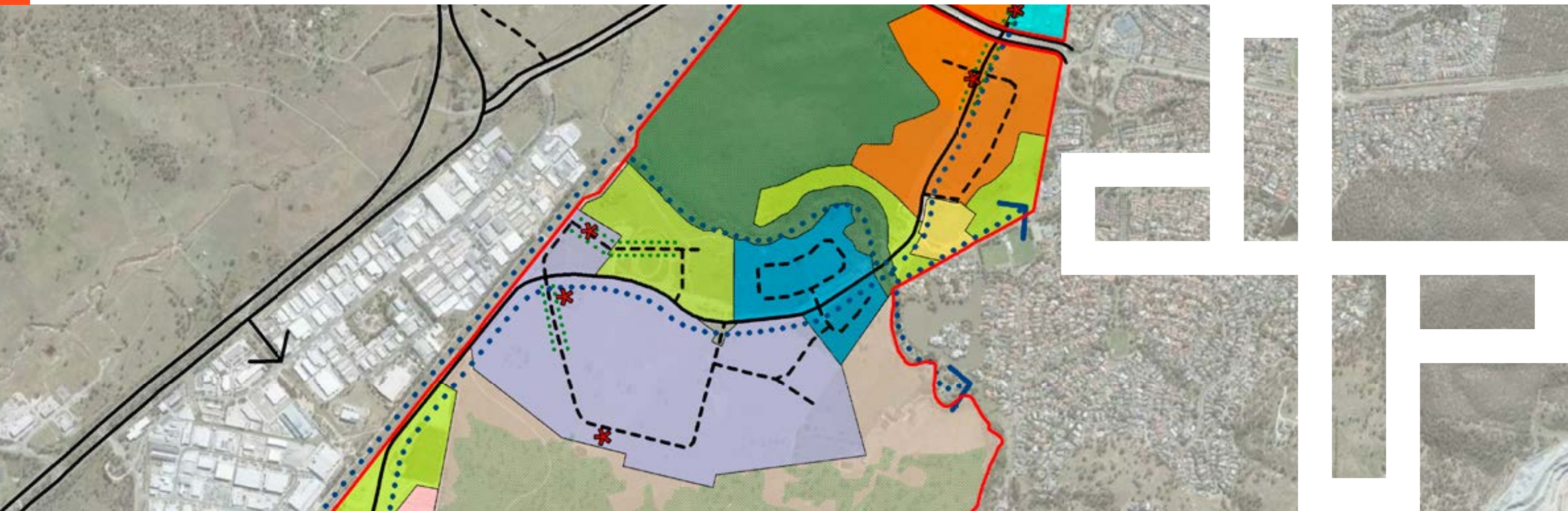


July 2024

South Jerrabomberra Regional Job Precinct

Urban Design Report



Prepared for Department of Regional New South Wales

+ Jensen PLUS with

- + SGS Economics & Planning
- + Dsquared Consulting
- + Liesl Codrington Consulting

**JENSEN
PLUS**

Planning
Landscape Architecture
Urban Design
Social Planning



“The ambition of the South Jerrabomberra Regional Job Precinct is to be a leader in high-technology businesses, good design and placemaking, and sustainability.”

Acknowledgements

We acknowledge the following stakeholders and consultants whose inputs and participation informed the South Jerrabomberra Regional Job Precinct.

- _ The traditional owners of the South Jerrabomberra region, the Ngunnawal and Ngambri people
- _ Department of Regional New South Wales
- _ Queanbeyan-Palerang Regional Council
- _ Department of Planning and Environment
- _ Environment Protection Authority
- _ Transport for New South Wales
- _ Chief Minister, Treasury & Economic Development Directorate (ACT)
- _ ERM
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- _ SGS Economics & Planning
- _ Dsquared Consulting
- _ Liesl Codrington
- _ Landowners of the study area
- _ The wider community of Jerrabomberra.



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1. The Precinct at a Glance

**Section 1
summarises
the Precinct's
important
features**



1. Summary

“South Jerrabomberra Regional Job Precinct will be the capital region’s most attractive new location for tech-businesses to grow and prosper, in a well-designed, well-connected and well-supported place.”

The Objective

Jensen PLUS was commissioned by the Department of Regional New South Wales, as part of a wider consultancy team, to prepare an Urban Design Study for the South Jerrabomberra Regional Job Precinct.

South Jerrabomberra is a key development opportunity located at Queanbeyan, NSW, close to the border with ACT. The precinct has been identified as a location for new employment and industry lands specialising in advanced manufacturing, space and defence-related industries.

The Precinct's proximity to Queanbeyan and Canberra, the Hume Industrial Area, Canberra Airport (approx. 14km), and road and rail corridors creates a strategic opportunity for the envisaged mixed use and employment uses.

The RJP's focus on leading technology industries, supported by the area's highly skilled workforce, also provides potential to achieve "Innovation District" outcomes, if supported by high quality urban design and placemaking.

Vision + Principles

A vision and six principles have been developed to guide the planning outcomes:

1. Innovative tech-jobs precinct

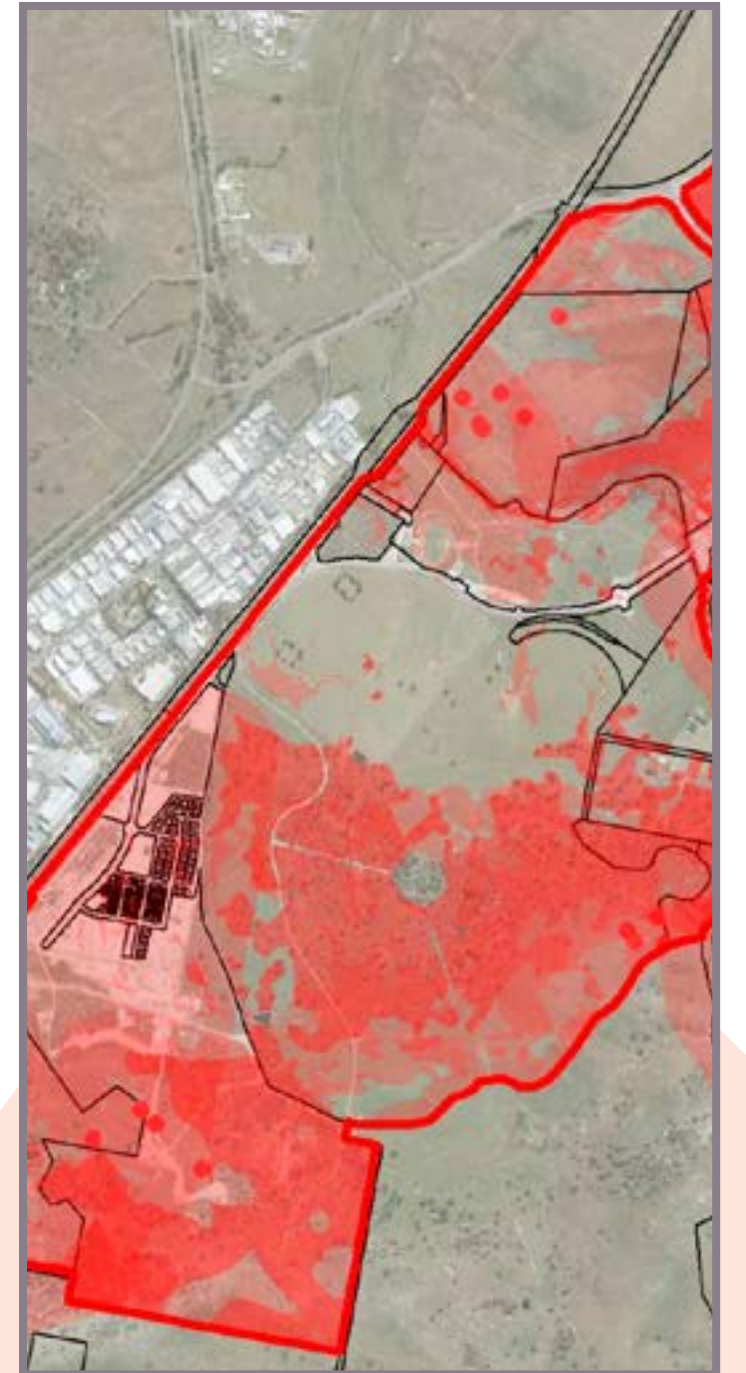
2. Seamless precinct + cross border connectivity

3. High quality urban design + placemaking

4. Leading sustainability outcomes

5. Be a good neighbour

6. Collaborative cluster



Study area opportunities and constraints have been investigated



Technical analysis

Several technical studies have been prepared to inform the development of South Jerrabomberra Regional Job Precinct and to test preliminary options.

- _ Economic Analysis (SGS)
- _ Transport (SMEC)
- _ Infrastructure (SMEC)
- _ Biodiversity Assessment Report (ERM)
- _ Intermodal Feasibility Report (George Stanley Consulting)
- _ Bushfire Assessment (ERM)
- _ Land Use Considerations (Sherpa)
- _ Air Quality, Noise and Odour Modelling (Todoroski Air Sciences)
- _ Sustainability (Dsquared)
- _ Heritage Assessment Report (ERM)
- _ Contamination Assessment Report (ERM)

Summary outcomes of each technical study are included in this report.

In addition, strategic and site planning opportunities and constraints have been mapped and synthesised to highlight important opportunities of the South Jerrabomberra Regional Job Precinct.

Urban Design Strategy

The urban design strategy for South Jerrabomberra is described at different levels of details.

- _ A Structure Plan proposes eight Sub Precincts - with different land use and business mixes - to guide development.
- _ Existing and future road and transport links, activity hubs, public realm enhancements and environmental overlays are shown in layers.
- _ For each Sub Precinct, a detailed narrative is provided to describe the desired future character for each area.
- _ An Illustrative Design has been drawn, showing how the business, industry, local centre, open space and conservation Sub Precincts of South Jerrabomberra could look at full development.

Activation + Implementation

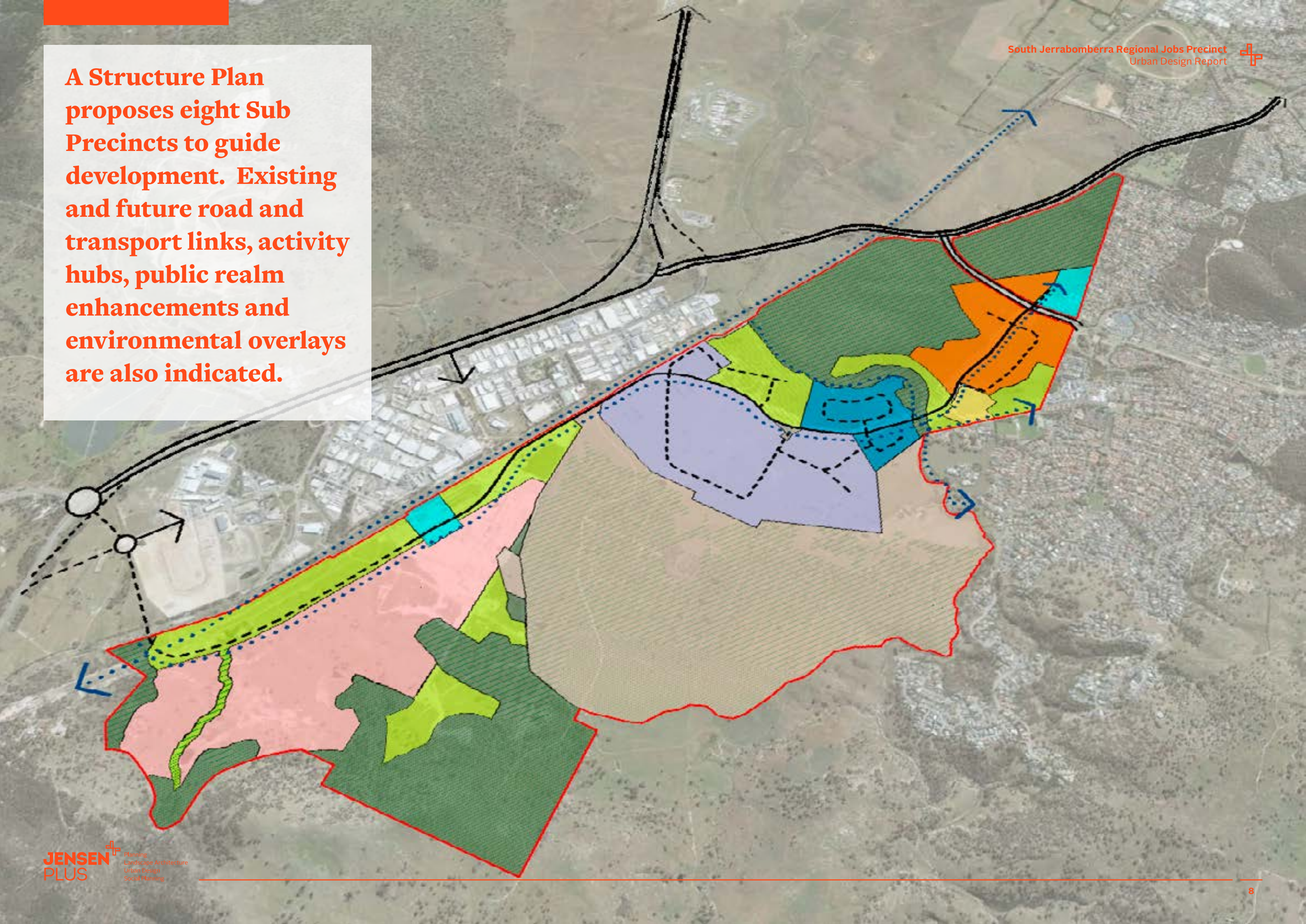
- _ Potential rezoning to achieve the planning intent is indicated, as is a sequence of development over 20 years.
- _ It is noted that rezoning additional land for development will not be possible until additional road connections (including to ACT) are agreed, planned and funded, along with other enabling infrastructure.
- _ Additional urban design guidance and placemaking and governance recommendations are also made.



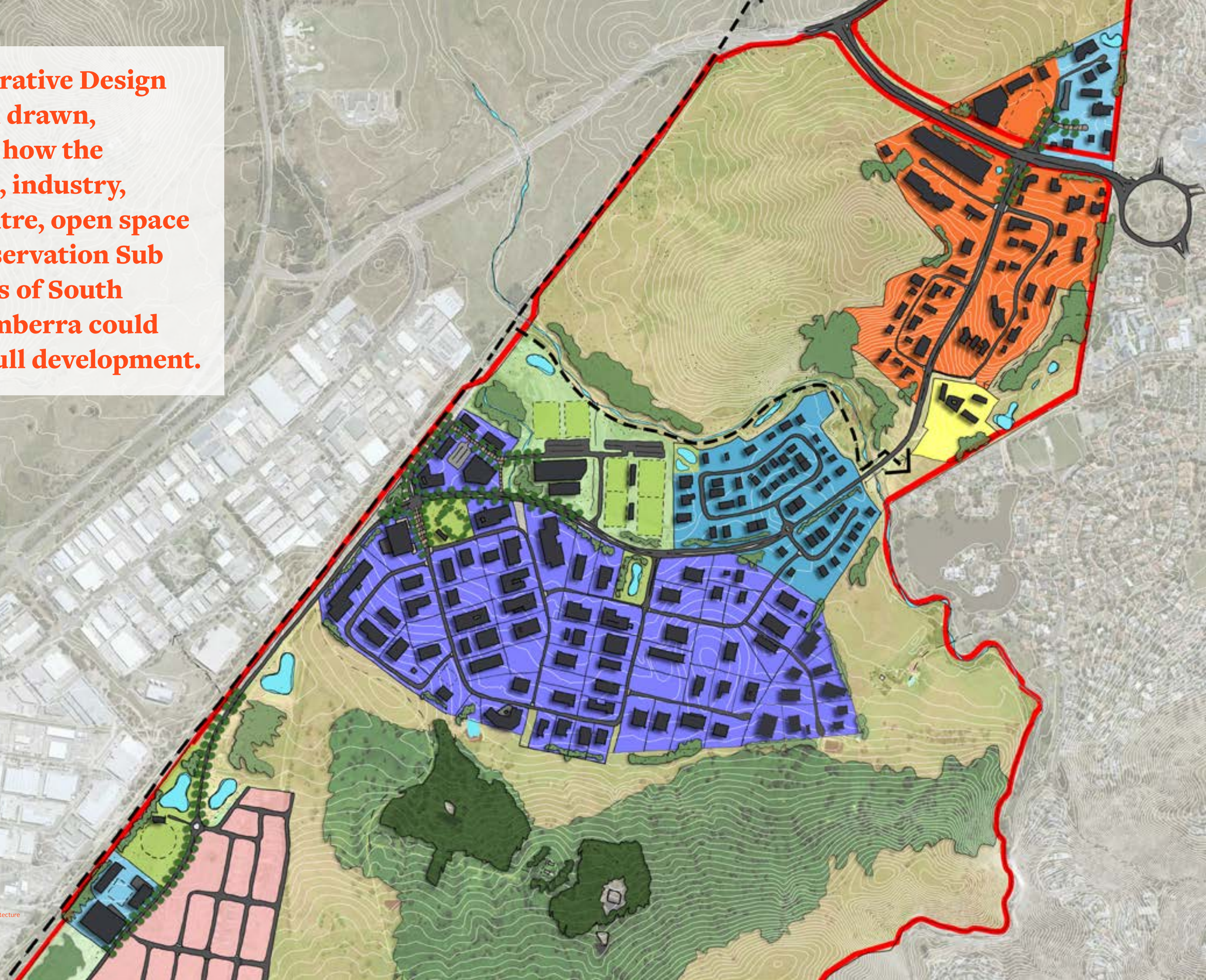
"Green Infrastructure" areas represent an important part of the proposed design



A Structure Plan proposes eight Sub Precincts to guide development. Existing and future road and transport links, activity hubs, public realm enhancements and environmental overlays are also indicated.



**An Illustrative Design
has been drawn,
showing how the
business, industry,
local centre, open space
and conservation Sub
Precincts of South
Jerrabomberra could
look at full development.**



**This section
summarises
the project
objectives +
purpose of
this report.**



2. Introduction

- 2.1 Purpose + objectives
- 2.2 Regional Job Precincts
- 2.3 Methodology at a glance
- 2.4 Strategic location
- 2.5 About South Jerrabomberra
- 2.6 Existing conditions
- 2.7 Planning history
- 2.8 Innovation Districts
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2. Introduction

An introduction to this report

The Regional Job Precinct Urban Design Study identifies opportunities to drive the area's economic development and job creation, by planning an area to attract high technology industries and deliver on the vision for South Jerrabomberra.

2.1 Purpose + objectives

Jensen PLUS was commissioned by Department of Regional New South Wales, as part of a wider consultancy team, to prepare an Urban Design Study for the South Jerrabomberra Regional Job Precinct (South Jerrabomberra RJP).

South Jerrabomberra is a key development opportunity located at Queanbeyan, NSW, close to the border with ACT. The precinct has been identified as a location for new employment and industry lands specialising in advanced manufacturing, space and defence-related industries.

The urban design process included a number of steps including:

- _ Appreciating the context and understanding the locale.
- _ Use of workshops to create the RJP's guiding principles and vision that are imperative to forming the urban design strategy
- _ Combine baseline analysis reports and investigations with and engagement to create design options.
- _ Through an iterative process, refine the options through further studies and engagement to inform the Urban Design Study.

Urban Design Report

This Urban Design Report outlines in some detail the planning strategy for South Jerrabomberra. Other objectives include:

- _ Document the strategic planning context of the South Jerrabomberra RJP.
- _ Summarise key drivers and influences.
- _ Review previous studies, identifying relevant strategies to further develop.
- _ Document the context and site conditions within the South Jerrabomberra RJP.
- _ Graphically represent investigation findings.
- _ Summarise engagement and inputs including the Vision and Guiding Principles Workshop and Integration Workshop.
- _ Summarise technical investigations by other consultants in the wider team.
- _ Describe an overall structure plan to guide the Precinct's development.
- _ Describe and illustrate the desired character of future development for each part of the Precinct.
- _ Recommend implementation steps including zoning, staging, urban design guidance, governance and placemaking.





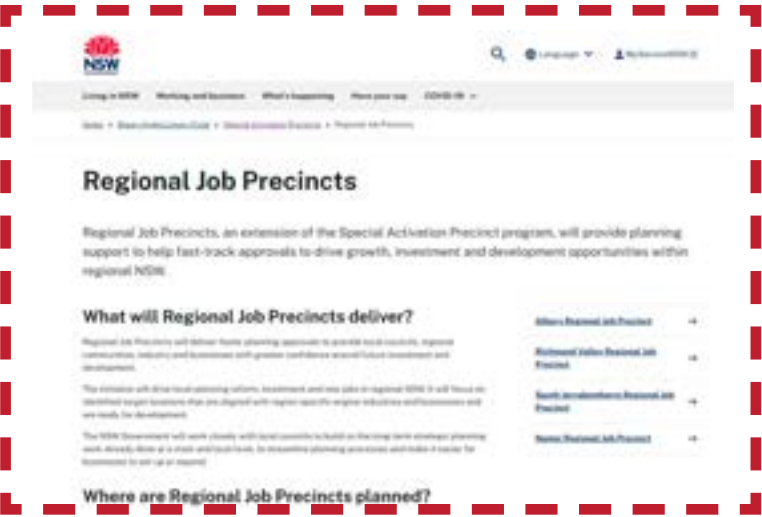
“The NSW Government is working closely with Queanbeyan-Palerang Regional Council... to identify barriers to development and opportunities for employment growth, in industries such as defence, space, cyber-security, information technology and scientific research. The aim of the RJP is to deliver improved planning pathways to support economic growth, job creation and to facilitate cross-border connections / planning outcomes.”
(Special Planning Advisor - Final Report)

2.2 Regional Job Precincts explained

Regional Job Precincts (RJPs) are an extension of the Special Activation Precinct (SAP) program. RJPs are a place-based or industry-based approach that draws on the planning system to attract jobs and investment, and drive growth in strategic locations of Regional NSW.

The creation of RJPs is part of the NSW Government’s 20 Year Economic Vision for Regional NSW and will be delivered as part of the \$4.2 billion Snowy Hydro Legacy Fund.

The South Jerrabomberra RJP is one of four RJPs announced by the NSW Government. Other RJPs are at Albury, Richmond Valley, and Namoi. South Jerrabomberra RJP is distinctive for its proximity to Canberra, freight routes and Poplars Innovation Precinct.



To find out more about RJPs, click on the webpage link above or visit <https://www.nsw.gov.au/snowy-hydro-legacy-fund/special-activation-precincts/regional-job-precincts>



What is an RJP?
Source: RJP South Jerrabomberra - Final Report

2.3 Methodology at a glance



Stage 1 Context Analysis

November 2021

Project start up

- _ Background document review
- _ Initiation meeting
- _ Stakeholder engagement plan

December 2021

Vision + Guiding Principles

- _ Using the observations taken from the site visit, the projects Vision and Guiding Principles were developed through a workshop

January - February 2022

Baseline Investigations + meetings

- _ Receive and analyse the technical baseline reports
- _ Interviews with technical consultants to discuss baseline reports and initial option discussions for the urban design study

Stage 2 Options Development

March 2022

Integration Workshops

- _ Test Urban Design options and develop preferred scenario
- _ Collaborate with client and stakeholders on Urban Design options and preferred scenario
- _ Preferred scenario to provide direction for technical reports

Stage 4 Exhibition

late 2023

Public Consultation

- _ Prepare engagement materials
- _ Consult
- _ Finalise Urban Design

December 2021

Site visit

- _ Understanding the precinct and sharing of information with project team

December 2021

Economic Analysis Report

- _ Market sounding interviews
- _ Early engagement

February 2022

Integration Analysis Report

- _ Use the baseline reports and technical meetings to appreciate the projects context and provide options for discussion

February 2022

Project Control Meeting

- _ Assess findings of baseline reports
- _ Format integration workshop

April 2022 - May 2023

Urban Design Report _ Draft

- _ Concept design and preliminary costings
- _ Implementation plan
- _ Consultation outcomes
- _ Urban Design Strategy
- _ Client and key stakeholder review

2024

- _ Final Urban Design Study for adoption

Stage 5 Final Urban Design Report

Stage 3 Urban Design Report and Technical reports



2.4 Strategic location

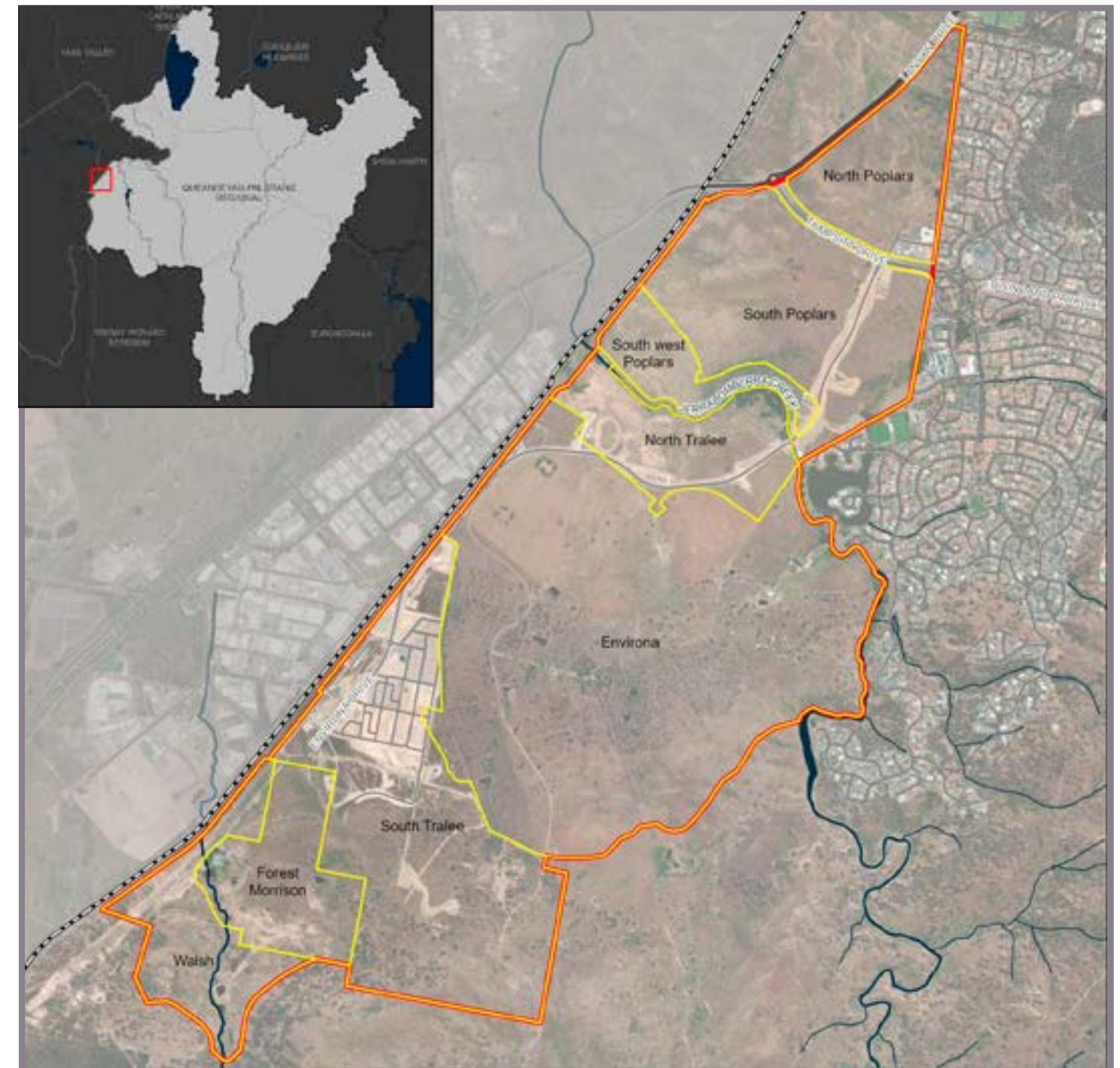
The South Jerrabomberra RJP's proximity to Queanbeyan and Canberra, the Hume Industrial Area, Canberra Airport (approx. 14km), and road and rail corridors, create a strategic opportunity for the envisaged employment uses. The goal of the Urban Design Study is to connect these areas together and provide amenities that increase the area's appeal.

Drivers

A major driver for the Precinct is the facilitation and attraction of high technology jobs in the space, defence, cyber-security, and other high technology industries. South Jerrabomberra's proximity to Canberra's federal government departments, and exclusive (outside ACT) access to secure government communication networks, make the RJP a desirable place for the targeted industries.

Regional Job Precincts aim to reduce delays in planning, and enable economic growth and provide jobs. Planning for the South Jerrabomberra Regional Job Precinct will integrate the area's strategic land ownerships into a cohesive unit that encourages and accommodates future investment through appropriately zoned and buffered land.

Queanbeyan has a technical and highly skilled workforce, many of whom commute to the ACT. The local area has the personnel and housing to help support the RJP's objective of attracting a technology-based manufacturing industries and workforce.





2.5 About South Jerrabomberra

Location

South Jerrabomberra is located on the eastern (NSW) side of the ACT/NSW border. The area is approximately 10km south of Canberra's CBD and 5.5km southwest of Queanbeyan's CBD.

Country

South Jerrabomberra is part of the Ngarigo language area, and is today generally represented by Ngunawal (Ngunnawal), Ngambri (subset of the Walgalu), and Ngarigo people.

Connectivity

South Jerrabomberra is located within easy reach of Canberra and the growing suburbs around Queanbeyan.

The area is serviced by road freight routes that connect the area to Canberra, NSW and the rest of Australia. A railway corridor borders the area from Hume, however the line is not in operation. The area's close proximity

to Canberra Airport provides a way to connect South Jerrabomberra both nationally and internationally.

The RJP area is adjacent to a mixture of different land uses, including the Hume (ACT) industrial area and Jerrabomberra residential area.

Landscape

The land is undulating, with its undeveloped areas including a mix of woodlands, grasslands and pastures. Jerrabomberra creek dissects the northern part of the area, with several surface dams.

The area has a relatively gentle slope downwards to the north and north-west, with increasing elevations near the southern boundary and north-eastern tip.

South Jerrabomberra developments

A number of recent developments and corresponding infrastructure have been built within the study area.

A new South Jerrabomberra residential estate, in the south west of the RJP, borders the Hume industrial area, and has completed its first stages.

North Poplar retail area has started development with infrastructure and retail stores including an ALDI supermarket.

The area's new Regional Sport Complex is breaking ground, with a proposed future high school site under assessment. These facilities are linked to the surrounding area via the newly constructed Environa Drive.





2.6 Existing conditions

The Investigation Area encompasses pastures, woodlands and grasslands across undulating terrain. Some new retail and residential areas have recently been built. With Canberra and Queanbeyan at South Jerrabomberra's doorstep, the area has potential to connect to businesses, employees and government departments across the capital region.



ALDI at North Poplars retail precinct



Enviro Drive looking south over Jerrabomberra Creek towards Enviro



Enviro Drive, prior to opening



North Poplars retail precinct



Enviro Drive with future industry land on the right, and the Regional Sports Park site beyond



Enviro Drive



South Jerrabomberra residential area



Project team on Enviro Drive



South Jerrabomberra residential area



Historic Environa Arch



Agricultural land



Photos of Environa's natural landscape and topography



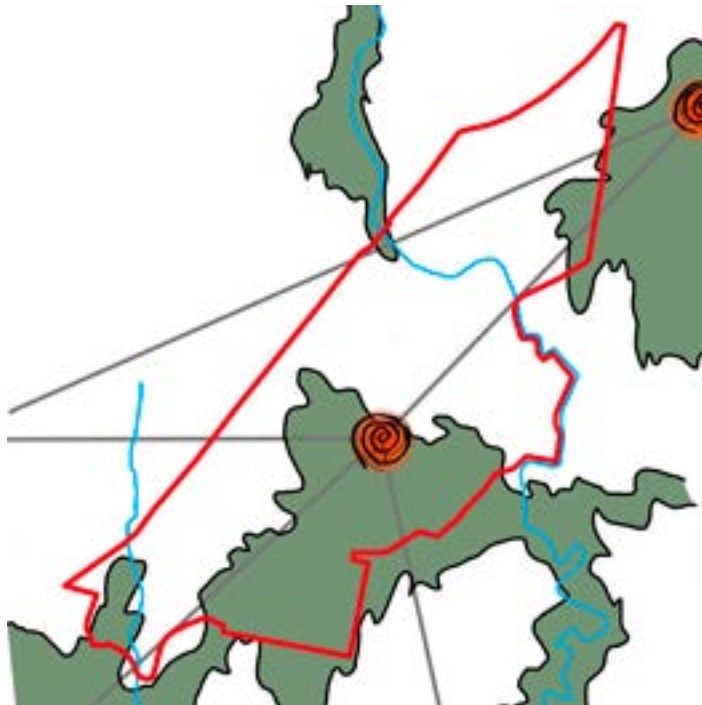
New entrance to Environa estate from Environa Drive



View of Hume and Canberra beyond, from hilltop at Environa

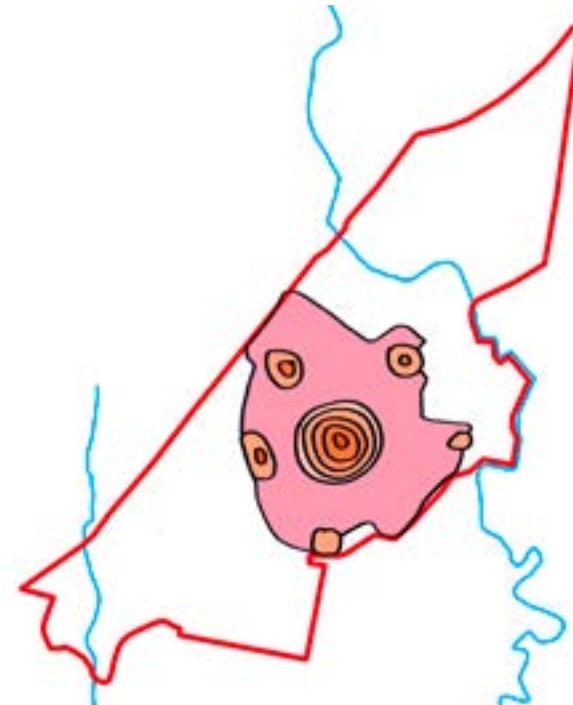


2.7 Planning History (in brief)



Pre-Colonial (pre-1820s)

- _ Ngannawal and Ngambri Country
- _ Southern Eastern Highlands Bioregion, Murrumbateman subzone



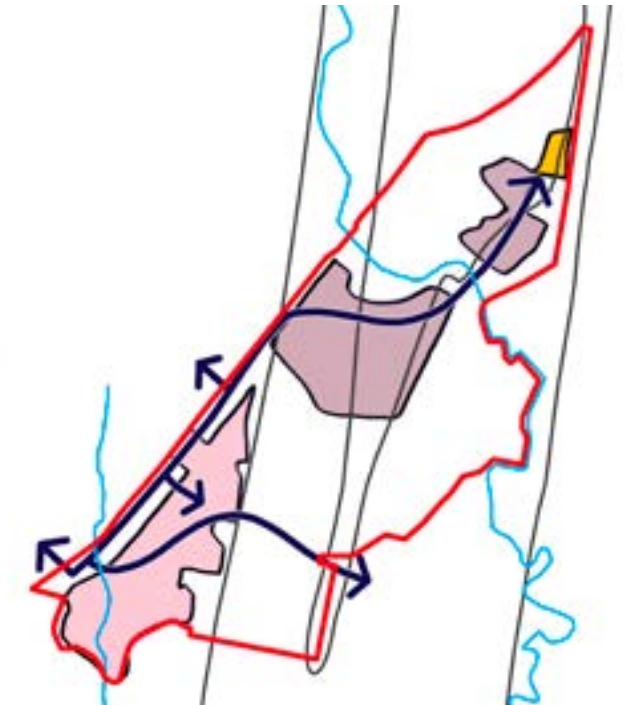
Envirova Estate (1920s)

- _ Vision of 100 years ago, for a freehold residential estate near Canberra, a vision unrealised



Hume Industry (1970s) + Jerrabomberra Residential (1980s-90s)

- _ Hume established west of the ACT/NSW border.
- _ Jerrabomberra residential area established east of the study area.



Structure Plan (2013) + Development Control Plan (2015)

- _ Introduces employment lands in north and suggests part-development of Envirova lands for employment
- _ South Tralee residential area rezoned after protracted legal disputes
- _ East-west connectivity into ACT has not been realised



Zoning (2010s)

_ The current zoning is from the Queanbeyan LEP 2012, Queanbeyan LEP (West Jerrabomberra) 2013 and Queanbeyan LEP (South Jerrabomberra) 2012



Recent Developments (planned or under construction)

_ Recent developments under construction include North Poplars retail precinct and South Jerrabomberra residential area.

_ Other planned developments include a high school, regional sports complex and Poplars Innovation Precinct and North Tralee Estate.



South Jerrabomberra (2020s)

_ The study area.



2.8 Innovation Districts

“A well designed Innovation District can create a culture of collaboration that links the area’s skilled workforce with start-ups, entrepreneurs and anchor institutions to increase its economic prosperity and help build a global presence.”

What are Innovation Districts?

The "Innovation Districts" approach of creating more vibrant and dynamic business areas are challenging the unimaginative developments and placemaking found in typical employment areas.

The Rise of Innovative Districts by Katz and Wagner (2014), provides a great insight to Innovation Districts. These areas house a variety of businesses and institutions, ranging from start-ups to leading-edge anchor companies, which are often supported by a university presence and promote a culture of sharing ideas and knowledge to form new technologies and solve real world problems.

Innovation Districts are typically mixed-use, providing retail, accommodation, amenities and services, supported by public transport and designed to promote walkability and placemaking through high-quality urban design.

What Makes a Successful Innovation District?

Katz and Wagner determined a way of benchmarking precincts based on the following criteria:

_ Quality of place - the most important talent attractor

- _ Diversity and inclusion
- _ Affordability
- _ Critical Mass
- _ Infrastructure
- _ Accessibility
- _ Anchor Institutions
- _ Competitive Advantage
- _ Collaboration

A similar report by SGS (2018) on Melbourne's Innovation Districts, found similarities in the above criteria, while noting the most important as the Quality of Place.

The physical attributes of Innovation Districts are just important, Storrer and Walker (2016) list eight Placemaking Principles for Innovative Districts:

- _ Identity: Make innovation visible and public
- _ Diversity: Mix innovation with a range of other uses
- _ Continuity: Start with existing people and places
- _ Sociability: Bring people together through places and programming

- _ Proximity: Build things close together on the ground - not just on the map
- _ Mobility: Connect to the broader city and region through multiple transportation modes
- _ Flexibility: Experiment, Observe, Repeat
- _ Unity: Govern with vision and holistic, inclusive strategies

Provision of a central hub

The addition of a central town square, where markets and community events are held is a common addition to innovation precincts with a focus on building community. These can include gardens, public art, BBQs and lawns for families to gather – inviting people to spend time in the area and thus building a sense of community cohesion.

People places

By designing innovation precincts with amenities and ‘people places’ to make the neighbourhood thrive, we can make these areas a place people want to be. Along with quality urban design, this precinct can include the incorporation of a retail and community hub, convenient public transport and active transport links, tree lined streets, colourful public art and open space.



Innovation Districts + NSW

_ In 2018 the NSW Government released its report *NSW Innovation Precincts - Lessons from international experience*, which analysed local and international districts to find commonalities in the requirements needed to create successful precincts for NSW, and the barriers to overcome.

_ Requirements include: promoting collaboration through proximity to drive start-ups, protect affordability and amenity to suit a range of workers, attract established companies that are supported by a deep local talent pool and create a sense of place which extends into a vibrant night-time experience.

The report found four distinct types of NSW districts:

- _ Health and education innovation precincts
- _ **Innovation precincts around universities**
- _ **Innovation precincts around a major asset**
- _ Inner city innovation locations.

Relevance to South Jerrabomberra

Many developments claim to be Innovation Districts, but their design and innovative outcomes vary greatly.

- _ Ideas including strong branding and creating a point of difference through ambitious sustainability goals may be crucial to attracting investment.
- _ Designing places that increase the chances of serendipitous meetings, which are a key driver of creating connections and promoting collaboration.
- _ Create places that build continuity in the community, and build social capital and identity.
- _ The need to bring people together through places and programming.
- _ Creating a innovation district that connects with the surrounding communities, providing services the local community needs and being physically connected through infrastructure, including public transportation.
- _ Establishing a governance structure that uses the RJP's vision to break down silos and address issues with integrated / holistic strategies of policy and place to promote unity.

The RJP's focus on leading technology industries (e.g. cyber and defence), supported by the area's highly skilled workforce, provides potential to achieve Innovation District outcomes, if supported by high quality urban design and placemaking.



2.9 Innovation District Benchmarking

Poplars Innovation District



Brindabella Business Park, ACT



Williamtown Aerospace Centre, NSW



South Eveleigh, NSW





Benchmarking (continued)

Brindabella Business Park, ACT

Context _ Airport

Located within Canberra's Airport District and 10 min from Canberra. The mixed-use area combines business (mostly office-based) and leisure.

Main industries

Cyber security, defence, Government, communications, R&D

Learnings for South Jerrabomberra RJP

Brindabella is positioned to attract international interest through its proximity to the Canberra Airport. The site's main industries are similar to those targeted by Poplars, which could be a way to increase cross border connectivity and for the ACT businesses to use Poplars potential University/R&D facilities.

Brindabella is also located adjacent to Majura Park, which compliments the former's business focus with leisure and retail opportunities.



Williamtown Aerospace Centre, NSW

Context _ Regional / Airport

Located next to Australia's largest operating air force base and Newcastle Airport. The site covers 11 hectares that contains light industry, workshops and warehouses.

Main industries

Defence and aerospace.

Learnings for South Jerrabomberra RJP

Williamtown Aerospace Centre is classified as an *Innovation Precinct around a Major Asset*. The precinct provides an example of leveraging off an area's existing infrastructure, industrial focus and skilled workforce.

The precinct has been able to attract anchor institutions including Raytheon, Airbus and Boeing.



South Eveleigh, NSW

Context _ Urban

Located in Sydney's CBD, the 14 hectare site is home to 100 resident firms and provides over 5,500 jobs and research positions.

Main industries

Hi-tech, biotech, technology, communications, media, research, training and consulting.

Learnings for South Jerrabomberra RJP

South Eveleigh is a strong example of how to connect research, anchor institutions and start-ups together to form a innovation precinct.

The precinct demonstrates how to create a facility that works with its surrounding locale, promotes public and active transportation, and provides high quality amenities including a park to create an area that inspires innovation and collaboration.





Innovation District Benchmarking (continued)

Tonsley Innovation District, SA



Technology Park, SA



Lot 14, SA



Armidale Agritech Innovation Precinct, NSW





Benchmarking (continued)

Tonsley Innovation District, SA

Context _ Suburban

The 61 hectare, 6 Star GreenStar, site is located along a main corridor connecting it to the CBD. The mixed-use site includes 32 businesses, Flinders University and will house 1200 residents (approx.).

Main industries

Cleantech, renewable energy, health, medical and assistive technologies, mining and energy services, and automation, software.

Learnings for South Jerrabomberra RJP

Tonsley seeks to unite progressive, creative individuals, businesses and researchers in collaborating, testing and growing in a flexible and supportive environment. It incorporates quality design promoting an inclusive environment for people and businesses. The holistic model incorporates physical, economic and networking assets. There is also a focus on high quality public realm, with the repurposed Main Assembly Building creating a stunning business venue and meeting place.



Technology Park, SA

Context _ Suburban

Located in the master planned suburb of Mawson Lakes. Technology Park is within walking distance to the University of SA Mawson Lakes campus, residential areas, public transportation (both rail and bus), industrial and commercial areas, retail and shopping precincts, and an artificial lake with walking tracks. The 65 hectare area hosts over 100 companies and includes a conference centre.

Main industries

Specialising in technology for the following sectors: health, education, software defence and aerospace sectors, and communications.

Learnings for South Jerrabomberra RJP

Technology Park is located close to (but not fully integrated with) nearby amenities and services. The facility has the ability to cater for numerous industries and is supported by a University, industrial and commercial areas.



Lot 14, SA

Context _ Urban

Located on the old Royal Adelaide Hospital site in Adelaide's CBD. Lot 14 has seen the demolition and construction of new facilities (still ongoing), while also re-purposing existing structures, with Lot 14's footprint covering 7 hectares.

Main industries

Space, start-ups, defence, hi-tech and creative industries.

Learnings for South Jerrabomberra RJP

Lot 14 is an example of how the State Government plays a key role in establishing a new industry and brand for the region. Since its establishment, Lot 14 has been able to attract anchor institutions including Google and Amazon Web Services.

The location is highly urban and densely built up, with high quality architecture and public realm part of the appeal to workers and visitors.



Armidale Agritech Innovation Precinct, NSW

Context _ Suburban / Regional

Located within and around the University of New England's Armidale campus. The Precinct's learning facilities uses the farms surrounding the campus to collect data and test R&D.

Main industries

R&D, environment, agricultural technology, and animal sciences.

Learnings for South Jerrabomberra RJP

Armidale Agritech Innovation Precinct demonstrates an area where researchers and students can work alongside businesses and entrepreneurs, to create a collaborative environment. The site also includes a conference area, that is used to attract international visitors and possible investors through hosting events.





**This section
highlights some
of the engagement
conducted with
stakeholders
to inform the
Structure Plan.**

3. Team + Stakeholder Engagement

- 3.1 Site visit + early engagement
- 3.2 Online visioning workshop
- 3.3 PCG Update
- 3.4 Integration Analysis Workshop
- 3.5 Ongoing stakeholder liaison

3. Team + Stakeholder Engagement

Two important collaborative steps in the master planning were a major Visioning Workshop, and a two-day Integration Workshop with government stakeholders and technical consultants. Both workshops were held online, and were successfully facilitated by Jensen PLUS using interactive workspace tools.

3.1 Site visit + early engagement

In December 2021 the technical consultants, Council, DRNSW and other stakeholders explored the RJP site and surrounding area to better understand the site's context.

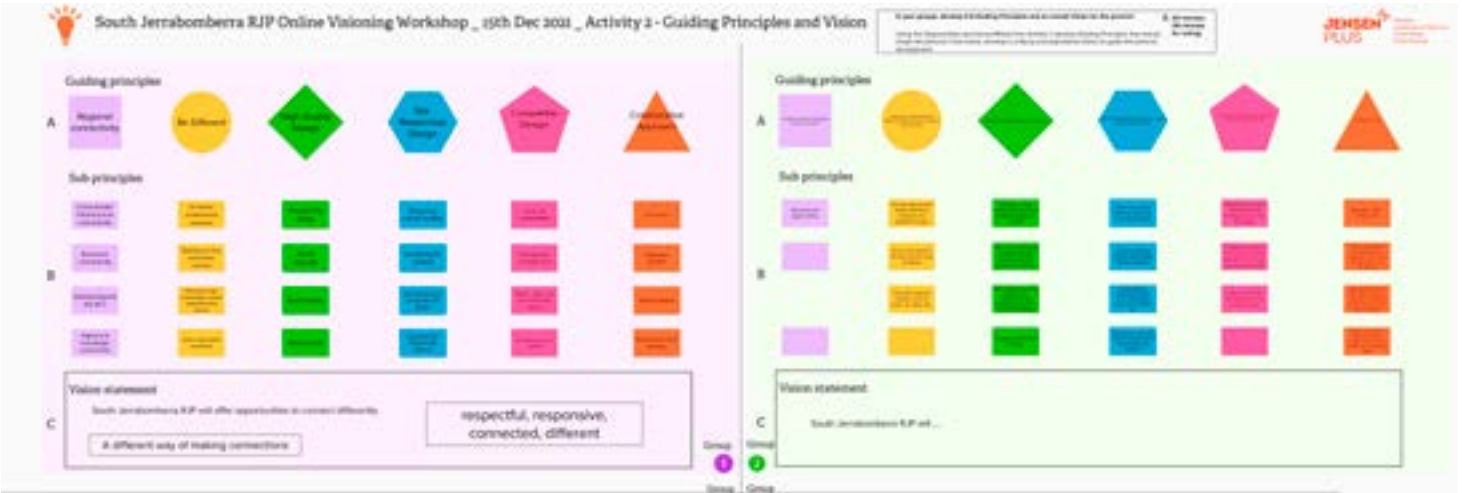
After the field trip the parties reviewed some of the observed issues and opportunities in a workshop.

Early engagement meetings and enquiries were undertaken with many stakeholders, including developers, Canberra Airport, and government service providers. Wider community engagement has yet been commenced by the master plan team.

3.2 Online visioning workshop

An online visioning workshop was held on the 15th of December 2021. The objectives included:

- _ Share knowledge and emerging baseline information
- _ Understand issues and opportunities better
- _ Develop vision and guiding principles
- _ Review and test and refine



South Jerrabomberra _ Online Visioning Workshop 15th Dec 21 _ Activity 2 _ Vision + Guiding Principles

Summary of guiding principles (re-ordered to align similar concepts)

Group 1						
Regional connectivity	Be different (industry / innovation)	High quality design	Site Responsive Design (Environment/cultural)	Compatible design (land use / impacts)	Collaborative Approach	
Group 2						
	Attracting the right kind of business mix	High quality urban design outcomes with a people-centred focus	Creating a precinct with exceptional environmental outcomes	Integrating components with adjacent residential area and Hume Industrial Area	Equitable access	Creating cohesion of purpose across the precinct
Group 3						
Integrated and interconnected transport	Attract the right industries	Destination that attracts the best talent for the jobs of tomorrow	Sustainability as an opportunity	Seamless integration with the ACT and wider precincts, including residential		Maximising job opportunities
Group 4						
Transport connectivity	New economy jobs	Distinct identity	Sustainable designed precinct	Be a good neighbour	Activate the synergies	
Summary – theme						
Transport	Economy / jobs	Design + place	Sustainability / environment	Land use interfaces	Collaboration + governance	?
Logical order?						
2	1	3	4	5	6	

Team visioning and guiding principles workshop notes (top) and post-workshop refinement (bottom)



(cont.)

Team + stakeholder engagement

- _ Foster strong collaboration between project team, technical consultants, QPRC, DRNSW etc.
- _ Early identification of options
- _ Help ensure alignment in investigations to a common purpose

The outcomes of the online activities are displayed in an Appendix.

The results of this workshop provided the Precinct's draft vision statement as well as six guiding principles and sub principles. These were developed further and are include in Section 4. Vision + Guiding Principles of this report.

3.3 PCG Update

On 16th February 2022, Jensen PLUS presented an update of the draft vision and principles to the Project Control Group, with a summary of the findings of the Integration Analysis Report. This included preliminary design options to be refined and tested in the Integration Analysis Workshop.

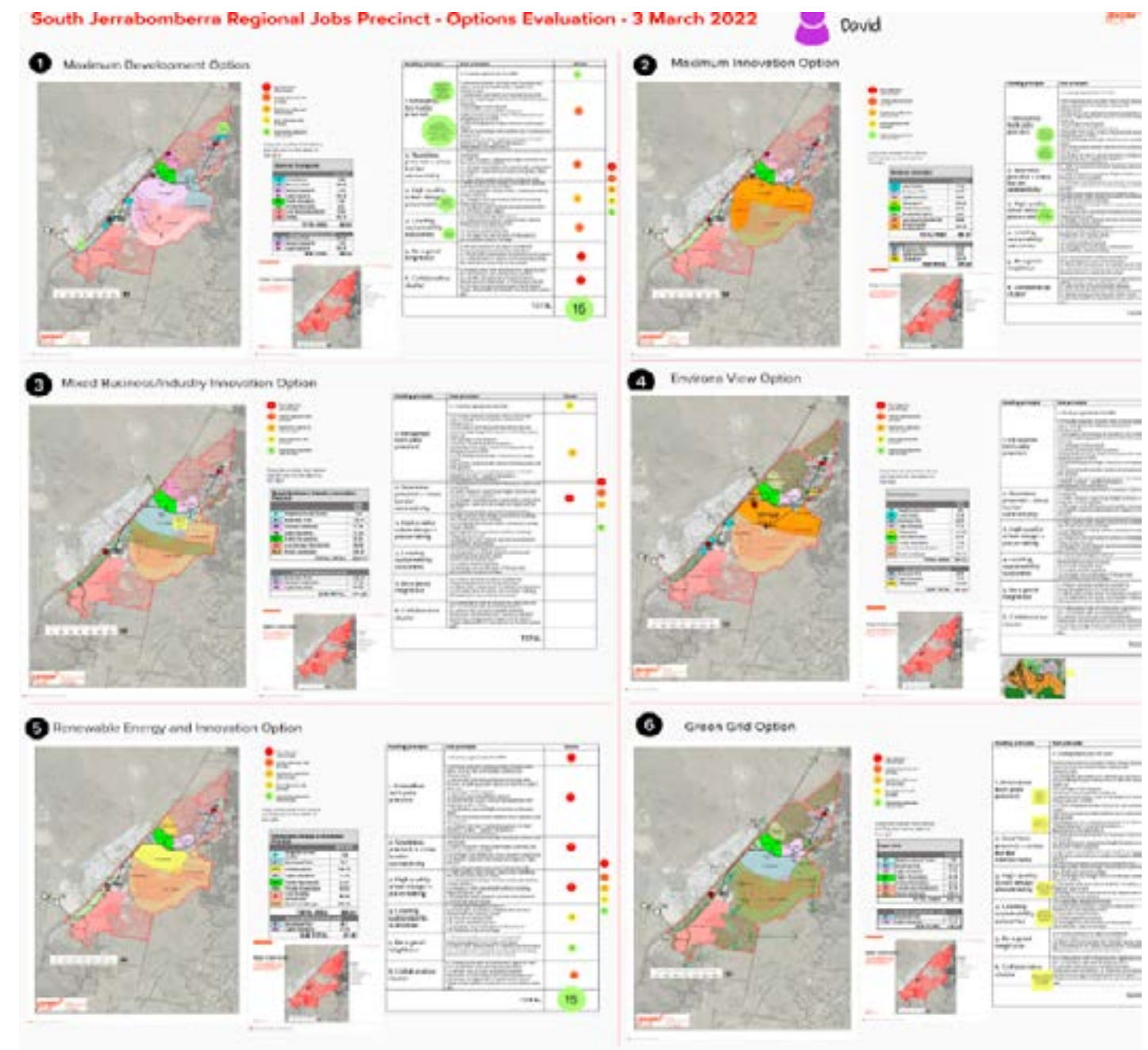
3.4 Integration Analysis Workshop

A two day design workshop was held on the 3rd and 4th of March 2022. A total of 45 participants attended the workshop across three online sessions.

The primary purpose of the Integration Workshop was to "Collaboratively develop a preferred design option that aligns with the RJP goals and precinct vision".

The workshop's objectives were to:

1. Evaluate design options, identifying a preferred scenario.
2. Inform key strategies to support the preferred design e.g. transport, sustainability, air/ noise/odour etc.
3. Identify additional testing and inputs needed for preferred urban design and Technical Reports.
4. Collaboration, consensus and project momentum between team, client and key stakeholders.



Integration Workshop _ online workspace showing option scoring by one of four small groups



(cont.)

Team + stakeholder engagement

In small groups, six design options were reviewed and evaluated on Day 1, with a refined urban design option developed overnight, in time for the final session on Day 2.

Six focus group discussions were then held to gather technical feedback on the refined option, and to identify further information / testing, as well as strategies needed to guide the draft technical reports and draft design.

Focus group topics

- _ Transport + Intermodal
- _ Environment + Heritage
- _ Economics
- _ Master Planning, urban design
- _ Land use considerations + Air, Noise, Odour
- _ Infrastructure + Sustainability

3.5 Ongoing stakeholder liaison

Throughout the project, Jensen PLUS have been in regular contact with DRNSW, QPRC, technical consultants and other stakeholders to resolve information gaps and clarifications.





4. Vision + Guiding Principles

Describes the vision and guiding principles for the Precinct



Vision + Guiding Principles

“South Jerrabomberra Regional Job Precinct will be the capital region’s most attractive new location for tech-businesses to grow and prosper, in a well-designed, well-connected and well-supported place.”

1. Innovative tech-jobs precinct

2. Seamless precinct + cross border connectivity

3. High quality urban design + placemaking

4. Leading sustainability outcomes

5. Be a good neighbour

6. Collaborative cluster



1. Innovative tech-jobs precinct



A forward-thinking and innovative business precinct full of opportunities

1.1. Creating regional jobs for NSW

The primary objective of the Precinct is to stimulate employment that utilises Queanbeyan's and the Capital region's skilled workforce.

By providing adequately zoned employment land that caters for growth, people of different ages and backgrounds will be encouraged to relocate and live in the area.

1.2. Provide business certainty with a urban design vision, zoning, bio-certification, + infrastructure planning

The innovation and employment vision must be matched with appropriate zoning for short and longer term growth, as well as infrastructure planning to support projected business, worker and resident growth.

1.3. Innovation + advanced manufacturing jobs precinct targeting growth sectors in defence, space, cyber etc.

South Jerrabomberra will differentiate itself from other business precincts and surrounding areas by focusing on future technologies, utilising its skilled workforce, lower business costs, and placemaking to create a point of difference.

1.4. Leverage ICON network

This service creates a point of difference from other precincts by attracting businesses that require secure fibre optic government connections.

1.5. Attract university/R&D presence

A true Innovation District requires a University or R&D presence.

These facilities will be attracted to locate in the area due to the ICON Network, and ability to work collaboratively with the advanced manufacturing and targeted sectors including defence, space and cyber.

1.6. Benefit from lower costs of development + doing business in NSW

First stages of infrastructure development at South Jerrabomberra have been well supported by a \$23m NSW Government grant. Lower land costs and taxes in NSW (compared to ACT) also contribute to this comparative advantage.

1.7. Facilitating general / light industries + supply chains

The urban design study will shape the area's underdeveloped land to support industries through zoning, and location of services and transport / freight routes.

1.8. Opportunity for Environa lands to provide medium term business + jobs growth

As envisaged in the 2010 Structure Plan, unplanned lands at Environa provide strategic future growth opportunities for employment land within the RJP.

1.9 Catalyst for new "Capital Innovation Corridor" Canberra Airport - Eastern Broadacre - Queanbeyan / Jerrabomberra

The RJP is part of a wider economic opportunity to develop innovative businesses and manufacturing along a corridor linking to / from Canberra Airport. Developing complimentary rather than competitive precincts based on comparative advantages of different sites, will create a much greater opportunity than each part considered in isolation.



2. Seamless precinct + cross border connectivity

A precinct that promotes connectivity + safety

2.1. Well connected precinct for business, visitors + community

Provide more than one road connection into the RJP to enable growth, as well as good connections within the precinct.

Ensure the area caters for all users and modes of transport. Roads and paths should be intuitive in their design and layout to help visitors, support people of all ages and abilities, and promote active and public transport.

2.2. Safe transport, separating freight, business + local users where possible

The area is targeting advanced manufacturing and industries that could require freight transport. The area could also be part of external freight routes connecting NSW and ACT via rail and road.

Where possible the road network should separate heavy vehicles and freight from general and residential traffic and pedestrians as much as possible. This will reduce noise and emission impacts on locals, and increase traffic safety, business efficiencies and attract investment.

2.3. Stronger + additional cross-border connections

A long-standing complaint from the area is the lack of cross-border connectivity, which is identified as crucial to supporting business and employment access.

Identifying and testing potential cross-border connections is an aim of the urban design strategy.

2.4. Explore road / rail intermodal + logistics (IN2) precinct

The area's proximity to rail is a valuable commodity to industry. The investigations for the precinct will need to consider the potential and feasibility of how to best utilise this infrastructure and support it with an adequate road network, coupled with zoning to increase freight efficiencies and safety.

2.5. Plan future public + active transport links

Ensure the area has been designed to promote active and public transport as attractive modal choices.

Public transport can be supported by park and ride facilities, EV charging points and contain amenities including bike shelters to allow mix-modal travel.

Active transportation links should protect users from vehicle and environmental hazards, to create safe and comfortable routes. Also, these should promote all year round usage through the inclusion of trees to provide shading and incorporate wayfinding to reduce trip anxiety and cater for tourism and people of all ages and abilities.





3. High quality urban design + placemaking



Enhanced urban design + placemaking outcomes

3.1. High-quality urban design outcomes at building, site, street and precinct scales

Many successful innovation precincts emphasise high quality urban design to create attractive, welcoming and vibrant places that foster knowledge-sharing opportunities, and attract the brightest people to work there and spend time there.

Designs should incorporate innovative building techniques that consider future environmental impacts through climate change.

3.2. Contemporary design within a landscape setting creates identity

The area is aiming to create an innovative precinct that is targeting sectors not found in neighbouring areas. The design should reflect this approach to shape its own image, while incorporating the area's historic culture and aboriginal heritage.

3.3. Integrate with specialised facilities including regional Sports Hub

Ensure specialised features are promoted, via zoning, well laid out roads and wayfinding / signage. The success of these facilities is determined on how accessible they are and how well they are supported by essential infrastructure.

3.4. Design to meet national security requirements

Market sounding with businesses suggest that incorporating building security to Department of Defence standards could be an advantage to the precinct.

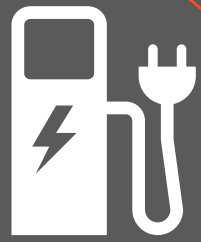
3.5. Minimise visual impact

The precinct is undulating with long views into and out of the area. Designs should take account of sensitive visual exposure including from residential areas, avoiding where possible the most sensitive areas of the landscape.





4. Leading sustainability outcomes



Creating a precinct that gives back

4.1. Sustainably designed + resilient precinct

Embed sustainability and resilience into the design of the precinct, development areas, streets and building.

Investigate ways to evaluate and certify the sustainability credentials of the precinct, such as Carbon Neutral or Green Star Communities certification. Include a strong governance framework that creates social sustainability and promotes wellbeing by understanding the needs of residents and visitors.

4.2. Green grid to protect, enhance + connect biodiversity and riparian values

Protect the area's rich environmental values and features by creating environmental corridors in the form of a "Green Grid".

Green Grids will also support sustainable living, by promoting active transportation, and increasing health and well being through biophilia.

4.3. Circular economy links

Circular economies create opportunities for one businesses waste or by-products to fuel another business or manufacturing process. With the need to reduce consumption of materials and increase recycling throughout the world, an opportunity exists to focus on the growing circular economies sector to become a leader in this field.

4.4. Carbon positive precinct

Using the intent of NSW Government targets to reduce carbon emissions by 50% by 2030, and via guidance from the precinct's innovative centre. The precinct can implement design principles include carbon offsetting, greening, locally sourced building materials and passive design guidelines to achieve a Carbon positive target in an appropriate timeframe.

4.5. Strategic bio-certification of the precinct

The precinct will be designed and staged to reduce the precinct's impact on the area's biodiversity. However any residential impacts may have to be offset. Forward-planning and certifying offsets could assist with development and business certainty and reduce planning timeframes.

4.6. Celebrate cultural heritage

Develop and implement the master plan in partnership with the Ngunnawal and Ngambri, and non-indigenous stakeholders.

Protect, enhance and elevate Ngunnawal and Ngambri culture and history in the precinct to make it more visible for visitors, and Ngunnawal and Ngambri people. This could be achieved by public art, tours, language and dual naming.





5.

Be a good neighbour



Minimise impacts on residential neighbours and on workers

5.1. Protect sensitive receptors (e.g. residential areas, schools and workplaces) from business impacts such as noise or odour

Understanding the requirements and constraints of targeted businesses and industries will inform the urban design study of what buffers and design requirements need to be installed e.g., zoning or using vegetation as buffers to protect sensitive receptors inside and outside of the RJP, as well as existing and future sensitive receptors.

5.2. Work with communities to maintain social licence

Keep communication open and honest throughout the precincts development. The success of the precinct will be governed by the input of all communities. All stakeholders will need to keep the lines of communication open and be in regular contact, to reduce friction that can be felt by local communities.

Obtain community input to shape the Precinct to provide for its current and future needs. The inclusion of active and public transport routes, greening and high-quality amenities are just some design features that will need to be incorporated into the RJP to enhance quality of life.

5.3. Consideration of nearby communities including development in proximity to the school

Ensure consideration of local needs are met without compromising on the supply of amenities and services or affecting facilities of the surrounding existing communities.

New developments are to consider the surrounding locality to enhance the area's liveability and not create unwarranted competition.





6. Collaborative Cluster

Innovation led by collaboration + planning

6.1. Collaborate with all landowners, agencies + ACT to envision, plan and develop the Precinct

Ensure communication between all stakeholders is maintained to create a holistic precinct that adds to the surrounding locale, including the ACT and Hume Precinct. This will ensure the creation of a successful precinct that seamlessly integrates between the existing areas of ACT and NSW.

An understanding of both NSW and ACT planning requirements and strategic planning documents would need constant perusing. Also, regular checks of any updated documents from both the ACT and NSW will need to be performed.

Beyond planning, the regulation and management of land uses (e.g. environmental protection and compliance functions) is also reliant on clear cross-border interaction and responsibilities.

6.2. Identify and activate synergies between businesses + developers to maximise potential

Via the targeted industry and business sector approach, internal and external business synergies should be promoted. This can be achieved through zoning, location of similar facilities and services together or creating hubs.

6.3. Review zoning around Poplars North, South Jerrabomberra urban buffer etc. to maintain an up-to-date urban design study

Previous zoning changes were implemented based on the requirements and assumptions at the time. The urban design study will ensure that established planning mechanisms are relevant to the precincts intended development. These should consider the impact of industry, air-traffic etc. on existing local communities and the environment.





**Relevant policies,
strategies and
previous plans**

5. Strategic Context

5.1. Relevant State +
Local Policies

5.2. Previous Studies

5.3. Recent Plans +
Strategies + Policies

5.4. Regional Job
Precinct South
Jerrabomberra Special
Planning Advisor - Final
Report (2021)

5.5. South Jerrabomberra
Development Control Plan
(QPRC 2015)

5.6. South Jerrabomberra
Local Infrastructure
Contributions Plan 2018
(QPRC 2018)

5.7. Canberra to Port of
Eden Feasibility Study _
Executive Summary (NSW
2020)

5.8. Monaro Rail Trail _
Pre-feasibility Assessment
(TRC 2018)

5.9. Canberra Airport
Master Plan 2020-2040
Preliminary Draft

5.10. Previous master
plans and concepts

5.11. Proposed Monaro
Highway upgrades by ACT
Government



5.1 Relevant State + Local Policies

NSW is a large state with a diversity of strategic plans and planning policies of relevance to the South Jerrabomberra RJP.

A review of this policy library highlights strong policy alignment around boosting local employment options, attracting investment, improving economic development, and providing opportunities for regional connections.



NSW Regional Development Framework (2017)

- The framework recognises that inland regions have a strong need for projects with government investments to switch on the local economy, support emerging alternative industries and ensure that regional communities can access essential services of modern economies.
- **South Jerrabomberra's locations to road and rail freight** is also a key feature of the framework's investment focus and area's targeted industries.



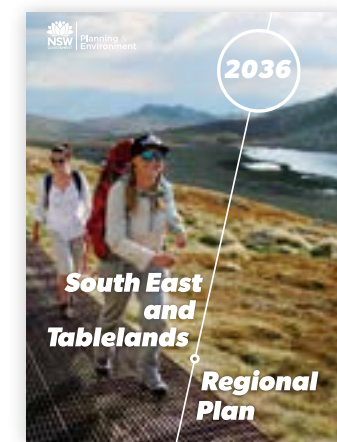
A 20-Year Economic Vision for Regional NSW (2021)

- The Vision is to accelerate economic growth in **emerging sectors and future industries**, which are targeted by the area's innovation precinct.
- **Improved connectivity across regional areas to capital cities** will help boost business activity, labour force pools and optimise freight routes.
- The NSW Government is **heavily investing in regional areas** to increase economic resilience and attract businesses/ partnerships, includes \$23 million for the South Jerrabomberra Innovation Precinct and funding transport infrastructure.



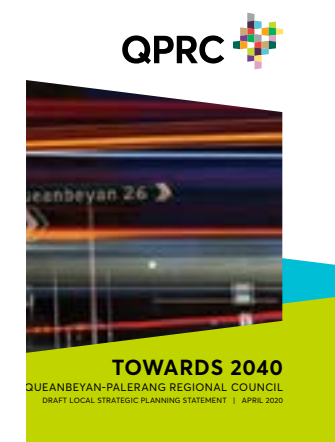
Future Transport Strategy 2056 (2018)

- Identifies **Queanbeyan-Palerang as part of a 'Global Gateway City'** via its operating rail corridor connection from Canberra to Sydney.
- There is a focus on creating a **'hub and spoke' model that links regional centres with hubs**.
- Provides **innovation pathways** that could amalgamate with the precincts vision, R&D strategy and targeted industries. These pathways could also leverage off the ICON network to create secure freight routes, drones or automated vehicles.



South East and Tablelands Regional Plan 2036 (2017)

- Provides insight on the significance of South Jerrabomberra's proximity to Canberra and the **importance of cross-connectivity, including leveraging off Canberra airport of freight and tourism**.
- Comments how the design needs to optimise infrastructure and educational facilities.
- There is **enough zoned land to house expected population growths**.
- Provides guidance on what area's to address and how, including biodiversity, Aboriginal culture.
- Currently under review.



QPRC Towards 2040 (2020)

- Provides planning priorities for the precinct, including protecting the environment, transport options, connectivity, healthy population etc.
- The documents vision **To connect our region, honour our heritage and inspire a future of possibilities by 2040** provides the master plan with a foundation to grow from.
- Emphasises the area's innovation focus on defence, cyber etc. and links in higher education.
- Provides insight into the QPRC's planning outcomes and proposal for South Jerrabomberra and its concept plan.

5.1 Relevant State + Local Policies (cont.)



NSW Freight and Ports Plan (2018-2023)

- **Increase capacity of freight sector** via the delivery of new infrastructure and, support the freight sector via protecting and improving freight and logistics land, precincts, terminals and key freight routes, and implementation of intermodals.
- Foster an environment where technology is embraced, by bringing together technology companies, academia and freight companies with the possibility to solve real world problems that are supported by a skilled workers.



Designing with Country - Discussion Paper (2020)

- Explores a series of questions and issues that Government Architect NSW (GANSW) has identified through their work in Aboriginal understanding of landscape and environment.
- Seeks to inform a set of **Cultural Design Principles** and a framework to apply to all built environment projects delivered by government.
- In the Aboriginal sense of the word, Country

relates to the nation or cultural group and land that they/we belong to, yearn for, find healing from and will return to.

- Three essential elements of designing with Country; nature, people and design. An eco-centric approach to design and planning processes aligns with Aboriginal world views.
- **Designing with Country is not possible without engaging with and, more importantly, being guided by Aboriginal community and recognised knowledge holders.**



Urban Design for Regional NSW (2020)

- Addresses an identified urban design resource gap in regional NSW, recognising the positive impact of good quality design on regional communities, and the need for targeted practical assistance.
- **Sets 7 urban design strategies for regional NSW:**
- Identifies several challenges for urban design in the South East and Tablelands Region:
- Connectivity over large distances between settlements

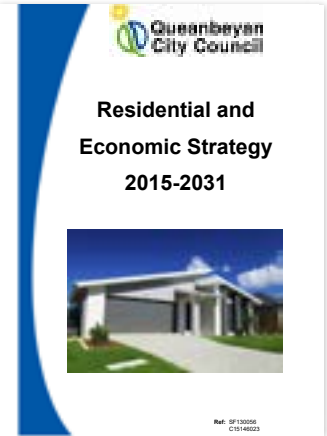


- Urban design that fits the surrounding areas context.
- Managing natural hazards including bushfire and increasing temperatures.
- **Balancing the demand for new urban areas and the provision of infrastructure and utilities with protecting and enhancing native vegetation and sensitive natural environments.**
- **Population peaks in holiday periods** place increased demand on housing and infrastructure.



NSW Space Industry Development Strategy (2020)

- Five strategic themes and initiatives.
- Highlights that advances in technology provide more opportunities for start-ups and ways of using satellite technology.
- Commonwealth to invest \$150 million from 2019-24 in businesses and technology.
- Potential for regional areas to test technology.
- Encourage companies to engage with universities, start-ups, local businesses.



Residential and Economic Strategy 2015-2031 (2015)

- The amount of land available for residential land is **reduced due to the ANEF 20 contour.**
- The documents updated population growth data found the amount of **land set aside for employment (industry) land is adequate past 2031.**
- Highlights the importance of creating cross-connectivities with Hume.
- **Housing development progressed simultaneously on more than one development front** to create a more competitive and diverse housing market.



5.1 Relevant State + Local Policies (cont.)



Queanbeyan-Palerang REDS (2018-2022)

- The development strategy **provides the endowments / strengths / weaknesses** that could be considered in the urban design process to increase the area's economic development.
- It points to the area's **highly educated and skilled workforce** to provide direction of targeted industries.
- The strategy places great emphasis on **leveraging and working with the ACT / Canberra** to increase the area's economy, skills and create places for people.
- Provides **opportunities and early stage targets** for the design phase to consider.
- Currently being reviewed.



NSW: Strong, Smart and Connected (2017)

- Highlights the importance of defence for **regional sector's employment and economic growth**.
- **\$195 billion** worth of investment in Defence capabilities from 2016-2026.
- Bringing defence to regional economies and communities by a **'hub and spoke' delivery** approach.
- The RJP site is part of the **Capital Region**.
- Build on **collaboration with the ACT** and its existing defence capabilities.
- Enhance Defence and industry **collaboration networks with universities, including R&D opportunities**.



ACT Planning Act (2023)

- The ACT planning system has recently undergone a reform with a new **Planning Act 2023, a new Territory Plan, and the introduction of a new level of strategic planning, District Strategies**. The new planning system commenced on 27 November 2023.
- The East Canberra District Strategy and Tuggeranong District Strategy cover the area within the ACT that adjoins the South Jerrabomberra Regional Job Precinct (SJRJP).
- Both district strategies have an action (under 'Strategic movement to support city growth') to:

Partner and collaborate with the NSW Government and Queanbeyan-Palerang Regional Council to investigate a coordinated, strategic approach to cross-border infrastructure and road connectivity to accommodate anticipated employment and housing growth in South Jerrabomberra (NSW) including the South Jerrabomberra Regional Job Precinct.



CBR Switched on - ACT's Economic Development Priorities (2022-2025)

- The ACT's Economic Development Priorities agenda is focused on **mission-led and value-driven growth**.
- Mission three highlights the importance of continuing this development. **The South Jerrabomberra Regional Jobs Precinct (SJRJP) aims to complement the ACT's strengths**, leveraging existing investments and attracting key industries to the Canberra Region.
- **Close cross-border connectivity and integration with the ACT economy are crucial for the SJRJP's**

success. The precinct aligns with the ACT Government's priority industries of space and cyber, presenting a collaborative industry development opportunity. It will also **contribute to the growth of industry clusters, accelerating industry development, creating competitive advantages, and attracting investments**.

- As the ACT's innovation and entrepreneurial ecosystem matures, the precinct offers value-chain opportunities for high-growth ACT-based businesses to expand their manufacturing capabilities within the region, free from land-use and skills constrain.

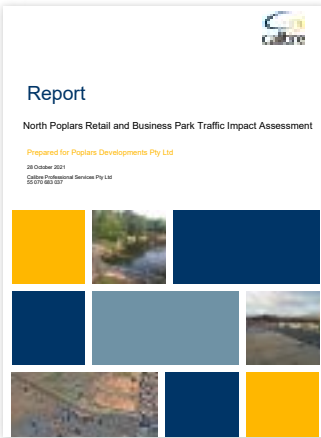


5.2 Previous Studies



ACT Eastern Broadacre Planning and Direction Study (2009)

- _ The report provides insight into the planning considerations adjacent to the project, including any **biodiversity links, heritage locations** that would need to be appreciated in the precinct design.
- _ Other infrastructure requirements that should be considered and if possible leveraged by South Jerrabomberra include the proposed **Very High Speed Rail path** displayed in the study.



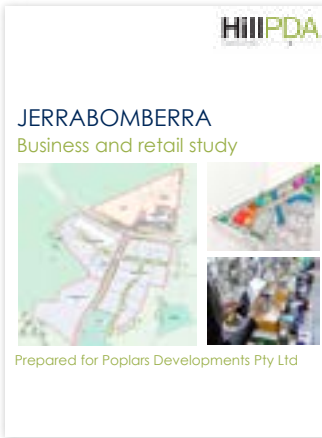
North Poplars Retail and Business Park Traffic Impact Assessment (2021)

- _ Assessment considered future growth scenarios for the area, including the case of **increasing North Poplars' retail area**.
- _ Changes to the road network were provided due to increase demand
- _ The **current road network** esp Jerrabomberra roundabout, **will not handle future demand**, regardless of any development at North Poplars.
- _ Any further development at North Poplars would have little impact on the majority of the road network.



Invest Regional NSW - South Jerrabomberra RJP Investment Attractions (2021)

- _ Only location outside of ACT that has **connection to ICON** - required for high level security businesses.
- _ \$23 million infrastructure investment. However, potential delays in utilities until mid-2023.
- _ Provides a list of target industries and neighbouring facilities/ services to attract and provide connections for.
- _ **\$35b** on Stream One of 2016 Defence Integrated Investment Program.
- _ **\$1.67b on combating cyber security** threats through Australia's Cyber Security Strategy 2020.



Jerrabomberra Business and Retail Study (2021)

- _ Provides the key factors to create a innovative precinct
- _ Jerrabomberra has a current **under supply of 3,900 sqm** of retail space.
- _ The type of retail would raise Jerrabomberra to a **town centre**
- _ Impacts of Jerrabomberra's additional retail floorspace on the Queanbeyan CBD will be negligible
- _ **Poplars Innovation Precinct is strongly supported from an economic perspective**
- _ **Recommended** that the retail area located behind the ALDI (current LEP) is relocated to the Tomsitt Drive frontage



Jerrabomberra Creek Catchment Plan (2021)

- _ Establishes a biodiversity and overall health baseline of Jerrabomberra Creek and catchment areas
- _ Impacts on flora an fauna are provided, including how to address the area's wombat community
- _ The South Jerrabomberra development provides an opportunity for the active community to improve the creeks conditions
- _ Council and locals actively **managing 800 hectares**

Other studies conducted on the RJP

The RJP has been subject to past studies conducted as part of the RJP's other developments e.g. obtaining development approval, including North Poplars Retail Area, Poplars Innovation Precinct , The Regional Sports Complex, proposed High School

This urban design report's technical consultants reviewed

and referenced some of these past studies and reports, when conducting their baseline reports, for example:

- _ Biodiversity reports
- _ Heritage reports
- _ Infrastructure baseline reports.



5.3 Recent Plans + Strategies + Policies



Queanbeyan-Palerang Regional Council Combining Existing Local Environmental Plans (2020)

- _ In 2016 the former Queanbeyan City Council and Palerang Council merged into a single LGA
- _ The Queanbeyan-Palerang Regional Council prepared a draft Local Environmental Plan (draft LEP 2020) that will combine the seven existing LEP's into one

document. Current LEP's include:

- _ Palerang Local Environmental Plan 2014
- _ Queanbeyan Local Environmental Plan (Poplars) 2013
- _ Queanbeyan Local Environmental Plan (South Jerrabomberra) 2012
- _ Queanbeyan Local Environmental Plan 2012
- _ Yarrowlumla Local Environmental Plan 2002
- _ Queanbeyan Local Environmental Plan 1998
- _ Queanbeyan Local Environmental Plan 1991

_ The LEP will provide consistency throughout the regions planning instruments and seek to transfer existing provisions with as little planning/policy change as possible.

_ One area the LEP will amend, are areas for dual occupancies in R2 Low Density Rural zones. This includes parts of Environa and Tralee, with the document proposing minimum lot sizes of 2000m².

_ In 2022 the LEPs have been consolidated into one LEP.



Towards 2042 - Community Strategic Plan

_ In mid-2021 the Council used community feedback to determine how well the Council was implementing their Community Strategic Plan 2018-2028

_ This feedback will inform the **new Community Strategic Plan**

QPRC Community Resilience Plan

_ The Plan aims to ensure the QPRC community is **prepared for and recovers faster** from future disasters / events.

_ Public consultation was held in mid-2021

Renaming of Environment Zones

_ From the 1st of December 2021 the Environment zones have been **renamed** to 'conservation zones'.

- _ New conservation zone swill be:
- _ C1 – National Parks and Nature Reserves
 - _ C2 – Environmental Conservation
 - _ C3 – Environmental Management
 - _ C4 – Environmental Living Public

_ The **change is in name only** - all objectives and land uses remain the same

Inclusion of Employment Zones

_ Existing Business (B) and Industrial (IN) zones will be replaced with **five** employment zones

- _ The new zones provide greater certainty
- _ DPIE are currently consulting stakeholders, with the final guidelines anticipated to be released within the first half of 2022
- _ Plan to have new zones introduced into LEP's in Nov 2022



5.3 Recent Plans + Strategies + Policies (cont.)

Schools planning by Schools Infrastructure NSW

The South Jerrabomberra Regional Jobs Precinct (RJP) is located within a range of several government schools including:

- _ Jerrabomberra Public School
- _ Jerrabomberra High School
- _ Queanbeyan South Public School
- _ Karabar High School

To plan for schools, School Infrastructure NSW (SINSW) and the Department of Education considers (amongst other things) long term trends in population growth, the likely uptake of new housing by those with school aged children, the ratio of government and non-government school attendance and the size and location of existing schools.

The provision of new or upgraded schools depends on a demonstrated need and receiving budget approval. The department undertakes rigorous analysis and prioritisation across its portfolio of over 2,200 schools to inform if and when a new school or upgrade project is needed. Where new schools are required, the Department of Education consults with key stakeholders, including local councils, to place them near transport and town centres and encourage the use of shared amenities including sports fields and halls.

SINSW will undertake ongoing consultation with Council and the NSW Department of Planning and Environment (DPE) as detailed planning progresses for the Precinct and monitor the situation.

If additional educational facilities are required to accommodate enrolment demand, SINSW will commence a detailed planning review. The site based requirements for any new school site are outlined in the SINSW 'School Site Selection and Development Guidelines'. These guidelines are available at the following link:

<https://www.schoolinfrastructure.nsw.gov.au/news/2021/03/guidelines-for-school-site-selection-and-master-planning-.html>



5.4 Regional Job Precinct South Jerrabomberra Special Planning Advisor - Final Report (2021)

The document reviews all relevant strategy and strategic planning documents to highlight the area's planning considerations, and barriers and opportunities to be considered in the design to improve the area's job and economic outcomes

Overview

The report was the **Action Plan** which forms step three of the Regional Job Precincts Process, as shown in the figure.

The document provides an understanding of the strategic and statutory planning framework applicable to the RJP and a recommends a series of actions, with the main aim of reducing investor uncertainty.

The document **led** to the creation of this **report and baseline studies**.

The report identifies the precincts, land uses, urban design principles and infrastructure that is to be included in the design, including the innovation precinct, proposed high school, regional sports hub.

The report highlights the **precinct's ability to establish** a cluster of defence, space, cyber security, information technology and scientific research centres - '**targeted industries**'.



Regional Job Precinct Process (source: www.nsw.gov.au/snowy-hydro-legacy-fund/special-activation-precincts/regional-job-precincts)



The RJP can complement the adjacent Hume industrial area to potentially become the **largest technology and industrial precinct** across the broader Canberra Region.

Opportunities arising from RJP's include:

- _ Facilitate cross-border planning;
- _ Streamline approval processes for emerging land use, and
- _ Implement planning frameworks to deliver certainty for future development.

Initial stakeholder engagement has identified the following areas as **potential barriers** to development

- _ Electricity network capacity, limits and cost and approval framework;
- _ Government coordination across agencies;
- _ Delays in resolving Voluntary Planning Agreements;
- _ Linkages to ACT – road and economic; and
- _ Biodiversity and environmental constraints.

Proximity to ACT

The area's proximity to Hume and Canberra Airport affects the RJP's land uses and need to be considered, which also, extends to ACT's planning framework and infrastructure planning.

Shared access roads and public transport options are other barriers that need to be addressed by the RJP, to improve freight options and provide different transportation modes.

Precincts

The RJP is the only area outside of Canberra to have access to the ICON, which is an attractive utility for the innovative precinct's targeted industries.

A proposed intermodal and logistics precinct is earmarked for the site due to the existing Bombala Rail, which is currently not fit for service. This facility could benefit the RJP's and Hume's industries through supplying another freight option.

Issues + Recommendations

The report finds that the RJP is well placed to become a prominent new regional centre for economic growth, innovation and employment generation.

A list of issues and 26 recommendations are provided to assist in providing a basis for further investigations to recognise economic opportunities. The issues include:

- _ RJP Boundary
- _ Infrastructure
- _ Environment and Biodiversity
- _ Governance and Coordination
- _ Strategic Planning
- _ Statutory Planning
- _ Data Collection and Analysis.

Regional Job Precinct South Jerrabomberra

Special Planning Advisor – Final Report



18 October 2021



5.5 South Jerrabomberra Development Control Plan (QPRC 2015)

The DCP aims to provide a framework of development controls that guide future developments in the new land release areas of South Jerrabomberra

Overview

This DCP sets in place urban design guidelines to achieve the objectives for the whole South Jerrabomberra area as a new sustainable community and growth area of Queanbeyan.

The DCP supports the Queanbeyan LEP (South Tralee) 2012 and Queanbeyan LEP (Poplars) 2013, by providing background, objectives, controls and design criteria in line with the Council's development vision of South Jerrabomberra.

The DCP also provides the overarching Master Plan, Structure Plans for each area, additional control buffers and the staging of South Jerrabomberra.

Design Control Categories

The design controls provide a guide to applicants wanting to develop in South Jerrabomberra. These controls cover the following areas:

- _ Subdivision
- _ Roads and Public Places
- _ General Residential for different dwelling types
- _ Environment Management
- _ Signage.

These controls contain sub-criteria specific to them that need to be considered, including: passive design, movement, landscaping, amenities etc.

Specific Design Controls

The controls provide guidance of how applicants need to satisfy specific criteria for categories including: hazards (bushfire and floods), environment, culture, movement, site contamination, housing diversity, noise, air quality etc.

The DCP supplies design controls for specific areas that are encapsulated by this master plan:

- _ Neighbourhood Centre, including South Tralee and Poplars
- _ Business Park and Employment Land, including Environa, South Tralee, Tralee and Poplars.

Aircraft Noise Assessment Guidelines

The RJPs proximity to the Canberra Airport has resulted in elevated noise levels that have reduced the amount of land allowed for residential development. However, as a result of earlier developments, some residential dwellings are located in the ANEF 20 zone (these include the dwellings as

part of the South Tralee development). The DCP provides criteria, including construction guidance, that dwellings located within the ANEF zone must satisfy to accommodate the elevated noise levels.

How the RJP can improve the DCP

Step 4 of the RJP process involves a range of technical studies including in urban design, stormwater management, traffic management, sustainability etc.

The outcomes of these studies can include design recommendations around water sensitive urban design, building form and materials, visual amenity, landscaping requirements etc. that are specific to the RJP area and can be incorporated into the DCP.

Draft Design Guidelines

Design guidelines for the Poplars Innovation Precinct West (Place Logic 2021) and North Tralee Business Park Design (VBC, 2021) are being drafted. These documents will guide the precinct's built form, accessibility, land uses, precinct layout etc. to create high-quality precincts.



**JENSEN
PLUS**  Planning
Landscape Architecture
Urban Design
Social Planning





5.6 South Jerrabomberra Local Infrastructure Contributions Plan 2018 (QPRC 2018)

The Local Infrastructure Contributions Plan provides the Council with a set of contributions required to augment local infrastructure, which are based on the type of development expected at South Jerrabomberra

Overview

The Local Contributions Plan sets contribution costs that developers/builders will need to pay to develop in South Jerrabomberra. The plan is based on a twenty year time frame (2018 to 2038) and uses employment, dwelling and worker/job estimates to determine the contribution fees.

The contributions depend on the location within the RJP and development type. Alternative money contributions are also provided in the plan.

The contributions will assist the Council with providing and maintaining local infrastructure throughout South Jerrabomberra.

Demand for local infrastructure

The South Jerrabomberra RJP is expected to construct **1,500 dwellings** that house **4,275 residents**, between 2018 to 2038.

The number of dwellings constructed per year is anticipated to peak at 120 dwellings per year between the 6th and 10th year of the Plan, then decrease to 25 dwellings per year by the 20th year.

The release of land will be staged to support the increase in dwelling numbers.

The plan provides contribution fees for residential lot sizes (below or above 400 sqm) and non-residential rates per hectare.

Employment

Over the 2018 to 2038 period, the plan anticipates **1,204 workers/jobs** will be created within South Jerrabomberra. However, it is unlikely that the full extent of the area's employment land will be developed by 2038.

The plan assumes that approximately **1.5ha** of employment land will be taken up per year.

Updated South Jerrabomberra employment figures

Since the creation of this Plan, there has been an increase in the amount of South Jerrabomberra's employment zoned land.

Discussions with the QPRC has indicated that the change in zoning has increased the estimated worker/jobs number to **2,413**.

The amount of dwellings assumed to be constructed by 2038 remains at **1,500**.



5.7 Canberra to Port of Eden Feasibility Study _ Executive Summary (NSW 2020)

The feasibility study created alternative freight and passenger scenarios to determine the viability of creating a rail link from Canberra Airport to the Port of Eden, with this line passing through Queanbeyan.

Overview

The study was conducted to determine if a viable rail route from the Canberra Airport to the Port of Eden existed.

The Proposal

The proposal was to make use of the existing (mostly decommissioned) rail line between Queanbeyan and Bombala and build two new extensions at the Port of Eden and Canberra Airport.

The aim was to provide efficient rail to passengers and cost-effective freight.

Scenarios

The study's 'optimistic' passenger scenario considered the case for more people moving into regional centres (due to more affordable housing) and travelling into Canberra for work. With the 'optimistic' freight scenario allowing the port of Eden to attract neighbouring Port's freight.

The Outcome

Even based on the optimistic passenger

and freight demand scenario, the proposed connector rail from **Canberra Airport to the Port of Eden is non-viable**, due to topography, environmental and demand factors.

The Proposals impact on Queanbeyan

Four different routes from Canberra

Airport to Queanbeyan were considered. These would eventually terminate at Pialligo Avenue 'Travelport', a light rail and high speed rail connection to the Airport. However, this was also found to be infeasible, with the report **recommending buses** be used for this section.



Proposed rail links from Canberra Airport to Queanbeyan 'Travelport'



5.8 Monaro Rail Trail _ Pre-feasibility Assessment (TRC 2018)

The pre-feasibility study was a high-level assessment to determine if the disused rail line between Queanbeyan and Bombala could be used for recreational cycling.

Overview

The study provided a high-level assessment on the potential markets and economic benefits of transforming the disused rail line between Queanbeyan and Bombala into a rail trail.

Rail Trails

Rail trails can increase cycling tourism, revitalise businesses and regions, and preservative heritage items through remediation.

The Trail

Most of the existing Bombala rail line is disused, requiring extensive repairs to make it suitable for trains.

The proposed trail will start at Queanbeyan Station, run along a shared path adjacent to Henderson Road (no further path was discussed) and connect to the Bombala line.

The study found several strengths of turning the rail line into a trail, including, the ability to attract a broad tourism market supported by new and revitalised businesses. However there are issues with the trail, including distance between townships, funding, downturns in tourism.

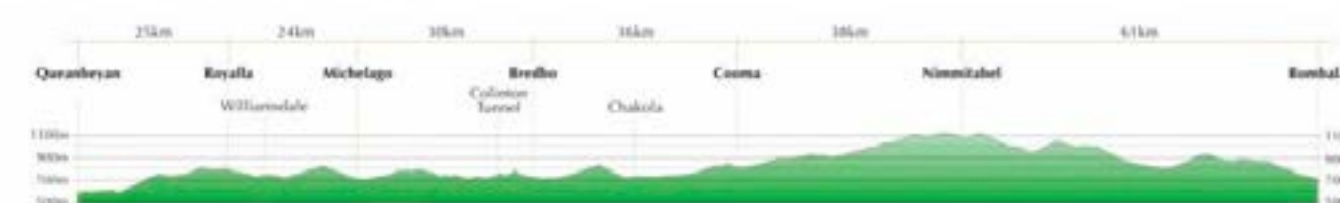
Outcome

The assessment assumed a 'medium' scenario that included Canberra tourists with a steady new and existing tourism growth rate to determine that **there is merit in the proposal**. However, the study's conclusion is based on several criteria being met and recommends a detailed feasibility study be completed.

The Route



Elevation Profile



Proposed rail trail route and elevation



5.9 Canberra Airport Master Plan 2020-2040 Preliminary Draft

Updates to the Airport Master Plan and Environment Strategy are legislative requirements. The document assesses the Airport's impacts on the areas economy, environment and surrounding developments.

Overview

The Airport Master Plan is a comprehensive planning document that creates the Airport's objectives, future strategies and vision, by incorporating environmental, residential, economical and commercial factors.

The document also provides planning assistance for development occurring within the Airport's flight paths and surrounding areas.

Surrounding Developments

The ACT's Eastern Broadacre study identified commercial and industrial land opportunities adjoining the Airport, which include Majura Park and Brindabella Business Park. The Airport Master Plan details these and other adjoining area's structure plans and future proposed developments.

The Eastern Broadacre study also found the area **unsuitable for residential development** due to aircraft noise, and critically endangered flora and fauna.

Safeguarding the Airport

There has been strong recent efforts to prevent residential developments

from jeopardising the Airport's ability to operate and expand, including:

- _ Creating agreements with the Airport and Government bodies, including QPRC and NSW Planning requiring any development in the area be referred to the Airport.
- _ The National Airports Safeguarding Framework (NASF) developed in the 2009 Master Plan, which is a national land use planning framework that addresses aircraft noise-sensitive developments near airports.
- _ Mechanisms to protect the airport including noise abatement area's that limit flight paths to certain times of the day.

The NSW South East and Tablelands Regional Plan 2036, Action 1.1 - "Protect Canberra Airport's current and future operations by maintaining restrictions on the location of nearby residential development".

ANEF 20

The ANEF 20 contour line (based on factors including noise and meteorological conditions) is used as a planning mechanism that **prohibits rezoning land to allow residential development within its boundary**, including the area within the South Jerrabomberra Regional Job Precinct.

As a result of the South Jerrabomberra development a few houses do exist within the ANEF 20 contour. However, these dwellings do have design criteria and property selling caveats attached to them.

The Airport Master Plan provides an updated ANEF 20 contour line.

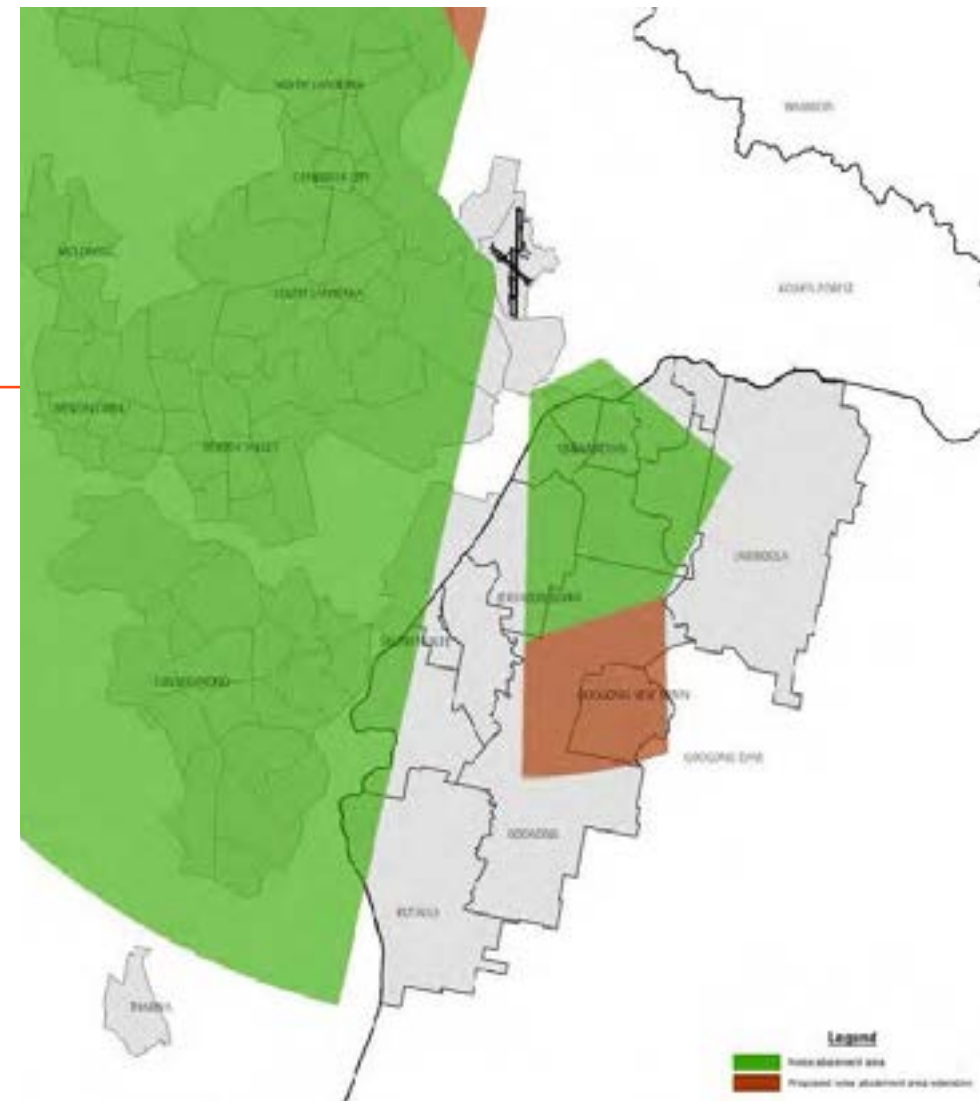
Freight Hub

The Airport Master Plan discusses creating a freight hub at the curfew-free airport, due to its proximity to existing rail and road freight routes.

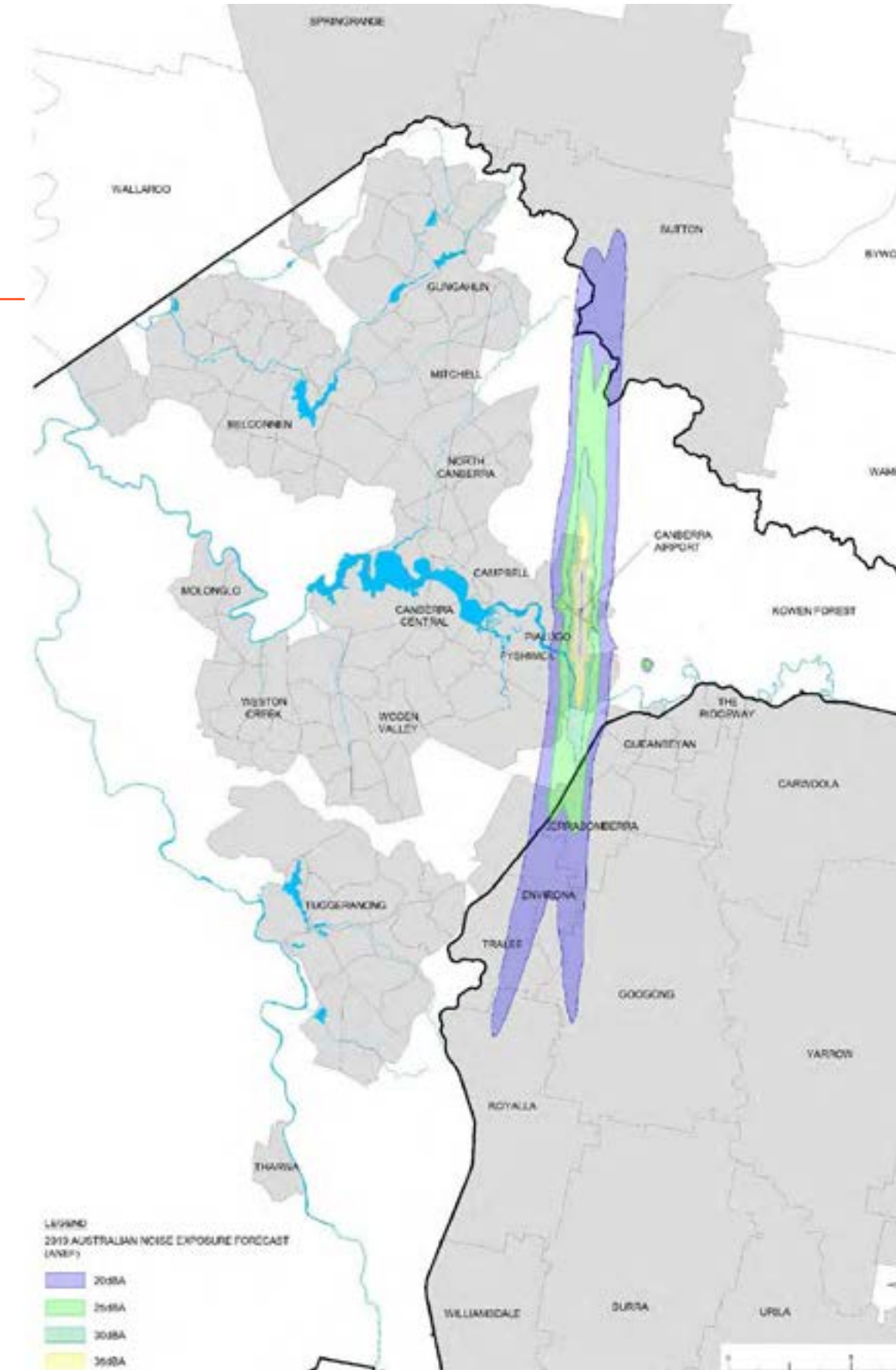
This hub could be supported by Queanbeyan and South Jerrabomberra through the provisions of employees and industrial land, including storage. With the Airport Master Plan recognising Jerrabomberra as a **Future Activity Node**, with an expected freight route starting from North Tralee/Poplars. However, there are concerns with the existing houses in the ANEF 20 contour being exposed to increased air-freight noises that will need addressing.



Freight route



Noise abatement areas



ANEF Contours



Brindabella Precinct proposed expansion



Majura Park Precinct proposed expansion



5.10 Previous master plans and concepts

Summary

Previous investigations and projects have occurred within the study area. Some of these are currently concept plans, while others, including the Sports Complex are breaking ground.

These plans guide the design options by: considering what has been approved / constructed and how it needs to be integrated to the wider area; what other facilities and services need to be provided; are there any plans / ideas that have been rejected that could be further refined; and what planning considerations e.g. zoning, staging exist.



South Jerrabomberra Master Plan



High School design concept



Poplars overall master plan



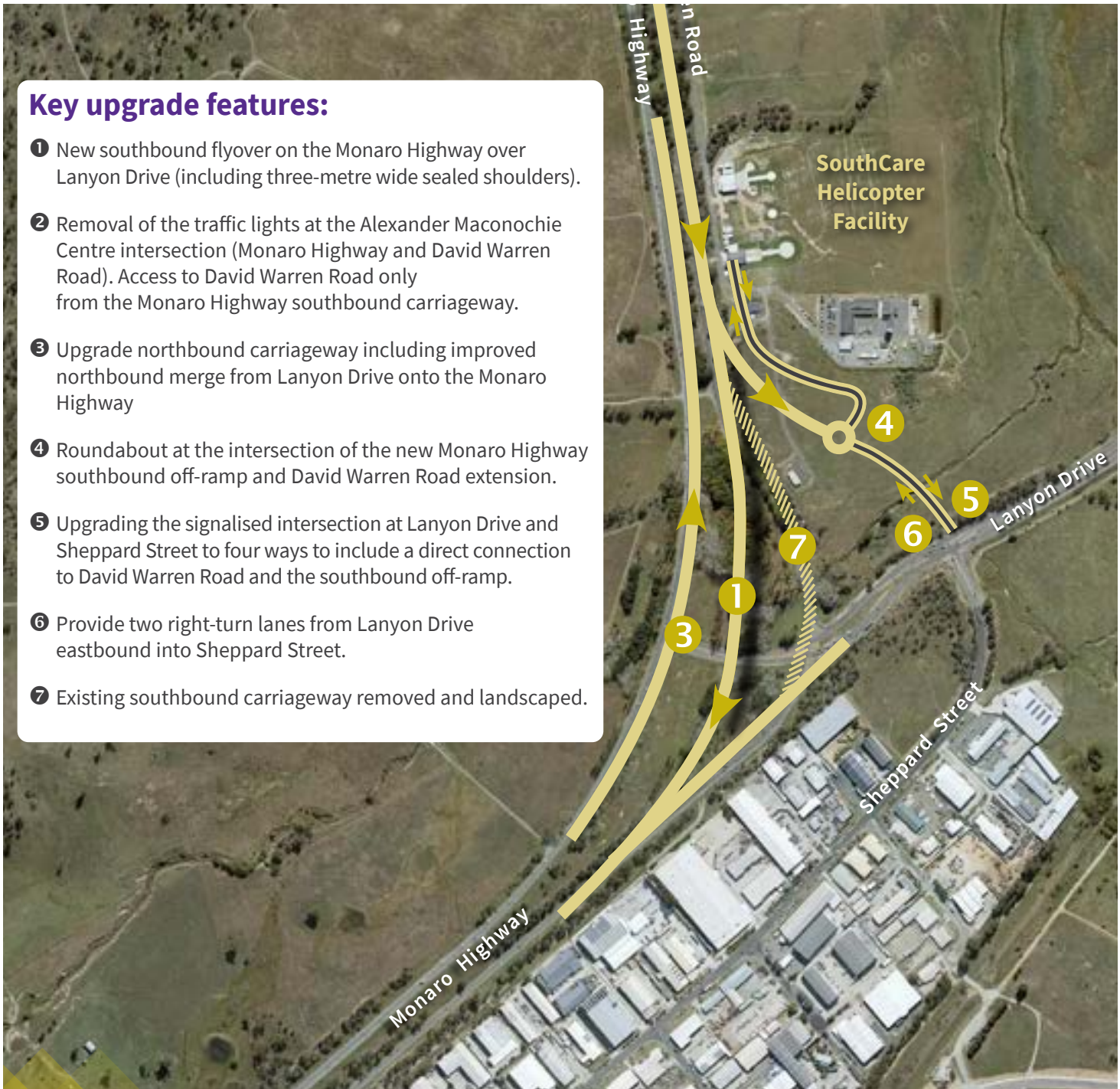
Regional Sports Complex




5.11 Proposed Monaro Highway upgrades by ACT Government



Proposed Isabella Drive and Hume upgrades



Proposed Monaro Highway Upgrades: Lanyon Drive interchange



**A summary of
the technical
analyses that
support this
urban design
study**

6. Technical Reports (at a glance)

The section provides a summary of the technical analyses that support this urban design study.

More detailed descriptions of each technical investigation can be found in Appendix E.



Economic Analysis of South Jerrabomberra Master plan Technical Report (SGS)



Economic Analysis of South Jerrabomberra Masterplan

North and South Poplars, and North Tralee are expected to provide a supply of employment lands for the next 10-20 years.

_With deliberate strategies to attract business and innovation, the Capital Region can develop and sell up to 60 ha/year of industrial lands, or almost four times the population-driven demand

_By 2041 Environa expected to house 2,300 jobs, with South Poplars and North Tralee respectively supporting 1,150 and 452 jobs by 2031.

_Businesses intending to locate at South Poplars will generally be large lots - around one hectare on average, with floorspace of at least 2,000 sqm per business – most will average around 5,000 square metres.

_Expected number of employees from market sounding range from 75 FTE for a 4,200 sqm site, 200 FTE for a 10,000 sqm site.

_After this, Environa land releases will be needed to supply additional employment lands.

_South Jerrabomberra RJP is expected to provide employment lands over and above the baseline employment lands needed to service the population.

_Queanbeyan has no plans for future employment lands other than South Jerrabomberra - RJP may need to increase business variety.

Utility Infrastructure Technical Report (SMEC)

_Based on targeted industries, advance manufacturing, offices and general industries.

_Substation needed for Stage 2, with the potential for another substation needed for Stage 3/4. .

Assumes a electrical demand of 155MVA at full development of 319.96 hectares.

_RJP should consider being a Digital / Smart Precinct - possibility of a Smart Precinct.

_Incorporate intelligent traffic management, smart lighting, intelligent irrigation systems.

_RJP will need a centrally placed telecommunications tower.

_EV charging stations - 20% of parking spaces and 10% additional spaces for EV ready infrastructure.

_Second high level reservoir planned for the future.

Full development peak hour potable water demand = 254.3 L/s + 30 L/s for fireflow.

_Insufficient capacity in existing water network. New connection required - new DN450 main to the DN450 truck main in Jerrabomberra Parkway.

Fully developed RJP sewage demand = 20,439 EP.

_Increasing demand will exceed sewage network capacities wet weather performance.

_The existing 88 L/s capacity for the proposed Tralee Sewer Pump Station is insufficient and will require an upgrade to allow for approximately 120 L/s for the Urban Design Study's Stage 3 and 150 L/s for Stage 4.



Hydrology, Water Quality + Water Demand Technical Report (SMEC)

Traffic + Transport Technical Report (SMEC)

Land Use Considerations Technical Report (Sherpa)

Intermodal Feasibility Report (George Stanley Consulting)

- _ Targeted industries water demands should not cause water availability issues.
- _ RJP unlikely to have a recycled water connection .
- _ Rain Water Tanks to be sized to meet maximum of **70% of demand** to be cost effective.
- _ A total bioretention basin of **7,935 sqm** of filter area is required as a minimum to meet the removal targets.
- _ Water quantity management strategy uses On-site Detention (OSD) Storages distributed at various land use zones - **total storage of 58,664m³** - located on lower lands near riparian areas.
- _ Deeper fractured rock aquifers may be a suitable source of raw water for small demand localised applications - located across the site.
- _ Recharge/ re-inject into deeper aquifers - high points of Environa as potential location.

Connection to ACT.

- _ Existing network at or near capacity.
- _ Planned upgrades along Monaro Highway at Lanyon Drive and Isabella Drive will improve the area's efficiency, safety and commute times.
- _ A **secondary connection** into the RJP is required in the short term to reduce load on Lanyon Drive and Tomsitt Drive. Note: The ACT Government do not support an ACT connection via Sheppard Street and that their preferred connection is via the Isabella Drive intersection.
- _ Queanbeyan public transport services to extend into the RJP. Long term goal of creating better ACT/ NSW connections.
- _ Incorporate active networks linking RJP to Queanbeyan and ACT , possibility for **Rail Trail** along disused rail line.
- _ Proposed Park & Ride in North Poplars area.

- _ Recommended that no occupied buildings are permitted in RU2 zones within 100m of the E3 and SP4 zones.
- _ Avoid toxic dangerous goods throughout the RJP and careful considerations to weapons testing to prevent sterile land.

Majority of land parcels does not support child care facilities.

- _ Lots in South Poplars and North Tralee to be below the Resilience SEPP potential hazardous threshold due to proximity of high school.
- _ Provide a general buffer between industrial and residential developments - **100m buffer is proposed.**
- _ Developments in the innovation precinct should be restricted to below the Resilience SEPP screening threshold. This will allow co-location of office and administration activities and control developments adjacent to the education precinct .



Regional Job Precincts: Intermodal
Feasibility
South Jerrabomberra

george stanley consulting
economic & advisory services

- _ The study looks at the feasibility of creating an rail intermodal facility at a 3 hectare site at South Poplars.
- _ Would require 6km of rail connection.
- _ Upgrades to roads could increase truck productivity and make it more attractive than rail.

Insufficient freight and supply chain efficiency to make viable.

- _ Regional Intermodal terminals employ few staff.



Biodiversity Analysis Report (ERM)

Bushfire Analysis Technical Report (ERM)

Historic + Aboriginal Cultural Heritage Technical Report (ERM)



Field survey conducted in Nov-Dec '21 + May '22

- _Southern section of Envirova lands constrained by high value biodiversity.
- _Field survey have identified two TECs White Box-Yellow Box-Blakely's Red Gum Grassy woodland in Envirova Lands and Natural Temperate Grassland
- _Golden Sun Moths found during field surveys.
- _Four threatened fauna species incidentally observed during May field survey (none in Nov-Dec survey).
- _Further field work is required to ground truth data, also align with seasons.

- _Use of C2 and E3 Zones presents a well defined interface between the hazard and planned development.
- _APZ should be external to the C2 and E3 lands.

Potential to integrate indigenous fire management practices.

- _Landscaping to comply with Appendix 4 of Planning for Bush Fire Protection 2019 and meet the requirements of an APZ.
- _Include perimeter roads to fight fires.
- _No lots directly adjoining the retained environmental protection areas.

Consultation with the RAPs have identified that the area demonstrates cultural significance as a resource gathering location and travel route - moderate social value.

- _One item (with associated features) is considered to have local heritage significance - Envirova (subdivision built features, Lobbies Homestead, and stone façade building in adjoining Lot).
- _Based on the current design there is potential negative impact to the Envirova subdivision, no likely impact to the Lobbies Homestead or Shed Ruins, and a positive impact to the stone façade building.
- _This area is part of the Ngarigo language area, and is today generally represented by Ngunawal

(Ngunawal), Ngambri (subset of the Walgalu), and Ngarigo people.

- _Jerrabomberra Creek is considered likely to have been a focus of Aboriginal occupation and travel which would have been a key travel route across the wider extent of Ngunawal, Walgalu and Ngarigo lands.
- _It is considered highly unlikely that any further historic heritage features would be discovered during future assessment or works in the previously assessed areas of the South Jerrabomberra RJP.
- _Aboriginal objects are of high significance to the Aboriginal community as it proves evidence of their connection to the land.
- _Areas identified as having high archaeological sensitivity should be prioritised for conservation either through master planning or through proposed future developments.



Air Quality, Noise and Odour Technical Report (Todoroski Air Sciences)

Sustainability Technical Report (Dsquared)




The RJP will be impacted by climate change, include increased hot days, higher bushfire risk, more intense rainfall, extended periods of drought.

- _Hume/South Jerrabomberra interface - Introduce tall and dense vegetation bands within the industrial area, 50-100m wide. Will help reduce visual impacts.
- _Noise, air and odour modelling has found the **RJP's eastern area to be at the highest risk**, other high to medium risk areas located through the RJP's centre.
- _Majority of the RJP industrial area is not ideal for significant stacks due to topography and presence of residential areas.
- _Night time noise an issue to surrounding sensitive receptors.

- _Recommendations including designing public infrastructure to support a cooler environment.
- _Stormwater management systems to handle intense rainfall events.
- _Incorporate water conservation measures.
- _Minimum mandate for on-site renewables, PV solar.
- _Integrate an microgrid into energy infrastructure planning, allows for smart energy systems to be integrated into the precinct e.g. smart grids, shared energy networks, and Virtual Power Plant (VPP) arrangements.

- _An integrated water cycle has been proposed to improve water security for the precinct, including water conservation, rainwater harvesting, Aquifer Storage and Recovery (ASR), and Water Sensitive Urban Design (WSUD) e.g. vegetated swales, rain gardens, tree pits and permeable surfaces.
- _Proposed governance options are considered as part of the development of the Urban Design Strategy and by the Department of Regional NSW and Council to ensure environmental sustainability improvements are maintained when the RJP is in operation.
- _All-electric design - PV combined with battery technology a real potential for the site.
- _Circular Economy - Source local materials and incorporate recycled content as part of infrastructure works. Prevent waste going into landfill.
- _The RJP could leverage off the increasing levels of renewables in the NSW grid and proposed Renewable

Energy Zones, by implementing mechanisms to increase renewable energy uptake in the RJP.



**A summary of
the study area's
opportunities
and constraints.**

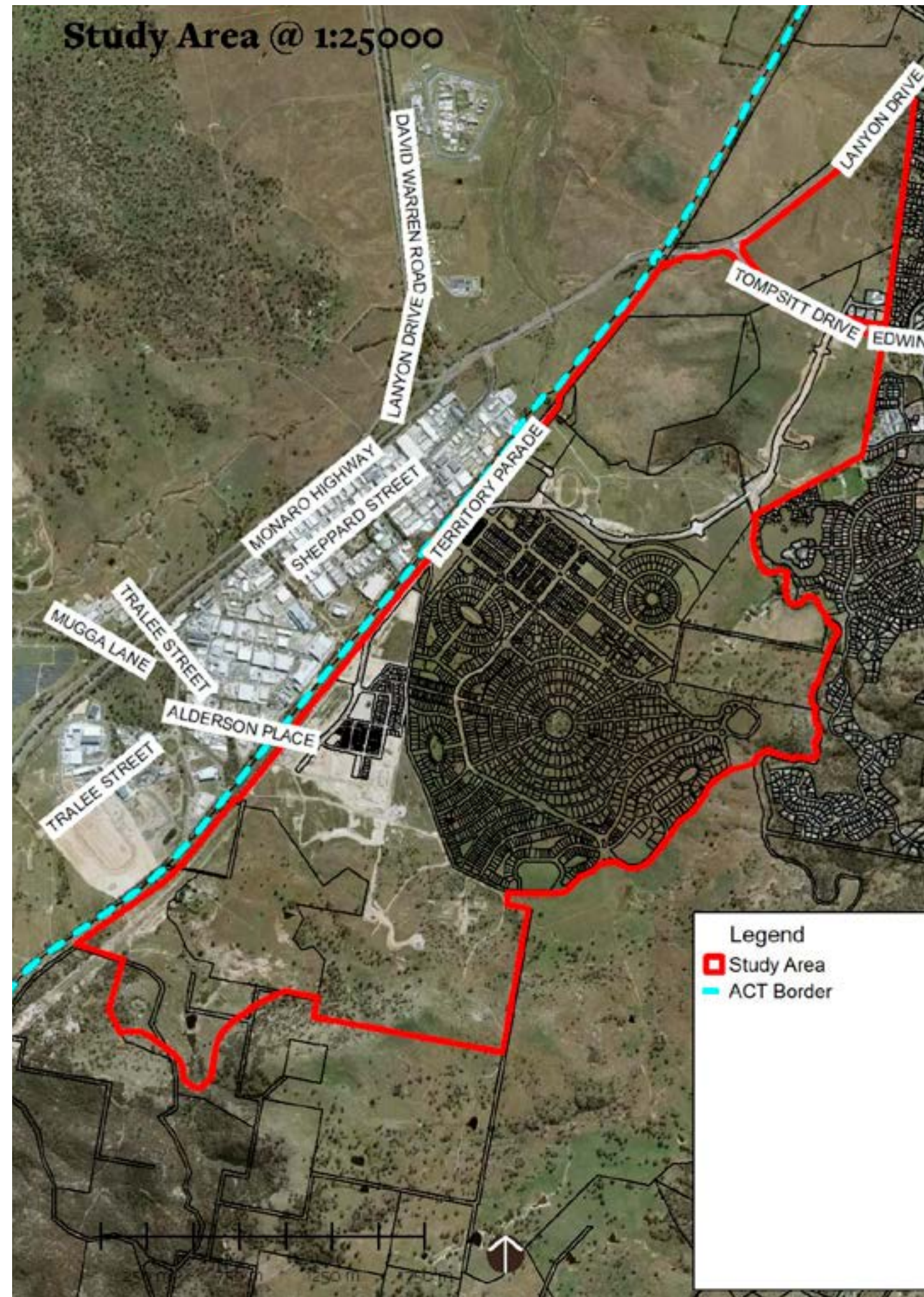
7. Interrogation of Constraints + Opportunities

- | | |
|--------------------------------|---------------------------------|
| 7.1. Study Area | 7.11. Biodiversity Value |
| 7.2. Topography | 7.12. Fire Prone Land |
| 7.3. Slope with Water Courses | 7.13. Vegetation |
| 7.4. Easements | 7.14. ANEF Contours |
| 7.5. Land Ownership | 7.15. Selected Viewsheds |
| 7.6. Lot Sizes | 7.16. Major Constraints Overlay |
| 7.7. Infrastructure | |
| 7.8. Zoning | |
| 7.9. Buffers | |
| 7.10. Threatened Fauna + Flora | |



7.1 Study Area

The strategically placed site is located between Jerrabomberra to the east and Hume Industrial Area / ACT to the west, with integration and connectivity to the ACT a key outcome for the RJP.



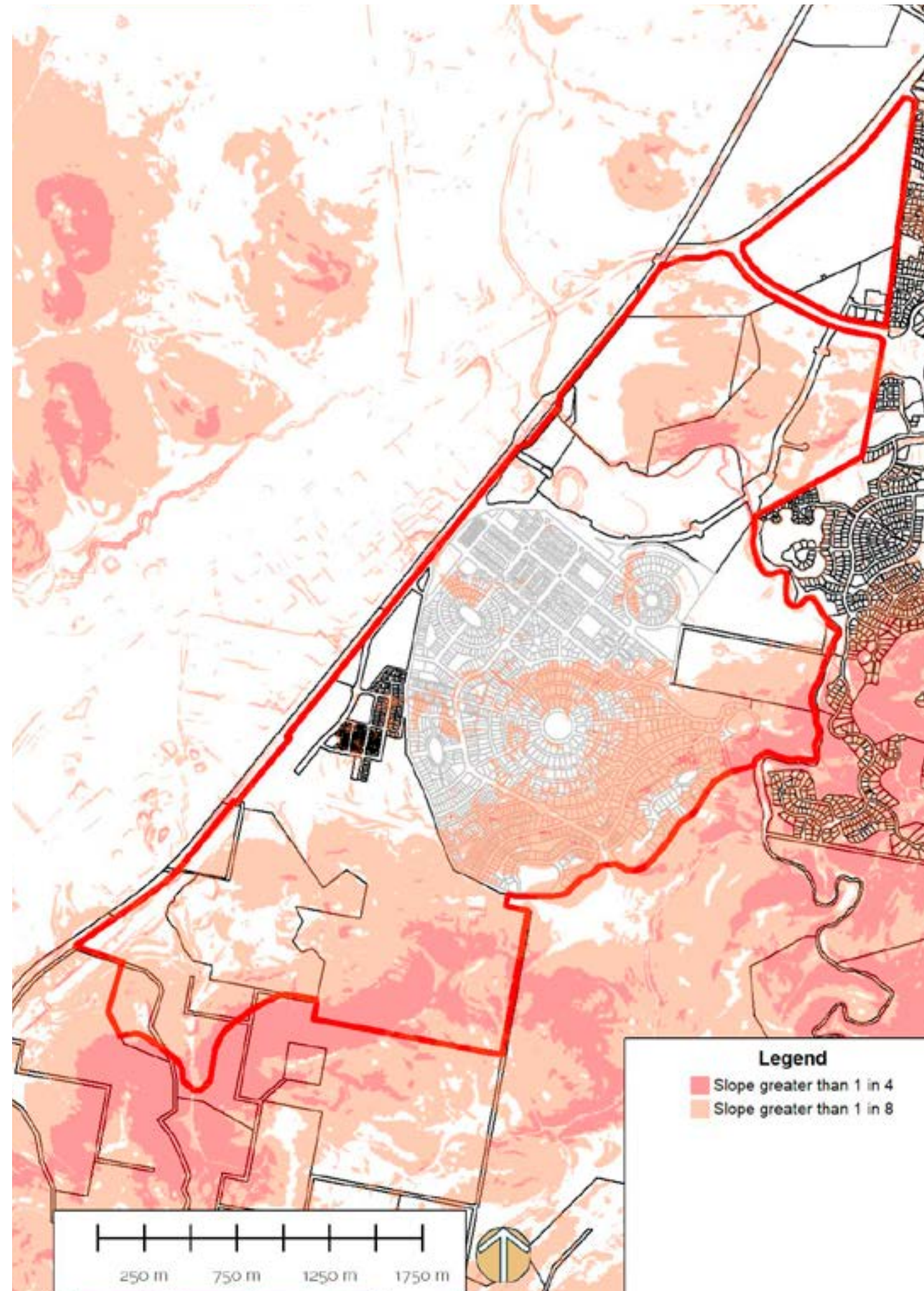
Observations

- _ The surrounding areas (ACT, Jerrabomberra) provide jobs and economic opportunities for the RJP.
- _ The RJP will need to integrate and connect with the surrounding areas, through access roads etc. to leverage off these areas and increase investment opportunity.
- _ The RJP proximity to road and airport freight routes are a real attraction for the area.
- _ Although the RJP's proximity to the ACT has benefits, there are issues with cross-border connectivity, including public transportation, industry pollution, governance structures and utility sharing that need to be addressed.



7.2 Topography

Many parts of South Jerrabomberra contain slopes that provide challenges for development and infrastructure.



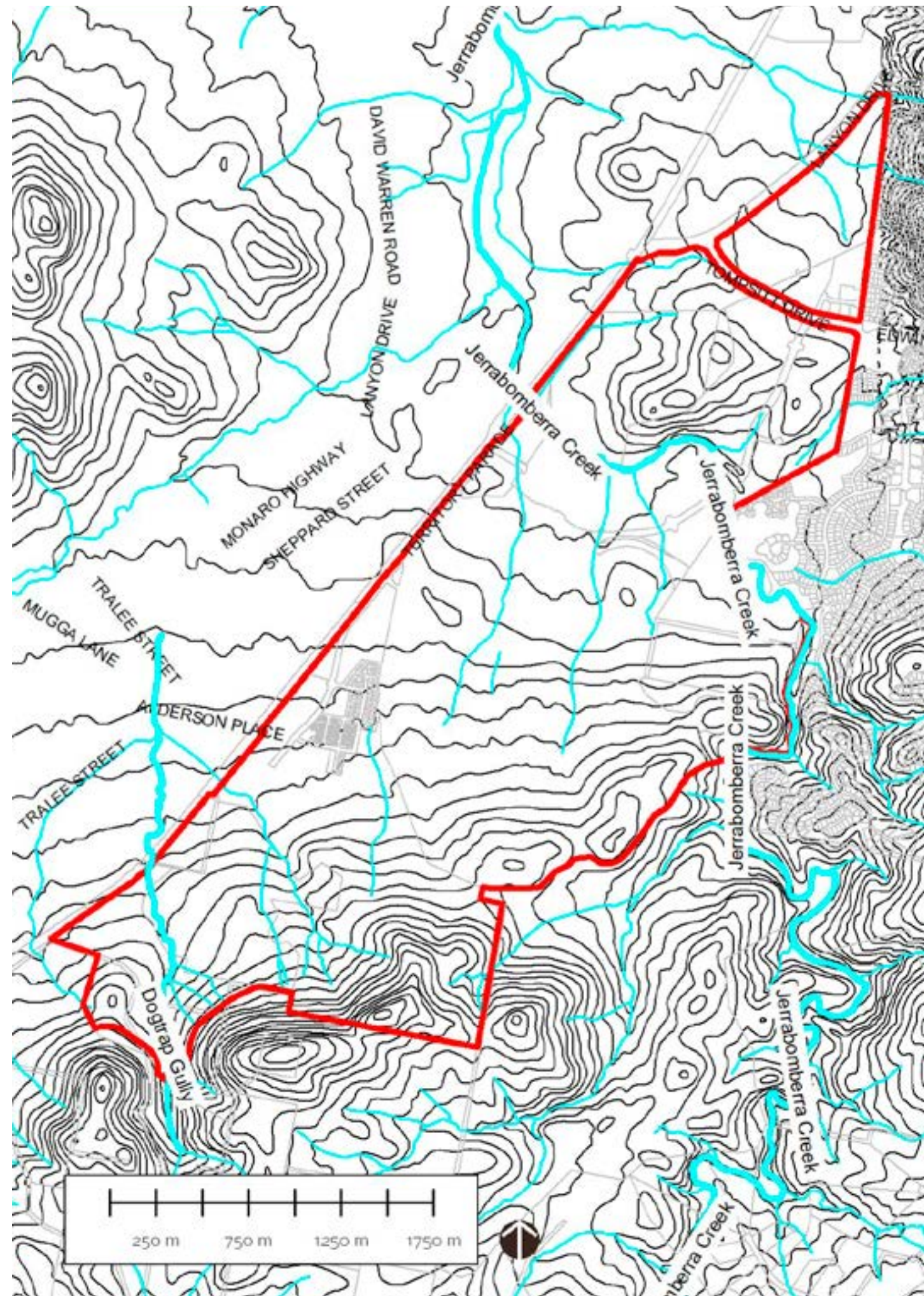
Observations

- _ The central and far north areas are relatively flat. With the sloping sections found north of Jerrabomberra Creek and along the area's south / southeast, with these area's containing lands in excess of 14 degrees (1 in 4).
- _ Majority of the elevated locations are areas of high biodiversity value and are at a higher risk of spreading fires. These considerations will need to be addressed through the urban design process.
- _ The visual impact of elevated areas from internal and external view points needs to be considered.
- _ The flat areas will make active transportation more appealing.
- _ The ability to service the elevated areas with water and sewage will need to be addressed.



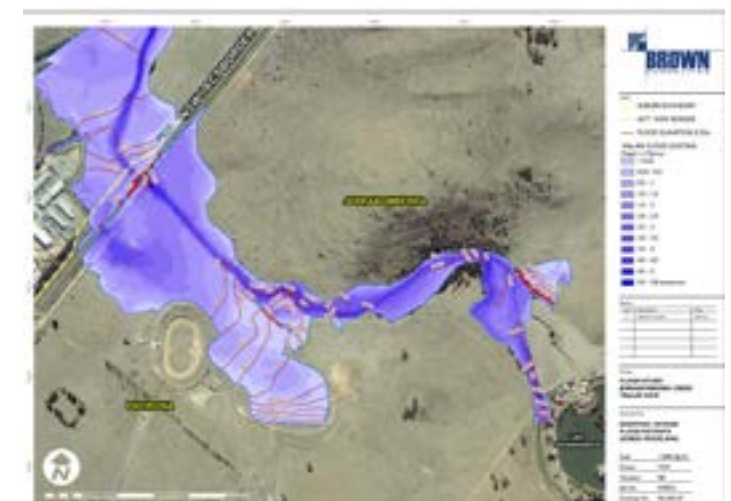
7.3 Slope with Water Courses

The majority of the land slopes to the north/north-west, with water courses draining into the ACT. However, the relatively flat area around Jerrabomberra Creek could create localised flooding issues.



Observations

- _ Each contour line represents a 10m fall/rise
- _ There is one major creek - Jerrabomberra Creek that has tributary areas within the RJP.
- _ The northern 'tip' and south / south-east sections do not flow towards Jerrabomberra Creek.
- _ Jerrabomberra Lake is located to the right/ east of the site. However, the lake is not connected to any water courses throughout the site.
- _ The site's water courses drain into Hume industry and ACT.
- _ The slope is relatively flat where Jerrabomberra Creek meets the ACT border, creating a flooding potential as demonstrated in Brown Consulting's 2010 report.

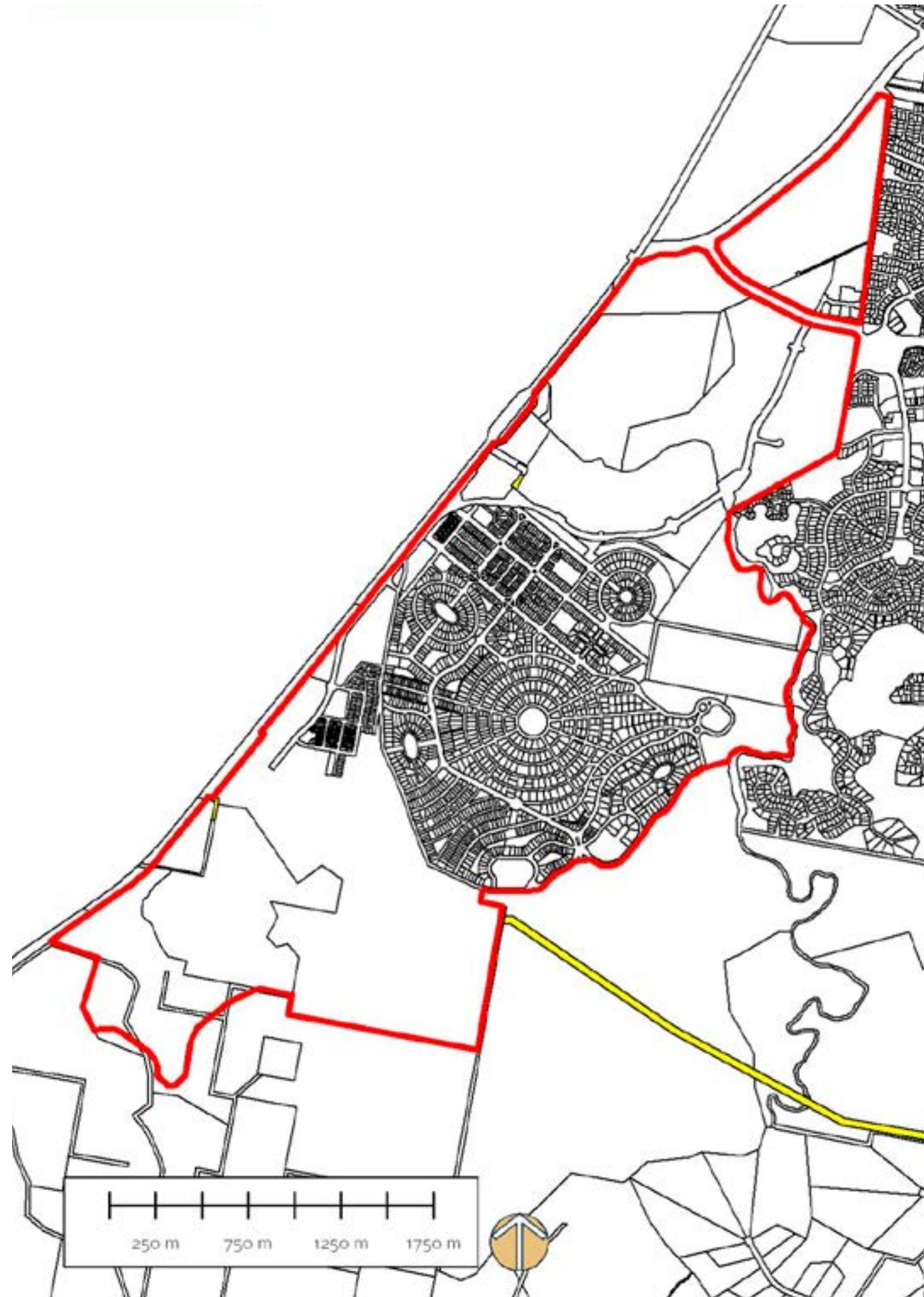


Jerrabomberra Creek Flood Study (Brown Consulting 2010)



7.4 Easements

There is only one small easement located in the study area.



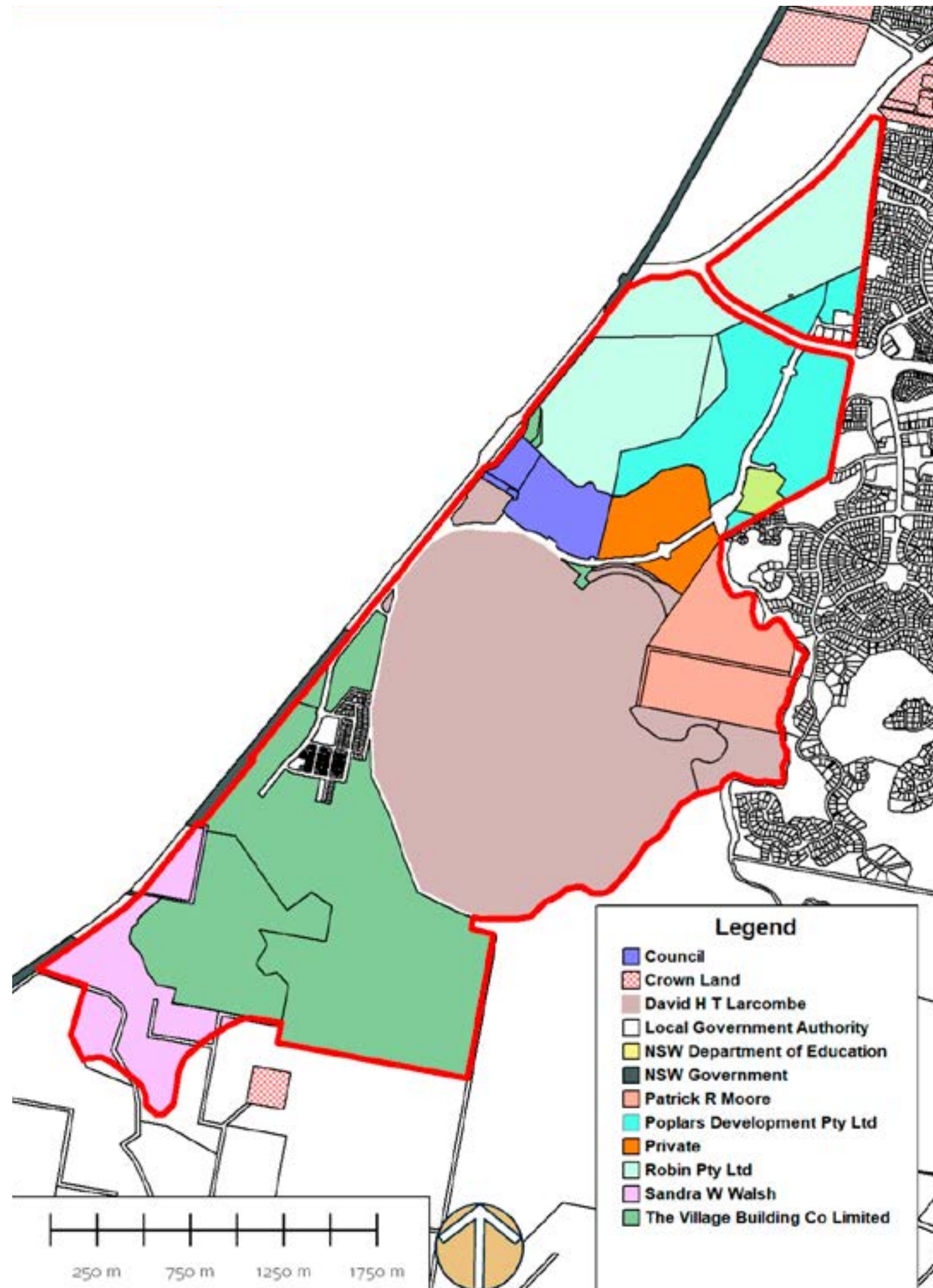
Observations

- _ These plans show the extent of easements located through the site.
- _ There is currently one easement within the site, located south of Jerrabomberra Creek.



7.5 Land ownership

A small number of landowners control strategic opportunity sites within the study area.

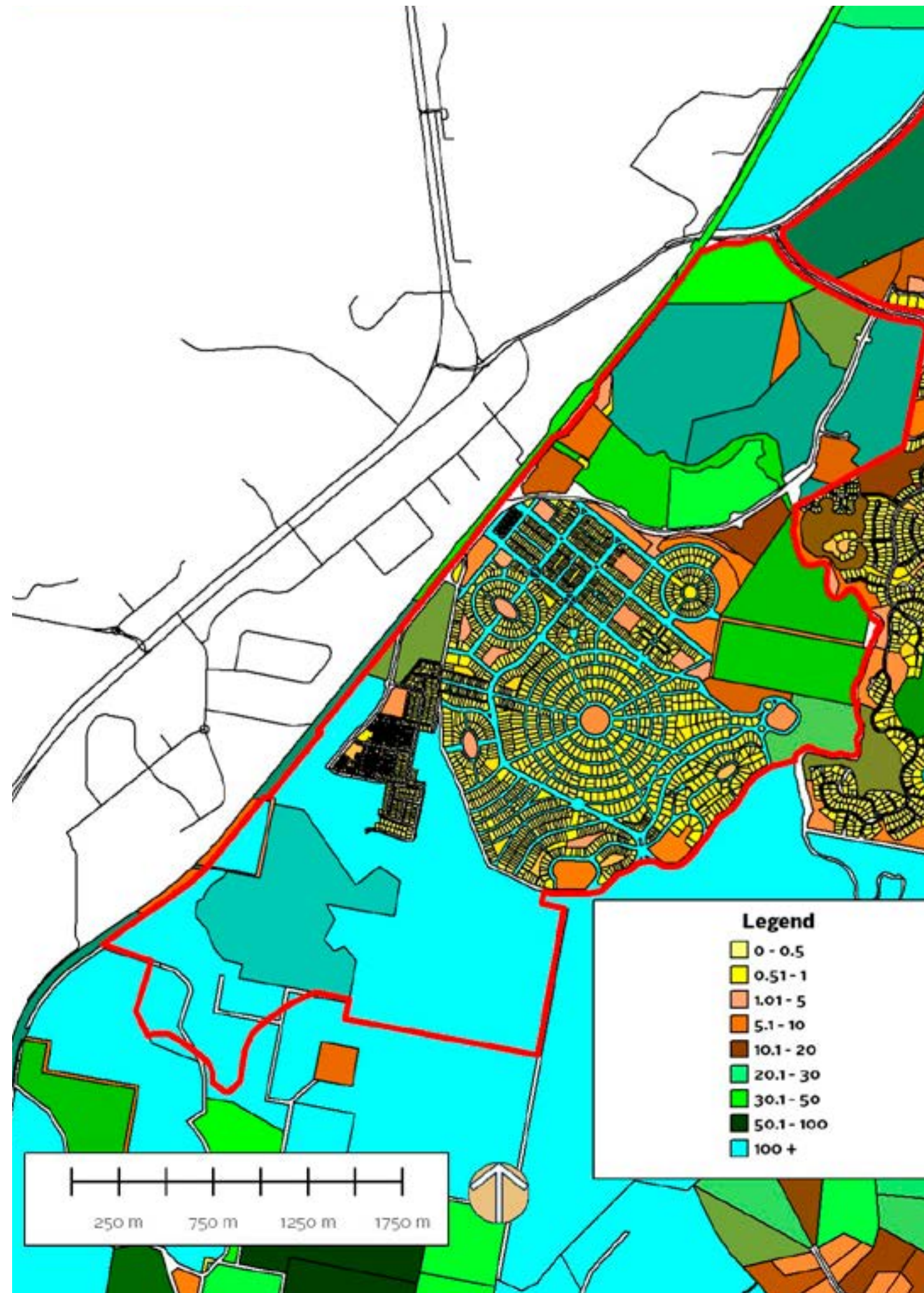


Observations

- _ The site consists of a mixture of private and public owned land.
- _ The privately owned land is relatively large, with the larger land owners being key to implementing the design.
- _ Certain area's of the RJP have already completed master planning and are now constructing their developments. The urban design process will need to work with these land owners to implement the RJP's objectives.

7.6 Lot Sizes

The larger lot sizes relate to the land ownership boundaries, with the South Jerrabomberra residential development lot sizes smaller than surrounding residential areas.



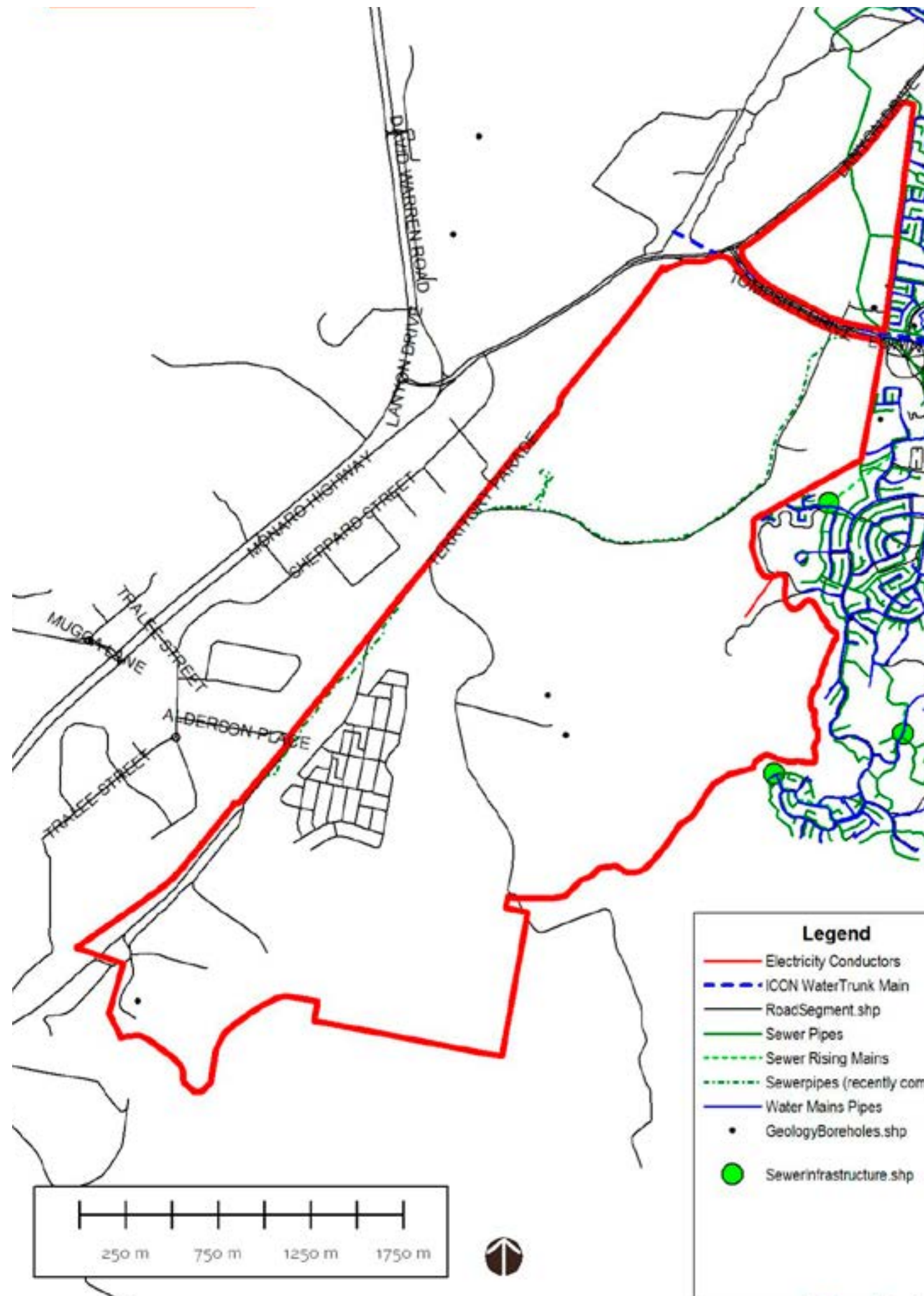
Observations

- _ The study area contains a range of land sizes.
- _ South Jerrabomberra residential development have lot sizes smaller than the nearby Jerrabomberra area.
- _ The centre of the image shows Environa's 'paper subdivision' which was never developed.



7.7 Infrastructure

Infrastructure located within the site is predominately found within South Jerrabomberra and North Poplars developments, and along Environa Drive.



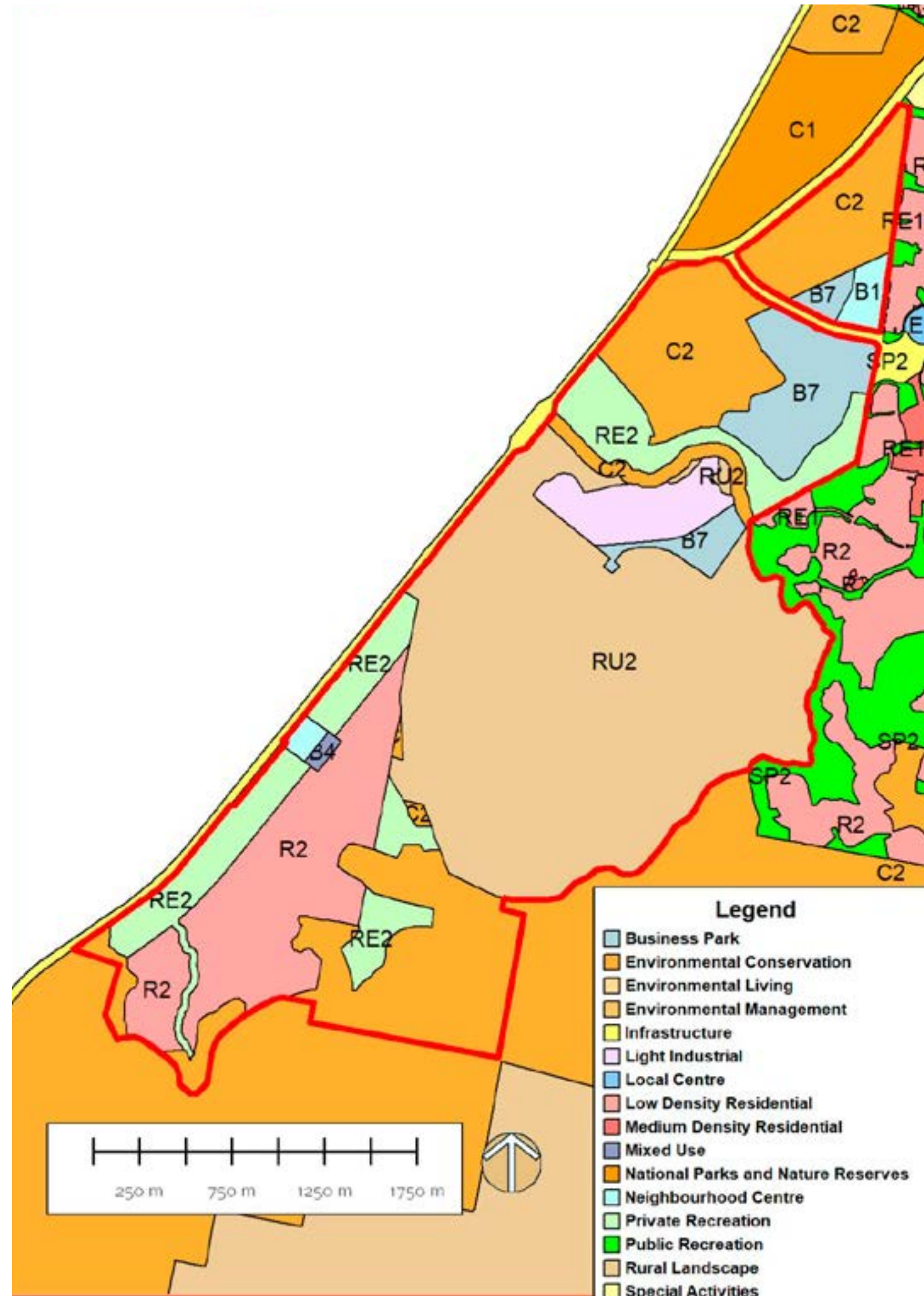
Observations

- _ Along Environa Drive there is a new infrastructure spine, consisting of sewer mains.
- _ Other existing infrastructure and utilities inside of the site boundary consists of sewer connections north of Tomsitt Drive and a water trunk along Tomsitt Drive.
- _ The South Jerrabomberra residential area has localised services / infrastructure, including a new road network.
- _ The area east of the site (Jerrabomberra) is well serviced with key infrastructure and utilities, including water, sewage and electricity.



7.8 Zoning

The area is zoned for residential, business, recreational and conservation uses. The project could propose changes to these zones, including at Environa.



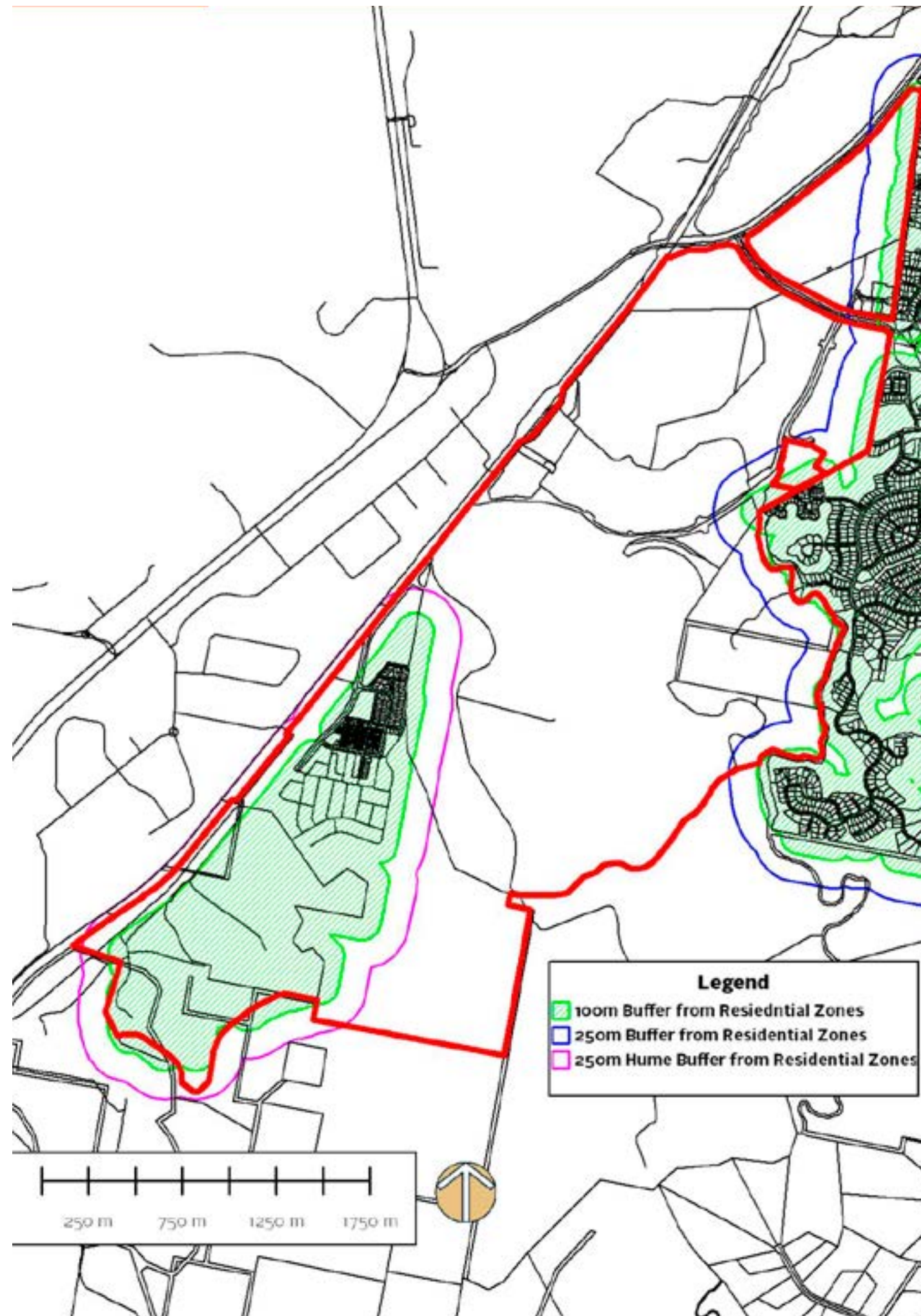
Observations

- _ The site is mixed zoned to include areas of business, residential, recreation and conservation.
- _ Environa is currently zoned as Rural Landscape (RU2).
- _ The area to the site's east is typical of a residential area, consisting mostly of recreationally and residential zones.
- _ To the site's north and south are conservation zones.
- _ The Zoning map is from the NSW Planning Portal spatial viewer tool, July 2024.



7.9 Land use buffer analysis

Indicative buffer analysis between industrial and residential land uses has been shown, to inform planning.

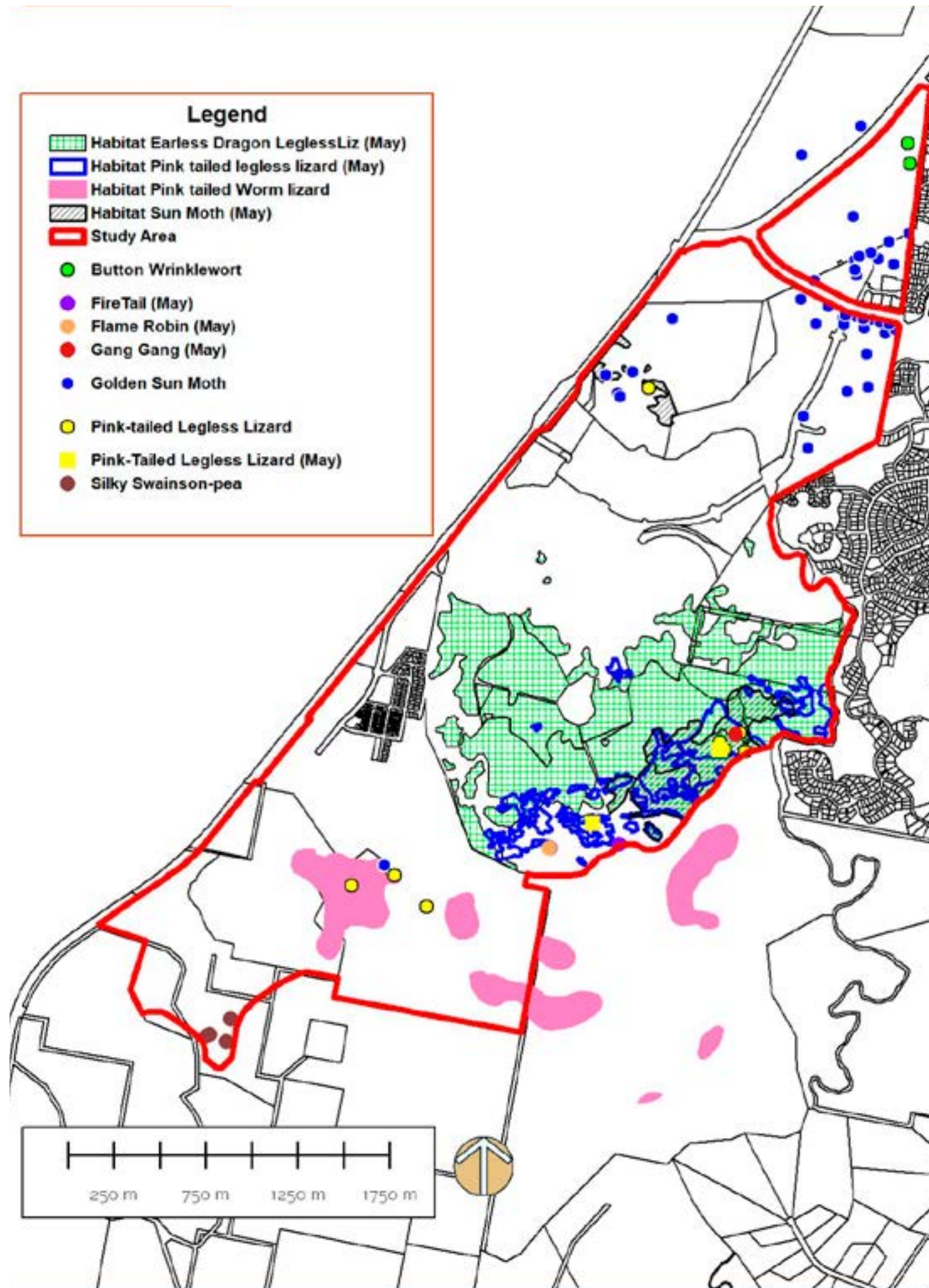


Observations

- _ A 250m wide buffer between Hume and South Jerrabomberra was included into the LEP (South Jerrabomberra) 2012 to avoid land use conflicts between proposed residential land and the Hume industrial area.
- _ Temporary buffers could be needed due to bushfire risks, and protecting land being developed.

7.10 Threatened Fauna + Flora

Majority of the threatened flora and fauna species are found in the study area's north and south / south-east.



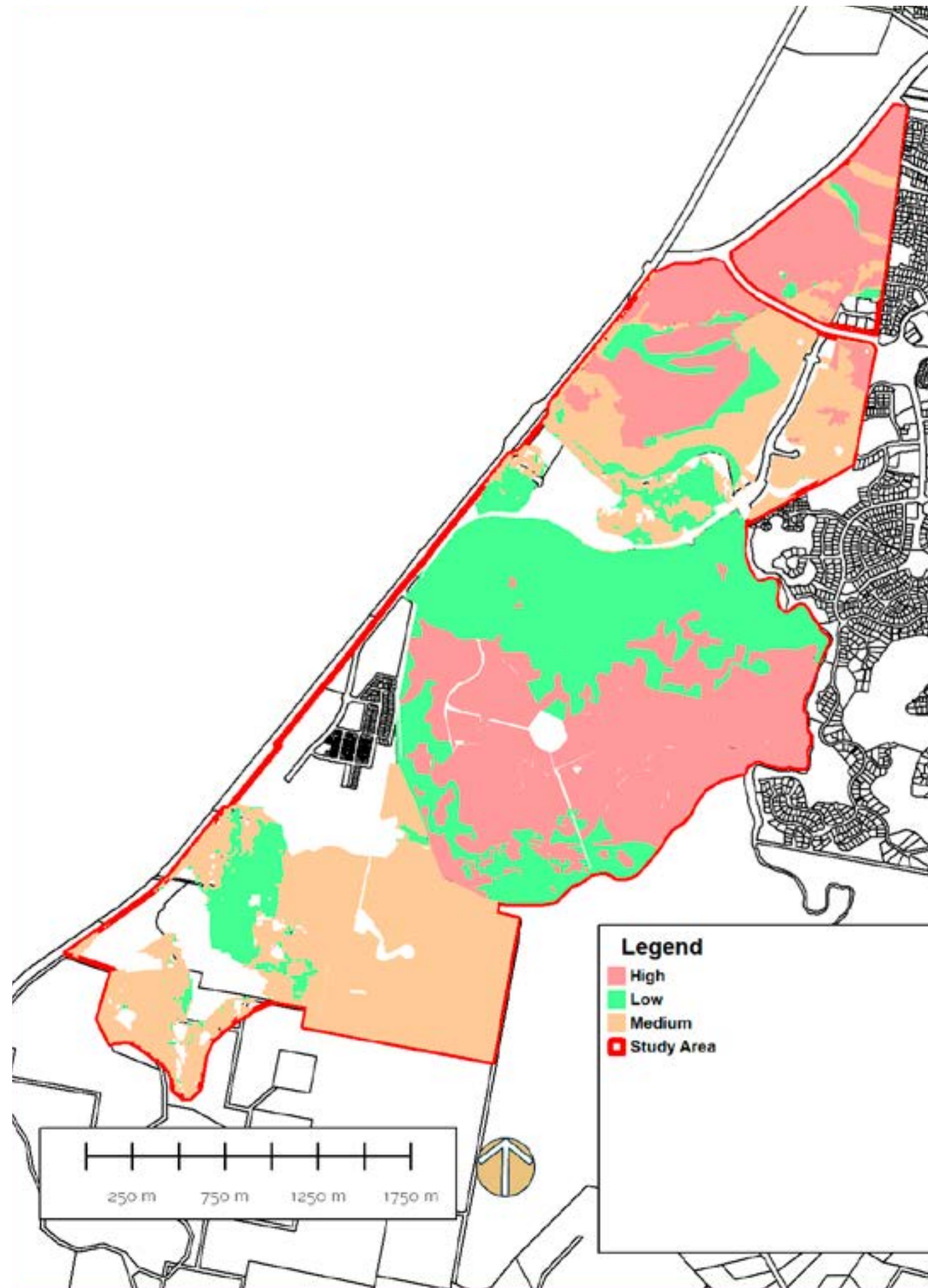
Observations

- _ Threatened flora communities have been identified in the very northern and southern ends of the study area.
- _ Threatened fauna species are mostly located to the north and southern ends of the study area, and south-eastern area of Environa. Specifically, communities of Golden Sun Moth have been found to the north and in Environa (south), Pink-tailed Worm Lizard habitats spread across the south, and Earless Dragon and Stripped Legless Lizards found through the centre of the Environa lands.
- _ There are few threatened species throughout the central parts of the study area.



7.11 Biodiversity Value

The study area contains a mixture of high, medium and low biodiversity areas.

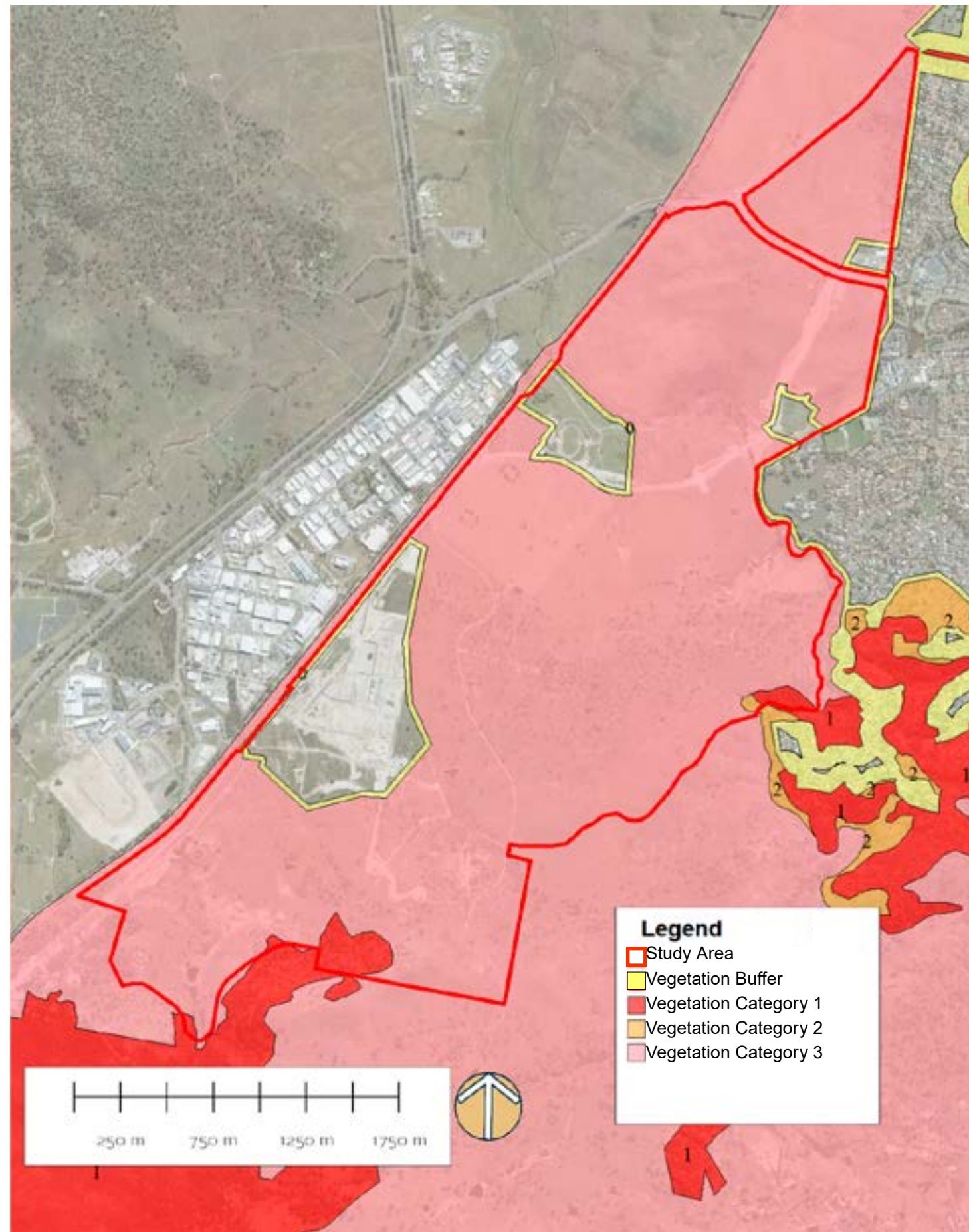


Observations

- _ The northern section of Envirova is classified as having low biodiversity value, this provides fewer constraints on developing the area.
- _ The criteria used to determine the biodiversity values included:
 - _ Patch size and connectivity to conservation reserves.
 - _ Occurrence within identified habitat corridor.
 - _ Records of threatened fauna and identified habitat suitability.
 - _ Status of vegetation community.
 - _ Consideration of matters of national environmental significance.
- _ High environmental values include:
 - _ High biodiversity, existing conservation reserves, Threatened Ecological Community areas, threatened fauna habitats, habitat corridor and linkages, Potential Serious and Irreversible Impacts entities.

7.12 Fire Prone Land

The RJP contains few locations of vegetation category 1, the highest risk for bushfire.



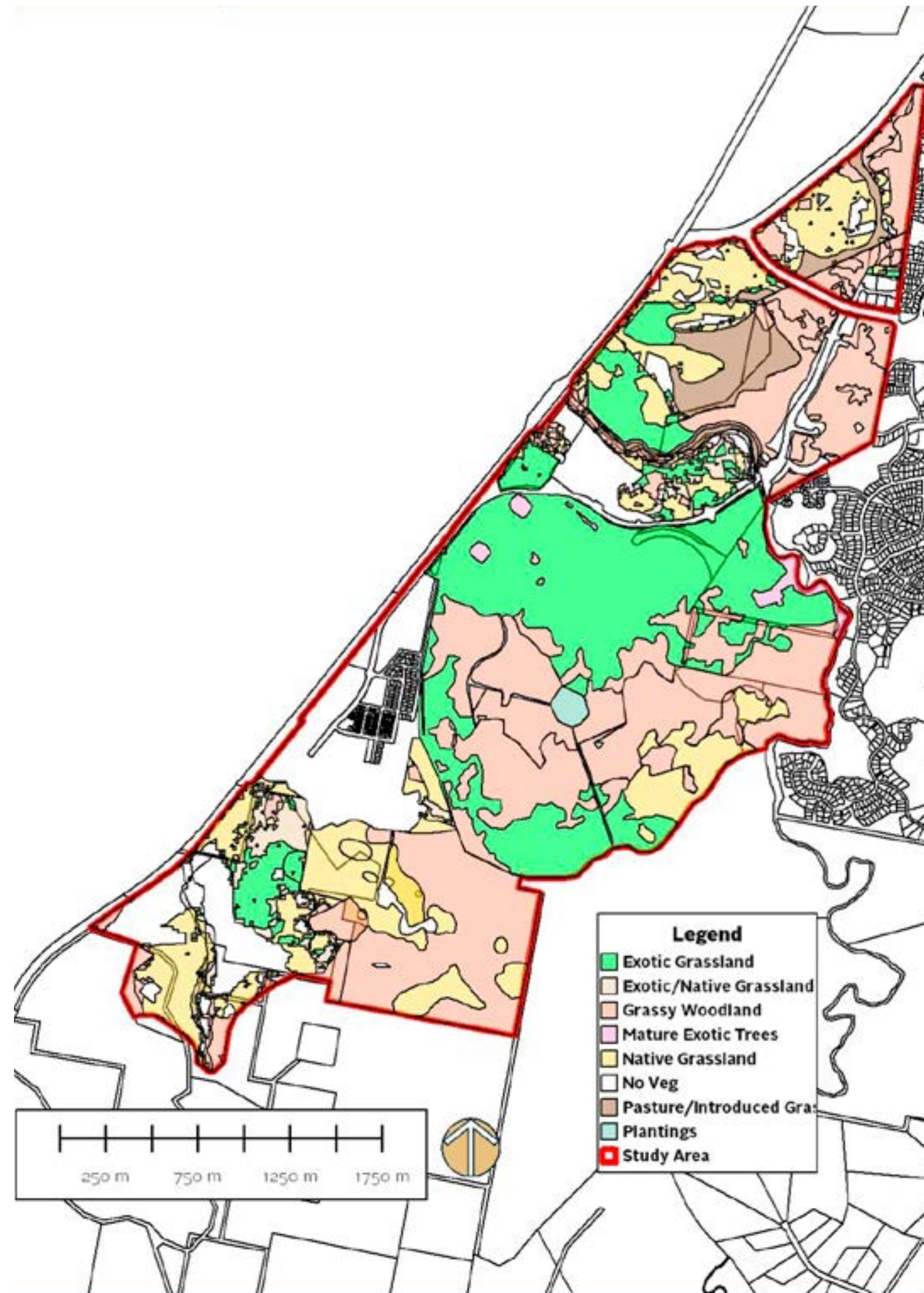
Observations

- _ There are two main locations within the RJP, near the southern tip and eastern border that are classified as Vegetation Category 1 (the highest risk for bush fire).
- _ Majority of the site is classified as Vegetation Category 3.
- _ 30 metre buffers have been placed around the RJP's residential, retail developments, high school and Regional Sports Park as they are abutting Vegetation Category 3.



7.13 Vegetation

The area contains a mixture of native and exotic grasslands. Areas of native vegetation align well the high and medium biodiversity value mapping presented previously.



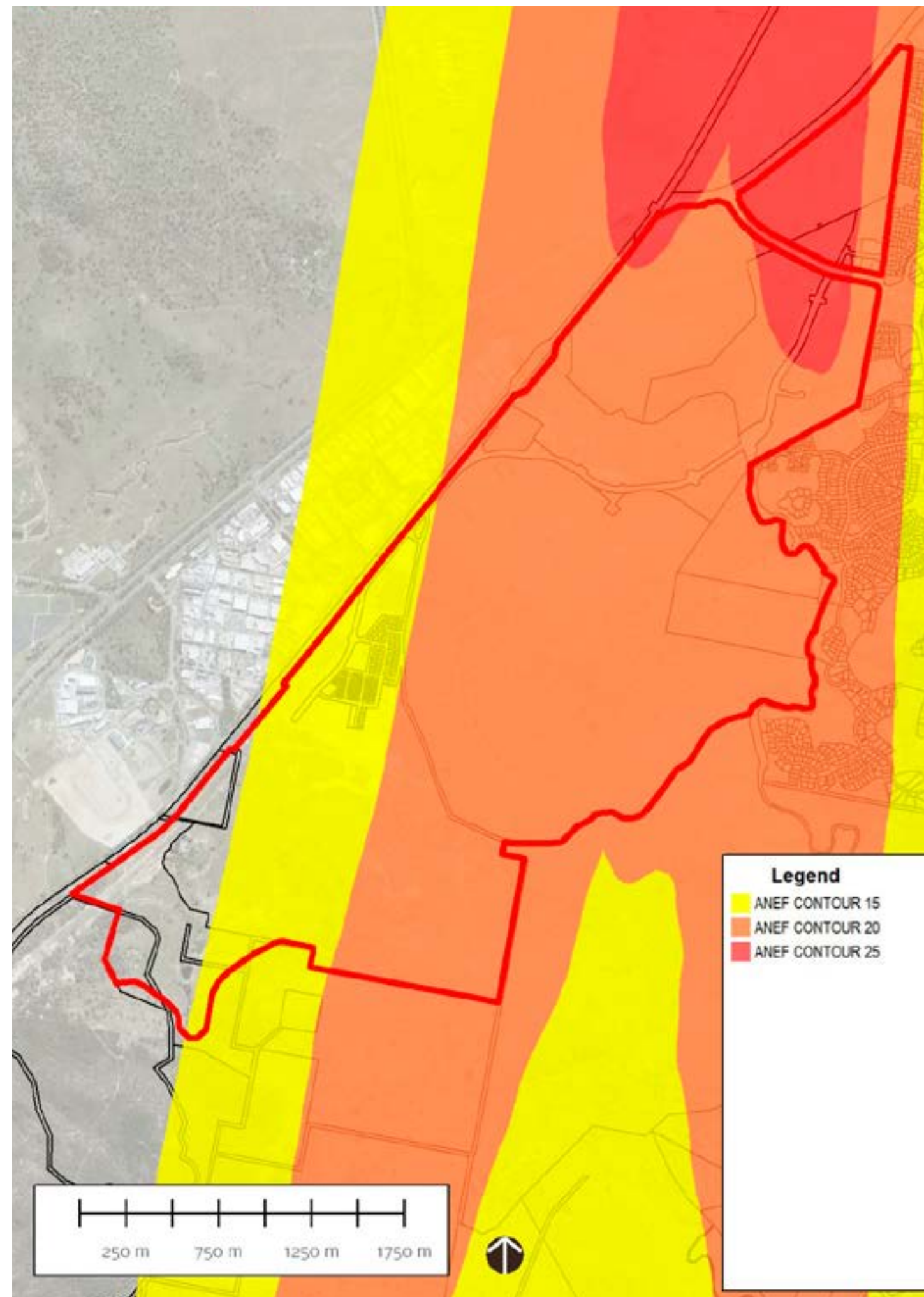
Observations

- _ The study area contains a scattering of exotic and native vegetation. The native areas line up with the high and medium biodiversity value maps.
- _ The native vegetation is located predominately to the south and north, and through the bottom half of Environa.
- _ There are currently areas of no vegetation - which aligns with the RJP's current developments.



7.14 ANEF Contours

Majority of the RJP is within the ANEF 20 + ANEF 25 contours.



Observations

- _ Part of North Poplars' Innovative area and retail area, and the northern conservation area lies within the ANEF 25 contour.
- _ The ANEF 20 contour covers majority of the site.
- _ The ANEF 15 contour covers the constructed residential area of South Jerrabomberra.
- _ Only the south-west corner of the site is not covered by an ANEF contour.
- _ Parts of the eastern residential area (Jerrabomberra) are within the ANEF 20 and 15 contours.



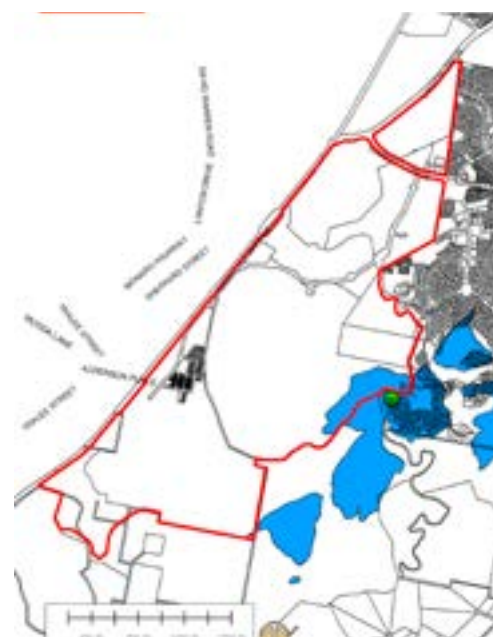
7.15 Selected Viewsheds

The following viewsheds were selected as key locations into the Regional Job Precinct or from within the site area

The viewsheds demonstrate those locations that are highly visible from these strategic locations and point to a need to consider visibility in Master Planning for the site, which also appreciates the neighbouring areas visual amenity.

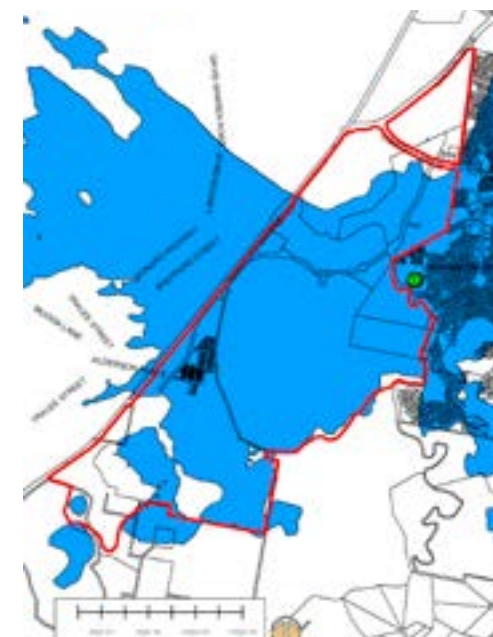
How to read these maps

- _ Green circles triangles represent the view point location.
- _ Blue areas represent the extent of land that is visible from the view point location (noting that some of these areas may be quite elevated and that is why they are visible, despite their distance).



Banyalla Close

- _ Majority of the site is not visible from this point
- _ Only a small eastern portion of the site is visible



Lakeview Gardens Island

- _ Majority of the site is visible - excluding parts of North Poplars, Forest Morrison and Walsh
- _ The central section of the ACT visible
- _ The area's east and south of the site's boundary are not visible



Swan Drive

- _ Majority of the site is not visible
- _ Only a small southern portion of the site is visible



Monaro Highway Southern Approach

- _ Only a very small section of the site's south is visible
- _ Note: the view point (green dot) is to the south west - off screen



Monaro Highway Western Edge

- _ Large parts of the site are visible from the location, including most of its southern section, the area between Jerrabomberra Creek and Tomsitt Drive, and North Poplars. Also, most of the neighbouring ACT area is visible
- _ The central part of the site (parts of Environa and North Tralee) is not visible, including parts of North Poplars.
- _ There are also limited views to the east, including Jerrabomberra



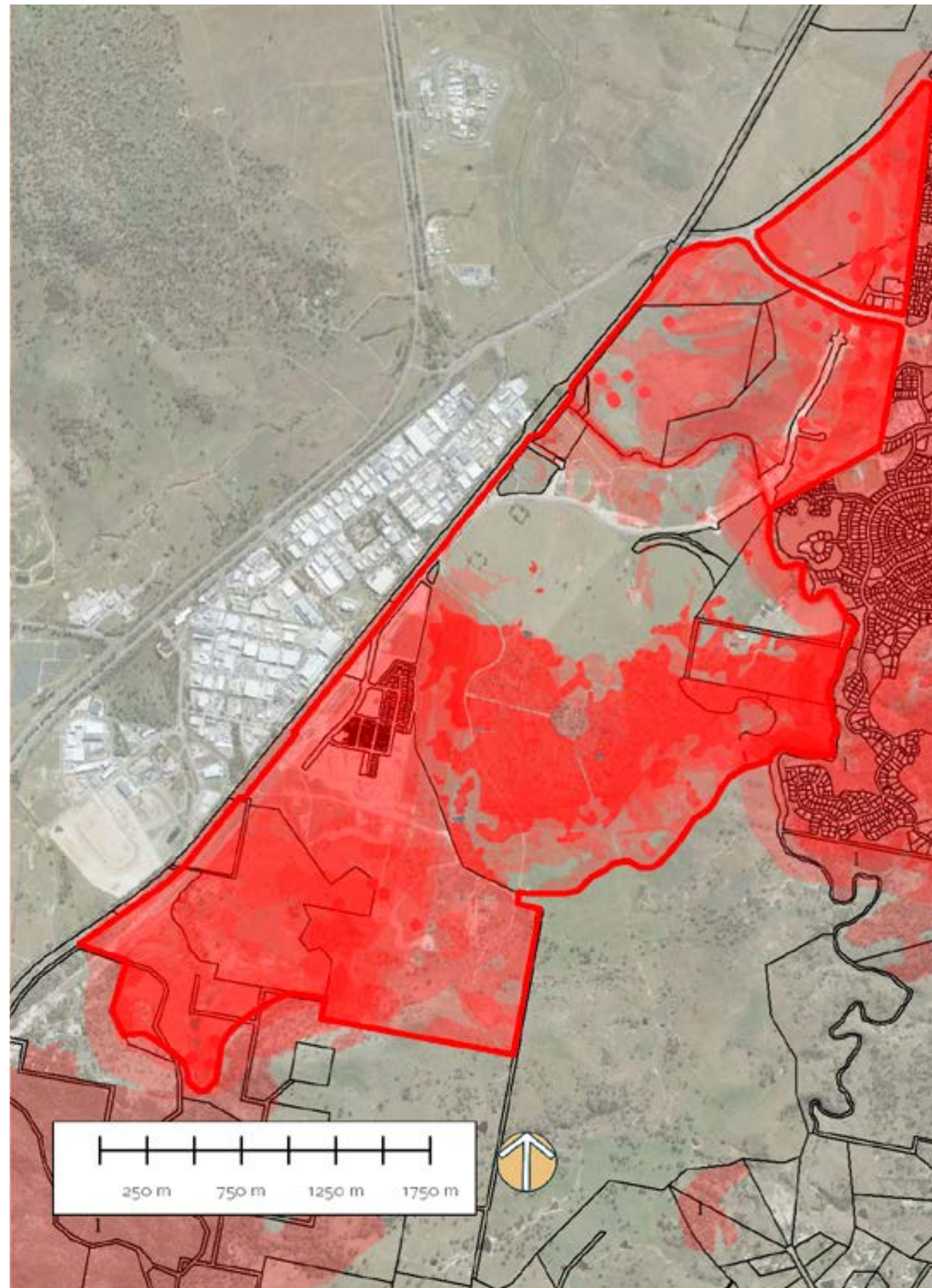
Monaro Hwy & Lanyon Drive Junction

- _ The site's central, south and eastern sections are visible from this location
- _ Area's to the east, including Jerrabomberra, are not visible
- _ Most of ACT's area south of this view point is visible



7.16 Major Constraints Overlay

The major constraints overlay highlights areas where more than one constraint overlap. The reddest coloured areas indicate locations with most constraints.



Observations

The map includes:

- _ 1:8 Slope
- _ 1:4 Slope
- _ High Biodiversity Value
- _ Threatened Flora and Fauna communities
- _ High fire prone land category 1
- _ Slope greater than 1 in 4
- _ Slope greater than 1 in 8
- _ 250m buffer from residential zones
- _ 1 in 100 year flood



8. The Structure Plan

8.1 Structure Plan

8.2 Structure Plan elements (environment)

8.3 Structure Plan elements (transport)

8.4 Structure Plan elements (public realm)

8.5 Structure Plan elements (planning)

8.6 Structure Plan elements (infrastructure)

8.7 Sub Precincts

8.8 Space, Defence + Technology Sub Precinct

8.9 Local Business + Industry Sub Precinct

8.10 Local Activity Centres Sub Precinct

8.11 Open Space Sub Precinct

8.12 Rural Landscape Sub Precinct

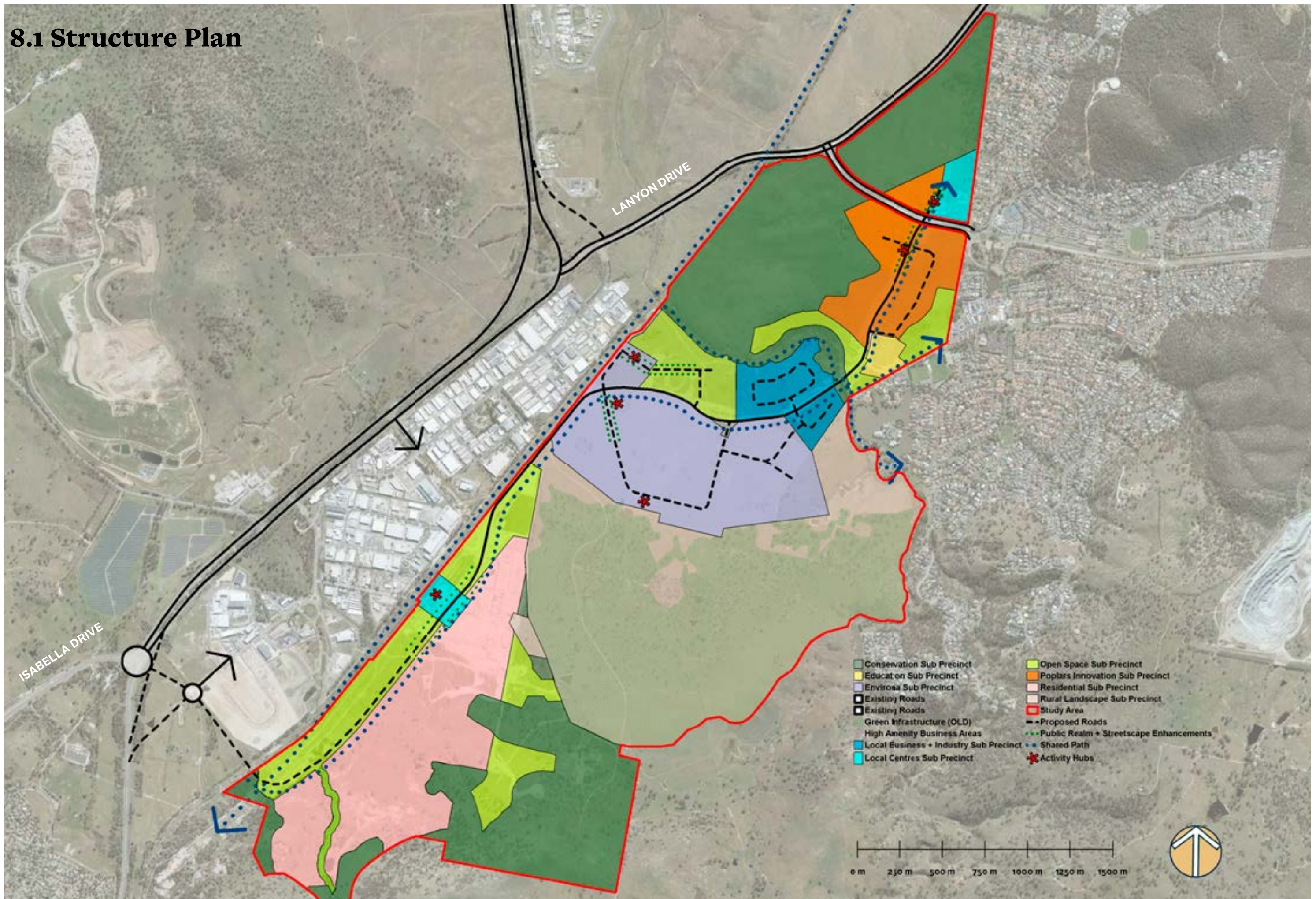
8.13 Conservation Sub Precinct

8.14 Education Sub Precinct

8.15 Residential Sub Precinct

8.16 Illustrative Design

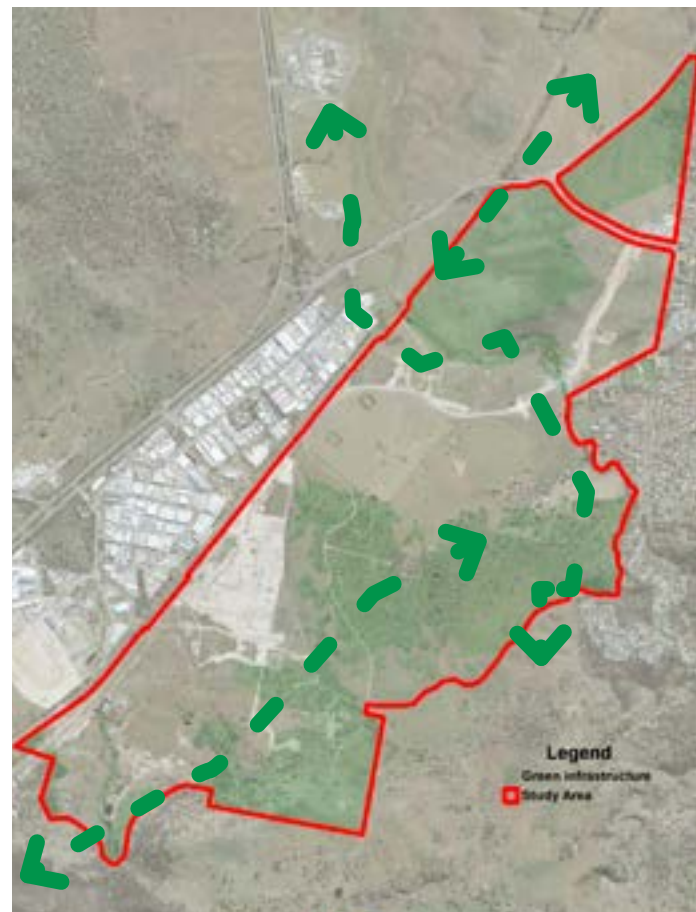
8.1 Structure Plan



8.2 Structure Plan elements (environment)

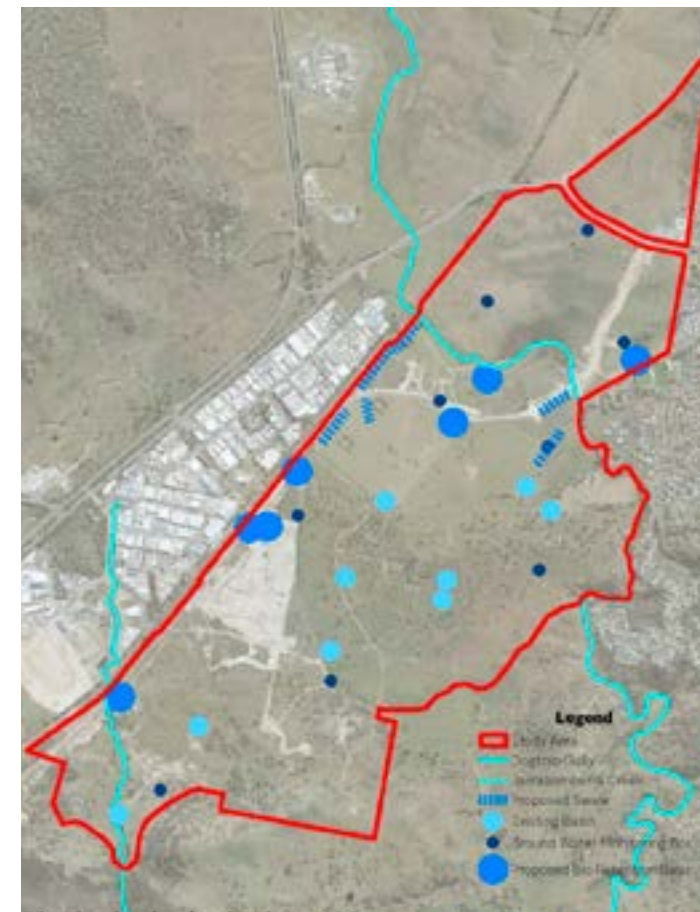
Complex environmental values are present in many parts of the Precinct. Interestingly the proposed Enviroana developments are less affected by protected vegetation than previously zoned land at South Jerrabomberra. The urban design study's environmental strategies seek to integrate existing planning with new strategies for the balance of the study area.

Green Infrastructure + corridors



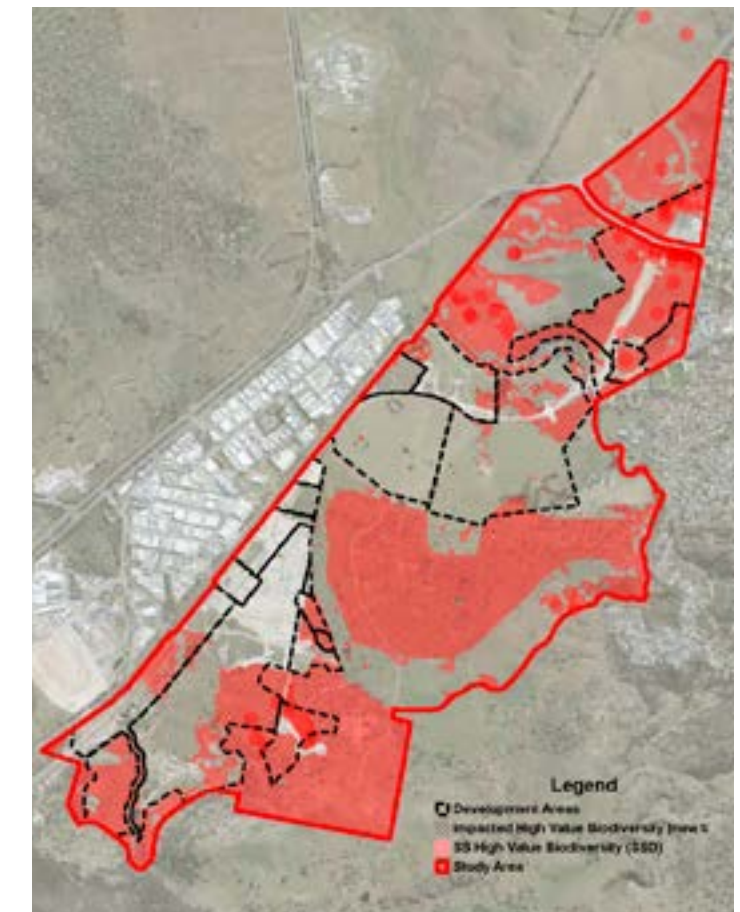
- _ The Green Infrastructure overlay shows areas of high value vegetation and biodiversity to be protected and enhanced during the development of the Precinct.
- _ It includes conservation zoned land, and also areas of high value vegetation on non-conservation zoned land (e.g. rural lands).
- _ Green corridors are strategic habitat linkages between areas of environmental value. These linkages extend beyond the study area.

Blue Infrastructure



- _ Treatment of stormwater in bioretention basins, natural swales and other techniques is necessary to protect water quality and environmental values in Jerrabomberra Creek, Dog Trap Gully, and groundwater.
- _ Preferred basin location at low points - indicative locations provided.
- _ Stormwater treatment areas can be well landscaped and contribute to urban amenity and other environmental values.
- _ Total estimated bioretention basin of 7,935m² of filter area is required.
- _ Aquifer recharge / re-injection on elevated areas is also proposed for consideration.

High value biodiversity + impacted areas

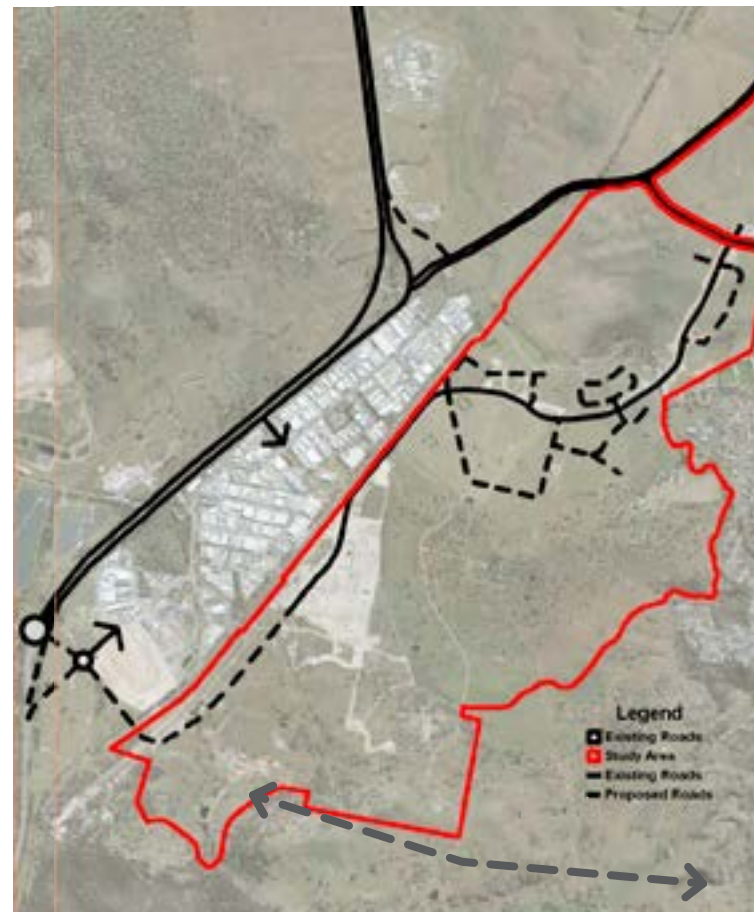


- _ Areas of high biodiversity value that will be impacted by future development are highlighted.

8.3 Structure Plan elements (transport)

Environa Drive has been the catalyst to first phase development at South Jerrabomberra. Additional access points and connectivity (including to ACT) are needed to fully develop and integrate the Precinct. Review of proposed road, active transport and PT linkages by SMEC suggests that the design's transport network proposals are plausible, and will be needed to support a staged development of the Precinct. However, even with additional ACT connections, some road linkages may reach capacity at full development.

Roads



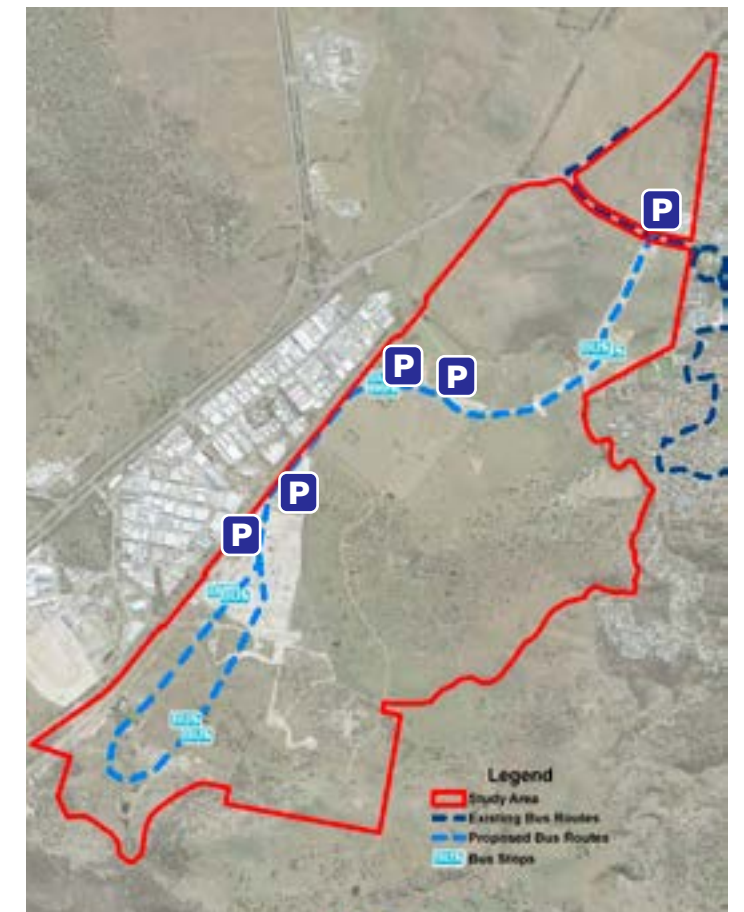
1. Reclassify Environa Drive (non residential segments) to accept 25m B-Doubles
2. Connected local street network
3. Upgrades to Monaro Highway Lanyon Drive interchange
4. Environa Drive extension
5. Additional (longer term) access point at Isabella Drive
6. Investigation for east-west road corridor (Googong to Monaro Highway)

Shared paths



1. Rail trail for recreational walking and cycling along decommissioned rail trail. Allows for some active transport commuting and access into Hume industry area for local employees.
2. Jerrabomberra Creek shared path. Links schools (including proposed high school) and Jerrabomberra residential to Regional Sports Park.
3. Shared path along Environa Drive to connect key local destinations safely and efficiently.

Bus routes + integrated car parking



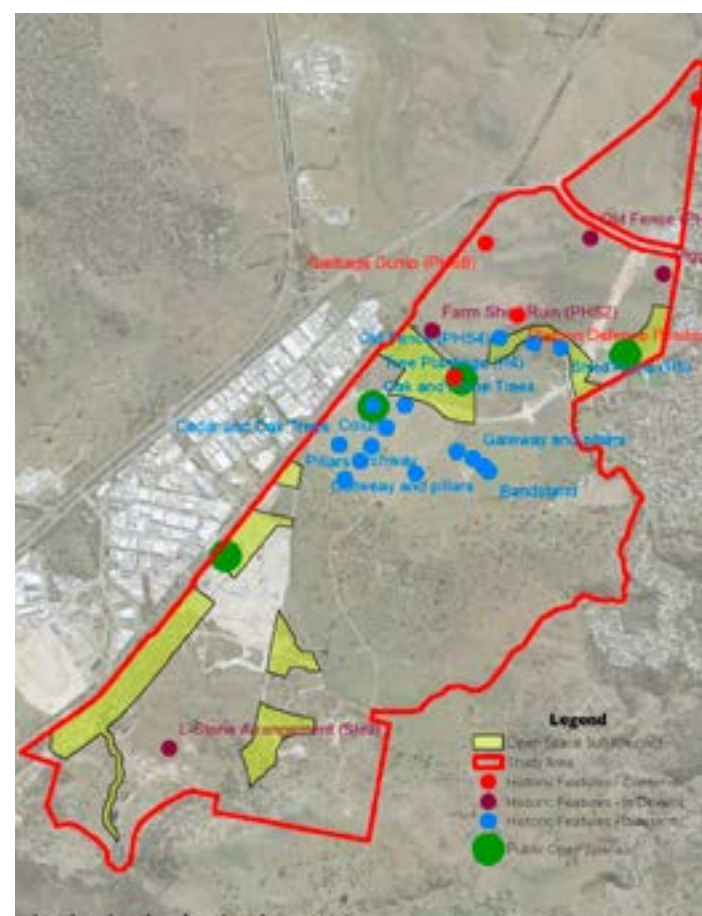
- _ Extend Queanbeyan bus route along Environa Drive and create a loop within South Jerrabomberra. Route to alter based on growth of residential area.
- _ Improve public transport links between ACT and NSW.
- _ Shared car parking at local centres and key activity areas.
- _ QPRC, ACT Government and Transport NSW are considering the benefits of a Park and Ride in North Poplars.

8.4 Structure Plan elements (public realm)

A well designed and high quality public realm is a feature of successful innovation precincts.

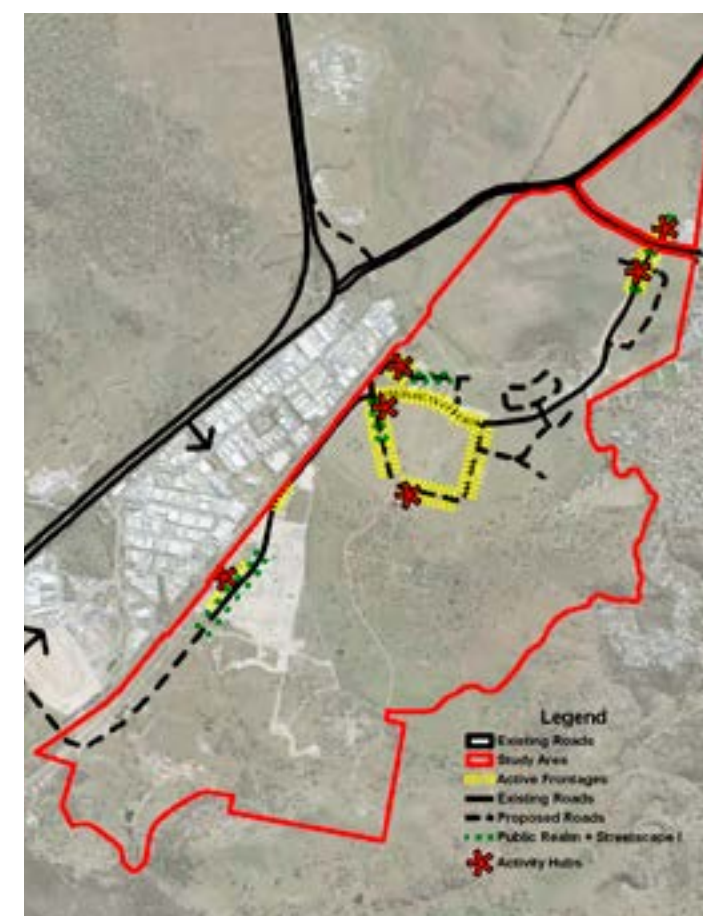
South Jerrabomberra's mix of business and community uses does present advantages to activating the area throughout the day and the week, in a way that some business-only areas struggle to do.

Parks, open space + historic features



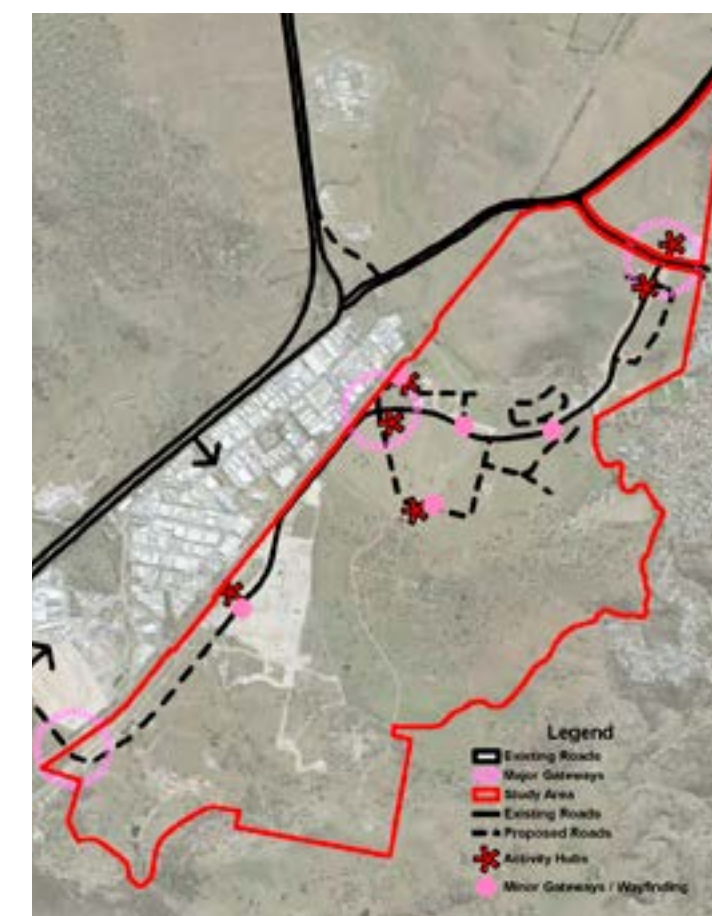
1. Incorporate Environa historic features into development layout. Explore opportunities to create a entry public space at "Oak and Plane Trees".
2. Link open space between Jerrabomberra schools, Jerrabomberra Creek and Regional Sports Park.
3. South Jerrabomberra Park to activate open space buffer.

Activity hubs, active frontages + high amenity streetscapes



- _Prioritise quality urban design and placemaking at nodes where people gather and arrive.
- _Face buildings to major streets including Environa Drive to create an attractive, welcoming address.

Gateways



- _Position landmark buildings, landscapes, signage and art at gateways.

8.5 Structure Plan elements (planning)

Managing land uses and interfaces carefully is an important planning objective at South Jerrabomberra. This includes managing the impacts of past planning decisions.

High amenity business activity overlay



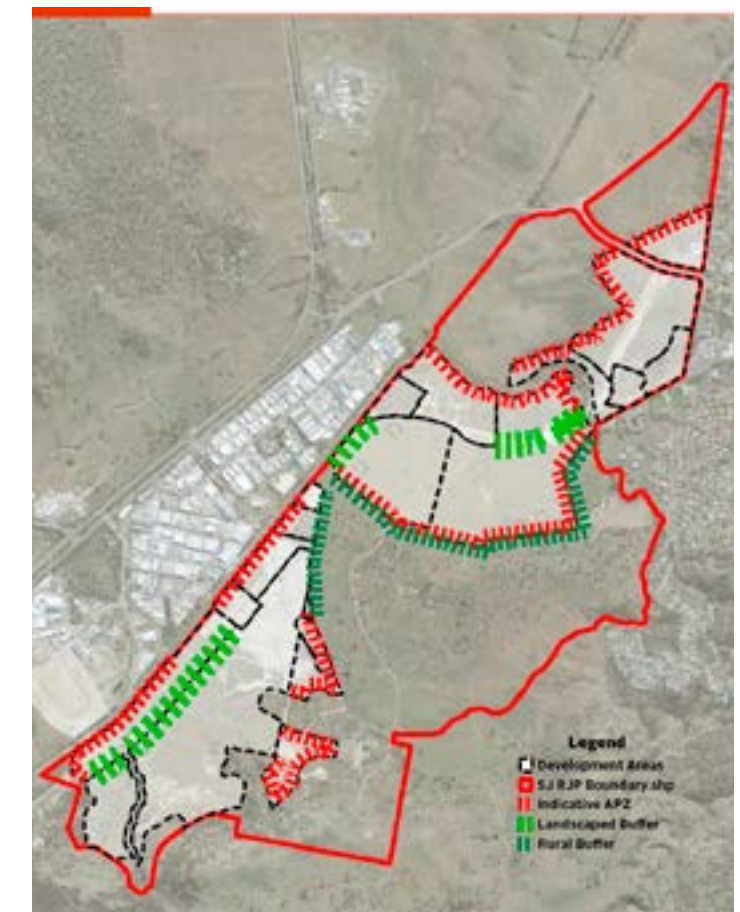
- _ Modelling of likely noise, odour and air emissions from future business and industry areas shows that some locations have increased potential to cause impacts on nearby residential areas.
- _ A High Amenity Business Overlay indicates locations where specific controls (in particular noise outputs) should be put in place to maintain residential amenity.

Sensitive land uses



- _ Sensitive land uses comprise residential land to the south-west (under development) and a proposed high school site (not shown).
- _ Sensitive land uses like schools, child care, aged care, tourist accommodation or housing should not be located elsewhere in the Precinct.
- _ This is to limit the impacts of industry and aircraft noise on people, and also to avoid encroachment on businesses that could impact their ongoing operations.

Landscape, bushfire + rural buffers



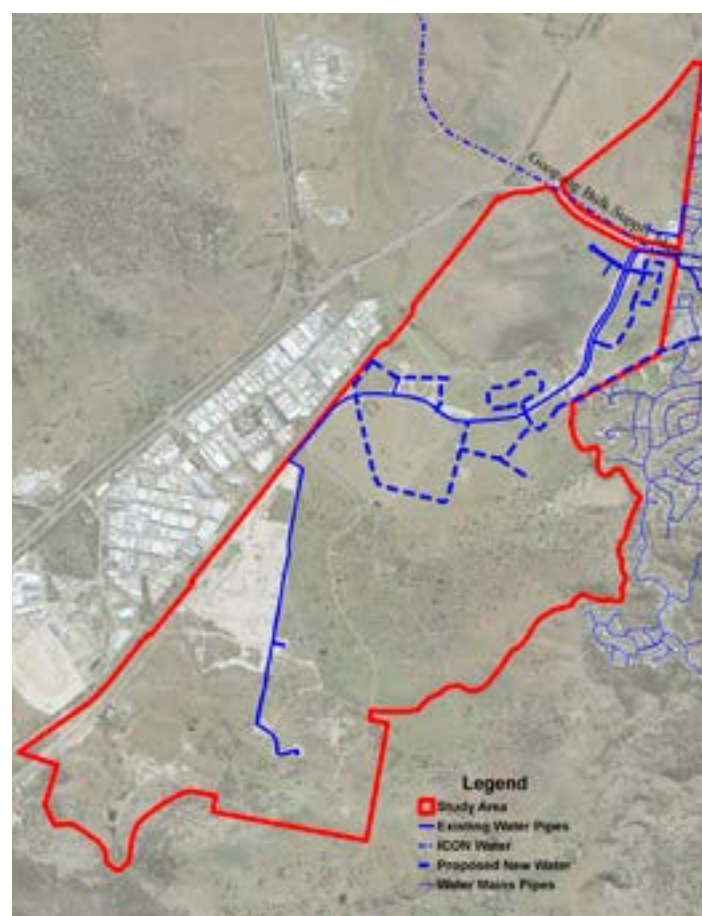
- _ Development areas present interfaces to rural land, to conservation areas, and to major streets.



8.6 Structure Plan elements (infrastructure)

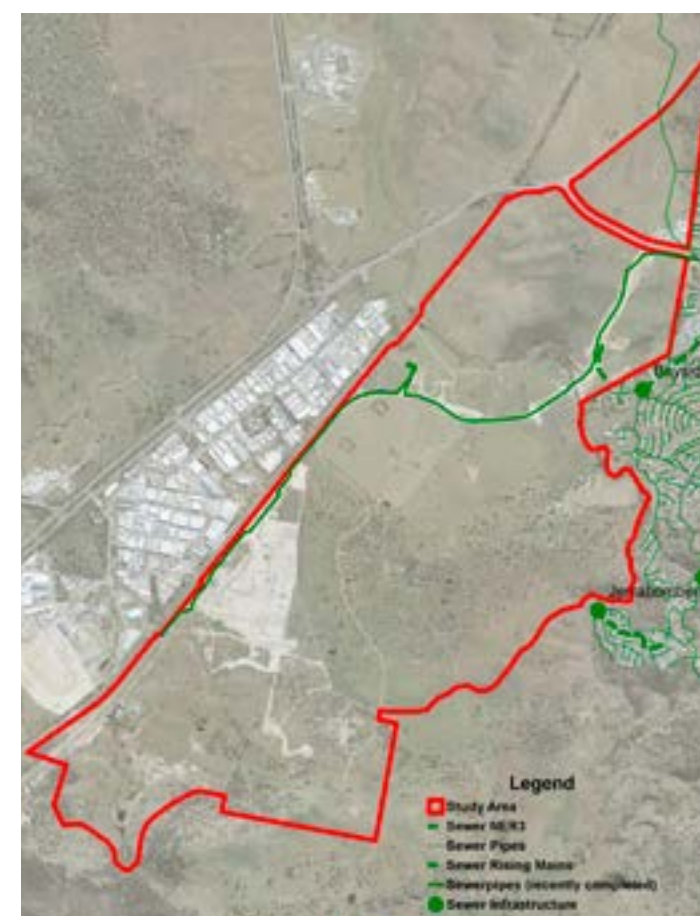
Preliminary utilities infrastructure planning has been undertaken by SMEC. Local upgrades and additional connections and storages have been flagged to service the additional development areas proposed in the design.

Water



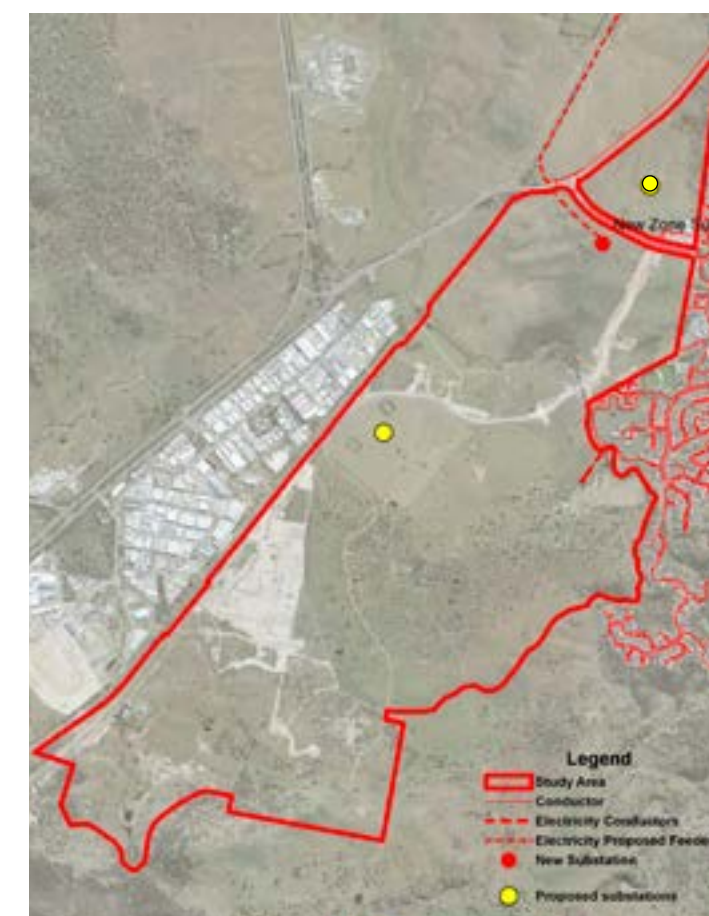
- Second high level reservoir planned for future.
- Full development peak hour demand = 254.3 L/s + 30 L/s for fire-flow.
- Insufficient capacity in water network for full development. New connection required - new DN450 main to the DN450 truck main in Jerrabomberra Parkway.
- A concept for an aquifer recharge scheme has also been identified and should be considered in future development.

Sewer



- New pump station installed on northern side of Environa Drive.
- Fully developed RJP estimated wastewater demand - 20,439 EP.
- Upgrades required to wastewater network capacity north of Tomsitt Drive.
- No recycled-water anticipated.
- Additional sewage treatment capacity (located outside RJP) to service RJP.

Power



- Total estimated energy demand is 155 MVA.
- New substation proposed south of Tomsitt Drive.
- Potential for a second and third substation located in the RJP's western and north areas - 2ha of outdoor land (indicative locations shown).
- One telecommunications tower needed, 400 sqm site centrally placed.
- 20% of parking spots in private developments to be for EV – additional 10% for EV ready infrastructure.



8.7 Sub Precincts

Poplars Innovation Sub Precinct

_ The Poplars Innovation Sub Precinct is designed to create partnerships and collaboration opportunities between industry, education, research institutions and investors, with the potential to create future jobs

Conservation Sub Precinct

_ The Conservation Sub Precinct protects the region's protected grassland and woodland vegetation, and the fauna that rely on this habitat.

Environa Sub Precinct

_ The Environa Sub Precinct is a future land for high value industries and jobs in Space, Defence + Technology, designed as thriving innovation clusters.

Open Space Sub Precinct

_ The Open Space Sub Precinct includes future active recreation and sports parks, as well as land for passive recreation, revegetation and stormwater management.

Residential Sub Precinct

_ The Residential Sub Precinct has been previously planned to accommodate 1,500 new homes at South Jerrabomberra, Forrest Morrison and Walsh in the south-west of the Precinct.

Local Centres + Activity Hubs Sub Precinct

_ Two Local Activity centres are included in the urban design study, to provide shopping, entertainment, wellbeing and community services to support business and residential communities.

Education Sub Precinct

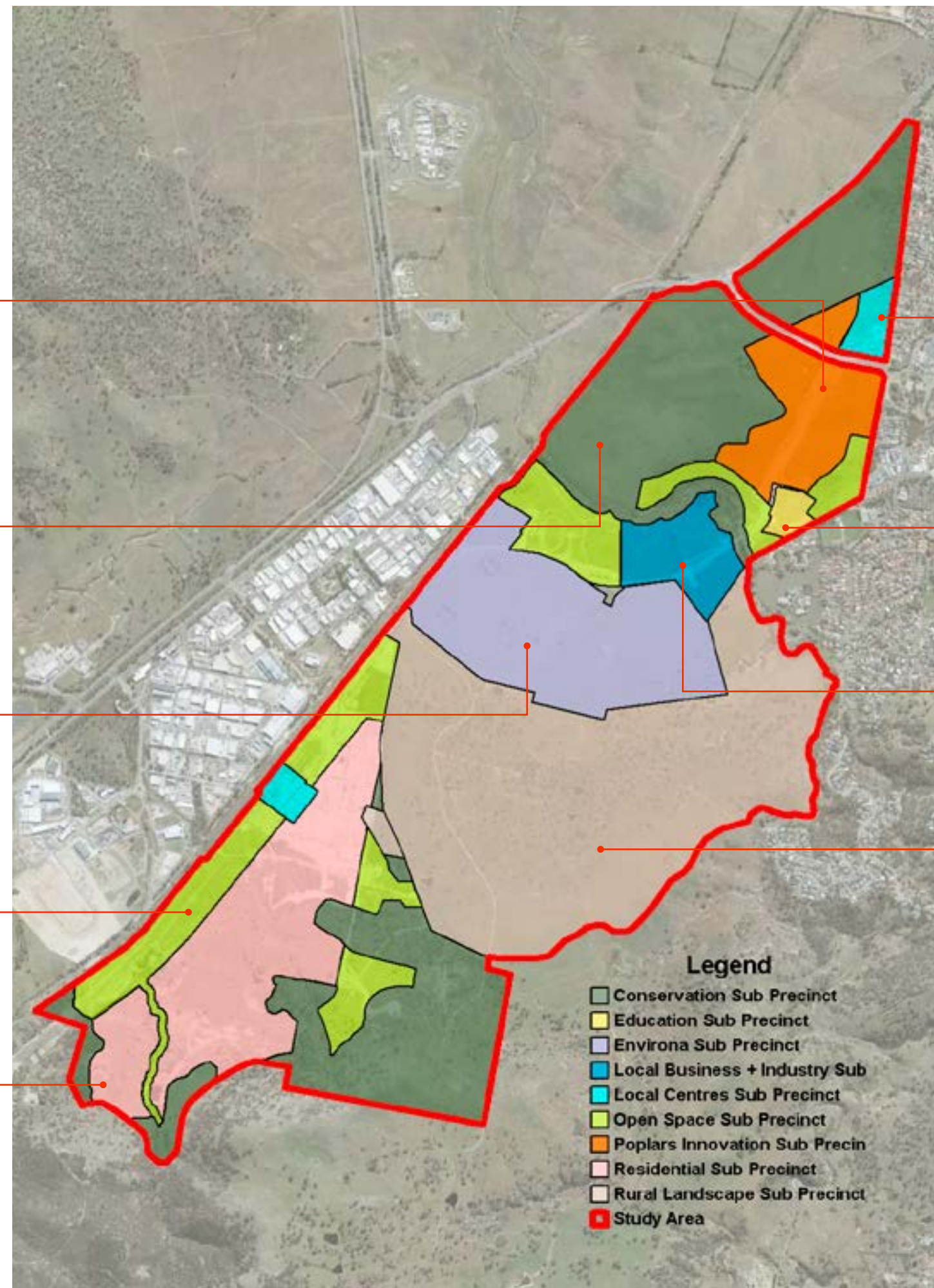
_ The Education Sub Precinct is 5ha (approx.) and is created to represent the new high school at South Jerrabomberra.

Local Centre Sub Precinct

_ The Local Business + Industry Sub Precinct is intended to provide land for a wide range of light industries and commercial businesses.

Rural Landscape Sub Precinct

_ The Rural Landscape Sub Precinct applies to the balance of 'unplanned' lands and is not proposed for urban development.

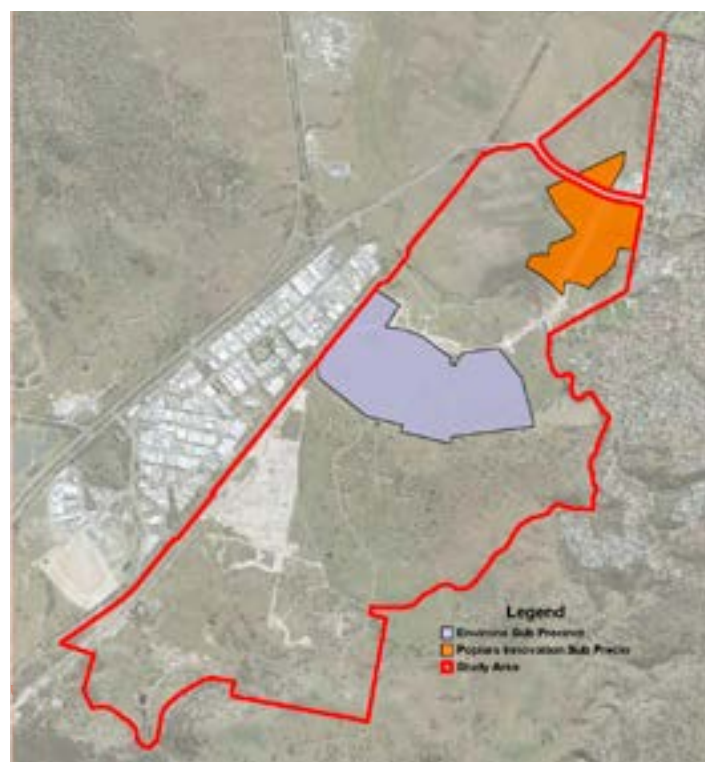




8.8 Space, Defence + Technology

Environa Sub Precinct + Poplars Innovation Sub Precinct

The 146ha Space, Defence + Technology Sub Precincts are promoted for high value industries and jobs. Two sub precincts - the Poplars Innovation and Environa - are designed to be thriving innovation clusters.



Overview

A major driver for the Regional Job Precinct is the facilitation and attraction of high technology jobs in the space, defence, cyber-security and other high technology industries. South Jerrabomberra has been given this focus due to its proximity to Canberra's federal government departments, and to a lesser extent its university and research facilities.

Access to more affordable land on the New South Wales side of the border is also a locational advantage of South Jerrabomberra, as is the area's new infrastructure including road, utilities and secure fibre optic communications, and the potential to source employees from Queanbeyan's growing suburbs.

The high-tech development focus of South Jerrabomberra is already well advanced through the (privately developed) Poplars Innovation Precinct,

through the investment attraction activities of DRNSW, and by Council support including a proposed 'Innovation Centre'.

South Jerrabomberra is also earmarked for high-tech jobs in recent local, regional and state policies for planning and economic development.

The RJP urban design study includes two areas targeted for Space, Defence + Technology businesses:

1. Poplars Innovation Precinct – a staged development underway in the north of the RJP.
2. Environa Sub Precinct – a future development area, part of the unplanned Environa lands. Environa is subject to further investigations and rezoning is only possible when infrastructure capacity is increased.

Of note is that both of these areas have the same landowner.

Area _ 146ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

1.1. Creating regional jobs for NSW

1.3. Innovation + advanced manufacturing jobs precinct targeting growth sectors in defence, space, cyber etc.

1.4. Leverage ICON network

1.8. Opportunity for Environa lands to provide medium term business + jobs growth

2.1. Well connected precinct for business, visitors + community

2.5. Plan future public + active transport Links

3.1. High-quality urban design outcomes at building, site, street and precinct scales

3.2. Contemporary design within a landscape setting creates identity

3.4. Design to meet national security requirements

3.5. Minimise visual impact

5.1. Protect sensitive receptors (e.g. residential areas, schools and workplaces) from business impacts such as noise or odour

6.2. Identify and activate synergies between businesses + developers to maximise potential



Grassland conservation area with interface to Poplars development

Stage 1 includes technology businesses

Road layout indicative

Stage 2 with ~17 proposed allotments for development

(cont.)

Space, Defence + Technology Sub Precinct

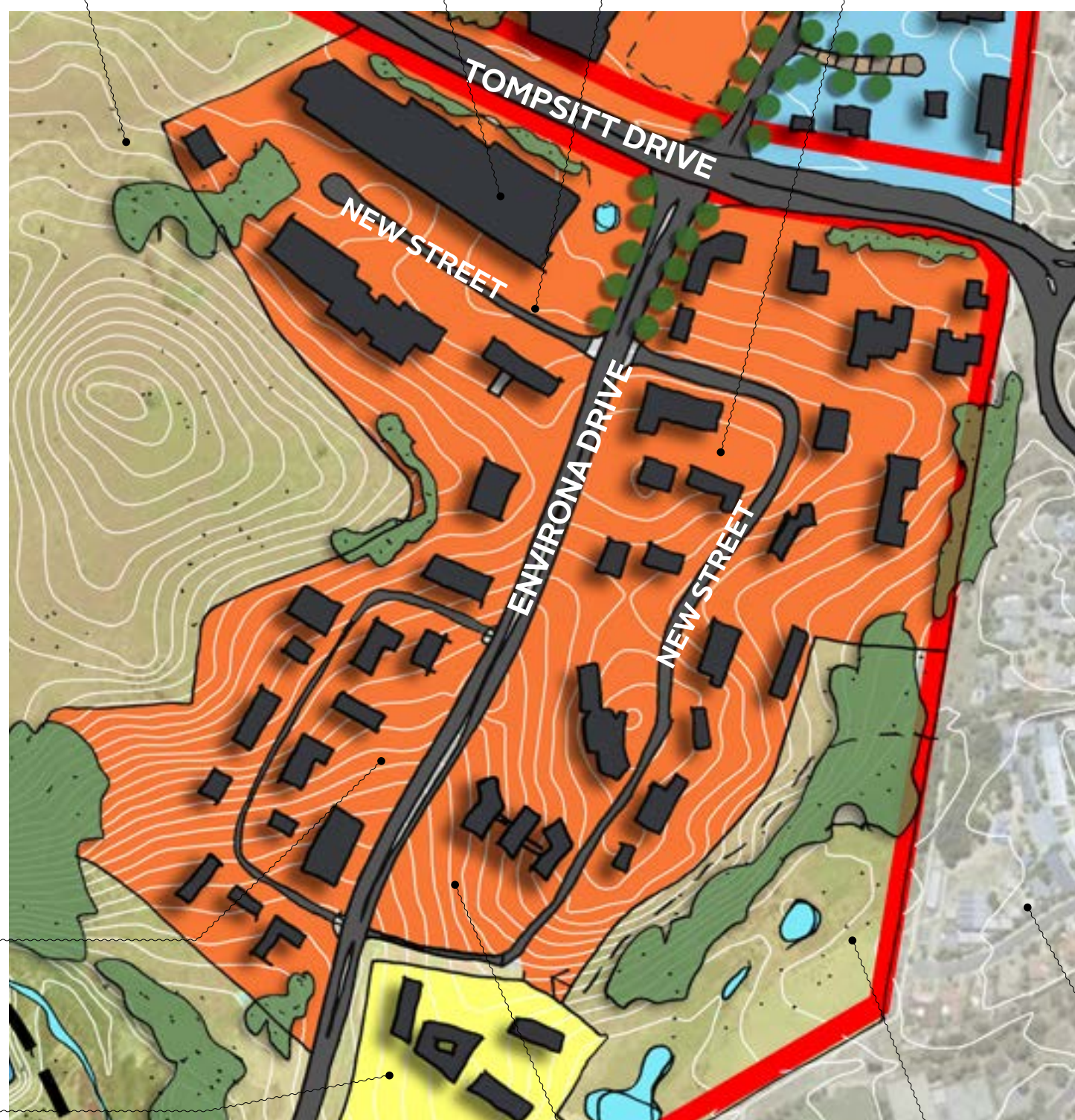
Existing conditions (South Poplars)

The Poplars development is located north and south of Tomsitt Drive, an arterial road linking Jerrabomberra's suburbs with major routes to the ACT. To date, one stage of retail and fast-food developments has been built on the north side of Tomsitt Drive. This land is known as North Poplars. Remaining land at North Poplars of approximately 8.6 ha is zoned B7 Business Park. (Note: The balance of land at North Poplars is described in the Local Business + Industry Sub Precinct.)

South of Tomsitt Drive, South Poplars includes approx. 36ha of development land, on both sides of Environa Drive. Environa Drive is a new road that has been constructed to provide access and services to the South Jerrabomberra area including the Poplars development, and other areas further south.

Poplars Stage 3

Proposed Jerrabomberra high school



Future development (South Poplars)

- _ Stage 1 of Poplars Innovation Precinct is on the west side of Environa Drive. It is proposed to be developed for a small number of sites for advanced manufacturing and Poplars Innovation Centre. Access is from a new street which intersects with Environa Drive.
- _ Stage 2, east of Environa Drive, is larger (~17ha) and is designed as a subdivision of approx. 17 allotments of 5,000-12,000 m2 in size, accessed from a new street with a loop connection south to land for a public high school, and for Council's Innovation Centre.
- _ Stage 3 (~8ha) is south west of the other stages and also fronts Environa Drive. This stage has not been designed in detail.
- _ High quality building design, landscape and street interfaces are envisaged by the developer's design guidelines for the Poplars Innovation Precinct development.
- _ Stages 1, 2 and 3 of the Poplars Innovation Precinct is well placed to capture interest from the targeted Space, Defence + Technology businesses for the RJP. The land has undergone extensive planning (including zoning, and biodiversity offset agreements), and enabling infrastructure along Environa Drive has recently been built.

Location for Council innovation centre overlooking Environa Drive

Drainage reserve location indicative

Jerrabomberra Public School



(cont.)

Space, Defence + Technology Sub Precinct

- _ Using the developer's current master plans, and our own analysis, the 36ha of development land is likely to provide land for about 30 allotments for Space, Defence + Technology businesses or groups of businesses. Based on an expected land take up of target industries 5 to 10 years of land supply may be expected at South Poplars.
- _ The business-park-style layout of the development suggests that most businesses will likely develop a stand-alone building, with their own off-street parking and loading as required. Site fencing for all or part of sites is likely to be required to provide security.
- _ Analysis of other Space, Defence + Technology businesses by Jensen PLUS suggests that building forms are often a mix of office buildings and modern manufacturing buildings, sometimes with integrated warehousing. Sites of 1ha or less are most common, which aligns with the proposed Stage 2 layout.
- _ Building form is typically one or two storeys. Hard-stand around buildings allows for car parking and loading, with additional space for landscaping for screening, amenity and visual appearance.

- _ While the targeted businesses, lot sizes and design quality of the proposed South Poplars developments align well with the desired innovation precinct outcomes, research suggests that additional urban design and placemaking outcomes may be needed to fully achieve the intent:
 - _ Cafés and meeting places (noting the adjacent North Poplars retail precinct with further development potential, and also the Innovation Centre proposal).
 - _ Shared facilities such as car parking may also help integrate business activity.
 - _ Integrated urban design at human scale e.g. integrated buildings and public spaces.
- _ Some of the land in Stage 2 is close to existing housing and schools at Jerrabomberra. While office-based business uses are unlikely to create noise and amenity impacts, other technology activities in this location may increase risks on nearby residential areas.
- _ South Poplars is currently zoned B7 Business Park but this zone will not be included in NSW's new employment zones. There is an expectation from DPE that B7 zoned land in Queanbeyan's new LEP will move into the

E3 Productivity Support zone. E3 is a mix of light industry and business park land uses (e.g. offices). While providing development flexibility this zone does not provide a targeted planning approach most suitable for the envisaged Space, Defence + Technology businesses.



Example of high quality architecture + landscapes for targeted industries



Tonsley Innovation District tech architecture and public realm (Jensen PLUS)



(cont.)

Space, Defence + Technology Sub Precinct

Existing conditions (Environa)

- _ Much of the master planning investigations concern the ‘unplanned’ Environa lands, some of which has been earmarked for industrial development in past planning.
- _ In the urban design strategy about 8oha of land at Environa is proposed for business and industry uses, with about half of this in the Space, Defence + Technology Sub Precinct. We are calling this area of development ‘Environa’.
- _ Environa is approx. 4oha of land, on the south side of Environa Drive, opposite the proposed Regional Sports Park. The land is gently sloping and is used for grazing today, and is part of the historic (undeveloped) Environa residential subdivision. There are low biodiversity constraints.
- _ A small number of tree plantings and stone wall constructions from this period are present on the site. These have historic value but are not protected.
- _ This part of Environa estate is close to the Hume industrial area (ACT), and is also affected by the flightpath to Canberra Airport.

Future development (Environa)

- _ South Poplars make sense as the first development area for the Space, Defence + Technology businesses targeted by the RJP. Approx. 36ha of land is available in three stages, which may take 5 to 10 years to develop. Environa provides for the continued and expanded development of these targeted businesses.
- _ Environa has a central location within the RJP, with good road access south and east on Environa Drive (recently constructed). The location also benefits from a proposed northern road link from Environa Drive to Lanyon Drive at this location.

Other proposed features of Environa:

- _ Approx. 45ha of gently sloping, north facing land.
- _ Highly visible and strong address to Environa Drive, and well located to the new access road from Lanyon Drive.
- _ Adjoining and connected to an area of Local Business and Industry land immediately east, which provides land for supporting businesses that may not be ideally located in the Environa.

- _ Business activity hub centred around a historic green space close to the entrance to the area.
- _ Typically 1ha to 3ha lots, providing flexibility for small, medium and larger scale technology businesses, either office-based and manufacturing-based.
- _ While our analysis showed that most tech businesses are 1ha or less, Environa includes some larger sites which may be more suitable to larger and strategic businesses. Because these larger sites are a point of difference to South Polars (0.5-1.2ha lots) it may be that Environa View starts to be developed before South Poplars is fully developed.

- _ ‘View Street’ is the primary business street and is aligned from Environa Drive intersection with a view to the Environa hilltop. This will help create legibility, local character and a business address. A small number of local business streets provide access to other business sites.
- _ It is envisaged that commercial buildings will face View Street and be positioned close to the street to create street enclosure and a more urban address, and not be set back behind car parks.
- _ Buildings will also be positioned close to Environa Drive and overlook public space. Exposed side and back fences which will create an unsurveilled Environa Drive should be avoided.

Space, Defence + Technology Sub Precinct -

Environa

Desired business activities	Unsuitable activities	Key land uses
<ul style="list-style-type: none">_ Space manufacturing_ Defence research and manufacturing_ AI + cyber security centres_ Other advanced manufacturing (e.g. electronics)_ Data centre_ Business hubs, cafés, function centres	<ul style="list-style-type: none">_ Local business + industry uses_ Accommodation_ Entertainment and recreational facilities_ Warehousing_ Child care_ Community uses	<ul style="list-style-type: none">_ Light industry_ High technology industry_ Office premises_ Food and drink



(cont.)

Space, Defence + Technology
Sub Precinct

Environa Sub Precinct is a future location for Space, Defence + Technology businesses. It enjoys a central location within the Precinct, with good road access south and east on Environa Drive. The location also benefits from a proposed northern road link from Environa Drive to Lanyon Drive at this location.

A smaller area of tech businesses can be located on the prominent corner of Environa Drive and "Link Road"

Larger business sites 1-2ha overlooking Environa Drive

"View Street" provides legible access and a prominent business address. Urban street design with on-street parking, high standard of footpaths, green landscaped setting

New park and placemaking opportunity created around historic tree plantings. Green gateway to Environa development

Regional Sports Park provides lifestyle and recreation opportunities for employees

Perimeter street to manage rural and bushfire interface

Balance Environa land with woodland vegetation provide backdrop to development

Prominent elevated commercial, HQ or function centre site

Integrated through street connections with adjoining local business and industry area

Mix of allotment sizes for businesses. High quality commercial architecture and public realm contribute to urban design outcomes



(cont.)

Space, Defence + Technology Sub Precinct

_Environa is close to one of the proposed local activity hubs, to provide high amenity business hub to eat, drink, meet and shop. As this hub is adjacent to the Regional Sport Park, a health and wellness focus (e.g. gyms, physio) will complement the business support services and differentiate from the fast food and supermarket-based centre at North Poplars.

_At the top of View Street there is an opportunity for a prominent commercial site (e.g. headquarters) or potentially a function centre or even a public open space area and trailhead.

_For rural interfaces, perimeter roads and access tracks are proposed to provide bushfire separation and also to minimise edge effects to high value woodland vegetation on the balance Environa lands.

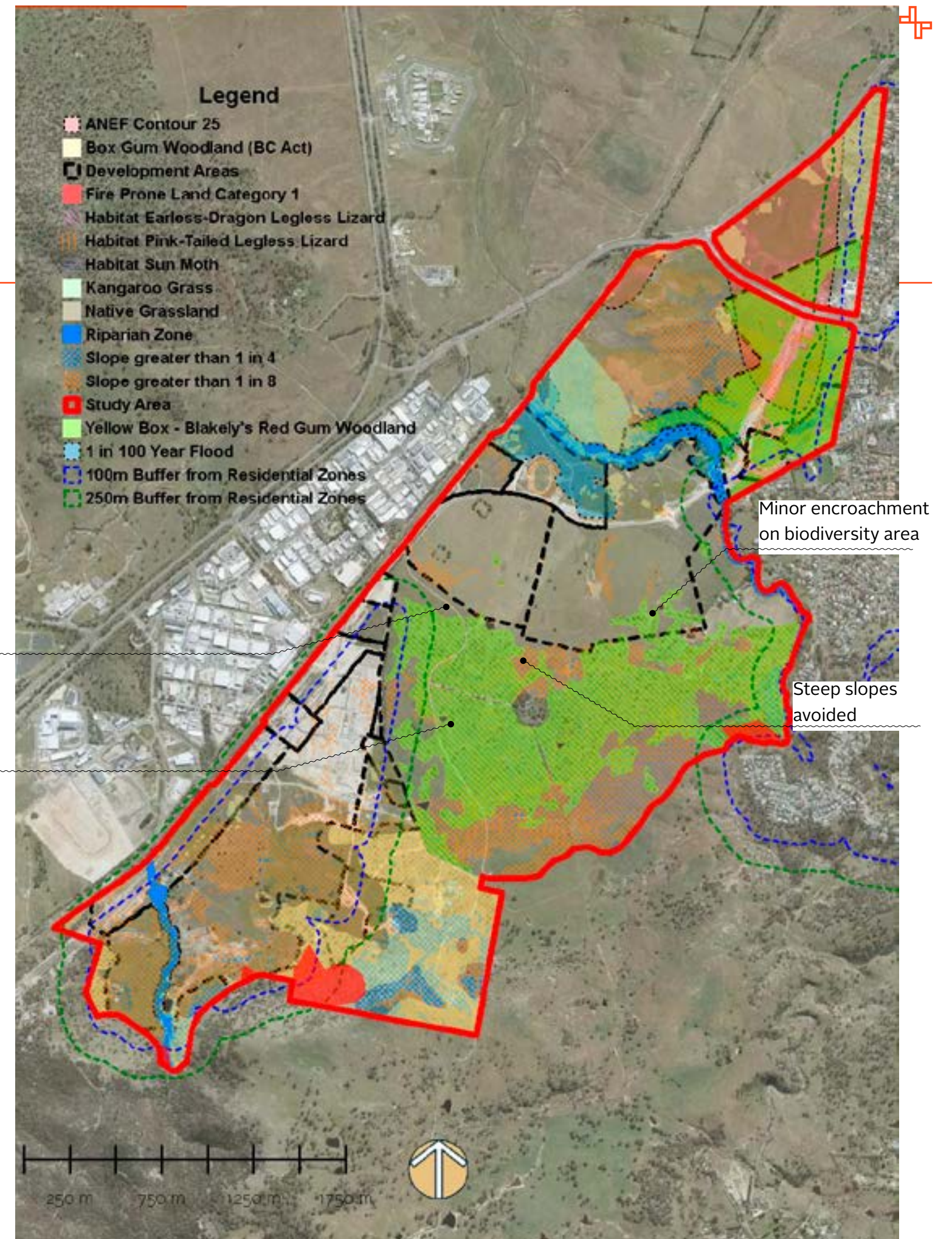
_The Sub Precinct extends from Environa Drive in the north, to a ridge in the south which visually separates the development from the South Jerrabomberra residential estate (480m). This ridge is also the approximate commencement of higher elevation and where higher value woodland vegetation is located. The boundaries of Environa View have been located to avoid this vegetation.

_Development near the perimeter of the growth areas should minimise indirect impacts on nearby woodland by buffering and using other methods to minimise edge effects.

_Opportunities to retain scattered paddock trees within streets, public spaces and developments across Environa View should also be explored, particularly if they are hollow-bearing trees.

Ridge separates industry from residential

Large areas of high value woodland vegetation and other biodiversity





8.9 Local Business + Industry Sub Precinct

The Local Business + Industry Sub Precinct is intended to provide land for a wide range of light industries and commercial businesses.



Overview

As well as providing for employment-generating industries in targeted sectors such as space, defence, cyber-security and other high technology industries, the RJP also seeks to provide land for local industries to service a wide range of population and business-supporting needs of the Queanbeyan region.

Often described as “light industry” areas, these local business and industry activities can be diverse, such as local manufacturing, construction, vehicle repairs, self storage, hardware and trade services.

The Local Business + Industry Precinct Sub Precinct is located central to South Jerrabomberra, west of Jerrabomberra Creek and on both sides of Environa Drive.

Existing conditions (North Tralee Business Park / Industry Park)

There are two land parcels that make up the North Tralee Business Park. These are 15.8ha and 6.45ha, located on the north side and south side of Environ Drive respectively. The land is vacant and has been mapped to contain a mix of native and non-native grasslands.

The northern land is zoned as IN2 Light Industrial, while land south of Environa Drive is zoned B7 Business Park. However these zones are soon to be replaced with new employment zone descriptions as part of state-wide reforms to employment zones.

Future development (North Tralee Business Park/ Industry Park)

_ The North Tralee development is intended

Area _ 23ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

1.1. Creating regional jobs for NSW

1.6 Facilitating general / light industries + supply chains

2.2 Safe transport, separating freight, business + local users where possible

3.1. High-quality urban design outcomes at building, site, street and precinct scales

3.2. Contemporary design within a landscape setting creates identity

5.1. Protect sensitive receptors (e.g. residential areas and workplaces) from business impacts such as noise or odour

5.3. Consideration of nearby communities including development in proximity to the school

6.2. Identify and activate synergies between businesses + developers to maximise potential



(cont.)

Local Business + Industry Sub Precinct

to be constructed in three stages, with the first two stages located on the northern side of Envirova Drive. The development's road network and allotments have been planned, with allotments proposed from 2,008 sqm to 14,688 sqm.

The project will provide a mix of employment generating activities, including business and commercial uses, general and light industries, warehousing, bulky goods, food and drink premises, and neighbourhood shops. The project's draft design guidelines promote good quality building design features, landscaping, and street and boundary interfaces that respect the site's different interfaces.

Stage 1 – shares its western border with the Regional Sports Complex. This stage contains 19 allotments ranging in size from 2,031 sqm to 7,436 sqm and will be accessed by the development's internal ring road that connects to Envirova Drive via one access point.

Stage 2 – shares its eastern border with Jerrabomberra Creek. This stage contains 27 allotments ranging in size from 2,008 sqm to 6,341 sqm and is accessed by the same ring



Landscape drainage reserve with bioretention basin. Creates green gateway entry to development

Local street link to North Tralee development stage

NORTH TRALEE BUSINESS
PARK/INDUSTRY PARK

ENVIRONA DRIVE

NORTH TRALEE BUSINESS
PARK/INDUSTRY PARK

ENVIRONA BUSINESS /
INDUSTRY PARK

Link to View Street in Envirova technology sub precinct

Rectangular shaped allotments for local business and industry. Mix of sizes including sites >1ha

Landscaped interface to rural land



(cont.)

Local Business + Industry Sub Precinct

road as stage one.

- _ Stages 1 and 2 (north of Environa Drive) are envisaged by the developer to include both industrial and light industrial uses, with the light industrial allotments used as a buffer/ interface to industries in the centre of the stage.
- _ Stage 3 – is located south of Environa Drive. It is closer to two residential areas: Jerrabomberra residential area to the east (separated by Jerrabomberra Creek) and a dwelling on the neighbouring rural property to the east. This stage contains 14 allotments ranging in size from 2,131 sqm to 14,688 sqm and is accessed by a no through road connected to Environa Drive.
- _ There is an intent (new in this urban design study) to link the future Environa development area to Stage 3 of North Tralee Business Park via a road that connects to the no through road. This would better integrate Stage 3 with the larger future development area adjoining.
- _ Today, Stage 3 is zoned differently (B7 Business Park) to reduce the risk of noise or other impacts on nearby houses. However, the intended implementation of the new

Employment Zones could impact the intent of this zone and may require additional provisions or guidelines to protect future amenity.

- _ Accordingly this stage has been shown with a High Amenity Business Activity overlay in the Structure Plan.

Existing conditions (Environa Business / Industry Park)

- _ Environa Business / Industry Park is approx. 52ha of rural land located in the north east of the Environa estate, south of Environa Drive. The land is gently sloping and contains a dam in its southeast area. The land is used for grazing and contains low biodiversity constraints.
- _ The area was part of the historic (undeveloped) Environa residential subdivision, with a few structures from the subdivision including the bandstand, stone pillars and gateways are still present. These have historic value but are not protected. The area is also affected by the flightpath to Canberra Airport (ANEF 20).

Future development (Environa Business / Industry Park)

- _ Similar to North Tralee Business / Industry Park, this area is proposed for a wide range of local business and industry uses such as manufacturing, construction, automotive, self-storage, hardware, landscape supplies, and other uses.
- _ Larger allotments of 1ha to 2ha are envisaged for this land, making the area potentially more suited to warehousing and transport related industries as well.
- _ SGS in their economic analysis have commentated that South Jerrabomberra is the only area in the Queanbeyan region planned for future employment lands. As this Environa parcel of land won't be dedicated to the RJP's targeted industries, it will provide an important resource of local business and industry land for Queanbeyan.
- _ Environa Business / Industry Park is located slightly further away from Jerrabomberra's residential areas than the North Tralee Business Park.
- _ Environa Business / Industry Park will be accessed from a new street intersecting with

Environa Drive, as well as links to Environa View Technology / Innovation Park and North Tralee Business Park.

- _ Other proposed features of Environa View:
 - _ Approx. 39ha of gently sloping, north facing land.
 - _ The southern boundary has been located to avoid impacting on land with high biodiversity value.
 - _ The land's location between Environa View and North Tralee Business Park, provides supporting land for Environa View and supplement land for North Tralee Business Park.
 - _ Highly visible and strong address to Environa Drive, as well as providing additional connections to the neighbouring areas.
 - _ Lots will be typically 1 – 1.5 ha in size,
 - _ The lots will contain suitably sized driveways and paths to allow for B Double truck movements.
 - _ Site covers as low as 50% will provide room for hard-stand and allow materials to be stacked on site e.g. timber, construction material.

(cont.)

Local Business + Industry Sub Precinct

- _ Development near the perimeter of the growth areas should minimise indirect impacts on nearby woodland by buffering and using other methods to minimise edge effects.
- _ Opportunities to retain scattered paddock trees within streets, public spaces and developments across Environa View should also be explored, particularly if they are hollow-bearing trees.

Local Business + Industry Sub Precinct -

Environa Business / Industry Park

Desired business activities	Unsuitable activities	Key land uses
<div><ul style="list-style-type: none">_ Local manufacturing_ Construction_ Automotive_ Warehouses_ Transport depots_ Self-storage units_ Industrial and construction training services_ Hardware, landscape supplies etc._ Retail stores attached to manufacturer_ Take away food and drink</div>	<div><ul style="list-style-type: none">_ General Industries (noise and air impacts)_ Hazardous Industries_ Heavy Industries_ Child care_ Community uses_ Shops_ Hospital_ Schools</div>	<div><ul style="list-style-type: none">_ Light industry_ Business premises_ Industrial training facilities_ Industrial retail outlets_ Self-storage units_ Transport depot_ Warehouse or distribution centre_ Depots_ Hardware and building supplies_ Landscaping material supplies_ Timber yard_ Take-away food & drink premises_ Truck depot_ Vehicle body repair station_ Vehicle repair station</div>



Well landscaped industrial and commercial development including WSUD (Jensen PLUS)



Contemporary, large and small industry buildings with simple lines and clear entries (Jensen PLUS)



8.10 Local Activity Centres Sub Precinct

Two Local Activity centres in the design provide shopping, entertainment, wellbeing and community services to support business and residential communities.



Overview

Studies have found that creating successful Innovation Districts can be partly attributed to the level of amenity and services provided within and around these areas. These places should incorporate high quality and sustainable design features, be easily accessible by active transport, provide opportunities for recreation and lifestyle pursuits, and most importantly, provide places where people can meet and cultivate ideas.

The RJP also needs to provide for the day to day needs and services of residents, employees and visitors.

Two local activity centres areas are included in the design. In addition, other activity hubs for business collaboration are also identified.

Existing conditions (North Poplars)

The North Poplars activity centre is located on the north side of Tomsitt Drive, close to Jerrabomberra's residential area. The first stage of centre development has been completed, with the construction of an ALDI supermarket, fast food restaurants and a service station. These are accessible from Ferdinand Lane, a new access street that connects to Tomsitt Drive and to Environa Drive at a new signalised four-way intersection.

The land uses here are constrained by aircraft noise, with part of the land designated under the ANEF 25 contour, with the rest of the centre located under the ANEF 20 contour. The location of these contours limits the development of sensitive land uses like housing and schools.

Undeveloped portions of the centre include native grasslands with high biodiversity values. As part of the planning process to date, land to the west and north of the hub is part of an established biobanking agreement.

Area _ 13ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

3.1. High-quality urban design outcomes at building, site, street and precinct scales

3.3 Integrate with specialised facilities including regional Sports Hub

5.3. Consideration of nearby communities including development in proximity to the school

6.2. Identify and activate synergies between businesses + developers to maximise potential

6.3. Review zoning around Poplars North, South Jerrabomberra urban buffer etc. to maintain an up-to-date urban design



(cont.)

Local Activity Centres Sub Precinct

Future development (North Poplars)

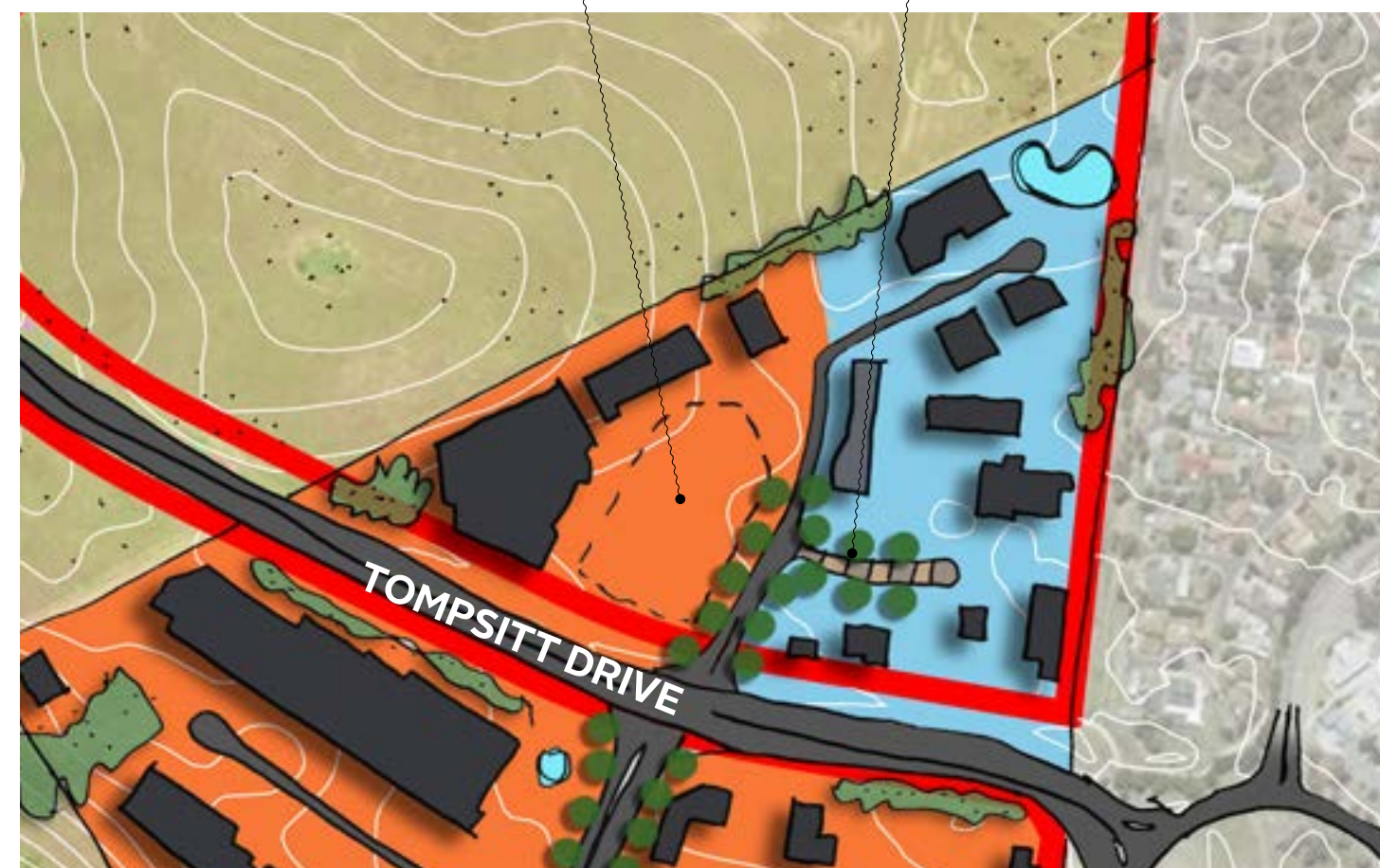
- _ Approx 8.35 ha of land remains undeveloped at North Poplars. This is zoned B7 Business Park, similar to land at South Poplars on the other side of Tomsitt Drive. However the B7 zone is being discontinued and a new zone is sought.
- _ At the same time, the Poplars developers have proposed to change the planning intent for the balance of the North Poplars centre to create a larger retail, entertainment and community precinct.
- _ While this would reduce the land area available to high technology industries, the North Poplars area is smaller and less well integrated to other business areas in the Precinct. The potential zoning of Environa lands for technology businesses also introduces substantial land supply elsewhere within the Precinct. At the same time the potential increase in retail space at North Poplars would have an impact on other centres elsewhere in Queanbeyan.
- _ Proposed land uses in the expanded local activity centre could include a mixture of commercial, retail and community uses, including a community centre, licences venue,

eateries, shops, offices and health consulting rooms. The high amenity area would also include open spaces and a pond to improve visitor experiences.

- _ Residential accommodation including short-term accommodation and aged accommodation is not appropriate due to the aircraft noise constraints that exist today and may increase in the future.
- _ An additional access from Tomsitt Drive may be required, either for loading and emergency access, or for general use.
- _ Buildings could be one or more storeys, and serviced by integrated car parking facilities.
- _ Careful attention should be paid to urban design treatments including footpaths, building entries, public spaces, relationship between buildings and streets, and landscape.
- _ Creating an attractive, accessible and walkable local centre will be important not just to meet the needs of nearby residents who shop and recreate at the centre, but to make the centre an integral part of the innovation precinct. The barrier effect of Tomsitt Drive (a four lane roadway at this location) will make this challenging to achieve and may also support the development of cafés and hubs within Poplars south itself.

Future development
(Poplars Innovation
Sub Precinct)

Stage 1 (constructed) including
supermarket, fast food and service
station



Landscaped street at Googong shopping and business centre, providing a well integrated mixed-use centre near residents (Jensen PLUS)



Street-facing (and car park facing) retail-commercial building (Jensen PLUS)

(cont.)

Local Activity Centres Sub Precinct

Existing conditions (Environa Activity Hub)

- _ The proposed Environa local activity hub is located on an approx. 2.1ha parcel of land that is part of the Environa estate, but has been separated from the main Environa development lands by the recent construction of Environa Drive.
- _ The land adjoins the proposed Regional Sports Complex, and is a short distance from the Hume industrial area across the rail corridor to the west. A temporary access road linking Hume to Environa Drive has been used to support construction.
- _ The site is relatively flat and is assumed, pre-Environa Drive, to have been grazed rural land.

Future development (Environa Activity Hub)

- _ The proximity of this location to the Regional Sports Complex, and the presence of more resident-focussed retail centres at North Poplars and South Jerrabomberra, suggests the hub is suited for small scale businesses such as gyms, medical centre, allied health (e.g. physio, massage), yoga or dance studios, nutrition shops, office and business premises.
- _ At the same time the proximity to the Environa business areas will support some cafés and takeaway food and drink within walking distance of offices and other workplaces.



Mixed use commercial architecture need not be boring (Jensen PLUS)

- _ A high quality public realm including a new local main street within the hub and potentially connecting directly to the Regional Sports Park and Environa Drive is encouraged. Creating places for people to meet and spend time is the objective.
- _ Buildings could be one, two or three storeys.
- _ The land on the north of Environa Drive is also proposed for tech-precinct uses. A strong built form presence to Environa Drive and Link Road will create a new gateway into the Precinct from the north, and link across to Environa View. Development should not turn its back onto surrounding roads.



High quality public realm including seating, paving, landscaping, lighting, in shopping street (Jensen PLUS)

Tech-business buildings on prominent corner site. Opportunity for distinctive architecture. Building to positively address all street frontages. Awnings to footpaths

Local main street and secondary access to Regional Sports Park distinctive architecture. Building to positively address all street frontages. Awnings to footpaths



Integrated car parking for all land uses in hub

New intersection with safe pedestrian crossing linking centre to Environa business area



(cont.)

Local Activity Centres Sub Precinct



Existing conditions (South Jerrabomberra - retail + community)

- _ The parcel of land is part of the South Jerrabomberra residential development. The land parcel is part of a designated land buffer to provide separation between the residential area and Hume industrial area. This buffer prevents the development of certain land uses including land uses that allow for sensitive receptors.
- _ The 3.38ha land is relatively flat. Construction of the surrounding residential area has commenced, including its road network.

Future development (South Jerrabomberra - retail + community)

- _ The South Jerrabomberra residential area is the only residential development in the RJP. The site's master plan has included recreational areas, water bodies, open spaces, a village centre and town park with playground, green area, learn-to-ride track, community centre. These facilities are located within the buffer that runs along the Hume Industrial area and will provide the residential area with amenity, provide a visual buffer to Hume and reduce the industrial impacts on the sensitive receptors.

- _ The proposed Retail and Community Hub is designated in the master plan as the 'Future Village Centre'. The land parcel is currently zoned as a Neighbourhood Centre, and can provide the South Jerrabomberra community with day-to-day needs including eateries, shops and businesses e.g. hairdressers. This land will provide an important service to the area, especially to people who rely on active and public transportation, as the closet shopping centres are approximately 4km away (Chisholm, ACT and Jerrabomberra, NSW).
- _ Like the Environa centre, development should avoid turning its back onto surrounding roads. An integrated and urban centre with good street connections, and hard and soft landscaped spaces framed by buildings would help create a vibrant place.

(cont.)

Local Activity Centres Sub Precinct

Local Activity Centres Sub Precinct -

Poplars North – Retail + entertainment focus

Desired business activities	Unsuitable activities	Key land uses
<div><div>– Hotel / club / licensed venue (no accommodation)</div><div>– Community centre</div><div>– Supermarket</div><div>– Cafés, bars and restaurants</div><div>– Speciality retail (e.g. post office, hairdressers, banks, dry cleaners, pharmacy)</div><div>– Gym/indoor recreation</div><div>– Professional Offices</div><div>– Pub with micro-brewery</div><div>– Shops</div><div>– Service station</div><div>– Commercial offices</div><div>– Health and wellbeing facilities</div></div>	<div><div>– Residential</div><div>– Short-term accommodation</div><div>– Child care</div><div>– School</div><div>– Uni/TAFE,</div><div>– Motel</div><div>– Aged care</div><div>– (All due to industry proximity and ANEF)</div></div>	<div><div>– Business premise</div><div>– Community facilities</div><div>– Food and drink premises</div><div>– Health consulting rooms</div><div>– Medical centres</div><div>– Neighbourhood shops</div><div>– Places of worship</div><div>– Shop</div><div>– Recreation facilities (indoor)</div><div>– Service station</div><div>– Office premises</div><div>– Artisan food and drink industry</div></div>

Local Activity Centres Sub Precinct -

South Jerrabomberra – Retail + community focus

Desired business activities	Unsuitable activities	Key land uses
<div><div>– Cafés, bars and restaurants</div><div>– Speciality retail (e.g. post office, hairdressers, banks, dry cleaners, pharmacy)</div><div>– Community centre</div></div>	<div><div>– Residential</div><div>– Short-term accommodation</div><div>– Child care</div><div>– School</div><div>– Uni/TAFE,</div><div>– Motel</div><div>– Aged care</div><div>– (All due to industry proximity and ANEF)</div></div>	<div><div>– Community facilities</div><div>– Food and drink premises</div><div>– Neighbourhood shops</div><div>– Business premises</div></div>



8.11 Open Space Sub Precinct

The Open Space Sub Precinct includes active recreation and sports parks, land for passive recreation, revegetation and stormwater management.



Overview

The Precinct contains two significant open space areas for community recreation. These are: Council's proposed Regional Sports Complex, and a corridor of open space at South Jerrabomberra separating the Residential Sub Precinct from the nearby Hume industrial area.

The inclusion of open space provides the community and workers with active lifestyle opportunities that can benefit health and wellbeing. Open spaces also contribute to the local character of the area, providing visual amenity. These facilities can also help create personal connections through the establishment of sporting clubs etc.

Existing conditions (South Jerrabomberra open space corridor)

A 180 to 205m wide corridor separates South Jerrabomberra's residential zoned land from the Hume industry area, extending parallel to the ACT/NSW border. Most of this corridor has been zoned for open space uses (RE2 Private Recreation), with two parcels of approx. 4ha each proposed for other (non-residential) land uses.

The majority of the land is undeveloped (some including native grasslands), or grazing land and a scattering of trees. There are a few water bodies located throughout the vegetated buffer, including Dogtrap Gully with an attached small reservoir.

In the north, Environa Drive has recently been constructed across part of the buffer land, as well as three new stormwater detention basins servicing the residential development. Temporary hardstand areas have been constructed on part of the land to support the construction of the South Jerrabomberra residential area.

Area _ 101ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

2.2 Safe transport, separating freight, business + local users where possible

2.5. Plan future public + active transport Links

3.1. High-quality urban design outcomes at building, site, street and precinct scales

3.2. Contemporary design within a landscape setting creates identity

5.1. Protect sensitive receptors (e.g. residential areas, schools and workplaces) from business impacts such as noise or odour

5.3. Consideration of nearby communities including development in proximity to the school

6.1. Collaborate with all landowners, agencies + ACT to envision, plan and develop precinct

(cont.)

Open Space Sub Precinct

Future development (South Jerrabomberra open space corridor)

- _ Areas of the corridor have been incorporated into the South Jerrabomberra's residential development master plan. These areas include a town park, and stormwater detention areas.
- _ A town park concept design has a circular village green in the park's centre, with pathways and terraces radiating outwards. Terraces are located on the south side to utilise the site's natural slope and create an amphitheatre. The high amenity park contains play equipment, kids splash park, outdoor gym, BBQ facilities, public art, a Learn-to-Ride facility and a community centre with on-site parking. In some ways the design is evocative of the nearby historic Envirova development with its circular layout.
- _ The proposed use of remaining areas of open space for active or passive recreation activities has not been fully detailed at this stage. However, options such as outdoor recreation spaces like tennis / basketball courts, walking and cycling paths, seating and landscaped areas are some ideas. Indoor recreation uses could also be developed, and even some non-recreation uses such as solar PV installations could be contemplated.
- _ The planting of substantial additional trees and shrub vegetation along this corridor is proposed to provide the area with more visual amenity and help reduce the impacts of Hume's industry on the residential community. Vegetation and water bodies can also help reduce the impacts of increased temperatures due to urban heat islands and climate change (DSquared 2023).
- _ The open space corridor and disused rail corridor adjacent to it provide a major opportunity for a new walking and cycling route to connect the Precinct, and beyond the Precinct to other destinations. For example an off road path linking the Residential Sub Precinct with the Regional Sports Park can be provided through this corridor.



(cont.)
Open Space Sub Precinct

Existing conditions (Regional Sports Complex)

- _ The complex is located north of Environa Drive and south of Jerrabomberra Creek. This site included a historic Environa sports field.
- _ The land is relatively flat, with a study from Brown Consulting (2010) finding the land can be susceptible to flooding. The site’s western edge contains a scattering of native grasslands and grassy woodlands. Construction of the complex has begun, with land starting to be cleared and earthworks commencing.

Future development (Regional Sports Complex)

- _ The Regional Sports Complex will be accessed off Environa Drive and include car parking through its central axis, bus parking on its western side and bicycle parking scattered throughout the facility.
- _ The complex will be a multi-disciplinary facility containing at least four outdoor soccer fields and two hockey fields overlooked by pavilions. An indoor aquatic centre is planned, as well as an indoor seated basketball stadium. Only two of the facilities six pitches will be natural turf. There are currently studies being performed to determine if the area’s groundwater will be able to irrigate this facility.
- _ This urban design study proposes stronger linkages between the Regional Sports Park and the Environa local centre adjoining it to the west, with a new local street connection into the heart of this health and wellbeing focussed hub.

Proposed Regional Sports Park
with outdoor sports field and indoor
recreation (by Queanbeyan-Palerang
Regional Council)



Open Space Sub Precinct - Regional Sports Park

Desired business activities	Unsuitable activities	Key land uses
<div><div>_ Parks</div><div>_ Sporting fields</div><div>_ Indoor Recreation</div></div>	<div><div>_ Education establishments</div><div>_ Accommodation</div><div>_ Offices</div><div>_ Industrial</div><div>_ Storage</div><div>_ Eateries</div><div>_ Shops</div><div>_ Retail</div></div>	<div><div>_ Community facilities</div><div>_ Recreation areas</div><div>_ Recreation facilities (indoor)</div><div>_ Recreation facilities (outdoor)</div><div>_ Environmental facilities</div></div>



8.12 Rural Landscape Sub Precinct

The Rural Landscape Sub Precinct applies to the balance of ‘unplanned’ lands not proposed for urban development.



Overview

This Sub Precinct is part of the Environa estate lands in the centre of the Regional Job Precinct study area.

Based on this urban design study's investigation, not all of the unplanned areas are suitable for development as business or industry land, for example due to steep topography or high biodiversity values.

The Rural Landscape Sub Precinct applies to the balance of ‘unplanned’ lands not proposed for urban development.

Existing conditions

Land in this Sub Precinct is held in two land ownerships. In the east, two parcels of land (43.8 ha total) adjoining Jerrabomberra Creek is also close to Jerrabomberra's residential area. This land is rural in nature, with a residential dwelling and supporting structures located central to the property, which

is accessed from Jerrabomberra's suburbs (and not from Environa Drive) via a bridge over Jerrabomberra Creek. The land is mostly cleared of native vegetation, with some Box Gum Woodland in the south where the land is sloping, and denser vegetation alongside Jerrabomberra Creek. Some native grasslands are also present.

The second ownership in this Sub Precinct is part of the Environa property, a large part of which is proposed to be developed in the Space, Defence and Technology Sub Precinct, and Local Business and Industry Sub Precinct. However the southern half of the property is unsuitable for this type of development, mainly due to its elevation and the large area of protected Box Gum Woodland.

The balance Environa land is rural in nature. Terrain is elevated and steep in places. The land is partly used for grazing, and also includes a prominent central homestead on a high point overlooking the wider area. A new access gate and driveway has recently been constructed from Environa Drive in the west.

Area _ 26oha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

4.2 Green grid to protect, enhance + connect biodiversity and riparian values

4.6. Celebrate cultural heritage

5.1. Protect sensitive receptors (e.g. residential areas, schools and workplaces) from business impacts such as noise or odour

5.3. Consideration of nearby communities including development in proximity to the school

(cont.)
Rural Landscape Sub Precinct

Land in the Rural Landscape Sub Precinct is affected by aircraft noise constraints (mapped as ANEF contours) which has historically prevented residential development on the lands, and continues to constrain residential land uses here.

The area contains structures and tree plantings from the Environa historic residential development proposal, as well as Aboriginal artefacts.

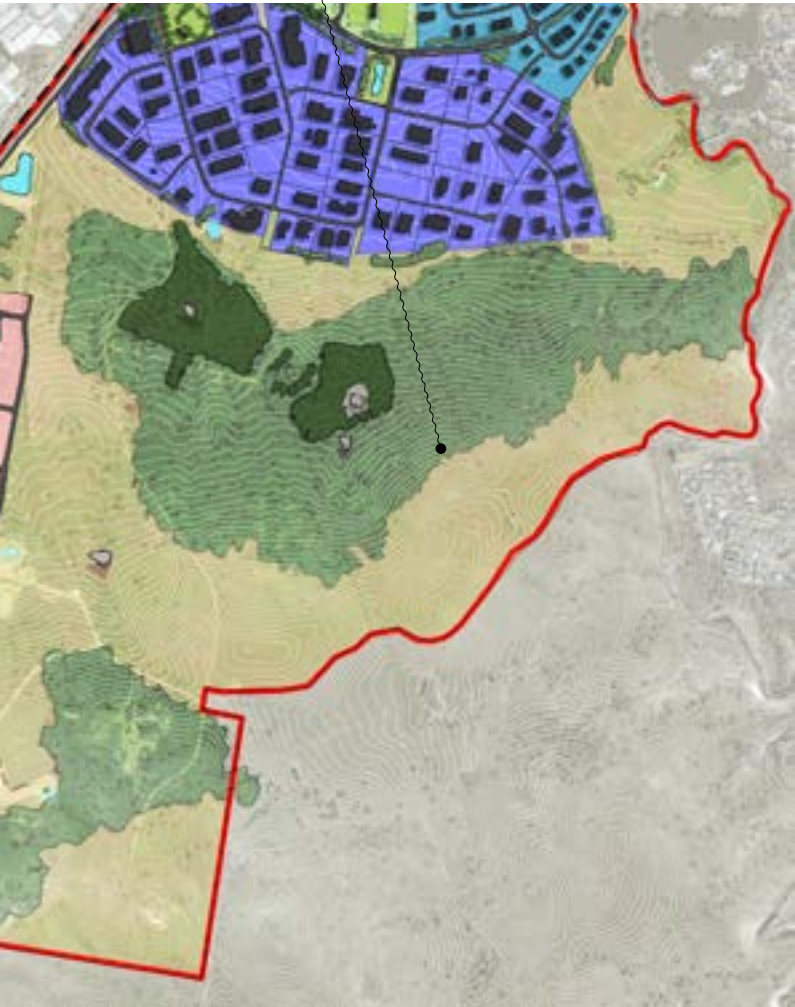
Future development

- Land in the Rural Landscape Sub Precinct is proposed to form a rural landscape buffer, separating business and industry areas from residential areas.
- The intent is also to maintain a rural landscape character and rural landscape views in this part of the Precinct, to minimise the visual and character impacts of the Precinct development generally.
- This is proposed to be achieved by maintaining some rural land uses in the Sub Precinct (for example livestock grazing), and also by maintaining, preserving and

enhancing environmental values. Specifically, the high biodiversity vegetation Box Gum Woodland on the upper slopes of the Sub Precinct should be protected and enhanced. This area is shown on the Structure Plan in a Green Infrastructure Overlay, indicating that woodland vegetation should be protected.

- The two dwellings in the Sub Precinct are assumed to continue to be used as residences. Industry planning indicates that noise, air and odour impacts can be managed in a way that achieves acceptable residential amenity at these dwellings. However, new and additional residential dwellings and subdivisions within the Sub Precinct are not proposed, to prevent encroachment of additional sensitive land uses close to business and industry areas.
- A potential and minor exception to this strategy could be the inclusion of small-scale tourism accommodation and attractions within this Sub Precinct, taking advantage of the rural landscape setting and helping to provide a viable ongoing income and management of the land.

Much of the rural balance land at Environa is characterised by Box Gum Woodland, and other high value biodiversity values. The woodlands and biodiversity area should be protected and enhanced.



- The Precinct’s topography creates risks that noisy or polluting industries could impact the Jerrabomberra residential area. The Rural Landscape Sub Precinct will reduce this risk by acting as a substantial buffer (up to ~760m) to prevent noise and other impacts from the Space, Defence and Technology Sub Precinct, and Local Business and Industry Sub Precinct, impacting on residential areas.
- This Sub Precinct contributes to wider environmental resources and habitat corridors, and could also provide resources for the location of environmental offsets such as stewardship sites, to compensate for the clearing of protected vegetation elsewhere in the Precinct.

Rural Landscape Sub Precinct -

Desired business activities	Unsuitable activities	Key land uses
<ul style="list-style-type: none">– Dwelling (existing only)– Grazing– Eco-tourism	<ul style="list-style-type: none">– New dwellings– Commercial– Industrial– Businesses– Education	<ul style="list-style-type: none">– Farm buildings– Dwelling houses– Water supply systems– Electricity generating works



8.13 Conservation Sub Precinct

The Conservation Sub Precinct protects the region's protected grassland and woodland vegetation, and the fauna that rely on this habitat.



Overview

South Jerrabomberra is known to contain extensive areas of high biodiversity grasslands and woodlands, supporting a number of protected species including the Golden Sun Moth.

Large areas of land in north of the Precinct (adjacent to the Poplars development) and in the south (near South Jerrabomberra) have previously been zoned for Conservation purposes, both to project biodiversity values and to provide offset areas for these developments.

Together with other natural areas such as Jerrabomberra Creek, the Precinct's conservation areas are creating a 'green grid' of connected environmental areas and habitat corridors.

One additional land parcel, north of Jerrabomberra Creek adjacent to Territory Parade, is proposed to be included in the Conservation Sub Precinct.

Biodiversity certification agreement for North Poplars

A Biodiversity Certification to The Poplars, Jerrabomberra, under Part 8 of the Biodiversity Conservation Act 2016 (NSW), was approved on 31 January 2024.

Biodiversity certification information should be included in planning certificates issued to notify interested stakeholders about the land's development potential. Under this certificate, the Landowner must ensure that there is no disturbance of the Avoided Land, including the removal of any Native Vegetation, fallen timber or habitat, or any earthworks, from the Avoided Land.

Area _ 239ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

4.2 Green grid to protect, enhance + connect biodiversity and riparian values

4.6. Celebrate cultural heritage



Part of North Poplars conservation area (Jensen PLUS)

(cont.)

Conservation Sub Precinct

Existing conditions

Land in the Conservation Sub Precinct is undeveloped for agricultural or urban purposes. Previous biodiversity surveys as well as new studies for this urban design study have documented the presence of high value and protected species across large parts of the Sub Precinct.

To the north, native grassland habitats are known to support threatened fauna species including the Golden Sun Moth and Pink-tailed Worm Lizard. In the south a mix of native grasslands and Box Gum Woodland is found.

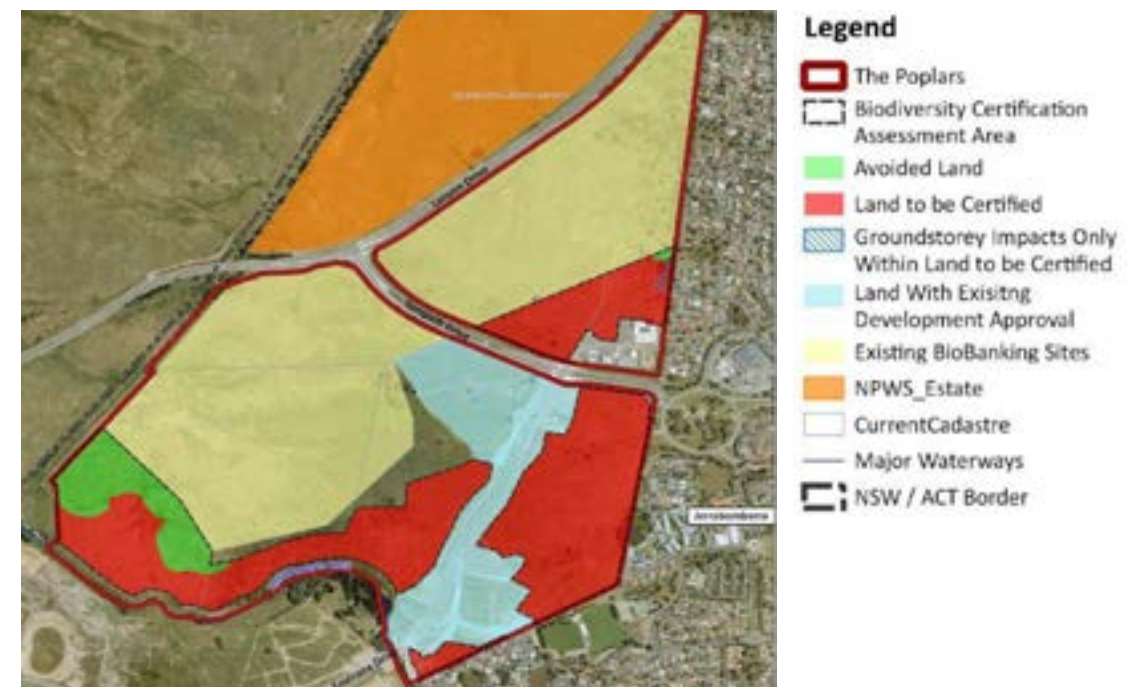
The parcel proposed to be zoned for conservation purposes is located close to Jerrabomberra Creek and Territory Parade. It has been investigated for the possible use as a road/rail intermodal transport terminal, but the demand and viability for such a facility has been shown to be lacking. Located north of Jerrabomberra Creek, with poor access and separated from other industry areas and infrastructure, an isolated industry development at this location would

be inconsistent with the integrated and technology-focussed aims of the Precinct.

Further, this site is partly sloping and susceptible to some flooding (Brown Consulting 2010). The land parcel is also classified as having high biodiversity value. This is due to the site being home to two threatened fauna species: the Golden Sun Moth and Pink-tailed Worm Lizard and also containing Kangaroo Grass – Redleg Grass Forb-rich Temperate Tussock Grassland and native grasslands.

Future development

- Land in this Sub Precinct is to be protected from urban development, instead being managed and enhanced to support protected species of flora and fauna. The establishment of offset agreements on parts of the Sub Precinct is envisaged, to compensate for clearing in other areas of the Precinct.
- Low impact recreation such a walking trails and other infrastructure may be developed over time.
- Location of roads and utilities infrastructure in this Sub Precinct should be avoided.



Map of the Avoided Land (Biodiversity Certification Agreement, 2024)



8.14 Education Sub Precinct

The Education Sub Precinct is 5ha and is created to accommodate the new Year 7-12 High School for South Jerrabomberra.



Overview

The recently built High School is the only educational establishment proposed within the RJP. The school provides a new secondary school to the surrounding community and brings many new people into the Precinct. The school also provide vocational training courses to the community.

The secondary school site is located approximately 600m west from an established primary school - Jerrabomberra Public School.

Existing conditions

The recently built high school's western boundary runs along Environa Drive. A northern cul-de-sac street frontage has been constructed, the Lexcen Ave.

The land has a high point located in the site's approximate centre, with the land slightly sloping from this point to the south and north, with steeper slopes located on the site's eastern face.

The site contains flora and fauna of high biodiversity value including the Golden Sun Moth and Yellow Box – Blakely's Red Gum Woodland.

New development

- _ The high school is accessed by students via a bus way that runs off Environa Drive, while the facilities employees and visitors access the site's car park via a street on the northern side of the site, that links to Environa Drive.
- _ The site's topography result in the proposed school varying in height from one to three stories. Buildings are orientated to accommodate the prevailing summer afternoon winds, and winter and summer solar angles. Currently has a beatifull outlook to the hills.
- _ The school includes workshops, food tech lab, science labs, and an indoor full size basketball courts that can also be converted into netball court, volley court, and badminton. On the outside accommodate outdoor play areas, two outdoor basketball courts, and a hub about 100 handball court squares. The eastern boundary includes an access path that connects to an existing walking and cycling trail.

Area _ 5ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

3.1. High-quality urban design outcomes at building, site, street and precinct scales

3.2. Contemporary design within a landscape setting creates identity





8.15 Residential Sub Precinct

The Residential Sub Precinct has been previously planned to accommodate 1,500 new homes at South Jerrabomberra, Forrest Morrison & Walsh in the Precinct's south.



Overview

The Residential Sub Precinct is located in the south-west of the Precinct. It is approximately 113ha in size and was zoned R2 Low Density Residential some years ago. The Sub Precinct is located adjacent to the Hume industrial area (ACT) and just outside Canberra Airport's ANEF 20 contour.

Existing conditions

Development of the South Jerrabomberra residential development has begun. The works to date include the construction of the development's initial street network and some dwellings have been completed. The opening of Environa Drive late in 2021 provided formal road access to the development area for the first time. Until then a temporary access road linking to Hume across the (closed) railway corridor was used.

Works on the first land releases is well developed, which has included the construction of majority of the supporting road network and several dwellings. The lot sizes range in size from 156 to 690 sqm. The first stage also includes a park / open space area on the corner of Environa Drive and Oxalis Crescent, and stormwater detention basins.

Future development

- _ Current planning for the Residential Sub Precinct envisages the development of zoned residential land to a maximum 1,500 dwellings. The dwellings will be constructed over three land parcels: 750 dwellings in South Jerrabomberra, 500 in Forrest Morrison and 250 in Walsh (South Jerrabomberra Local Infrastructure Contributions Plan, 2018).
- _ These dwellings are planned to be constructed over about twenty years and via two main land releases, with the construction of the first land release divided into three smaller stages. Access and infrastructure is provided from the north via Environa Drive.
- _ New pump stations and water reservoirs around the development have also been constructed.

Area _ 113ha

(Areas approximate and may be inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)

Guiding principles that this sub precinct addresses

- 2.2 Safe transport, separating freight, business + local users where possible**
- 2.5. Plan future public + active transport Links**
- 3.1. High-quality urban design outcomes at building, site, street and precinct scales**
- 3.2. Contemporary design within a landscape setting creates identity**
- 5.1. Protect sensitive receptors (e.g. residential areas, schools and workplaces) from business impacts such as noise or odour**
- 5.3. Consideration of nearby communities including development in proximity to the school**
- 6.1. Collaborate with all landowners, agencies + ACT to envision, plan and develop precinct**



(cont.)

Residential Sub Precinct

_ The Residential Sub Precinct is zoned R2 Low Density Residential and no zone changes are proposed. However there are some smaller and narrower allotments located throughout the first stages of the development to provide for greater housing choice.

_ During the zoning process part of the land around the residential areas was zoned for conservation, recreation and local centre uses. The surrounding zoning reflects constraints on development, namely a combination of high biodiversity values, proximity to the Canberra Airports ANEF 20 contour, and a buffer to the Hume industrial area to reduce impacts.

_ In the south of the Sub Precinct, Dog-trap Gully and connecting water courses cross the area, with the site's overall landform sloping to the north-west.

_ Over the next 20 years the residential area is expected to continue to grow from north to south towards to the Precinct's southern boundary. Its progression will also include the development of a town park (with amenities), local mixed use centre, and other open spaces. The housing stock will provide a range

of higher density housing, flats, affordable housing, and traditional residential lots.

_ Stage 2 will construct a higher portion of narrower lots, with frontages as small as 4.7m. These lots will range in size from 133 to 320 sqm. Stage 3 – lot sizes will typically support family sized homes, range from 365 to 508 sqm. At the time of writing this report, the layout and design of the area's future stages was not available on the developer's website.

_ Given the emerging dwelling types and allotment sizes, it is possible that the R2 zoned land may be able to accommodate additional dwellings over and above the yield currently planned for. This could only be achieved should one or more additional road accesses to the Precinct be provided, as well as supporting utilities infrastructure.

_ Given that the urban design study proposes a new road access – to Monaro Highway at Isabella Drive – it is plausible (but not certain) that additional road and infrastructure capacity could be available in the future. It is acknowledged that the proposed future road connections to the ACT raise a number of funding and cross-jurisdictional planning challenges, and may influence the timeframes

set out in the staging proposed under this urban design study.

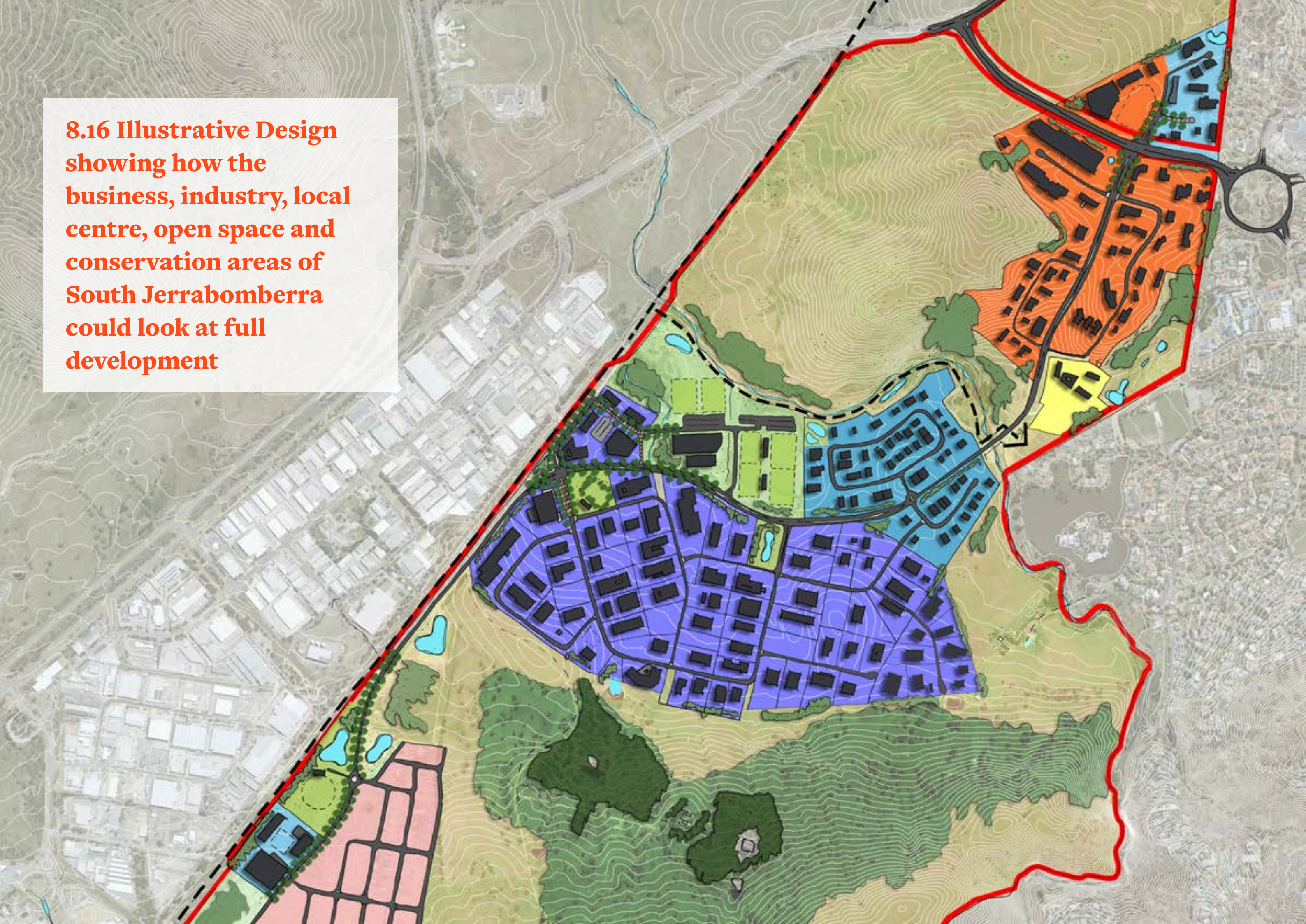
_ Finally, strategic road connections to the east to link Monaro Highway to Googong have long been investigated. A viable road alignment has not been identified although planning continues. It is possible that a strategic east-west road from Googong to Monaro Highway at Isabella Drive could pass through the southern extent of the Residential Sub Precinct. Appropriate transport corridors and land use interfaces should be planned for in this sub-precinct when/if an alignment is identified.



South Jerrabomberra Residential Area (Village Building Company, 2022)



8.16 Illustrative Design showing how the business, industry, local centre, open space and conservation areas of South Jerrabomberra could look at full development





9. Activation + Implementation of the Precinct

9.1 Proposed rezoning

9.2 Staging

9.3 Infrastructure to enable future rezoning

9.4 Urban design + placemaking for innovative industries

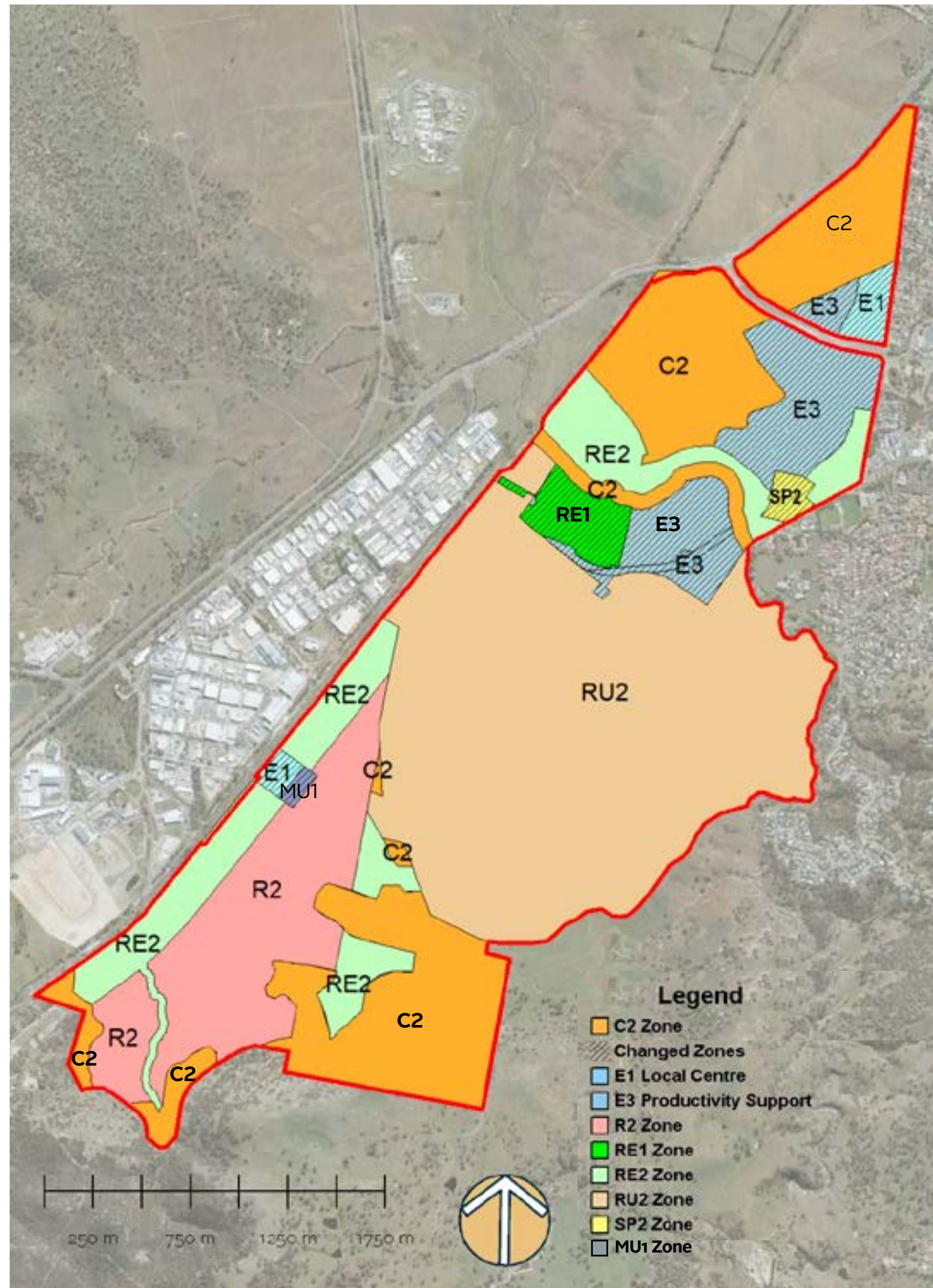
9.5 Additional urban design and placemaking considerations

9.6 Non-physical placemaking strategies

9.7 Planning Implementation Process Options

9.1 Future rezoning

Staged land zoning will be a key step in the implementation of the urban design strategy. However, it is noted that rezoning additional land for development will not be possible until additional road connections (including to ACT) are agreed, planned and funded, as well as other enabling infrastructure.



Notes

- _ Conservation zones have recently changed labelling from a "E" zone to a "C" zone.
- _ State-wide changes to employment zones are being introduced, resulting in the discontinuing of zones like B7 Business Park and IN2 Light Industry.
- _ Local centre zoning options have also changed.
- _ This is a preliminary recommendation for zoning and is subject to further engagement with Council and stakeholders.
- _ Additional investigation of the potential impacts of expanding retailing activities at South Jerrabomberra on the Queanbeyan CBD are likely to be required as part of any rezoning planning proposal.
- _ The RU2 zone area has been included in the Queanbeyan-Palerang LEP 2022.

Infrastructure requirements to support future rezoning

- _ It is noted that rezoning additional land for development will not be possible until additional road connections (including to ACT) are agreed, planned and funded, as well as other enabling infrastructure.



Future rezoning (cont.)

E3 – Productivity Support

- _ To provide for local business and light industry uses, land at North Tralee and at Envrona is proposed to be zoned E3 – Productivity Support.
- _ This wide-ranging zone allows for traditional light industry uses (and also some uses such as stand-alone offices that may not be best suited in an industry area, but are allowable).
- _ This zone will provide the RJP with ‘typical’ industrial, business, and commercial land uses for the local area and the Queanbeyan region.
- _ This zone prohibits the implementation of general industries (and heavy industries), that could significantly impact surrounding residential area and workplaces.

E1 – Local Centre

- _ The two local centre areas already zoned at South Jerrabomberra and North Poplars - have a mix of B1 – Neighbourhood Centre and B4 – Mixed Use zoning. These zones are being replaced as part of the state-wide employment zone reforms.
- _ The proposed zoning would change each local centre zone to E1 – Local Centre. The new centre at Envrona would also be an E1 zone.

- _ As described in the Structure Plan chapter, each local centre has a different strategic intent and desired business mix. This should be further developed and integrated into the statutory planning for the Precinct.

RU2 – Rural Landscape

- _ The Rural Landscape Buffer Sub Precinct is zoned RU2 – Rural Landscape.
- _ While parts of the land in this Precinct has high value vegetation on it - and the protection and enhancement of this vegetation is strongly intended by this urban design study - other parts of the land are less environmentally sensitive.
- _ Both parcels of land proposed for this zone have long hosted a house and outbuildings, and this limited residential land use is expected to continue. The land is assumed to remain in private ownership.
- _ Other rural activities such as grazing and potentially other businesses are also encouraged, to ensure sustainable land management over time. The zone allows for existing dwellings to install supporting structures e.g. farm buildings if desired.
- _ At the same time, several constraints prevent

more substantial development. Aside from biodiversity, the land's steep slopes, visually prominent hilltops, airport flightpath and noise effects will continue to prevent urban development.

- _ The new business and industry lands adjoining will do the same. Encroachment on business areas from future residential development must be avoided.

SP2 – Infrastructure

- _ The current zoning for the proposed high school is a combination of RE2 – Private Recreation and B7 – Business Park. These zones do not reflect the use of a high school, therefore, by rezoning the area to SP2 – Infrastructure, will create a better fit to the land's intended use.

RE1 Public Recreation and RE2 – Private Recreation

- _ The sub precinct includes the South Jerrabomberra open space corridor (already zoned RE2) and Regional Sports Complex which is zoned RU2 – Rural Landscape and In2 – Light Industrial.
- _ Rezoning the Regional Sports Complex to RE1 fits the proposed land use and ownership.

- _ Future rezoning of additional open space areas to RE1 Public Recreation can also be anticipated.

R2 – Low density Residential

- _ No change to existing zoning.

C2 – Environmental Conservation

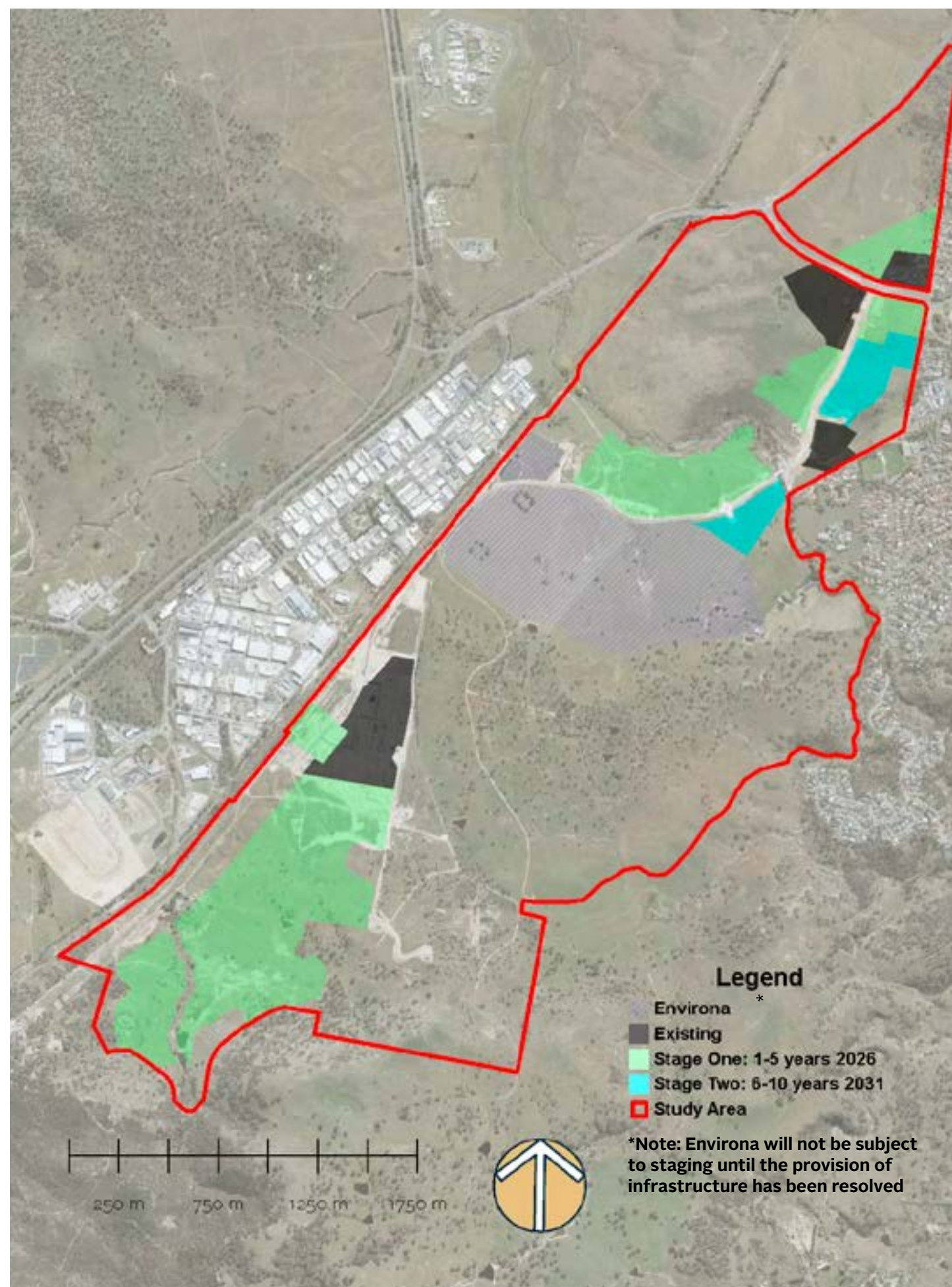
- _ Most land in the Conservation Sub Precinct is already zoned C2.
- _ One additional parcel is land north of Jerrabomberra Creek currently zoned RE2 – Private Recreation.
- _ The land parcel is classified as having high biodiversity values, due to the type of flora and fauna located on the site.
- _ Given the location adjacent to the newly protected Jerrabomberra grasslands reserve, and the intent of the C2 zone to protect land with high conservation values by preventing development on the site, rezoning the area C2 is appropriate.
- _ Two isolated RU2 land parcels are located south of Jerrabomberra Creek and north of the North Tralee Business Park.
- _ Given their isolated location and potential to be flooded, we recommend the area be rezoned to C2.



9.2 Staging

Full development of the South Jerrabomberra Regional Job Precinct has indicatively been shown to be staged over 10 years.

Sections 8.3 and 8.6 of the report identify additional services and infrastructure required to support the RJP's full development.





(cont.)

Indicative development sequence in five year increments. Assumed that existing road and utilities infrastructure can service first 10 years of development, followed by a new phase of infrastructure investment to facilitate new land development at Environa.



Existing

- Local Centre North Poplars sub precinct
- South Poplars stage 1 tech-businesses (Poplars Innovation Precinct development)
- High School
- South Jerrabomberra residential (subdivision already complete, housing continues to develop)



Stage One: 1-5 years (2021 to 2026)

- Full development of North Poplars retail and services hub
- South Poplars full development (Stage 3, Poplars Innovation Precinct development)
- North Tralee business and industry Stage 1
- Regional Sports Park
- South Jerrabomberra local centre
- South Jerrabomberra residential full development



Stage Two: 6-10 years (to 2031)

- North Tralee business and industry Stage 2
- South Poplars stage 2 tech-businesses (Poplars Innovation Precinct development)



Enirona: future

- Enirona Business and Industry Park
- Enirona View Space, Defence and Technology



9.3 Infrastructure to enable future rezoning

Existing infrastructure and services will not adequately support the RJP's expected growth to 2041.

As outlined in the structure plan (sections 8.3 and 8.6) the plan's technical consultants have provided infrastructure and service upgrade proposals that will support future development and rezoning.

The Urban Design Study's technical reports performed high-level investigations to determine the current and future infrastructure and service demands and capacities that align with the study area's future staged rezoning. Assumptions included staged land release, forecasted growth, earmarked infrastructure/ service upgrades and the study area's land use/ business mix.

The outcomes of this assessment to guide the study area's potential infrastructure and service upgrades required for each stage are listed below.

1-5 years (2021 to 2026)

Transport

- _ Bus route from Queanbeyan to RJP.
- _ Road and active travel routes.

Electricity

- _ New substation.

Potable Water

- _ Pipe to supply development.

Sewer

- _ Completed construction of Queanbeyan Sewer Treatment Plant to cater for 75,000 Equivalent People.

6-10 years (to 2031)

Transport

- _ Roll out of internal road network.
- _ Link mobility scheme to public transport.
- _ Upgrade of Environa Drive - dual carriage way.
- _ Upgrade Tomsitt Drive / Environa Drive intersection.
- _ Upgrade internal road, and public and active transport network.
- _ Provision of internal RJP shared mobility scheme linked to public transport.

Electricity

- _ New substation.

Potable Water

- _ Jerrabomberra Reservoir storage to have a Peak Hour Supply of 45.9 L/s, Peak Day Supply of 1,631 kL/day and 24 hour Storage of 1.6 ML.

- _ Second potable water main needed. DN450 from RJP to Jerrabomberra Parkway.

- _ Pipe to supply development.

Sewer

- _ Increase South Jerrabomberra Sewer Pump Station (SPS) emergency storage to 614 kL and incorporate 88 L/s capacity, including DN250 rising main.

11-15 years (to 2036)

Transport

- _ Provision of Isabella Drive to Environa Drive link road.
- _ Upgrade to internal road, and public and active transport network.

Electricity

- _ Substation with 2 x approximately 40 MVA Transformers.

Potable Water

- _ Jerrabomberra Reservoir storage to have a Peak Hour Supply of 117 L/s, Peak Day Supply of 4,167 kL/day and 24 hour Storage of 4.2 ML.

- _ Pipe to supply development.

Sewer

- _ Increase South Jerrabomberra SPS



emergency storage to 966 kL and inflows to 120L/s.

- _ New rising main to address capacity issues if the existing DN600.

16-20 years (to 2041)

Transport

- _ Potential provision of Googong to Monaro Highway road.
- _ Upgrade to internal road, and public and active transport network.

Electricity

- _ N/A.

Potable Water

- _ Jerrabomberra Reservoir storage to have a Peak Hour Supply of 173 L/s, Peak Day Supply of 6,151 kL/day and 24 hour Storage of 6.2 ML.
- _ Pipe to supply development.

Sewer

- _ Increase South Jerrabomberra SPS

emergency storage to 1,245 kL and inflows to 150 L/s.

Other infrastructure required to support the RJP include

Telecommunications

- _ Increase 5G capabilities by installing a centrally placed telecommunications tower for use by three operators, requiring 400sqm. Or, allocate land for three major mobile operators.
- _ Providing public wi-fi and internet of things, smart street poles, electric vehicle charging stations, and copper and fibre networks.

Electricity

- _ The study area's energy requirements are dependant on rooftop solar uptake, provision of a grid battery or Better Energy Storage System (BESS) and the quantity of energy intensive industries/ business that move into the RJP. This will dictate the need for the additional sub station(s).
- _ EV charging stations - 20% of parking spaces and 10% additional spaces for EV ready infrastructure assumed.

Potable water

- _ Council's planned upgrade of the

Jerrabomberra Reservoir will provide the RJP's forecasted water supply.

- _ Second high level South Jerrabomberra Water Reservoir.

Stormwater

- _ Onsite Detention Storage distributed at various land use zones, with a total storage of 58,664 m3.
- _ A total bio-retention basin of 7,935 m2.

Funding

- _ There is no direct State Government funding for the Precinct's infrastructure. Consequently, improving infrastructure capacities will be tightly linked to land released within the Precinct.
- _ Funding mechanisms for the proposed infrastructure and services can be through legislative mechanisms including through the Environmental Planning and Assessment Act, e.g. Special Infrastructure Contributions, and South Jerrabomberra Local Infrastructure Contributions Plan 2018 (SJLICP).
- _ Contributions under the SJLICP are at the maximum permitted levy and cover planned infrastructure for Stages 1 to 3 based on current zoning. As future demand for infrastructure is required with development of the Precinct, this infrastructure will need

to be funded by levies associated with the release of additional development parcels in Stage 4, or be funded separately.

- _ Additionally, when updating the SJLICP to accommodate the Precinct's increased demand due to new developable land. Council should consider ensuring sufficient levying of Section 64 contributions to cover the associated additional upgrades. Consequently, Queanbeyan-Palerang Regional Council should update the Development Control Plan and development contribution plans to reflect the Urban Design Study's aspirations.
- _ Other funding sources include State, Federal and Council Government Grants, ACT Government Contributions and Voluntary Planning Agreements.
- _ It is recommended that Council undertake a detailed feasibility study and separate costing of sewer and water infrastructure upgrades to determine suitable levies.
- _ Cross-border infrastructure requires further investigations to understand available mechanisms and co-ordinate commitment.



9.4 Urban design + placemaking for innovative industries

Research by Jensen PLUS into successful Innovation Districts identifies high quality urban design and placemaking as one important elements of achieving successful business environments in Innovation Districts.

Urban design for Innovation Districts

The South Jerrabomberra Regional Job Precinct aspires to create a cluster of innovative technology businesses, with a special emphasis on space and defence-related businesses (but not exclusively).

The creation of an 'Innovation District' to support and encourage a vibrant and collaborative business environment has been promoted in this master planning, and indeed has already started with the commencement of the Poplars Innovation Precinct in the north of the RJP.

Research by Jensen PLUS into successful Innovation Districts identifies high quality urban design and placemaking as important elements of achieving successful business environments in Innovation Districts. Other elements include the presence of anchor institutions, infrastructure, skilled staff, precinct branding and sustainability.

In this section we review existing approaches to achieving urban design and placemaking at South Jerrabomberra. Additional urban design and placemaking elements are also proposed for the precinct as it further develops.

Note that this section focusses on urban design and placemaking for business and industry areas, and local centres, and not residential land (or the Regional Sports Park).

Defining urban design

Urban design is a broad term relating to many aspects of the urban environment, but in this case the key urban design elements of interest are:

- _ Layout of streets and allotments (for business areas).
- _ Street design including streetscape and connectivity.
- _ Siting, form, architecture and landscape of commercial and industrial buildings.

Mechanisms to influence urban design outcomes at South Jerrabomberra

Urban design outcomes are the Precinct are informed by:

- _ The LEP and DCP for the area (the planning policies to regulate development).
- _ Developer design guidelines (guidelines and requirements of land purchasers).
- _ Design guidelines can also be incorporated or reflected into the DCP to create a central or consistent reference for development requirements.
- _ State, regional and council-wide urban design guidelines (more commonly informing the drafting of the DCP and developer design guidelines).



Summary of existing urban design guidelines

Policy	Key elements and guidance
Poplars Innovation Precinct West Design Guide	<ul style="list-style-type: none">_ Focus on desired urban design outcomes and guidelines, with examples_ Currently not available to the public_ Landscape urban design and location of precincts features, nodes_ Preferred business / land uses_ Interfaces with grasslands_ Passive design and sustainability requirements
Tralee Business Park Design Guidelines	<ul style="list-style-type: none">_ Focus on site and building design requirements, including materials, form, signage, entries_ Currently not available to the public_ Includes interface requirements within the precinct and surrounding areas

Policy	Key elements and guidance
South Jerrabomberra Development Control Plan (DCP) 2015 (Focus on site and building design requirements)	<ul style="list-style-type: none">_ Subdivision design, street cross sections (residential), lot sizes, passive solar design_ Hume interface POS and landscape_ Art, signage_ Residential controls_ Neighbourhood centre controls_ Business Park and Employment Lands controls_ Desired future character and land use (high level)_ Reference to building height controls in LEP_ Car parking requirements (link to Queanbeyan DCP)_ Building and site design elements_ Noise and emissions design elements

All existing guidelines and requirements seek contemporary designs and a sustainable built environment for businesses and community use



9.5 Additional urban design and placemaking considerations

The combination of statutory planning policy requirements (LEP / DCP) and developer-driven urban design requirements (design guidelines and pre-approval of designs by developer) are an appropriate way to support good urban design outcomes at the business and industry developments of South Jerrabomberra.

The themes, objectives and urban design outcomes in the policies are well targeted and up-to-date and supported.

The RJP master planning suggests the following additional considerations be added to future plans and guidelines as the Precinct develops.

In addition, placemaking recommendations are also proposed to help enable non-physical or non-development placemaking outcomes to emerge and be supported.



Activating streets including Envirova Drive

- _ Important urban streets should have a strong place function as well as a role in the movement of people and vehicles.
- _ Future development including buildings and public spaces should address Envirova Drive positively, and especially at key placemaking nodes such as the new Envirova local centre and

intersection proposed.

- _ Development should avoid 'turning its back' onto Envirova Drive wherever possible.



Greening the precinct

- _ Existing guidelines and planning policy include on-site landscape requirements in buffers and parking areas, plus street tree planting and landscaping. Contemporary business and

innovation precincts often have a much greater proportion of land dedicated to on-site greening and landscaping (up to 20%).

- _ Increased space for landscaping has multiple benefits including greener and cooler sites and local environments, space for water sensitive urban design treatments including increased penetration of stormwater into the ground (reducing runoff into the stormwater system), and improved appearance and visual amenity of business and work environments.



Building design of large tech-sheds

- _ Building form and appearance is addressed in existing guidelines. For example guidelines recommend the positioning of office-components in prominent locations at the front of developments.
- _ Additional guidance is required to guide the type of large technology buildings – comprising

manufacturing, integrated warehousing and office - that may result from the Precinct's preferred business uses.

- _ Simple forms of building (both in plan view and elevation), with clean lines, modern materials and restrained colours can be combined in such buildings to create a contemporary architecture contributing to a superior quality aesthetic to a general industry area.
- _ Design service and loading areas carefully, including simple canopies and awnings.

_ Screen service infrastructure from surrounding streets and public areas.



Design for national security requirements

- _ Site planning and building design that allow for or achieve defence security standards are encouraged to support the Precinct business mix.



(cont.)



Integration between sub precincts

_ Buildings and places within successful Innovation Districts are well integrated with paths and street connections, and shared and public areas are accessible to visitors and sometimes the public. Separated development enclaves reduce likelihood of casual interaction and collaboration.

_ Integration between local centres, schools, Regional Sports Park and business areas should be encouraged in plans and guidelines.

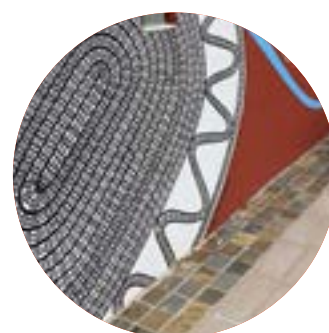
_ New street and path connections between development should be shown in guidelines and concept plans.



Legibility

_ Building on the 'nodes, views and connections' themes proposed in Poplars' urban design guidance, additional connections, pathways, gateways and wayfinding to connect the different parts of the Precinct in a legible way is recommended.

_ Street layouts should be simple and straight where possible, aligning with terrain, and key streets connected to allow easy navigation through the Precinct.

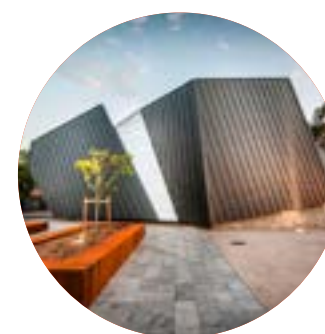


Urban + landscape design theme

_ South Jerrabomberra has Aboriginal and European history and this history can be told in the development of places, streets and buildings.

_ A stronger urban and landscape design theme for public space and streets can be developed to celebrate history,

connect to country, and promote future industries and creative people. This can also be an element of placemaking and branding development for the Precinct.



Location + design of public infrastructure

_ New sub stations, pump stations, poles, stormwater, pits, compounds, and towers may be needed at South Jerrabomberra

over time. Thinking ahead to locate these out of view lines (e.g. not aligning with new streets) will minimise visual intrusion.

_ Develop infrastructure with built and landscape design treatments to minimise visual impact and clutter. This can be a focus of detailed urban design guidance.



Walking + cycling + street design

_ Encourage walking and cycling in the Precinct to help create vibrant and healthy communities and encourage casual meeting and collaboration.

_ Design generous walking and cycling paths in business areas, with convenient crossing points and high-quality landscapes to make walking and cycling easier and more attractive.

_ Provide direct connections to local centres and activity hubs via walking and cycling routes.

_ Include end-of-trip facilities for cyclists and runners etc. in workplaces.



Environmental biodiversity integration

_ Celebrate biodiversity values in new development (e.g. views to woodland areas, use of local trees and plantings, interpretive signage).



(cont.)



Aircraft noise + workplaces

- _ Reduce impact of aircraft noise on employees and workplaces through building design, materials, good quality windows and doors etc.



Design of the local centres and hubs

- _ Three local centre zoned land parcels are included at North Tralee, South Jerrabomberra and Link Road. Each has a slightly different land use and business focus, but all must be designed as attractive, equitable and safe places for people to visit, shop, meet and connect.
- _ In addition, “activity hubs” are also identified in some of the business areas, for example the Poplars Innovation Centres and Environa are places where increased activation is encouraged.

- _ For local retail and community focussed centres, the use of street-fronting buildings which face and open onto wide footpaths with seating and urban landscapes is a successful design technique to help create vibrant, attractive urban centres.
- _ Well located car parking is also important and should be shared between buildings and businesses rather than separately.
- _ Parking in local centres should be accessible and easy to find but not dominate the streetscape.
- _ A ‘hybrid’ centre design where part of the built form is positioned fronting a retail street, and part opens onto surface car parking, may be a good compromise between 19th century “main street” layouts, and “shopping centre and car park” layouts of the 20th century. An example of this design approach can be seen at nearby Googong Village Centre.
- _ Creating paved plazas, and green spaces, with direct and generous footpaths linking businesses to car parks and surrounding areas will be important at all centres and hubs.



Minimising visual impacts

- _ Development at Environa includes low-lying land close to Environa Drive, and also land rising up the hillslopes to the south. Street layouts and building scale and position should celebrate vistas and minimise visual impacts.
- _ Create “view streets” to celebrate views towards hilltops and woodlands at Environa and other development areas.

- _ Minimise visual impact of development close to Environa Drive and other prominent view areas, including nearby residential areas.



Sustainability

- _ Development to incorporate solar panels, batteries.
- _ Capture and reuse of stormwater through basins, aquifer injection and rainwater tanks.



9.6 Non-physical placemaking strategies



Branding and marketing

The Precinct includes a number of established place names and emerging brands. South Jerrabomberra, Poplars, Tralee, Environa, (even Hume) may create a diluted overall brand effort.

Work together to confirm one or more Precinct brands (especially for targeted technology business areas) to capitalise on investments. This can also be a way to communicate the vision for the Precinct as a whole.

Create and implement Precinct marketing strategies with Precinct partners to help achieve the property development, business development and job objectives of the Precinct.

Governance

An ongoing Governance group or “Leaders Forum”, comprising property developers, local and state government, Precinct businesses, local resident representatives and other stakeholders is recommended to be established and potentially administered by the Council.

Successful Innovation areas are more than just buildings, roads and public spaces. They require ongoing strategic development, collaboration, management and activation to achieve success. A governance group of some kind can help maintain connections and achieve these goals.

They can also implement RJP-wide initiatives including reducing waste through the provision of multiple waste streams.

Circular Economy

Creating a circular economy within the RJP can leverage off the areas

collaborative and innovative focus, by promoting businesses to share knowledge and resources.

Governance structures could be put in place that preference local materials and suppliers for constructing new developments and infrastructure.

Investment Attraction.

Investment attraction activities are well underway at state government level, by local government, and by developers.

Continued collaboration in this area is recommended to support Precinct development, business attraction and achievement of projects including through grant funding.

Activation Plan

A three year activation plan, costed and detailed could be developed to support Precinct development.

This could include brand, marking and events development and implementation.

It could also integrate with public and private development of development stages, streets and public spaces to

achieve a more integrated and targeted investment.

This could be scoped by a Working Group comprised of the precincts businesses and funded through membership or establishment costs into the precinct.

Policy review

Successful placemaking sometimes requires policy changes at a local level. For example outdoor dining regulations may or may not support local centre design objectives.

A policy review and recommendations should be undertaken to identify any local government policies that could be further developed to assist with the achievement of Precinct goals.

Consultation

This urban design study has been developed with the input of selected stakeholders. Wider community, business and government consultation is recommended as a priority, to improve upon the strategies described in this urban design study, and to build understanding and support for the Precinct's development.



9.7 Planning Implementation Process Options

One of the purposes of Regional Jobs Precincts are to audit local planning rules/ policies/ frameworks (both State and Local Government) and find opportunities to streamline these processes allowing development to progress, drive investment and create more jobs.

The following delivery options have been considered in the context of both:

- _ the desire to achieve simplification of planning processes for proponents to support investment and attraction to the precinct
- _ the ability to deliver the broader urban design and placemaking needs to the precinct to be a successful innovation precinct.

Proposed options

Planning Option	Potential Benefits	Constraints
Changes to Environmental Planning and Assessment Act, 1979	<ul style="list-style-type: none"> _ Can be tailored to suit precinct objectives and needs – i.e., a new planning pathway (Regional Precincts SEPP is a precedent to this approach) 	<ul style="list-style-type: none"> _ Difficult to implement within existing legislative framework. _ Requires political will for another dedicated pathway, parliamentary process, as well as consultation. _ Likely to be time consuming to implement – not likely to facilitate quick action on the ground in the short term
Application of Regional Precinct SEPP to the Precinct	<ul style="list-style-type: none"> _ Framework in place does not require legislation change / new SEPP (Precinct can be added as a Chapter). _ Allows for zoning and tailored land use tables as well as development controls (to address important urban design matters) _ Regional Jobs Precinct achieves most of the criteria for a State Significant Precinct (albeit in private ownerships) _ Achieves relevant LEP zoning amendments at the same time 	<ul style="list-style-type: none"> _ Usually reserved for precincts under state or local ownership (but can work with single ownership) _ DPE require additional detailed investigations (the SSP Study) _ Would need to ensure that use of the SEPP leads to a streamlined or simplified assessment pathway and meaningful time savings in applying for Activation Precincts Certificate and Complying Development Certificate for anticipated range of projects.
Simplified RJP Precinct Specific Environmental Assessment Requirements (SEAR) requirements (e.g., for Acoustics and Stormwater Management)	<ul style="list-style-type: none"> _ Increases consistency across projects _ Improves planning efficiency and certainty _ Process and documentation better aligned to project complexity, and impacts and in recognition of strategic investigations already undertaken 	<ul style="list-style-type: none"> _ Applies to State Significant Development _ Not fully tested in real world scenarios _ Only relates to agree upon areas



Planning Option	Potential Benefits	Constraints
Minister initiated Planning Proposal (LEP Amendment)	<ul style="list-style-type: none"> _ Coordinated with relevant agencies, utilising existing Structure Plan investigations (better control) _ Zoning proposed aligns to that existing (or proposed) and can be easily implemented _ Potentially more responsive in implementation _ Contributes to single LEP for Council area. _ Opportunity to give legal weight to a master plan _ Agency engagement throughout RJP development likely to streamline consultation requirements and feedback. 	<ul style="list-style-type: none"> _ Still likely to require collaboration with Council, ACT, and landowners to ensure successful outcomes.
Council initiated Planning Proposal (LEP Amendment)	<ul style="list-style-type: none"> _ Zoning proposed aligns to that existing (or proposed) and can be easily implemented _ Amendment prepared by the authority likely to implement it _ Contributes to single LEP for Council area. _ Opportunity to give legal weight to a master plan _ Agency engagement throughout RJP development likely to streamline consultation requirements and feedback. 	<ul style="list-style-type: none"> _ May not be resourced to be delivered within the desired timeframes (compared to Minister / Agency led process). _ Still involves input from State Government (i.e., preparation of the draft amendment and associated reports), however, RJP Master Plan should streamline / simplify this process / input (may require DRNSW assistance or coordination)
Proponent(s) initiated Planning Proposal(s) (LEP Amendment)	<ul style="list-style-type: none"> _ Zoning proposed aligns to that existing (or proposed) and can be easily implemented 	<ul style="list-style-type: none"> _ No additional efficiency in process (unless preparation is resourced and fast tracked) _ Will likely require all landowners / developers to partner for coordinated approach to precinct _ Potentially uncoordinated and fragmented approach, and no guarantee of consistency
Development Control Plan	<ul style="list-style-type: none"> _ Can align the design criteria to important urban design elements needed for precinct to be successful _ Informs assessment of proposals (and provides some clarity of expectations) _ Can reference Structure Plan _ Greater control and strength in policy support in assessment process _ Assistance with preparation of draft DCP could be provided by the State Government 	<ul style="list-style-type: none"> _ Does not necessarily lead to simpler processing of proposals (unless clear delineation of aims and criteria to proponents upfront) _ Needs to be resourced and prepared by Council (although could be jointly done with developer or state agency)



Planning Option	Potential Benefits	Constraints
Preparation of Developer Design Guidelines for Precinct	<ul style="list-style-type: none"> _ Allows developers to guide built outcomes over and above LEP / DCP _ No other special planning processes required _ Can be tailored to specific developed land areas and land uses within each sub-precinct _ Can specifically address place making and urban design measures needed to support precinct aims. 	<ul style="list-style-type: none"> _ Potential loss of control over implementation and quality of guidelines (may not achieve intent) _ Requires developers to agree to preparation and implementation (not guaranteed). _ Potential for inconsistencies and conflicts between different developers, lack of coordination in outcomes, themes, and approaches.
Special Infrastructure Contribution / Voluntary Planning Agreement	<ul style="list-style-type: none"> _ Can be tailored to align with project objectives _ Provides certainty to infrastructure delivery and funding _ Reduces the number of agreements needed with agencies and Council _ Spreads the cost of infrastructure to all who benefit 	<ul style="list-style-type: none"> _ Voluntary so no guarantee that proponents will enter into agreement _ Costs likely to be “passed on” which may affect marketability / attractiveness
Infrastructure Plans	<ul style="list-style-type: none"> _ Provides clarity in what infrastructure will be delivered in precinct _ Identifies trigger points, staging and timing _ Clarity on funding and costs 	<ul style="list-style-type: none"> _ Limits on what can/cannot be included in a contributions plan. _ Need to update cost estimates regularly
Dedicate one (or more) Business Development Managers within DRNSW / Council for the Regional Jobs Precinct	<ul style="list-style-type: none"> _ Can tailor service to precinct and link with investment attraction – “one stop service” from first contact through to delivery _ Can coordinate agencies and Council approval processes _ Helps coordinate international investors 	<ul style="list-style-type: none"> _ Will likely require ongoing funding for the project’s delivery _ Requires the right person and skillsets to be delivered successfully _ Still reliant on agency and Council cooperation in fast-tracking or simplifying approvals.
Increase Planning Team Resourcing (e.g., dedicated FTE(s) for the precinct to handle queries and assess proposals)	<ul style="list-style-type: none"> _ Provides for quicker processing of applications (assuming they are sufficiently detailed). _ Greater opportunities for pre-lodgement discussions and support to facilitate better applications. 	<ul style="list-style-type: none"> _ Does not lead to simpler process for applications _ Does not provide the policy support needed for getting desired outcomes.



Recommendations

Each implementation option has potential benefits and constraints, with no single measure identified to provide more streamlined planning pathways (e.g., for developers) in a way that is easy or efficient for DRNSW or stakeholders to provide.

However, it is highly encouraged that either the State or Council take the lead in implementing changes to the LEP for the Precinct as this is likely to lead to a more coordinated approach to the policy framework, than an approach that is driven by individual landowners or developers through ad-hoc planning proposals.

It is likely that to be most effective in achieving the desired objectives, a combination of planning measures should be explored for the delivery of the precinct.

This is because those measures that aid in simplifying processes, do not necessarily deliver the quality of design

outcomes that are important for an innovation precinct, and therefore need to be accompanied by stronger policy and design setting, coupled with advice and assistance, which ensures consistency, compliance and therefore smoother (and more efficient) processing.

In this regard, preference is placed on the following:

1. **Preparation of a Minister initiated Planning Proposal** (but working collaboratively with Council in its preparation) to deliver an efficient rezoning process.
2. **Preparation of a Development Control Plan** for the Precinct by Council that references and links the Structure Plan (concurrently with the LEP update) to provide greater design detail and policy strength for the precinct. It is strongly encouraged that this process is done in close collaboration with landowners/ developers for selected parcels, to ensure a common direction for content and outcomes.

3. **Preparation of Infrastructure Plans** (likely informed by LEP investigations) to provide certainty, align potential funding and proponent led delivery.
4. **RJP Specific Case Manager(s)** be appointed to act as concierge for queries from investors and to support applicants and their consultant teams through application processes and agency engagement.
5. **Fund dedicated planner** to manage queries and assessments for proposals within the Precinct to ensure both consistency in advice and prioritised processing of development applications.



Appendices



Appendix A _ Yield analysis



Yield estimates for employment land (excluding local centres)

Summary of key development assumptions

- _ Road reserve based on developer's subdivision designs or Jensen PLUS test designs. Typically 17%-22%
- _ A general assumption of 20% road reserve and 80% allotments is reasonable.
- _ 0%-3% open space / drainage reserves assumed.
- _ 50% site cover (building footprint).
- _ 30% hardstand area (car parking, loading, servicing, paths)
- _ 20% pervious area (landscaping, gardens, on-site drainage) for enhanced amenity, environmental and drainage outcomes.
- _ Average 1.5 storey buildings in Space, defence + technology sub precinct. Allows for office component of tech-businesses.
- _ 1 storey assumed for Local business + industry sub precinct.
- _ Yield of 165 allotments nominally suggests approximately 8-9 new businesses opening at South Jerrabomberra each year for 20 years.

South Jerra Development Yield Estimates

Space, defence + technology sub precinct

	ha	ha	ha	ha	m2											
	gross developme nt area	road reserve area (designed)	road reserve % (designed / assumed)	open space / drainage reserve area (designed)	open space / drainage % (designed / assumed)	net developabl e area (saleable land)	average building site cover	average storeys	average floor space ratio (FSR) achieved	floor area	hardstand	total impervious %	lots (designed / assumed)	lots / gross ha	jobs/ha (council assumption s for B7 and In2)	jobs
Poplars Stage 1	9.99	0.8	8%		3%	8.8903	50%	1.5	0.75	66677	30%	80%	5	0.5	32	320
Poplars Stage 2	17.26	2.927	17%	0	0%	14.333	50%	1.5	0.75	107498	30%	80%	18	1.0	32	557
Poplars Stage 3	8.7		20%		3%	6.699	50%	1.5	0.75	50243	30%	80%	9		32	278
sub total south poplars	35.95					29.92				224417			32			1156
Environa View	43.38		20%		4.5%	32.75	50%	1.5	0.75	245639	30%	80%	31	0.7	32	1406
total sub precinct	79.33					62.67				470057			63			2561

Local Business + Industry Sub Precinct

North Tralee Business / Industry Park (north and south)	22.58	3.7	16%	0.72	3.2%	18.16	50%	1	0.5	90800	30%	80%	60	2.7	20	452
Environa Business / Industry Park	51.13		15%	1.17	2.3%	42.2905	50%	1	0.5	211453	30%	80%	32	0.6	20	1023
South Tralee Local Business Hub	3.94	0.6698	17%	0.1182	3%	3.152	50%	1	0.5	15760	30%	80%	11	2.7	20	79
total sub precinct	77.65					63.60				318013			103			1553

Total employment (excluding local centres)	156.98					126.28				788069			165			4114
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if 8ha demand per annum = 19.5 years supply



Appendix B _ Benchmarking



Prime & Tier 1 Defence, Cyber and Space companies



Raytheon _ Mawson Lakes (SA)

- _ Site area – 3.82 ha
- _ Building and site cover – 1.02 ha (26.8%)
- _ Impervious parking/hardstand, roadways – 1.86 ha (48.6%)
- _ Total impervious area – 75%



BAE Systems _ Williamtown (NSW)

- _ Site area – 2.09 ha
- _ Building and site cover – 1.09 ha (52%)
- _ Impervious parking/hardstand, roadways – 0.88 ha (42.5 %)
- _ Total impervious area – 94.5%



Defcon Technologies Group_ Fyshwick (ACT)

- _ Site area – 912 m2
- _ Building and site cover – 560 m2 (61.4%)
- _ Impervious parking/hardstand, roadways – 352 m2 (38.6 %)
- _ Total impervious area – 100%



Airbus _ Brisbane Airport (Qld)

- _ Site area – 0.96 ha m2
- _ Building and site cover – 0.166 ha (61.4%)
- _ Impervious parking/hardstand, roadways – 0.79 m2 (38.6 %)
- _ Total impervious area – 100%
- _



Prime & Tier 1 Defence, Cyber and Space companies (cont.)

AI, Cyber security and manufacturing companies



Leidos _ Dandenong (Vic)

- _ Site area – 0.51 ha
- _ Building and site cover – 0.107 ha (21%)
- _ Impervious parking/hardstand, roadways – 0.294 m2 (58%)
- _ Total impervious area – 79%



Lockheed Martin _ Williamtown (NSW)

- _ Site area – 0.233 ha
- _ Building and site cover – 0.092 ha (39.5%)
- _ Impervious parking/hardstand, roadways – 0.115 ha (49.5%)
- _ Total impervious area – 0.207 ha (89%)



Safran SA _ Bankstown (NSW)

- _ Site area – 1.014 ha
- _ Building and site cover – 0.4 ha (40%)
- _ Impervious parking/hardstand, roadways – 0.47 ha (46.8%)
- _ Total impervious area – 86.8%



Codan _ Mawson Lakes (SA)

- _ Site area – 4.09 ha
- _ Building and site cover – 0.65 ha (16%)
- _ Impervious parking/hardstand, roadways – 1.85 ha (45.1%)
- _ Total impervious area – 61%



Tech + advance manufacturing (cont.)



Geospatial Intelligence _ Barton (ACT)

- _ Site area – 0.363 ha
- _ Building and site cover – 0.13 ha (36 %)
- _ Impervious parking/hardstand, roadways – 0.21 ha (58 %)
- _ Total impervious area – 94%

Note: this is a 4 storey building (Ground + 3 levels, with an underground carpark)



Saber Astronautics _ Chippendale (NSW)

- _ Site area – 405.44 m2
- _ Building and site cover – 395.56 m2 (97.5%)
- _ Impervious parking/hardstand, roadways – 9.88 m2 (2.5 %)
- _ Total impervious area – 100%



Fleet Space Technologies _ Beverley (SA)

- _ Site area – 1414 m2
- _ Building and site cover – 836 m2 (59%)
- _ Impervious parking/hardstand, roadways – 440 m2 (31%)
- _ Total impervious area – 90%



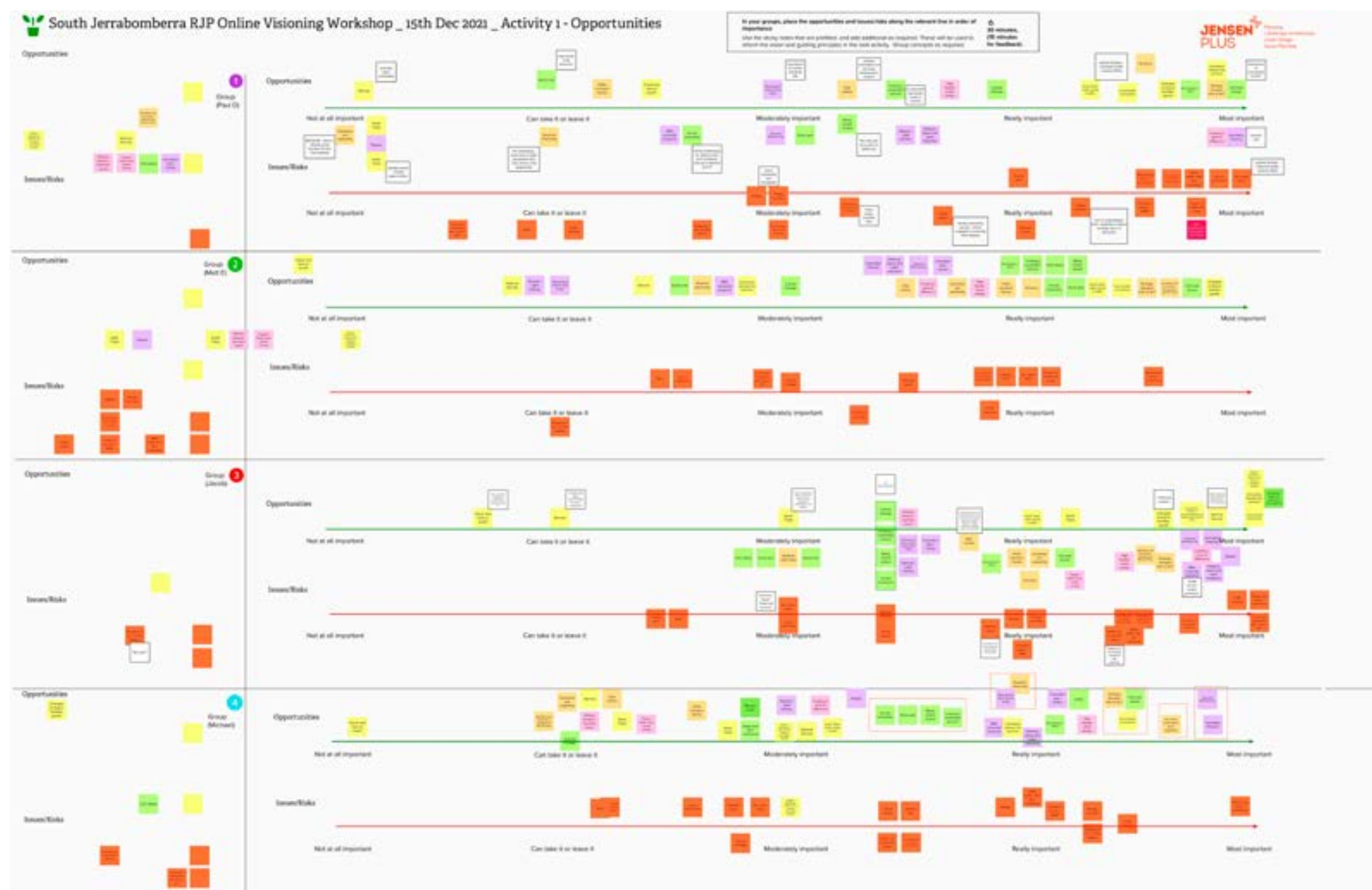
Appendix C - Vision Workshop Summary



Workshop activity #1 _ Opportunities

In four small groups, the team considered the many opportunities and ideas that have been suggested for South Jerrabomberra, both by stakeholders, and from review of previous plans and studies. The prioritised these opportunities by placing them on a sliding scale line from "most important" to "not important".

A similar activity was done for a series of risks and issues. The online workspace MURAL was used to facilitate the exercise.





Workshop activity #1 _ Synthesis of activity outcomes

Following the workshop Jensen PLUS reviewed all four group outputs. Many similar prioritisations were identified, and an overall ranking and organisation of opportunities and issues was made.

Some refinement of opportunity and risk descriptions was also undertaken, to take account of workshop discussion and additional notes made by the groups.

The synthesised outputs have informed the draft vision and guiding principles in section 1.

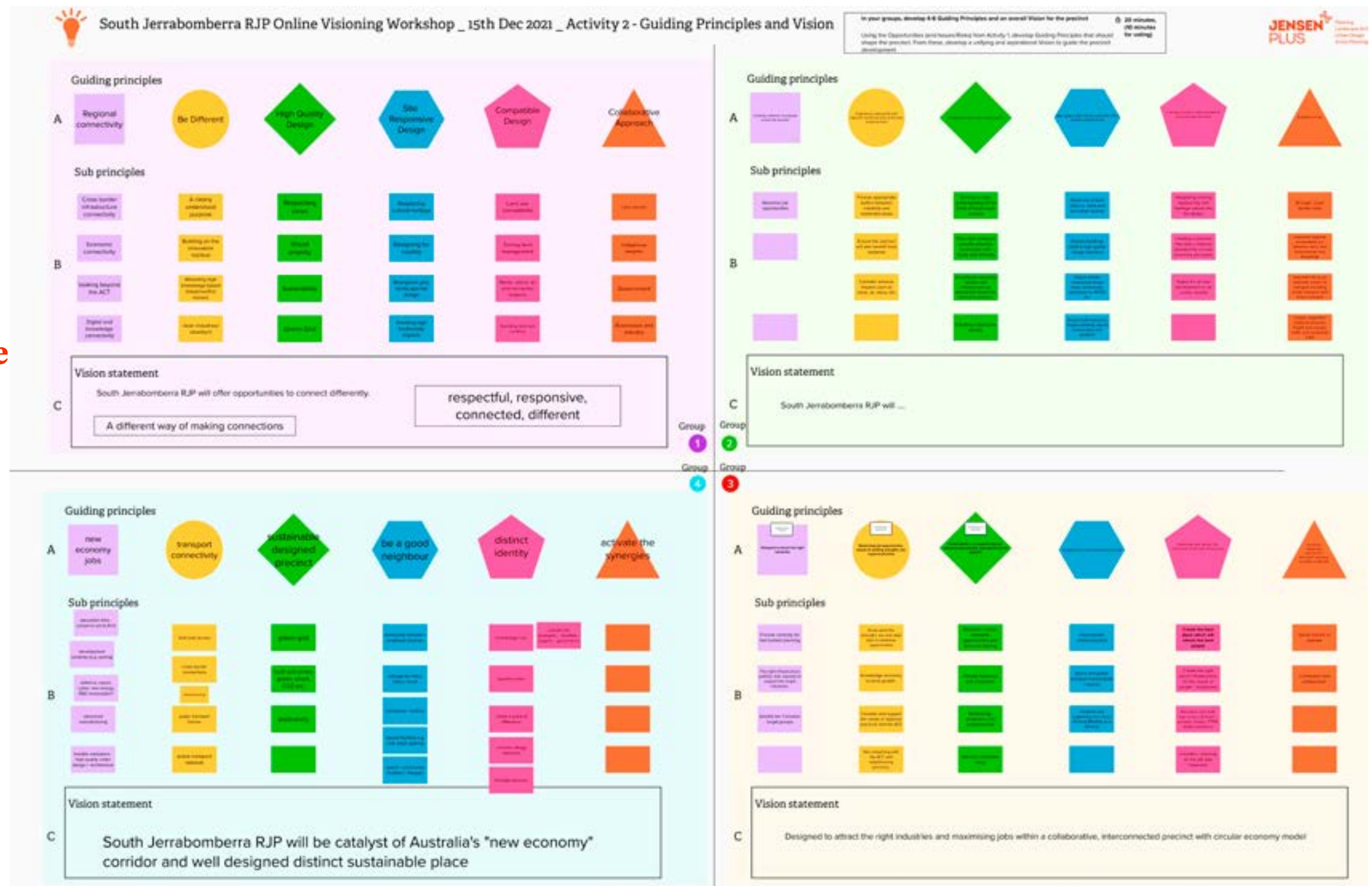
South Jerrabomberra _ Online Visioning Workshop 15th Dec 21_ Activity 1_ Post-workshop Summary

Opportunities				
Not at all important	Can take it or leave it	Moderately Important	Really Important	Most Important
<ul style="list-style-type: none">Identification of future residential opportunities to the south of study area	<ul style="list-style-type: none">Rail TrailAlready zoned / planned development areas of South Tralee, North Tralee and PoplarsNew East-West road (Googong – Monaro Hwy)	<ul style="list-style-type: none">Creating specialised facilities including a Regional Sports HubUniversity/R&D presenceFacilitating general / light industriesRoad/rail intermodal + logistics (IN2) precinctEastern Broadacre, airport to SJ, Capital innovation corridor – Canberra Airport – Eastern Broadacre – Queanbeyan /JerrabomberraMeets national security, defence and government requirements.Refine zoning around Poplars North centre, South Tralee urban bufferRefine industry zoningFuture public and active transport linksIncorporating cultural heritageLeverage ICON network	<ul style="list-style-type: none">6. High-quality urban design outcomes at site, street and precinct scales - ties precinct together including Environa7. Sustainably designed precinct (circular economies, environmental / biodiversity green grid, carbon neutral, riparian zones, CO2 etc.)8. Target growth sectors e.g. Defence, space, cyber industries, advanced manufacturing9. Strategic bio-certification of the precinct10. Environa (unplanned land which ties it together)	<ul style="list-style-type: none">1. Creating regional jobs for NSW*2. Business certainty, including vision, zoning, infrastructure and creating a borderless region for economic development3. Precinct and cross-border connectivity4. “Innovation precinct” with point of difference (tailored to this location)5. Lower costs of development and doing business in NSW*
Issues/Risks				
Not at all important	Can take it or leave it	Moderately Important	Really Important	Most Important
		<ul style="list-style-type: none">Mix of landowners + interestsEconomic integration with ACT and HumeBushfire risksSloping land and rock (constructability and cost)Traffic volumesCanberra Airport + ANEFDevelopment in proximity to the school	<ul style="list-style-type: none">4. Cultural heritage values5. Visual impact and look of the development6. Supply of utilities, including energy corridor7. Consideration of nearby communities	<ul style="list-style-type: none">1. Biodiversity values + protections2. Protecting sensitive receptors (e.g. residential areas and workplaces) from industrial/commercial impacts including noise and odour3. ACT agreement to any cross-border connections

Workshop activity #2 _ Vision + Guiding Principles

A second workshop activity was undertaken in the same four groups. This used the outcomes of the first activity as prompts to inform potential Guiding Principles and Sub-Guiding Principles for the Urban Design Study.

Through this process, each group narrowed their focus to help create preliminary vision statements for South Jerrabomberra.





Workshop activity #2 _ Synthesis of activity outcomes

The four independent groups created broadly similar principle statements (often with different wording). Jensen PLUS has re-ordered the group principles which demonstrates a strong alignment in themes. A logical order for the draft Guiding Principles is suggested by reference to the highest priority opportunities in activity #1.

South Jerrabomberra _ Online Visioning Workshop 15th Dec 21 _ Activity 2 _ Vision + Guiding Principles

Summary of guiding principles (re-ordered to align similar concepts)

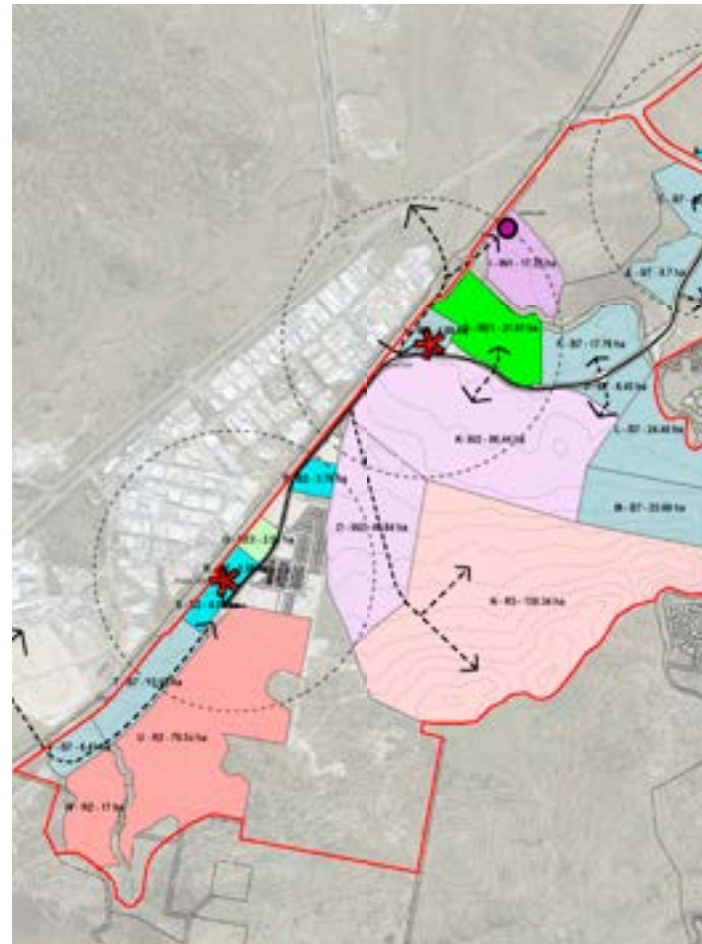
Group 1	Regional connectivity	Be different (industry / innovation)	High quality design	Site Responsive Design (Environment/cultural)	Compatible design (land use / impacts)	Collaborative Approach	
Group 2		Attracting the right kind of business mix	High quality urban design outcomes with a people-centred focus	Creating a precinct with exceptional environmental outcomes	Integrating components with adjacent residential area and Hume Industrial Area	Equitable access	Creating cohesion of purpose across the precinct
Group 3	Integrated and interconnected transport	Attract the right industries	Destination that attracts the best talent for the jobs of tomorrow	Sustainability as an opportunity	Seamless integration with the ACT and wider precincts, including residential		Maximising job opportunities
Group 4	Transport connectivity	New economy jobs	Distinct identity	Sustainable designed precinct	Be a good neighbour	Activate the synergies	
Summary – theme	Transport	Economy / jobs	Design + place	Sustainability / environment	Land use interfaces	Collaboration + governance	?
Logical order?	2	1	3	4	5	6	



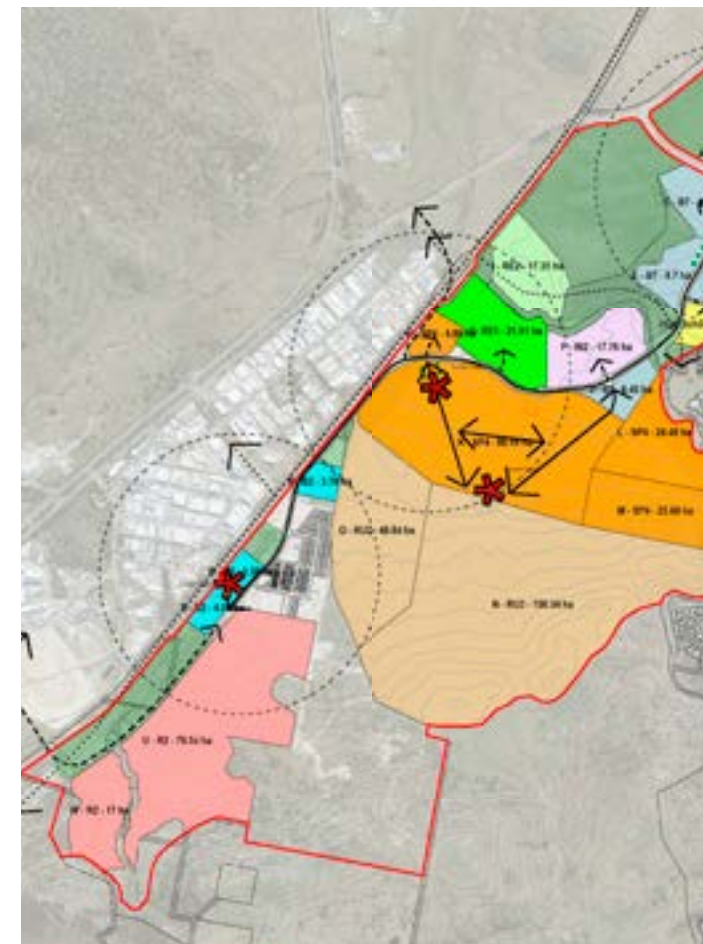
Appendix D _ Integration Workshop Summary

Session #2 _ Options Evaluation

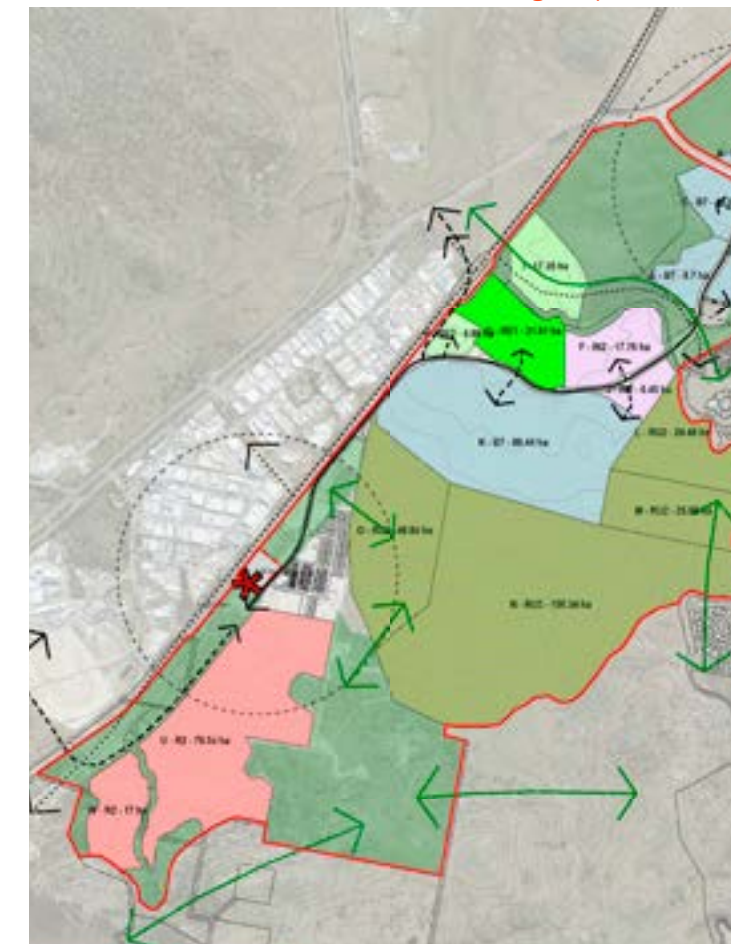
Six design options were introduced to the workshop, to illustrate different scale, land use, connectivity and urban design outcomes to be tested.



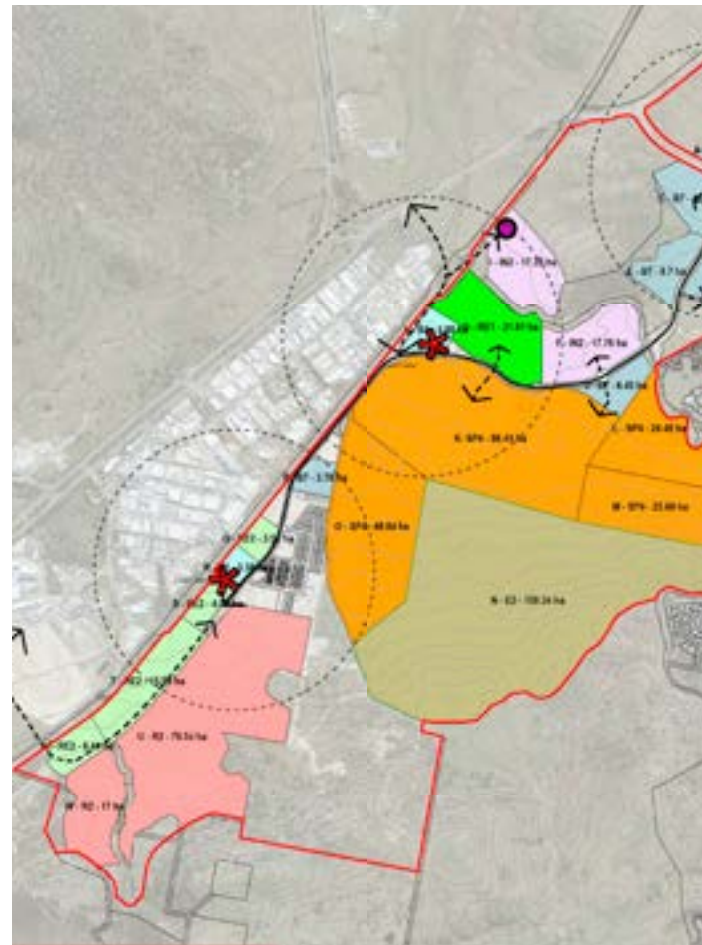
Maximum development



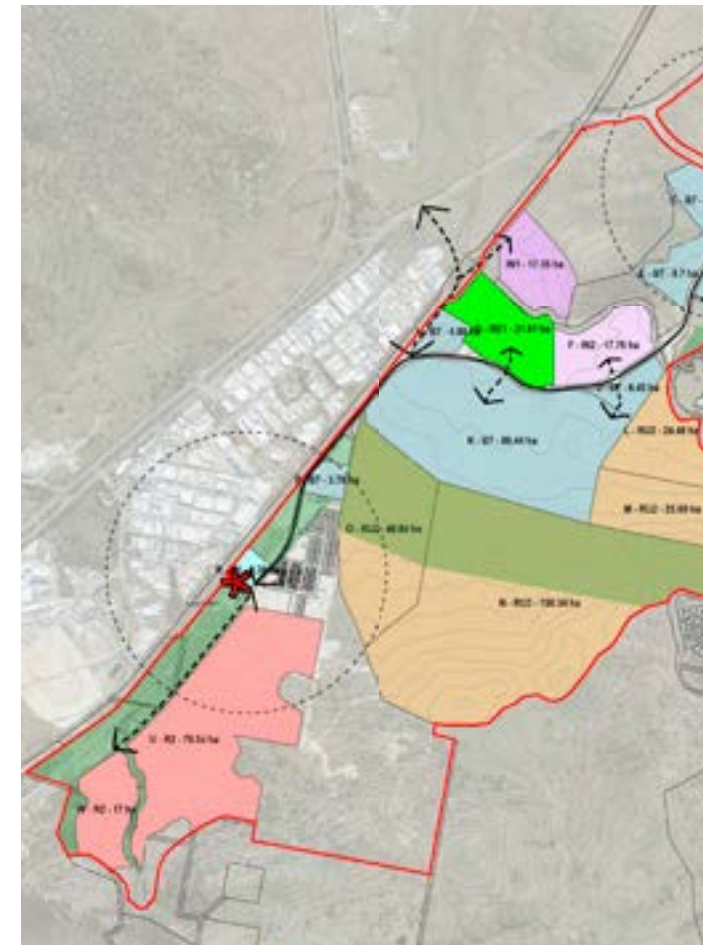
Environs View



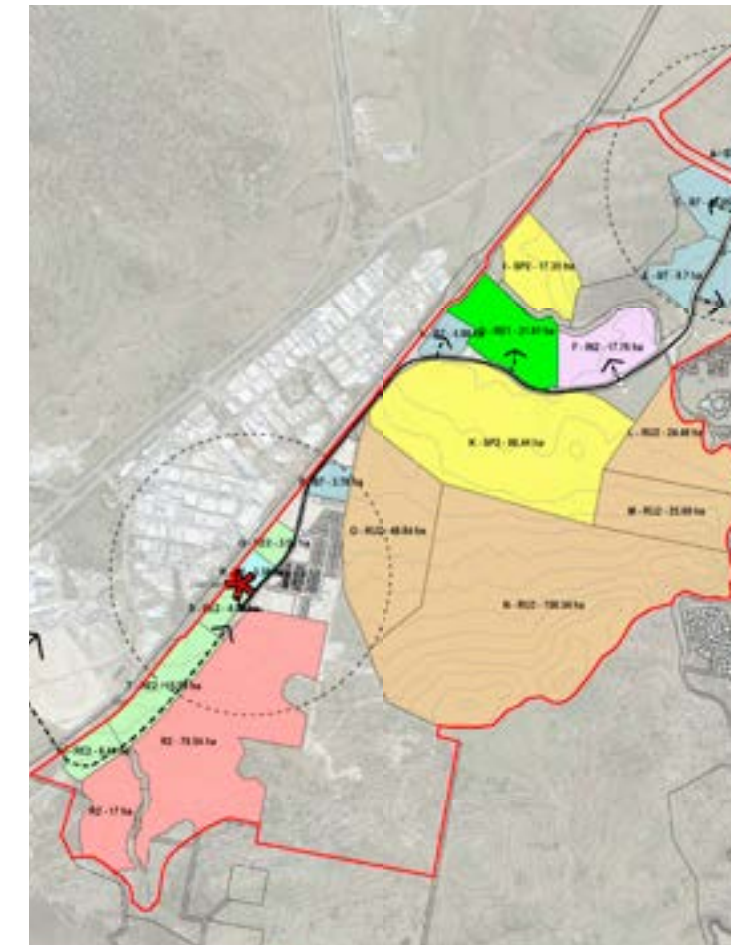
Green grid



Maximum innovation



Mixed business/industry innovation



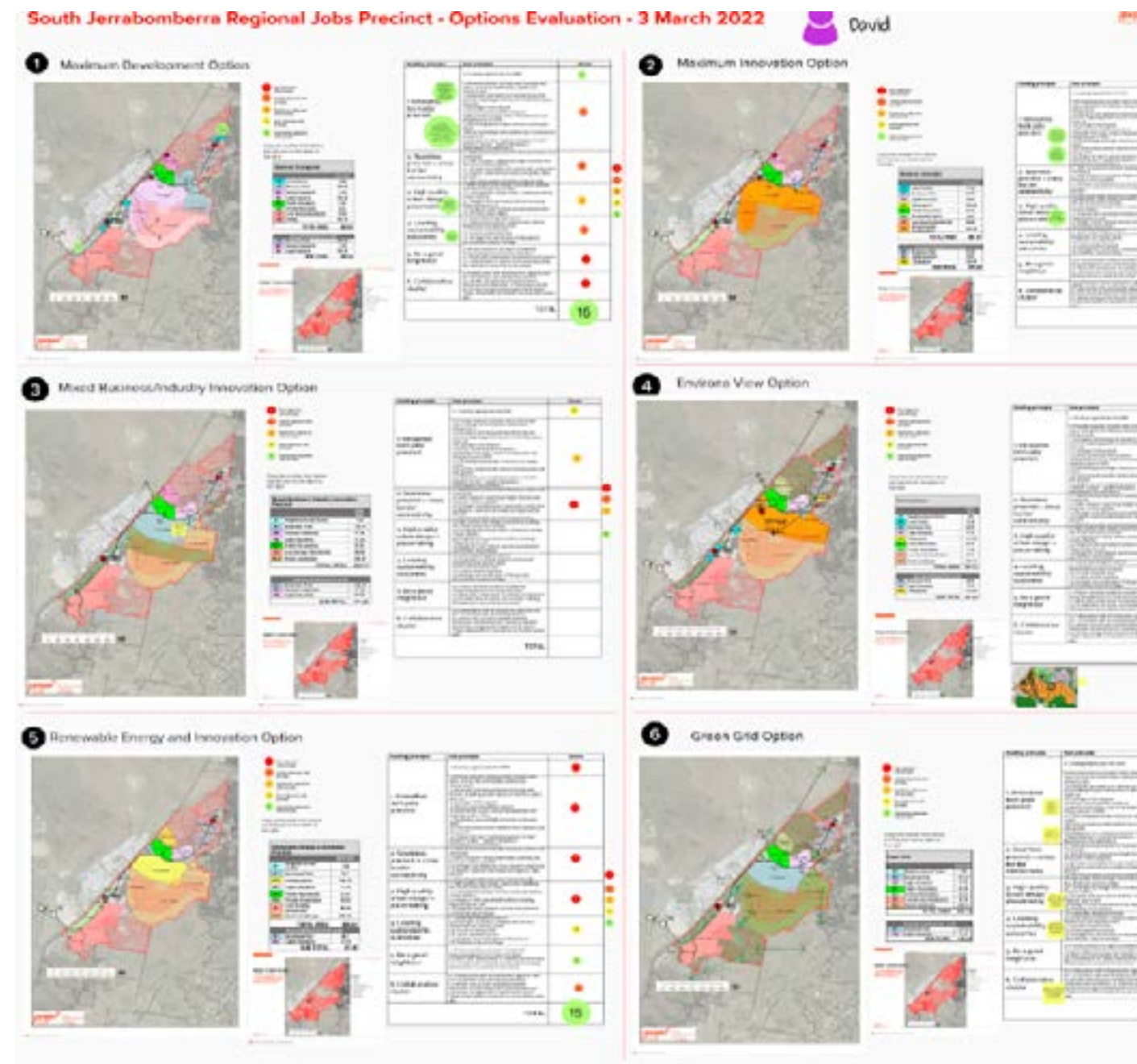
Renewable energy and innovation



(cont.)

In four small groups, all six urban design options were evaluated. For each option, a score was given against each of the urban design study's six guiding principles, on a five point scale - from 1 "poor alignment with the principle" to 5 "outstanding".

Group scores were recorded on a matrix on the online workspace MURAL. Each group then commented on a preferred (high scoring) options, and a least preferred.



Workspace showing option scoring by one of four small groups



Synthesis of Session #2 Options evaluation

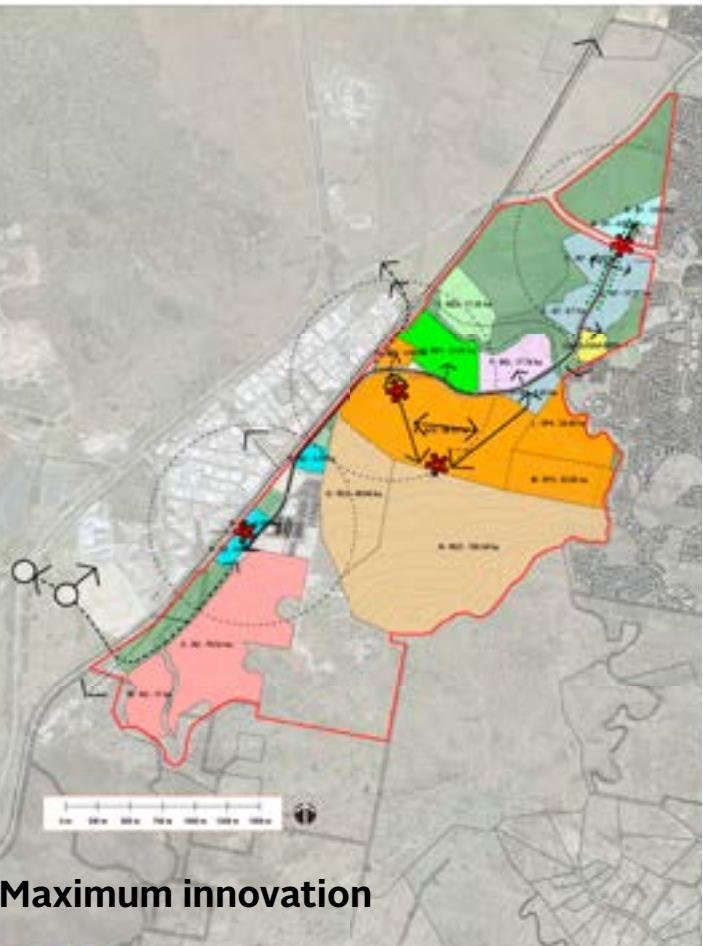
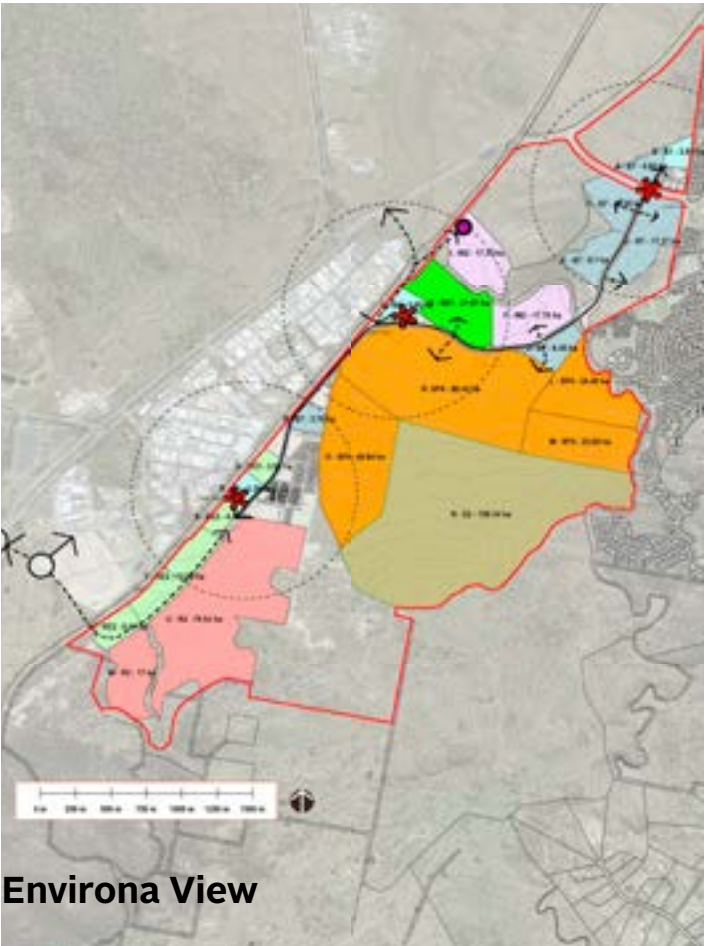
Group option voting outcomes

OPTION	David	Daniel	Liesl	Paul
Maximum Development	16	-	19	19
Maximum Innovation	22	24	24	23
Mixed business industry / innovation	-	18.5	18	14
Environa View	22	28	25	22
Renewable energy and business	15	14	16	10
Green grid	22	23	22	16

Three of four groups scored the option "Environa View" highest or equal highest, and recommended this option as preferred.

One group top scored "Maximum Innovation".

All groups bottom scored "Renewable energy and business" option.



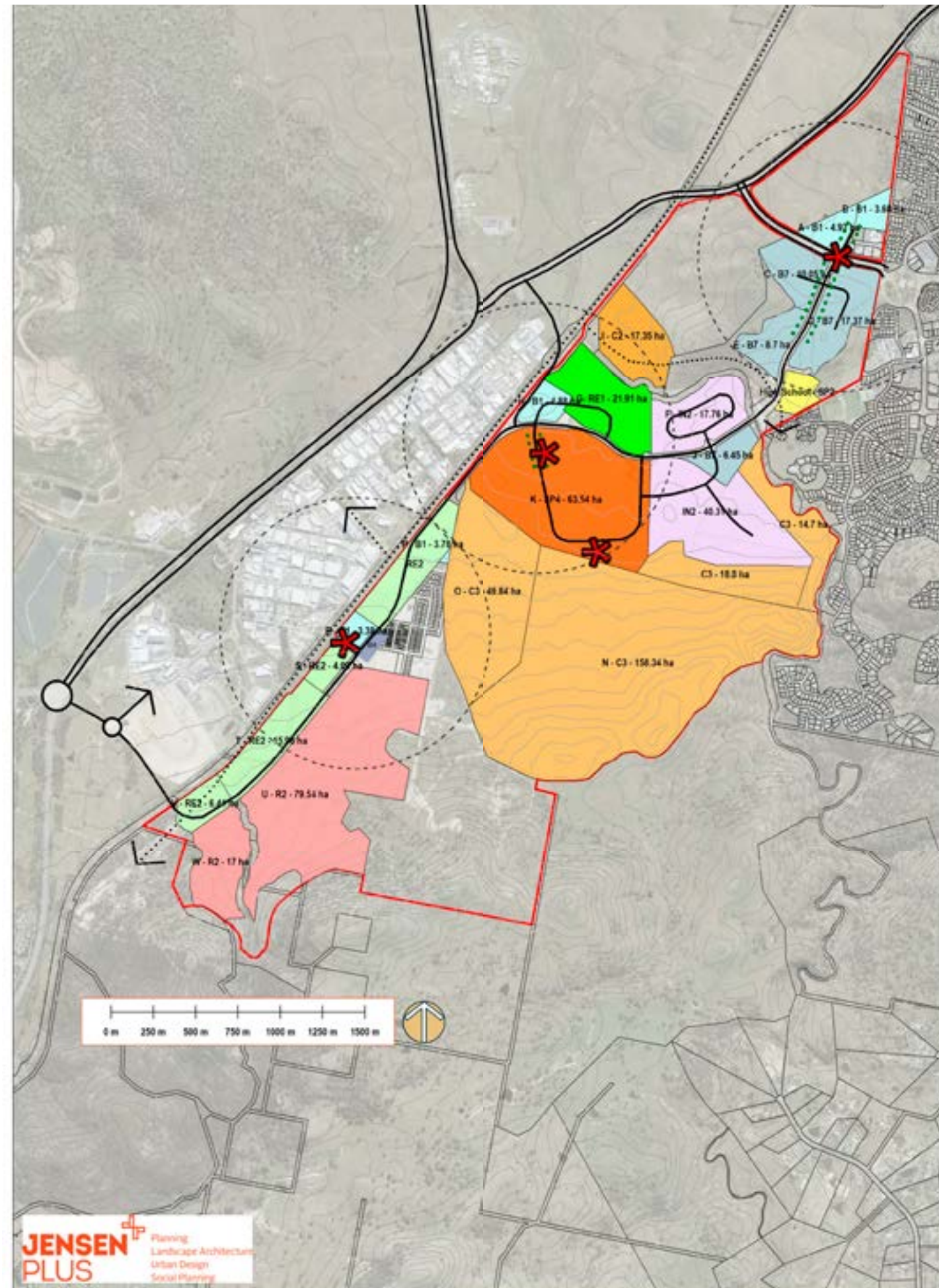
Summary of Session #2 Options Evaluation outcomes
_ Apply the environa view concept
_ Define what uses are in SP4 Enterprise?
_ Avoid box gum woodland (parcels M, N and O)
_ Increase separation from creek + residential
_ Refine mix of IN2 and SP4 land
_ Parcel I _ north of Jerra Creek site constrained
_ Review mix of B1/B2/B7?

Session #3 _ Preferred option refinement

Between sessions #2 and #3 (overnight) a refined urban design option was developed "Environa Enterprise + Industry Precinct".

The option shows:

- _ Mix of SP4 + IN2 land
- _ C3 conservation zone introduced around Enterprise + Industry, and parcel I
- _ Placemaking
- _ (South Jerrabomberra as existing zoning)
- _ Connectivity north (Lanyon) and South (Monaro/ Isabella)
- _ Active transport + green corridors




Yield Table

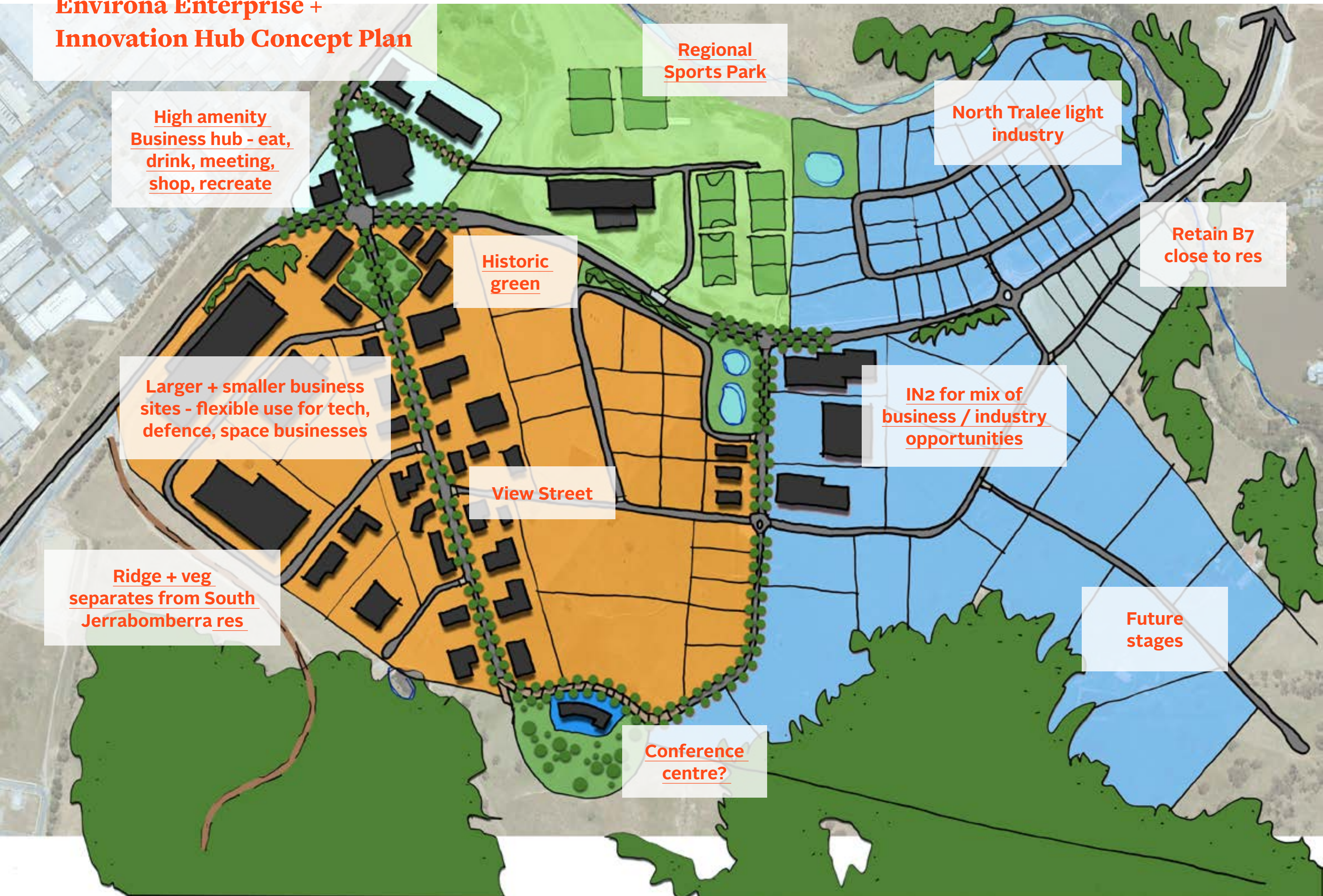
Environa View - Preferred Option		
		Area (ha)
B1	Neighbourhood Centre	16.86
B7	Business Park	42.57
IN2	Light Industrial	58.07
SP4	"Enterprise"	63.54
RE1	Public Recreation	21.91
RE2	Private Recreation	30.26
C2	Environmental Conservation	17.35
C3	Environmental Management	241.68
R2	Low Density Residential	96.54
TOTAL AREA		588.78

Area (ha) Employment Lands		
B7	Business Park	42.57
IN2	Light Industrial	58.07
SP4	"Enterprise"	63.54
SUB TOTAL		164.18

Legend

 Hub / local centre

Environa Enterprise + Innovation Hub Concept Plan



High amenity
Business hub - eat,
drink, meeting,
shop, recreate

Regional
Sports Park

North Tralee light
industry

Retain B7
close to res

Historic
green

Larger + smaller business
sites - flexible use for tech,
defence, space businesses

IN2 for mix of
business / industry
opportunities

View Street

Ridge + veg
separates from South
Jerrabomberra res

Future
stages

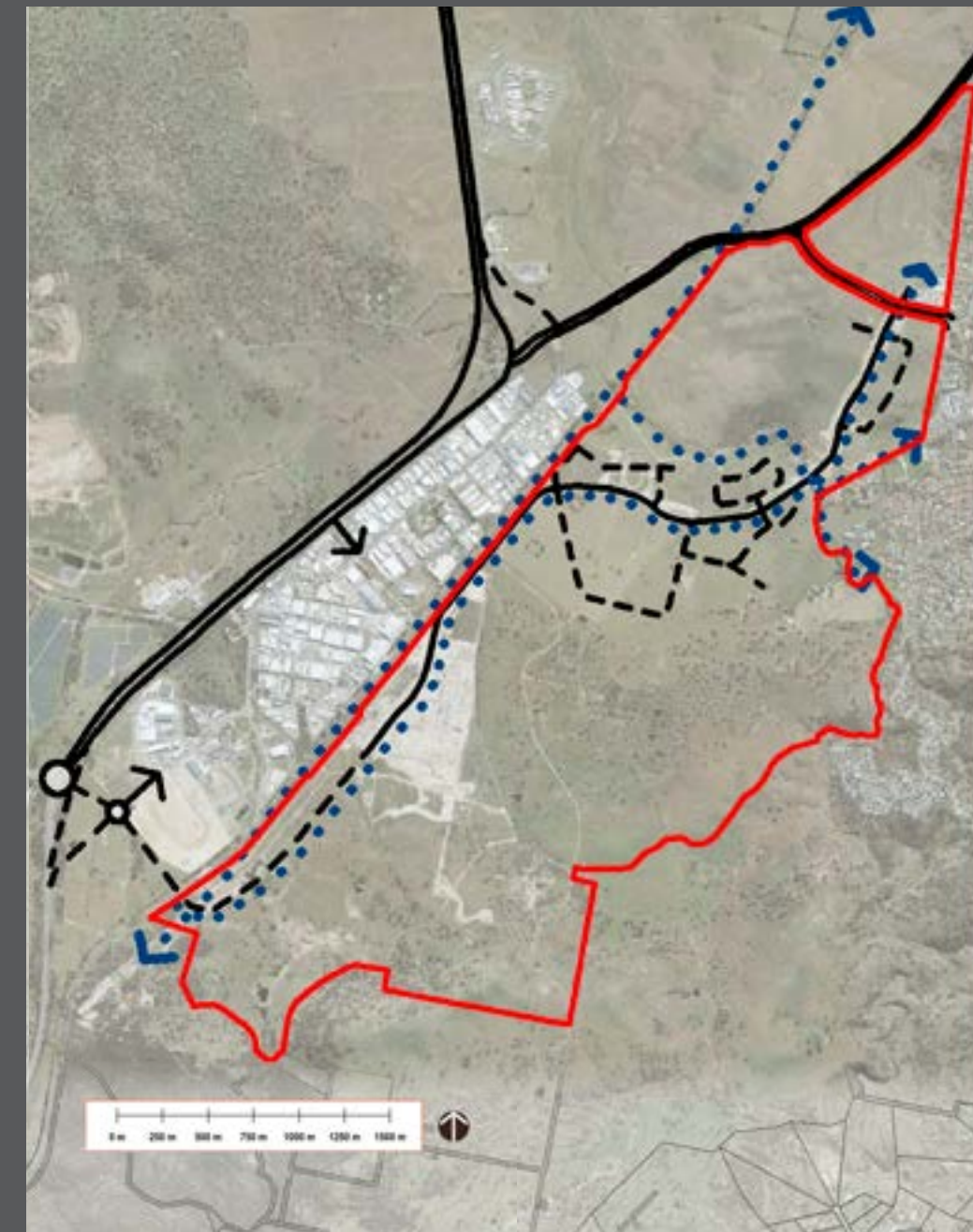
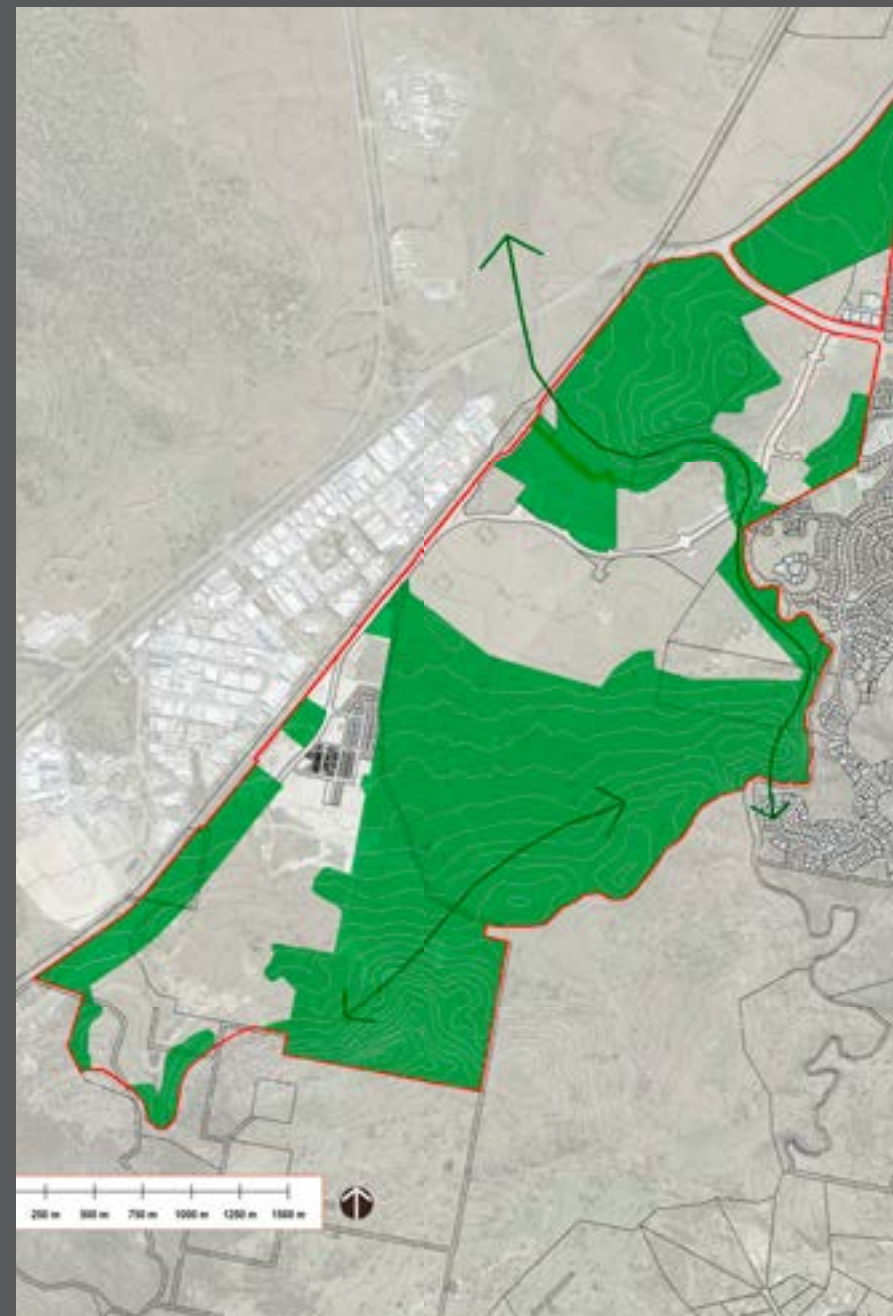
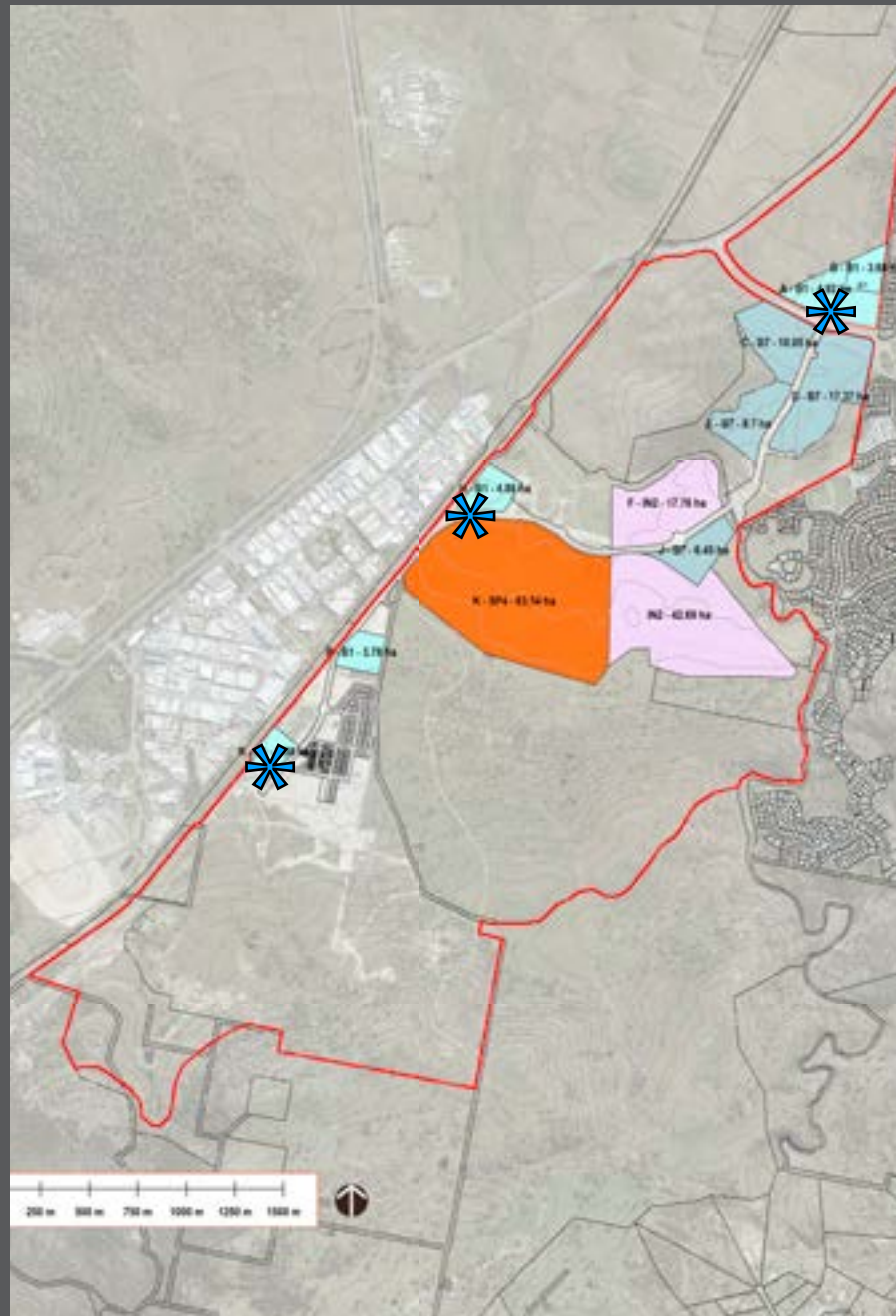
Conference
centre?

Master plan layers

Employment + centre zones

Green infrastructure

Connectivity (road + active)





Session #3 _ Master Plan Supporting Strategies

Six focus group discussions were held to gather technical feedback on the refined master plan option, and to identify further information / testing, as well as strategies needed to guide the draft technical reports and draft master plan.

Small Group Focus Groups

9.30am

- Transport + Intermodal
- Environment + Heritage
- Economics

10.30am Break

10.40am

- Master Planning, urban design
- Land use considerations + Air, Noise, Odour
- Infrastructure + Sustainability





Transport + intermodal focus group summary

Transport + Intermodal

active travel along Monaro Hwy?

relying on tompstitt/lanyon causes risks with reliability and traffic impacts

lanyon link may be compatible with monaro upgrade - to be tested

link to lanyon essential for safety and resilience

how would shared active travel scheme work - employees not mentioned, need to review location options and safety and design and environmental design

councils preferred option still central

no intermodal is OK

doesn't have the critical mass base on freight for ACT

TINSW didn't see a strong need for this... would be industry led

supply chain costs to the region

this link sensible for master plan - network resilience, capacity

south is a long way from tompstitt etc

provides robustness to connect E-W corridor south of RJP

dunns creek road - show potential & linkage to east

or not? maybe not the RJP proposal?

1

Do you have any comments on the updated master transport?
e.g. consider transport access and location

2

What additional testing or modelling on transport needs to be done to verify the master plan?

3

What other strategies need to be done to verify the master plan from a transport perspective?

1. Key points _ master plan feedback

- _ Road-rail intermodal not viable and not included in master plan
- _ Lanyon Drive link and Monaro/Isabella link sensible for network resilience, safety and precinct access.
- _(Council's policy remains Dunns Creek / central corridor. To be addressed)

2. Additional testing

- _ Review recent ACT Monaro Hwy planning concepts
- _ Test Lanyon Drive link and Monaro/Isabella link - layout, environmental, volumes, rail corridor crossings
- _ Review active transport network including ACT links

3. Strategies for technical reports

- _ Public transport, including connectivity to the ACT



Environment + heritage focus group summary

Changed Zones_access_overlays_green infrastructure.pdf

1 Do you have any comments on the updated master plan in relation to the environment or heritage?
e.g. consider the environmental protections and heritage requirements

how do we encourage opportunities for restoration

introduce stewardship sites - could be an incentive to create offset sites

The amount of 'green' space is beneficial for protecting Aboriginal cultural values at a landscape level

Almost all built heritage features of Environa are within the developable zones and would need to be considered in future designs

2 What additional testing or consultation on environmental constraints and/or heritage needs to be done to verify the master plan

detailed overlay on C zone north of creek to test if it is developable

explore whether C3 zoning should be C2

detailed field surveys/data collection for Environa

Todoroki to model buffer zone to east of R2 to define a more courtyarded boundary

Flooding, stormwater zones to be mapped, strategy required for managing on NSW side of border

Overlay known heritage places including Environa structures and incorporate in master plan sub-precinct layouts

Additional Aboriginal heritage surveys still to occur

further data collection necessary after master plan is published due to seasonal timing?

strategy to manage potential disconnect of mapping and master plan draft release

Discussion about timing of survey. Several species have limited survey windows eg PTWL, SLL, Superb Parrot and Key's Matchstick Grasshopper require survey in Sep - Nov.

Area in south of Environa, outside mapped Bongum Woodland, requires further investigation

Assuming presence of species credit species not ideal

3 What other strategies need to be developed to support the master plan from an environment and heritage perspective?

Heritage Management Plan for precinct could be a consideration

Water-sensitive urban design strategy

Would recommend a heritage interpretation plan

strategy to manage potential disconnect of mapping and master plan draft release

Connecting with Country Framework (Government Architect NSW)

1. Key points _ master plan feedback

- _ Amount of 'green' space beneficial for protecting Aboriginal values
- _ Introduce stewardship sites and offset sites

2. Additional testing

- _ Review Parcel 'I' biodiversity and flooding constraints
- _ Confirm C2 V C3 (or other zones) for non employment areas (including southern edge of Environa)
- _ Fine tuning of employment / buffer boundaries (and other land use opps within - may require air/noise/odour inputs)
- _ Additional field survey Environa (show any potential employment expansion areas as TBC)
- _ Identify stewardship / offset site opportunities

3. Strategies for technical reports

- _ Heritage Management Plan + Interpretation Plan
- _ WSUD strategy
- _ Connect with Country Framework
- _ Provisions for including environmental mapping past Master Plan deadline?
- _ Environment restoration strategy

Economics focus group summary

1. Key points _ master plan feedback

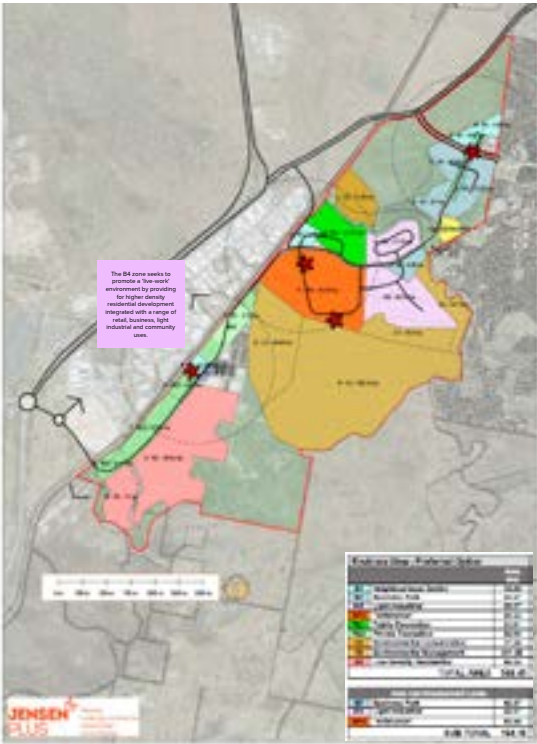
_ Ensure appropriate mix of IN2 and SP4

2. Additional testing

- _ Define specific land uses of SP4 zone
- _ Resolve Parcel 'I'
- _ Buffer Environa Drive with B7 for streetscape benefit?
- _ Hilltop hub - confirm role
- _ Define activity mix for each hubs - point of difference, function, mix e.g. health hub, defence hub
- _ Explore other emerging tech suitability e.g. agritech and food tech

3. Strategies for technical reports

- _ Establish buffers to support future land user certainty
- _ Public transport strategy
- _ Business Attraction strategy, including placemaking and urban design guidelines
- _ Be clear that residential is not part of B1 zones



Changed Zones_access_overlays_green infrastructure.pdf

1

Do you have any comments on the updated master plan in relation to economics?
e.g. consider the fine tuning of the zoning (B1 vs B7)

- Concern about sufficient industrial lands to service long term needs (but suitable for accommodating short - medium term)
- Could part or all of C3 buffer be Business Park
- Parcel F would be good as B7, but may be committed already by Village as IN2 - To review
- Could Parcel I be a design team supply option for industrial land? - noting constraints in place
- As land slopes more, less suitable and more expensive for industrial
- extend SP4 / B7 along southern side of Environa Drive - both sides if possible / doesn't compromise IN2
- SP4 zone could potentially be accommodated within the existing land parcels
- SP4 Zone - should only be used where there isn't an appropriate zone - DPE Guidance
- Eastern Broadacre land could accommodate broader industrial purposes

2

What additional testing to be done from an economics perspective to verify the master plan

- Parcel F would be good as B7, but may be committed already by Village as IN2 - To review
- Could Parcel I be a longer term supply option for industrial land? - noting constraints in place
- Mix and function of hubs - point of difference and experience?
- consider Poplars hub - further south - better for walkability
- B7 Zone needs to provide flexibility for cafe
- H - B1 - investigate allied health adjacent to leisure precinct / allied health / defence health.
- Hilltop Hub - confirm function feasibility - support by zoning or overlay (Key Sites?)
- Data Centre - confirmation of the location is needed - understand opportunities this could provide
- explore other emerging tech - agritech and food tech suitability here

3

What other strategies need to be developed to support the master plan from an economics perspective?

- clear messaging that residential is not part of the B1 / zones
- establish visual and noise buffers to support certainty for future users
- importance of public transport as a serious consideration for businesses looking to locate there
- Visual Amenity / place plan - closely linked to economic drivers
- Business Attraction - aligning uses with preferred locations - supported by design elements



Master planning + urban design + community focus group summary

integrates with sports precinct

Changed Zones_access_overlays_green infrastructure.pdf

1 Do you have any comments on the updated master plan in urban design?

public transport integration?

central hub a good strategy

2 What additional testing needs to be done from a master planning and urban design perspective?

review place plan for queanbeyan CBD

medical, services, etc

design around other historic features

bandstand, stone walls, arch

3 What other strategies need to be developed master plan from an urban design/master perspective?

urban design principles

sports tech

new centre should have health wellness focus, sports, gyms, meeting places... not just convenience retail and no fast food

1. Key points _ master plan feedback

- _ Incorporate high-quality urban design features
- _ Integration with public transportation
- _ Central hub a good strategy - focus on health, wellness, sports, + business meeting places....Integrates well with sports precinct

2. Additional testing

- _ Design to incorporate historical features of Environa
- _ Review place plan for Queanbeyan CBD
- _ Provisions of services + amenities e.g. medical

3. Strategies for technical reports

- _ Urban design principles
- _ Potential for sports tech businesses

1. Key points _ urban design feedback (see over)

- _ Hub concept supported

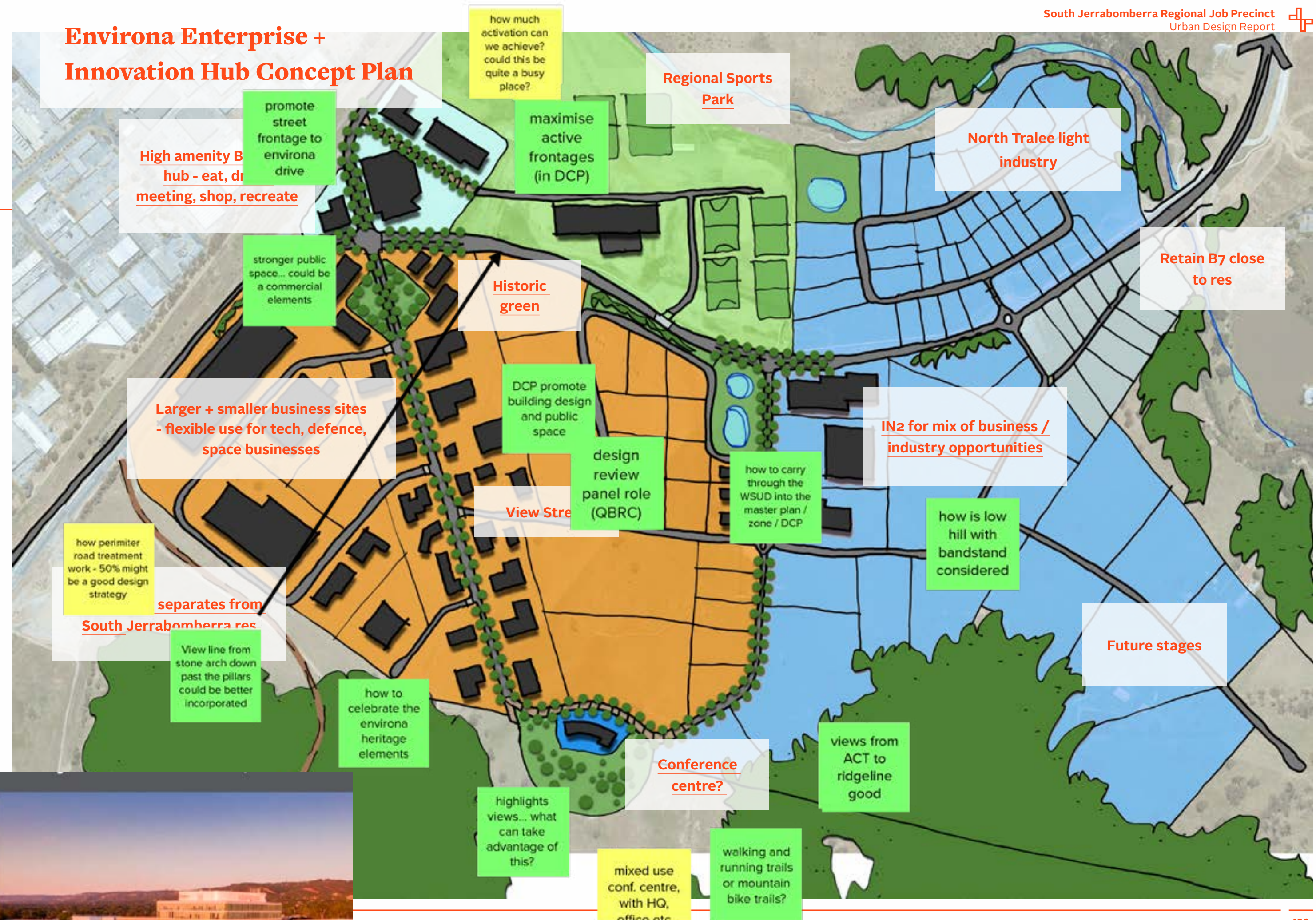
2. Additional testing

- _ WSUD integration
- _ Activate street frontages including at Environa Drive centre
- _ Stronger public space element
- _ Typical streets / cross sections
- _ Path + trail locations
- _ Views
- _ Industry interfaces with Environa Drive

3. Strategies for technical reports

- _ Urban design policy / guidelines (for DCP or stand-alone guidelines?)
- _ Design Review Panel by QPRC?

Environa Enterprise + Innovation Hub Concept Plan





Infrastructure + Sustainability focus group summary

1. Key points _ master plan feedback

- _ Micro grid opportunity
- _ Works from electrical, comms, transport perspective
- _ Buffer width along creek insufficient?

2. Additional testing

- _ Review flood mapping + any additional planning needed?
- _ Renewable energy options - microgrid, batteries, virtual power plant etc.
- _ Need for substation - internal or external
- _ Water and sewage capacity

3. Strategies for technical reports

- _ Water strategy - mapping, WSUD, ASR, water catchments + locations, reticulation
- _ Sustainability Governance strategy
- _ Renewable energy funding strategy

option for micro-grid for this zone

investment opportunity

grants - NSW, ARENA

1 Do you have any comments on the updated master plan in relation to infrastructure and sustainability?

Transport - broadly reasonable - if links are not feasible there will be issues

zoning lines potentially too close to creek flood lines

No significant issues from an electrical and comms perspective

2 What additional testing needs to be done for infrastructure and/or sustainability?

detailed overlay of flood mapping to inform zone lines and roadway design

identify need for studies/test steps for flood risk implications on infrastructure

road linking functionality needs to be tested - including with ACT

determine extent of known mapping of other tributaries in the Evictions zone

establish lessons learned from Council/Enviros Drive

further exploration of on-site renewables, batteries, and integrated approach to energy

SMEC to define best locations and sizes for water catchments

feasibility review of ASR option - land use impacts

water strategy mapping and development - WSUD, ASR, catchments, reticulation

A Feasibility Study of water and proposed case including potential changes to land use in the Precinct will be required to assess the Section 91 Developer 4.3

SMEC to advise provisions options for internal or external substation - cost versus aesthetics

water and sewage infrastructure

water supply

Governance conversation for sustainability strategy with NSW and Co

3 What other strategies need to be developed to support the master plan from an infrastructure and sustainability perspective?

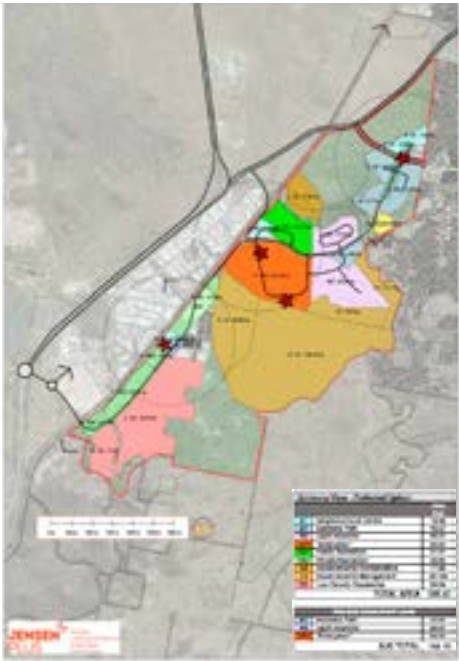
Both Aquifer recharge and surface recharge

on site renewable energy, battery, and integrated energy strategy

micro-grid/ virtual power plant



Land use considerations + air, noise + odour focus group summary



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1

Do you have any comments on the updated master plan in relation to urban design?

C3 Zone - lower lot size req - permits residential dev - lot size controls - Consider C3 Zone OR lot size controls / dwelling permissions

Additional R2 land in South Tallee - high potential for land use conflict from Hume. Too late?

B4 near Hume is problematic - allows high density residential -

B1 hub near Hume will have little amenity

2

What additional testing needs to be done from a master planning and urban design perspective?

Testing what the SP4 Zone can and can't do - potential impacting industries

Test whether scope to relocate the B1 hub adjacent Hume to the east of Emvona Drive

Can we develop any potential commercial development potential in heavily forested areas? Better understanding of the potential for commercial development in heavily forested areas

Test line of western buffer line - consider the potential for low impact/low scale - near zone or low high scale zone

3

What other strategies need to be developed to support the master plan from an urban design/master planning perspective?

Clear communication and management of expectations about the development in C3 zones

Clear communication and/or for managing complaints between ACT and Council for land use conflicts

Facilitate the relocation of the Asphalt plant?

sewer buffer - adopt strategy of smaller lots that smaller lots intensive use and possible business uses - DCPH other mechanisms?

1. Key points _ master plan feedback

- _ C3 vs C2 zoning (C3 allows subdivision). Control subdivision to very large sizes?
- _ Concern about amenity of South Jerrabomberra B1 and B4 land, and future R2 zone proximity to Hume

2. Additional testing

- _ Explore the Land uses for SP4 zone and implications for industries with amenity impacts
- _ Confirm any site contamination constraints and MP impacts
- _ Test width of buffers e.g. between RJP and Jerrabomberra and whether some land uses (or lot sizes) allowable with restrictions,

3. Strategies for technical reports

- _ Land use conflict strategy between NSW and ACT (including complaints, possible relocations etc)



Appendix E - Summary of Technical Reports

- Economic Technical Report
- Utility Infrastructure Technical Report
- Hydrology, Water Quality + Water Demand Technical Report
- Traffic + Transport Technical Report
- Land Use Considerations Technical Report
- Biodiversity Analysis Report
- Bushfire Analysis Technical Report
- Soils, Geology + Contamination Technical Report
- Historic + Aboriginal Cultural Heritage Technical Report
- Intermodal Feasibility Report
- Air, Noise and Odour Technical Report
- ESD Technical Report

**This section extracts
key points from the
technical analysis
of the draft urban
design study by
others**



Economic Technical Report



Economic Analysis of South Jerrabomberra Masterplan

Jensen PLUS
13/10/2022



Economic Analysis of South Jerrabomberra Master plan (SGS 2023)

- _ The aim of this report is to assess the existing and proposed land uses/ industries, employment land and employment numbers for the RJP and surrounding areas and provide the master plan with the opportunities, requirements and constraints needed for the industries that should be considered by the master plan.
- _ Proximity of ACT and Queanbeyan (including RJP area) means that their economies function essentially as one unit.
- _ Seventy-four percent of employed Jerrabomberra residents worked in the ACT and its highly likely that many new residents in South Jerrabomberra will travel to ACT for work. Also, Queanbeyan residents with a Bachelor degree or higher are more likely to work in the ACT.
- _ From 2016 to 2021, Professional, Scientific and Technical Services have increased from 8.37% of the GVA of the ACT to 11.51%.
- _ Queanbeyan's largest economical sector is construction.
- _ Defence is over seven times larger as a proportion of the economy in Queanbeyan-Palerang compared to NSW as a whole.

- _ Surrounding employment centres do not provide employment lands comparable to the South Jerrabomberra RJP, due in part to fragmented land and limited availability for larger lots.
- _ Cross-border cooperation is essential for future economic development. This includes both governments resolving cross border public transportation connections.
- _ High electricity prices in ACT may make South Jerrabomberra a more attractive place to invest in.
- _ The market sounding process found key advantages for businesses to locate in South Jerrabomberra, including:
 - _ Access to secure fibre optic network
 - _ Access to Federal Government departments and Defence, with a lower cost of operation than locating in the ACT; and
 - _ Tech and advanced manufacturing among businesses establishing at Stage 1 of Poplars, commencing a 'critical mass' process.
- _ North Tralee developers are not thought to be targeting advanced manufacturing and defence industries.
- _ Investment that would make South Jerrabomberra more attractive, include:
 - _ Structures built to Defence standards and have provisions for a Secure Compartment Information Facility

- _ Reliable range of transport options, including suitably fast road transport, public transport and active travel, with sufficient cross-border connections
- _ Place making, supported by cafés, gyms, attractive outdoor settings etc.
- _ Access to technically minded labour force, supported by a proposed high school and potentially a TAFE or University presence.
- _ Permissions to run new and innovative testing and manufacturing techniques.
- _ Complementary businesses located nearby.
- _ Total employment lands demand in ACT/ Queanbeyan 10-60 hectares per year.
- _ 150 hectares of employment land to be taken up in South Jerrabomberra by the mid 2040s, if RJP nurtured for targeted industries.
- _ By 2041 Environa expected to house over 2300 jobs, with South Poplars expecting 1,150 jobs and North Tralee expecting 452 jobs by 2031 - Total jobs = 3,961.
- _ By 2041 the RJP's economic activity (with majority of Environa land developed) is expected to reach \$461million per year.



_ North and South Poplars, and North Tralee are expected to provide a supply of employment lands for the next 10-20 years. After this, Environa land releases will be needed to supply additional employment lands.

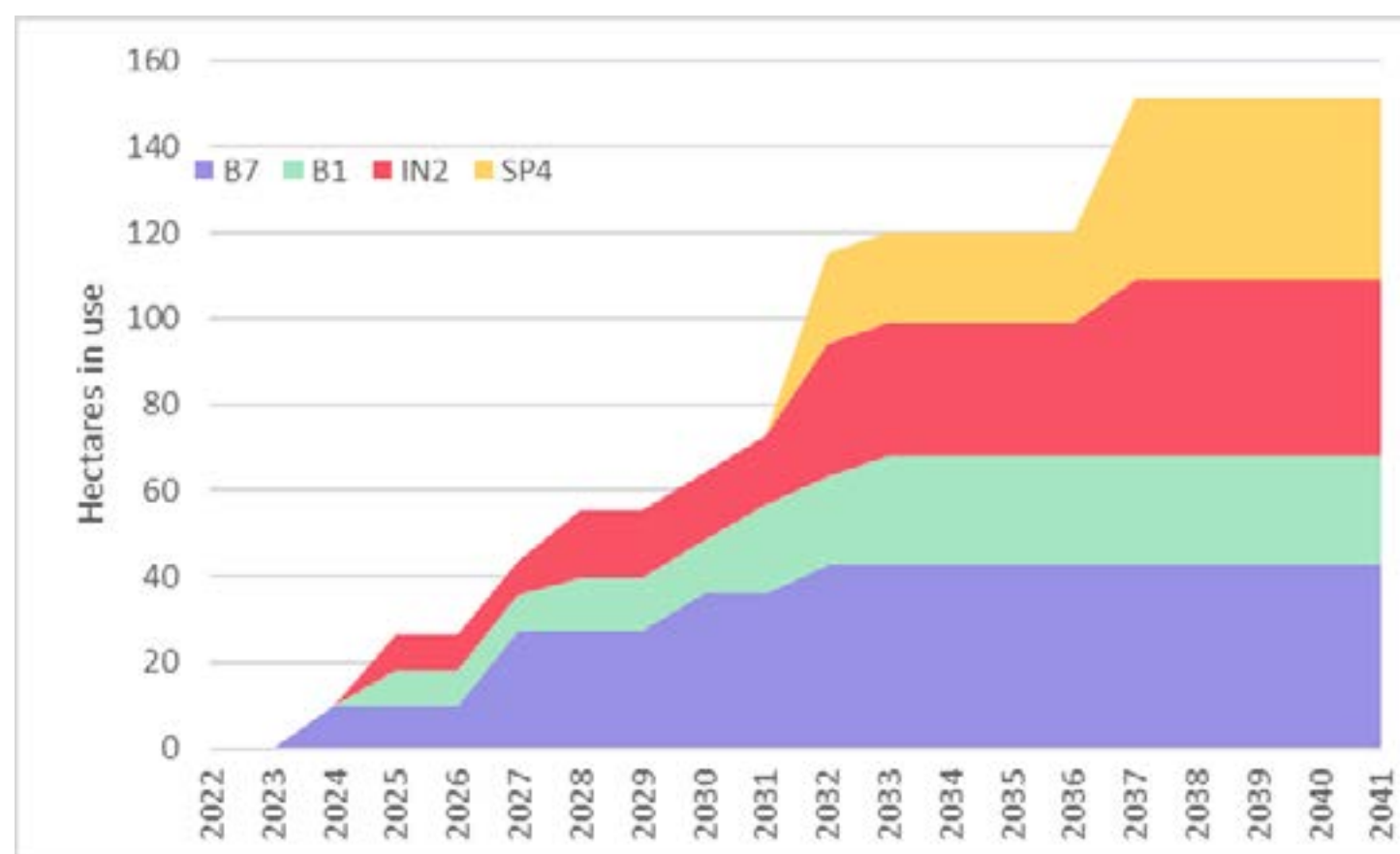
_ Businesses intending to locate at South Poplars will generally be large lots - around one hectare on average, with floorspace of at least 2,000 sqm per business – most will average around 5,000 square metres.

_ Employment land should also allow for supporting / related industries / organisations.

_ Expected number of employees from market sounding range from 75 FTE for a 4,200 sqm site (179 FTE/ha), 200 FTE for a 10,000 sqm site (200 FTE/ha).

_ South Jerrabomberra is expected to provide employment lands over and above the baseline employment lands needed to service the population.

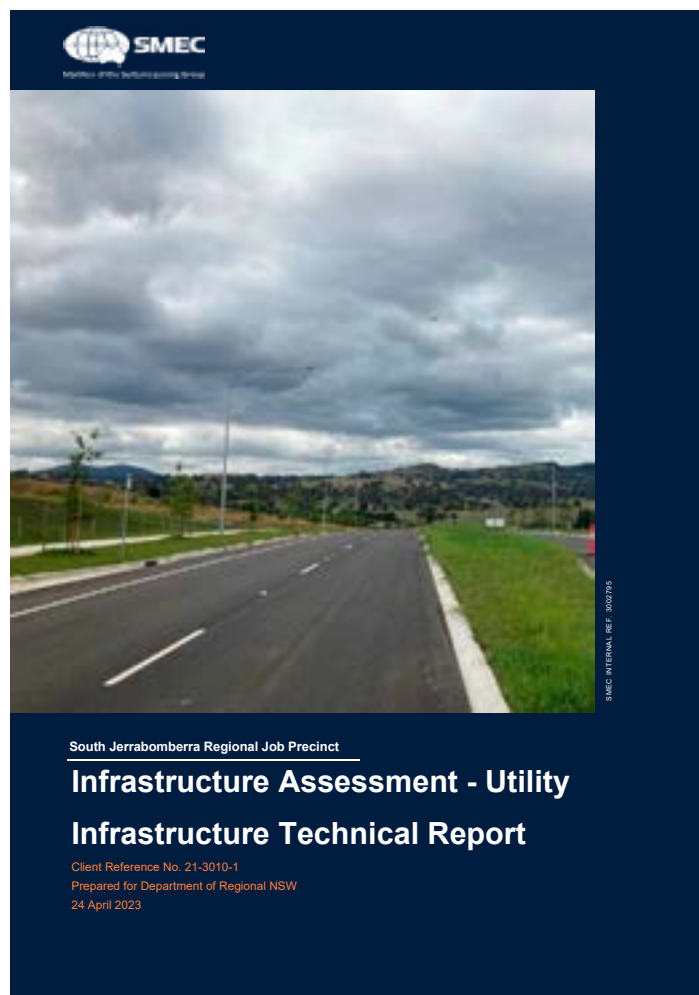
_ Queanbeyan has no plans for future employment lands other than South Jerrabomberra - RJP may need to increase business variety.



Projected employment lands uptake if advanced manufacturing is targeted



Utility Infrastructure Technical Report



Infrastructure Assessment - Utility Infrastructure Technical Report (SMEC 2023)

The technical report will highlight if the area's existing or intended utilities will be able to service the proposed Structure Plan, and provide upgrades required to satisfy any shortcomings.

Utility Infrastructure

- _ Essential Energy advised the need for a new Zone Substation. Possible location south of Tomsitt Drive.
- _ Report provides a spectrum of electricity solutions, provided as three stages.
- _ Potential need new substation for Stage 2 located in North Poplars.
- _ The energy requirements i.e. amount of substations, are dependant on roof top solar uptake, provision of a grid battery or Better Energy Storage System (BESS) - ideally online at Stage 2.
- _ Long-term (Stages 3 & 4) demand satisfied if Stage 2 station constructed, and offset by Stage 2 implementations.
- _ Second new substation required for the Urban Design Study's third and fourth stages. This will appropriately be 2 x 40MVA Transformers, located in the RJP's western area, 2ha outdoor site.

- _ Report assumes a electrical demand of 155MVA at full development, 319.96 hectares.
- _ Opportunity to heat Sports Precinct swimming pool from high energy users.
- _ Potential to accommodate a fully integrated network with a microgrid or virtual power plant.
- _ Development Contributions Plan be updated to share a portion of the cost associated with improved power supply - assist Council long term.

Telecommunications

- _ Currently majority of the RJP only has internet connections via satellite - future works will provide the RJP with NBN connections.
- _ Agencies required to supply own equipment to 'light' ICON fibre.
- _ RJP should consider being a Digital / Smart Precinct - possibility of a **Smart Precinct**.
- _ Progressive Governance - **Industry 4.0 + Government 4.0**.
- _ Incorporate intelligent traffic management, smart lighting, intelligent irrigation systems, smart street poles that can include CCTV cameras, public Wi-Fi, charging stations, LED lights.

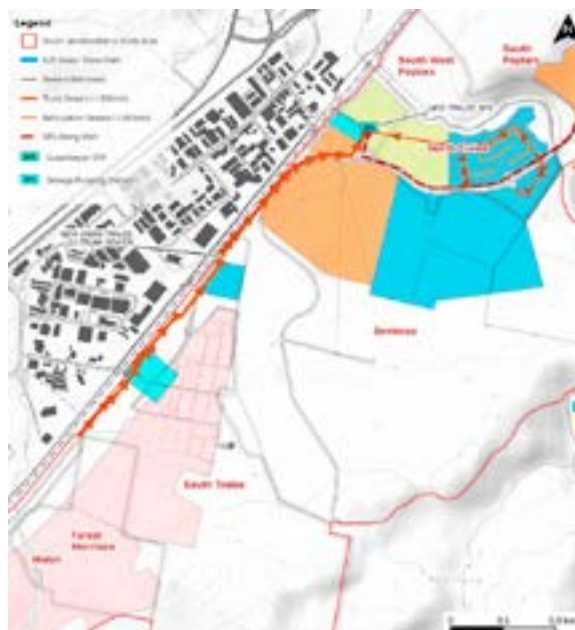
- _ Centrally placed shared telecommunications tower - 400sqm site - 5G network across the site. Not located near sensitive receivers.
- _ Recommended that a data centre operator be vigorously pursued.
- _ EV charging stations - 20% of parking spaces and 10% additional spaces for EV ready infrastructure.
- _ Provides three development options.
- _ Council can take an active role in encouraging the expansion of the RJP's telecommunications infrastructure - increase business and skilled workforce attraction.
- _ A variety of mechanisms discussed depending on services and infrastructure.

Water Supply + Sewage

- _ Queanbeyan Sewage Treatment Plant at risk of having insufficient capacity for future demands. An existing project is underway to upgrade facility to cater for 75,000 equivalent population. Completion expected in 2024.
- _ The RJP's existing water infrastructure, includes two connections to the north west, mains pipe and internal reservoirs.



RJP water pipe network (proposed)



Constructed sewer trunk main and Tralee Sewer Pump Station (SPS)

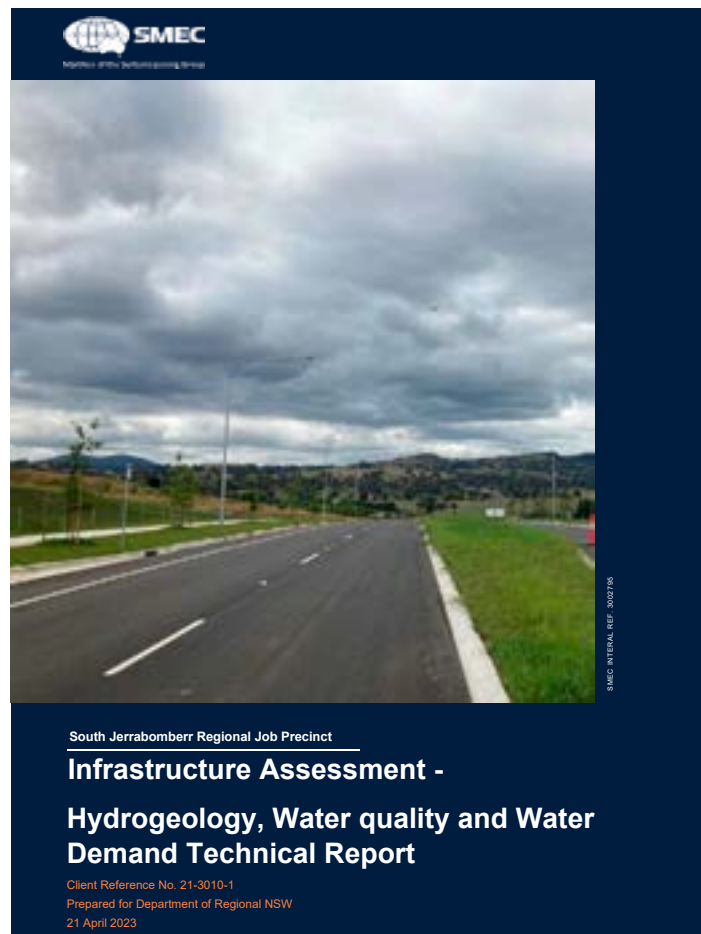
- _ The Precinct's connection point to existing Rosewood Glen 450mm main.
- _ Insufficient capacity in existing water network. New connection required.
- _ Second high level reservoir planned for the future.
- _ There is insufficient space within Environa Drive's road reserve to cater for additional water infrastructure needed for developments above what has currently been approved.
- _ Assumed regional sports centre, and other open space areas will use alternative water sources for irrigation.
- _ Reports provides three stages for how the RJP will be serviced by water - third stage uses alternative water sources and reduces total water demand.
- _ Modelling assumes current capacity includes North Poplars commercial area and South Tralee residential area, including addition 500 dwellings and 3.94ha of commercial land above as-built network.
- _ Water Demand Assumptions for South Poplars, North Tralee & Environa = 254.3 L/s + 30 L/s for commercial fireflow + 10 L/s for

- residential fireflow).
- _ Model connects the RJP with a new DN450 to the DN450 truck main in Jerrabomberra Parkway, required during Stage 2. This will allow Stage 2, 3 and 4 to meet the peak hour and fireflow demands. However, some pressures in the existing Jerrabomberra area have insufficient pressures.
- _ Stage 4 maximum peak hour demand of 602 L/s.
- _ Including additional dwellings and Local Business and Industry sub precinct will increase peak hour demand of 20.4 L/s. However, further analysis is needed to determine if additional infrastructure is needed.
- _ Additional reservoir capacity is needed to cater for the RJP's developments.
- _ Stage 1 upgrade of the Queanbeyan STP will cater for the increased demand - anticipated completion 2024.
- _ Capacity constraints are experienced in DN600 gravity mains, construction of new pump station will address capacity issues.
- _ Fully developed RJP = 20,439 EP.
- _ Increasing demand will exceed sewage

- network capacity wet weather performance, with some manholes at risk of overflow.
- _ The existing 88 L/s capacity for the proposed Tralee SPS is insufficient and will require an upgrade to allow for approximately 120 L/s for stage 3 and 150 L/s for Stage 4.
- _ Augmentation of the emergency storage is needed for Stages 2, 3 and 4. With Stage 4 requiring 1,245 kL.
- _ Approximately 2,170m of the sewer identified as being under capacity for the adopted 10-year ARI storm event.
- _ Recommended that the DCP be upgraded to help raise funds for new infrastructure.
- _ Council could also negotiate Voluntary Planning Agreements.
- _ Council should update the provisions of the South Jerrabomberra Local Infrastructure Contributions Plan 2018 to accommodate the RJP's increased demand, and also consider ensuring sufficient levying of Section 64 contributions.
- _ State Infrastructure Contributions (SICs) can help fund the delivery infrastructure.



Hydrology, Water Quality + Water Demand Technical Report



Infrastructure Assessment - Hydrogeology, Water Quality and Water Demand Technical Report (SMEC 2023)

The technical report provides an overview of the RJP's groundwater and surface water quality and availability. This will determine how best to use this water to service the RJP and what water controlling / conserving mechanisms should be considered in the Master Plan.

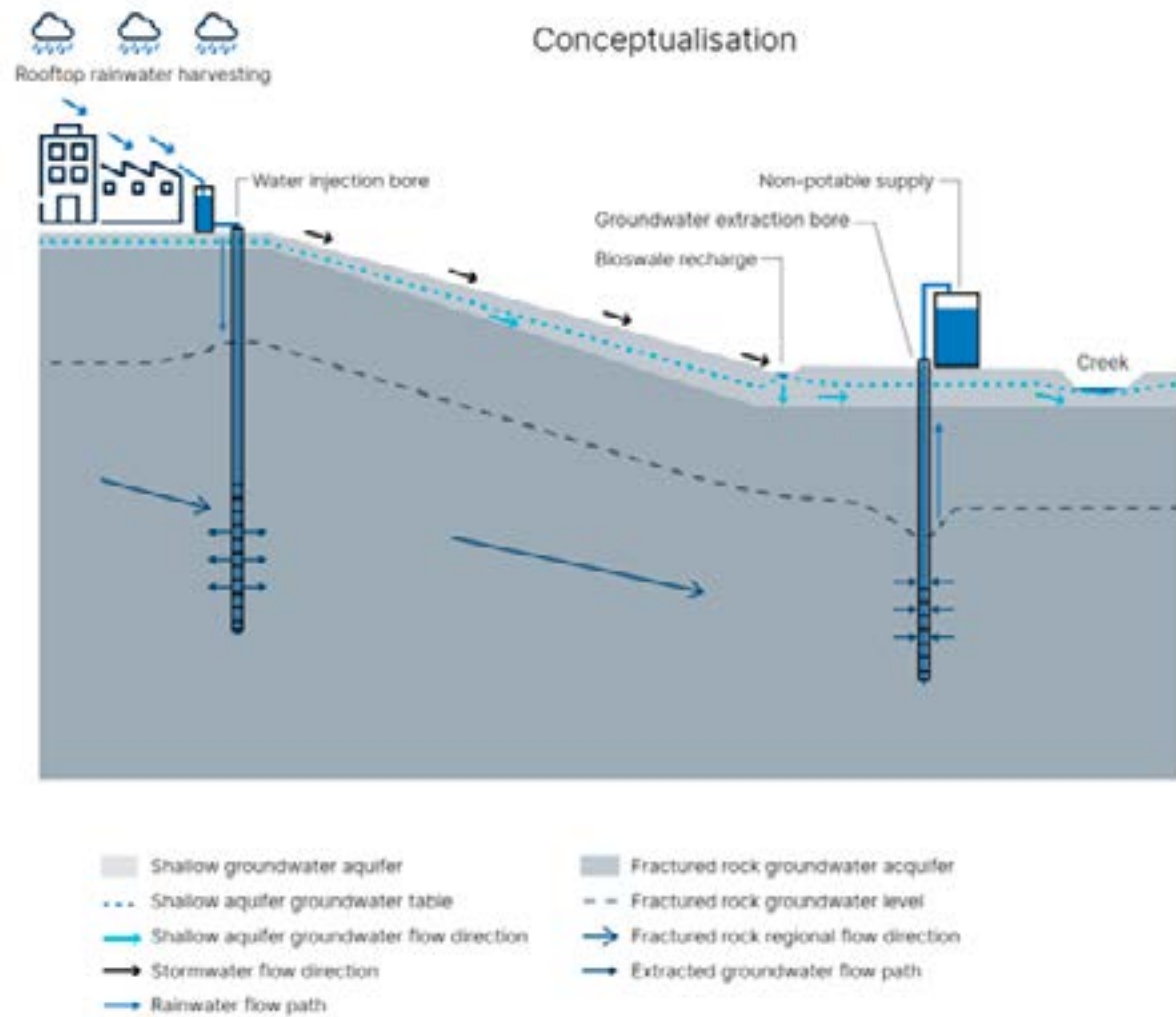
- _ Rainfall is the greatest recharger of aquifers.
- _ Water Supply for Queanbeyan is either owned or controlled by the ACT Government. There are allowances for growth, however, high water using industries, residential growth etc. will need to be run through the ACT Gov. to determine capacities and the existing water supply agreement.
- _ The RJP's water supply is part of a tri-partite agreement. Although this can impact supplying a growing area, the RJP's industries have a relatively low water demand for potable water.
- _ Groundwater potentially can be used to irrigate the Sports Complex.
- _ The site is not in proximity to known high-

priority groundwater dependent ecosystems (GDE).

- _ Groundwater can form part of the development's water supply and management strategy.
- _ Assumed potable water supply for the Regional Sports Centre is reasonably high.
- _ Council will not support the provision of a third pipe (recycled water) to the RJP. May be explored if certain industries move into the RJP. Lack of demand and current infrastructure.
- _ Rain Water Tank sized to meet maximum of 70% of demand to be cost effective for meeting non-potable water demand.
- _ A total bioretention basin of 7,935 sqm of filter area is required as a minimum to meet water quality targets - located on lower lands near riparian areas.
- _ Construct natural bioswales - not concrete, will allow for infiltration over a wider area.
- _ Water quantity management strategy uses On-site Detention (OSD) Storages distributed at various land use zones - total storage of 58,664m³ - located on lower lands near riparian areas.
- _ Deeper fractured rock aquifers may be

a suitable source of raw water for small demand localised applications - located across the site.

- _ Recharge re-inject into deeper aquifers - high points of Environa as potential location. Help offset extraction due to Regional Sports Complex irrigation.
- _ Existing funding mechanisms exists via legislation, including through the Environmental Planning and Assessment Act, e.g. Special Infrastructure Contributions and South Jerrabomberra Local Infrastructure Contributions Plan 2018.
- _ Report recommends QPRC update the DCP to cover regional WSUD features, funded by developers and maintained by landowners
- _ DCP should include a provision that 100% of rainwater captured from roof areas, and be used for irrigation, toilets and washdown facilities.

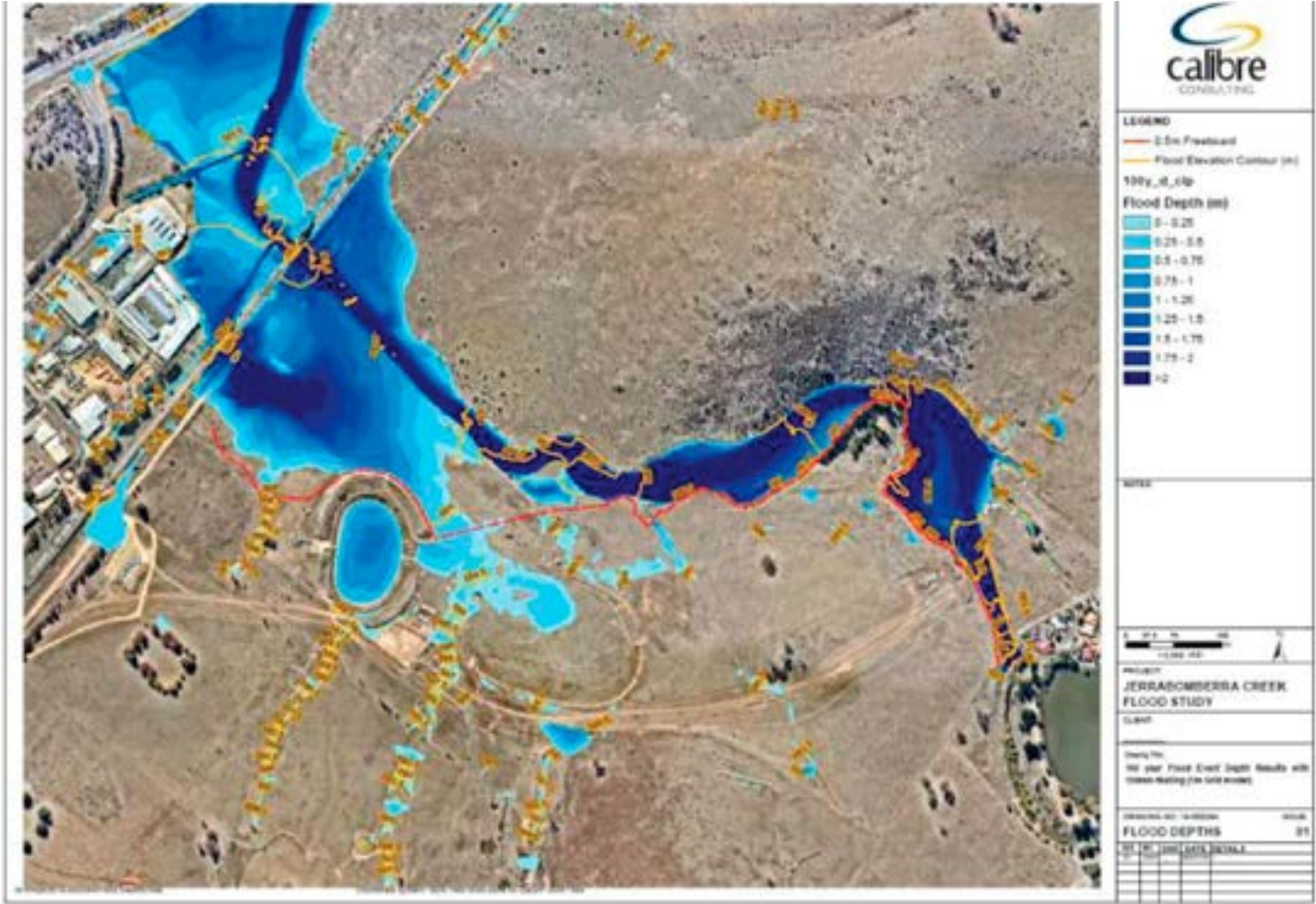


Hydrogeology, Water Quality and Water Demand Technical Report findings - Post-Urban Design Report

_ Recommended that Precinct's Development Control Plan amended to make on-site rainwater tanks a mandatory requirement for all new developments, with collected water used for non-potable uses.

_ 2016 Flood mapping, indicates everything between red-line and Jerrabomberra Creek be zoned for drainage and land south of red-line zoned for development.

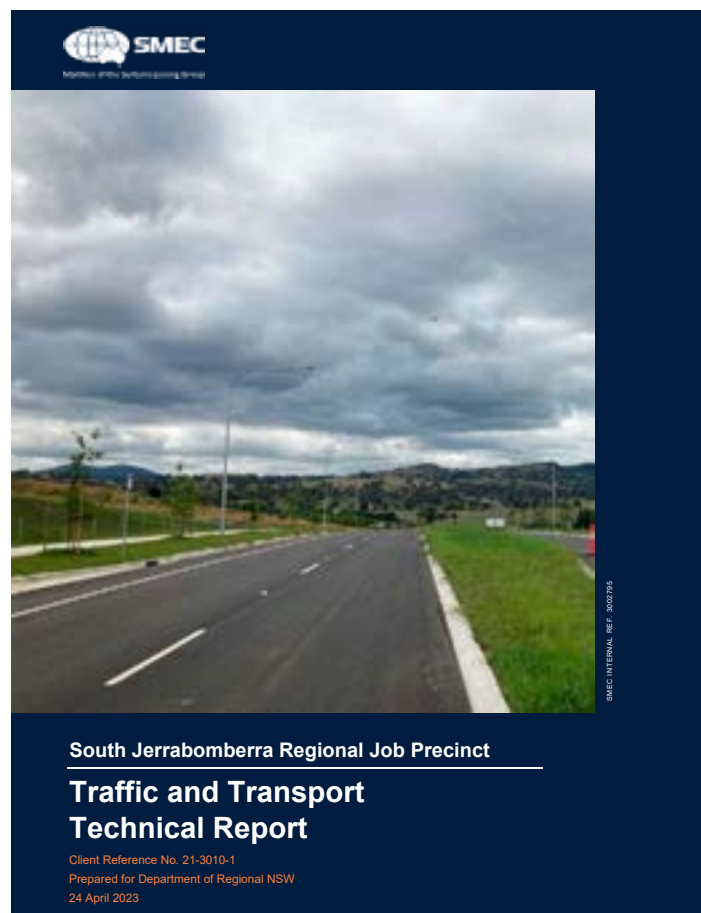
_ Report recommends further studies be done to create a more detailed hydraulic model using the ARR 2019 method. This will account for climate change.



Calibre 2016 flood study - map shows 1% AEP flood planning level with 0.5m freeboard



Traffic + Transport Technical Report



Traffic and Transport Technical Report (SMEC 2023) + DRNSW commentary

The technical report will investigate how the RJP will impact the area's traffic network and provide ways to upgrade the infrastructure, while providing ways to increase active and public transportation.

- _ Develop off-road cycle paths along Ellerton Drive and Cooma St. These paths would connect to the existing path along Edwin Land Parkway and provide cycle access to the RJP from most of Queanbeyan.
- _ Provide active transportation paths and connections to Canberra and Queanbeyan.
- _ Separate cycle lanes from roads where possible.
- _ Provide active paths and connections to surrounding areas. Should include excellent end of trip facilities to promote active travel.
- _ Upgrades to public transport needed to support growth.
- _ Cross-border bus services are only offered by Qcity Transit, and fares are not transferable between operators. People travelling between NSW and ACT require two tickets and need to transfer between buses.
- _ Few bus services provided near the RJP.

- _ RJP could be serviced by the Queanbeyan Interchange by extending Routes 835 and 836 or by a new dedicated route, with the potential for a interchange/transfer opportunity at the intersection of Cooma Road and Edwin Land Parkway
- _ ACT and NSW Gov. currently discussing interstate travel options. Possibly to create a connection with the Woden Town Centre, as accessible to all other ACT town centres through rapid buses.
- _ QPRC, ACT Government and Transport NSW have agreed that a Park & Ride facility would support Googong and Jerrabomberra residents travelling to the ACT - should include secure bike parking.
- _ Rail line possibly used as a rail trail (in planning stage), however, partly used as an easement for power supply, also biodiversity constraints along trail.
- _ The surrounding area's road network condition is at a high standard.
- _ B doubles greater than 19m in length cannot access Tomsitt Drive and Environa Drive, unless the roads are reclassified to allow 25m B-doubles.
- _ Additional connections into and within the RJP needed to support movement.

- _ 69,886 average vehicle trips per day, with 25% being internal trips..
- _ Report's model used 2031 and 2041 scenarios, with the RJP's proposed Stage 1 & 2 included within the 2031 model and Stages 3 & 4 within the 2041 model.
- _ Lanyon Drive and Tomsitt Drive, including past Jerrabomberra Roundabout are currently near or at capacity, especially at the AM Peak. With Monaro Highway southbound and Isabella Drive westbound operate above their respective capacities during the PM peak period.
- _ Several planned transport upgrades for the region, including along Monaro Highway at Lanyon Drive and Isabella Drive, which will improve the area's efficiency, safety and commute times.
- _ No-through roads within the RJP should be avoided - freight concerns.
- _ Single carriageway two-way roads will generally be sufficient throughout the local road network.
- _ Environa Drive may require duplication across Jerrabomberra Creek in the early stages of the RJP's development.
- _ DCP to be updated to promote active transport through parking rates and end of trip facilities



Traffic and Transport Technical Report findings - Post-Urban Design Report

- _ Location of proposed Monaro Rail Trail has a limited catchment, connectivity along trail to key locations is recommended, such as CBD.
- _ Widening of Tomsitt Drive to six total lanes is not viable.
- _ The QPRC ITS and Bike Plan recommend additional shared paths along Cooma Street, Donald Street and Lanyon Drive via the existing shared path along Edwin Land Parkway. These will provide better connections between Queanbeyan and the RJP.
- _ New 835 bus route connects the Queanbeyan CBD to the RJP and Jerrabomberra Village Shops via Lanyon Drive. Bus route intends to provide schedule connections with ACT buses/ routes.

Dunns Creek Road

- _ Dunns Creek Road is proposed to connect Googong Township and Tralee to the ACT. Initially, the route was to connect Old Cooma Road and Googong Road, extend to Tralee, and reach the Monaro Highway through Sheppard Street into Hume. A 2015 investigation and cost review led to the adoption of this route.
- _ However, the land along the alignment has since been registered as biodiversity conservation land and a wildlife sanctuary. Investigations concluded that development through these lands or offsetting elsewhere is not possible.
- _ Council is exploring alternative routes that avoid protected areas and minimise property impacts. The ACT Government prefers a connection via Isabella Drive and does not support a connection via Sheppard Street.
- _ The project will be delivered in two stages.

Stage 1

- _ Stage 1 connects Tralee to the ACT near Isabella Drive. Traffic modeling shows Tomsitt Drive will become congested as Tralee and the South Jerrabomberra Regional Jobs Precinct grow by 2031. Stage 1 aims to

alleviate this by providing a second exit from Tralee into the ACT.

- _ Council is collaborating with NSW, ACT, and Commonwealth departments and agencies to reach a consensus on Stage 1's design by late 2024.
- _ On February 2024, Council resolved to move the Dunns Creek Road corridor from North Tralee to the southern end of the Tralee Urban Release Area to facilitate a community housing project near the Community Park, Community Centre, and shops. A review confirmed the western alignment is feasible, but no funding or construction decisions have been made. A Planning Proposal, involving extensive stakeholder consultation, aims to register the road corridor on the LEP

Stage 2

- _ Stage 2 connects Stage 1 to Old Cooma Road. Stantec is preparing a study on route options, and the impact on residents will become clearer as these options are developed. The study is expected in the coming months and will be made public for community consultation.



Land Use Considerations Technical Report

Sherpa's report considers planning for land use safety matters that could arise between potentially 'hazardous' land uses and sensitive land uses such as residential areas. Sherpa produced a layout of the RJP that could fast track development approvals by reducing conflicts between adjacent areas.

Regional Job Precinct South Jerrabomberra Technical Report Land Use Considerations (Sherpa 2023)

Sherpa's study intends to highlight any potential safety planning matters that could arise from the proximity of existing or proposed land uses in the RJP, for example, potential hazardous industries to sensitive land uses.

An aim of RJPs is to fast track approvals. Sherpa's process will facilitate this by minimising potential land use conflicts during future assessments and development approvals.

The study uses three criteria to determine the potential for developments to result in land use safety conflicts:

- _ A performance objective to protect residential safety
- _ Societal risk (the cumulative risk of developments effecting a population)
- _ Individual risk (the cumulative risk of developments effecting an individual at a location).

The assessment is supported by four general principles:

- _ The avoidance of avoidable risks
- _ The risk from a major hazard should be reduced

wherever practicable, even where the likelihood of exposure is low

- _ The effects of significant events should, wherever possible, be contained within the site boundary; and
- _ Where the risk from an existing installation is already high, further development should not pose incremental risk.
- _ The study uses the Resilience and Hazards SEPP to apply defined thresholds and other considerations to determine if a facility is potentially hazardous.

Baseline Report

- _ The South Tralee Residential development may constrain development of the adjacent areas of Environa and the Hume Industrial Estate, through buffers.
- _ The current buffers between residential development and the Hume Industrial Estate should be applied to future residential areas and land zoned for industrial uses.
- _ Locating retail areas adjacent to existing residential areas minimises land use safety conflict by creating a buffer to industry.
- _ If rail becomes operational, certain goods should not be considered as freight and certain handling/storage processes avoided. For example chlorine spills require protection up to 1.4km downwind from the source.

- _ Projected growth of the sports complex does not result in land use safety conflict with North Tralee or Hume Industrial Estates.
- _ There is the potential for industries in Hume to result in land use conflict with the sporting complex, require buffers.
- _ Avoid single access roads, inhibits evacuation during bushfire or industry accidents.
- _ RJP should consider evacuation routes that consider peak growth population, and isolated cases e.g. events at the sporting complex.
- _ Innovation Precinct - larger lots have a 400m separation distances and have the potential for an acceptable development of a potentially hazardous facility.
- _ Rail Intermodal investigation- Separation distance to the proposed school and residential areas (ranging from approximately 1km) and the sporting complex (200m) would constrain storage and handling of toxic gases under pressure and non-toxic substances.
- _ Freight and logistics Hub - Separation distance to the proposed school and residential areas (ranging from approximately 600m) and the sporting complex (100m) would constrain storage and handling of toxic gases under pressure.



_ **Environa** - Industries centrally placed will have at least 800m separation distance to sensitive and residential land uses.

_ **Forest Morrison and Walsh** - Buffer distances can be applied to the Hume interface, providing development to the south of this area with a separation to the industrial estate. Also, a suitable buffer could be provided from South Tralee to facilitate development of potentially hazardous industries in Walsh.

Technical Report

_ Recommended that no occupied buildings are permitted in RU2 zones within 100m of the E3 and SP4 zones .

_ E1 zone – no permanent occupation, sensitive receptors e.g. child care, large populations adjacent to Hume. Appropriate for commercial development.

_ Avoid toxic dangerous goods throughout the RJP. Development of a Major hazard Facility within the RJP is technically acceptable, however, this land use and its safety requirements could potentially create an inefficient use of land within the RJP.

_ Careful consideration with weapons testing in SP4 - as this to cause sterilisation of land. Unlikely to be compatible with a streamed lined planning process.

_ Majority of land parcels do not support child care facilities.

_ General layout of business zones and conservation zones provides buffers to residential areas.

_ Consideration to educational establishments including the proposed high school, potential TAFE / Uni and Primary School east of the RJP.

_ Lots in South Poplars and North Tralee to be below the Resilience and Hazards SEPP threshold due to proximity of high school.

_ Land uses around Sporting Complex to reflect the area's sensitive users and potential to attract large crowds.

_ Development of food and retail is appropriate in the E1 zoned area - North Poplars.

_ Data centres won't provide a land use conflict.

_ A 100m buffer is proposed between residential zones and developments that are above the Resilience SEPP potentially

hazardous development screening thresholds.

_ Developments in the innovation precinct should be restricted to below the Resilience and Hazards SEPP screening threshold. This will allow co-location of office and administration activities and control developments adjacent to the education precinct.

_ Sensitive land uses are not compatible with efficient and effective development of employment zones, without the use of buffers.

_ The greatest uncertainty regarding hydrogen is its refuelling and its effect on layout. The ability to add hydrogen to an existing service station whilst meeting land use planning risk criteria has not been demonstrated in Australia.



Biodiversity Analysis Report



The business of sustainability



South Jerrabomberra RJP Biodiversity Analysis Report (ERM 2023)

- _ The technical report furthers the baseline report's preliminary desktop assessment of the Investigation Area's (IA) biodiversity values, by performing field work during Nov - Dec 2021 and May 2022. To help ground truth the desktop work and provide an understanding of the IA's biodiversity values.
- _ This information will inform ongoing design evaluations to assist in avoiding and minimising impacts on biodiversity values and identifying any existing data gaps.
- _ The Report identifies landscape features across the RJP and then assesses their occurrence in the Urban Design Study's sub-precincts.
- _ A emphasis was placed on protecting and providing Landscape Connectivity. These are habitat corridors that link vegetation to form wildlife habitats.
- _ Creating links/corridors are important for flora and fauna ecosystem health and survival. These features also provide resilient landscapes that can reduce GHG emissions, which relate to the projects vision of being 'carbon neutral'.

- _ Important habitat corridors found in the baseline analysis and expanded in the technical report, include patches large enough to sustain viable populations of threatened flora and fauna and facilitate dispersal movement include:
 - _ Jerrabomberra creek
 - _ Dogtrap Gully
 - _ Large vegetation areas, such as south of the IA
 - _ Areas mapped Threatened Ecological Communities
 - _ Linkage to the Jerrabomberra Mountain Reserve through the northern boundary of the RJP and Jerrabomberra Creek through the eastern boundary
 - _ The Monaro Rail Trail offers opportunities to enhance ecological connectivity between important habitat patches.
- _ The reports found there may be two critically endangered Threatened Ecological Communities (TEC) within the IA - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (also considered critically endangered as part of the BC Act) and Natural Temperate Grassland of the South Eastern Highlands.
- _ The report identified three threatened flora species: Button Wrinklewort, Hoary Sunray and Silky Swainson-pea, and nine threatened fauna species: Diamond Firetail, Dusky Woodswallow, Gang-gang Cockatoo, Scarlet

Robin, Flame Robin, Golden Sun Moth, Striped Legless Lizard, Grassland Earless Dragon and Pink-tailed Worm Lizard.

- _ The Jerrabomberra Creek riparian vegetation was found to be in poor condition and dominated by exotic species. A combination of re-vegetation and assisted regeneration is recommended for the area. The creek was also identified as poor-quality for freshwater fish habitat.
- _ The site contains ten Potential Serious and Irreversible Impacts (SAIL) entities: Mauve Burr-daisy; Pale Pomaderris; Regent Honeyeater; Curlew Sandpiper; Swift Parrot; Eastern Curlew; Yellow-spotted Tree Frog; Golden Sun Moth; Large-eared Pied Bat; Brush-tailed Rock Wallaby.
- _ Eight ecosystem credit species have been identified as linked to PCTs within the RJP: Gang Gang Cockatoo, Diamond firetail, Dusky Wood Swallow, Hoary Sunray, Scarlet Robin, Button Wrinklewort, Silky Swainson Pea, Golden Sun Moth.
- _ Field validation of existing vegetation mapping has determined that five plant community types are present within the RJP, include: Yellow Box grassy woodland, Yellow Box – Blakely's Red Gum grassy woodland,



Kangaroo Grass – Redleg Grass, Speargrass grassland, and Wallaby Grass – Red-grass – Tall Speargrass – Kangaroo Grass.

- _ IA contains approximately 465ha of native vegetation.
- _ Grassy woodlands, box-gum woodlands and native grasslands most widely mapped vegetation community within the RJP.
- _ The 'Poplars' currently has a Biobanking Agreement in place, covering North and South Poplars sites.
- _ There are no conservation areas protected under the NP&W Act or Land classified under the LLS Act.
- _ The southern area of the Environa lands is constrained by high value biodiversity.
- _ Ecological features identified with high environmental value include: Existing conservation reserves, TEC, Golden Sun Moth habitat, Pink Tailed Legless Lizard Habitat, Grassland Earless Dragon Habitat, Vegetated Habitat corridors and linkages, Potential Serious and Irreversible Impacts (SAII).
- _ Species Credit Species – 13 classified “further consideration”.
- _ High threat weeds and WoNS were detected

and will require treatment and/ or removal prior to disturbance to these areas to prevent spread, degradation and loss of biodiversity.

- _ Vegetated areas within the RJP contain high biodiversity value should be targeted for conservation actions and avoided by any construction within the IA where possible.

Nov-Dec Field Surveys

- _ Field survey found small patches of White Box-Yellow Box-Blakely's Red Gum Grassy woodland in Environa Lands.
- _ Field survey found Environa land not suitable for Pink Tailed Worm Lizards, suitable for Striped Legless Lizard.
- _ Golden Sun Moths observed in South West Poplars during field survey - low numbers potentially due to poor food species.
- _ Threatened fauna species generally found in the areas north of the investigation area, such as Tomsitt Drive and Lanyon Drive, Jerrabomberra Creek and areas to the east of the investigation area.
- _ Golden Sun Moths clustered towards north - poplars area, dense clusters found adjacent to Tomsitt Drive.
- _ No threatened fauna species recorded during

Nov-Dec field surveys.

- _ During field work areas of high threat weeds and WoNS were detected – require treatment and/or removal.

May Field Surveys

- _ Further ground-truthing habitat suitability and vegetation communities for the Environa area.
- _ Twenty-two Rapid Data Point surveys were undertaken. These informed the habitat assessment, identified areas dominated by native ground-cover vegetation and/ or rocks, abundance and suitability of tree hollows.
- _ Recorded potential habitat for six threatened species (Gang Gang Cockatoo, Superb Parrot, Grassland Earless Dragon, Striped Legless Lizard, Pink-tailed Worm Lizard and the Golden Sun Moth).
- _ Incidental observations of four threatened fauna species, including: Gang Gang Cockatoo, Pink-tailed Worm Lizard, Diamond Firetail and Flame Robin.
- _ Areas of Box Gum Woodland TEC were assessed to determine whether woodland areas contain the box-gum eucalypts. Ground cover assessed to determine if native-dominated and contain enough floristic

diversity to qualify as the TEC.

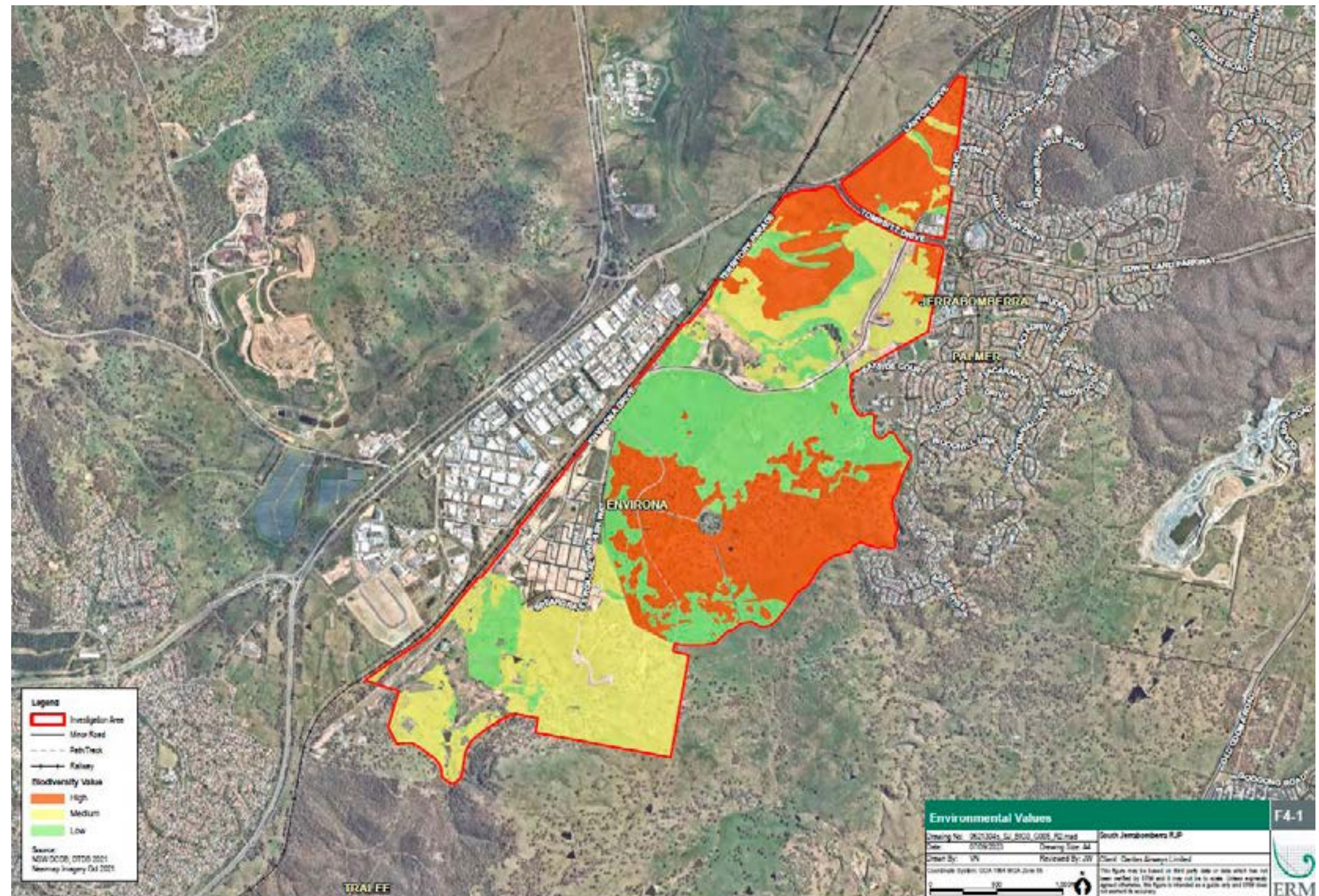
- _ A 'scattered tree assessment' undertaken.

Further Work

- _ Further field work is required to ground truth data, also align with seasons - for example Pink Tailed Worm-Lizard observations needed during spring.
- _ Further site surveys in the form of BAM surveys will be required to ground truth all Plant Community Types (PCT).
- _ Criteria used to determine biodiversity value included:
 - _ Patch size and connectivity to conservation reserves
 - _ Occurrence within identified habitat corridor
 - _ Records of threatened fauna and identified habitat suitability
 - _ Status of vegetation community
 - _ Consideration of matters of national environmental significance
- _ High valued areas must be considered in the planning process and should be targeted for conservation actions and protected by construction.



- _ High environmental values include:
 - _ High biodiversity
 - _ Existing conservation reserves
 - _ Areas mapped Threatened Ecological Communities
 - _ Golden Sun Moth, Pink Tailed Legless Lizard, Grassland Earless Dragon habitats
 - _ Vegetated habitat corridor and linkages
 - _ Potential Serious and Irreversible Impacts entities
- _ Medium environmental values include:
 - _ Areas of non-threatened PCTs
 - _ Hollow bearing trees
 - _ Broad habitat types classified as native
- _ Low environmental values include:
 - _ Scattered trees
 - _ Broad habitat types classified as non native



Summary of biodiversity values

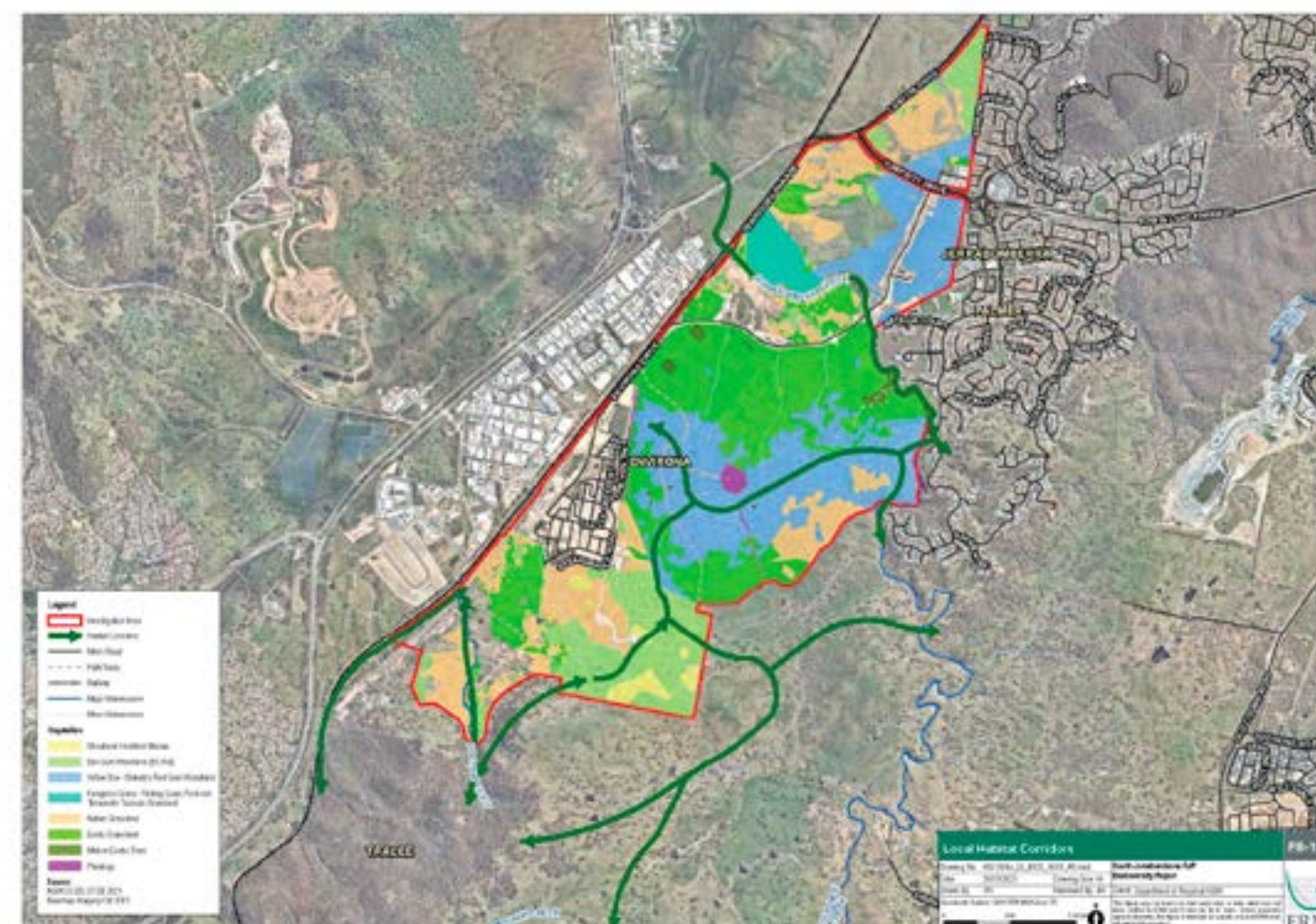


Biodiversity Analysis Report findings - Post-Urban Design Report

- _ The current draft Urban Design Study provides opportunities for the protection of high biodiversity valued areas, such as the majority of the Precinct's critically endangered Box Gum Woodland TEC, and confirmed or likely habitats for Grassland Earless Dragon, Striped Legless Lizard and Pink-tailed Worm-lizard.
- _ The majority of the Matters of National Environmental Significance (MNES) species and communities are located within the Rural Landscape Sub Precinct, south of the Environs Local Business/ Industry and Space, Defence and Technology sub precincts.
- _ There are some areas of high biodiversity values, such as Box Gum Woodland TEC, threatened reptile habitat and Golden Sun Moth within areas indicated for increased development. It is likely that smaller impacts to these MNES areas will require referral and approvals, however full extent of impacts will need to be assessed against the EPBC Act and guidelines.
- _ Control of invasive weeds to be included as part of environmental management measures

during development / construction.

- _ Any future development application within the areas of high-biodiversity values will require a BDAR.
- _ Further detailed refinement of the design could protect high-valued areas located within the Precinct proposed for further development, for example, retain habitat trees within streetscape.
- _ Potential to establish stewardship sites and applying for biodiversity certification to offset the loss of high valued biodiversity, such as, within Rural Landscape Sub Precinct that contain lower quality Box Gum Woodland TEC.
- _ Biodiversity certification benefits include areas being developed can have increased certainty of offset obligations being delivered within the RJP.



Habitat corridor map



Bushfire Analysis Technical Report



South Jerrabomberra
Regional Job Precinct

Bushfire Assessment Report

26 July 2024

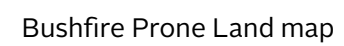
Project No.: 0521304

South Jerrabomberra RJP Bushfire Analysis Report (ERM 2024)

- _ The study provides a desktop assessment of the bushfire risks of the Investigation Area (IA), and an understanding of what development and design characteristics should be avoided.
- _ The report provides indicative Bushfire Prone Land (BAL) and Asset Protection Zones (APZs) to be considered based on land characteristics and uses.
- _ This information will inform ongoing design evaluations to assist in avoiding and minimising impacts from bushfires on the site and surrounding area.
- _ The Report identifies the bushfire landscape features across the RJP, including slope, vegetation fuel groups and assesses the combine ability for area's within the RJP to promote or inhibit bushfires.
- _ The majority of the RJP is prone to bushfires.
- _ Fire season generally occurs in spring to mid-summer.
- _ Wind direction, fuel moisture content, and ignition source should be considered and managed to reduce the likelihood of smoke issues.
- _ Steeper slopes can significantly increase the

rate of spread of fires. This is not a key risk across the majority of the RJP with only small localised steep slopes.

- _ Bushfire hazard classes were identified across the landscape by applying equal weightings to the varying fuel groups and combining them with available slope classes.
- _ The Urban Design strategy will need to work with existing areas and approved facilities, with their own bushfire management strategies.
- _ No fires have been reported within the RJP investigation area in over 35 years, ignoring controlled burns etc.
- _ Potential to integrate indigenous fire management practices.
- _ Existing developments including Poplars retail, proposed High School, Regional Sports Complex and South Tralee Residential Development are already manage to reduce the risk of bushfires.
- _ The design of the RJP includes retention of large areas of high value biodiversity conservations land which presents a clear, well defined interface between the hazard and planned development.
- _ SFPP uses would attract larger minimum required APZ and more onerous Bushfire Protection Measures.
- _ APZ should be external to the C2 and E3 lands.
- _ Landscaping to comply with Appendix 4 of Planning for Bush Fire Protection 2019 and meet the requirements of an APZ.
- _ Include perimeter roads to fight fires.
- _ No lots directly adjoining the retained environmental protection areas.
- _ APZ up to 20m wide (for residential development).
- _ Provide more than one public road into and out of areas of development within 100m of the bushland interface.
- _ All bushland interface areas containing a APZ for a significant bushfire hazard should feature a perimeter public road within the APZ.
- _ The report supports the new access links proposed within the RJP, which include a new link road from Environa Drive to Sheppard Street, as well as upgrades to local interchanges and additional connections into the local road network to increase egress during bush fires. Proposed public transport networks will also assist in removing some of pressure from the local road network.





Soils, Geology + Contamination Technical Report



The business of sustainability



South Jerrabomberra RJP Technical Report - Soils, Geology and Contamination (ERM Sept 2023)

- _ The report identifies the constraints and opportunities in relation to the geology, soils and contamination conditions within the RJP within the context of the proposed Master Plan.
- _ The report has combined the baseline reports desktop analysis with an on-site inspection.
- _ The report will is to test the preferred structure plan and establish the relevant specifications and requirements to assist in the development of the master plan and assist in avoiding and minimising receptors exposure to contaminated soil, water and airborne hazards.
- _ The Report identifies majority of the site was used for agricultural purposes, with minor commercial / industrial uses. However, specific details of their operations are unknown.
- _ Most of the analysed site provides a low risk of contamination.
- _ Various levels of contamination found across the site assessment.

- _ Remediation has been undertaken for different portions of the site.
- _ Recommend a Data Gap Assessment and Detailed Site Investigation for the site.
- _ Aquatic ecosystem on the site and within 500m buffer rely highly to moderately on the surface expression of groundwater.
- _ One site found on the NSW EPA contaminated land database, a petrol station approx. 915m metres north-west of the site.
- _ Numerous industry sites including an Asphalt Plant, are potential pollutant sources.
- _ Medium to High risk pollutant linkages exist on the site, including groundwater contamination.
- _ Known contaminated groundwater located adjacent to RJP's northern boundary. Unlikely to represent a risk to ongoing use within the RJP, potential for draw-down of contamination if groundwater is extracted for beneficial re-use within the RJP.
- _ Soils are prone to flooding or water-logging.
- _ No salinity hazard, however, changes to land cover can prevent rain/water from infiltrating and could increase salt levels. This should also be a concern with groundwater extraction, continue monitoring should be done.
- _ Changes in existing zoning/ land use to recreational use or to allow sensitive receptors e.g. Child care may trigger further assessments.



Historic + Aboriginal Cultural Heritage Technical Report

South Jerrabomberra RJP Historic & Aboriginal Cultural Heritage Assessment Report (ERM 2023)

- _ The report used the information obtained during the baseline assessment and combined it with an Aboriginal heritage field survey conducted from the 22 - 24 March 2022 with eight RAP groups. To provide an overview of heritage values and identify constraints.
- _ Almost all of the South Jerrabomberra RJP has been subject to various forms of heritage assessments. Gap with eastern property.
- _ One item (with associated features) is considered to have local heritage significance - Environa (subdivision built features, Lobbies Homestead, and stone façade building in adjoining Lot).
- _ Based on the current design there is potential negative impact to the Environa subdivision, no likely impact to the Lobbies Homestead or Shed Ruins, and a positive impact to the stone façade building.
- _ Partial to total impact is likely for 29 of the 85 Aboriginal heritage features, with 14 of the 85 sites are listed as destroyed. Many others are associated with existing developments with

plans for their further investigation, salvage, or conservation.

- _ Only two National Trust NSW (no statutory authority) listings, the Environa Urban Conservation Area and the associated Environa Monument and Arch.
- _ This area is part of the Ngarigo language area, and is today generally represented by Ngunawal (Ngunnawal), Ngambri (subset of the Walgalu), and Ngarigo people.
- _ Jerrabomberra Creek is considered likely to have been a focus of Aboriginal occupation and travel which would have been a key travel route across the wider extent of Ngunawal, Walgalu and Ngarigo lands.
- _ European settlement began in mid-1820s.
- _ In 1827 grant given to John Palmers for the land. Called Jerrabomberra – from Aboriginal place name meaning 'boy frightened by storm.
- _ Land mostly used for agriculture and timber production after European settlement.
- _ None of the Bombala tracks or railway are considered to have any historical significance.
- _ No World, National, State or locally listed historic heritage sites within the Investigation Area.

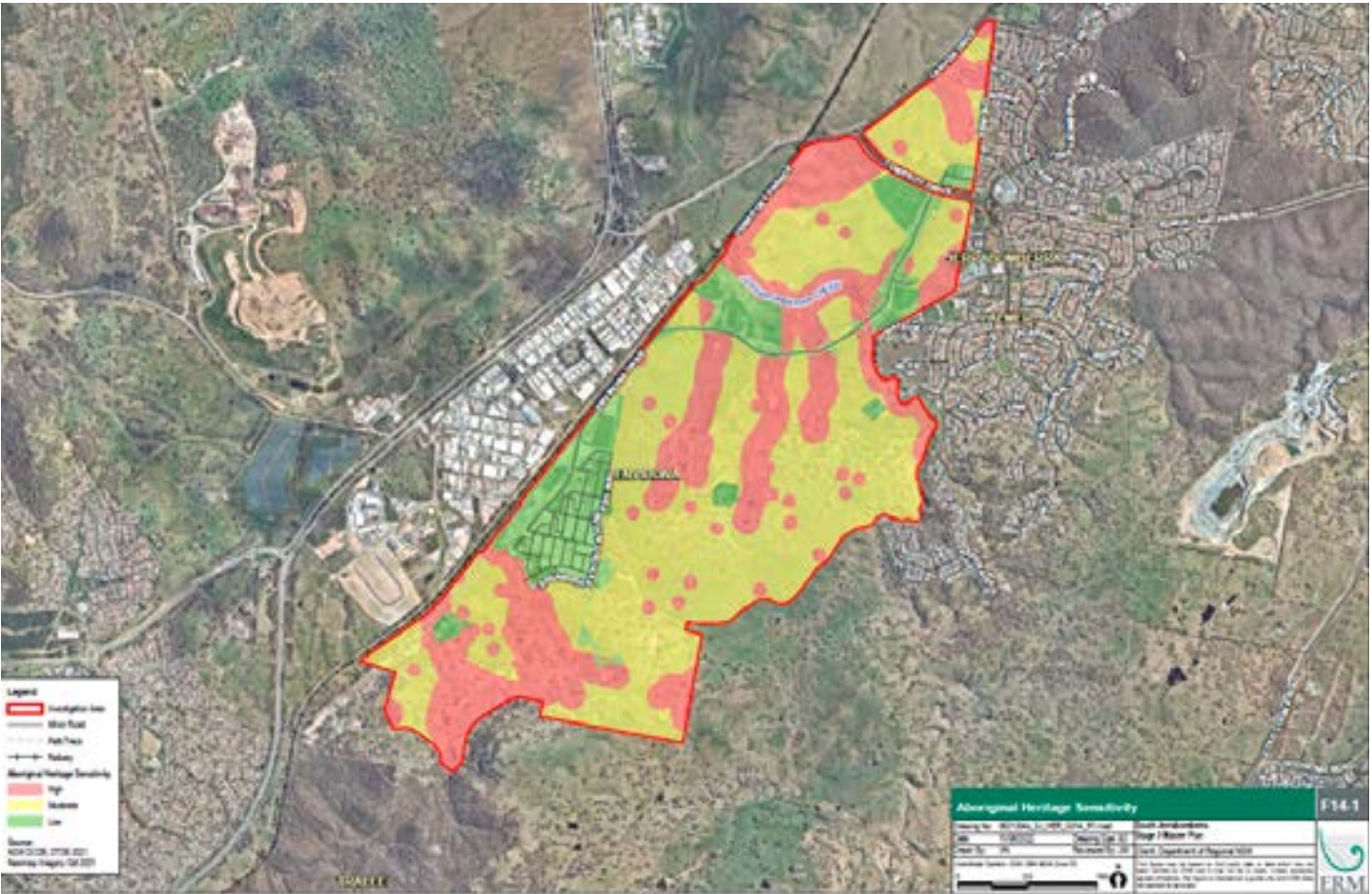
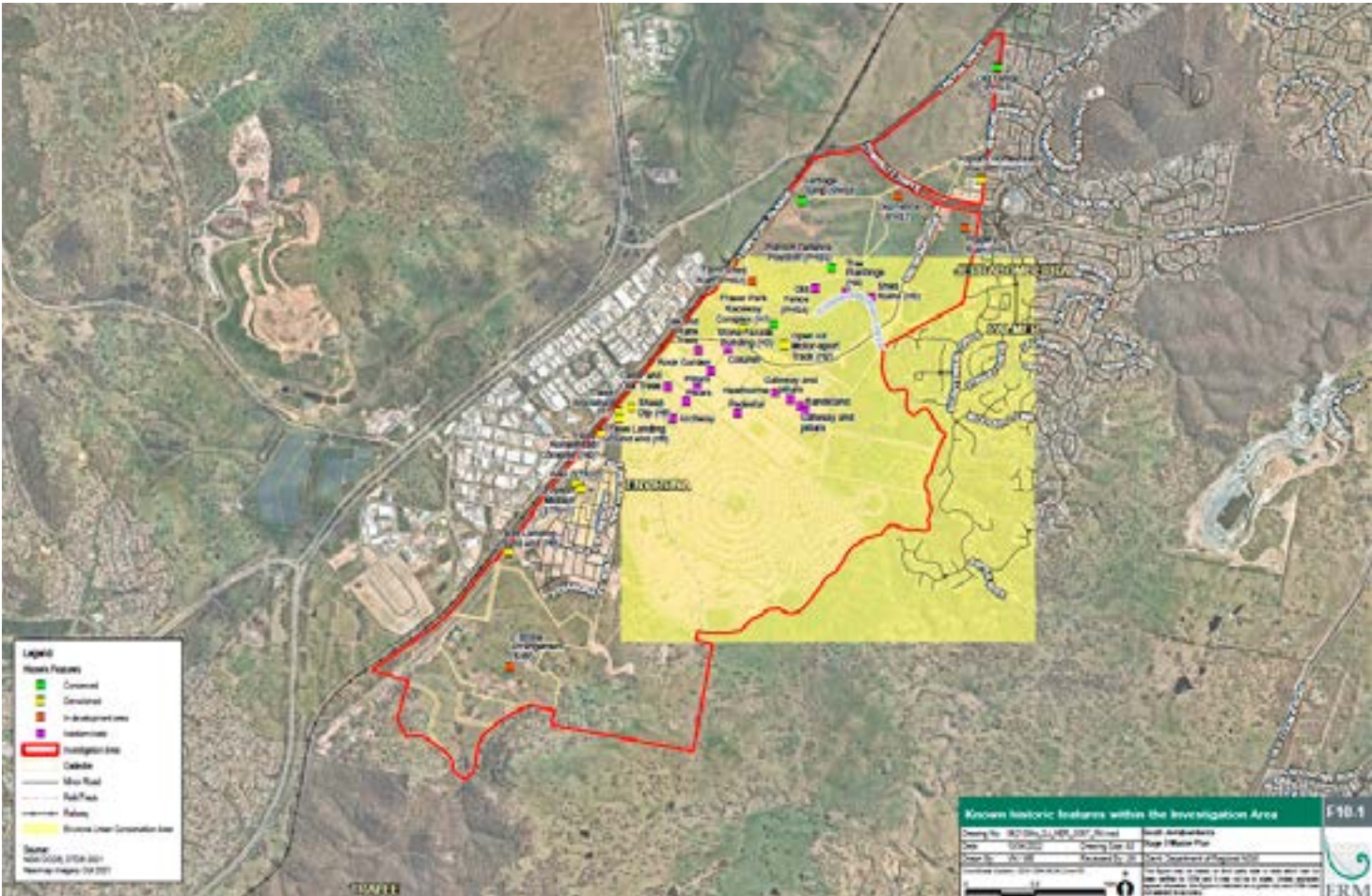
- _ Various historic features and survey units scattered through the area, however, none are listed in a statutory heritage register.
- _ Within current development plans, conservation is already ensured to sites within the Poplars Conservation Area.
- _ Environa Subdivision meets the criteria for local heritage significance, with the Stone Façade Building has moderate local heritage significance.
- _ It is considered highly unlikely that any further historic heritage features would be discovered during future assessment or works in the previously assessed areas of the South Jerrabomberra RJP.
- _ A Heritage Management Plan (HMP) could be developed to manage cultural heritage.
- _ The RJP has been delineated into high, medium and low areas of Aboriginal heritage sensitivity which will help with future development applications.
- _ Areas identified as having high archaeological sensitivity should be prioritised for conservation either through master planning or through proposed future developments.
- _ Future development should incorporate mechanisms to acknowledge and incorporate

Aboriginal heritage into design and development.

- _ A management policy should be developed for conservation areas which overlap identified heritage constraints
- _ Four RAP responses were received, all provide no further comment and endorsed the proposed management and mitigation measures.

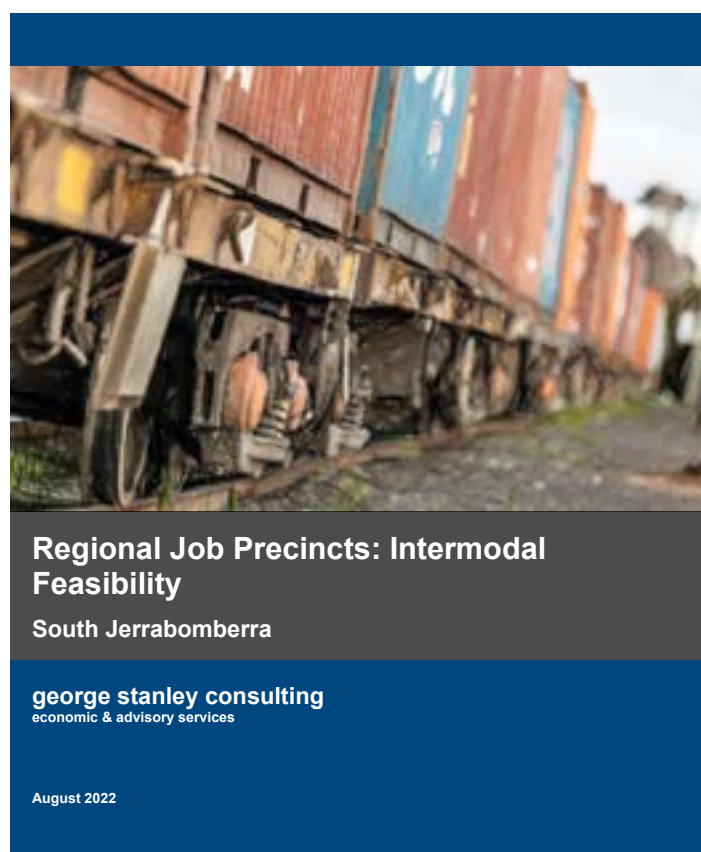
March Field Surveys + Consultation

- _ Not all identified Aboriginal heritage value sites were not located during field survey.
- _ One newly identified Aboriginal Heritage site was recorded during the site survey on an exposed track running north to south parallel to Environa Drive.
- _ Consultation with the RAPs have identified that the area demonstrates cultural significance as a resource gathering location and travel route - moderate social value.
- _ Aboriginal objects are of high significance to the Aboriginal community as it proves evidence of their connection to the land.
- _ Investigation Area is considered to demonstrate moderate aesthetic value, partly due to vantage points.





Intermodal Feasibility Report



RJP Intermodal Feasibility - South Jerrabomberra (George Stanley 2022)

- _ The study looks at the feasibility of creating an rail intermodal terminal (IMT) at a 3 hectare site at South Poplars.
- _ The objectives include providing the opportunities and constraints of the proposed site, including an analysis of the regions potential future demand and supply chain analysis (dependant on the area's industry mix).
- _ The RJP's inclusion of a innovative area, logistics precinct (at intermodal site) and proximity to Hume were considered.
- _ Current infrastructure is not suitable for an intermodal at the proposed site (or at Queanbeyan), required upgrades include, to provide capacity for 21 tonne axle and S4 locomotives, 1200m siding for loading, 6 kilometres of Bombala Line track, hardstand, storage and handling equipment and road access.
- _ Provided an alternate location of intermodal at Fyshwick (ACT).
- _ Upgrades to roads could increase truck productivity and make it more attractive than rail.

- _ Potential freight destinations include Port Botany, Sydney, Melbourne, Brisbane and Tarago.
- _ Intermodal supply chains are not efficient across all distances. Study found intermodal preferred to road freight when transporting to Melbourne's ports or Brisbane, both domestic and port connections.
- _ For a regional intermodal terminal to be economic and viable, a volume of around 10,000 loaded TEU's (twenty equipment unit) per annum, and preferably operates at more than 15,000 loaded TEU's per annum is required.
- _ Regional Intermodal terminals employ less than 20-30 direct staff.
- _ Terminal may stimulate secondary employment opportunities, however, initial terminal development requires substantial start-up industries.
- _ Intermodal must exist within an efficient chain where the total cost of the elements is lower than the cost of competing chains for a comparable level of service.
- _ There is a lack of rail contestable volume to support the development and operation of an IMT site.

- _ As the proposed IMT is on a branch-line, it will not provide enough volume to be a stand-alone service.
- _ The proposed land uses within the RJP do not enhance the potential of a IMT site.
- _ An IMT site within the RJP is not feasible.



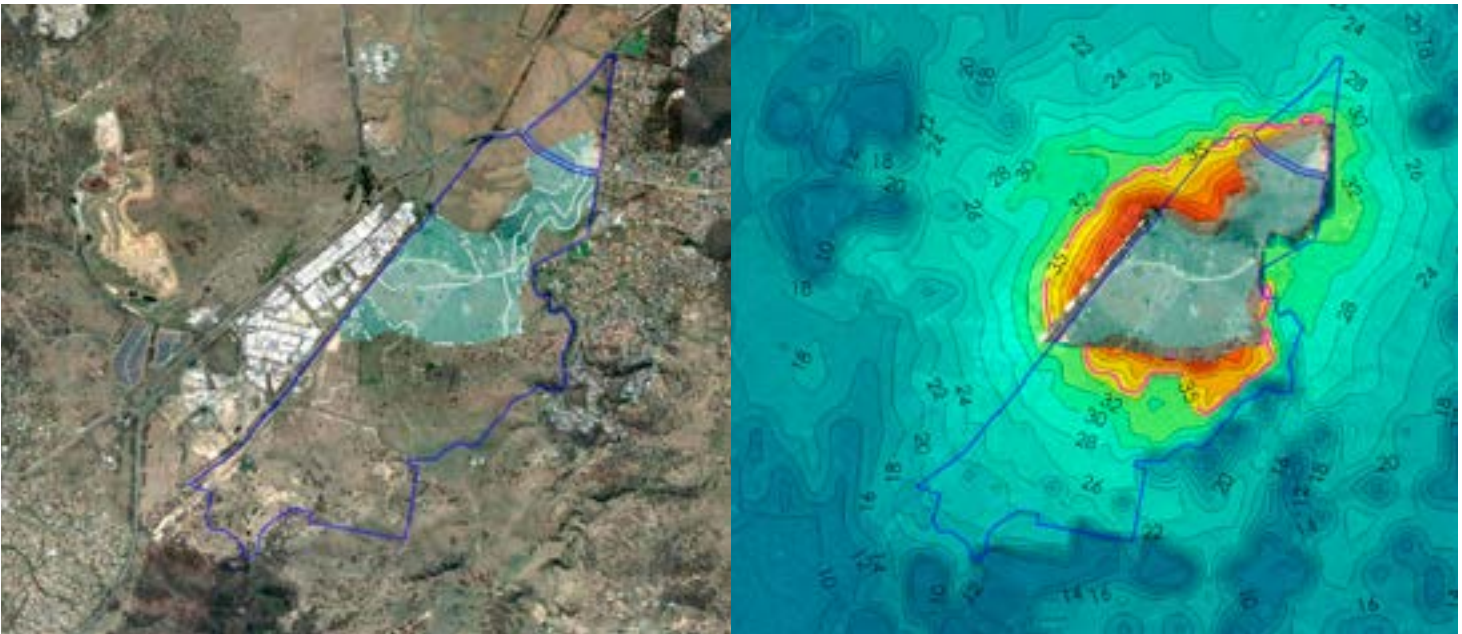
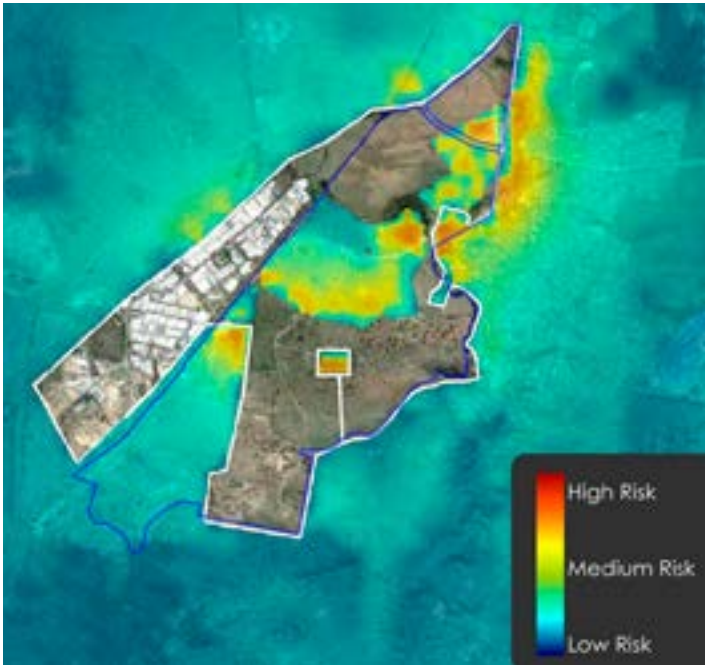
Air, Noise and Odour Technical Report

RJP Air, Noise and Odour Master Plan Report - South Jerrabomberra (Todoroski Air Sciences 2023)

- _ The report's purpose is to present the findings for environmental air, noise and odour matters for the Master Plan and to inform development standards and precinct-based planning controls to address air, noise and odour concerns.
- _ The report considers the area's current conditions, including local setting, topography, climate, dispersion meteorology, ambient air quality, noise levels and existing industries for the area within and surrounding the South Jerrabomberra RJP investigation area.
- _ The area's predominate winds are from the north-west, west and south to south-east during different times of the year.
- _ The local conditions promote temperature inversions at night, that are able to carry sound over greater distances and reduce the dispersion of air pollution.
- _ Existing air quality and noise limits are within acceptable limits. Elevated levels have occurred with extreme weather events including bushfires and droughts.
- _ Existing Hume industries are capable of introducing air, noise and odour issues to the RJP.
- _ High risk pollutant impacts are generally

- found at the source, however these are expected to extend to the southeast of the RJP due to effects of terrain and wind.
- _ Air pollutant impacts are predicted to be significant in the southern half of the RJP investigation area, especially elevated areas.
- _ Noise and odour emissions expected to significantly impact the western half of the RJP, due to terrain and proximity to Hume.
- _ Expect land conflicts to occur within South Tralee residential area due to pollutants from Hume industry area, insufficient buffering part of the problem. Introduce tall and dense vegetation bands within the industrial area, 50-100m wide. Will help reduce visual impacts.
- _ RJP proposed industrial areas, can have noise impacts on future and existing residential areas.
- _ Noise modelling predicts that high-risk areas largely occur to the east and along the centre of the RJP. The air quality and odour modelling has a similar risk footprint, however with reduced risk levels.
- _ Large areas of low sloping land are suitable for industrial use.
- _ Significant noise constraints for the central-eastern parts of the RJP, with night time noise the most limiting factor to consider
- _ Majority of the RJP industrial area is not ideal

- for stacks due to topography and presence of residential areas.
- _ The RJP investigation area and buffer is designed such that industries incorporating general levels of control should be able to operate within the industrial area without causing impacts.
- _ Includes images that indicate the maximum allowable emission, odour and noise levels that can be created within specific zones/ contours of the RJP area without impacting surrounding areas and sensitive receivers. These images can be used to help streamline future development if they comply with the zones/contours allowable levels.



Maximum attenuated sound levels (left) and respective received sound pressure levels (right, pink line separates area where sensitive receivers can and cannot be located)



ESD Technical Report

South Jerrabomberra Master Plan - Integration Analysis ESD Technical Study (DSquared 2023)

- _ The purpose of this report is to summarise the potential ecologically sustainable development (ESD) opportunities for the RJP. This includes understanding trends, policy directions and the site-specific context to ensure all opportunities are identified and benefits for the environment, residents, businesses and the broader community are considered.
- _ The Report has been developed under nine ESD themes, climate resilience, greenhouse gas emissions, embodied energy, water, energy transport, waste management, and resources and circular economy.
- _ The report focuses on key sustainability actions:
 - _ **Goal 1** – A connected and prosperous economy – renewable energy hub
 - _ **Goal 2** – A diverse environment interconnected by biodiversity corridors – protect water, biodiversity, water, prepare for climate change
 - _ **Goal 3** – Healthy and connected communities – protect against climate change

- _ **Goal 4** – Environmentally sustainable housing choices – protect water
- _ Area will be impacted by climate change, include increased hot days, higher bushfire risk, more intense rainfall, extended periods of drought.
- _ Recommendations including designing public infrastructure to support a cooler environment, plan for increased rainfall intensity as part of stormwater management systems and incorporate water conservation measures such as drought tolerant and low water consumption plantings as part of public realm landscaping.
- _ Minimum mandate for on-site renewables, PV solar.
- _ Integrate an microgrid into energy infrastructure planning, which will enable flexible options for smart energy systems to be integrated into the precinct including smart grids, shared energy networks, and Virtual Power Plant (VPP) arrangements.
- _ An integrated water cycle has been proposed to improve water security for the precinct, including water conservation, rainwater harvesting, Aquifer Storage and Recovery (ASR), and Water Sensitive Urban Design (WSUD) e.g. vegetated swales, rain gardens, tree pits and permeable surfaces.

- _ Proposed governance options are considered as part of the development of the Master Plan and by the Department of Regional NSW and Council to ensure environmental sustainability improvements are maintained when the RJP is in operation.
- _ The Climate Active Carbon Neutral Standard for Precincts has been identified as a pathway to achieving carbon neutral certification. In addition, the Green Star Communities tool has been proposed for the Poplars Innovation Precinct which could be extended to the RJP.
- _ A number of sustainability rating tools and frameworks available to the South Jerrabomberra RJP which can be used to certify sustainability outcomes within the Structure/Master Plan and during operations.
- _ Net Zero Plan targets should be implemented.
- _ Consideration of ways to reduce reliance on natural gas - an all-electric design. PV combined with battery technology a real potential for the site. Also, green hydrogen.
- _ The precinct should consider mechanisms for sourcing local materials and supplies from the surrounding region, as well as incorporating recycled content as part of infrastructure works - Circular economy to prevent waste going into landfill.

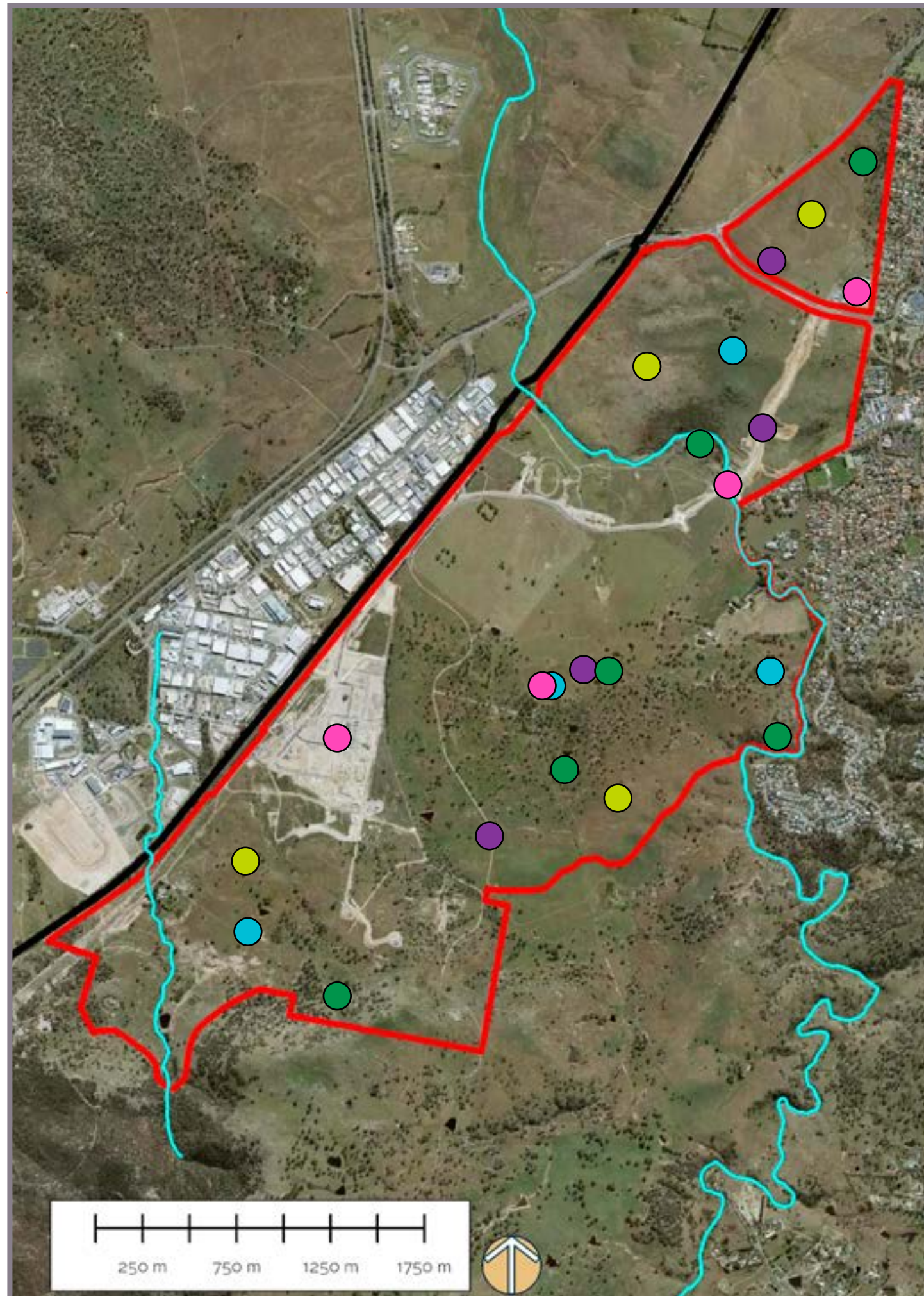
- _ Green corridors to protect biodiversity and improve climate resilience.
- _ Promote clean transport, EV and charging points and dedicated active transport paths.
- _ Due to the scale of the precinct, it is not expected that a recycled water (non-potable) water supply would be justified.
- _ The RJP could leverage off the increasing levels of renewables in the NSW grid and proposed Renewable Energy Zones, by implementing mechanisms to increase renewable energy uptake in the RJP.
- _ The precinct could create a renewable energy hub, including supporting industries such as solar panel and battery recycling.



Appendix F _ Landscape character notes

Landscape character

The RJP's diverse natural landscape of grasslands, watercourses and woodlands provides picturesque views that are best observed from the area's elevated points. The natural form of the landscape continues to be altered due to current developments including Enviroana Drive, North Poplars Retail area and South Jerrabomberra Residential area.



Landscape character _ Views

The undulating landscape provides viewing locations across the entire RJP.

The RJP's natural beauty can be observed from these view points, including the grassy fields, woodlands and natural land form.

Neighbouring developed area's including Hume (west), Googong (east) and Jerrabomberra (north-east) can also be viewed from these elevated points.

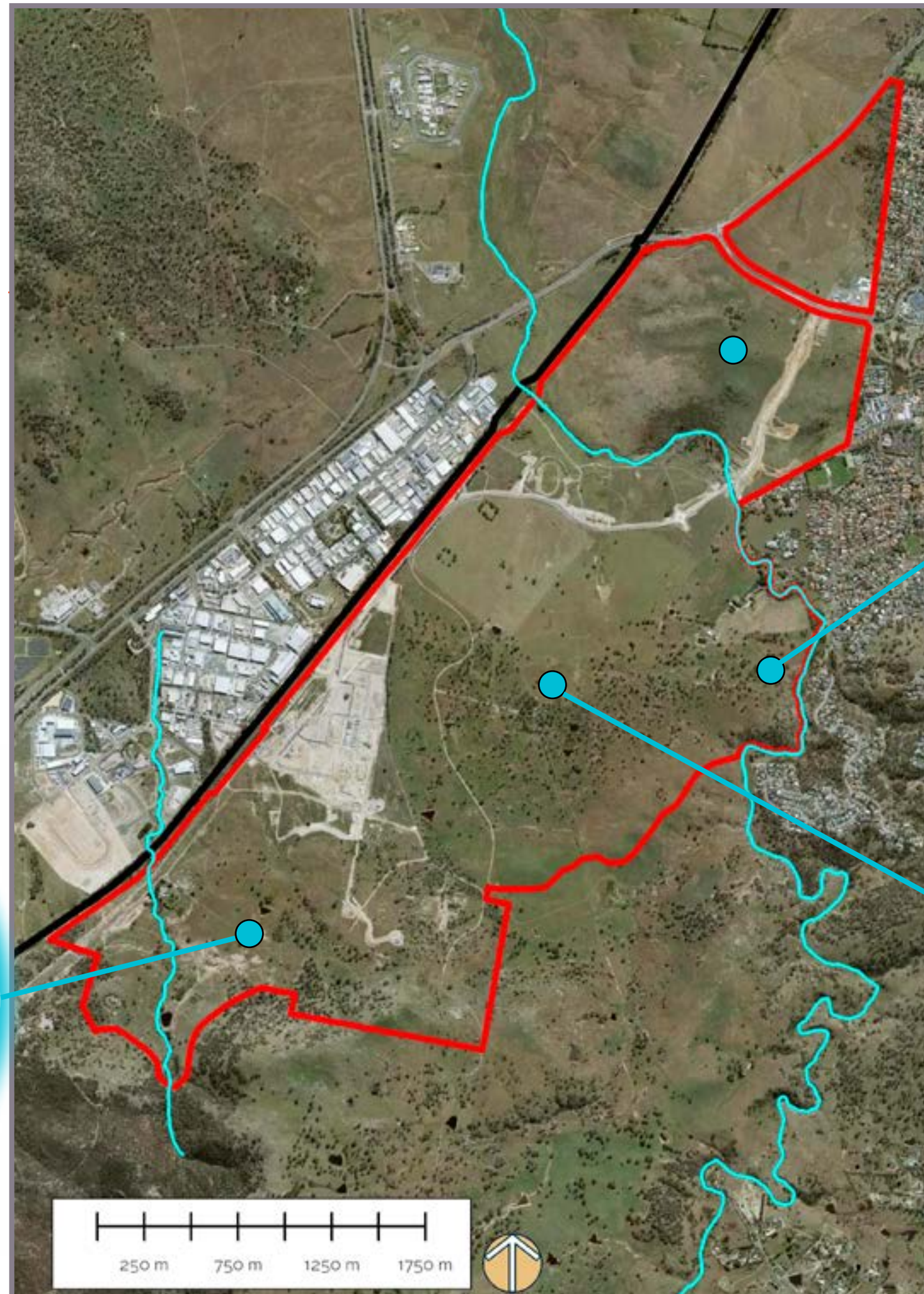


VIEW-POINTS

Landscape character _ Topography

The topography provides the RJP with watercourses and untapped natural landscapes that are littered with a variety of flora.

The topography can provide opportunities for viewing platforms for the RJP.



TOPOGRAPHY

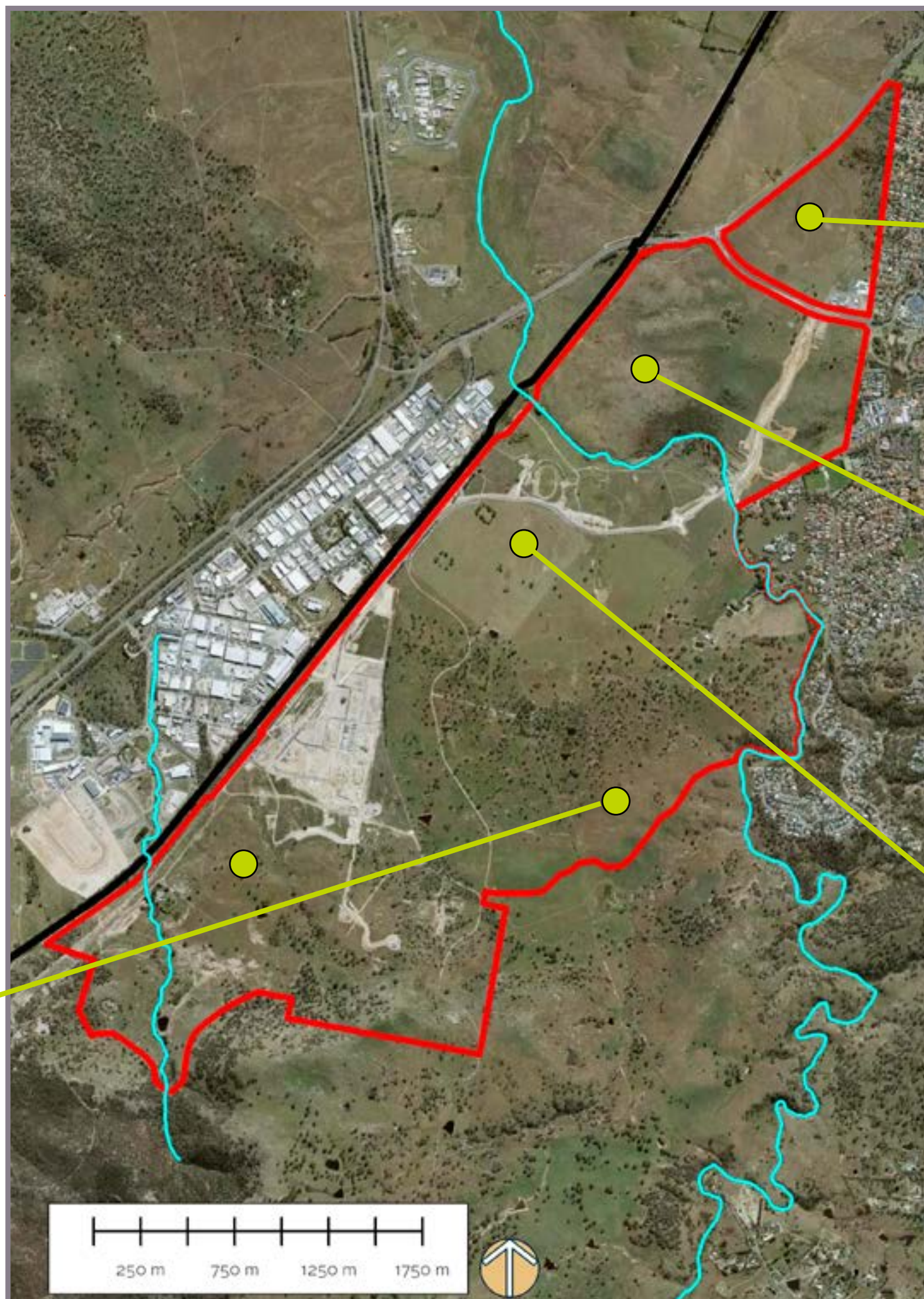




Landscape character _ Grasslands

Previous agricultural land uses have created extensive exotic grasslands throughout the RJP.

The RJP's other grassy areas, including the northern conservation areas provide habitat for local fauna.



Landscape character _ Woodlands

The RJP's woodlands provide the site with texture and character. With the tree planting in Envirotona purposefully done for the proposed development in the 1920s-30s.

The woodlands provide habitat for fauna, with certain area's containing protected/rare/ endangered flora and fauna.



South Jerrabomberra Precinct



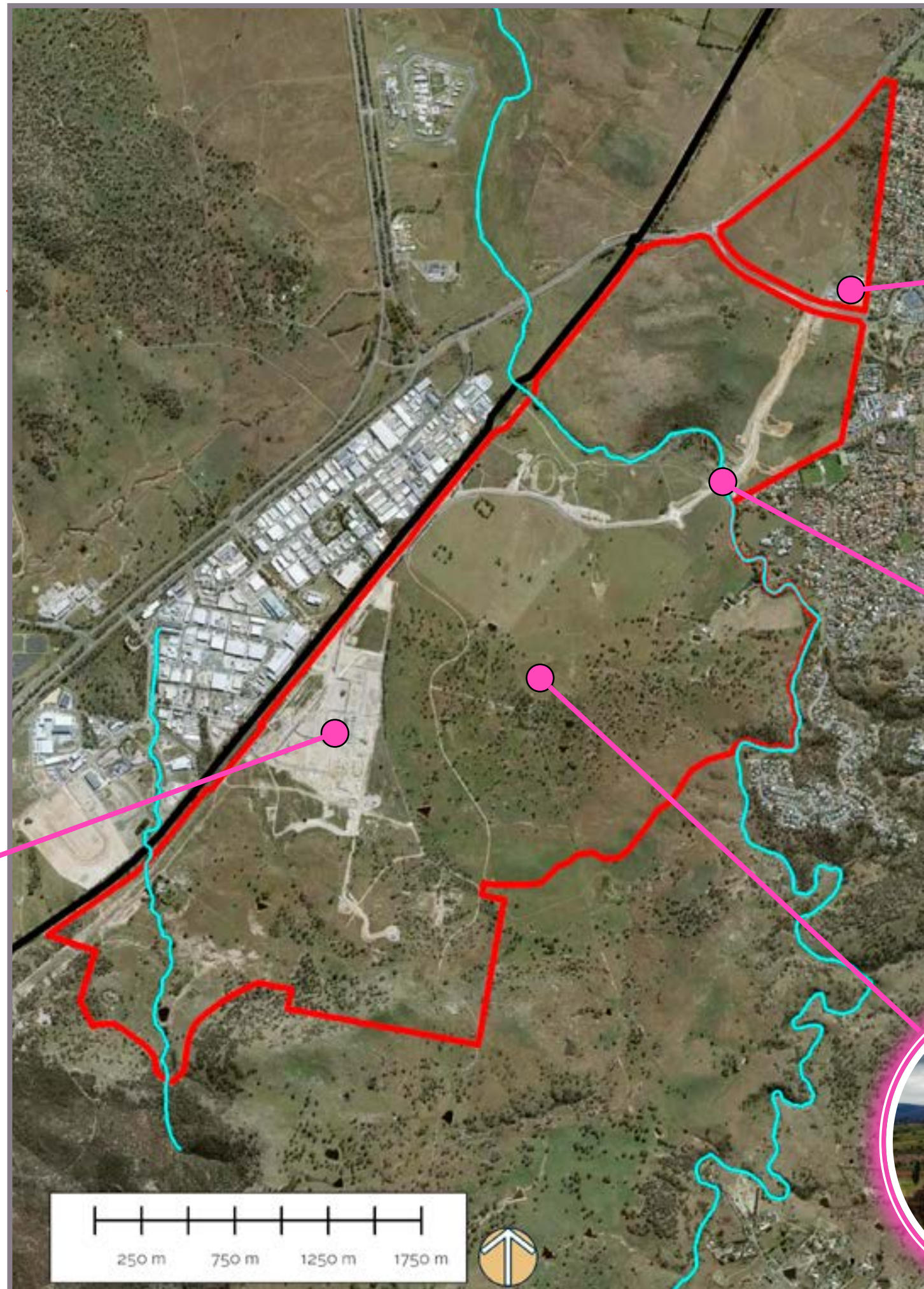
WOODLANDS





Landscape character _ Development

Development within the RJP includes existing structures e.g. the Enviroana Arch, as well as recent installations including Enviroana Drive, South Jerrabomberra Residential Development and North Poplars Retail Area. With each area having its own character and style.



DEVELOPMENT





Thank You
