

Parkes Special Activation Precinct Draft Structure Plan

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Prepared for Department of Planning, Industry and Environment



Jensen PLUS together with
+ Sue Weatherley & Associates
+ Dsquared Consulting

JENSEN PLUS
Planning
Landscape Architecture
Urban Design
Social Planning

“The ambition of the Parkes Special Activation Precinct is not only to become Australia’s largest inland freight and logistics hub, but to be a leader in sustainable regional enterprise areas.”

Acknowledgements

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- The traditional owners of the Parkes region, the Wiradjuri people
- Department of Planning, Industry and Environment
- Transport for NSW
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- NSW Environmental Protection Authority
- Parkes Shire Council councillors and staff
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- Sue Weatherley
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- landowners of the study area
- the wider community of Parkes.

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<p>Section 01 describes the vision for what Parkes Special Activation Precinct (Parkes SAP) is intended to become. Four aspirations are identified to distinguish Parkes from other designated growth areas. They show that Parkes SAP will be a place of national importance and scale.</p> <p><i>Use this section to understand the Structure Plan at a glance.</i></p>	<p>Section 02 describes why Parkes has been chosen as New South Wales' first SAP. It explains what a Special Activation Precinct is, and the project's drivers. The aim and objectives of the Structure Plan and the approach taken to develop the Plan are outlined.</p> <p><i>Use this section to understand the drivers for the project and the aims and objectives of the Structure Plan.</i></p>	<p>Section 03 summarises the context for the Structure Plan. It provides a brief history of Parkes and describes the study area in words and pictures. Strategic policy is summarised, much of which provides consistent direction for the Structure Plan. The current statutory planning context is also summarised.</p> <p><i>Use this section to understand the context and influences in preparing the Structure Plan.</i></p>	<p>Section 04 summarises investigations and analysis for a range of technical disciplines including economics, transport, infrastructure, stormwater and groundwater, biodiversity, cultural heritage, noise, air quality and odour.</p> <p>Social infrastructure, streamlined planning processes and Ecologically Sustainable Development opportunities are also covered, all of which informs why the Structure Plan plan is depicted as it is. The collaborative workshop process to develop the Structure Plan is also described.</p> <p><i>Use this section to understand how technical analysis from a range of disciplines has informed the Structure Plan.</i></p>	<p>Section 05 provides a Structure Plan with Sub Precincts located and sized for anticipated land uses. It shows how the vision and aspirations for Parkes SAP will be achieved. 'Illustrative master plans' then show detailed development concepts within each Sub Precinct including local road and stormwater networks, a variety of allotment sizes and buildings, and areas of vegetation. Relevant precedents are identified for Sub Precinct uses. A sustainability framework, green infrastructure overlay, transport network and road and public realm design outcomes complete the planning narrative.</p> <p><i>Use this section to understand in detail the plan for Parkes SAP and how it might translate onto the ground.</i></p>	<p>Section 06 discusses some of the 'who, when and how much' questions that will be addressed in project implementation. Issues include infrastructure and services and their staging but go further to show the integration required through partnering, sustainability, cost and risk. An overview of future Design Guidelines for the Parkes SAP is also provided.</p> <p><i>Use this section to understand how the Structure Plan will be translated to a successful activation precinct.</i></p>

Section 01. Vision + Aspirations for Parkes Special Activation Precinct

Section 01 describes the vision for what Parkes Special Activation Precinct is intended to become. Four aspirations are identified to distinguish Parkes from other designated growth areas. They show that Parkes SAP will be a place of national importance and scale. A summary of the Structure Plan is provided.

Use this section to understand the Structure Plan at a glance.

1.1 Four Precinct Aspirations

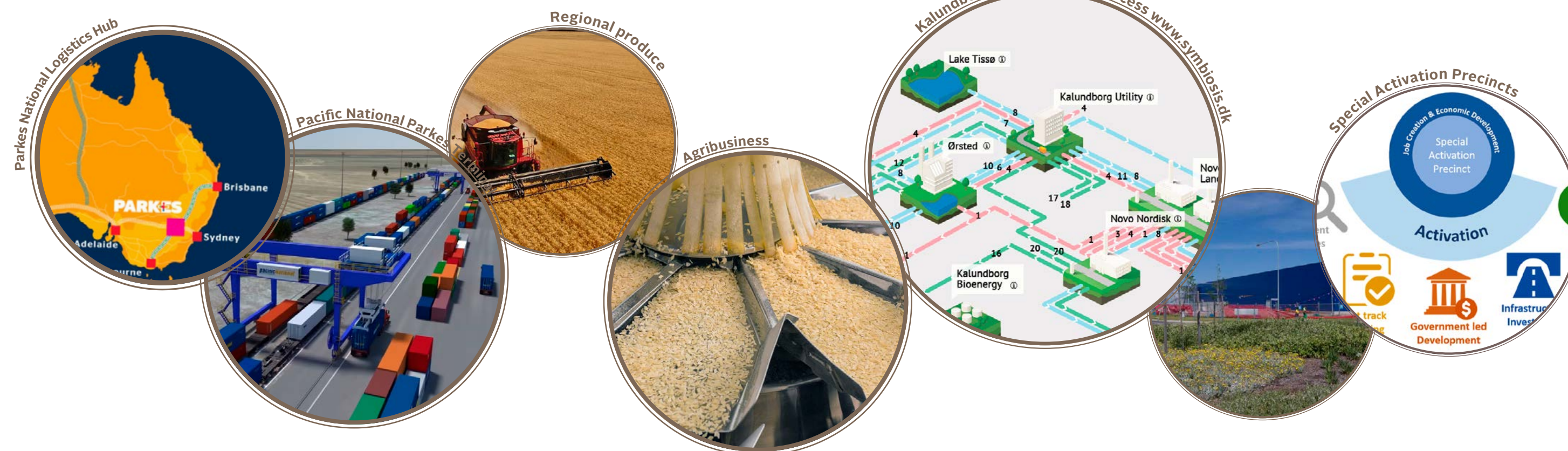
Aspirational targets that respond to the competitive advantages of Parkes, to national opportunities and to global trends. These aspirations aim high and distinguish Parkes from other regional growth centres. When combined they describe an economic precinct of national importance and scale

“Australia’s largest inland freight and logistics hub, centred around Inland Rail and Parkes National Logistics Hub”

“The Central West’s newest and most advanced enterprise precinct, producing high-value food and manufactured products for global and national markets”

“Australia’s first UNIDO eco-industrial park, and the nation’s leading circular economy precinct”

“Streamlined planning in New South Wales’ first Special Activation Precinct”



1.2 Our Vision for a world-class Precinct

“The ambition of the Parkes Special Activation Precinct is not only to become Australia’s largest inland freight and logistics hub, but to be a leader in sustainable regional enterprise areas.”

Vision

The Vision for the Parkes Special Activation Precinct has been developed by stakeholders through a series of stakeholder and team workshops.

This collaborative process culminated in a week-long 'Enquiry by Design' workshop held in Parkes in May 2019, where the group established a vision statement.

Stimulating economic development and employment, the Parkes Special Activation Precinct will be a hub of enterprise and sustainability that will enhance the local and regional community.

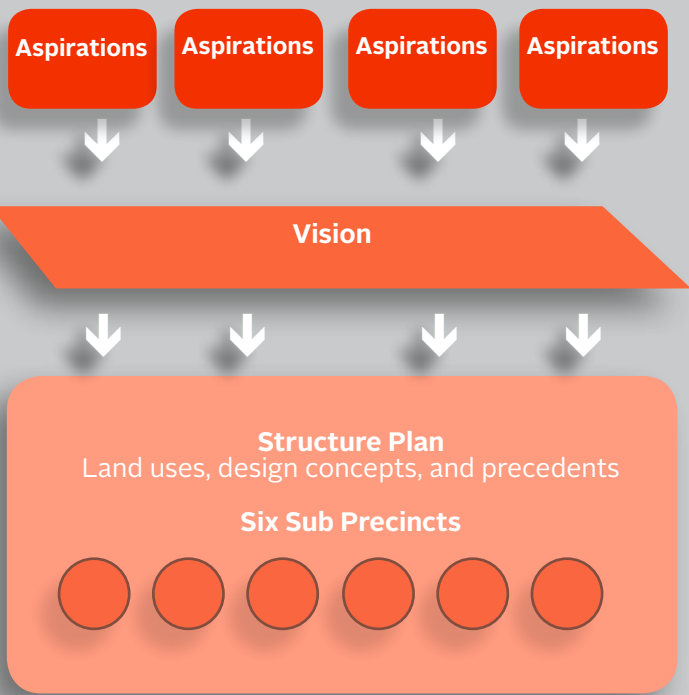
Located at the centre of Australia’s transport and logistics networks, Parkes will be a gateway to national and global markets.

Use of the Vision + aspirations

A clear vision for the project will assist in creating:

- _ A strong identity for the Precinct
- _ Clear direction for the Precinct
- _ Aspirations and deliverable targets for the Precinct
- _ Themes for the planned and future development of the Precinct
- _ An agreed approach to people involved in shaping and delivering the Precinct
- _ An agreed approach to talking to people in the regional and local community
- _ Prefacing technical documents and helping 'set the scene'
- _ Testing and evaluate future proposals, plans, scenarios and success
- _ Investment attraction and marketing activities.

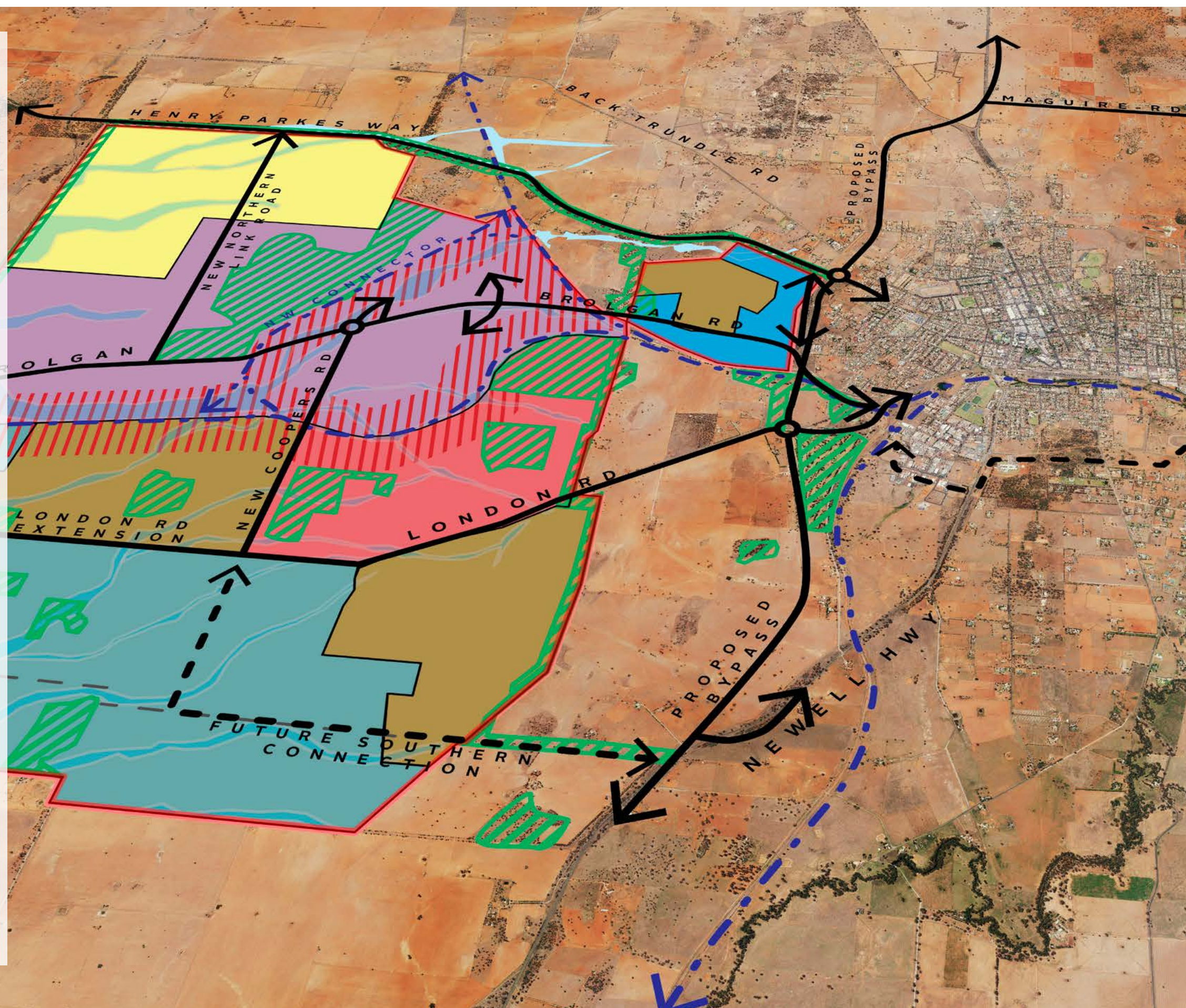
Relationship to the Structure Plan



The Parkes Special Activation Precinct comprises over 4,800ha of land west of Parkes.

The Precinct's Structure Plan defines six Sub Precincts, tailored to economic development aspirations, strategic transport and infrastructure connections, and environmental overlays.

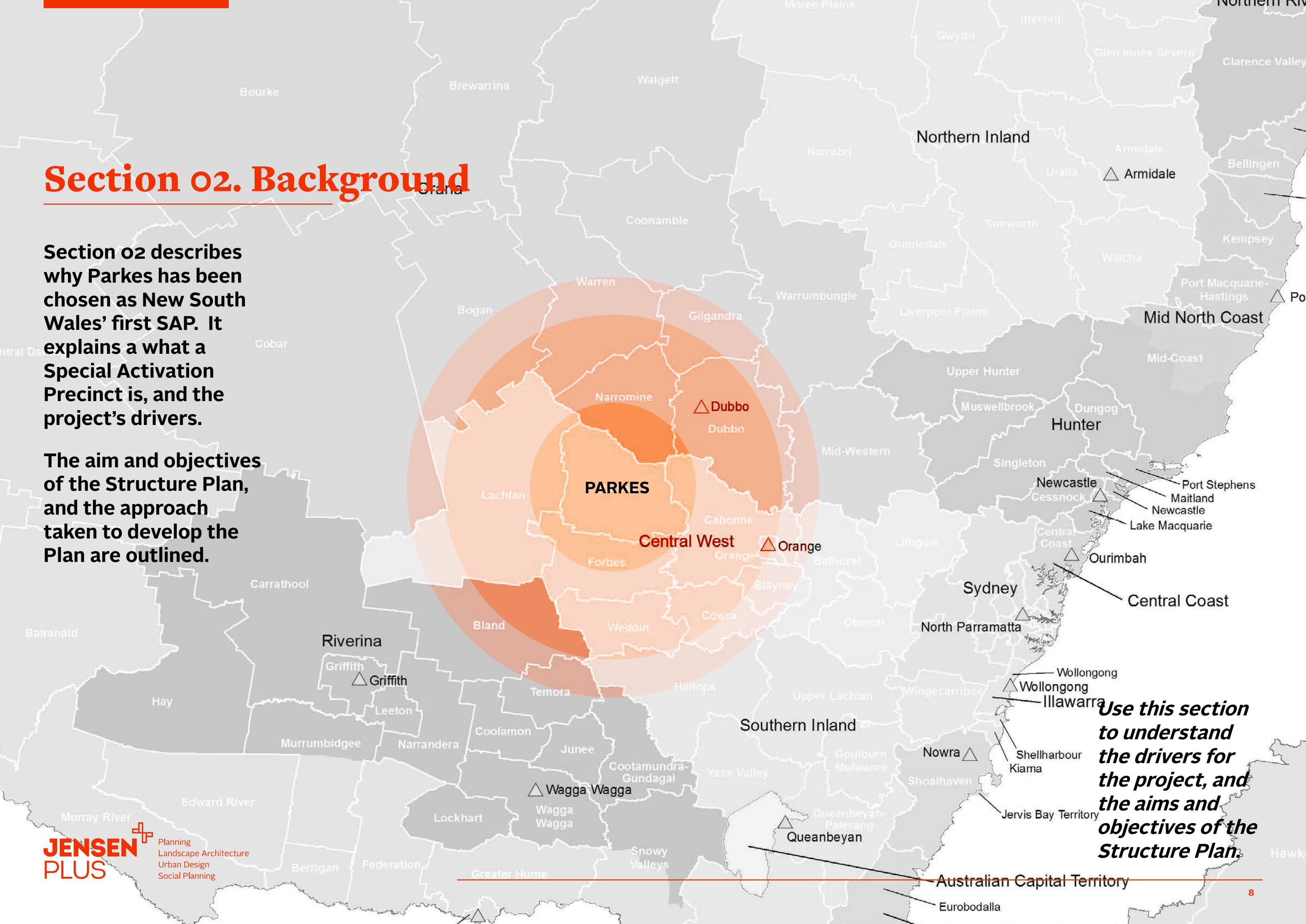
The Parkes SAP Structure Plan is a large, bold plan for a precinct of national scale and importance.



Section 02. Background

Section 02 describes why Parkes has been chosen as New South Wales' first SAP. It explains what a Special Activation Precinct is, and the project's drivers.

The aim and objectives of the Structure Plan, and the approach taken to develop the Plan are outlined.



Use this section to understand the drivers for the project, and the aims and objectives of the Structure Plan.

2.1 Introduction

An overview of the Structure Plan aim, objectives, project drivers and methods

“A Structure Plan, informed by detailed technical studies, is required to define the long term vision to create a large, world-class and multi-function enterprise precinct at Parkes.

One objective of the Structure Plan is to inform the implementation of streamlined planning processes.”

About the Structure Plan

This Structure Plan is a key outcome of a comprehensive master planning process for the Parkes Special Activation Precinct.

Master planning is part of a broader implementation programme which includes an infrastructure business case, and a new State Environmental Planning Policy (SEPP).

The Structure Plan is informed by technical studies prepared by other consultants and was developed utilising a collaborative ‘Enquiry by Design’ approach.

The Structure Plan guides land use planning and design, as well as investment in infrastructure including roads, water, electricity, telecommunication, gas and other services, and other infrastructure.

An objective of the Structure Plan is to inform the implementation of streamlined planning processes, including the creation of development standards to enable the adoption of exempt and complying development for identified land uses within the Parkes SAP.

Why Parkes?

Parkes is a location of State and regional significance and the Parkes Special Activation Precinct is a place-based approach to ‘activate’ and leverage several catalyst opportunities of this strategic location.

Master planning has been undertaken as part of a joint Government agency initiative, announced by Deputy Premier, the Hon. John Barilaro, to create a 20-year vision for job creation and regional development, including:

- _ creation of a new logistics hub
- _ Inland Rail
- _ value adding opportunities
- _ road network integration.

Special Activation Precincts

Special Activation Precincts are unique in NSW because they bring together planning and industry levers, and have the potential to harness support from all levels of government.

Special Activation Precincts contains five core components and this Structure Plan brings together the government led studies that will inform fast track planning for the Parkes SAP, and guide potential future infrastructure investment, government led development and investment attraction activities and incentives.

A SAP is designed to be more than a land use plan. The SAP is a mechanism designed to leverage sustained government and private sector investment and support, promote and attract business, and ultimately to cultivate a growth conducive environment in strategic locations in Regional NSW.



What is SAP? Source: Department of Premier and Cabinet



Parkes unique location at the crossing of the Transcontinental rail line, the new Melbourne-Brisbane Inland Rail, and the Newell Highway, make Parkes one of the most strategically important locations in our national transport network. Source: Parkes Shire Council

2.2 Precinct Drivers

An overview of the drivers of the project

The hub of Australia’s rail freight network

The Parkes SAP Structure Plan addresses the economic opportunities associated with the construction of an Inland Rail from Brisbane to Melbourne and the existing east-west Sydney to Perth/Adelaide Rail corridor which cross at Parkes creating a unique economic development opportunity.

The Inland Rail project has received \$9.3 billion in funding from the Commonwealth Government to support the upgrade to the freight network from Brisbane to Melbourne. It is projected that the first train will run between the two capital cities in 2025 and:

- *reduce supply chain costs*
- *improve access to and from regional markets for agriculture products*
- *better connect cities and farming to markets*
- *improve sustainability*
- *improve linkages: faster, safer and more reliable.*

Parkes is also strategically located within central NSW in the Central West & Orana region, at the junction of key road routes including the Newell Highway (north-south) and Henry Parkes Way (east). This unique location puts 80% of Australia’s population in reach within 12 hours by road or rail.

Parkes is already experiencing a period of heightened interest from logistics firms and other industry focused around the Parkes National Logistic Hub, formalised in 2017 to capitalise on Parkes strategic location, transport capabilities, and the future Inland Rail opportunity.

Specifically, SCT Logistics has operated a major road-rail terminal in the Precinct since 2006. Pacific National are constructing an intermodal rail-road terminal in the Precinct, and Linfox have a depot nearby.

Value-adding in agribusiness and manufacturing

Agricultural industries remain the highest employer in the Parkes region. Despite this, sector employment has fallen by a third in the last 15 years (Mid-Lachlan Regional Economic Development Strategy 2018-2022).

The big opportunity is to fill gaps in the supply chain in areas like food production and packaging, adding value to regional primary products from grain-sheep and grain-cattle farming.

In addition to the wheat, livestock and horticultural products of the region, the Central West’s viticulture, forestry and grazing activities also offer opportunity for value adding.

Other areas for value adding identified in the ‘Value adding to Agriculture in Central West NSW – 2016’ report by NSW Department of Industry are:

- *Biotechnology including functional foods and bio-energy*
- *Digital technology including e-commerce, digital platforms connecting agribusiness to capital and traceability of origins of goods*
- *Processing and packaging*
- *Branding including ‘clean and green’ and organic foods*
- *Collaboration and cooperation including cooperatives*
- *Export opportunities and trade agreements*
- *A major abattoir or other intensive livestock agricultural use with adequate areas for processing, feedlots, services and waste disposal*
- *Agri-business or resources-related related advanced manufacturing and packaging uses close to national rail (and road) freight terminals and routes.*

First mover advantages: embracing the Circular Economy

As businesses, shareholders and the broader community become more environmentally aware the opportunity to offer an ‘Eco Industrial Park’ also becomes a key investment driver.

An ‘Eco Industrial Park’ is defined as ‘an earmarked area for industrial use that ensures sustainability through the integration of social, economic and environmental quality aspects into its siting, planning, operations, management and de-commissioning’ (UNIDO – United nations Industrial Development Organization).

The potential to share energy networks, reduce and re-purpose waste streams, and enhance the local environment is an economic positive both for the business bottom line and for the perception of the Parkes SAP.

In fact embracing the ‘circular economy’ approach is central to the Parkes SAP Environmentally Sustainable Development strategy for manufacturing industry and agribusiness.

The European Commission states ‘In a circular economy, the value of products and materials is maintained for as long as possible. Waste and resource use are minimised, and when a product reaches the end of its life, it is used again to create further value. This can bring major economic benefits, contributing to innovation, growth and job creation.’

Parkes Special Activation Precinct has been identified with potential to be an Australian first-mover in Eco-Industrial Parks demonstrating circular economy principles.

“Parkes is already experiencing heightened interest from logistics firms and other industry around the Parkes National Logistic Hub, encompassing land adjacent to the existing East-West rail line and the proposed Inland Rail route.”

Kent Boyd, Parkes Shire Council

2.3 Detailed objectives informing the Structure Plan

In addition to the project drivers described in 2.2, a number of detailed objectives inform the Structure Plan

“Some of these objectives were created prior to the commencement of master planning. Others emerged during the process.

Some objectives require action outside the Precinct boundaries.

Others will rely on action by other stakeholders.

Objectives are arranged under seven themes which are common to other Special Activation Precincts.”

Master Planning + Precinct Design

- _ Protect the amenity of the Parkes township including nearby residential precincts, particularly the areas to the east of the Newell Highway.
- _ Enhance and create opportunities for the Parkes township to benefit from the Special Activation Precinct via direct and pleasant street links, connected quality green spaces, and reuse of stormwater across the Precinct.
- _ Provide a range of land uses to accommodate new and emerging industries.
- _ Build on the existing National Freight and Logistics Hub.
- _ Ensure future development builds on and creates a distinctive character for the Parkes township and the Precinct.
- _ Provide certainty and confidence for difficult-to-locate businesses to establish within the Precinct.

Environment, Heritage + Sustainability

- _ Become Australia’s first UNIDO Eco-Industrial Park and circular economy precinct.
- _ Achieve and foster precinct-wide sustainability, including carbon neutral, infrastructure and building sustainability certification.
- _ Protect Parkes township and precinct biodiversity and foster environmental values.
- _ Protect and enhance the catchment of Goobang Creek.
- _ Protect and where possible enhance cultural heritage values across the precinct.

Natural Hazards + Resilience

- _ Incorporate measures to manage natural hazards to ensure future resilience across the precinct.
- _ Incorporate reuse of water across the precinct recognising its environmental and sustainability importance.
- _ Future development will be located outside of flood prone areas.
- _ Preserve drainage corridors and incorporate the principles of green infrastructure and water sensitive urban design in development.

Infrastructure + Connectivity

- _ Ensure appropriate utility and service provision and connectivity (water, sewer, communications, stormwater) and include potential for precinct level energy and storage facilities.
- _ Create a smart, digitally connected precinct, ensuring 5G connectivity.
- _ Ensure existing infrastructure is optimised to facilitate efficient development delivery.
- _ Consider precinct integrated smart movement strategy, including public transport options for workers and visitors.

Social + Community Infrastructure

- _ Brokering partnerships with research bodies and industry to grow and develop skills for commercialisation and benefits to the local Parkes economy.
- _ Integrating TAFE and tertiary educational institutions to provide educational opportunities to up-skill existing and new workers and retain youth in the Parkes and precinct area.
- _ Ensuring relevant and appropriate services for workers meet their needs, recognising the precinct operates 24hrs a day, 7 days a week.

Economic Drivers + Industry

- _ Supporting all of Australia's freight and logistics companies.
- _ Providing processing and manufacturing opportunities to deliver on Parkes regional products and reputation for food and value added products.
- _ Facilitating the streamlined establishment of businesses aligned to the freight and logistics, advanced manufacturing, recycling, value add agribusiness, technology and renewable energy industries.
- _ Supporting the establishment of circular economies.
- _ Ensuring future development is aligned to precinct opportunities and efficient land use.
- _ Attracting exemplar businesses with aligned corporate and social responsibilities to the Precinct's Vision and Aspirations.

Certainty of Delivery + Governance

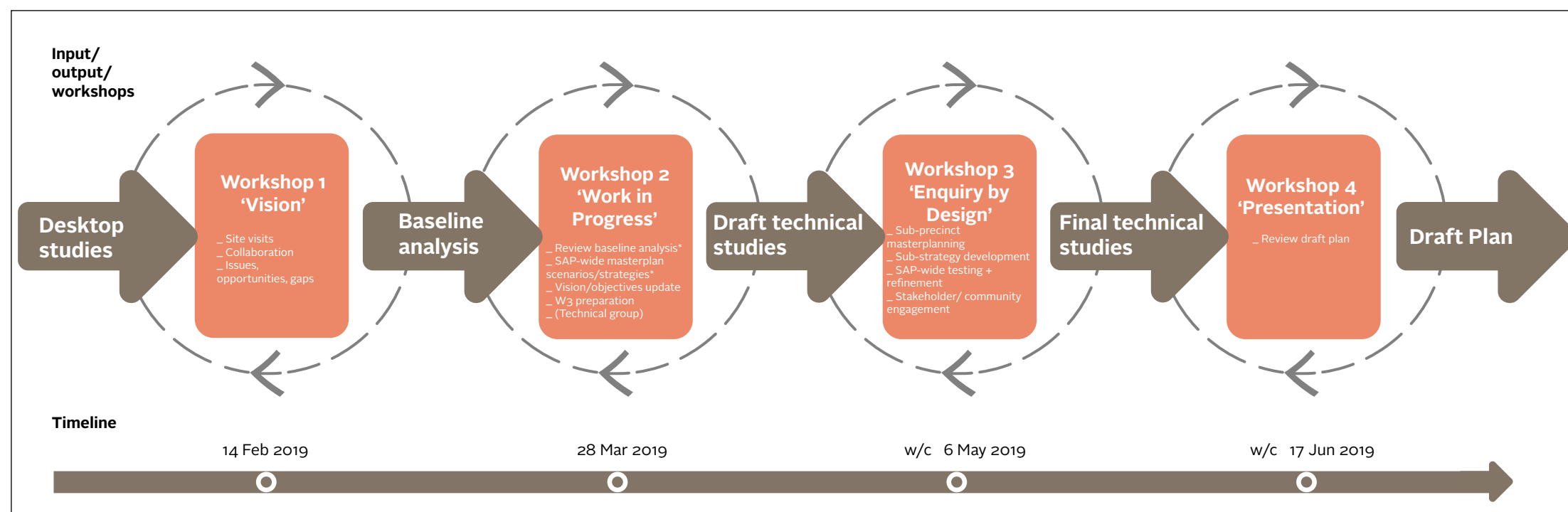
- _ Delivering appropriate and relevant governance arrangements aligned to partnership models.
- _ Ensuring and delivering on streamlined planning processes and approvals - investment certainty.



2.4 Methodology _ Enquiry by Design

“The Enquiry by Design (EbD) process is a planning tool that brings together key stakeholders to collaborate on a vision for a new or revived community...to assess a complex range of design requirements for the development site, with every issue tested by being drawn.”

Princes Foundation



The Structure Plan methodology was strongly informed by a commitment by the client group to a collaborative, multi-stage ‘Enquiry by Design’ workshop programme, facilitated by Jensen PLUS.

Enquiry by Design (EbD) workshops enable a design team and a stakeholder group to spend time together, on site, and ‘on topic’.

Four workshops formed the basis of the process:

- _ Workshop 1 - ‘Vision’
- _ Workshop 2 – ‘Technical studies in progress’
- _ Workshop 3 – ‘Enquiry by design’
- _ Workshop 4 – ‘Presentation’ (presentation of the draft Structure Plan to stakeholders).

Investigations + testing

Between each workshop Jensen PLUS and other technical consultants undertook investigations, testing and reporting, to inform the next collaborative workshop.

The EbD process is well suited to a large, regional project of this type, where gathering people together takes time to organise, and where maximum value must be sought from face-to-face time. It is also suited to projects with accelerated timeframes.

Stakeholders

The main participants in workshops were:

- _ Department of Planning and Environment and Department of Premier and Cabinet (now both part of Department of Planning, Industry and Environment)
- _ Parkes Shire Council staff
- _ Technical consultants
- _ State agencies (including EPA, TfNSW, RMS)

At the major EbD workshop in May 2019, additional stakeholder engagement meetings and community information sessions were incorporated into the process.

Achievements

The use of an EbD process to establish and develop a vision for large master planning projects is a well established technique, particularly for urban growth, town centre revitalisation and other urban development projects.

Parkes SAP’s use of EbD is innovative given that the project is a large-scale industry project. This presents new challenges such as the difficulty in forecasting demand (and therefore land requirements), the diversity of site sizes and spatial designs that might be required by businesses, and generally the lack of ‘rules of thumb’ that often underpin the rapid planning processes of an EbD.

Overall the Parkes SAP process has been successful in developing a Structure Plan for a complex project, in a rapid way, with strong collaboration and stakeholder input. It offers a model for future SAP master plans.

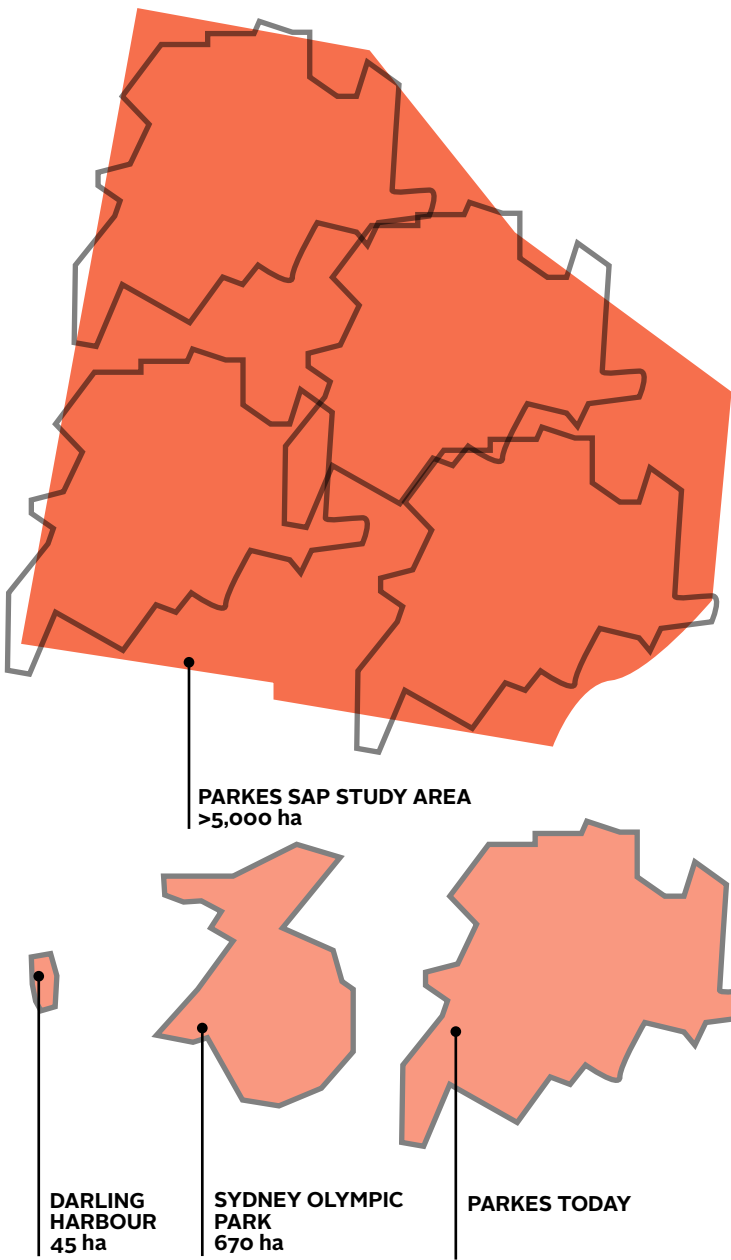
Section 03. Context

Section 03 summarises the context for the Structure Plan. It provides a brief history of Parkes and describes the study area in words and pictures.

Strategic policy is summarised, much of which provides consistent direction for the Structure Plan. The current statutory planning context is also summarised.

Use this section to understand the context and influences in preparing the Structure Plan.

3.1 Study Area



- 4.5 times the size of Parkes today
- 8 times the size of Sydney Olympic Park
- 125 times the size of Darling Harbour

The Parkes Special Activation Precinct study area measures some 8 km by 8 km. The scale can be difficult to comprehend but such an area is necessary to accommodate the large-footprint uses envisaged as well as the buffer areas required to ensure some of these uses can be planned and operate with confidence.

Description

The proposed Newell Highway Bypass is on the eastern edge of the study area and separates Parkes township from the Precinct. Henry Parkes Way forms the northern boundary and Keiths Lane part of the western boundary, with the southern boundary south of London Road and the Westlime Quarry.

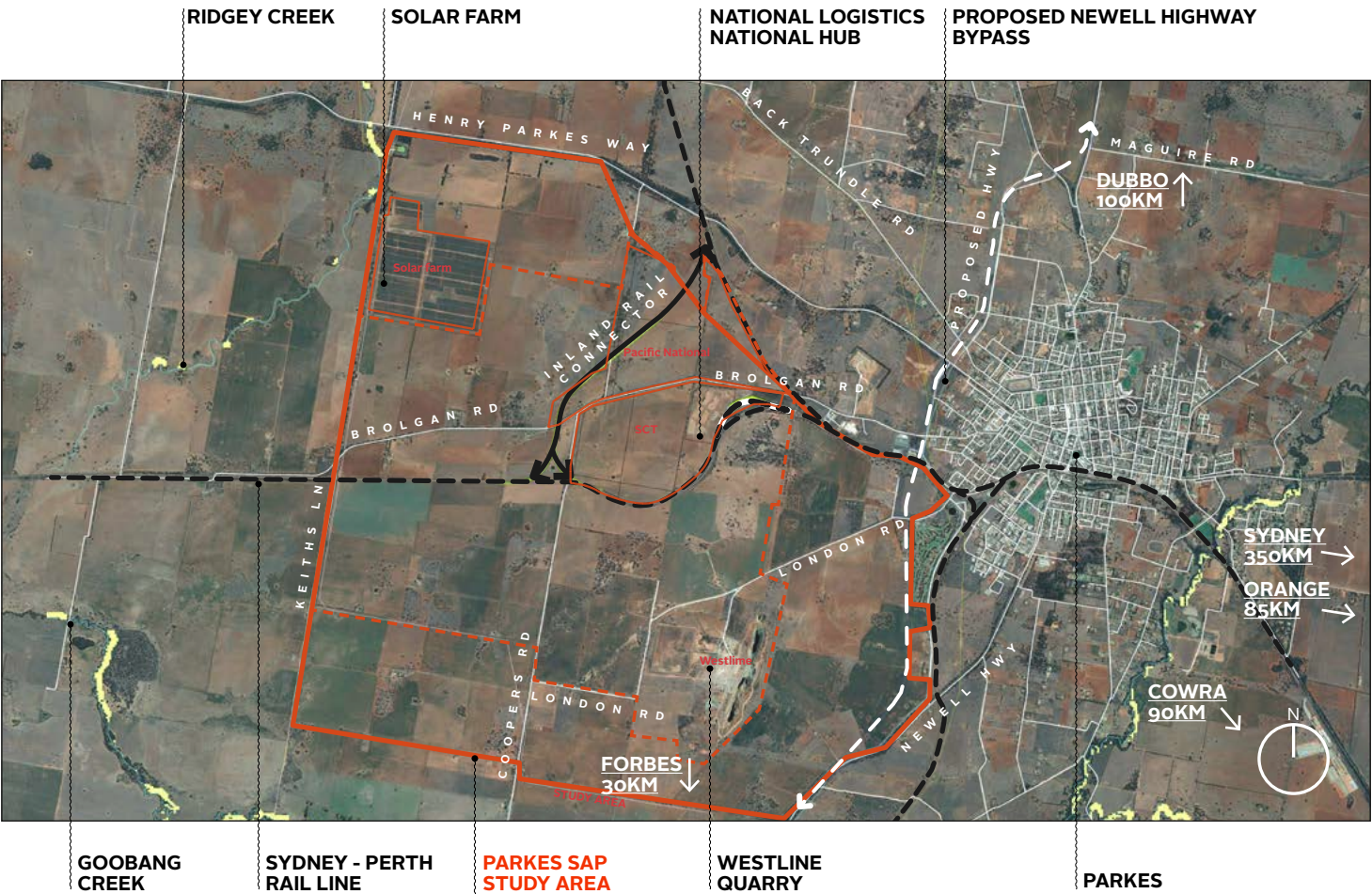
The study area has cultural relevance to the Wiradjuri people and artefact sites and scarred trees have previously been identified in the study area.

Today the study area is predominantly used for broad-acre agriculture. The land form is undulating with sparse areas of native trees and vegetation. A small number of farms with associated houses and sheds are located within the study area.

The existing SCT Logistics intermodal facility and the new Pacific National intermodal terminal are located in the central part of the study area, 4 km west of Parkes, adjoining the Perth-Sydney and Inland Rail lines. New services including electricity, gas and water are currently being installed along Brolgan Road to supply these and associated developments.

These two companies own some 600 hectares of land on either side of Brolgan Road which runs east-west through the centre of the study area. Brolgan Road also provides access to the smaller Linfox freight terminal and the Parkes Shire Council landfill closer to the town.

The Westlime quarry in the south east quadrant of the study area is 8 km from Parkes is accessed from the Newell Highway via London Road.



London Road, with Coopers Road and Brolgan Road form the main connecting roads within the study area.

Several at grade road-rail crossings exist in the study area. The proposed north-south Newell Highway Bypass design proposes a road overpass straddling both the Hartigan Road/Brolgan Road entrance to the study area, and the Perth-Sydney rail line.

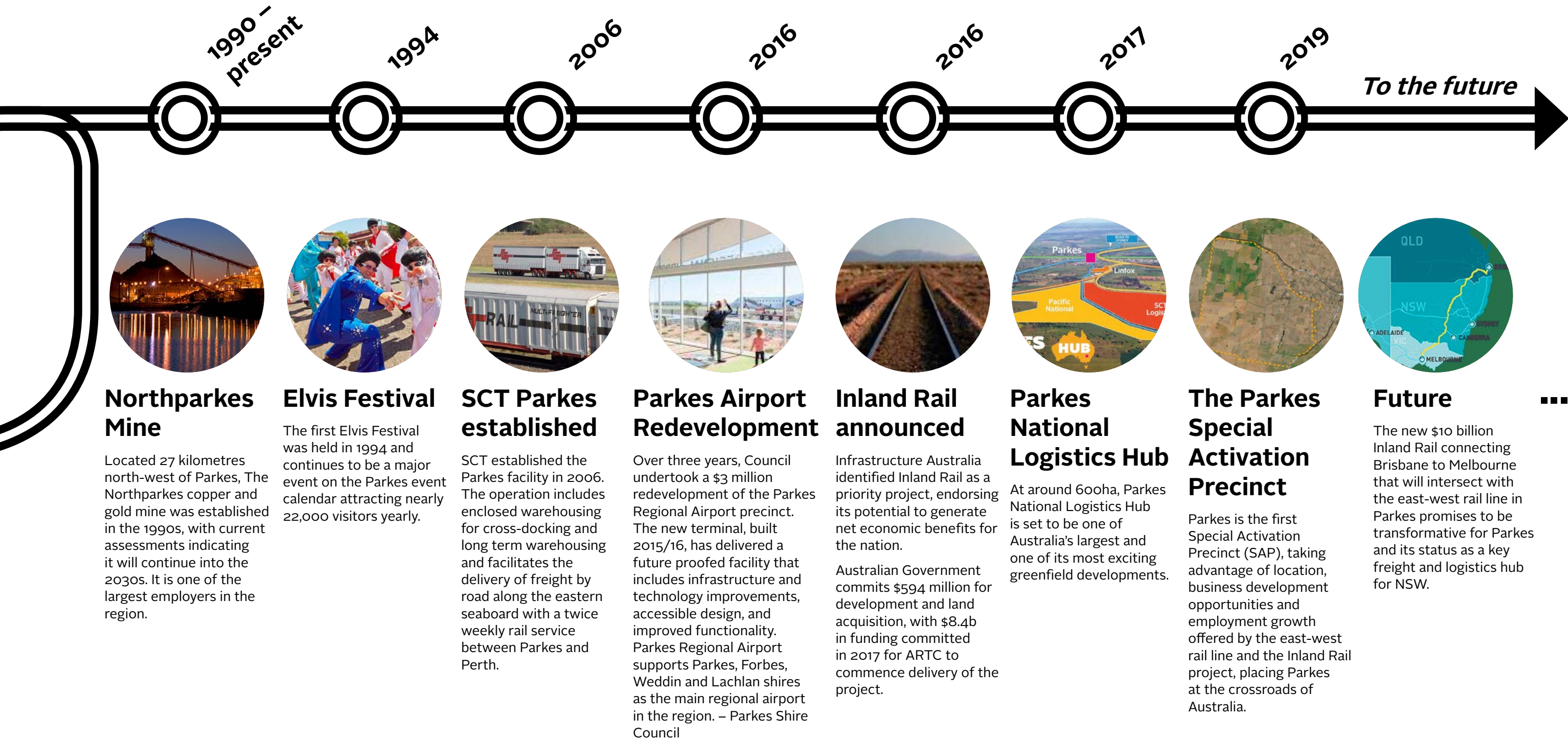
Other natural attributes of the study area include significant stands of mature native trees along Henry Parks Way, Coopers Road and Keiths Lane. Stands of vegetation are evident on the hilly areas of the site where cropping is difficult.

A 'Travelling Stock Route' traverses the site and also contains vegetation. Numerous paddock trees have been identified across the study area. Natural drainage lines are evident but flood ways are relatively small, forming a high part of the catchment flowing west and south west to Goobang Creek outside the study area.

Parkes Local Government Area

Parkes Local Government Area (LGA) is located approximately 350 km west of Sydney, in the Central West and Orana Region. Other major centres in the region include Condobolin, Cowra, Dubbo, Forbes and Orange.

The Parkes township has a population of approximately 11,500 people (ABS, 2016), with around 5,000 dwellings. An industrial estate is located south of the town, adjoining the Newell Highway. The attractive town centre is well serviced with commercial, business and retail uses. A new hospital and health precinct is located at the southern end of the town. Parkes Regional Airport is located east of town, with the Parkes National Logistics Hub located to the west.



3.3 Existing Conditions

“A landscape of broad-scale agriculture is gradually evolving into a mix of contemporary uses including logistics businesses, and a recently built solar farm. Existing rural roads and lanes are being upgraded to accommodate new developments like Pacific National’s new intermodal terminal, now under construction on Brolgan Road.”

Existing land uses



Large scale broadacre farming and cropping is currently practised on a majority of the study area



Container stacks at SCT’s rail terminal in the freight and logistics area



Linfox terminal at Parkes (formerly FCL)



Solar farm array in the north west corner of the study area



This warehouse in the study area has potential for redevelopment or adaptation

Infrastructure



At grade rail crossings may need to be upgraded for safety and heavy vehicles



Brolgan Road will be the spine of the SAP, upgraded with new services alongside



Signage on the eastern edge of the Parkes SAP. Forbes can provide a labour source for SAP businesses

Infrastructure



Unsealed roads and uncontrolled rail crossings within the study area will require upgrading.



Major stands of trees including road verges are protected in the SAP structure plan green infrastructure overlay.



Brolgan Road with level crossing in foreground



Transgrid substation in the north-west corner of the study area

Recent development



Earthworks for rail terminals are dwarfed by the scale of the SAP



Pacific National rail terminal development

Parkes



Sir Henry Parkes, proponent of expansion of the continental rail network



Businesses in Parkes will benefit from SAP activity



Many heavy vehicles pass through Parkes



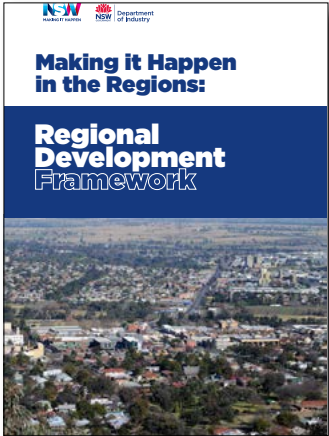
Recently upgraded Parkes Regional Airport, currently for passengers only

3.4 Relevant State and Local Policies

“NSW is a large state with a diversity of strategic and planning policies of relevance to Parkes SAP.

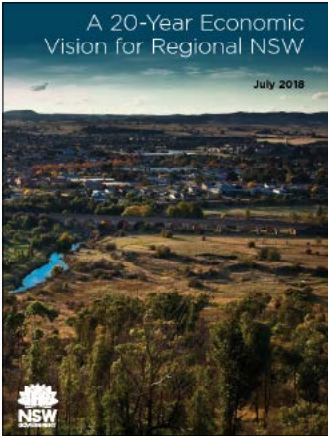
A review of this policy library highlights strong policy alignment around agribusiness, freight and logistics, and realising export opportunities.

There is an increasing emphasis in recent documents on renewable energy, advanced manufacturing, business-friendly regulatory environments, and investment support services.”



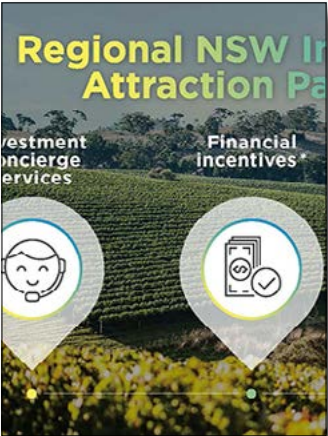
NSW Regional Development Framework (2017)

- For inland areas, such as the Central West, agribusiness is identified as a key industry sector that could drive regional development but will require investment in infrastructure to create efficient freight networks that will increase the sectors competitiveness.



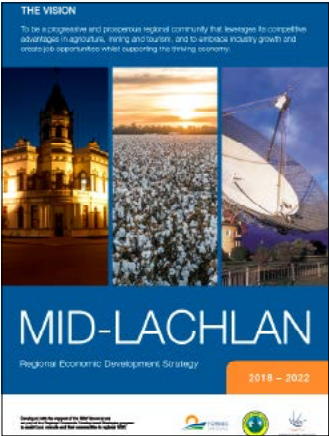
20 Year Economic Vision – Regional NSW (2018)

- Vision is to accelerate economic growth in key sectors or ‘engine industries’, such as; agribusiness; tertiary education; health care; resources and mining, freight and logistics; advanced manufacturing; renewable energy; and technology enabled primary industries.



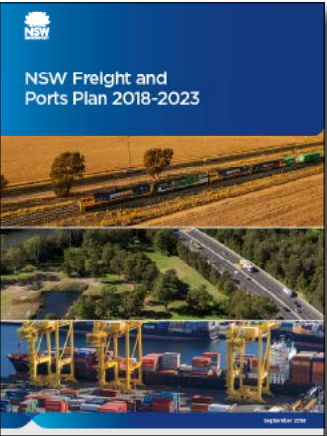
Investment Attraction Package for Regional NSW (2018)

- Skills Relocation Assistance – \$10 million in grants to help meet the cost of moving from the city to the country.
- Previously announced, ‘Special Activation Precincts’ or business hubs in areas that will offer infrastructure and streamlined planning processes for the industries and sectors responsible for driving significant growth in regions.



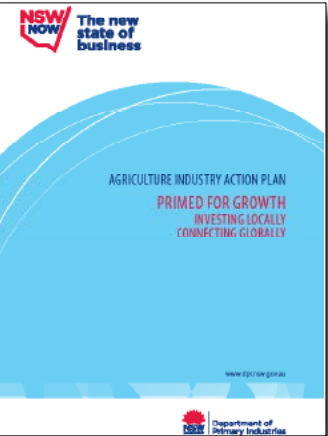
Mid-Lachlan Regional Development Strategy (2018 – 2022)

- Vision: Leverage competitive advantages in agriculture, mining and tourism, and to embrace industry growth and create job opportunities whilst supporting the thriving economy.
- Optimise and grow agriculture and provide opportunities to expand current and future mining operations.
- Improve water security constraints for the agriculture, mining, manufacturing and tourism industries.
- Improve availability of skilled labour for high value mining, construction, transport and manufacturing industries.
- Improve access to markets for agriculture, mining and manufacturing by investing in network resilience and reliability.



Transport for NSW – Freight and Ports Plan (2018 – 2023)

- Increase capacity of freight sector via the delivery of new infrastructure to; increase rail and road freight capacity; increase capacity and number of fuel pipelines; and, support the freight sector via protecting and improving freight and logistics land, precincts, terminals and key freight routes (Pacific, Newell and Golden Highways).



NSW Agriculture Industry Action Plan (2014)

- Drive continued growth of the sector and support growth of jobs in rural and regional areas. The plan identifies strategies and actions to unlock new market and growth opportunities for agricultural products across the supply chain, addressing a range of issues including workforce development, education, and research and development.



3.4 Relevant State and Local Policies



Future Transport Strategy 2056 – Regional NSW Services and Infrastructure Plan (2018)

- The strategy aims for agile transport planning solutions that lead to a productive economy, liveable communities and a sustainable society, considering rapid changes in technology. Expected outcomes include a 'hub and spoke' network better connecting regions as well as connections to Sydney'



Invest in Regional NSW – Prospectus (2018)

- Investment programs to support businesses that are expanding and developing new market opportunities and looking to set up greenfield operations or relocate to Regional NSW.



Value Adding to Agriculture in Central West NSW (2016)

- The majority of wheat, livestock and horticultural products currently leave the region without additional value adding.
- Jobs are shrinking in agriculture in Central West NSW and the sector will have to develop strategies to manage job and skill gaps.
- Trade agreements will create significant opportunities for Central West agricultural products. The ability to transport produce by air from Canberra to Asian markets is a potential game-changer for agricultural exports from Central West.
- Freight and logistics connectivity to market is a key challenge and opportunity for Central West region.



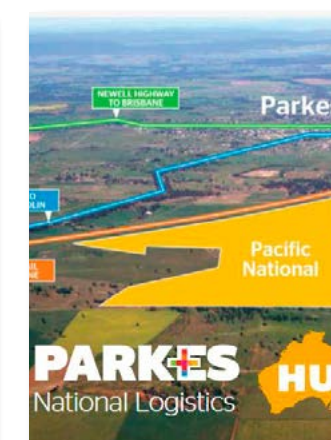
Central West and Orana Regional Plan 2036 (2017)

- Parkes will be a critical intermodal node for the proposed Melbourne to Brisbane Inland Rail. It will provide the catalyst for more efficient freight transport and a stronger Parkes National Logistics Hub, supported further by the Southern and Western ring roads to support heavy vehicle transport.
- The priorities for Parkes are to: develop the National Logistics Hub and the Parkes Airport as a freight hub; facilitate Inland Rail progress; ensure adequate supply of commercial, industrial, and residential land; diversify the economy; improve infrastructure; create a vibrant community; and, support the visitor economy.



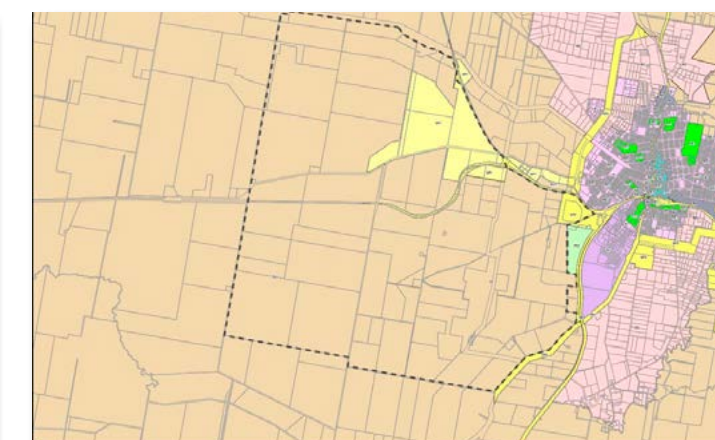
Parkes Shire 2030+ Community Strategic Plan (2017)

- By 2030, Parkes Shire will be a progressive and smart regional community embracing a national logistics hub with a vibrant healthy community.
- The plan advocates for the completion of the National Logistics hub by leveraging economic potential of the Parkes Western bypass, promotion of the Inland Rail, advocating for access to major domestic and international markets.



Parkes National Logistics Hub Prospectus (2017)

- Released in 2017, the prospectus introduces the National Logistics Hub vision and seeks enquiry and interest from investors
- Outlines key drivers for Parkes Logistics Hub, including:
 - Access to all major ports
 - First centre from Sydney
 - Double stacked rail capability
 - Road freight connections
 - Central location with 80% of Australian population in reach within 12 hours
 - 600 hectares of low-cost industrial land available
 - 45-minute connection to Sydney via three flights daily
 - 24 hour operating capacity



Parkes Local Environmental Plan (LEP) 2012

- Includes a Special Activities Zone for Freight Transport Facility, Heavy Industrial Storage Facility, High Technology Industry, Rural Industry, Transport Depot, Truck Depot.
- Primary Production Zone Policies:
 - Minimum lot sizes
 - Special Activities – no specified minimum
 - Primary Production – 400ha
- The area includes the Parkes Township Buffer Zone, and Terrestrial biodiversity classification.

Parkes Development Control Plan

- The Parkes Development Control Plan contains specific provisions for the area of the Activation Precinct. This includes a structure plan, and a special control area for the area of Terrestrial Biodiversity. There are also building height and setback guidance within the DCP.

A black and white photograph showing the interior of a bus. Passengers are seated in rows, looking out the large windows. The bus has a modern interior with overhead lights and air vents. The view is from the back of the bus looking towards the front.

Section 04. Investigations

Section 04 summarises investigations and analysis for a range of technical disciplines including economics, transport, utilities and infrastructure, stormwater and groundwater, biodiversity, cultural heritage noise, air quality and odour.

Social infrastructure, streamlined planning processes and Ecologically Sustainable Development opportunities are also covered, all of which informs why the Structure Plan plan is depicted as it is. The collaborative workshop process to develop the Structure Plan is also described.

Use this section to understand how technical analysis from a range of disciplines has informed the Structure Plan.

4.3 Workshop #2

Workshop #2, 'Technical studies in progress', 3 April 2019, Sydney, NSW



Pre-workshop investigations

Structure Plan Preliminaries Report

- _ Updated Vision + Principles
- _ Identified 'Place Types' being land use clusters (later to become the Sub Precincts of the Structure Plan)
- _ Long list of Structure Plan Scenarios (seven including 2018 option from Strategic Business Case)

Aim + objectives

An interim technical workshop - between the two large stakeholder workshops (#1 and #3) - to review the technical baseline work and synthesise into approx. 3 SAP-wide master plan scenarios, and strategies.

- _ Review + feedback on baseline analysis and technical study progress
- _ Agree approx. three SAP-wide master plan scenarios for technical study analysis in next stage
- _ Progress high-level strategies through focus group discussions for ESD, transport and infrastructure, and Streamlined Planning
- _ Review updated vision + objectives
- _ Confirm Workshop #3 (enquiry by Design workshop) approach and inputs from each consultant
- _ Technical team and client team collaboration

A multi-criteria assessment approach was used to evaluate the 7 long-listed Precinct scenarios.

Three scenarios were short listed for detailed technical testing. The three scenarios were reissued following the workshop.

4.4 Workshop #3

Workshop #3 , Enquiry by Design Workshop , 3- 10 May, Parkes, NSW

The workshop was the primary master planning workshop for the project, and involved more than 40 participants from the project team, state agencies, Parkes Shire Council and local stakeholders.

Pre-workshop investigations

Scenario Testing Report

Global and national precedent analysis to inform Sub Precinct and site size, proximities, buffers and integration.

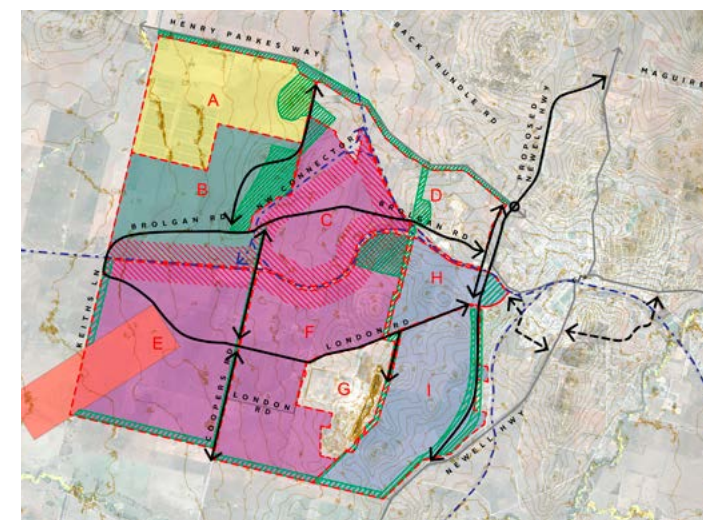
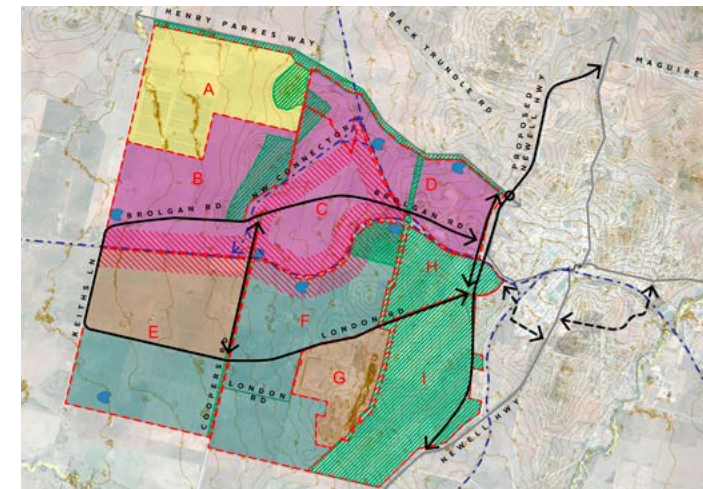
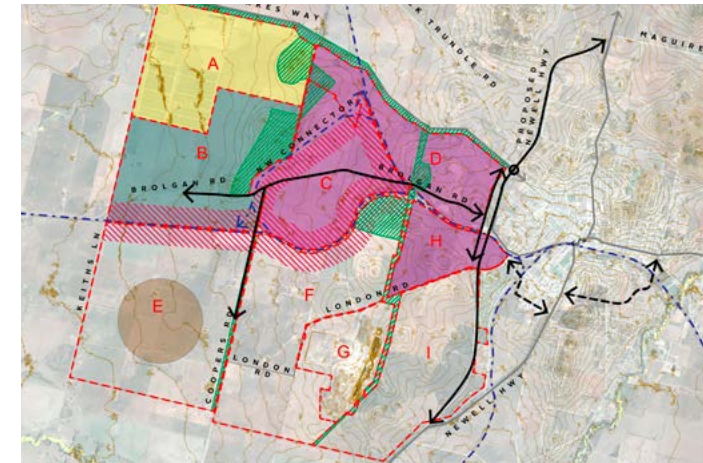
- _ Kalundborg Eco-Industrial Precinct
- _ Toowoomba Enterprise Hub
- _ Greenfield Intermodal Terminals (various)
- _ Resource recovery + Energy from Waste (various)
- _ Intensive livestock agriculture (various)

Streamlined planning

- _ Risk-based testing of proposed statutory planning framework for three scenarios

Sub Precinct master plan testing: 'Proof of Concept'

- _ Detailed concept designs of key precincts to building, lot, street and local area scale, to test planning assumptions.
- _ Use of 2D and 3D techniques to assist with visualising and team and stakeholder understanding of scale of development, for use at Enquiry by Design workshop.





Aim + objectives

Using Enquiry by Design techniques, develop a detailed master plan and implementation strategies for Parkes SAP, with a range of stakeholders

Objectives

Prepare 11 technical outcomes during the workshop

1. Preferred Structure Plan
2. Sub-precinct master plans for each area, consulted with stakeholders with 3D visualisations
3. ESD strategy (on a page)
4. Environmental strategies
5. Transport, infrastructure, stormwater strategy
6. Planning/environmental regulations approach, tested and consulted in workshop
7. Industry strategy (mix, catalysts etc.)
8. 3D Visualisations
9. Local Strategic Planning Statement Integration
10. Final Vision and development principles
11. Stakeholder/community engagement and outcomes summarised

All technical outcomes to be written (and illustrated with drawings as appropriate), suitable for presentation on Day 5 of the Enquiry by Design workshop.

Monday 6th May Workshop Sessions



Following arrival and setup, the workshop commenced at lunch time with an attendance of over 50 technical advisors, consultants and Federal, State and Parkes Council representatives. the multi-criteria analysis (MCA).

Key actions involved small group assessment of the 3 master plan scenarios identified at Workshop #2 using a multi-criteria analysis (MCA) framework. The results of these analyses were converted by the groups in to a concept sketch plan. The Monday agenda included:

- _ Welcome to country
- _ Daily briefing and project update
- _ Scenario evaluation – MCA evaluation in small groups, rotating between ‘table experts’
- _ Concept sketch in small groups reflecting evaluation, containing preferred elements
- _ Daily review

Tuesday 7th May Workshop Sessions



Review of the structure plan concept sketches from Monday was completed, providing agreement on some precinct land use locations. Technical groups covering the required inputs then assembled, each with designated expert leaders, to commence their detailed plan preparation. This activity occupied most of the day.

The Tuesday agenda included:

- _ Reflections on Monday, GIS
- _ Complete structure plan review in groups
- _ Landowner feedback (off site)
- _ Technical groups begin, covering:
 - _ ESD,
 - _ Transport and infrastructure planning
 - _ Environmental impacts including biodiversity, flooding, air, noise and odour quality
 - _ Streamlining planning processes and regulations
 - _ Sub-precinct masterplans including local access roads, lot sizes, uses,
 - _ Industry/economics,
 - _ 3D. structure plan integration
 - _ Prof Ali Abbas circular economy talk
 - _ Parkes Shire Councillors presentation
 - _ Community bus tour
 - _ Daily review

Wednesday 8th May Workshop Sessions



Business stakeholder meetings were held throughout Wednesday. These meetings with client and technical representatives were critical to understanding the operations and plans of the key freight and logistics companies operating at Parkes and the operations of Westlime minerals processing. Technical groups continued their detailed precinct planning.

The Wednesday agenda also included:

- _ Daily briefing, reflections on Tuesday
- _ Optional site visits
- _ Key business stakeholder interviews – SCT, Pacific National, Linfox, Westlime
- _ Technical groups continue review and refinement (ESD, transport/infra, planning/env regs, sub-precinct master plans, industry/economics, 3D visualisation)
- _ Daily review

Thursday 9th May Workshop Sessions

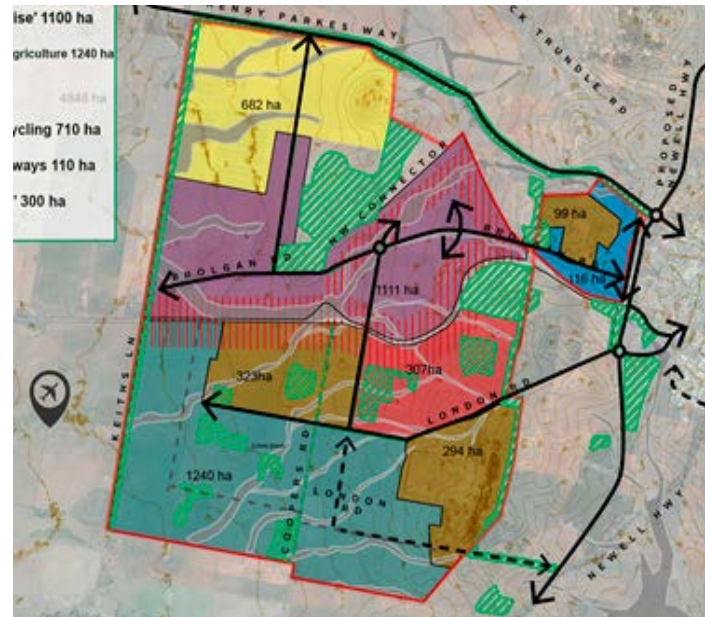


Thursday required the technical groups to complete their investigations, feeding into a refined and detailed master plan.

The Thursday agenda included:

- _ Reflections on Wednesday
- _ Technical groups from 80% to 100% (env, planning, sub-precinct master plans, ESD, transport, infrastructure /storm water, 3D visualisation)
- _ Refining structure plan to match technical group investigations
- _ 3D visualisations
- _ Final presentation requirements + preparation
- _ Industry strategy meeting
- _ Local Strategic Plan Statement Integration workshop
- _ Vision + Principles workshop
- _ Daily review
- _ Final presentation preparations

Friday 10th May Workshop Sessions



After two hours of finalisation the collective work of the week was presented, underpinning the master plan. The Friday presentation included:

- _ Introduction + overview of EbD
- _ Parkes SAP Structure Plan, Vision, principles,
- _ Sub-precinct master plan in 3D
- _ ESD strategy
- _ Environmental strategy
- _ Transport + Infrastructure strategy
- _ Streamlined planning
- _ Local Strategic Plan Integration
- _ Industry strategy
- _ Staging
- _ Next steps
- _ Q&A session
- _ EbD feedback + thanks
- _ Close and lunch



4.5 Economic and Industry Analysis

Economic and Industry Analysis - Final Report (SGS, June 2019)

Key findings

- Identifies three key economic narratives that will underpin the Precinct's attraction to industry namely: a major freight and logistics hub serving road and rail, an advanced agribusiness precinct and a leading waste transition precinct.
- Identifies likely first movers, drawn to the precinct by the road and rail interface, linkages with surrounding industries and the established role of Pacific National and SCT.
- Supply chain and industry linkages and regional activities are used to identify upstream and downstream industry sectors on which the master plan Sub Precincts are based.
- The economic benefits of co-location in the SAP are highlighted and the competitive offer of Parkes is also described.
- It is anticipated that by 2041, the SAP could generate between 2,147 and 3,016 jobs in the precinct (high range estimate).
- There could be between 1,767 and 2,482 additional jobs (high range estimate) created within the Parkes LGA through employment multipliers.
- Land area take-up is likely to radiate out from several points of establishment, mainly the Regional and Mixed Enterprise Sub Precincts.
- The SAP will have a significant impact on Parkes region's population, potentially growing from some 15,000 to up to 30,000 by 2041 (high range estimate).

- Low medium and high growth scenarios have been identified for staging based on multiple assumptions including industry profile, land sizes, employment, timing and technological and other future changes.
- Total lot coverage is expected to range between 808 ha (low scenario) and 1,112 ha (high scenario). These land estimates do not take into consideration roads, open space or any other non-lot land requirements.
- Investment attraction principles and opportunities for each precinct are provided.

Structure Plan responses

- The economic narratives of freight and logistics, advanced agribusiness and waste transfer underpin the Plan, and are reflected in the Sub Precinct land uses (with some overlap).**
- Structure Plan form has been influenced by the co-location benefits and competitive advantages identified in terms of services and infrastructure, land availability and the existing freight and logistics operations.**
- The extensive Regional Enterprise Sub Precinct responds to the analysis that much of the initial investment is likely to occur from the diverse freight, logistics and agribusinesses land use groups.**
- Staging has been based on predicted economic land take up rates and maintaining flexibility for investors at all times.**
- Labour and population projections have informed recommendations on the development of housing, training and other services in Parkes.**
- SGS case studies for anticipated industry locations have informed the size of Sub Precincts.**

4.6 Environmental, Heritage and Sustainability

Environmental, Heritage, and Sustainability Report (WSP June 2019)

Key findings

- A groundwater desktop assessment indicates that multiple groundwater sources were identified within the investigation area that may be suitable for multiple beneficial uses.
- Contamination - A Preliminary Site Investigation has identified potential contaminated land risks, primarily associated with former land uses in a small number of specific locations (e.g. mining at Westlime site; wool processing evaporations ponds near SCT Logistics facility).
- Cultural heritage – An Aboriginal Cultural Heritage and Historic Heritage Assessment identified a number of Aboriginal heritage sites to be managed. Five artefact sites were newly identified, and a number of previously recorded sites within the investigation area were documented. No non-Aboriginal historic sites were identified within the area of investigation.

Structure Plan responses

- In conjunction with infrastructure planning, and Precinct and industry needs, opportunities for ground water use have been identified for potential inclusion as part of a secure water supply.**
- Manage items and sites identified through an Aboriginal Cultural Heritage Management Plan based on the principles of avoidance, mitigation, and management in consultation with the relevant Reconciliation Action Plans and local Aboriginal representatives in accordance with OEH ACH consultation requirements.**
- Recognise and manage the cultural heritage of the Precinct and Parkes area e.g. in public realm treatments, and at gathering points e.g. any future Precinct Information Centre or offices.**

Parkes is...

The largest inland freight and logistics hub in Australia, connecting regional NSW to the major interstate centres, with a focus on agricultural and minerals freight efficiency and removal of trucks from national highways

Parkes is...

An advanced agribusiness and tech precinct, producing high-value agricultural produce, co-located with up-and-downstream value-adding processes. The precinct is focused on the domestic and/or international export market

Parkes is...

Australia's leading circular economy precinct, focused on waste recovery, waste to energy and waste to resource economies, with potential attraction to other advanced manufacturing sectors

4.7 Biodiversity

Biodiversity Assessment Report Stage 1 (WSP, June 2019)

Key findings

- _ Desktop studies, on-site vegetation surveys (across the vast majority of the Precinct) including paddock tree assessments, and on-site targeted threatened species surveys were undertaken.
- _ Native vegetation covers approximately 596ha of the surveyed areas.
- _ 884 'Class 2 and Class 3' paddock trees have also been identified.
- _ Threatened ecological communities were listed, flora and fauna, at various levels of significance.
- _ Assessment has identified areas of high (Tier 1) and medium (Tier 2) constraint biodiversity in the north of the SAP investigation area, along existing roads including Henry Parkes Way, Coopers Road and Keiths Lane, and in other locations.
- _ Additional seasonal field work is required to inform a Strategic Biocertification of the Precinct.
- _ A Bushfire Constraints and Opportunities Report was also undertaken, recommending adoption of state bushfire protection planning and building policies.

Structure Plan responses

- _ **Adopt an avoidance hierarchy to protect areas of significant biodiversity including vegetation and paddock trees in line with the following guidelines.**
 - _ **Development (e.g. buildings, hardstand, operational areas) avoids areas of Tier 1 and 2 biodiversity constraints.**
 - _ **Essential infrastructure avoids where possible, or minimises areas of Tier 1 and 2 biodiversity constraints.**
 - _ **Tier 1 - High biodiversity constraints including major listed and threatened species and hollow bearing trees.**
 - _ **Tier 2 - Medium biodiversity constraints are:**
 - _ **Native vegetation patches that correspond to other Threatened Ecological Communities listed under the BC Act.**
 - _ **Paddock trees recorded as Class 2 or Class 3 that require biodiversity offsets at an ecosystem credit level.**
- _ **A Green Infrastructure Overlay has been created in the Structure Plan, to direct development away these biodiversity areas. This high-level overlay has been designed to generally align with vegetation forming the Tier 1 and 2 biodiversity constraints, with the exception of paddock trees, which are scattered throughout the Precinct and will require more detailed consideration as each Sub Precinct or development is progressed.**
- _ **Impacts to biodiversity values (e.g. removal of protected vegetation) will require biodiversity offsetting in accordance with the NSW Biodiversity Offset Scheme.**

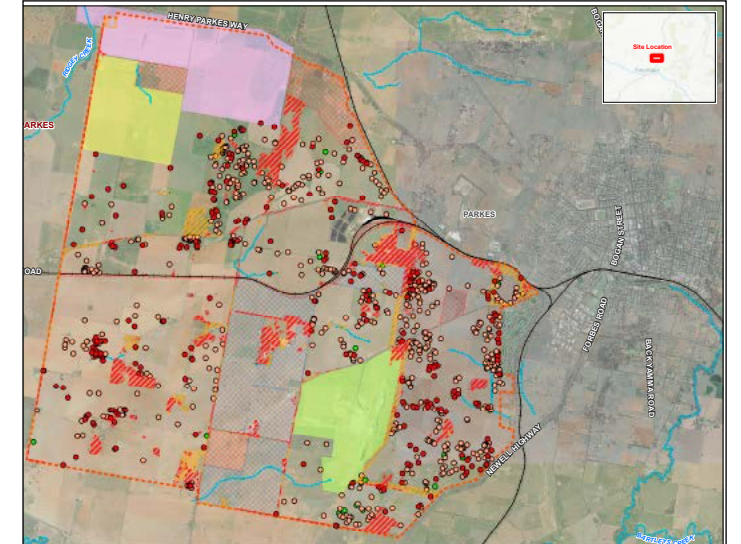
4.8 Noise and Vibration

Noise and Vibration Assessment (WSP, June 2019)

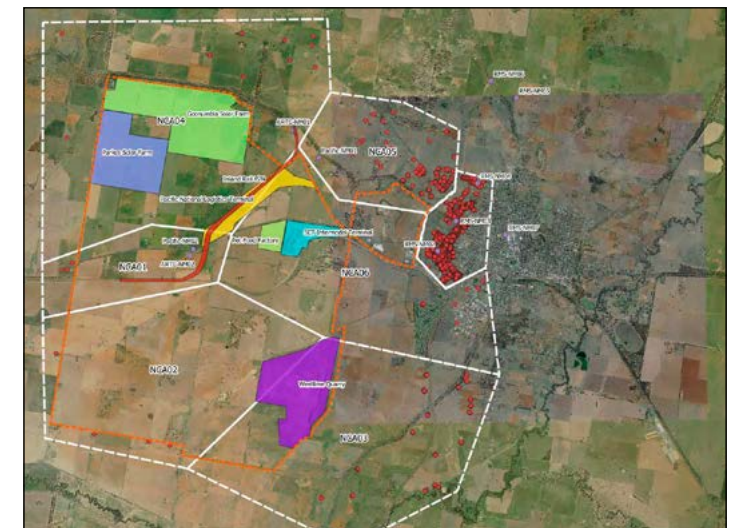
- _ A noise and vibration assessment modelled that industry activity in the Parkes SAP is expected to create noise and vibration impact on existing sensitive receivers.
- _ Road noise is another likely source of noise as well as on-site operational noise from rail terminals and other uses.
- _ Consideration should be given to mitigation effects as required and to carefully locating future sensitive receivers in the Precinct e.g. child care centres (if relevant).
- _ Noise receivers were grouped into seven catchment areas to assist analysis.

Structure Plan responses

- _ **Provide a buffer to noise-generating industries between the SAP and Parkes township.**
- _ **Prepare a noise and vibration management plan for major construction programs in the SAP considering hours of work, information for worker training, community consultation and a complaints handling protocol.**
- _ **Consider mitigation measures for road noise particularly in the construction of the proposed Newell Highway Bypass (noting that the Bypass is not a SAP project) and connector roads near sensitive receivers.**
- _ **Mitigate industry operational noise considering:**
 - _ **Provision of appropriate buffers and land use planning**
 - _ **Noise control at the source**
 - _ **Noise control along the transfer path and noise control at the receiver.**



Biodiversity constraints map showing high value vegetation and paddock trees, WSP



Noise and vibration, WSP

4.9 Air Quality and Odour

Air Quality and Odour Assessment (WSP, June 2019)

Key findings

- An air quality and odour evaluation identified sensitive receivers within and near the SAP study area.
- Dispersion modelling for the master plan focusing on intensive livestock agriculture uses including abattoir and pet food manufacturing. It excluded modelling of an Energy from Waste plant as the study assumed such as use not be exempt for development assessment processes.
- The modelling indicated that for particulate pollutants assessed, concentrations were below the assessment criteria.
- For odour, concentrations are predicted to exceed applicable off-site criteria.

Structure Plan response

- **Designate likely air quality and odour generating industries to occur in specific Sub Precincts (e.g. Intensive Livestock Agriculture Sub Precinct, Resource Recovery + Recycling Sub Precinct).**
- **Locate these Sub Precincts in the south west of the Parkes SAP, away from Parkes township and away from the more intensively developed industry and employment areas (e.g. Regional Enterprise Sub Precinct).**
- **Provide a large Intensive Livestock Agriculture Sub Precinct with an ability to include one kilometre buffers to the SAP boundary.**
- **Develop design standard requirements to ensure particulate and odour emissions remain at acceptable levels within and outside the Precinct.**

4.10 Infrastructure and Transport

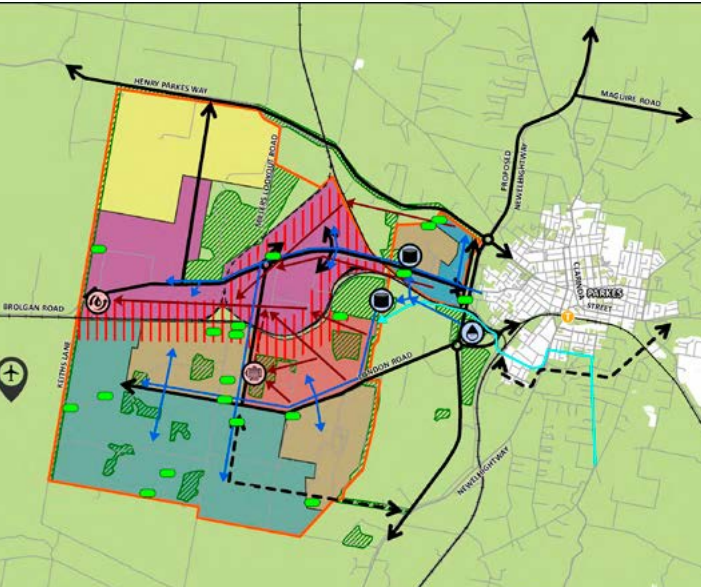
Infrastructure and Transport Evaluation Report (Aurecon, June 2019)

Key findings

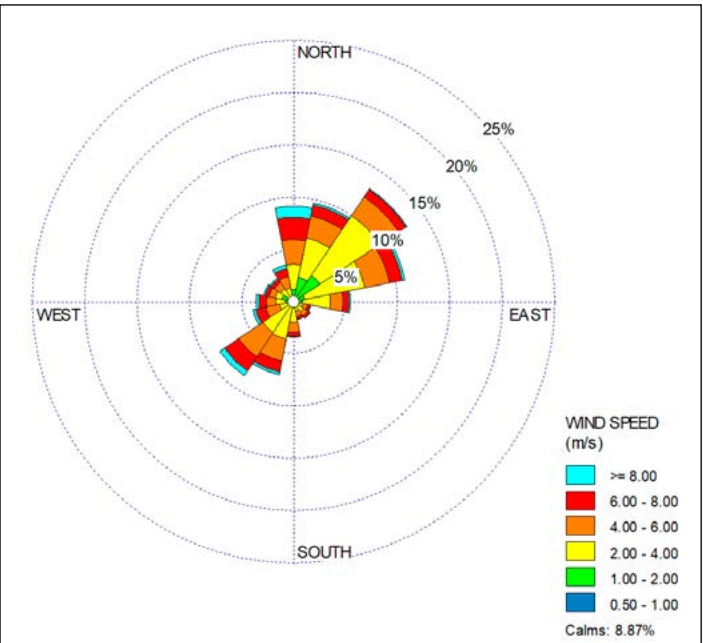
- Existing networks and demand for transport, water, wastewater, and stormwater, electricity, gas, and telecommunications were documented.
- Acquisition of additional water licences may be required due to drought and climate change.
- Ultimately a STP (sewage treatment plant) will be required.
- Stormwater management will need a series of floodways with detention basins.
- The SAP needs be connected to the 132 kV bus rating and apply for a connection as an embedded generator.
- Optical fibre should also connect to a tower or towers on high points in the SAP to provide 5G.
- Solid waste and resource recovery is recommended when volumes are sufficient. A rail siding may be required and has been costed.
- Initial road transport proposals involve upgrades to Brolgan Road, Coopers Road and London Road. Grade separations will ultimately be required.
- Active travel and public transport should be accommodated in road design.
- High level infrastructure cost estimates were provided.

Structure Plan response

- **A Ring Road comprising Brolgan Road, Coopers Road, London Road linking with the proposed Newell Highway Bypass is included as the framework for robust, flexible Precinct road access.**
- **A connector road is also proposed linking north to Henry Parkes Way.**
- **The Ring Road would also connect into the proposed Newell Highway Bypass.**
- **A water supply network following the proposed Ring Road.**
- **A future sewerage main following the proposed Ring Road.**
- **A Sewage Treatment Plant location for future use.**
- **Floodway and cross drainage locations and land for detention basins identified indicatively.**
- **Energy supply with 132 kV feeder cables from main intake substations.**
- **Gas line connections of sufficient size with other services (e.g. roads and water).**
- **A Resource Recovery + Recycling Sub Precinct including a specific rail siding location.**



Infrastructure and transport, Aurecon



Air quality and odour, WSP

4.11 Environmentally Sustainable Development

Environmentally Sustainable Development (WSP, June 2019)

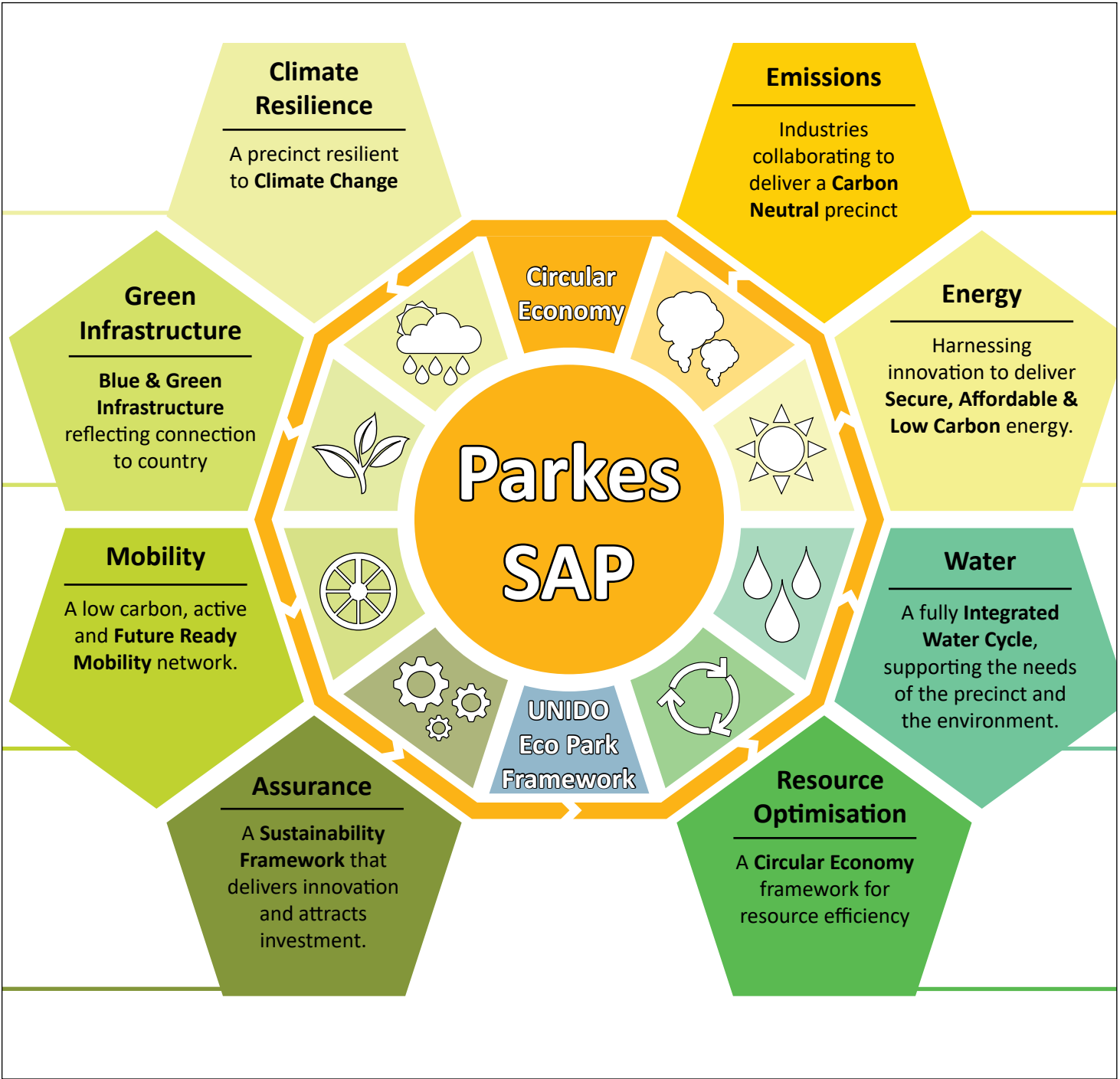
Key findings

- The foundation for the delivery of the preferred future for the Parkes SAP is the United Nations Industrial Development Organisation's (UNIDO) Eco-Industrial Parks Framework.
- To support this foundation is the concept of a 'Circular Economy', fundamental to delivery and binding together the sustainability goals.
- Carbon neutrality – provision of an industry support programme for carbon reduction. Outcomes to include NCOS precinct carbon neutral certification, carbon offset projects and investment creation attracting carbon neutral industries.
- Climate resilience – provision of a secure water supply; a secure energy supply; climate resilient infrastructure; and blue & green infrastructure to reduce heat island effects.
- Energy – provision of electricity via a shared embedded network; piped natural gas; solar renewable energy; and smart delivery and management of systems. Require roof-mounted solar on industrial buildings through design standards.
- Water – provision of a reliable water supply and alternate water sources for non-potable uses; sub-precinct rainwater storage and re-supply; precinct stormwater treatment.
- Solid waste - support the expansion of the Council resource recovery and recycling facility, reducing landfill. Include organic waste to compost opportunities; provide a sub precinct for commercially based waste-to -energy plant at Parkes SAP with spinoffs in heat generation.

- Mobility - provide efficient transport and logistics networks; a gateway transport hub; and a precinct shuttle bus service.
- Blue and Green infrastructure - the SAP will provide linked green corridors and waterways, native green reserves and recreation spaces.
- Digital infrastructure – provide for towers for 5G capability.
- Circular economy - provide a circular economy business to business concierge to discover and match resource inputs and outputs.
- Assurance Rating Tools - the SAP Masterplan will provide UNIDO Eco Industrial Park Framework recognition; sustainability governance; and National Carbon Offset Standard (NCOS) Precincts Carbon Neutral Certification.

Structure Plan responses

- **Well considered land use planning through Sub Precincts, and flexible infrastructure provision including a Ring Road and accompanying infrastructure loop to accommodate services.**
- **The Structure Plan describes in more detail infrastructure provisions and the ESD actions they will enable in the eight areas of:**
 - **Climate resilience**
 - **Green Infrastructure**
 - **Mobility**
 - **Assurance**
 - **Emissions**
 - **Energy**
 - **Water**
 - **Resource optimisation.**



Environmentally sustainable development opportunities identified for Parkes SAP, WSP

4.12 Flood and Water Quality

Flood & Water Quality Management Study Report (WSP, June 2019)

Key findings (extracted from WSP report)

- Under existing conditions, the dominant flooding process within the SAP is local catchment runoff and overland flow, with no flood risk from the larger creek systems running south (Goobang Creek) and west (Ridgey Creek) of the SAP.
- Under existing conditions flood depths, velocities and hazards remain relatively low across most of the SAP. The main hazardous area for flooding is located within and close to the main overland flow path running west through the SAP south of Brolgan Road.
- The Master Plan will increase impervious areas throughout the SAP with a corresponding increase in runoff rates and volumes. To manage adverse flooding impacts within the SAP and downstream, a flood detention scheme is proposed that maintains flows at existing rates at the lot level up to and including the 10% AEP and at the SAP level up to and including the 1% AEP. This scheme requires a total of 15 SAP level detention basins and lot level detention provided within 15 sub-catchments of the SAP.
- Simulation of the Master Plan scenario in the flood model shows that the SAP will not adversely affect the adjacent land due to the effectiveness of the detention scheme. The scheme is also effective at protecting sensitive assets within the SAP, such as existing development and transportation corridors.
- Climate change effects have been assessed ... The assessment found that the impacts of the SAP on adjacent land do not change appreciably when comparing the two events, and therefore the SAP is not sensitive to climate change and adaptation measures that may be required in the future should be possible through upgrades of the flood management infrastructure.

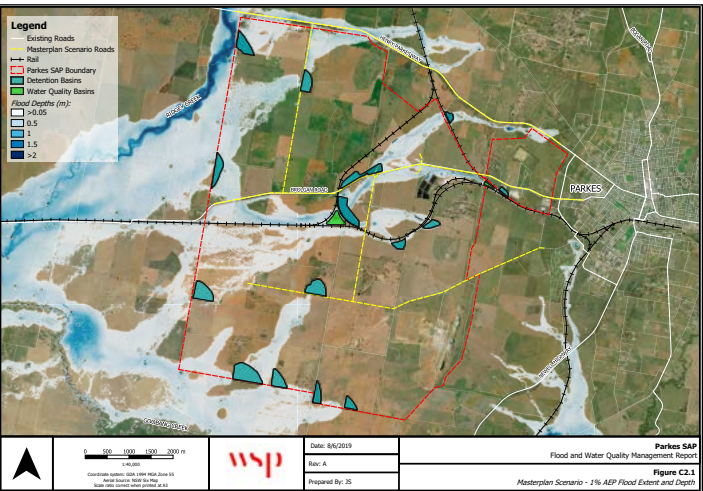
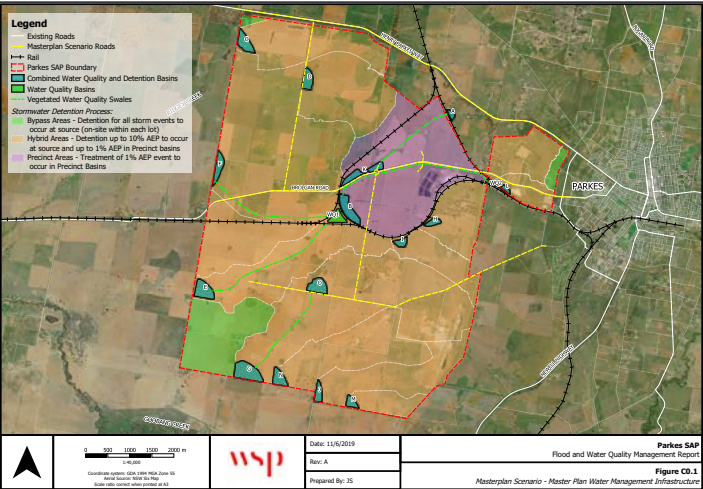
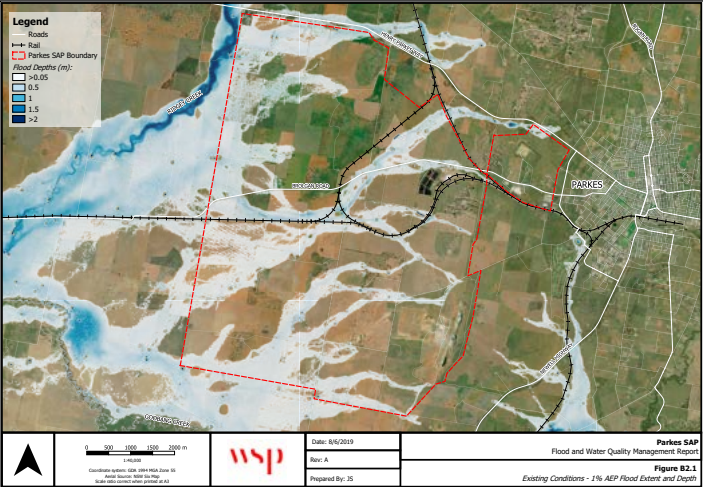
- The SAP will require stormwater treatment measures to protect the downstream environments within Ridgey Creek and Goobang Creek. A range of treatment measures have been assessed, and the flood detention scheme provides an opportunity to co-locate flooding and water quality management measures within the SAP.
- A number of initial treatment measures have been tested and found to be effective in reducing downstream pollutant loads while maintaining or increasing flows downstream.
- Stormwater harvesting within the SAP has the potential to yield almost 2GL/year in some years which would make a significant contribution to meeting the demand for non-potable water for the SAP.

Structure Plan response

- The Structure Plan including Sub Precincts, roads, and ‘proof of concept’ designs developed during the planning process, have been prepared to accommodate stormwater detention areas.
- Design Guidelines for land development, and road cross sections, to include swales, detention basins and other stormwater infrastructure.
- Design Guidelines to include site cover (impervious area) standards to align with stormwater modelling. In particular, Regional Enterprise and Mixed Enterprise Sub Precincts standards are for no greater than 70% impervious area (a combination of buildings, hardstand, driveways and the like).
- As well as reducing potential runoff, these standards have been developed to increase the area of landscaping and otherwise unbuilt areas on development sites (when compared to typical urban industrial estates), supporting the desired character and rural setting of the Precinct, for example by increasing separation of buildings, and providing visual screening and biodiversity areas.

FLOOD AND WATER QUALITY

SUB PRECINCT	BUILDING/HARD STAND MAXIMUM %	PERVIOUS AREA MINIMUM%
Commercial Gateways	60%	40%
Resources and Recycling	50%	50%
Intensive Livestock Agriculture	25%	75%
Regional Enterprise	70%	30%
Mixed Enterprise	70%	30%
Freight Terminal and Rail Infrastructure	70%	30%
Energy (Solar)	50%	50%



Flood and water quality mapping, WSP

4.13 Streamlined Environmental Assessments

Streamlined Environmental Assessments Report (WSP and Sue Weatherly, June 2019)

Key findings

The following approach is recommended for the Parkes SAP to provide a streamlined statutory planning process.

Create a new Activation Precinct State Environmental Planning Policy (SEPP) that:

- _ Gives statutory weight to a Master Plan for the Parkes Special Activation Precinct, that:
 - _ includes a Structure Plan, that defines land use activity Sub Precincts, provides Design Guidelines and a Staging Plan (each Activation Precinct in NSW would have a specific schedule in the SEPP where the Master Plan would be contained)
 - _ provides a statutory role for a Development Corporation to agree that development is consistent with the Master Plan
 - _ requires copies of all Complying Development Certificates (CDC), Construction Certificates (CCs) and Occupational Certificates (OC) (e.g. when issued by a Private Certifier) to be given to the Development Corporation, as well as to the Council
 - _ requires development to be consistent with the Activation Precinct SEPP and the Master Plan (including Design Guidelines) before it can be considered as exempt or complying development
 - _ amends the relevant provisions of other Environmental Planning Instruments, including SEPPs and in the case of Parkes, the Parkes Local Environmental Plan 2012.
- _ Provide flexibility with the Development Corporation able to consider a development that is not consistent with the Master Plan, but is still appropriate to be permissible.

- Exempting most development uses if consistent with the Master Plan.
- Support a streamlined planning approval system by the Development Corporation acting as a concierge for applicants/proponents and ensuring that there would be early engagement with other approval agencies such as the EPA.
- Subsequent environmental approvals being minimised through a range of actions such as preparation of assessments in all key environmental areas for the SAP.
- Design Guidelines would define the quality and form of development and set out standards for development standards such as road layouts, fencing, building setbacks, building materials, façade treatments, landscaping, stormwater management and reuse, and solar performance.

Structure Plan responses

- **Identify and located Sub Precincts with preferred/ proposed land uses and activities (to become exempt from development approvals).**
- **Included overview of Design Guidelines to be developed as part of the Master Plan for SEPP schedules.**
- **Governance recommendations including a Development Corporation and concierge services have been assumed to form part of the implementation approach.**

Environmental approvals streamlining

Key findings

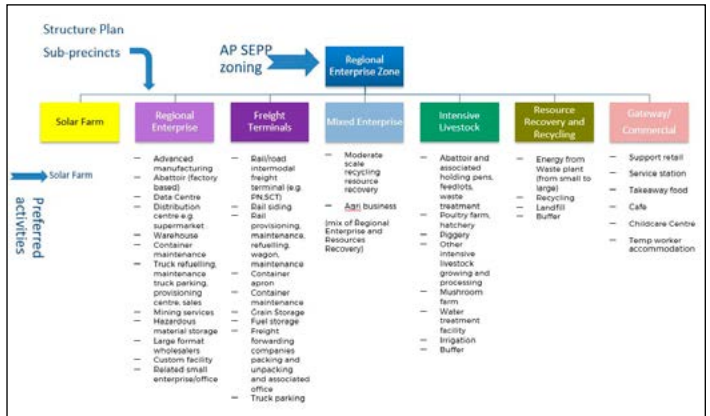
A summary of the actions to streamline environmental approvals comprises the following:

- _ Preparation or use of current strategic assessments /certifications/detailed site investigations and preparation of development standards, approved by the EPA for:
 - _ Waste and water infrastructure
 - _ Air quality
 - _ Noise and vibration
 - _ Contamination
 - _ Hydrogeology
 - _ Biodiversity
 - _ Heritage
 - _ Dangerous goods
 - _ Bushfires.
- _ Defined all envisaged land uses in SAP sub precincts.

- _ Defined all envisaged land uses in SAP sub precincts.

Structure Plan response

- Detailed investigations to date are recommended for EPA review and endorsement, with areas for further strategic assessments and investigations identified where required.
- Inclusion of environmental development standards in Design Guidelines where possible, to assist with streamlined planning.
- Governance recommendations including a Development Corporation and concierge services have been assumed to form part of the implementation approach.



Land use streamlining, WSP and Sue Weatherly

4.14 Community and Social Infrastructure

Community and Social Infrastructure Assessment (WSP, June 2019)

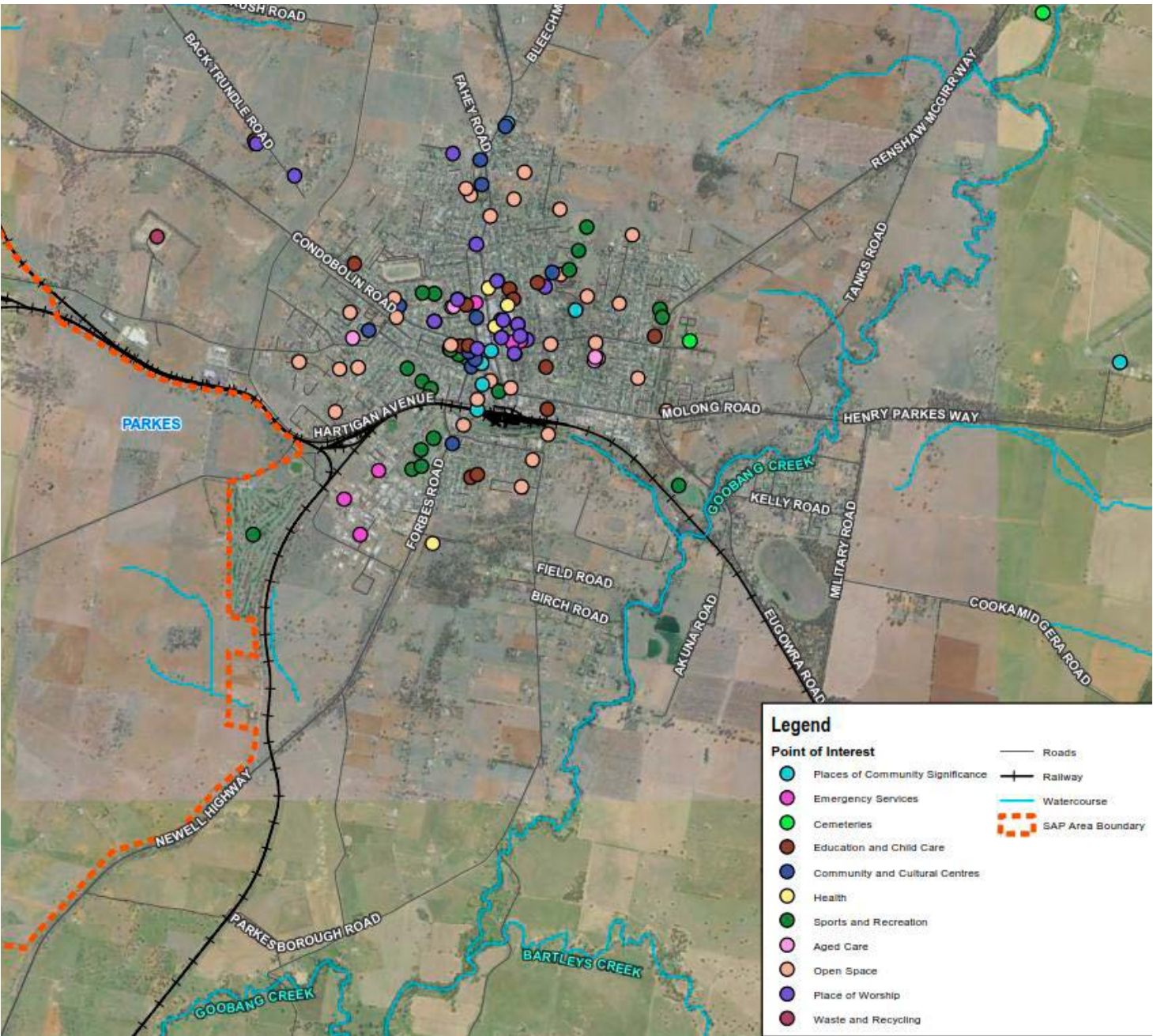
Key findings (extracted from WSP report)

- Population of 11,500, that has remained stable for many decades, Parkes' existing primary industries are focused around agriculture, freight and logistics, and mining.
- There is much optimism about the town's future, especially with the addition of recent opportunities such as the National Logistics Hub (NLH), expansion of the Northparkes mine, development of Clean Teq mine, and the Special Activation Precinct (SAP).
- Stakeholders in and around Parkes have highlighted some community challenges, particularly in relation to the retention of youth.
- The opportunities associated with the pending economic growth, present other challenges in terms of the current constraints on housing ownership, rent and maintenance; and the systemic difficulty of attracting and retaining sufficient medical practitioners and teachers to service the current population.
- The Parkes LGA is generally well serviced in terms of its social infrastructure needs.
- The severe shortage of homes for purchase or rent, or qualified tradespeople, needs to be addressed.

- It was estimated the possible high range population required to support the total jobs at 2041 would be 31,382. This is over double the population projection without the SAP.
- It is likely that the potential population is over-stated, as some proportion of the jobs will likely be filled by people already living in the study area or just outside
- Based on the current service provision, infrastructure and housing it is expected that any increase in population would create significant impacts on the Parkes community.
- A potential double in the entire population and the associated changing needs of the population by 2041 needs to be considered now by service providers in all planning activities, related to the SAP or external to the SAP.

Structure Plan response

- Structure Plan to inform broader strategic planning including community infrastructure planning and investment, and Local Strategic Planning Statement.



Existing social infrastructure, WSP

4.15 Wiradjuri Cultural Recognition

Aboriginal Planning Principles - Parkes Special Activation Precinct Wiradjuri Country (WSP, June 2019)

Key findings (extracted from WSP report)

This document aims to:

- Establish a set of Aboriginal Planning and Design Principles for integration into the Aboriginal Heritage Assessment for the Parkes SAP site.
- Provide a broader understanding of Wiradjuri Country.
- Consider ways to engage and represent Parkes Aboriginal community within the planning of the project.
- Promote sustainable management of Aboriginal Cultural Heritage as per EPA Act 1979.
- Establish criteria and locations for the choosing of potential 'Keeping Sites'.
- Establish the idea of Country as an Environmentally Sustainable Design (ESD) initiative.
- Provide concepts for how the Parkes SAP might acknowledge Wiradjuri Heritage.

Key site findings

- Rocky outcrops inside the Parkes SAP may be part of a former rock factory site.
- Scarred trees within the site are monuments to ancestors.
- Wiradjuri design has significant and strong pattern motifs - angled parallel lines around a centre point.
- Weaved baskets and animal, bird and fish totems are part of Wiradjuri culture.
- Wiradjuri language is taught in local schools.
- Aboriginal pathways and trading routes are identified across Australia, travelling stock routes were often these pathways as they followed food and water sources.

Aboriginal Planning Principles

- Involve Wiradjuri representatives in Parkes SAP aspects relating to key sites and interpretation.
- Promote biodiversity, solar control, orientation, land management and site responsive design as age-old Aboriginal principles of understanding country as well as ESD principles.
- Reinforce connections to country through promotion and celebration.
- Identify 'keep hill' sites - hills, open forest and camp sites and ensure they are open for all to use or visit where possible.
- Use a network of pathways, signage and amenities to tell the Wiradjuri stories.

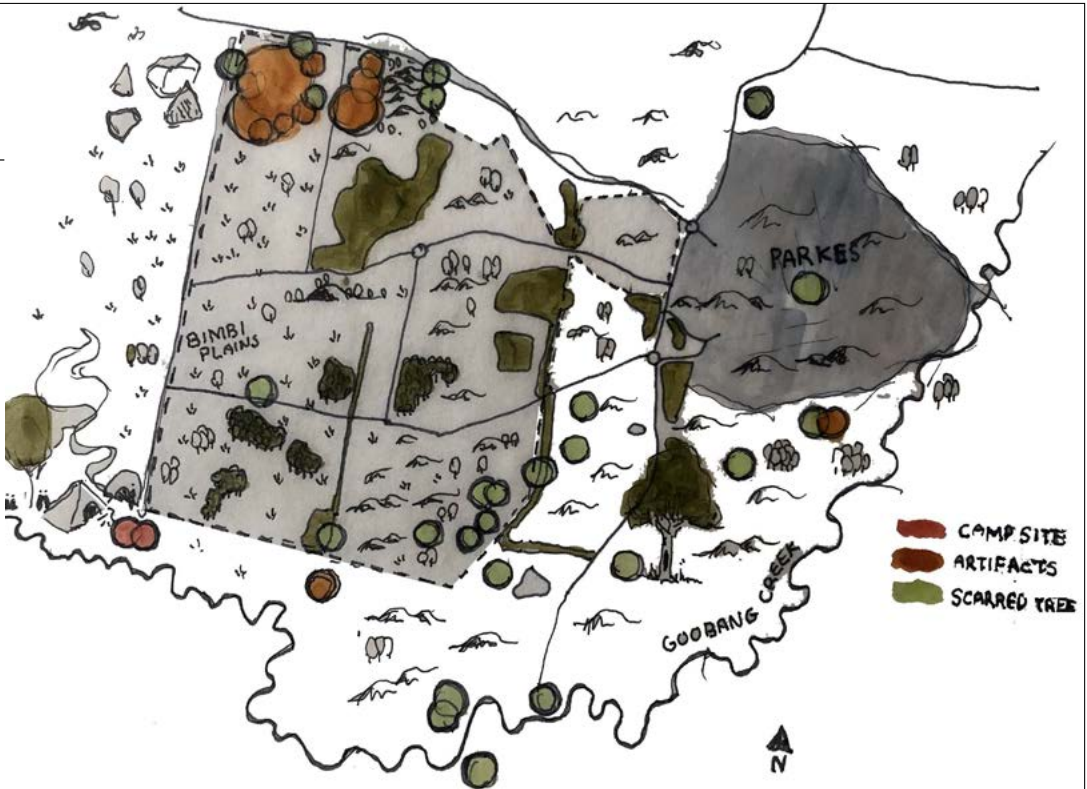
Structure Plan Response

- **Ensure as many of the scarred trees, stone quarry and artefact sites are retained as is, or enhanced as per community requirements.**
- **Incorporate landscape art, murals and gardens as part of the Wiradjuri culture recognition in road, public realm and infrastrucutre design.**
- **Include Wiradjuri people in detailed planning proposals including where they affect 'keep sites'.**

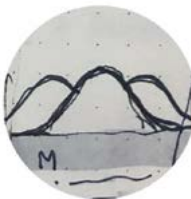
SAP project site

- Studies found open isolated artifact scatters and scar trees within the proposed development area.
- One stone hatchet quarry has been recorded inside in the investigation area; the Millers Lookout Quarry

RECOMMENDATION:
Ensure as many of the scarred trees, stone quarry and artifacts sites are made 'Keep Sites' and retained as is, or enhanced as per community requirements.



Hills Small yet nobel hills provide good regional viewpoints and potential site to appreciate the Country



Open Forest land a scattering of trees provide what little native vegetation resides on the site and must be protected



Campsite is recorded by the Goobang Creek and could be a site to retain and learn more about Wiradjuri Country



Images from the Aboriginal Planning Principles report. Above, concept for gateway artwork; top, understanding the Parkes SAP site; bottom left, potential 'keep site' criteria

Section 05. Structure Plan

Section 05 provides a Structure Plan with Sub Precincts located and sized for anticipated land uses. It shows how the vision and aspirations for Parkes SAP will be achieved. 'Illustrative master plans' then show detailed development concepts within each Sub Precinct including local road and stormwater networks, a variety of allotment sizes and buildings, and areas of vegetation. Relevant precedents are identified for Sub Precinct uses.

A sustainability framework, green infrastructure overlay, transport network and road and public realm design outcomes complete the planning narrative.

Parkes SCT Logistics - Completed in 2006, this facility provides cross-docking and long-term warehousing, and facilitates freight with a twice weekly rail service. Source: NSW Government & Parkes Shire Council, Parkes National Logistics Hub – Prospectus, 2017

Use this section to understand in detail the plan for Parkes SAP and how it might translate onto the ground.

5.1 Structure Plan Overview

This Structure Plan is a framework to guide planning, design, and infrastructure investment at Parkes Special Activation Precinct

“The Parkes SAP Structure Plan is a large, bold plan for a precinct of national scale and importance. It defines six Sub Precincts, tailored to the Precincts’ economic development aspirations around freight and logistics, value-adding agribusiness and advanced manufacturing, and resources and recycling.”

Parkes Special Activation Precinct comprises 4,868 ha of land west of Parkes. The Structure Plan shows six sub precincts and two overlays, responding to anticipated land use demand.

Sub Precincts are intended to guide the development of clusters of compatible businesses and activities. Clustering is designed to provide benefits for infrastructure efficiency and business collaboration, and also manage impacts such as traffic, noise and air quality by locating businesses sensitively.

The Structure Plan locates the main enterprise areas, rail and road transport terminals, commercial uses and an area of solar farms in the northern sector of the SAP, north of and adjoining the Sydney – Perth and Inland Rail routes.

Areas south of the rail lines, and further from Parkes township, are designated for higher impact land uses such as an abattoir and other livestock industries, and resource recovery and recycling uses.

The proposed road network – and services network - is initially centred on a Ring Road formed by Brolgan Road, Coopers Road (on a new alignment) and London Road.

A Commercial Gateway precinct flags the main entrance to the Parkes SAP from the proposed Newell Highway Bypass near Parkes but both London Road and a new road to Henry Parkes Way north of the SAP offer alternate access.

Existing uses including freight and logistics businesses SCT, Pacific National and Linfox, the Westlime quarry processing operations and Parkes Shire Council landfill are incorporated into the Structure Plan.

In summary, multiple Sub Precincts are easily accessible and serviced to attract a variety of investment sectors, benefiting from the freight and logistics, regional agriculture and eco-industrial foundations of the Parkes SAP, while managing and transitioning the external impacts anticipated by some land uses in the Precinct.

Regional Enterprise Sub Precinct

- _ The Regional Enterprise Sub Precinct is the heart of Parkes Special Activation Precinct.
- _ It is located on and around a triangle of new and existing railways which connect the national rail networks at Parkes.
- _ Brolgan Road forms a spine providing road access to the area.

Intensive Livestock Agriculture Sub Precinct

- _ The Intensive Livestock Agriculture Sub Precinct is intended for a large abattoir and other livestock value-adding businesses.
- _ The Sub Precinct is located in the south west of the Parkes SAP, 5-10km from the Parkes township, and away from Regional Enterprise employment areas north of the Sydney-Perth rail line.

Resource Recovery + Recycling Sub Precinct

- _ The most significant area of the Resource Recovery + Recycling Sub Precinct is 323 ha of land in the south west of the Parkes SAP.
- _ Co-located with the inter-modal transport network, this area is ideally placed to receive and re-process waste and resources as part of a new industry for Parkes, championing circular economy principles as part of an Australian-first ‘Eco-Industrial Park’.

Mixed Enterprise Sub Precinct

- _ The Mixed Enterprise Sub Precinct is a smaller (330ha) area and mixes uses of other Sub Precincts, targeting businesses with needs for moderate site sizes and of moderate impacts.

Commercial Gateway Sub Precinct

- _ The Commercial Gateway Sub Precinct provides a transition between the industry uses of the SAP proper, and the township of Parkes.
- _ Located prominently alongside the proposed Newell Highway bypass of Parkes, it also offers business opportunities to service local and travelling populations.

Solar Sub Precinct

- _ The Solar Sub Precinct recognises the significant investment already made in renewable energy generation at Parkes.

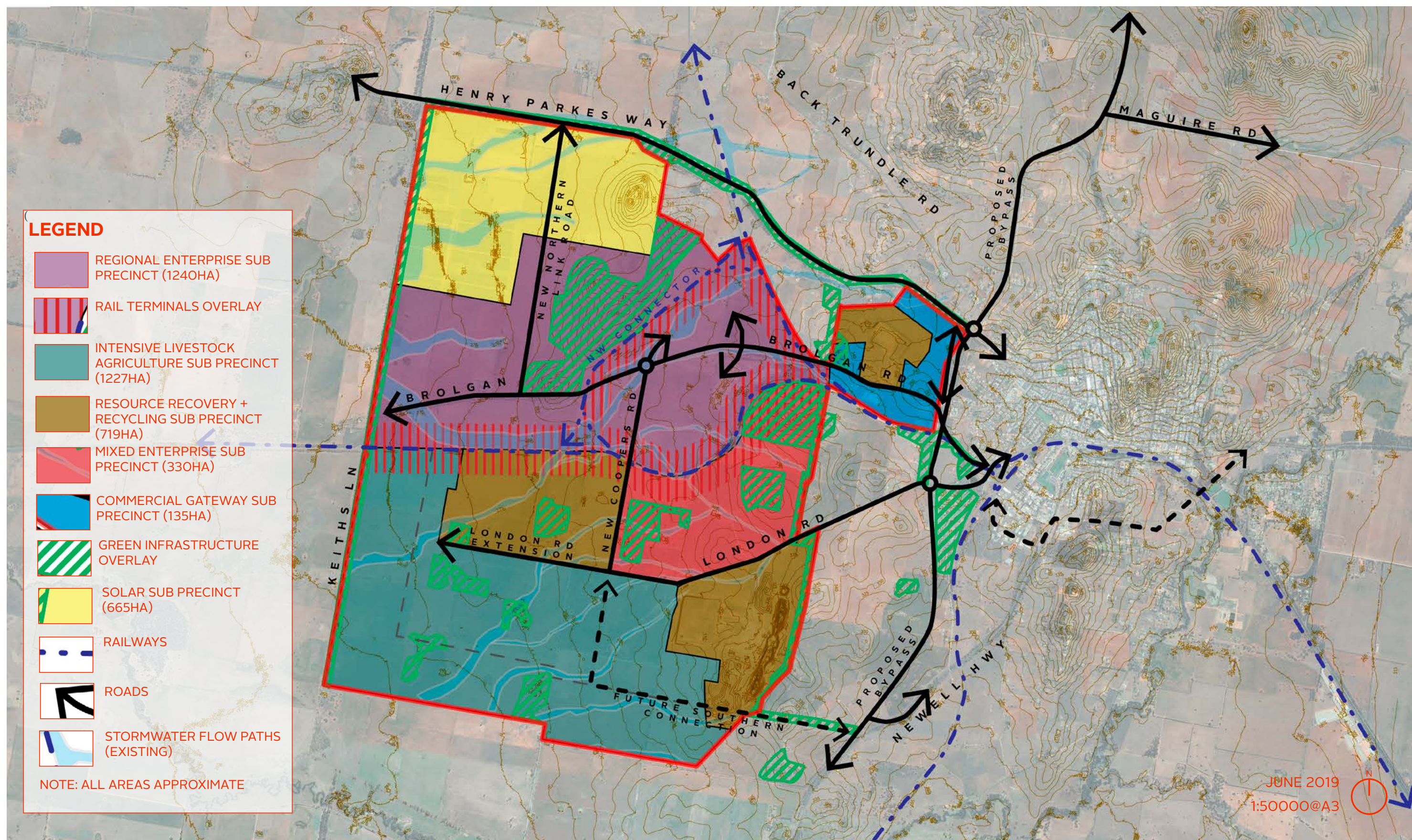
Rail Terminals Overlay

- _ The Rail Terminals Overlay straddles a number of Sub Precincts in the Parkes SAP.
- _ The Rail Terminals Overlay is intended to preserve opportunities for rail and transport infrastructure crucial to maintaining Parkes SAP competitive advantage as a rail-focused freight and logistics hub.

Green Infrastructure Overlay

- _ The Green Infrastructure Overlay is a planned network of environmental areas providing multiples values such as biodiversity, screening, stormwater and recreation.
- _ It includes areas of high value vegetation identified for retention.
- _ The Overlay also includes areas for future planting as Precinct buffers, especially along the western boundary of the SAP.
- _ Minor creeks and stormwater flow paths and future detention areas will also form part of the connected green infrastructure network.

5.2 Parkes Special Activation Precinct Structure Plan



5.2 Structure Plan design rationale

“The Parkes SAP Vision and Aspirations (Section 01) outlined the aims of the project.

These nine key moves outline a design rationale of how the Structure Plan has been tailored to deliver these aims.”



01 Grow from Parkes National Logistics Hub

- _ Build on what's here and planned:
- _ Inland Rail, SCT, Pacific National
- _ Solar Farm
- _ Brolgan Road Stage 1 Infrastructure
- _ Proposed Newell Highway (Parkes Bypass)



02 A precinct of scale

- _ Provide for new industries e.g. recycling
- _ Cater for large scale industries and long term
- _ Flexibility to market demand and innovation
- _ Future proof



03 Circular Economy Plan

- _ Structure Plan supports Eco-Industry Park needs
- _ Proximity of industry Sub Precincts to share resources
- _ Ring road for inset energy and services loop
- _ Ratings and assurance tools



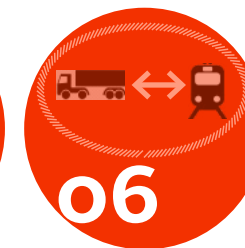
04 Green + blue infrastructure

- _ Enhance biodiversity by avoiding high value vegetation
- _ Respect landscape with sustainable drainage systems
- _ Plan for an enhanced + connected green network



05 Minimise amenity impacts from industry

- _ Locate high amenity industries north of rail
- _ Locate low amenity industries south and west, away from Parkes
- _ Separate industry from Parkes with rural buffer
- _ Use transition Sub Precincts (Mixed Enterprise, Commercial Gateways) to reinforce town buffers



06 Integrated land uses + transport

- _ Structure plan of large Sub Precincts each with diversity of compatible land uses
- _ Sized and located to optimise streamlined planning e.g. separation, buffers + symbiosis
- _ Boundaries aligned with cadastre and major ownerships
- _ Diversity of lot sizes to respond to multiple industry sectors
- _ Link to Newell Highway bypass and future east-west town bypass



07 Enabling infrastructure ring

- _ Ring Road provides simple, robust and flexible transport infrastructure and services to all sub precincts
- _ Ring Road provides access to ALL Sub Precincts, allowing for 20 year 'superstage' of >1000ha of land
- _ Get more from less – stretch infrastructure provision and stage expensive items e.g. road-rail bridges



08 Public realm + gateways

- _ Well-designed public spaces + roads
- _ Attractive Precinct gateways
- _ High amenity, clean + green Precinct brand



09 Plan for streamlined planning

- _ Frictionless approval processes + ongoing Precinct management
- _ Link to Delivery Plans and Design Guidelines
- _ Governance + partnerships
- _ Model for future SAPs

5.3 Sub Precincts and Overlays

Solar Sub Precinct

- _ The 665-hectare Solar Precinct recognises the significant investment already made in renewable energy generation

Regional Enterprise Sub Precinct

- _ The 1240-hectare Regional Enterprise Sub Precinct is the heart of Parkes Special Activation Precinct.

Intensive Livestock Agriculture Sub Precinct

- _ The 1227-hectare Intensive Livestock Agriculture Sub Precinct is intended for a large abattoir and other livestock value-adding businesses.
- _ The Sub Precinct is located in the south west of the Parkes SAP, 5-10km from the Parkes township, and away from Regional Enterprise employment areas north of the Sydney-Perth rail line.

Commercial Gateway Sub Precinct

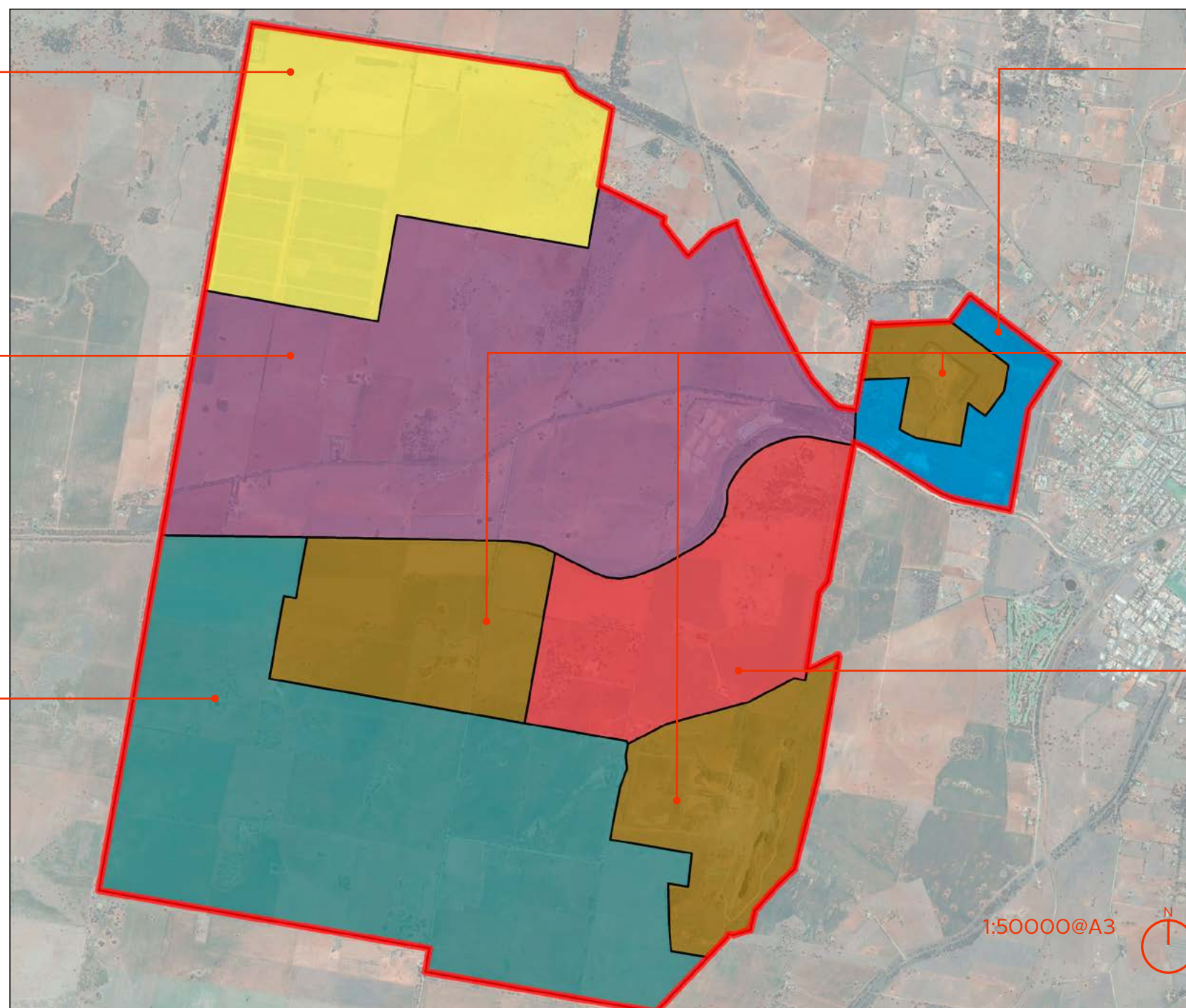
- _ The 135-hectare Commercial Gateway Sub Precinct provides a transition between the industry uses of the SAP proper, and the township of Parkes.

Resource Recovery and Recycling Sub Precinct

- _ The most significant area of the Resource Recovery + Recycling Sub-Precinct is 330 ha of land in the south west of the Parkes SAP.
- _ Co-located with the inter-modal transport network, this area is ideally placed to receive and re-process waste and resources as part of a new industry for Parkes, championing circular economy principles as part of an Australian-first 'Eco-Industrial Park'.

Mixed Enterprise Sub-Precinct

- _ The 330-hectare Mixed Enterprise Sub Precinct is a smaller area and mixes uses of other Sub Precincts, targeting businesses with needs for moderate site sizes and of moderate impacts.



5.3a

5.3a Regional Enterprise_ Sub Precinct

“The Regional Enterprise Sub Precinct is the heart of Parkes SAP, accommodating a diversity of businesses including rail and road transport terminals, warehouses, advanced manufacturing, and food processing businesses.

The Sub Precinct is extensive in area and includes a ‘development ready’ stage one on Brolgan Road, with a future development area to the west.”

Overview

The Regional Enterprise Sub Precinct is the heart of Parkes Special Activation Precinct. It is located on and around a triangle of new and existing railways which connect the national rail networks at Parkes. Brolgan Road forms a spine providing road access to the area.

The Regional Enterprise Sub Precinct is also the heart of industry at Parkes SAP, accommodating a diversity of businesses from the SAP’s three target economic sectors:

- _ freight and logistics
- _ advanced manufacturing for food and other sectors
- _ eco-industrial park.

The Sub Precinct is extensive in area and can be divided into two areas - a ‘development ready’ stage one area east of the new North West Connector railway, and a future development area further west.

Existing conditions

- _ SCT and Pacific National own the majority of land in the eastern Regional Enterprise area. SCT has operated a rail-road freight terminal for some years, and Pacific National are constructing a new intermodal terminal to open later in 2019.
- _ Road and services upgrades to Brolgan Road are currently underway to service these and future developments.
- _ Both SCT and Pacific National own significant land holdings adjoining their rail terminals which are currently vacant, with the exception of a recently approved food processing business currently under construction.
- _ A number of local stormwater overland flow paths cross this Sub Precinct. Detention basins and other stormwater infrastructure will be required to cater for future development.

Area _ 1240 ha

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

Excludes Green Infrastructure Overlay area of 220ha.)



Future development

- _ Many land uses ranging from rail terminals and warehouses to glasshouses, manufacturing and food processing businesses will locate in this Sub Precinct.
- _ A common characteristic of Regional Enterprise Sub Precinct uses will be their low environmental impact in terms of noise, odour, dust, air emissions and other externalities.
- _ A diversity of lot sizes (e.g. 2 to 35ha) and locations will be on offer to investors, initially aligned with the land development plans of ‘first movers’ SCT and Pacific National.
- _ Land west of the North West Connector railway is likely to be needed in the longer term (>20 years). A new road link north to Henry Parkes Way is planned through this area.
- _ A third general purpose rail terminal (in addition to SCT and Pacific Nationals) is possible south of Brolgan Road and west of NW Connector.

LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Regional Enterprise	Agricultural Produce Industry (e.g. advanced manufacturing of agricultural products)
	Intensive plant agriculture (e.g. glass houses)
	Depot facility
	Electricity Generating Works (small scale with negligible off-site air, noise and odour impacts)
	Emergency Services facility
	General Industry (e.g. advanced manufacturing of non-agricultural products)
	Liquid Fuel Depot facility
	Local Distribution facility
	Road Transport Depot (e.g. container maintenance, refuelling, mechanics workshop etc.)
	Truck Depot (e.g. parking, provisioning, maintenance, refuelling)
	Warehouse and/or Distribution Centre
	Customs inspection facility

'Illustrative
 master plan'
 showing concept
 for first stage
 of Regional
 Enterprise Sub
 Precinct

Pacific National Intermodal
 Terminal + Freight
 Forwarding businesses

Rail maintenance, grain
 storage and transport depots

Large distribution centre
 with nearby rail and road
 access

Pacific National industrial
 estate with mix of logistics
 and manufacturing industries
 on 2 to 20ha sites, accessed
 from new internal road

Brolgan Road showing road
 bridge over rail, and new
 intersections to access
 industry areas north and
 south of Brolgan. Gateway
 landscaping, and local service
 centre (blue) indicated.

SCT rail and logistics
 terminal, indicating future
 expansion possibilities

SCT industrial estate with
 mix of industries e.g. glass
 houses on 25 ha site

Wetlands and stormwater
 detention areas

Coopers Road (existing)
 repurposed as infrastructure
 and biodiversity corridor

New Coopers Road, 550m
 east of Coopers Road,
 connecting Regional
 Enterprise Sub Precinct
 south of railways via new
 road bridge over rail



“These precedents show the scale of logistics buildings and their site coverage. Extensive outside storage areas, 24 hour operations and major drainage systems are common. These uses are ideally located in close proximity to major roads and intermodal terminals.”

Relevant Precedents: Distribution and Logistics Centres



COLES DISTRIBUTION, EDINBURGH, SA

- _ site is 24.5 ha
- _ building and site cover: 7.7 HA (31%)
- _ impervious parking/hard stand, roadways: 7.7 HA (31%)
- _ total impervious area: 62%

This example shows major roof space available for rainwater catchment and rooftop solar; hardstand, parking, services and landscaped areas make up the site balance with major drainage works outside the site. This type of business is ideal in close proximity to the intermodal terminals at Parkes.



WODONGA LOGIC HUB, VICTORIA

A 24 hr operation with major truck movements, loading and lighting highlight the need for separation from living areas and other incompatible uses. Parkes SAP Structure plan has built in these separations.



PARKES SCT INTERMODAL TERMINAL, NSW

The loading and transfer of freight occurs under cover within the warehouse with truck parking and container storage nearby.

Advanced Manufacturing



BIG W DISTRIBUTION, MONARTO, SA

- _ site is 37 ha
- _ building and site cover: 7 ha (19%)
- _ impervious parking/hard stand, roadways: 4.4 HA (12%)
- _ total Impervious area: 31%

In rural areas like Parkes larger sites are often available to mitigate operational impacts. Retention of vegetation and under-utilised roof space are evident here.



WAGNERS COMPOSITE FIBRE TECHNOLOGIES, TOOWOOMBA, QLD

- _ site is 6.3 ha
- _ building and site cover: 0.5 ha (8%)
- _ impervious parking/hard stand, roadways: 1.8 ha (29%)
- _ total impervious area: 37%



INGHAMS ENTERPRISES, EDINBURGH, SA

- _ site is 13.8 ha
- _ building and site cover: 2.4 ha (17%)
- _ impervious parking/hard stand, roadways: 5.6 ha (41%)
- _ total impervious area: 58%

5.3b

5.3b Intensive Livestock Agriculture_Sub Precinct

“A large, state of the art abattoir is capable of being accommodated, and would include processing plants, feedlots, animal storage areas and on-site waste water treatment.”

LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Intensive Livestock Agriculture	Extensive agriculture (e.g. irrigated pastures, irrigated fodder cropping)
	Intensive livestock agriculture (e.g. feed lots, piggeries, poultry farms)
	Biosolids Treatment facility (e.g. related to Intensive livestock agriculture)
	Depot facility
	Electricity Generating Works (e.g. anaerobic digester related to Intensive livestock agriculture)
	Livestock Processing Industry (e.g. abattoirs, knackeries, tanneries, woolscours, and rendering plants)
	Roads

Overview

The Intensive Livestock Agriculture Sub Precinct is intended for a large abattoir and other livestock value-adding businesses. The Sub Precinct is located in the south west of the Parkes SAP, 5-10km from the Parkes township, and away from Regional Enterprise employment areas north of the Sydney-Perth rail line.

Its location enables buffering of impact generating activities including air quality, odour, dust and noise. This forward planning is intended to support a streamlined planning process attractive to investors.

Existing conditions

- The land is generally flat farming and grazing land sloping to the south west, with stands of vegetation mapped and classified for this Structure Plan. The sub-precinct is sufficiently large to ensure the proposed land uses can preserve and enhance these areas.
- Minor rural roads including Coopers Road, London Road, and Keiths Lane provide local access.

Future development

- A large, state of the art abattoir is capable of being accommodated in this Sub Precinct. This could include processing plants including rendering, feedlots and animal storage/pasture areas, and also on-site waste water treatment systems including irrigation using treated water for cropping.
- Case study research for this Structure Plan suggests that a basic abattoir and feedlot will be accommodated on around 100ha of land. However a large-scale facility with several feedlot/storage areas, waste water treatment, expansion areas and buffers might require 800ha or more. Allocating land for such an opportunity is an objective of this Structure Plan.

Area _ 1227 ha

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

Excludes Green Infrastructure Overlay area of 63ha.)



- A 1km buffer between odour (and other impact) generating activities and the SAP boundary has been accommodated inside the Sub Precinct, to enable simpler planning.
- Other livestock processing (e.g. piggery) and intensive agriculture (e.g. mushrooms, which has odour impacts) could also be located in this large Sub Precinct.
- Smaller scale and lower impacting livestock processing could also be located in the Regional Enterprise and Mixed Enterprise Sub Precincts.
- Green Infrastructure areas in this precinct include four areas of high value vegetation (excluded from the 1248ha Sub Precinct area measurement).
- Superior access is to be provided from New Coopers Road, providing direct access north to the main rail terminals and Regional Enterprise Sub Precinct, and the regional highway network beyond.
- London Road extension also provides direct access west to the proposed Newell Highway Bypass and towards Sydney.
- The Sub Precinct also enjoys direct rail frontage allowing an option for a private rail siding.
- Keiths Lane to the west is not proposed to be used for access (except emergency access) and instead will provide an enhanced green buffer to the western edge of the Sub Precinct.
- (Old) Coopers Road will be transitioned into a biodiversity and infrastructure corridor. A recreational trail loop for walking and cycling could be located in this corridor as well.

Illustrative
master plan
showing
Intensive
Livestock
Agriculture_
Sub Precinct



“A major abattoir can require very large areas for processing, feed lots and effluent treatment and irrigation, and buffers from living areas and other workplaces. Existing regional and contemporary national-scale have been examined to determine appropriate lot and Sub Precinct size.”

Relevant Precedents: Beef City, Toowoomba (QLD)



- BEEF CITY, TOOWOOMBA, QLD
- _ site area is 108 ha
 - _ building and site cover: 1.4 ha (1%)
 - _ impervious parking/hard stand, roadways: 8ha (7%)
 - _ total impervious area: 8%

Fletchers International Exports, Dubbo (NSW)



- FLETCHER, DUBBO, NSW (ABOVE)
- _ building and site cover: 4.1 ha
 - _ impervious parking/hard stand, roadways: 5.5 ha
- COSTA ADELAIDE MUSHROOMS, MONARTO, SA
- _ site: 69 ha
 - _ building site cover: 5 ha (7%)
 - _ impervious parking/hard stand, roadways: 8 ha (12%)
 - _ total impervious area: 19%

Thomas Foods International (SA)



Thomas Foods International recently announced a new state-of-the-art abattoir to be built near Murray Bridge (SA). Of relevance to Parkes SAP, the project expects to employ up to 2000 workers, is 10km from town on a greenfields site, sources mixed livestock from multiple states, and processes for domestic and international markets.

5.3c

5.3c Resource Recovery + Recycling (south west) _ Sub Precinct

“A new Eco-Industrial Precinct for national-scale resource recovery, recycling, energy from waste, and advanced re-manufacturing.”

Overview

The most significant area of the Resource Recovery + Recycling Sub-Precinct is 330 ha of land in the south west of the Parkes SAP. Co-located with the rail transport network, this area is ideally placed to receive and re-process waste and resources as part of a new industry for Parkes, championing circular economy principles as part of an Australian-first ‘Eco-Industrial Park’.

Location

- _ Located near the centre of the SAP and buffered to the east by the Mixed Enterprise Sub Precinct, and to the west by the Intensive Livestock Agriculture Sub Precinct. Adjacencies include the rail freight network, the re-aligned Coopers Road, the extended London Road, and potential advanced re-manufacturing businesses and agribusinesses.
- _ This location is away from Parkes township, to reduce potential impacts from air quality, noise, odour and dust generating activities.

Circular Economy

- _ The precinct forms the hub of the circular economy framework for the SAP, being adjacent to all other Enterprise Precincts.
- _ The site offers an attractive location for a national scale recyclables processing facility.

Energy from Waste

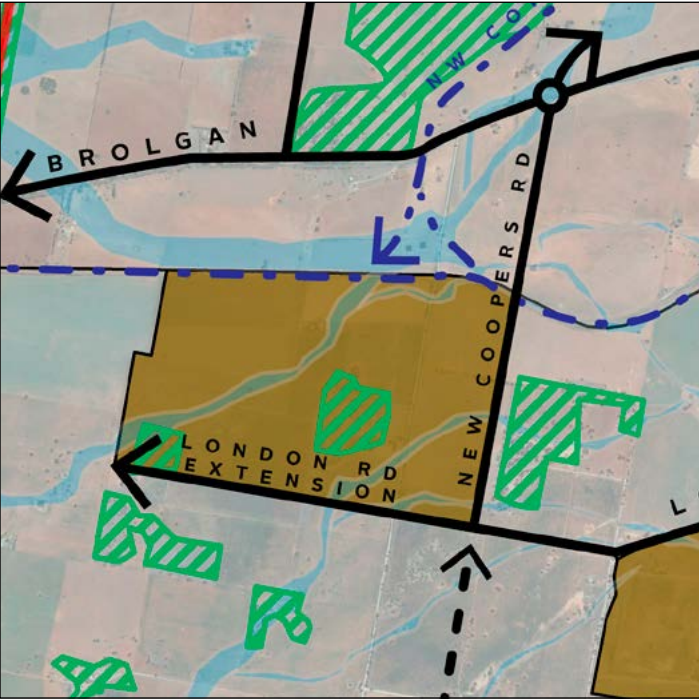
- _ The site offers an attractive location for a national scale energy from waste plant. The intermodal transport connections afforded by the SAP connects the precinct with the following potential fuel streams:
 - _ Local waste that would normally be exported or sent to landfill in the Parkes Council facility

- _ Regional general and recyclable waste
- _ National recyclable waste.
- _ Its location next to the Intensive Livestock Agriculture Sub Precinct offers the opportunity for high volume electricity and waste heat export, and carbon sequestration to those businesses.
- _ The plant will also be able to grid export electricity on a 24-hour basis via the SAP inset energy network.
- _ Green Infrastructure areas in this precinct include areas of high value vegetation (excluded from the Sub Precinct area measurement).
- _ Superior road access is to be provided from New Coopers Road, providing direct access north to the main rail terminals and Regional Enterprise Sub Precinct, and the regional highway network beyond.
- _ London Road extension also provides direct access west to the proposed Newell Highway Bypass and towards Sydney.
- _ The Sub Precinct also enjoys direct rail frontage allowing an option for a purpose-built rail siding for importing waste materials for recycling, and potentially exporting recycled products.
- _ (Old) Coopers Road will be transitioned into a biodiversity and infrastructure corridor. A recreational trail loop for walking and cycling and horse riding could be located in this corridor as well, potentially connecting north with vegetated areas leading north towards Henry Parkes Way.

Area _ 330 ha

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

Excludes Green Infrastructure Overlay area of 26ha.)



LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Recovery + Recycling Sub-Precinct (south west)	Electricity Generating Works (small or large scale including energy from waste including incineration, only on land west of Coopers Road)
	Biosolids Treatment Facility
	Depot facility
	General Industry (e.g. advanced manufacturing using recycled materials)
	Resource Recovery Facility (and repurposing)
	Waste Disposal Facility
	Waste or Resource Management Facility
	Waste or Resource Transfer Station
	New resource recovery rail terminal and freight handling apron (potentially private)
	Precinct resource recovery concierge business

Illustrative
master plan
showing
Resource
Recovery +
Recycling
(south west)

Resource recovery +
processing

Energy from waste

Solar

Recycling + re-manufacturing
in a range of businesses



5.3c Resource Recovery + Recycling (Westlime) _ Sub Precinct

“Continuing Westlime’s operations, and using additional land for new resource recovery and recycling operations.”

Overview

The 276 ha area around the Westlime Quarry is included in the Resource Recovery + Recycling Sub-Precinct. Underutilised land at Westlime is well placed to contribute to the uses of this Sub Precinct.

Location

Located to the south of London Road, the precinct incorporates the land owned and operated by Westlime, formerly a gold mine and now used for lime processing and quarrying of civil construction materials e.g. road and rail base.

Adjacencies include the Mixed Enterprise Sub Precinct to the north, and a Travelling Stock Route and natural buffer zone to the east.

Circular Economy

The precinct supports the circular economy framework for the SAP, for example by providing an opportunity for a specialised construction and raw material node, or additional minerals processing.

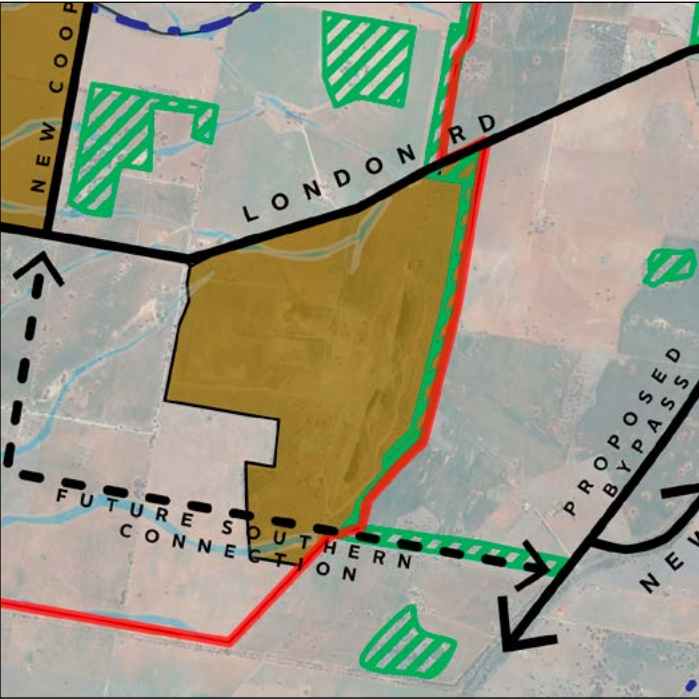
LAND USES

SUB PRECINCT	PROPOSED LAND USES
Recovery + Recycling Sub-Precinct (Westlime)	Electricity Generating Works (small scale)
	Biosolids Treatment Facility
	Depot facility
	General Industry (e.g. advanced manufacturing using recycled materials)
	Resource Recovery Facility (and repurposing; e.g. construction material production)
	Waste Disposal Facility
	Waste or Resource Management Facility
	Waste or Resource Transfer Station
	Extractive Industry (Westlime site only)
	Precinct resource recovery concierge business

Area _ 276 ha

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

Excludes Green Infrastructure Overlay area of 44ha.)



5.3c Resource Recovery + Recycling (Council landfill site) _ Sub Precinct

“Parkes Shire Council’s landfill has long term capacity for local use. In the long term, the Structure Plan envisages a circular economy framework for the SAP, which means that a landfill site could become redundant.”

Overview

At 99 hectares, incorporating the existing Parkes Shire Council general waste processing and landfill facility, the precinct has long-term capacity and is well placed to continue to receive local general waste from the Parkes Shire catchment area.

Location

Located to the north of Brolgan Road, and to the west of the proposed new Newell Highway bypass, the precinct incorporates the land owned and operated by Parkes Council as a waste collection, processing, and landfill facility.

Adjacencies include the Commercial Gateway Hub precinct to the east and the south.

Access is from Brolgan Road.

Land Uses

The Structure Plan envisages the retention of the current land use as a general local waste collection, processing, and landfill facility.

In the long term, the Structure Plan envisages a circular economy framework for the SAP, which means that a landfill site could become redundant.

Alternative re-purposing of this precinct would be limited by the latent environmental ground conditions, but could include a number of activities e.g.:

- _ a freight holding apron
- _ truck parking
- _ truck or other vehicle parking associated with a hotel/ motel in the adjacent Commercial Gateway Sub Precinct
- _ freight storage
- _ revegetation.

Circular Economy

The precinct supports the circular economy framework for the SAP, providing an opportunity for the initial processing of local waste into recyclable streams for other precincts, and general waste as a fuel for an energy from waste facility.

Energy from Waste

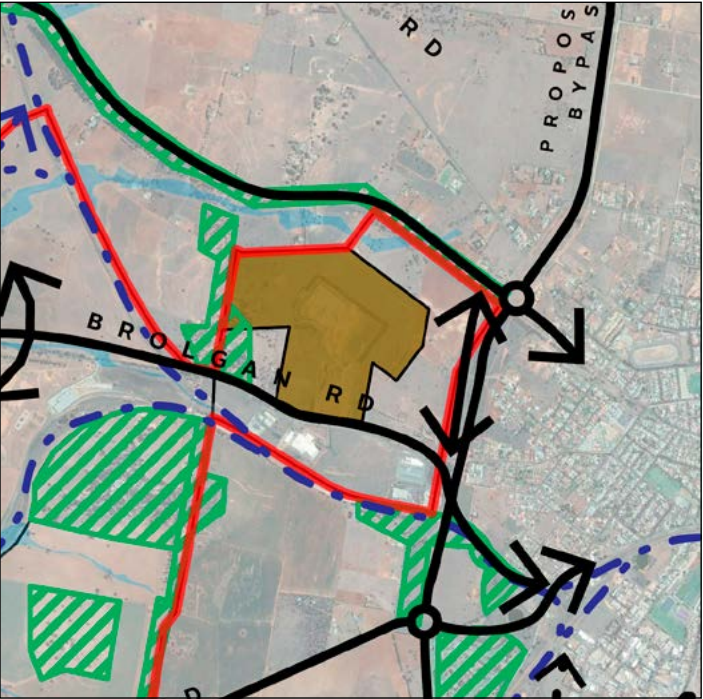
- _ This precinct is not proposed as a site for energy from waste facilities.

LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Recovery + Recycling Sub-Precinct (Council's landfill site)	Electricity Generating Works (small scale, landfill gas)
	Biosolids Treatment Facility
	Depot facility
	Waste Disposal Facility
	Waste or Resource Management Facility
	Waste or Resource Transfer Station
	Truck parking or freight apron
	Precinct resource recovery concierge business
	Greening (e.g. environmental offsets for the receiving area)

Area _ 99 ha

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

Excludes Green Infrastructure Overlay area of oha.)



“Globally, Kalundborg is probably the best known eco-industrial precinct, while large Energy from Waste projects are new to Australia. Resource recovery clusters have also been examined.”

Relevant Precedents: Kalundborg Eco-Industrial Park (Denmark)



KWINANA (WA)

- _ Energy from Waste
- _ 400,000 tonnes per annum
- _ 8 LGA's waste
- _ \$700m, now under construction



RESOURCE RECOVERY and WASTE TO ENERGY PLANT,
Wetherill Park, Western Sydney, NSW

Wingfield Resource Recovery Cluster (SA)



5.3d

5.3d Mixed Enterprise _ Sub Precinct

“The Mixed Enterprise Sub Precinct provides flexibility for a range of uses, and acts as a transition between lower impact and higher impact industry Sub Precincts.”

Overview

The Mixed Enterprise Sub Precinct is a smaller (330 ha) area and mixes uses of other Sub Precincts, targeting businesses with needs for moderate site sizes and of moderate impacts.

The Sub Precinct is located south of the Sydney-Perth rail line, enjoying direct rail frontage between (New) Coopers Road and London Road.

Existing conditions

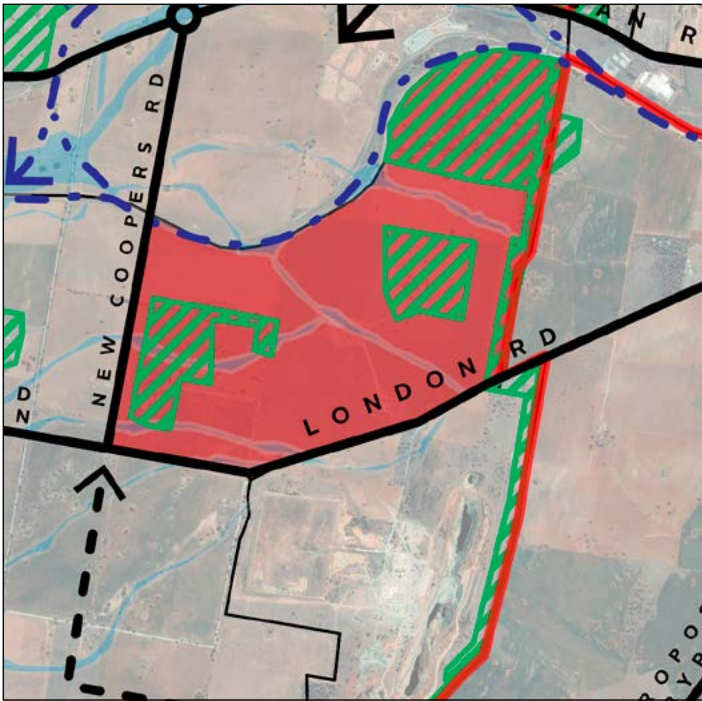
- Undulating farmland with some stands of high value vegetation.

Future development

- Positioned north east of the larger Resource Recovery + Recycling, and Intensive Livestock Agriculture Sub Precincts, this area provides additional scope for agribusiness and resource/recycling businesses to locate.
- Its neighbouring Sub Precincts provide strong opportunities for circular economy linkages between businesses in this area of the SAP.
- Medium sized sites of 10 to 100ha might be expected to be developed in this Sub Precinct, differentiating from other areas, and allowing each site to achieve internal buffers and visual screening where necessary.
- Large areas of high value vegetation have been surveyed in this Sub Precinct. New development will be designed around these areas.
- Superior access is to be provided from New Coopers Road, providing direct access north to the main rail terminals and Regional Enterprise Sub Precinct, and the regional highway network beyond.
- London Road extension also provides direct access west to the Newell Highway Bypass and towards Sydney.
- The Sub Precinct also enjoys direct rail frontage.

Area _ 330 ha

(Net figure, excluding green infrastructure. Areas approximate and inclusive of non-developable land for roads, infrastructure, open space, drainage etc.)



LAND USES	
SUB PRECINCT	PREFERRED LAND USES
Mixed Enterprise	Agricultural Produce Industry (e.g. advanced manufacturing agricultural products)
	Intensive plant agriculture (e.g. glasshouses)
	Depot facility
	General Industry (e.g. advanced manufacturing using recycled materials)
	Resource Recovery Facility (and repurposing; e.g. construction material production)
	Roads
	Precinct resource recovery concierge business

Relevant Precedents



Protected cropping ('glasshouses') are appropriate in the mixed enterprise and the regional enterprise sub precincts.

Examples including Sundrop Farms (SA), pictured, and Costa Tomatoes Guyra (NSW) show about 25ha of building area (excluding water treatment and - at Sundrop - solar energy). Costa Guyra has announced a 10ha expansion, suggesting 40ha sites may be appropriate to plan for Parkes SAP.

'Illustrative master plan' showing concept for Mixed Enterprise Sub Precinct

New Coopers Road, 550m east of Coopers Road, connecting land south of railway to regional enterprise sub precinct via new road bridge over rail

Smaller resource recovery and processing businesses might cluster close to the Resource Recovery + Recycling Sub Precinct

Protected Cropping (glasshouses) with potential for use of energy, steam and other waste products from nearby Intensive Livestock or Resource Recovery + Recycling Sub Precincts

Retained vegetation provides green infrastructure values including biodiversity, screening, dust suppression and amenity for the Sub Precinct

Landscape upgrade of key intersections and entry point to Intensive Livestock and Resource Recovery Sub Precincts to the west

Intensive agriculture e.g. mushroom growing

Stormwater detention

Travelling Stock Route has vegetation and biodiversity values and provides a natural eastern edge and green buffer to the Special Activation Precinct

Mix of allotment sizes e.g. 5 to 100ha provide for medium-scale businesses

Westlime property has capacity for new land uses and activities to complement lime and quarry operations e.g. resource recovery and recycling businesses along London Road





5.3e

5.3e Commercial Gateway _ Sub Precinct

“The Commercial Gateway Sub Precinct is a transition area between the Special Activation Precinct and the town. It provides opportunities for new businesses to service the Parkes SAP and its workers. Located prominently alongside the proposed Newell Highway Bypass, it also offers business opportunities to service local and travelling populations.”

Overview

The Commercial Gateway Sub Precinct provides a transition between the industry uses of the SAP proper, and the township of Parkes. Located prominently alongside the proposed Newell Highway bypass of Parkes, it also offers business opportunities to service local and travelling populations.

Existing conditions

- The Sub Precinct includes land from Brolgan Road in the south to Henry Parkes Way in the north, west of Westlime Road/Proposed Newell Highway Bypass, on the edge of Parkes township.
- Both sides of Brolgan Road from Westlime Road to the Parkes-Narromine rail line (Inland Rail route) are within this Sub Precinct. A number of industry and warehouse buildings exist on the south side of Brolgan Road and (where currently underutilised) can be re-purposed to new uses.
- The Sub Precinct abuts Council’s landfill site.
- Rural land is generally cleared with some remnant vegetation and areas of roadside vegetation on Henry Parkes Way, with local access to some dwellings.
- Parkes Shire Council is a major land owner in this Sub Precinct.
- From Westlime Road / future Bypass the land slopes up to a western ridge. Brolgan Road cuts through this ridge as the main access to the Parkes SAP to the west.

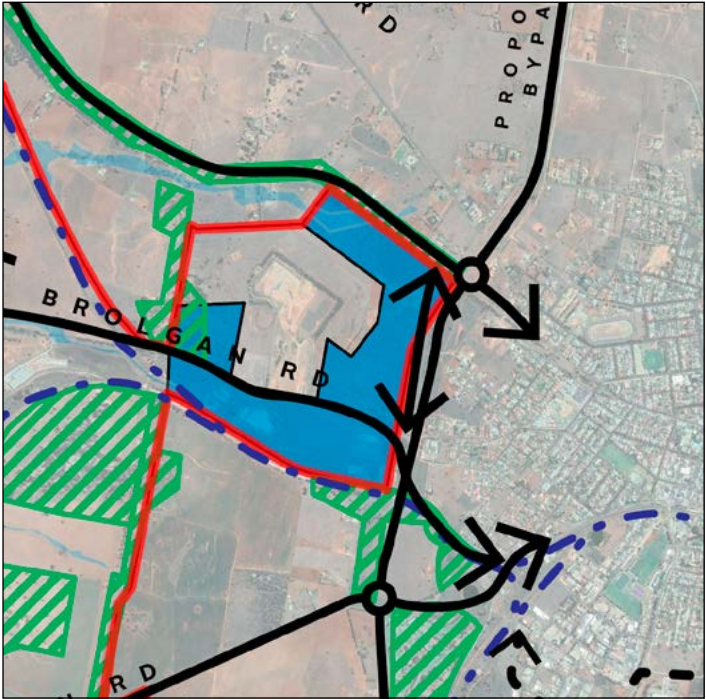
Area _ 135 ha

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

Excludes Green Infrastructure Overlay area of 8ha.)

Future development

- A wide road reserve following Westlime Road will form the alignment for the proposed Newell Highway Bypass. The Bypass will include a road bridge over both Brolgan Road and the Sydney-Perth rail line with ramps extending 500m or more back to ground level, making direct access to the Bypass difficult in this location. The Bypass has recently seen a funding commitment by the Federal Government.
- Replacing Westlime Road, a new service road west of the Highway will provide future access to the SAP from Henry Parkes Way and from Parkes and areas to the south.
- Land alongside this service road will also provide frontage opportunities for new development.
- Enhanced development of the public realm will be important in this Sub Precinct, especially to mark the SAP entry for vehicle visibility and promotion. The Bypass overpass and stands of vegetation could be used as a basis for lighting and marking of the SAP and possibly local cultural heritage interpretation.
- A range of commercial (rather than industrial) uses are anticipated. Some businesses will service the workers and businesses in the rest of the Parkes SAP.
- Given the proximity of Council’s landfill, and nearby residences, the location of more sensitive commercial land uses (e.g. Cafe, restaurant and hotel uses) must avoid causing new land use conflicts.
- A Parkes SAP information centre, office or start-up business hub is another appropriate use for this Sub Precinct, potentially reusing buildings along Brolgan Road.
- Other opportunities in the Sub Precinct have a broader market than just the SAP e.g. a highway service centre, and hotel and motel accommodation. It is important however that the Sub Precinct does not develop into an out-of-town retail centre which could undermine the Parkes town centre.



LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Commercial Gateway	Highway service centre (fuel, food, etc.)
	Industrial training facility
	Information and education facility
	Kiosk and Visitor Information
	Recreation area/park
	Roads
	Public domain lighting, markers and entry statements

'Illustrative master plan' showing concepts for Commercial Gateway_ Sub Precinct

Northern access + Bypass access via service road

Highway service centre in prominent location at main Parkes entry from Bypass

Mixed commercial uses including hotel/motel, food + drink, business services, training etc.

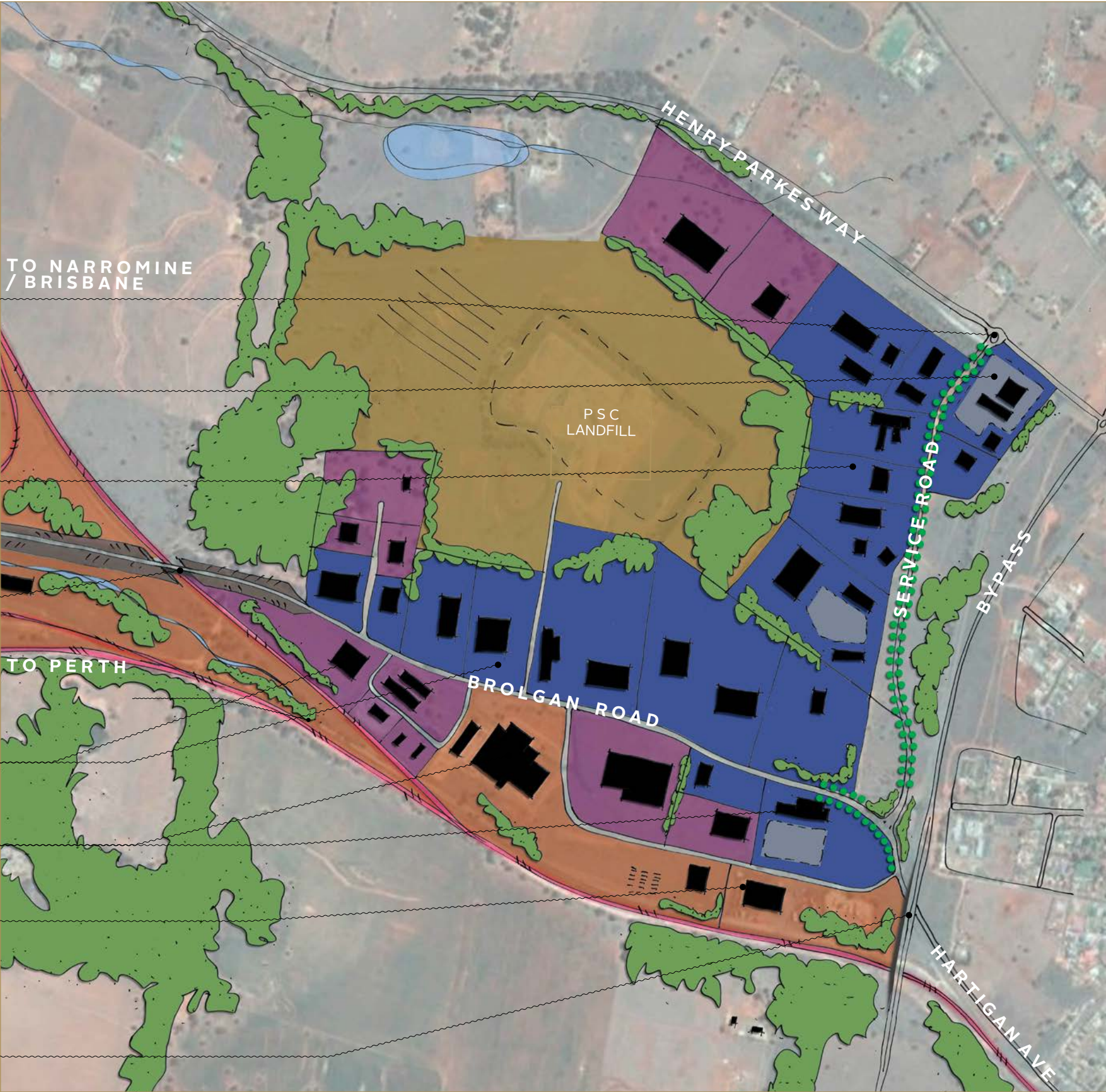
New road bridge Brolgan Road over parkes to Narromine rail - main entry into Parkes SAP

Mix of commercial and (light) industry uses transition into Parkes SAP along Brolgan Road

Reuse and re-purposing of existing building

Freight and logistics uses continue alongside rail

Highway bridge over rail and Brolgan Road, important gateway opportunity



Relevant Precedents



BP Eastern Creek, NSW, a new highway service centre with 22 B-Double parking spaces. ~2.5ha development area on ~4ha site (becon.com.au)



Accommodation and food services to support Precinct and capitalise on highway traffic (ihg.com)



Training facilities (fusiondna.co.uk)

5.3f

5.3f Solar _ Sub Precinct

“Dedicated to renewable energy generation, with 66MW already installed, a further 70MW due to commence installation in 2020, and land allocation for an additional 16MW.

The Solar Sub Precinct can be a major contributor to Parkes SAP becoming Australia’s first UNIDO Eco-Industrial Park.”

Overview

The 665-hectare Solar Precinct recognises the significant investment already made in renewable energy generation in the Parkes region, with the precinct comprising:

- _ the Parkes Solar Farm, a 66MW capacity ground mounted solar PV array completed by Neoen Australia, occupying 240 hectares of freehold land, and now exporting 138,000 MWh per year to the grid.
- _ a 385-hectare land allocation for the future Goonumbla Solar Farm, a 70MW capacity ground mounted solar PV array which has obtained Development Approval, with construction due to commence in 2020.

Location

Located approximately 10km west of Parkes township, the site is located at Henry Parkes Way (locally known as Condobolin Road) and Pat Meredith Drive to the west. The site is generally flat with no major soil, flooding or biodiversity issues.

The site incorporates 11kV power transmission lines providing a direct connection to the Parkes Transgrid substation for grid export.

Area _ 665 ha

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

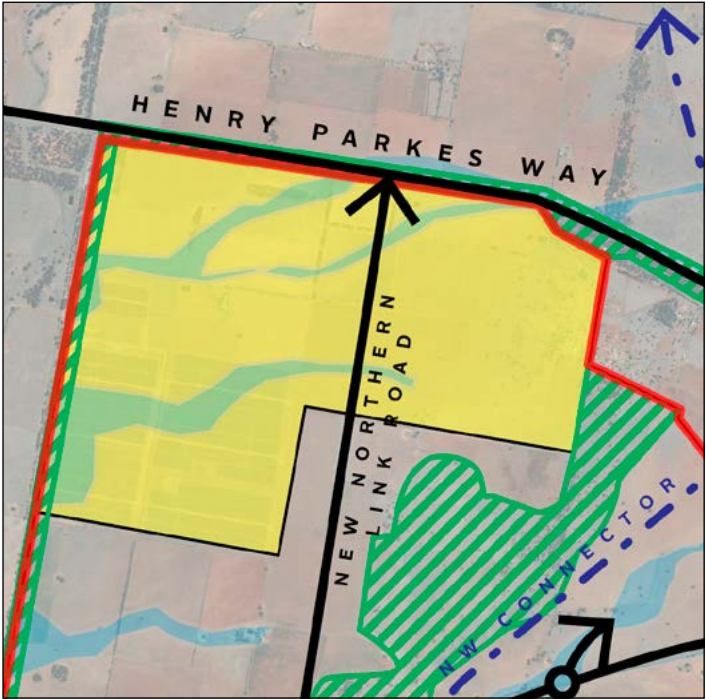
Excludes Green Infrastructure Overlay area of 0.5ha.)

Future development

In addition to the already existing and planned solar farms, the Structure Plan envisages the following land uses and features:

- _ A new road linking Henry Parkes Way and Brolgan Road.
- _ The creation of a vegetation buffer between the Regional Enterprise Zone and the SAP boundary.
- _ A new 11kV power transmission lines to connect the SAP to the Parkes Substation.
- _ Sensitive treatment of protected vegetation to the elevated land to the east of the precinct to support the green corridor and recreation opportunities. This hilltop area is also of cultural significance.
- _ A further 60-hectare allocation for solar farm development, capable of supporting 16MW of generating capacity, which could be connected directly to the Transgrid network, or directly to the SAP inset electricity network.
- _ Existing and proposed solar farms playing a role in offering competitive energy prices in the Parkes SAP, desirably through connecting to an inset network which would significantly contribute to UNIDO accreditation of Parkes SAP as an Eco-Industrial Park.

Environmental, noise, and heritage investigations indicate there are no impediments to these proposed land uses.



LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Solar	Solar farm
	Associated infrastructure
	Roads

5.4a

5.4a Rail Terminals _ Overlay

“The Rail Terminals Overlay is crucial to maintaining Parkes Special Activation Precinct’s competitive advantage into the future as a rail-focused freight and logistics hub.”

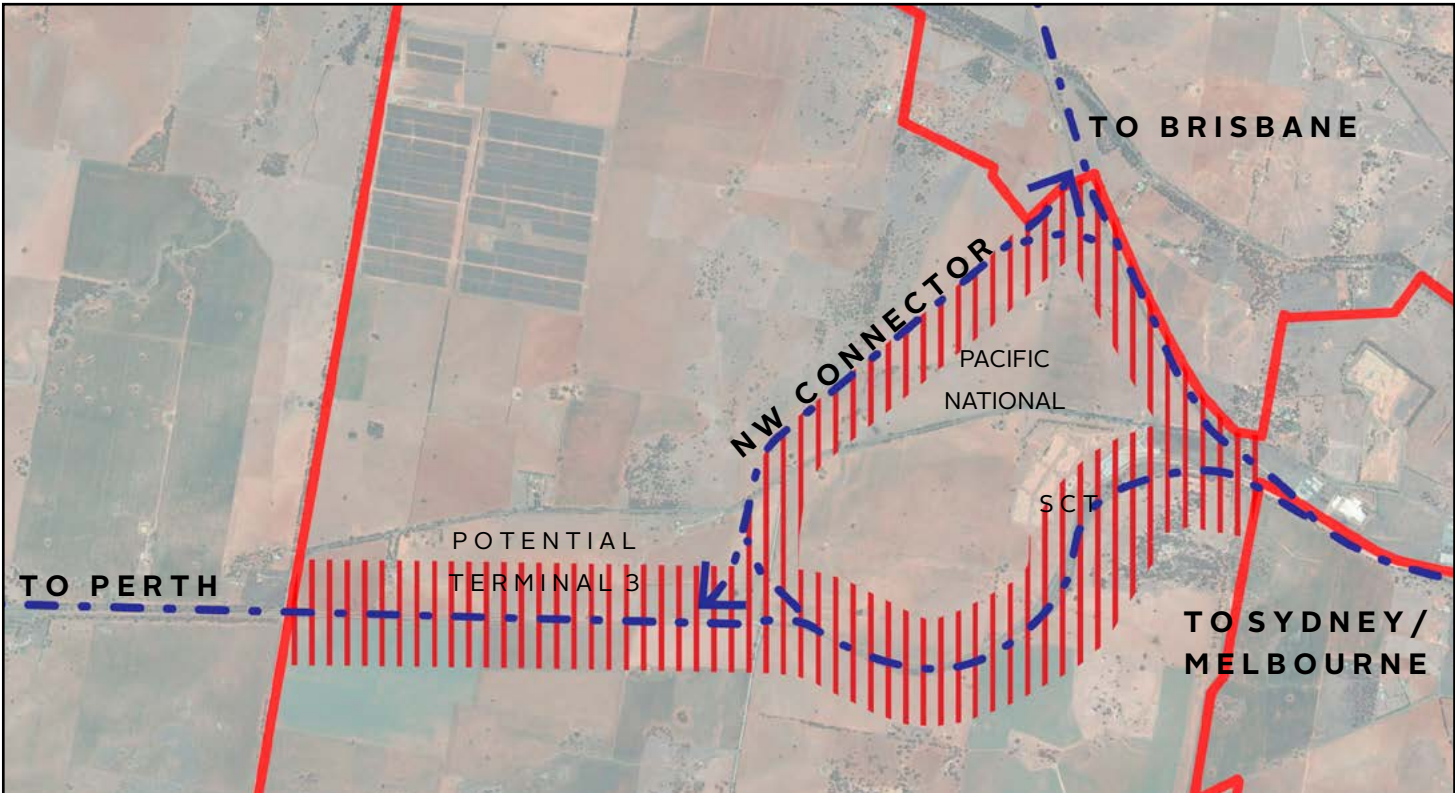
Overview

The Rail Terminals Overlay straddles a number of Sub Precincts in the Parkes SAP. The Rail Terminals Overlay is intended to preserve opportunities for rail and transport infrastructure crucial to maintaining Parkes SAP competitive advantage as a rail-focused freight and logistics hub.

Existing conditions

- The Rail Terminals Overlay extends 350 metres from the east-west Sydney-Perth line (both sides) and the north-south Inland Rail lines (south side only).
- An existing intermodal terminal built and operated by SCT is located south of Brolgan Road in the core area of the SAP. It comprises a major logistics warehouse and loading area, container storage area and truck parking with access from nearby Brolgan Road to the north. SCT own some 300 hectares of mostly vacant developable land around this terminal on the northern side of the east-west rail line including land within the Rail Terminal Overlay to the west of their current terminal and supporting uses.
- Pacific National own some 300 hectares of land north of Brolgan Road. They are currently building an intermodal terminal along the new North West Connector rail line section which connects the east west line with the north south Inland Rail route.

Structure Plan



Future development

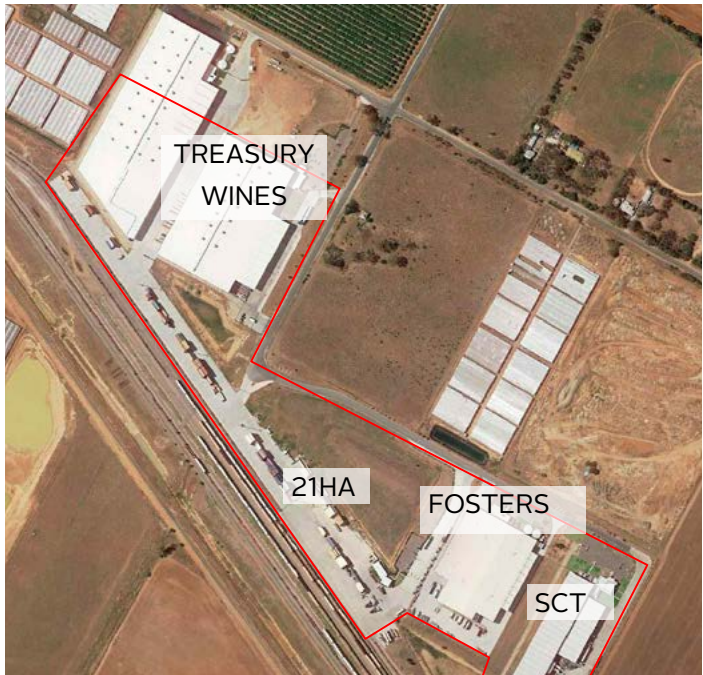
- SCT may extend their intermodal terminal facilities including westward following the Sydney-Perth line in the Rail Terminals Overlay Area.
- Pacific National plan to extend their terminals following the rail frontages to their property.
- The Structure Plan allows for an additional ‘Terminal 3’ west of Coopers Road on the north side of the Sydney - Perth line.
- Other rail terminals (perhaps special purpose sidings for adjacent industries such as resource recovery/ recycling) are also anticipated south of the Sydney -Perth line.

LAND USES	
SUB PRECINCT	PROPOSED LAND USES
Rail Terminals	Car parks
	Depot facility
	Freight Transport facility (e.g. rail-road intermodal terminal, grain storage)
	Hazardous Storage Establishment (where related to a rail freight terminal)
	Liquid Fuel depot (where related to a rail freight terminal)
	Roads
	Transport Depot (e.g. rail sidings, provisioning, maintenance, refuelling, container maintenance)
	Truck depot
	Warehouse or Distribution Centre (where related to a rail freight terminal e.g. freight forwarding)

“The sheer size of intermodal rail terminals is shown with sidings capable of accommodating 1800m, double stacked trains with associated hardstand, mobile container gantries, freight forwarders and sub-tenants using the terminals.”



Relevant Precedents: SCT Parkes and Penfield (SA); Pacific National Intermodal Parkes (under construction)



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5.4b

5.4b Green Infrastructure _ Overlay

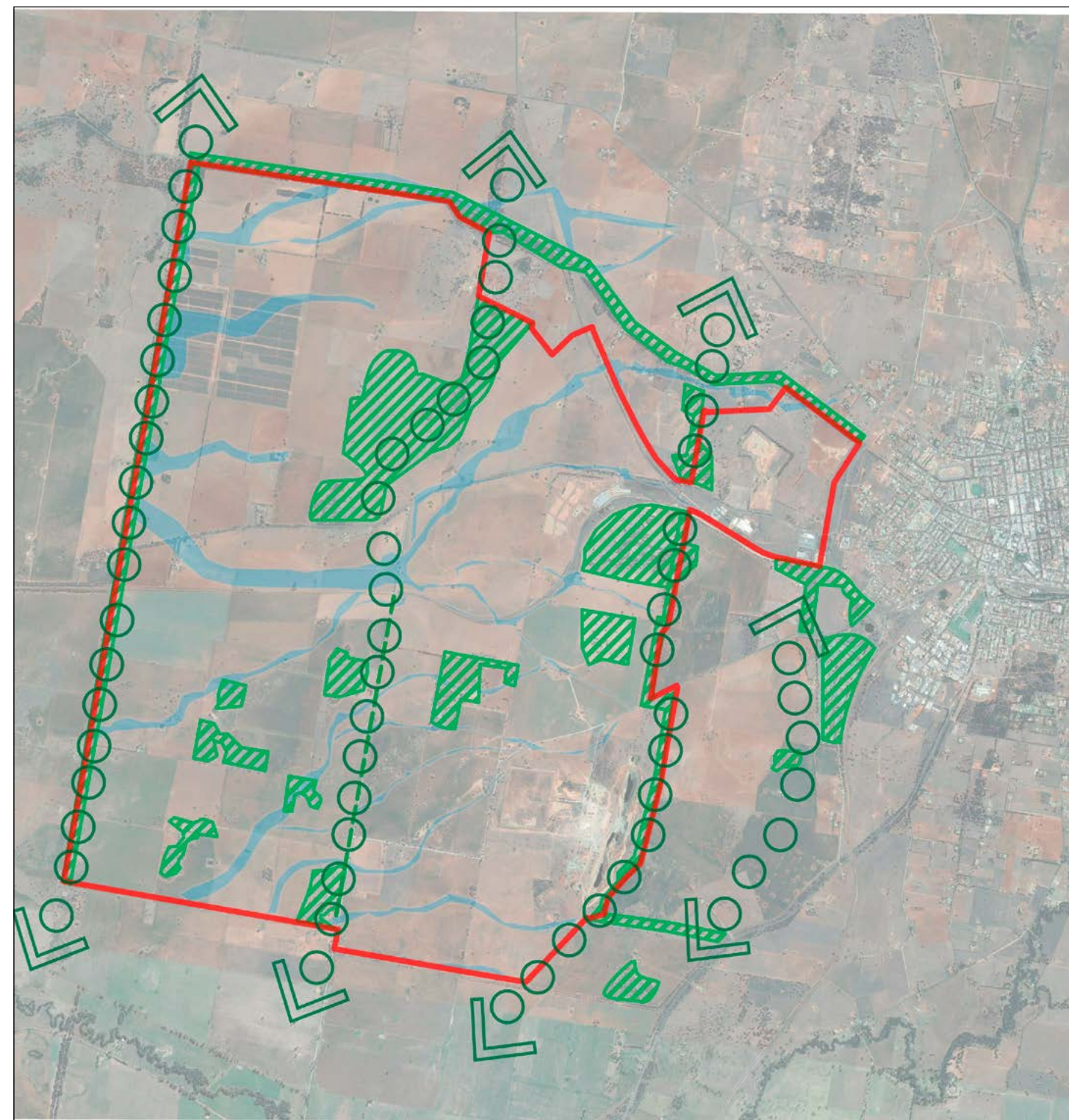
“Part of the ecological approach to the Parkes Special Activation Precinct involves an integrated Green Infrastructure layer across the Precinct, incorporating into the Structure Plan the areas of landscape which are visually, culturally and environmentally significant.”

Structure planning for the Parkes SAP has been underpinned by a commitment to sustainability in all its forms: aiming to develop an ‘Eco Industrial Park’, conserving and renewing energy and resources, and supporting economic development.

Part of this ecological approach involves identifying a Green Infrastructure Overlay capturing the higher value areas of vegetation and biodiversity, which are significant culturally and environmentally.

Existing conditions

- Site surveys were undertaken for vegetation, threatened species and threatened flora and fauna.
- Individual hollow-bearing trees and paddock trees of significance were also mapped. These trees are intended to be protected when development occurs in the vicinity.
- Floodways were also analysed and form another environmental constraint on development, and an opportunity to develop good quality water sensitive urban design solutions for the SAP.
- Additional surveys will be carried out in Winter and Spring 2019 to inform bio- certification.
- Significant vegetation is evident in several areas of the SAP including along road reserves of Henry Parkes Way, Keith’s Lane, the Travelling Stock Route within the study area, the Newell Highway, Brolgan Road and the rail lines. Several other large patches of trees are also distributed throughout the study area.
- These areas are contributors to biodiversity of flora and fauna, micro-climatic conditions and flood mitigation.



Proposed Strategic Approach

During the preparation of the Structure Plan an avoidance hierarchy was developed. High and medium biodiversity patches listed under Federal and State legislation were mapped and have been adapted into a Green Infrastructure Overlay in the Structure Plan, as areas to be avoided by development.

Where infrastructure works or similar activity cannot be avoided, biodiversity off-setting is required in accordance with the NSW Biodiversity Offset Scheme and will be considered as part of a Strategic Bio-certification of the Parkes SAP.

The strategic approach to the environmental layer was developed with the following elements:

- _ Develop a number of green corridors or linkages based on identified vegetation areas and where necessary using a 'stepping stone' approach to provide fauna and biodiversity connectivity through the Precinct.
- _ Include high value paddock trees in the location of these linked networks and protect these trees where they are not in the network areas.
- _ Co-locate floodways and water courses with vegetation corridors where possible.
- _ Select areas for water sensitive urban design improvements which reinforce the proposed corridor network.
- _ Integrate and mark artefact sites and scarred trees to protect these areas and explain their significance to SAP occupants and the wider community.
- _ Define Precinct edges with buffers by peripheral tree planting for screening, identification and visual amenity.

These elements are further described in the following sections.

Green biodiversity links

- _ The Green Infrastructure Overlay indicates a desired structure of north-south biodiversity corridors through the SAP towards Goobang Creek, generally aligning with Keiths Lane, Coopers Road (existing alignment), the Travelling Stock Route and Newell Highway Bypass.
- _ Some additional planting will be required to realise the corridor network. While the corridors do not have to be physically continuous the stepping stone approach requires substantial areas of vegetation at intervals which enable species dispersal and breeding potential.
- _ A key area for reinforcement is the central north-south corridor, joining the existing Coopers Road verge areas with the significant vegetation extending north from Brolgan Raod to Henry Parkes Way along the gentle hill slopes.

Paddock trees, hollow trees and scarred trees

- _ These trees are dispersed across the site but many clusters are evident in the significant native vegetation areas in the north west section of the study area and in the eastern section. Many of these trees will be captured by a green corridor network.
- _ Three species of box trees are identified as threatened ecological species and these areas are partially included in green corridor areas. Other areas will require specific protection through a finer grained control such as design and development standards.

Floodway co-location

- _ While minor natural drainage paths exist now, development of the SAP Structure Plan has required development of a more robust floodway system with detention basins to cater for future development. This system was integrated where possible with the areas of significant vegetation, reinforcing the green corridor linking strategy.
- _ Full realisation of sensitive floodway integration into sites will require careful design and development at project stage, using SAP Design Guidelines to clearly indicate desired environmental and design outcomes.

WSUD (Water sensitive urban design)

- _ Design of detention basins, roadside swales and built form standards are aimed at water conservation and minimising flooding and run-off. The location of swales and stormwater interventions contributes to healthy vegetation and corridor strength particularly along key access roads in the SAP.

Culturally significant areas and trees

- _ Scarred trees and the five artefact sites should be highlighted in development standards and in promotion of the SAP to reinforce their protection and promote the responsive nature of the SAP Structure Plan.

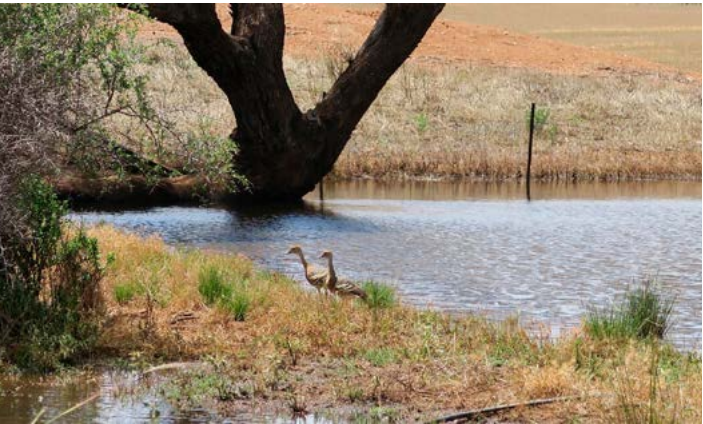
Buffer definition

- _ Buffer areas are not necessarily development free areas but offer the opportunity for further reinforcement of the linking corridor strategy through planting of endemic species. When planted on property boundaries or in road reserves the capacity for prejudicing future development potential is significantly reduced.

Benefits

Action in all these areas will contribute to a meaningful network of diverse vegetated areas in corridors which will:

- _ provide habitat and movement options for fauna in the SAP area
- _ reinforce the number and health of native endemic species
- _ minimise flooding and scouring from stormwater run-off
- _ capture stormwater and roof run-off for re-use through WSUD
- _ assist certification as an Eco Industrial Park
- _ augment green infrastructure in strategic locations to optimise benefits.



Green infrastructure elements today: Existing areas of vegetation near Henry Parkes Way (top), farm dam, and paddock trees typical to much of the study area.

5.5 Sustainability _ Structure Plan Integration

“The Parkes SAP sustainability framework has the concept of a circular economy as its keystone. A circular economy approach connects organisations, processes and resources, to gain efficiencies and minimise waste.”.

Overview

The sustainability goals for the Parkes SAP are to:

- _Become Australia’s first true Eco Industrial Park.
- _Become a carbon neutral precinct
- _Foster leadership in all aspects of sustainability.

The following over-arching sustainability framework has been developed:

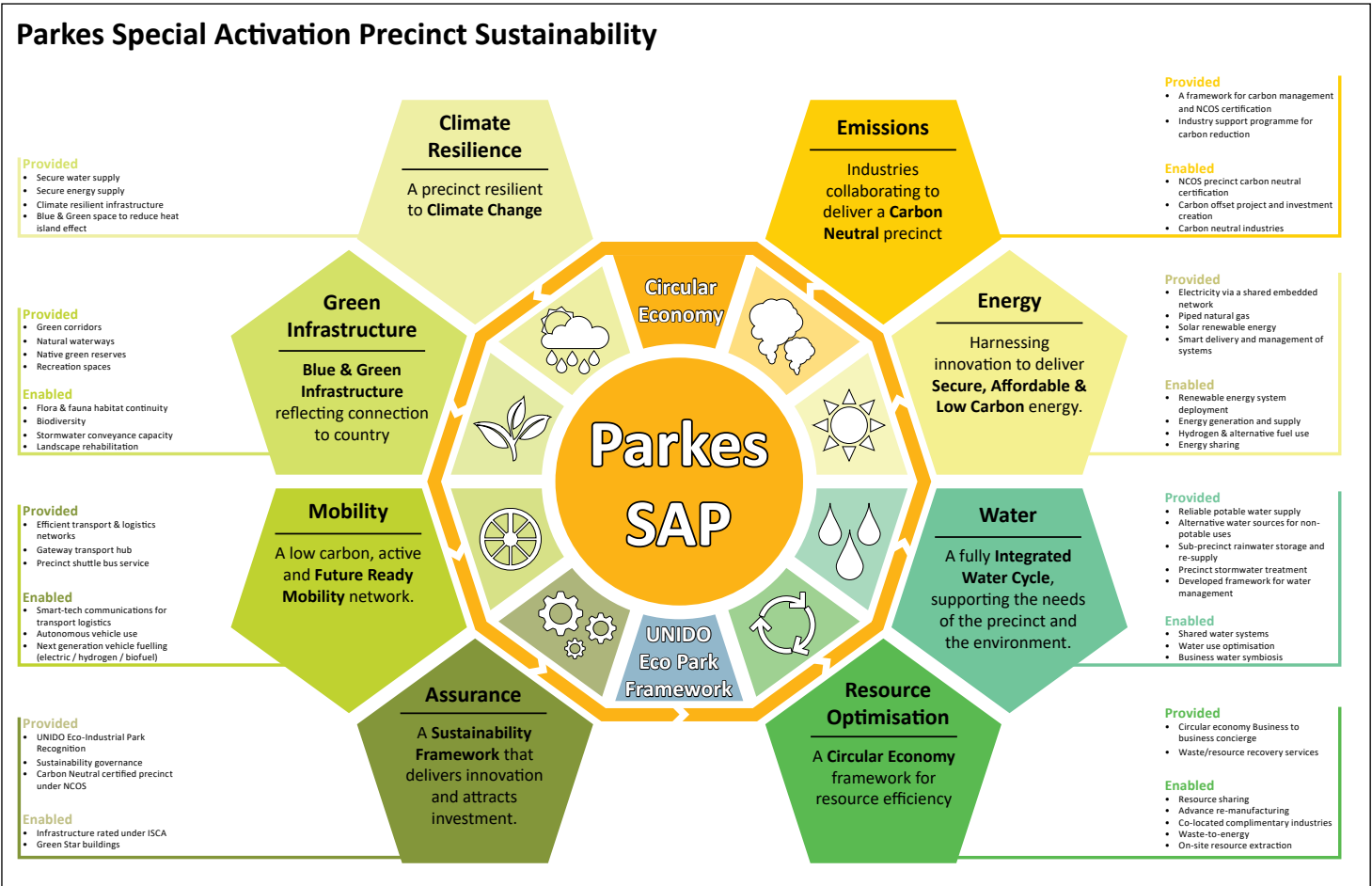
Sustainability Framework

The sustainability framework has the Circular Economy as its keystone. A circular economy approach connects organisations, processes, and resources, maintaining the value of products for as long as possible and minimising waste.

When a product reaches the end of its life its is used again to create further value bringing economic benefits, innovation, growth and job creation.

The framework has the United Nations Industrial Development Organisation (UNIDO) Eco-Industrial Park Framework as its foundation stone. This framework provides an internationally recognised and world-leading template for industrial symbiosis and a circular economy in manufacturing and agribusinesses.

The infrastructure provided by the SAP will be an enabler for both the achievement of the sustainability goals, and for businesses attracted to the SAP to improve their operational efficiency and reduce their environmental impact.



Environmentally sustainable development pr oposals enabled by infrastructure identified for Parkes SAP, WSP

Climate Resilience

- Provided:
- Secure water supply and energy supply, climate resilient infrastructure and blue/green infrastructure to reduce heat island effects.

Green Infrastructure

- Provided:
- Green corridors, natural waterways, native reserves and recreation spaces.
- Enabled:
- Flora & fauna habitat continuity, biodiversity, stormwater conveyance.

Mobility

- Provided:
- Efficient transport and logistics networks, a gateway transport hub, precinct shuttle bus service
- Enabled:
- Smart-tech communications for transport logistics, autonomous vehicles, next generation vehicle fuelling (electric/hydrogen/biofuel).

Assurance (Green Rating Tools)

- Provided:
- UNIDO Eco Industrial Park Framework recognition, sustainability governance and National Carbon Offset Standard (NCOS) Precincts Carbon Neutral Certification.
- Enabled:
- Infrastructure rated by the Infrastructure Sustainability Council of Australia (ISCA) and buildings rated by the Green Building Council of Australia (GBCA).

Emissions

- Provided:
- Framework for carbon management and NCOS certification, industry support programme for carbon reduction.

- Enabled:
- NCOS precinct carbon neutral certification; carbon offset project and investment creation; and carbon neutral industries.

Energy

- Provided:
- Electricity supply via a shared embedded network. Businesses connecting to the network will have access to discounted energy tariffs, and the ability to export generated energy to the electricity grid.
 - Piped natural gas, with the connectivity to allow on-site hydrogen generation and export to the Jemena gas network.

- Enabled
- Renewable energy system deployment, renewable and low carbon energy generation and supply, hydrogen & alternative fuel use; energy sharing.

Water

- Provided:
- Reliable potable water supply, recycled water sources for non-potable uses, stormwater treatment, wastewater treatment and a framework for water management.
- Enabled:
- Shared water systems; water use optimisation; sub-precinct rainwater storage and supply, trade wastewater treatment; and business water symbiosis.

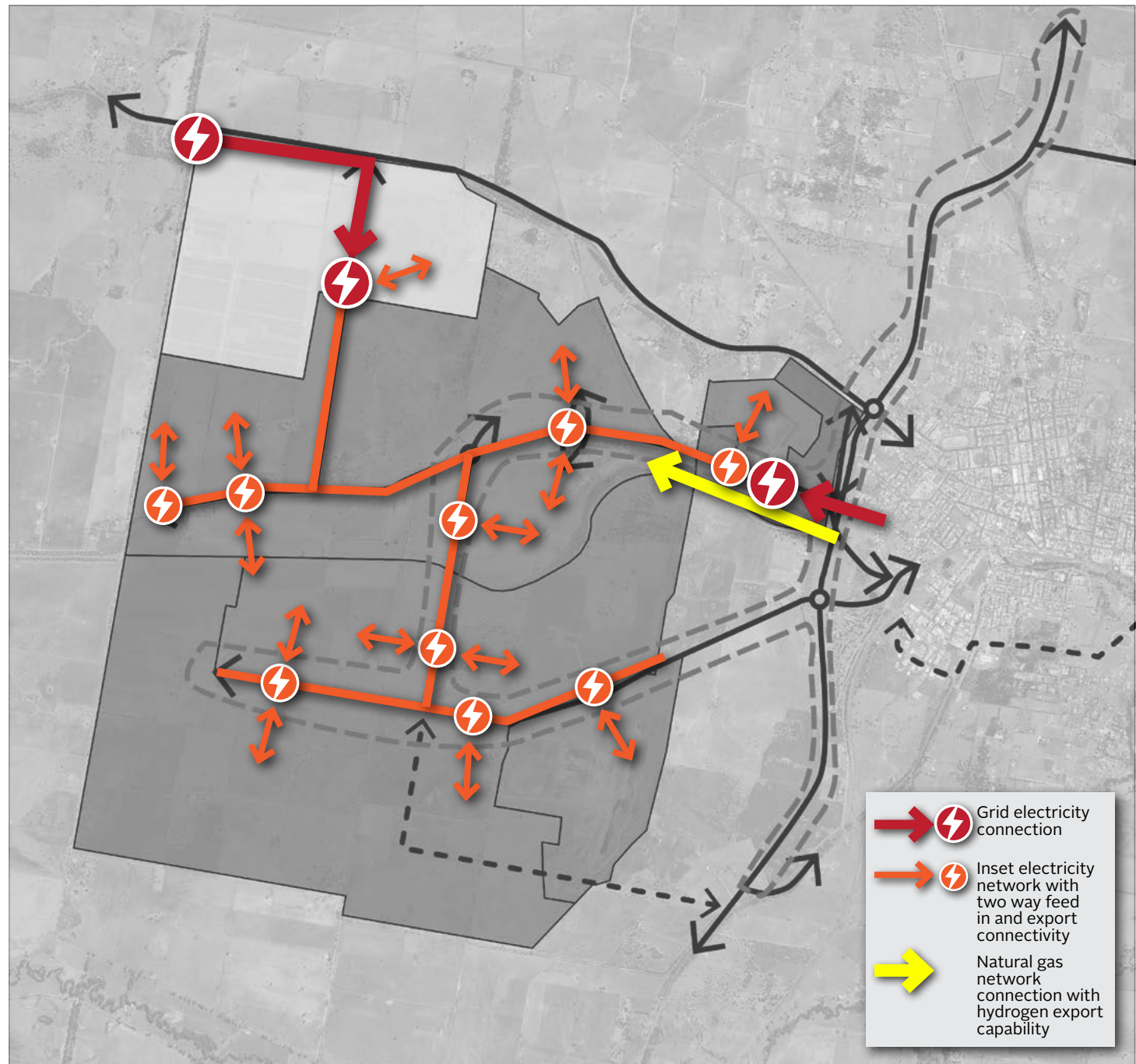
Resource Optimisation

- Provided:
- Circular economy business to business concierge, available from the outset to connect businesses and form circular economy sub-precincts. Forming a circular economy nucleus will facilitate development of support businesses such as resource collection and haulage, and advanced re-manufacturing.
- Enabled:
- Resource sharing, advanced re-manufacturing; co-located complimentary industries; waste to energy, waste/resource recovery providers and on-site resource extraction.



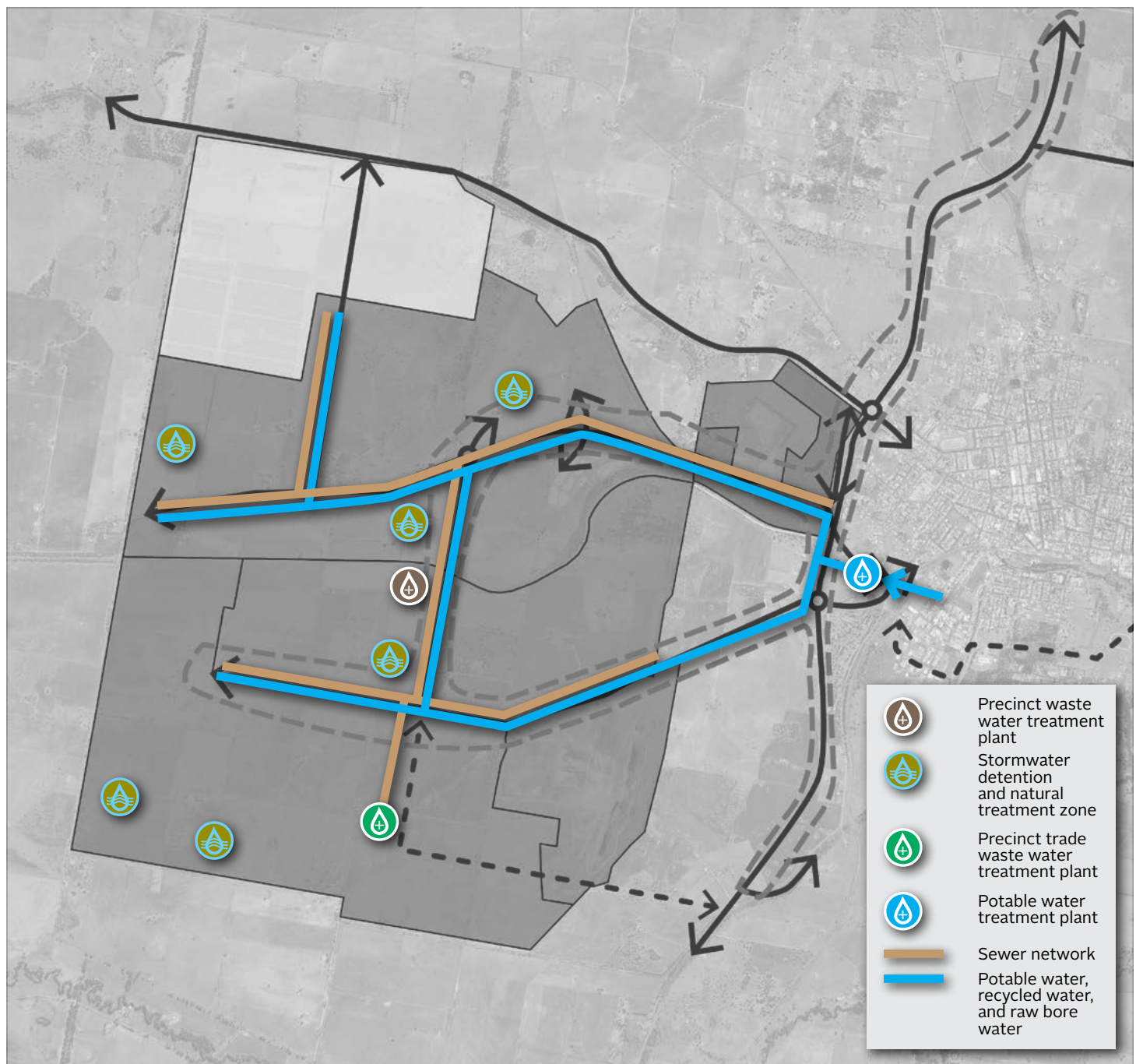
Sustainability rating tools being utilised for the development of Parkes SAP at the relevant state, regional and precinct scale.

Energy



Concept of inset energy network for the precinct

Water

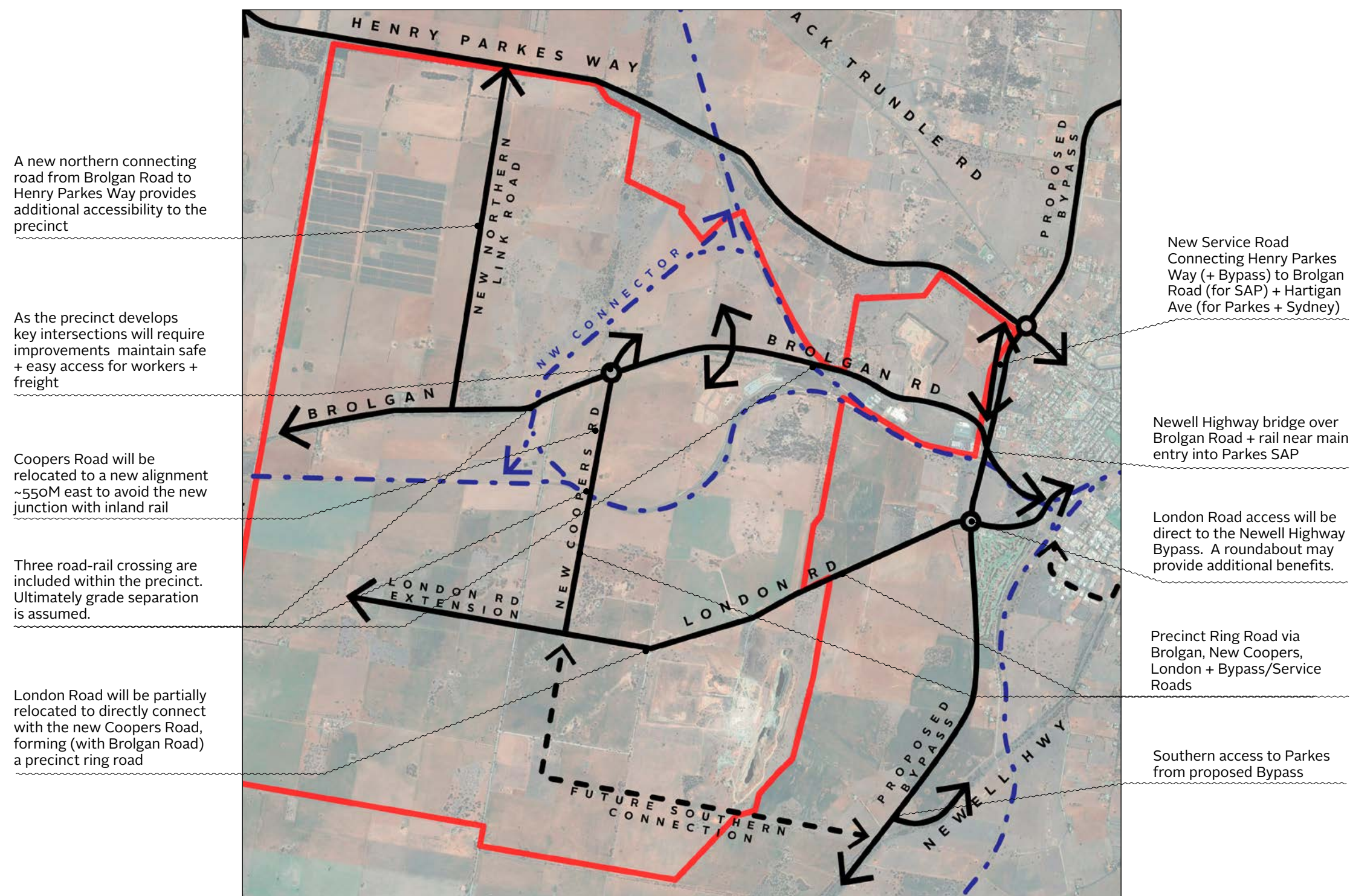


Concept of water supply network including ring mains following the ring road

5.7 Transport Network

“Parkes Special Activation Precinct already enjoys excellent access to regional and national road and rail transport networks. The Structure Plan includes strategic transport moves to provide even better local access within the Precinct and beyond.”

Transport Network Summary



Overview

Parkes Special Activation Precinct enjoys excellent access to regional and national transport networks, principally the Sydney-Perth railway, Melbourne-Brisbane Inland Rail (underway), the proposed Newell Highway Bypass and Henry Parkes Way, a state road to the north. Indeed it is these strategic transport advantages that underpin much of the economic opportunity for the Precinct.

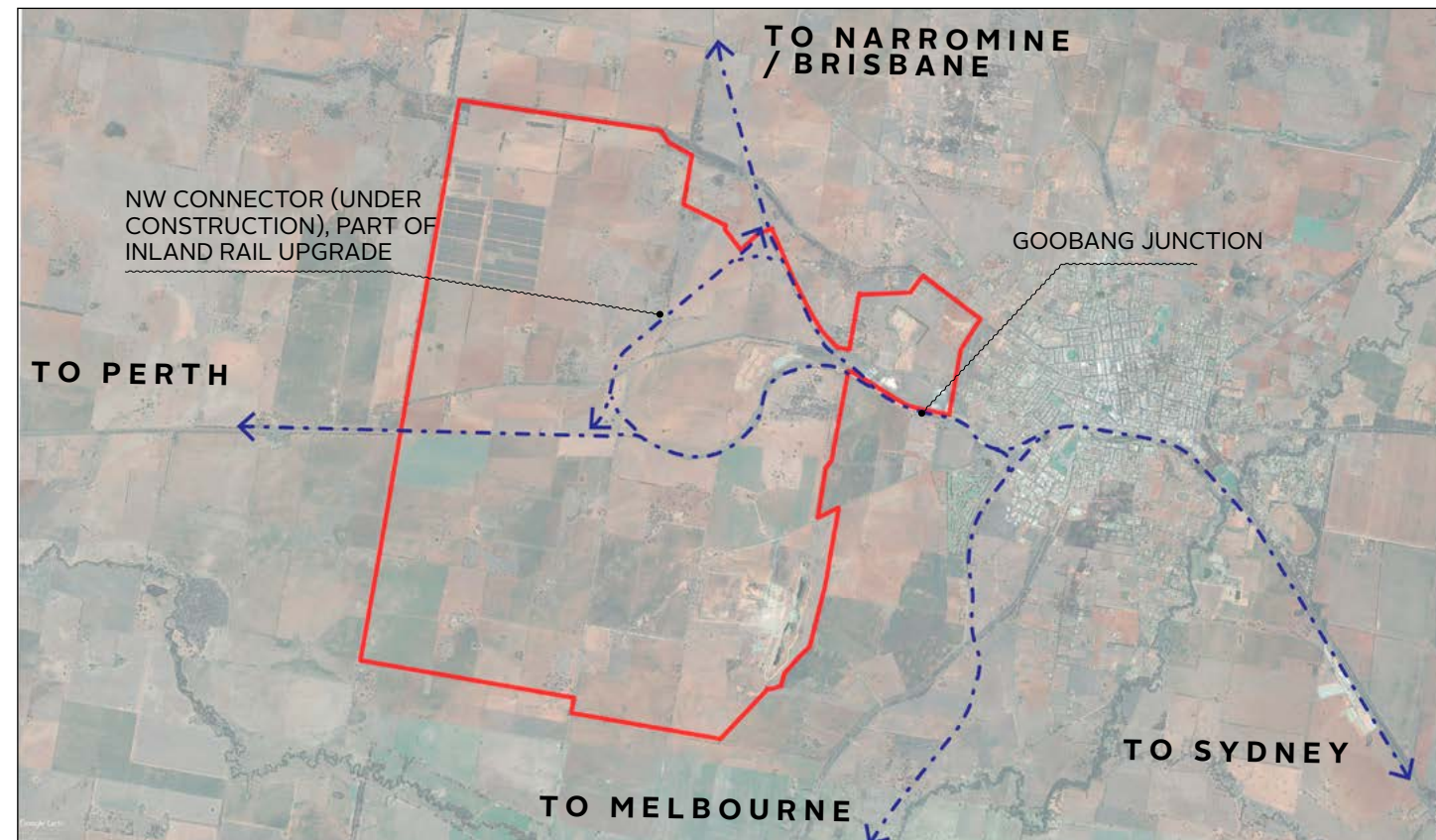
Within the Precinct the local distributor roads are:

- _ Brolgan Road, the east-west spine of the SAP in the foreseeable future providing access from Parkes to the current freight and logistics area.
- _ London Road serving the Westlime quarry and crushing facility and southern areas of the Precinct.
- _ Coopers Road, a centrally located north-south road connecting Brolgan and London Roads.
- _ Other minor roads and routes include Keiths Lane, an unsealed road on the western boundary of the SAP.
- _ A section of the travelling stock route network runs north-south through the SAP.

Proposed Transport Network

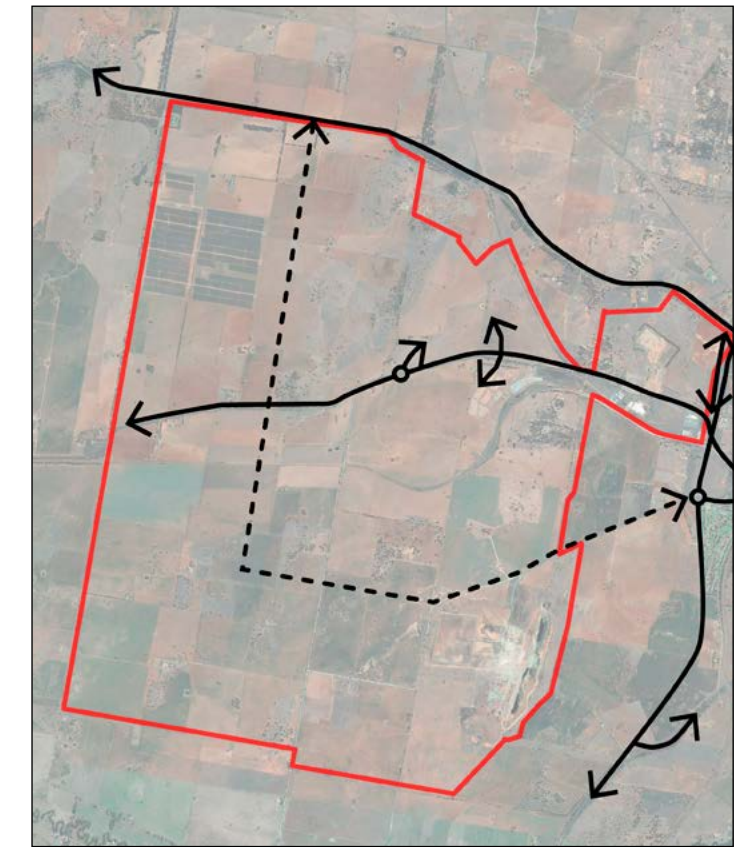
- _ The diagrams in this section highlight elements of the proposed transport network for the Precinct.
- _ Future transport planning and modelling will be used to inform the detailed design of infrastructure inside and outside the Precinct (e.g. road networks south of the Precinct and of Parkes), and anticipate future changes to transport modes, freight transport trends, and other transport planning objectives.

Rail Network



ARTC's Inland Rail project from Melbourne to Brisbane includes a short section of new track - the 'North West Connector' - within the study area. It is noted that while a northbound turnout (towards Brisbane) is under construction now for ARTC, the southern turnout shown towards Goobang Junction is not included and may be built in the future by Pacific National.

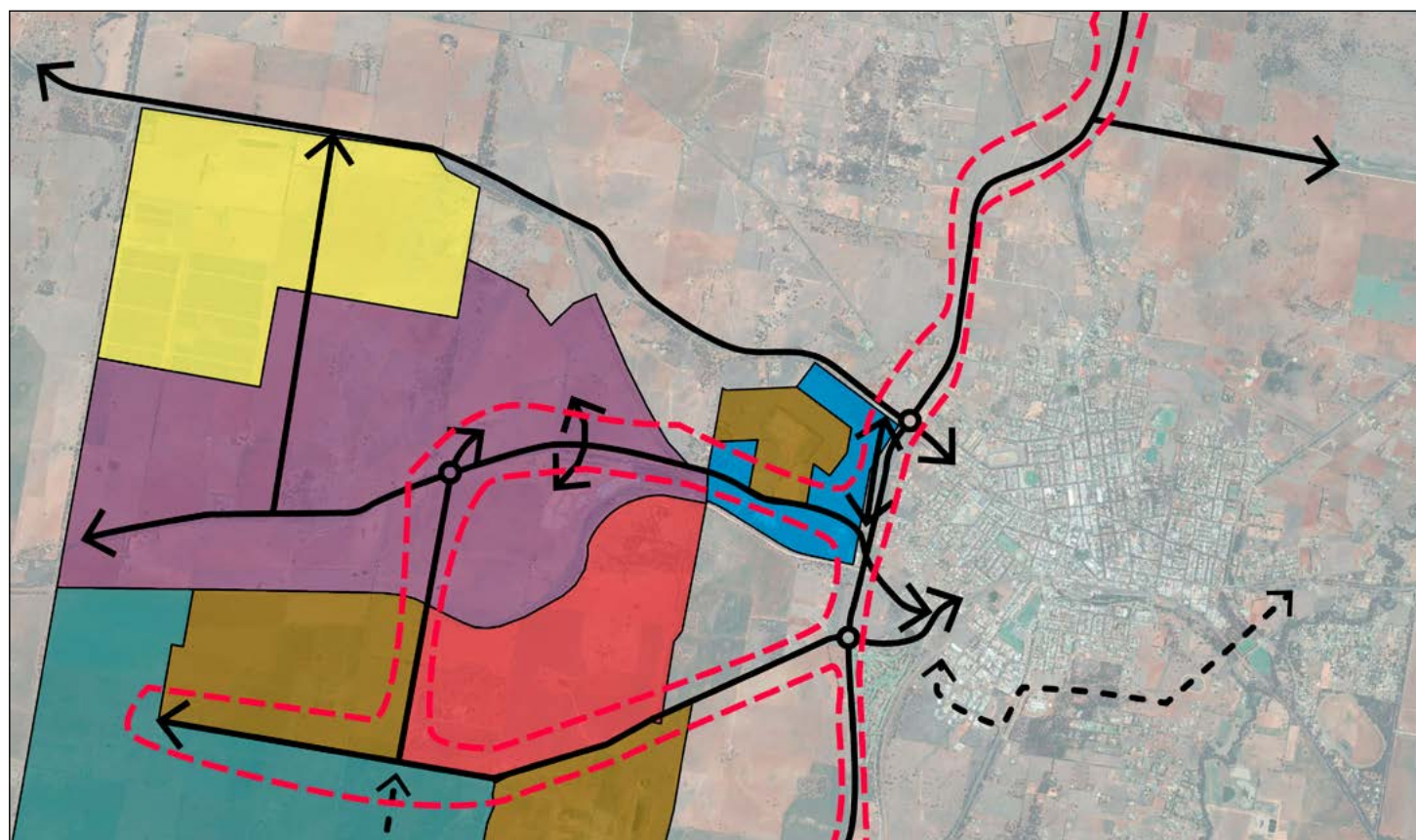
Alternative north-south link



An alternative (or additional) north-south road link between Henry Parkes Way, Brolgan Road and London Road is also possible, west of existing Coopers Road.

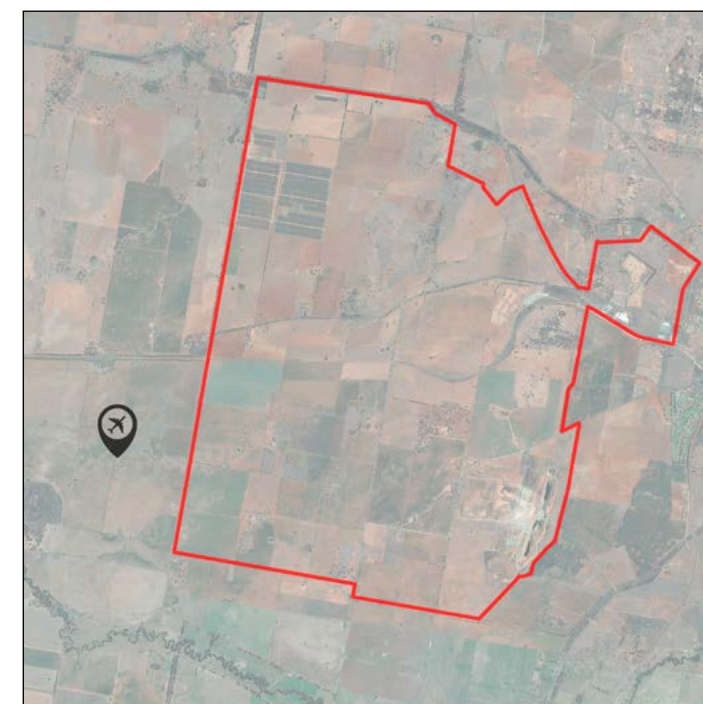
Disadvantages of this option are: impacts on future rail terminals envisaged in this area, and the additional bring forward cost of requiring three road-rail crossing upgrades to achieve the precinct ring road (compared to two initial crossings in the master plan concept).

Ring Road Enabling Precinct Development

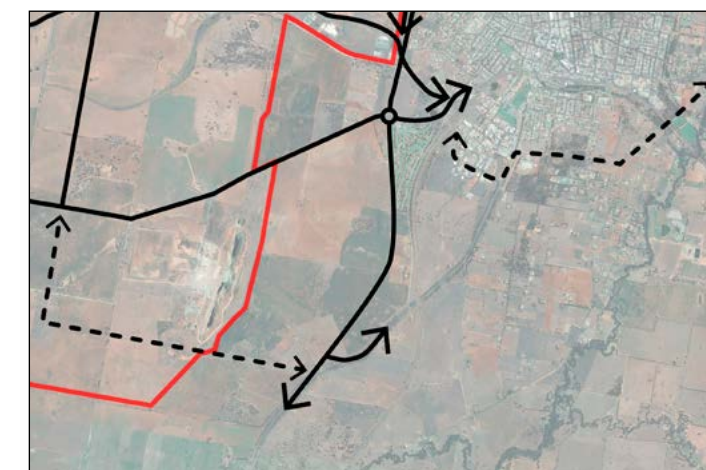


- _ In combination with the proposed Newell Highway (Parkes) Bypass, expected in the short term, the concept of a Precinct Ring Road is suggested as an enabler for Precinct development.
- _ The Ring Road would comprise Brolgan, New Coopers and London Roads (and Newell Highway/service roads).
- _ The Ring Road would provide internal Precinct connections north-south across the railway to access the Pacific National and SCT rail terminals for all users.
- _ With two major access points at the Precinct's eastern boundary, the Ring Road provides flexibility and robustness including in emergency or breakdown situations, and during construction.
- _ The Ring Road, if built in the short term, would provide frontage to all Sub Precincts, allowing market flexibility around one piece of strategic transport infrastructure.
- _ The Ring Road would also provide a simple logic for different business 'addresses', with Brolgan the mixed industry and freight gateway, and London Road the address for the bigger and higher impacting resources and livestock industries.
- _ The Ring Road requires two road-rail crossings at Brolgan and New Coopers (the third crossing at Brolgan west of Coopers is only needed at a later date).
- _ Ultimately it is assumed that all three Precinct road-rail crossings will be grade separated. However short-term safe upgrade alternatives (e.g. boom gates, traffic signals) should be considered while the Precinct is in its early phases and flexibility is needed.

Airport Services (future/current) East-West Road Connections



- _ Parkes Airport is located a short distance east of Parkes, and offers limited passenger and general aviation services.
- _ An aspiration to achieve enhanced air services including international air freight capability (e.g. to export premium food products such as meat and dairy products) has existed locally for some time. A plan to upgrade Parkes Airport was approved some years ago but has not yet been implemented.
- _ Alternative concepts have been mooted to build a new international standard airport, inspired by Toowoomba's privately built Wellcamp Airport.
- _ An airport site has not been located within the Special Activation Precinct.
- _ Flat land west of the Precinct has been suggested as a possible future airport site, should demand, financing and regional airports policy suggest that a new airport is a viable project.



- _ Master Plan investigations highlighted the need for further consideration of east west connections between the SAP, Parkes, Parkes Airport and Henry Parkes Way towards Sydney.
- _ All existing roads traverse Parkes town centre (with some difficulty including at rail crossings). The proposed Newell Highway Bypass will reduce but not eliminate town centre pinch points for freight.
- _ An east-west road route has been suggested south of Parkes, and should be investigated further.
- _ Subject to the take up of development opportunities within the SAP, a southern road connection south of Westlime into the SAP may also be worthy of future consideration.

5.8 Walking + Cycling Network

Creating a logical recreational and shared path network

“Integrating and designing coordinated walking and cycling routes will help create a people-focused and scaled experience for the Precinct, also offering opportunities to integrate with green infrastructure and cultural design objectives.”

Overview

Major Precinct roads are proposed to incorporate shared walking and cycling paths (on one side) to provide for safe pedestrian and cyclist access.

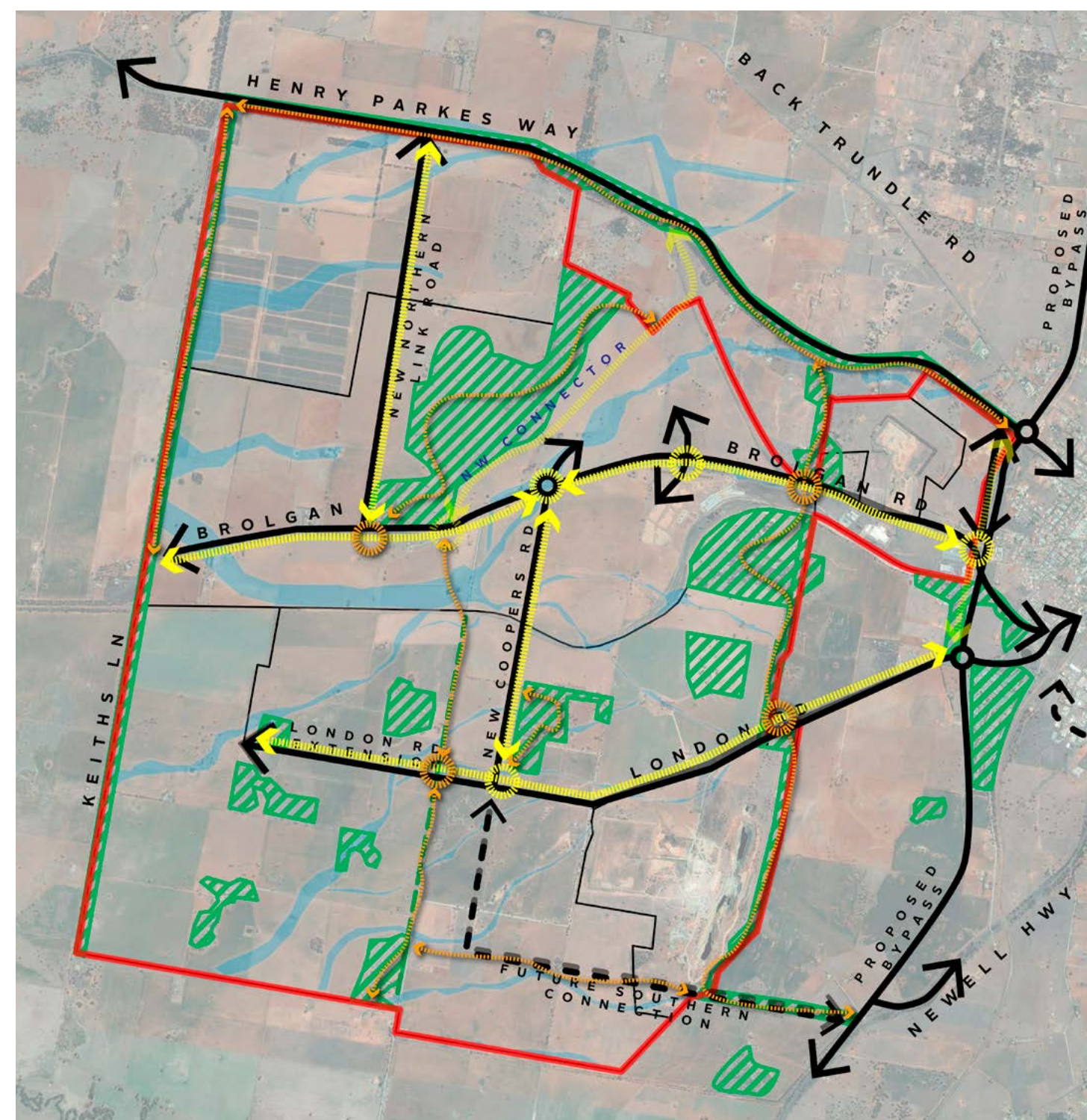
Opportunities also exist to create recreational trails in some locations including existing Coopers Road (when replaced by New Coopers Road), Travelling Stock Routes, and larger areas of vegetation retained.

Yellow - shared use paths min 3.0m wide with 0.5m clearance either side

Yellow circles - key junctions and opportunity for nodes including signage, interpretation, rest points and orientation

Orange - new meandering recreational paths - could be 3.0m wide shared use as well with 0.5m clearance min each side. Design could be informed by the Aboriginal Planning Principles and represent a good opportunity to tell the Wiradjuri stories of the Precinct and region

Orange circles - key junctions and crossings for the linear park trails





5.9f Road and Public Realm Design

Principles, precedents and road cross-section concepts

“In a very large precinct like Parkes SAP, where buildings and roads are far apart and often experienced from a passing car or truck, we only have limited opportunities to make design statements that get noticed, and that speak positively of the place.”

Design opportunities

Designing and building good quality roads, buildings, infrastructure, public realm and landscapes will be important as the Precinct develops, particularly as objectives of the project include:

- *create direct and pleasant street links, and connected green spaces*
- *Ensure future development builds on and creates a distinctive character for the Parkes township*
- *Attracting exemplar businesses with aligned corporate and social responsibilities to the Precinct's Vision and Aspirations.*

Design opportunities exist in both public and private realms with particular attention drawn towards the design of:

- roads and infrastructure
- signage and markers
- industrial buildings
- landscapes including public spaces and green infrastructure
- integration and expression of potential Wiradjuri cultural expressions into public infrastructure and public realm design, and architecture.

Best practice design for all modes of transport infrastructure including roads is also essential to provide and accessible, safe and attractive Precinct.

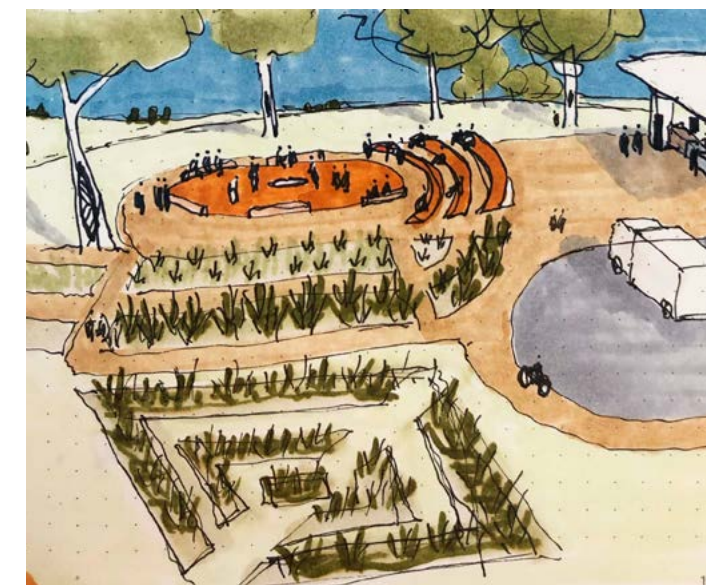
This section includes a number of design precedents and road cross-section concepts to be further developed in Precinct implementation.

Wiradjuri Cultural Recognition in design

WSP's Wiradjuri Country Aboriginal Planning Principles report highlights a number of opportunities to integrate and celebrate Wiradjuri culture in the development and operation of Parkes SAP, especially in the context of public realm design, and in some cases architecture.

Opportunities

- A memorial garden based on Wiradjuri planning principles near the main Parkes SAP gateway, Brolgan Road and the overpass associated with the Newell Highway/Parkes Bypass.
- Murals associated with the major road bridge in the Proposed Newell Highway Bypass overpass, depicting the Wiradjuri painting patterns.
- Markers identifying the Parkes SAP entry and other Sub Precinct entries.
- Confirmation of key sites within the Parkes SAP as 'keep sites'.
- Consideration of integrating Wiradjuri patterns and influences into the Design Guidelines, and future architecture and public realm projects.
- Engagement with Aboriginal community emmebers and leaders at all stages of design and implementation.



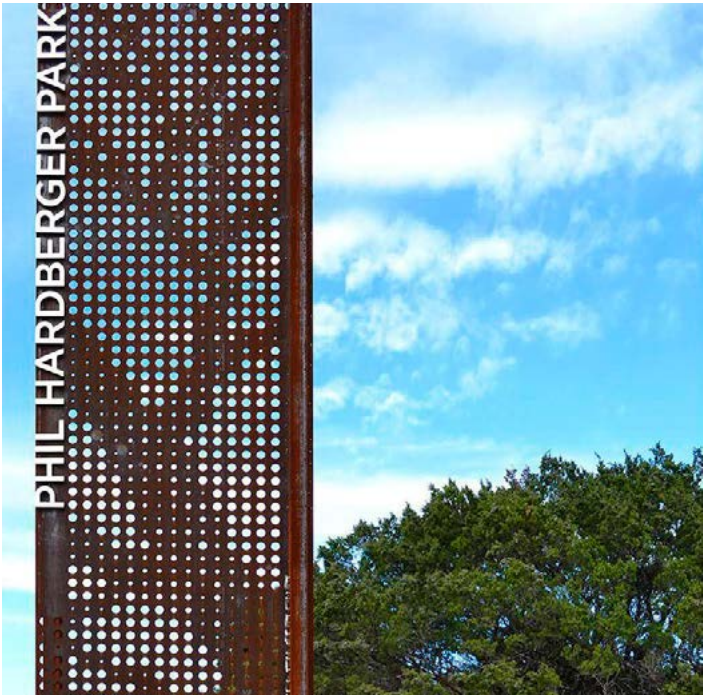
Concepts from Wiradjuri Country Aboriginal Planning Principles - Parkes Special Activation Precinct Wiradjuri Country (WSP, June 2019):

- concept for a memorial and garden, that references Wiradjuri burial ground (top), tree scar patterns make iconic treatments for a landscape (middle); iconic building mural using Duncan Smith's art to acknowledge Wiradjuri Country (bottom)

Signage



Bold site markers will assist broader orientation, branding and navigation



Precinct signage and orientation at a vehicle scale, can reflect local context and incorporate public art

Gateways/Bridges



Roads, bridges and gateways designed at a large scale will create better places and experiences (DPTI)



Night-time lighting will assist orientation and navigation (DPTI)



Gateway signage integrated with landscaping (DPTI)

Buildings



Simple and bold building architecture



Architectural forms on key sites

Landscape/urban design



Sympathetic, considered public domain design (Hassell)



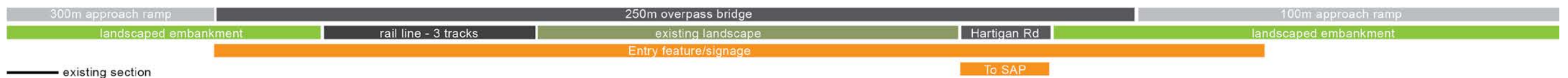
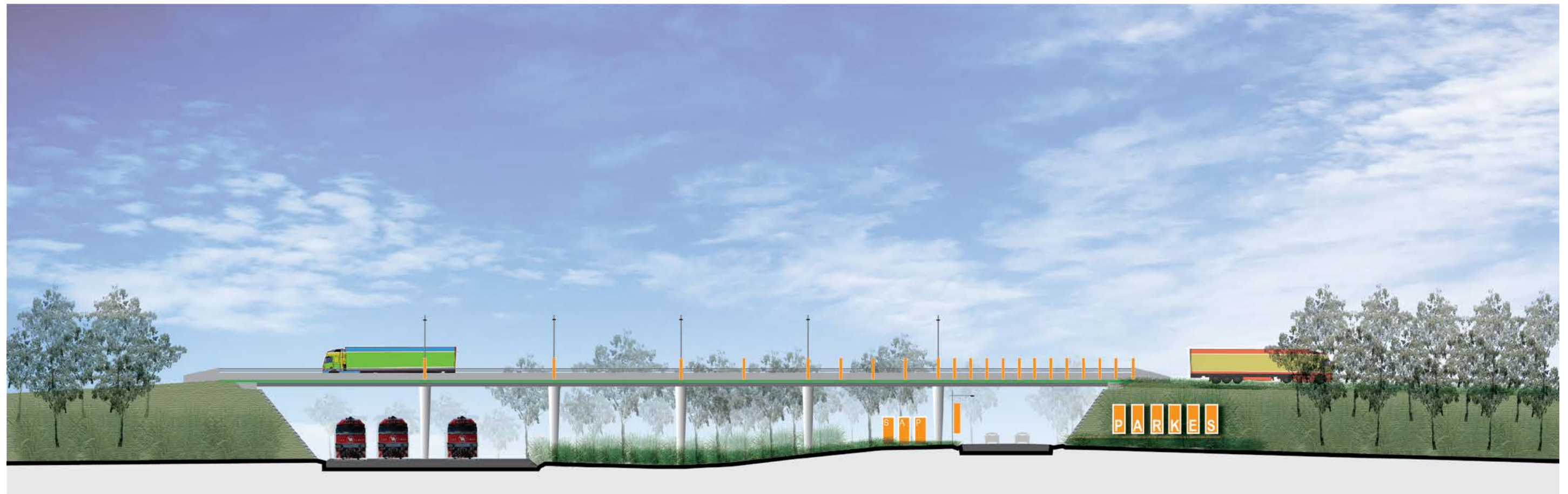
Viewing platforms can be integrated into key buildings or as part of the visitor experience



Consideration of the spaces between buildings and all weather outdoor spaces

“This important gateway highlights the extensive bridge structure required to bridge both the rail line and Brolgan Road/Hartigan Avenue, offering capacity for markers, planting and signage.”

5.9a Hartigan Avenue at Commercial Gateway_Sub Precinct Section



Source: Google maps

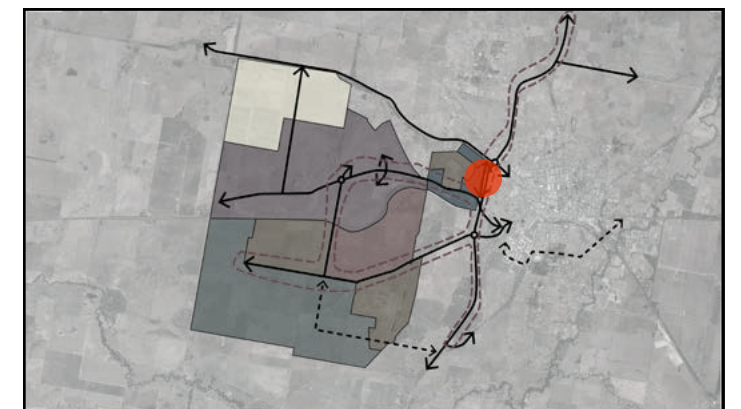


5.9b Service Road and Newell Highway (Parkes Bypass) Section

“The Service Road, west of the proposed Newell Highway Bypass, is separated by a landscaped buffer from Brolgan Road north to a series of roundabouts on Henry Parkes Way, and access for north south freight movement along Newell Highway.”

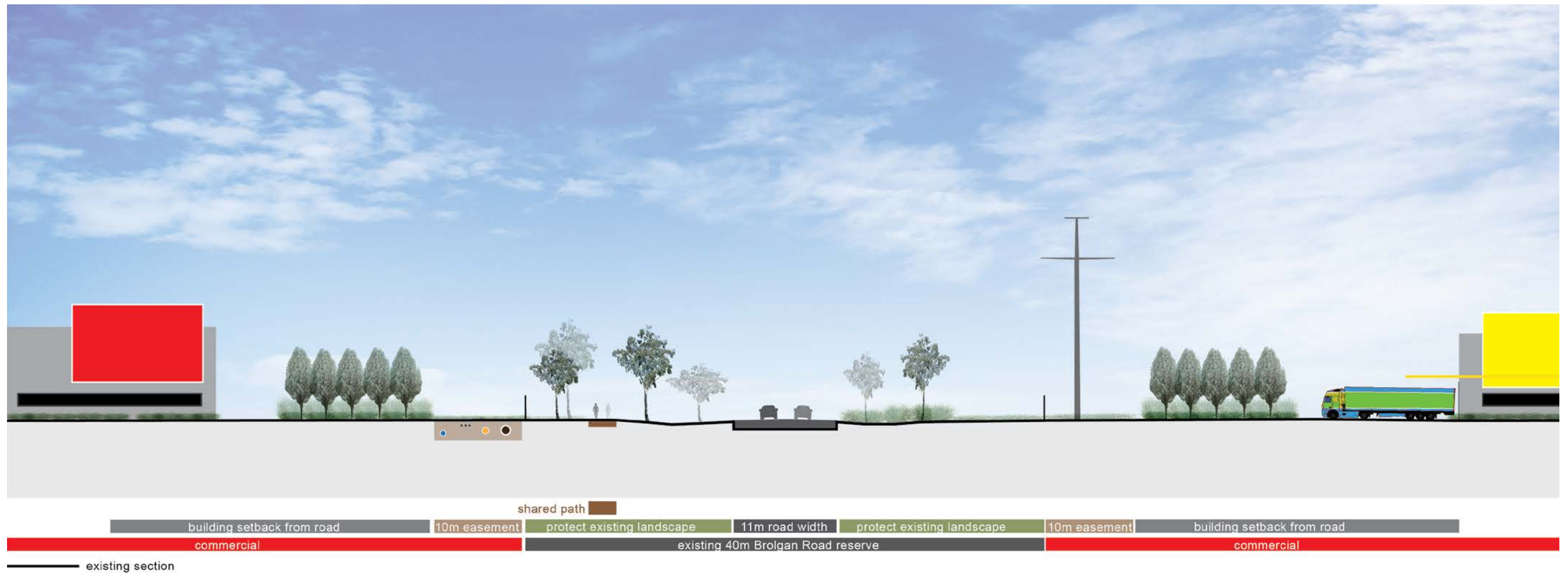


Source: Google maps



5.9c Brolgan Road Section

“The cross section comprises a 11m road pavement to cater for greater heavy vehicle numbers, with verges, swales and a shared path. A 10m service easements outside the 40 m road reserve provides generous landscape protection along Brolgan Road.”

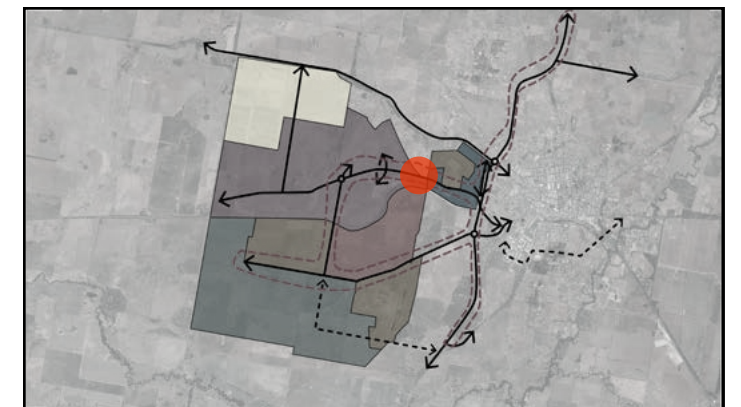


5.9d Brolgan Road crossing Parkes-Narromine Railway Section

“A long section of Brolgan Road, showing elevated land to the east, crossing the rail corridor allowing for double-stacked containers, with a longer western embankment descending into the Regional Enterprise Sub Precinct.”



— existing section



“The cross section shows a 11m road pavement, generous landscaped shoulder and services alignment within a 40m road reserve, with adjacent stormwater detention basin.”

5.9e New Coopers Road
Section



Source: Google maps



Section 06. Implementation

Section 06 discusses some of the ‘who, when and how much’ questions that will be addressed in project implementation.

Issues include infrastructure and services and their staging but go further to show the integration required through partnering, sustainability, cost and risk. An overview of future Design Guidelines is also provided.

Use this section to understand how the Structure Plan will be translated to a successful activation precinct.

6.1 Implementation

Further steps and actions to implement the Structure Plan

“Achieving the vision will require a coordinated and long term implementation programme involving the Precinct ‘manager’, state government departments, Parkes Shire Council, developers and businesses.”

Achieving the vision

This Precinct vision encapsulates the four aspirations of:

- Australia’s largest inland freight and logistics hub
- The region’s most advanced manufacturing and agribusiness enterprise precinct
- Australia’s leading circular economy precinct and first Eco Industrial Park
- Streamlined planning processes.

Inputs to a comprehensive implementation plan

Coordinated action will be needed to ensure prospective development and investment will remain focused on Parkes over time and in the face of alternate regional sites being offered.

A comprehensive implementation strategy will involve the following necessary actions, none of which on its own is considered sufficient to propel the SAP forward into a sustainable investment area:

- Identification of a **staging plan**, including, initiation of the ESD strategy, clarification of support for investors and community involvement.
- **Infrastructure and services provision** involving an interim and ultimate approach to key provision of major cost items.
- Ensuring **partnering mechanisms** are in place to integrate approval processes and ensure investors have assistance in establishing at Parkes.
- Recognition and **action on ESD aspirations** for Parkes SAP, demonstrating bona fides by early action related to, for example, the major concern of energy costs.
- Consideration of **costs identified to date** for the Final Business Case.
- A pragmatic **identification of challenges and risks** to the SAP, and mitigation required to reduce risk levels.

These actions are examined in this section and a number of priority actions are suggested which together should accelerate SAP growth, generating the early momentum to attract major catalytic investment, with the support and service industries following.

Aims of the staging plan

A major aim of the staging plan must be enabling of Precinct development at scale. At the same time, cost effective (affordable) infrastructure strategies are needed, as well as providing flexibility for capturing investment from the both diverse industry sectors identified, and other unanticipated investment approaches.

The staging plan will therefore include:

- Contemporary levels of road and utility provision to the areas identified for growth in the Regional Enterprise Sub Precinct focused on the SCT and Pacific National areas, including rail terminal overlay areas, complimenting and leveraging the significant private sector investment in the SAP.
- The Ring Road construction linking Brolgan, Coopers and London Roads, providing access to the southern major catalyst industry areas including the waste/ recycling and intensive livestock agriculture sub-precincts.
- Energy cost action – these costs are a major barrier to business investment in regional NSW and beyond. Action required to procure an operator for a commercially based inset power network as part of initial staging.
- Water supply certainty for major catalyst uses, clarifying capacities and network extensions for investors.
- The Commercial Gateway Sub-precinct for early wins, with Council capacity to offer serviced allotments along Brolgan Road to smaller commercial first movers, plus establishment of a major service station.
- Community consultation as part of marketing and branding should be part of all stages, but particularly in relation to major catalyst uses to ensure the ‘social licence’ obtained to date by diligent work from council, businesses and State government is maintained.
- Indicative ten year plans indicating the orderly sequence of the SAP’s development, integrating with the 20 year ‘Super Stage’ and 40 year stage required in the Final Business Case.

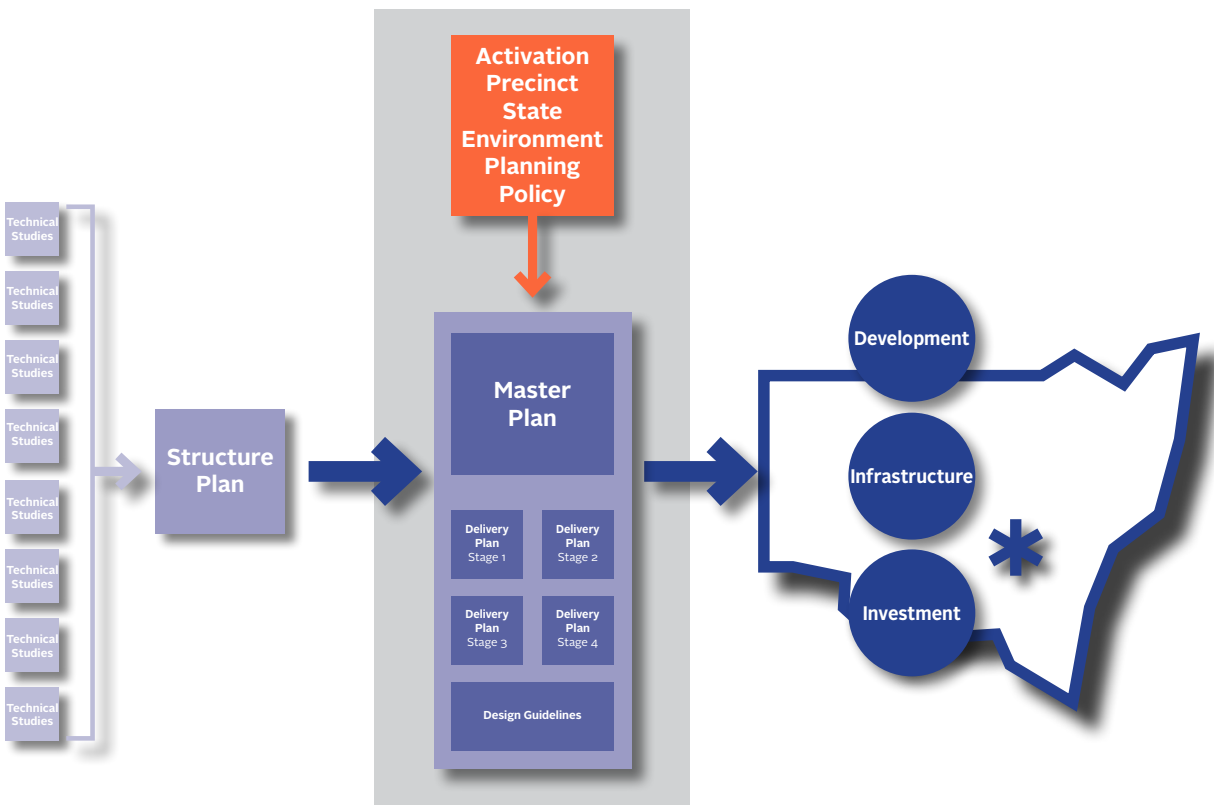


Diagram highlighting relationship between this Structure Plan, the SEPP and Master Plan, and project delivery

Indicative Stage 1



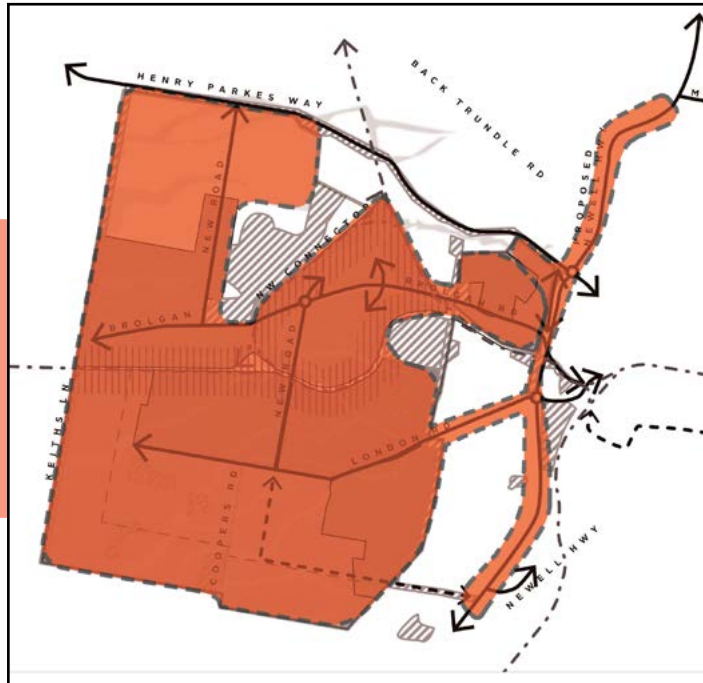
2



3



4



Infrastructure and services

Roads and services are critical to investment attraction. Innovation in service provision is considered an additional necessary condition at Parkes.

Action has already occurred with Inland Rail connectors to the Sydney-Perth line under construction, new services being laid along Brolgan Road to the core freight and logistics (Regional Enterprise Sub-precinct area comprising SCT and Pacific National). Brolgan Road will also be upgraded as part of this ‘Package 1’.

Careful consideration of the timing of additional services installation and road construction forming Package 2, over the next five years and beyond is required. Considerations include:

- An interim program of service extension and road upgrades until large investment e.g. Energy from Waste or an abattoir is operational.
- This would involve construction of the ‘Ring Road’ – Brolgan Road- Cooper Road -London Road, potentially without some of the large cost items involving grade separation of rail and road, with safer level crossings (for example boom gates and lights) installed for a initial period.
- Land availability is crucial to attracting investment. This means serviced, accessible, available land enabling prompt investment decisions from business.
- Currently serviced and accessible land is likely to be available initially in selected SCT and Pacific National owned areas and it is unclear what options might be available wither for sale or lease. A more diverse offer of serviced land is desirable as part of early staging in as many Sub Precincts as possible.

- Land ownership or vendor diversity is also crucial for investment attraction. Alternative vendors are necessary particularly for the major high impact catalytic uses which attract a number of service and support industries needed for symbiosis.
- Whilst private land owners may be prepared to negotiate and sell land, public purchase of key land areas for major industries, focussed on areas south of the east -west rail line in the SAP is also desirable, particularly for foreign direct investment (FDI).
- Green and blue infrastructure formalisation for protection and promotion as part of the offer to investors is considered a necessary condition for success.
- Innovation in the commercial provision of competitive energy and water is also critical in accord with the ESD Strategy.

Partnering

Good governance will rely on collaboration between the Parkes Shire Council, the proposed Development Corporation entity and key land owners in the SAP. For major high impact investment the involvement of the Environment Protection Authority in initial stages is also desirable.

Partnering implementation should include the following actions.

- Boosting investor confidence by the existence of a streamlined planning policy and approvals system AND a concierge service provided by a Development Corporation or similar body with power to guide the nature of SAP development.
- The person to person, government to business relationships are considered the priority in conjunction with underlying regulatory simplification. Close liaison and power-sharing between the three key entities will be critical with an initial ‘task force’ approach recommended.
- The special SAP SEPP will provide an incentive in itself for investment, addressing many of the common concerns of applicants with polices, regulations and variable interpretations.
- Development standards, a delivery plan and complying and exempt land use lists, connected to the SEPP are necessary to successful implementation.
- Grants and incentives will always be a consideration for successful implementation of the master plan for an innovative eco-industrial park which is in a ‘greenfield’ condition.
- Investment attraction programs and personnel will require coordination, ranging from local liaison and monitoring of business expansion to streamlining paths for major national and FDI. The roles for these programs and other governance activity will require clarification and agreement to present a seamless set of services.
- Identification and use of SAP champions has been used to great effect. This must continue through implementation.

ESD Strategy

- If an Eco-Industrial Park concept is to be a central aspiration of the Parkes SAP then early action in this area is desirable. If this action addresses just one of the major concerns of most businesses - energy costs - a strong argument can be made for immediate work on implementing an inset energy network.
- Setting up this network would be driven initially by the public sector or Development Corporation but offered as a commercial business for private sector operation in the future.
- Community infrastructure development to support SAP investment should be an early part of an ESD strategy, determining how housing, social services and labour supply requirements will respond to rates of SAP growth. Council may be best placed to lead action in this area with Development Corporation support.
- Other ESD actions can also be taken in terms of formalising vegetation protection and confirming a system of water conservation and re-cycling, minimising potable water use.

Costs Estimates to Date

- Costs are a paramount driver for implementation. Costs identified to date may be conservative and need refinement based on local conditions and broader economic contexts in line with agreed staging.
- The detail of the Structure Plan provides a sound base for refined costing as part of a Final Business Case process, highlighting the major services and infrastructure required for the ultimate plan. Staging to anticipate and match investment will be very important to manage costs.

Challenges and Risks

CHALLENGES AND RISKS

RISK	MITIGATION MEASURE	RISK LEVEL
Implementing a complex SAP with a ‘4 in 1’ vision for more freight and logistics activity, regional value adding, an eco-industrial park and streamlined planning processes	Constant oversight by special purpose partnering corporation	Low
Disruption caused by major service and road works and disruption through tech-nological advances	Detailed master planning and implementation	Low
Accommodating a potential doubling of the Parkes population by 2041	Identify and implement land, services, interim and permanent housing and community infrastructure solutions which may be required	High
Providing a local/nearby labour force matching SAP business requirements	Through the Country University program anticipate the potential resources required for local/regional training and skills development	High
Offering competitive utility prices especially for energy	Set up a commercially based inset energy network	Low
Providing sufficient competition in serviced land provision considering location, size and tenure	Government to secure key areas of land, particularly for catalyst uses and as an alternative to private land	Low
Maintaining a social licence from the local (and state and national) community for major catalyst uses with high environmental impact with capacity to impact on branding	Keep the community informed and involved on the benefits and potential impacts of major catalyst uses	High
Economic downturns slowing demand and activity across the key industry sectors	Ensure the plan has a diversity of opportunities for the widest range of business investment	Medium
Providing all required services including fast internet, 5G communications capaci-ty and optic fibre	Provide telecommunications connections in early infrastructure package	Low
Short term decisions not aligned with the master plan, impacting on surrounding land use potential and creating over-investment in services and infrastructure	Constant oversight by special purpose partnering corporation	Low

Conclusion _ Priority issues to address in implementation

1. **Precinct coordination** including partnering, investment attraction, and concierge services between Development Corporation, State agencies, Council and key land owners such as SCT and Pacific National.

2. **Major enabling infrastructure package to access all Sub Precincts** for maximum investment attraction (Ring Road with potential deferral of grade separations until demand warrants expenditure).

3. **Purchase of strategic land parcels** aligning with staging.

4. **Competitive energy prices** and other utilities (such as telecommunications, water) across the Precinct.

5. **Action on flagship ESD strategies including Eco Industrial Park**, protection of significant biodiversity areas and stormwater detention.

6. **Serviceable land availability at all times** in all Sub Precincts. Including market awareness of up-coming serviced, accessible land opportunities.
7. **Ongoing community engagement to develop and maintain a ‘social licence’.** Parkes Special Activation Precinct brand and coordination of engagement strategies by all partners.

8. **Investment attraction focus on catalytic industries e.g. Energy from Waste, abattoir** with a view to attracting major operators and FDI.

9. Planning for anticipated **housing and skills** needs in Parkes and region.

10. Introduction of **new SEPP policies and guidelines** for the SAP.

11. Continuation of **investment attraction programs**, including advice to investors on **grants and incentives** available and linking up potential circular economy candidates.



6.2 Design Guidelines Development Standards

“Creation of well considered Design Guidelines will assist all stakeholders to understand and help achieve the Vision for the Parkes Special Activation Precinct. This overview identifies topics and outcomes that, based on the Structure Plan investigations, could form the basis for a comprehensive set of Design Guidelines for Parkes SAP.”

Introduction

At the centre of the proposed streamlined statutory planning process for Parkes SAP is a Activation Precinct SEPP and which will give statutory weight to:

- _ A Master Plan that brings together the Structure Plan detail, sub-precincts, permitted and prohibited land-uses within the sub-precincts, and the principles for creating development standards
- _ Land-use tables
- _ Development Standards.

Alongside this framework is an intended statutory role for a Development Corporation to authorise or agree that proposed development is consistent with the above documents in terms of use type, location, sequencing and design.

The Development Corporation may create a Delivery Plan, Design Guidelines and Staging Plans for each SAP in accordance with the Master Plan, land-uses and development standards for each SAP.

The Corporation may also have a role to ensure the proposed development complies with relevant statutes such as the Building Code, Local Government Act, Roads Act and POEA Act.

The Design Guidelines will help establish and maintain a consistent, high quality and functional environment in the SAP which will be necessary to achieve ESD accreditations, as well as an integrated and successful built outcome.

The Design Guidelines need to be agreed by all relevant levels of government from the commencement of the SAP as a statutory entity. Compliance with the Design Guidelines will be required to achieve complying or permitted use status and will precede submission of a planning application.

Some Design Guidelines may become mandatory criteria, others may provide best practice design guidance.

Urban Design + Master Planning

- _ Creation of a high standard of industrial architecture.
- _ Creation of well proportioned, designed and consistent public realm design.
- _ Site legibility including buildings and signage.
- _ Orientation of new buildings and well considered industrial architecture.
- _ Site permeability through multiple access and egress opportunities.
- _ Quality place creation – including through cultural heritage responses.
- _ Safe places through regulatory and feature lighting, security, emergency response planning.
- _ Demonstrate incorporation of Crime Prevention Through Environmental Design principles.
- _ Maximum 30% building site coverage.
- _ Maximum 40% hardstand site coverage.
- _ Minimum 30% pervious or soft site coverage, including green infrastructure. Combined these measure create a more open Precinct character, increased green areas, and reduced runoff.

Architecture and Site Design

- _ Consideration of contextual design to reflect the character of Parkes.
- _ Consideration of site massing of buildings and associated storage facilities.
- _ Distinguish front and main entry of buildings, with appropriate pedestrian scaled areas.
- _ Specify maximum and minimum site coverage ratios for varying lot sizes, landmark lots and corner lots.
- _ Meet front, rear and side setback requirements, also primary and secondary setback requirements.
- _ Incorporate orientation and passive solar design in proposals.
- _ Provide quality front façade material finishes.
- _ Specify front, side and security fencing and integration with soft landscaping and green infrastructure.
- _ Orientation and sun shading devices required for windows and glazed walls, ventilation.
- _ Provide lighting for safety and presentation.
- _ Specify loading, service and storage areas location and their screening.
- _ Provide bunding where major liquids are stored.
- _ Apply CPTED principles to site and sub precinct design.

Site Landscape and Amenity

- _ Minimum 30% site coverage for pervious surfaces.
- _ Specify landscaping approaches across site, including high profile areas (eg corners and main entry, side and rear boundaries, car parks, loading and service zones, side boundary micro-climate strips etc).
- _ Require native species planting to complement endangered species and significant vegetation areas.
- _ Site Landscape Plan including trees at maturity, landscaping and native vegetation areas.
- _ Use of recycled stormwater for all irrigation.
- _ Identify and create pedestrian scaled areas for rest areas and recreation, including shade, seating, lighting and passive surveillance.
- _ Minimise noise, dust and odour emissions to meet EPA agreed criteria.
- _ Creation of connected shared use paths with clear hierarchy and network.
- _ Ensure paths have connected shade and tree canopies for pedestrian/cyclist comfort, with appropriately sited rest points including signage, seating and lighting.

Roads, Access and Parking

- _ Ensure all streets and roads incorporate appropriately sized and designed pavements, verges, shared paths, service easements, including appropriate Performance Based Standard for heavy vehicles.
- _ Provide sufficient space in developments for truck access, marshalling, servicing and storage.
- _ Road layouts to minimise vehicle emissions (e.g. promote free-flowing movement) and where possible separate freight and passenger movements.
- _ Ensure all streets contain connected street tree canopies at maturity and/or native vegetation.
- _ Services easement to be provided for utilities and infrastructure.
- _ Easements provided to create connected green infrastructure corridors and protect significant stands of vegetation.
- _ Ensuring sites are clearly signed and incorporate wayfinding signage.
- _ Legible access and circulation within sites, including visitor and worker car parking areas.
- _ Identify crossover locations and shared access opportunities between sites.
- _ Specify parking design to meet ratios required.
- _ Plan pedestrian and cyclist access, for visitors and workers.
- _ Provide cyclist facilities - shaded and protected parking.
- _ Greening and shading of car parking, with stormwater collection on site, incorporating green infrastructure.
- _ Clear access to building entrances, with shaded footpaths.

Advertising Signage

- _ Must not flash, move, be objectionably glaring or luminous, replicate any road guide warning or regulatory sign or be prejudice to the travelling public.
- _ Materials to be used on the signs must be of a new appearance and in good condition.
- _ Limited to not more than 4 business identification signs (which may refer to more than 1 business within the building) or building identification signs (or both) of this type for the building so long as only one sign is visible on each elevation of the building,
- _ Must not project beyond the parapet or eaves of the building to which it is attached.
- _ Meet relevant Australian Standards for (but not limited to) structural design, wind loading and effects of outdoor lighting.
- _ Must not contain more than one freestanding sign for each street frontage of the lot on which the development is located that is more than 15m in width.
- _ Meet relevant Australian Standards for (but not limited to) structural design, wind loading and effects of outdoor lighting.
- _ If the sign is a business identification sign and is on land that is within 50m of land that is within a residential zone and the sign faces the residential zone—only be illuminated during specified periods (to be confirmed).

Drainage, Water, Energy, Waste, Construction Management and Fire Safety

- _ Coordinated flood way locations.
- _ Agreed precinct wide detention basin locations.
- _ Waste water treatment for each site.
- _ Compliance with ESD Strategy.
- _ Rain water capture from roofs, targeted reduction of non-potable water use for toilets, landscaped areas.
- _ Optimal sourcing of potable and industry standard water.
- _ Compliance with ESD Strategy through a water supply and efficiency plan.
- _ Targeted energy consumption improvement (of 30%) against agreed base case.
- _ External and internal lighting efficiency targets.
- _ Minimise waste to landfill.
- _ Recycling areas and proposals documented.
- _ Hazardous material management.
- _ Site management.
- _ Waste management.
- _ Water management.
- _ Construction standards.
- _ Fire Safety - Buildings and sites.
- _ Bushfire hazard management.



Appendix _ Illustrative Master Plans

Illustrative development potential for selected Sub Precincts



Parkes

Henry Parkes Way

SCT

Brolgan Rd

Sydney-Perth Rail

Pacific National

New Coopers Rd

“Pictured in the foreground, the Regional Enterprise Sub Precinct is the heart of Parkes Special Activation Precinct, accommodating a diversity of businesses including rail and road transport terminals, warehouses, advanced manufacturing, and food processing businesses. Brolgan Road connects the new development to Parkes.”

“South of the Sydney-Perth railway are the Resource Recovery + Recycling (brown), Mixed Enterprise (pink), and Intensive Livestock Agriculture (teal) Sub Precincts.”

Brolgan Rd

**Energy
from
Waste**

Rail terminals 1.8km+

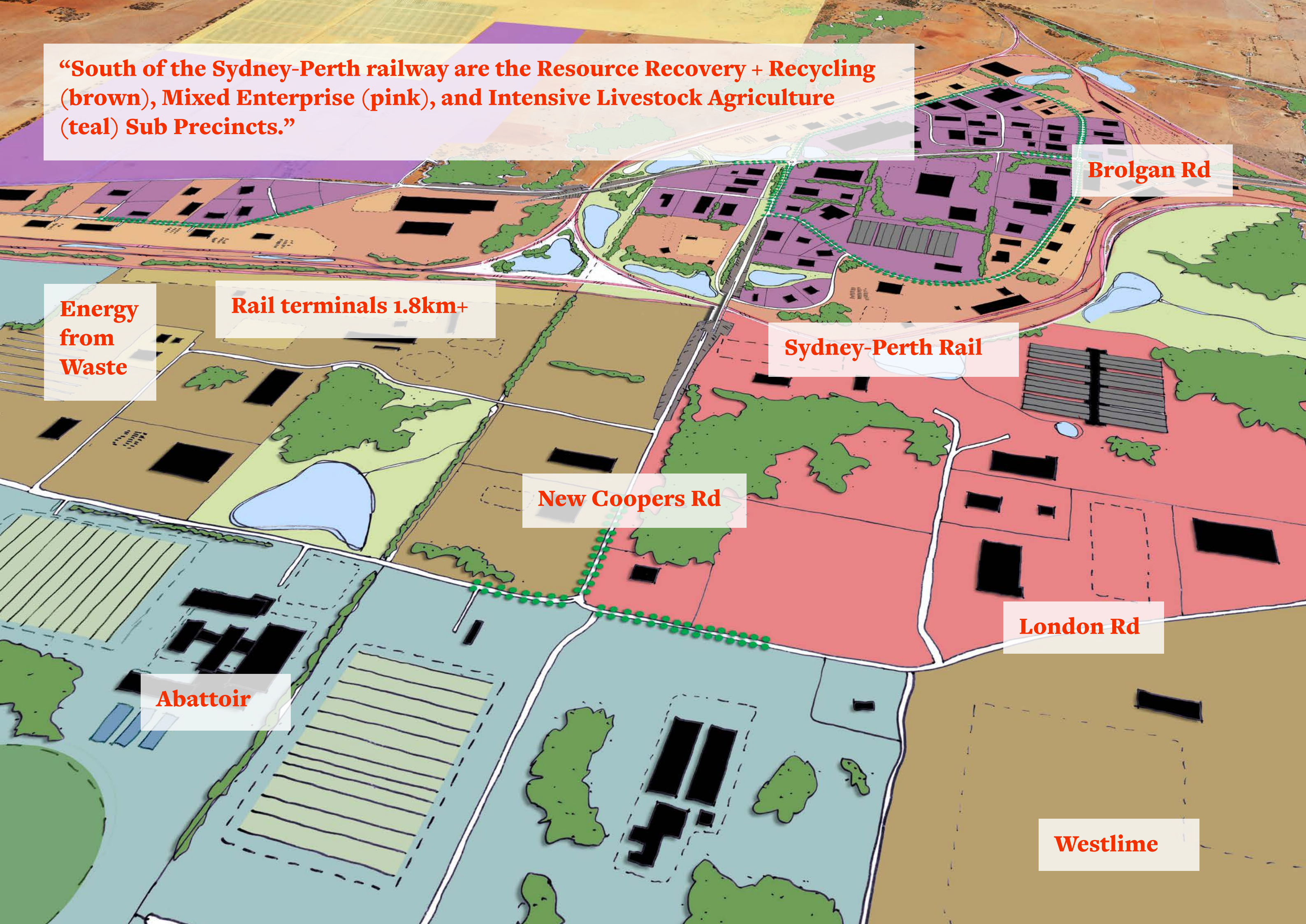
Sydney-Perth Rail

New Coopers Rd

London Rd

Abattoir

Westlime





Sydney-Perth Rail

“The 1227ha Intensive Livestock Agriculture Sub Precinct is intended for a large, advanced technology abattoir(s), and other livestock value-adding businesses. It is located 5-10km away from Parkes to the south west”

London Rd

Abattoir

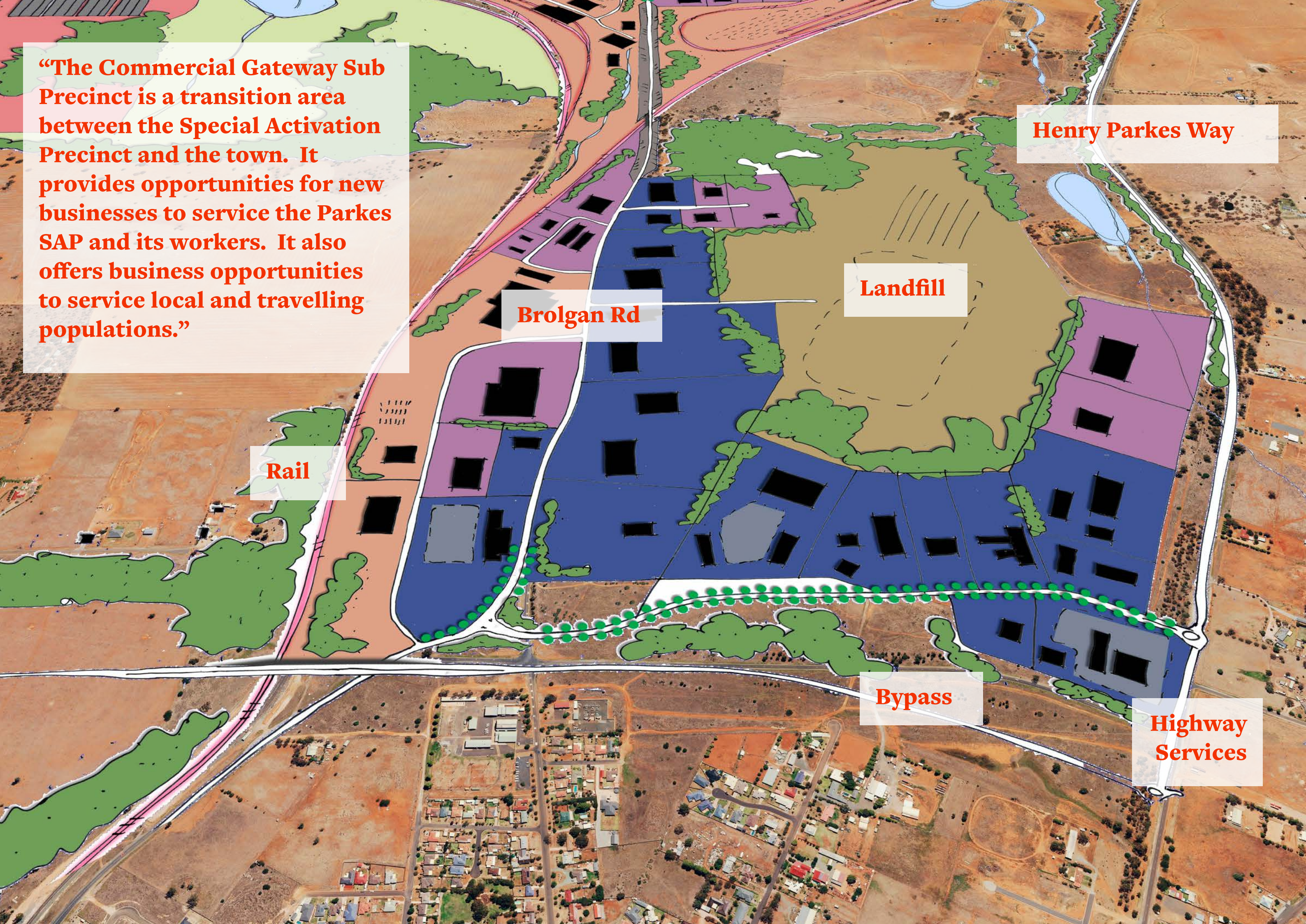
Feedlot

Mushrooms

Water reuse irrigation (1km from bdy)

Stormwater

“The Commercial Gateway Sub Precinct is a transition area between the Special Activation Precinct and the town. It provides opportunities for new businesses to service the Parkes SAP and its workers. It also offers business opportunities to service local and travelling populations.”



Henry Parkes Way

Landfill

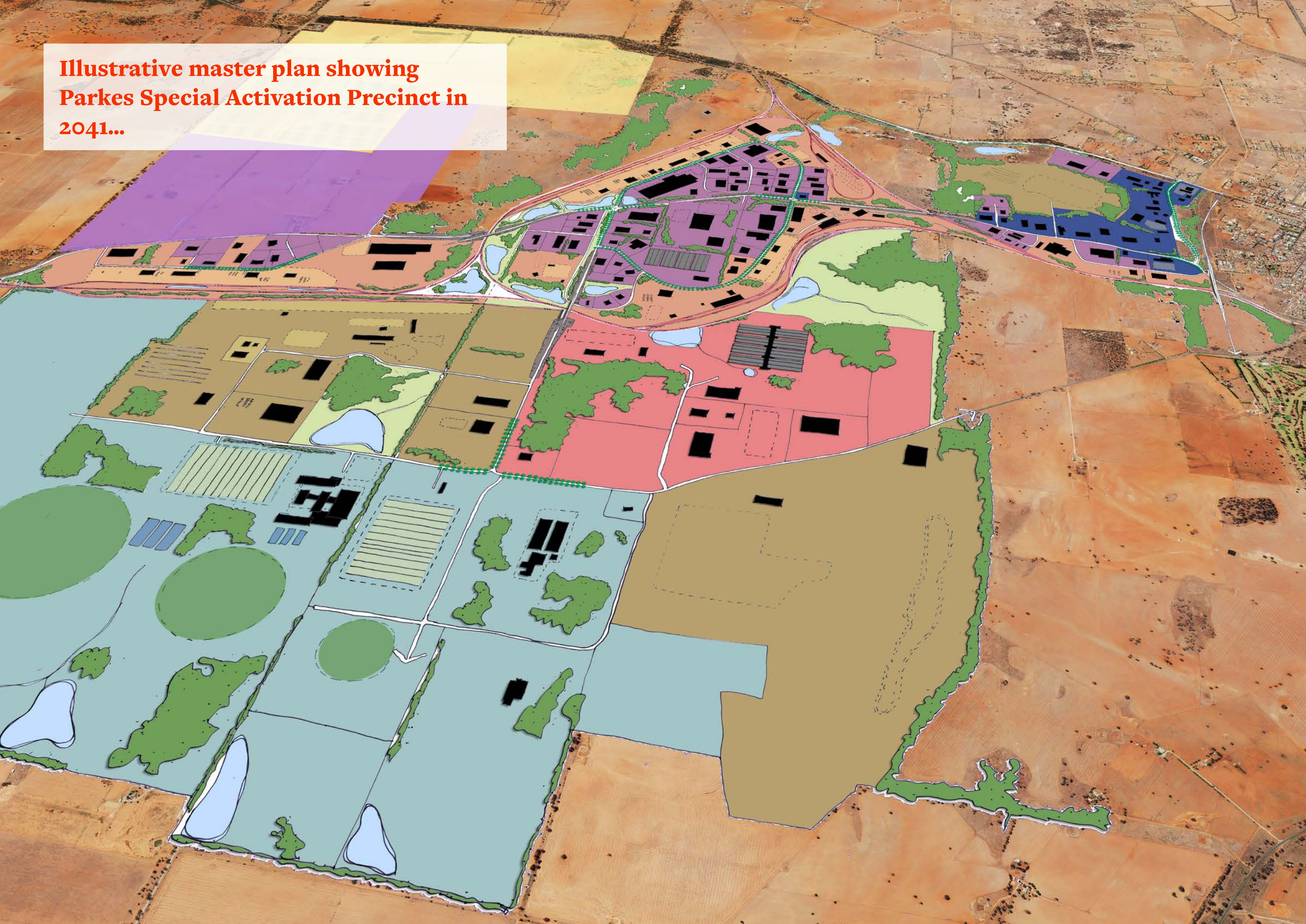
Brolgan Rd

Rail

Bypass

**Highway
Services**

**Illustrative master plan showing
Parkes Special Activation Precinct in
2041...**



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