

Carabooda District Structure Plan

Part Two - Explanatory Report

SEPTEMBER 2026



The Department of Planning, Lands and Heritage acknowledges the traditional owners and custodians of this land. We pay our respect to Elders past and present, their descendants who are with us today, and those who will follow in their footsteps.

This document was prepared with the assistance of CLE Town Planning + Design, Acumen, Cossill & Webley, Pentium Water, Pracsys, PJA and Western Environmental.

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Site Photo: View of northern site area from eastern site boundary

1. Introduction & Purpose

The Carabooda District Structure Plan ('DSP') is a strategic proposal that will deliver a significant supply of residential land for the growing North-West metropolitan corridor. The future community will be supported by local commercial, employment, conservation and recreation assets.

The Vision for the DSP is for a new town that delivers a diverse range of housing options for a variety of buyers, supported by modern facilities and services and enhanced by a best-practice approach to bushland conservation and a distinctive rural setting.

The DSP has been prepared in response to the WAPC's November 2024 decision to grant consent to its preparation, which was made in response to a request ('the Request') submitted in December 2023. The DSP's purpose is to guide the progressive urbanisation of the DSP area over the next 20 years. At completion, the DSP will support the delivery of approximately 9221 lots and 23,052 people, making it comparable to Ellenbrook in terms of scale and strategic influence.

Implementation of the DSP will bring significant benefit to the North-West corridor and Perth as a whole for reasons including:

- Short-term availability of land, with two-thirds of the DSP area being held by just six private landowners.
- Housing supply, with one in nine lots proposed to be prioritised for Government housing pipeline purchase.
- Environmental management. Nearly a quarter of the DSP area contains quality remnant vegetation proposed to be reserved, and a Conservation Management Fund is being set up. Demand for groundwater will reduce, to the benefit of Lake Nowergup.
- Employment and patronage to emerging centres at Alkimos, Eglinton and Yanchep.
- Increased utilisation of existing public transport and service infrastructure.

The DSP puts in place a framework for amendments to the Metropolitan Region Scheme and the City of Wanneroo's Local Planning Scheme (LPS), and the preparation of Local Structure Plans (LSPs). These processes will build upon the district-level detail in the DSP, which includes consideration of residential neighbourhoods, activity centres and catchments, a high-level movement network and the conservation estate.

The DSP consists of:

- Part 1: Implementation Section provides the framework for subsequent planning processes, including amendments to the MRS and LPS, and the preparation of LSPs.
- Part 2: Explanatory Section provides the rationale for the DSP and assists with its implementation by providing guiding principles, contextual information and an explanation of the intent behind particular DSP provisions.
- Appendices, comprising specialist technical reports on planning matters relevant to the DSP area.

Overall, the DSP brings together four years of work, particularly in respect of the environmental assets of the area, and puts in place a framework for a logical, well-located and unconstrained expansion area providing homes for a significant number of new residents along with supporting services and infrastructure.

1.1 Location

The DSP area is located approximately:

- Two kilometres east of the Alkimos Secondary Centre and railway station;
- 14km north of the Joondalup Strategic Centre;
- 14km south-east of the future Yanchep Strategic Centre;
- 38km north-west of the Perth CBD.

The DSP area is between Wanneroo Road and Old Yanchep Road (the future Whiteman-Yanchep Highway alignment) and obtains external road access via Romeo Road to the west, Nowergup Road to the south-west, Wesco Road to the south-east and Carabooda Road / Cutler Road to the north-east.

The DSP's location adjacent to the Alkimos Secondary Centre and the broader North-West corridor of Perth, which at the time of writing was supplying 40% of Perth's residential lot supply, makes it readily connectable to existing transport and service infrastructure. It is a logical and sequential extension of the urban front, balancing the narrow, coast-focused nature of the North-West corridor as a whole.

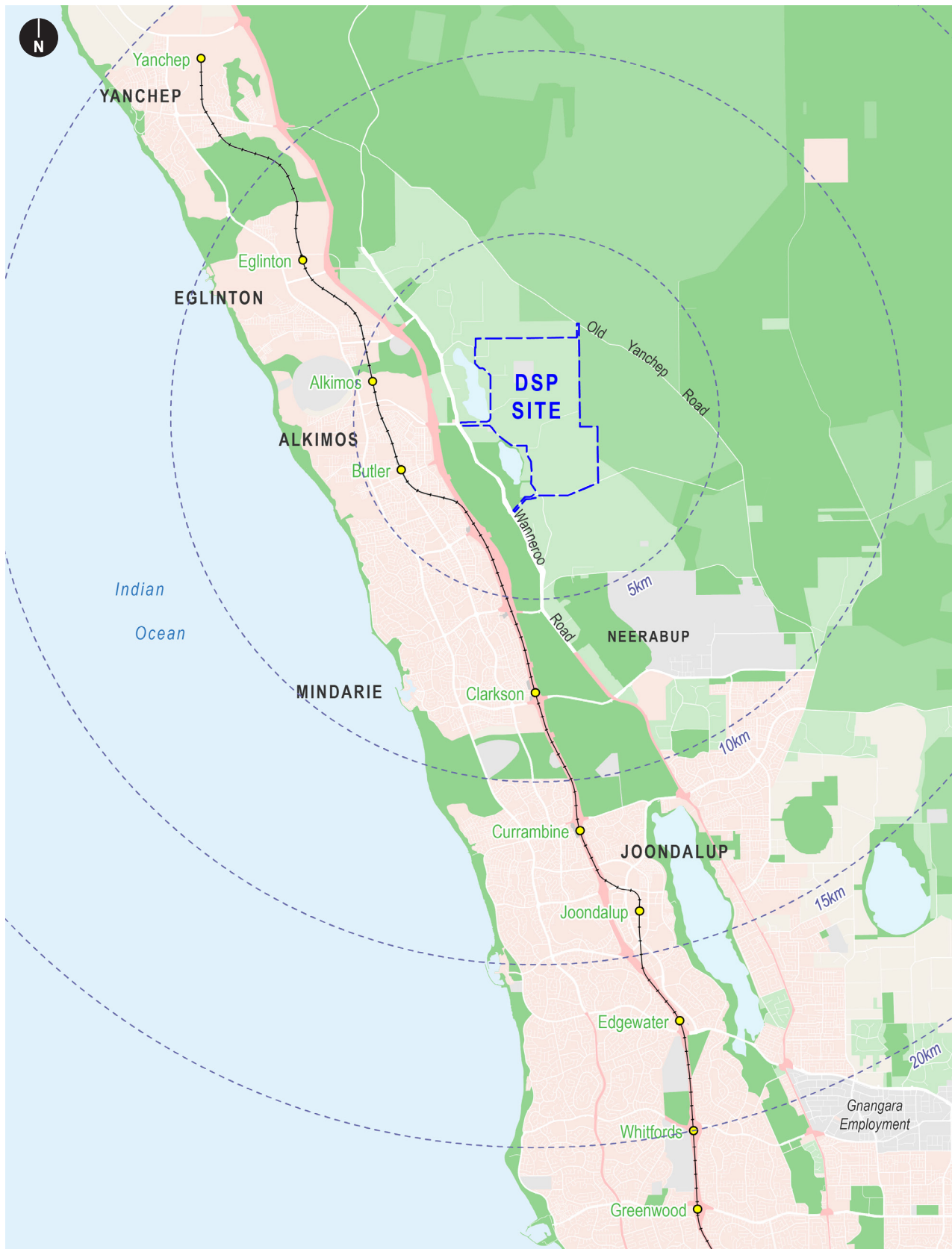


Figure 1: Location Plan

1.2 Boundaries

The DSP boundary was endorsed by the WAPC in its November 2024 decision to grant consent to its preparation. This was based on the following characteristics:

Western Boundary

South of Romeo Road, this boundary generally follows the natural features of Lake Nowergup and the related MRS 'Regional Open Space' reserve, with a strip of rural-zoned land excluded as a transitional interface and buffer to the future urban zone boundary.

North of Romeo Road, the boundary was delineated using a similar transition to the 'Landscape Protection' zone from the City of Wanneroo District Planning Scheme No. 2 ('DPS 2') via the separation of the DSP boundary by a strip of rural-zoned land.

Separation of the western DSP boundary from the 'Landscape Protection' zone and 'Regional Open Space' reserve using a buffer of rural zoned land retains the rural feel of land adjacent to Wanneroo Road and provides for tourism opportunities consistent with the local policy framework.

The recently-upgraded Romeo Road / Wanneroo Road intersection provides immediate infrastructure as the key western entry into the DSP area via Karoborup Road.

Northern Boundary

Carabooda Road provides a logical northern boundary for the DSP area, providing a road interface to the rural-zoned land to the north. The boundary leverages the existing Carabooda Road for access and connectivity to the future Whiteman-Yanchep Highway.

Eastern Boundary

The eastern boundary of the DSP area adjoins State Forest and, partly, Bush Forever Site 290. The eastern extent of the DSP area captures all existing rural-zoned land and enables the establishment of an appropriate and managed interface between the DSP area and the Gngara-Moore River State Forest.

Southern Boundary

The southern boundary of the Precinct is at Wesco Road, which provides a direct southern connection to Wanneroo Road via Nowergup Road and eastern link to Old Yanchep Road (future Whiteman-Yanchep Highway).

1.3 Legal Description of Constituent Lots

The DSP area comprises 65 freehold lots and various existing road reserves. The proponent for this DSP, Acumen Development Solutions, is authorised to act on behalf of the Carabooda Landowner Group. This body comprises just six members but represents 70% of the DSP area.

Acumen has also held discussions, and is providing updates to, the 34 landowners who are not part of the Carabooda Landowner Group.

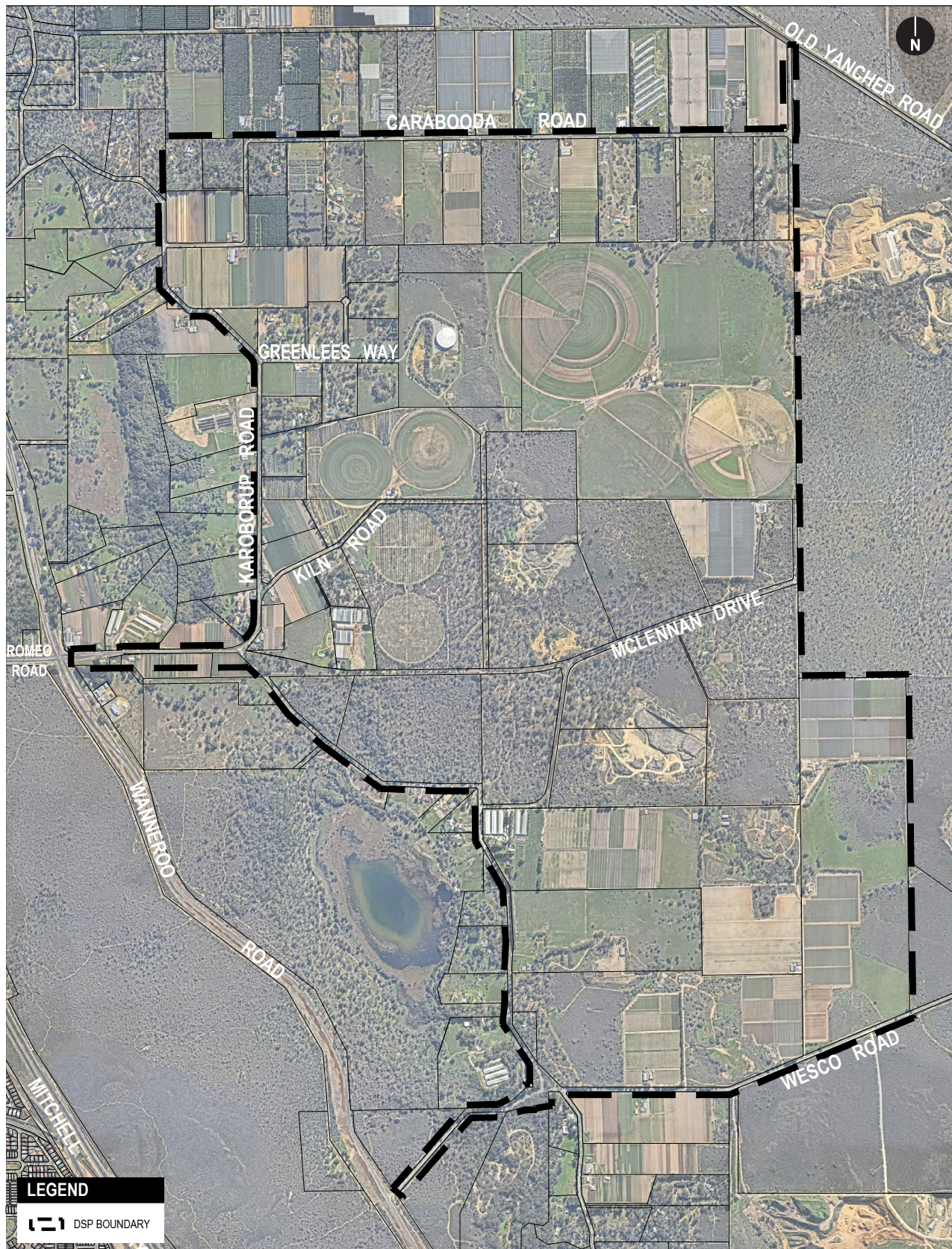


Figure 2: Site Plan (Aerial source: Nearmap)

2. Strategic & Planning Context

2.1 Perth and Peel @3.5 Million

The *Perth and Peel @ 3.5 Million* suite of policies was published in March 2018 and forms the spatial framework and strategic plan for Perth and Peel. Its purpose is to establish a blueprint to support a population of 3.5 million by 2050 through the implementation of four sub-regional planning frameworks. The DSP area is in the North-West sub-region.

2.2 North-West Sub-Regional Planning Framework

The purpose of the Framework document for each of the four sub-regions is to, by its own description, “establish a long-term, integrated planning framework for land use and infrastructure to guide future growth across the sub-region”.

The Framework is now nearly 7 years old and based on even older inputs, and to ensure ongoing land supply, it is imperative that further opportunities for urban development continue to be explored and considered. The location of the DSP area in the context of existing and planned urban areas under the Framework is illustrated on Figure 3.

The North-West corridor currently supplies 40% of the residential lot supply for Perth as a whole, up from 36% in late 2023. Land supply from the East Wanneroo DSP area, which is the only Urban Expansion area in this Framework, is emerging in a piecemeal manner because of the fragmented nature of landownership in that area and the resultant constraints to access and servicing. East Wanneroo is described as a 50 year development cycle.

The consistency of this DSP proposal with the objectives of the Framework was agreed by the WAPC through its November 2024 decision to grant consent to its preparation. The objectives, and the performance of the DSP area against them, are detailed in sub-sections 2.2.1-2.2.7 below.

2.2.1 Consolidated Urban Form

In the context of the Framework’s objective of a consolidated urban form, the DSP area is beneficial. The Framework observes that this sub-region’s “coastal lifestyle and relative affordability have resulted in it becoming one of the fastest growing areas in the Perth and Peel regions” during the 2010s. This trend has continued and the sub-region is currently providing 40% of residential lot supply across Perth and Peel.

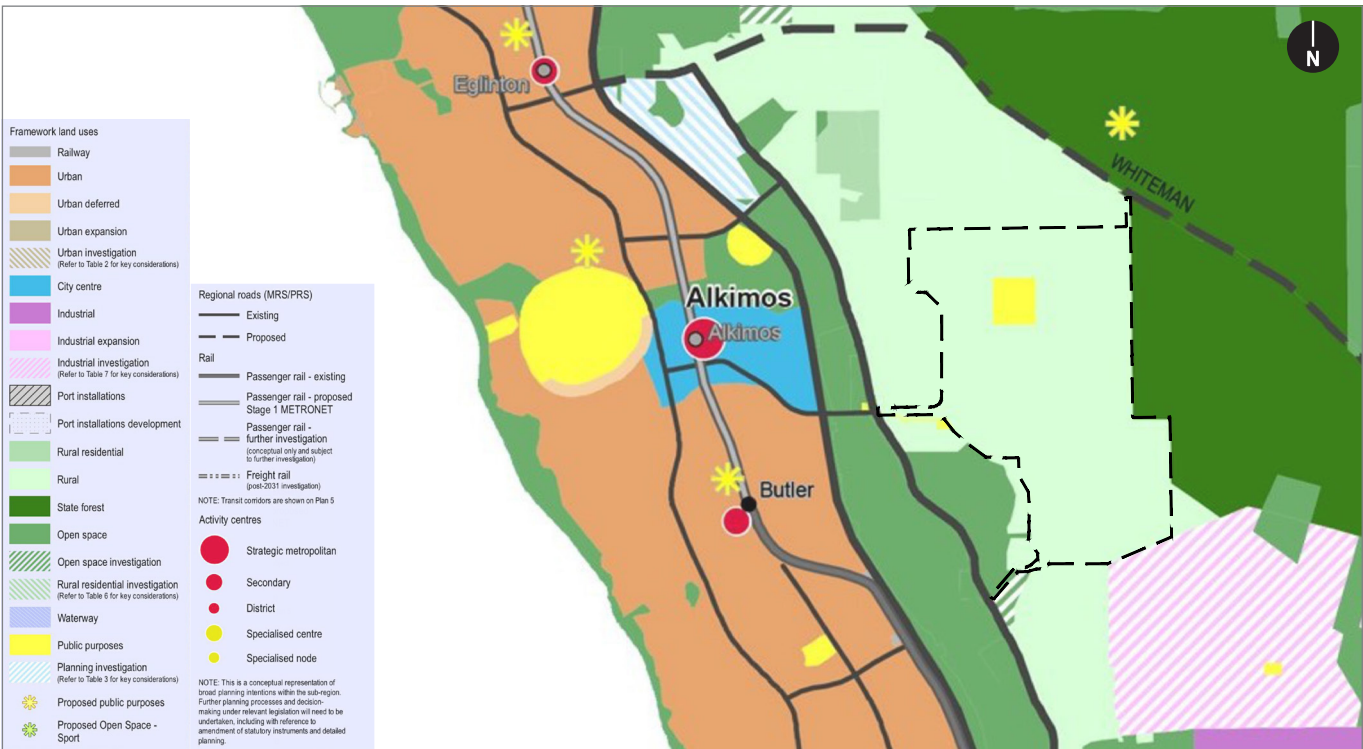


Figure 3: Sub-Regional Planning Framework (Source: DPLH)

Assuming the Frameworks' 47% infill target, 53% of dwelling supply needs to come from greenfield sites and demand for greenfield sites in this corridor is strong. There is a pressing need to make more land available for development.

The Framework also notes that there is a focus on *"minimising environmental impacts"* and *"making the most efficient use of transport networks, service infrastructure, employment land and key community / social infrastructure facilities."* The DSP delivers on these objectives strongly and comprehensively, being:

- Respectful of the significant environmental values evident across the area, with approximately 241.6ha of land, or 25% of the area, to be reserved for conservation purposes and a Conservation Management Fund to be set up to finance its ongoing care and maintenance.
- Within 2km of the Alkimos railway station and Secondary Centre, which makes it well located for future residents in terms of transport options, shops and services and catalytic for the expansion and evolution of the Secondary Centre.
- Readily accessible to the Mitchell Freeway (recently extended), Romeo Rd (recently upgraded and connected to Wanneroo Rd and Karoborup Rd), Wanneroo Rd (recently duplicated north of Romeo Rd), and the planned Whiteman-Yanchep Highway, making good use of existing and planned transport infrastructure.
- Readily connectable to existing service infrastructure, including:
 - The Alkimos Wastewater Treatment Plant is within 5km of the site and there are works underway to connect major gravity sewer mains under the rail corridor from the east.
 - The Alkimos Seawater Desalination Plant is scheduled to become operational in 2028.
 - There is a Western Power zone sub-station adjacent to the site at the corner of Wanneroo Rd and Romeo Rd. Existing distribution lines traverse the site and can be upgraded.
 - Major gas and telecommunications lines and in place along Wanneroo Rd and can be readily upgraded.
- Able to support employment opportunities internally and within easy commuting distance of the Alkimos Secondary Centre (supporting its development and evolution), Joondalup, future Yanchep City Centre and industrial areas in Neerabup, Wangara, Bullsbrook and Muchea.
- Adjacent to the regional sporting facilities planned for a site north of Romeo Rd between the Mitchell Freeway and Wanneroo Rd.

Relative to many other greenfield urban precincts, Carabooda is very well connected to existing and planned, funded infrastructure and its development will facilitate a high standard of management for the area's significant environmental assets. It therefore responds strongly to the Frameworks objective of a consolidated urban form.

2.2.2 Economy & Employment

The Framework seeks to *"promote employment opportunities and increase the number of people who live and work within the sub-region with a focus on attracting strategic economic and employment land uses within strategic metropolitan centres and key industrial centres, while maximising use of existing and proposed infrastructure."* An Employment Self-Sufficiency (ESS) target of 60% is set for the North-West sub-region in the Framework, and a pathway to deliver this is detailed in the Economic and Employment Analysis appended to this DSP.

The residential population of the DSP area will generate a labour force of approximately 10,671 people, based on the current labour force participation rate for the City of Wanneroo of 53% from the ABS 2021 Census. A portion of the jobs required by this workforce will be population-driven and the balance will be employed in strategic roles.

The DSP area is not being proposed as a strategic employment centre, rather, it will leverage off its proximity to existing and future strategic employment zones. Such zones include, as described in DPLH's November 2024 report to the WAPC:

- The Yanchep City Centre (11km to the north west), which will accommodate a diverse range of regional-level retail, commercial, industrial, health, community and social services and provide over 22,000 jobs.
- The Alkimos Secondary Centre (3km to the west), which is planned to accommodate 72,000sqm of retail floorspace, 45,000sqm of bulky goods floorspace, and over 11,000 jobs.
- The Neerabup Industrial area (3km to the south), which will accommodate 1,000ha of industrial land and support 20,000 jobs.
- The 120ha Eglinton East Planning Investigation Area (2km to the west) has been identified for employment-generating uses; and
- The Nowergup Industrial Investigation Area (directly to the south) has the potential to deliver an additional 1,000ha of industrial land adjacent to the site.

In addition, the DSP area is expected to generate 3,767 population-driven jobs in critical sectors such as retail, education, healthcare, public administration, and construction.

In a broader economic sense, the DSP area is beneficial by supporting development and commercial enterprise in Yanchep and Alkimos and by supplying affordable land. The existing North-West corridor attracts a price premium because of its accessibility to the coast, which limits opportunities for many buyers. It also limits opportunities for families looking for an above-average sized lot due to the resultant land value component of the purchase price. The DSP area's more inland location, combined with a relatively low cost of lot production (due to factors such as infrastructure availability and the limited need for fill) makes for a more affordable offering.

Lastly, urbanisation of the DSP area will preserve opportunities for agribusiness and, as envisaged in the City's Tourism Plan, nature-based tourism. As described, care has been taken to identify DSP boundaries that enable the rural character of the surrounding area to be celebrated and preserved. Rather than bringing the DSP area hard up against conservation reserves, rural land has been left as

a transitional area to the west. This allows the proposal in the City's draft Local Planning Strategy for the 'Landscape Enhancement' zone west of Karoborup Road to be designated for 'Rural Landscape Tourism' to be progressed.

2.2.3 Community & Social Infrastructure

The Framework seeks to "provide a wide range of community and social infrastructure to enhance the health and wellbeing of the community and meet the community's needs including health, education, sport and recreation, while promoting infrastructure co-location and optimising the use of existing facilities and infrastructure." At the sub-regional level, community and social infrastructure covers facilities such as secondary schools, universities, technical colleges, hospitals and health campuses, recreational spaces and cemeteries.

The DSP area is a logical extension of the Alkimos urban area and this is reflected in the extent of planned and existing community and social infrastructure. The area's locational attributes in a general sense translate to the area of community and social infrastructure. Carabooda is:

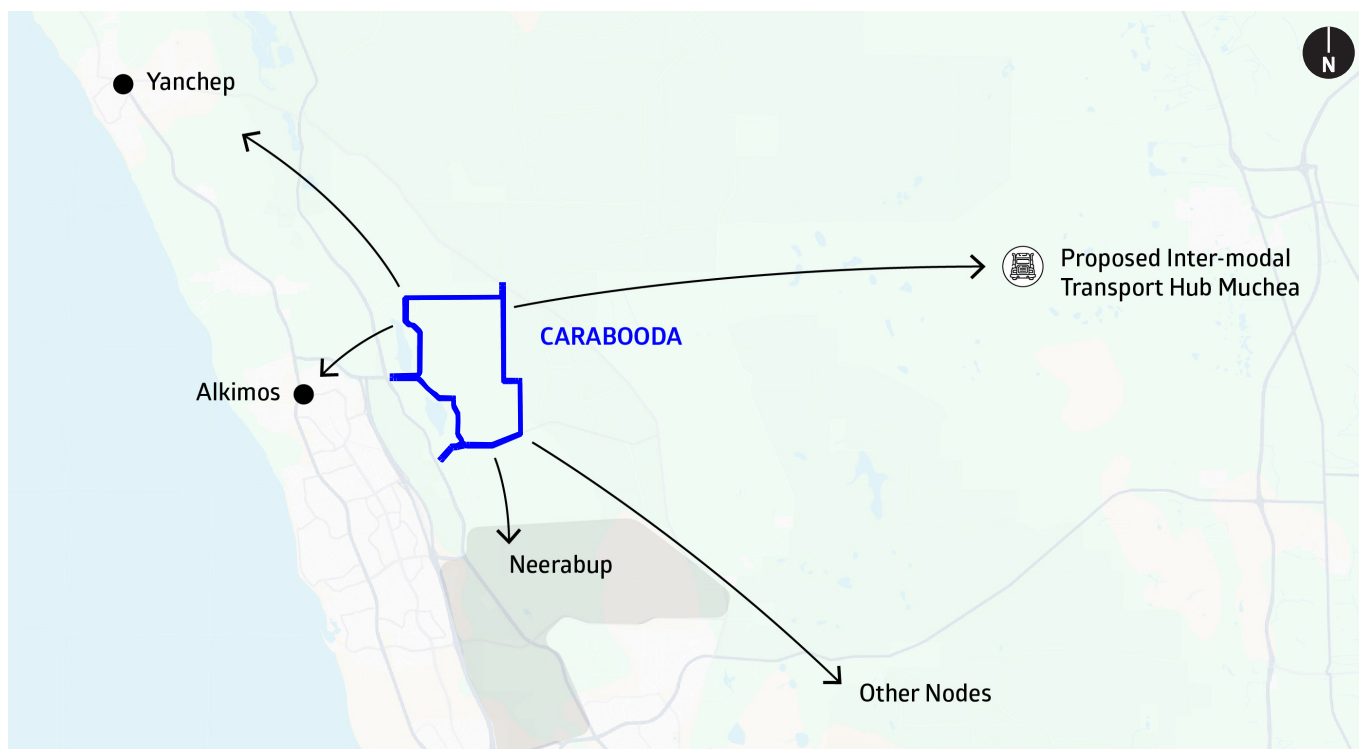


Figure 4: Strategic Employment Locations (Source: Pracsys, 2023)

- Adjacent to the regional sporting facilities planned for a 50ha site north of Romeo Rd between the Mitchell Freeway and Wanneroo Rd, which was identified from a shortlist of four options listed in the Framework.
- Within easy commuting distance of tertiary institutions such as the Joondalup campus of Edith Cowan University and the Clarkson campus of North Metropolitan TAFE, and a future university campus planned for the Yanchep City Centre.
- Readily accessible to the Joondalup Health Campus and a future health campus planned for the Yanchep City Centre.

Proposed public transport services (buses) connecting to rail services at Alkimos will provide rapid connections to destinations such as those listed.

District-level infrastructure such as those listed above will be augmented, in the normal manner, by local active open space and local community centres identified through future local structure planning. Overall, this represents a responsible and holistic approach to the provision of facilities for the proposed new urban area.

2.2.4 Movement & Access

To accommodate population growth and enhance the efficiency of the movement network, the Framework recognises the need to integrate urban and employment nodes with transport infrastructure and services. The Framework also proposes upgrading and adding new transport infrastructure to the network. *Perth and Peel @ 3.5 Million* notes that a challenge for the North-West sub-region is to change the population's travel patterns, which will require a focus on improvements to regional roads, public transport, active transport routes and increased employment self-sufficiency.

The North-West sub-region's movement network has historically focused on accessibility to the Perth CBD, evidenced by the concentration of north-south transport links to the Central sub-region. Key linkages include the Mitchell Freeway, Wanneroo Road, Marmion Avenue, Connolly Drive and the Yanchep railway line (via Alkimos station). This DSP represents an opportunity to diversify the range of transport options and destinations beyond the traditional radial system emanating from the Perth CBD, similar to the process that occurred in the south-west corridor after the Mandurah railway line opened in 2007. A movement network that focuses transport (particularly public transport) on a more mature, east-west basis will open opportunities for a more diverse range of residents and employment options and is consistent with the objectives of the Framework.

The Department of Transport supported the Request, noting that the DSP area can make use of significant existing and planned regional transport infrastructure, including Alkimos station (approximately 3km west of the site), Mitchell Freeway, Wanneroo Road, Romeo Road and the planned Whiteman-Yanchep Highway. The DSP's relationship to these and is explored in detail in the Transport Impact Assessment appended to this report.

Active transport opportunities will be provided by integrating a comprehensive internal cycling and pedestrian network with existing and planned shared paths along the Mitchell Freeway, Whiteman-Yanchep Highway, Nowergup Road, Romeo Road and Wanneroo Road in accordance with the Department of Transport's 'Long Term Cycle Network' plan.

In future, the DSP area will be further supported by the planned Whiteman-Yanchep Highway and the Neaves Road–Flynn Drive corridor. This road will form part of the freight network and be upgraded to a primary distributor in order to improve its capacity and efficiency for freight and general traffic. It will provide an important east–west link to the North-East sub-region, particularly the potential Bullsbrook intermodal terminal and industrial areas in that area.

2.2.5 Service Infrastructure

The proximity of the DSP area to existing service infrastructure is a major attribute that aids in the timely and efficient delivery of electricity, water, wastewater and other service infrastructure on a staged basis. It performs strongly against the Framework objective on this topic, which is:

"To ensure the timely, cost-efficient and cost-effective delivery of electricity, water, wastewater and other service infrastructure that is aligned with the staging of development and encourage the shared use of infrastructure corridors by the various service providers."

The DSP area can be readily connected to existing infrastructure such as the:

- Alkimos Wastewater Treatment Plant;
- Carabooda water storage tank;
- Western Power Yanchep zone sub-station;
- Major gas and telecommunications infrastructure in the Wanneroo Road corridor.

The site is to be developed in a sequential and staged approach commencing from the west of the site and progressing eastward. With trunk infrastructure required to service the site located in close proximity to the western boundary of the site, cost-effective delivery of roads and services extensions within the site can be achieved as staging and lot production progresses. The extension of services through the site will be delivered as part of the development works in shared common trenches and on standard service corridor alignments thereby minimising costs and programs for delivery.

The Water Corporation and Western Power have advised that the proposal can be serviced and that a DSP would be expected to include detailed planning to deliver services to the site. This has been done to a DSP level of detail in the Engineering Servicing (Infrastructure) Report (refer Appendix 4).

Timing and staging of infrastructure delivery is set out in Table 3 of the DSP Part 1. Whilst initial stages can be powered by the Yanchep zone sub-station, a short-term action is to secure a site for a new zoned substation within the DSP area, in consultation with Western Power. As most of the DSP area is controlled by the CLG, identification of a preferred site can be readily accommodated.

As detailed in the District Water Management Strategy (refer Appendix 6), the DSP area does not require complex drainage infrastructure such as sub-soil drainage, as the local soils are highly permeable with significant separation to groundwater. There are no wetlands or other surface water features within the DSP area.

2.2.6 Environment & Landscape

In respect of the environment and landscape within and around the sub-region, the Framework seeks to *"preserve and enhance...for future generations to enjoy."* The DSP makes a strong contribution to this objective by identifying a significant (200ha+) conservation estate and preserving its rural context.

A substantial proportion (approximately 35%) of the DSP area is under remnant vegetation in varying condition and with little to nothing in the way of protection under the planning framework. The DSP proposes an industry-leading Conservation Management Fund to enable the conservation and ongoing management of approximately 224 hectares of remnant vegetation (refer to Section 3.2 of this report). This includes banksia and tuart woodland and encompasses the east-west ecological linkage identified in the Framework (discussed further below).

The conservation estate will be additional to local Public Open Space provided in accordance with *Liveable Neighbourhoods*. The location of this POS will be confirmed at the Local Structure Plan stage in the normal manner and will include land for active and passive open space, walking trails and for the conservation of the lime kilns.

The above represents a very significant allocation of land for bushland preservation, environmental protection and other open space. The conservation estate and related Conservation Management Fund in particular are a unique proposition for Western Australian land development projects.

As described above, care has been taken to identify DSP boundaries that enable the rural character of the surrounding area to be celebrated and preserved. Rather than bringing the DSP area hard up against conservation reserves, areas of land proposed to be kept in their presently rural state have been left as a transition. This is in the interest of preserving some of the landscape character that is such a distinctive aspect of the DSP area. It will see urban-zoned land transition to general rural land against a backdrop of remnant vegetation around the DSP area.

2.2.7 Natural Resources

The Framework states that for the North-West sub-region, water resources, basic raw materials and agricultural land, in that order, are the priority resources. The Carabooda Urban Precinct proposal will:

- Be beneficial for water resources;
- Facilitate the extraction of basic raw materials where there is no environmental constraint to so doing; and
- Have a negligible effect on local agricultural capacity.

Detail on water resources, basic raw materials and agriculture is provided in Section 3: Site Analysis of this report.

2.3 Metropolitan Region Scheme

The Metropolitan Region Scheme ('MRS') applies zones and reserves across the Perth metropolitan region. Its purpose is to co-ordinate planning across local government areas by defining and protecting land for public purposes and designating broad zones to guide local-level planning controls.

The DSP area is zoned 'Rural' under the MRS except for two Water Corporation sites reserved for 'Public Purposes-WSD'. Nearby:

- Land to the north, north-west and south-east is zoned 'Rural', reflecting the current use and character of the area.
- Land to the south-west is reserved as 'Regional Open Space' and classified as Bush Forever Site 383.
- Land to the east is reserved for State Forests and partly classified as Bush Forever Site 290.

As outlined in Part 1 of this DSP, an amendment to the MRS will be needed to progress the implementation of this DSP. An MRS map appears as Figure 5.

2.4 Draft City of Wanneroo Local Planning Strategy

The draft City of Wanneroo Local Planning Strategy ('draft Strategy') has been prepared by the City in accordance with its obligations under the *Planning and Development (Local Planning Schemes) Regulations 2015* and was recently advertised.

Consistent with the Framework, the draft Strategy identifies the DSP area as a rural area. It states that agriculture is important to the economy and food security of the area, but notes that planned cuts to water licenses may be detrimental to the area's capabilities as an agricultural district. In granting consent for this DSP to be prepared, the WAPC has formed a position that the highest and best use for the DSP area is now urbanisation rather than a continuation of agriculture.

Section 6.1.3 of the draft Strategy forecasts that up to 59,403 greenfield dwellings could be delivered by 2041 across the City, which is sufficient to meet an overall housing target of 54,500 dwellings for infill and greenfield development. However, the delivery of these dwellings is reliant on site constraints being resolved and in the East Wanneroo DSP area in particular, which accounts for a significant proportion of the projected lot supply, land fragmentation and the related challenges for access and servicing is a major issue that is not evident in the Carabooda DSP area.

The City supports the DSP proposal and the DSP proposal supports the objective in Section 8.1.2 of the draft Strategy that advocates protecting areas with high environmental values and ecological linkages. There is an ecological linkage crossing the site from east to west that is shown in the Framework that will be conserved via the DSP and a second north-south linkage is also proposed.

It is anticipated that the final version of the draft Strategy will incorporate the DSP area as a new urban area before it is approved and published as an operational document.

2.5 City of Wanneroo District Planning Scheme No. 2

The *Planning and Development Act 2005* gives local governments the power to prepare and maintain local planning schemes to make "suitable provision for the improvement, development and use of land in the local planning scheme area". This is done through the application of appropriate local-level zones and reserves. The DSP area is within the City of Wanneroo District Planning Scheme No. 2 area ('DPS 2').

Local Planning Schemes comprise three parts – the Deemed Provisions that apply to all Local Planning Schemes through the Regulations, as amended, the Scheme Text, which is encouraged to be consistent with the Model Provisions in the aforementioned Regulations, and the Scheme Maps that illustrate the spatial extent of the various zones and reserves.

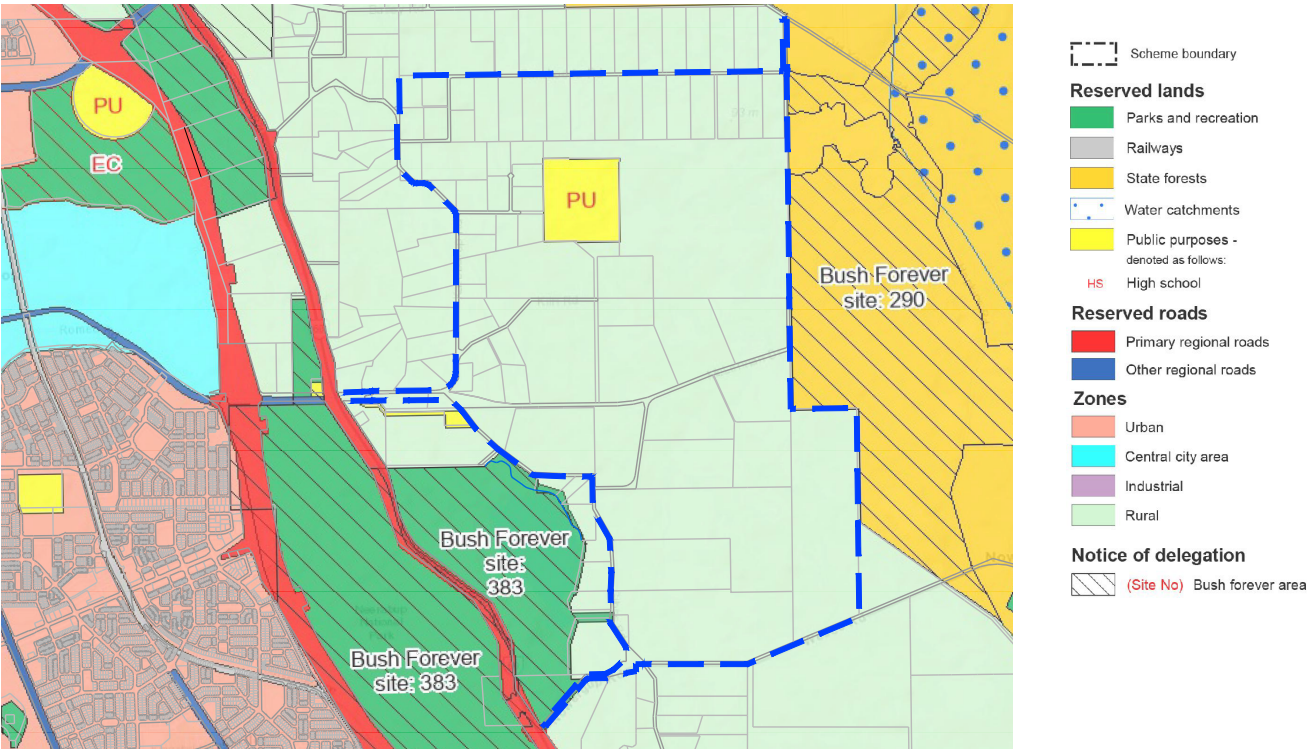


Figure 5: MRS Plan (Source: DPLH)

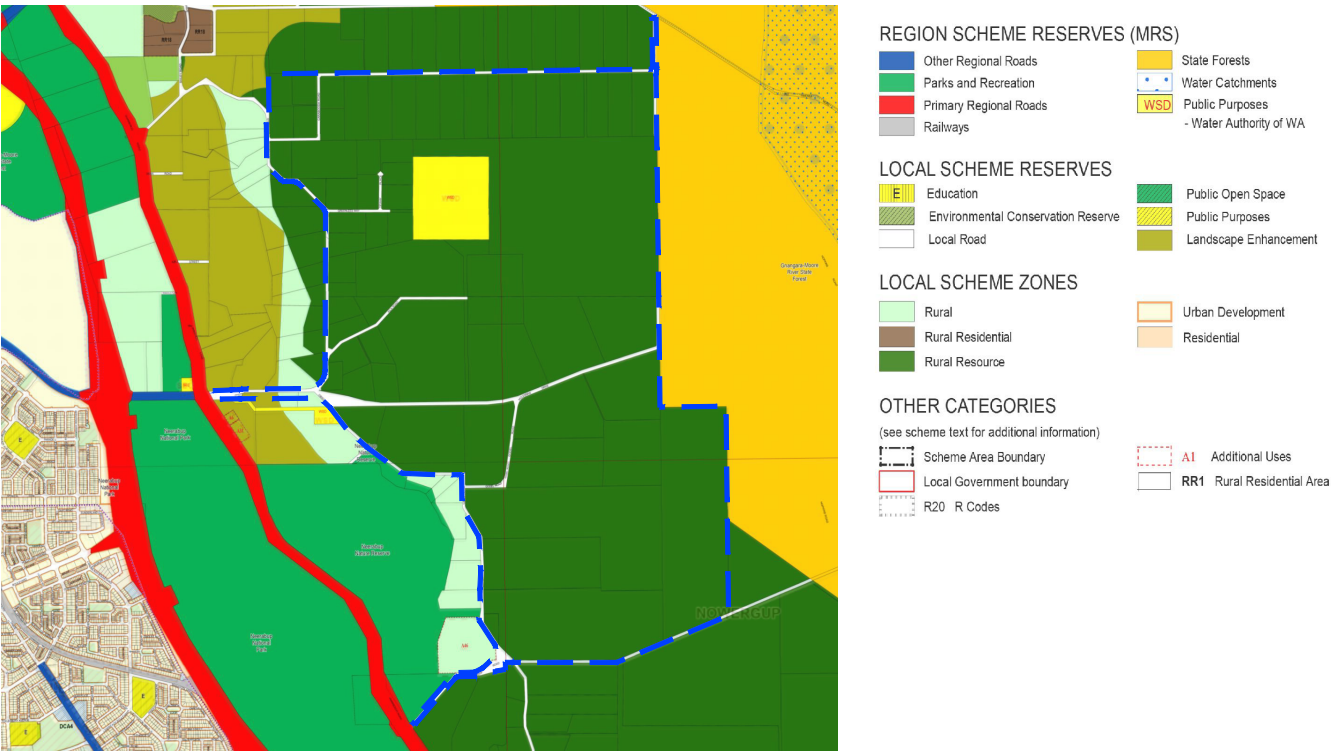


Figure 6: District Planning Scheme No. 2 Plan (Source: City of Wanneroo)

The DSP area, excluding the above-mentioned 'Public Purposes-WSD' reserve is zoned 'Rural Resource' under DPS 2, the purpose of which is:

- *"To protect from incompatible uses or subdivision, intensive agriculture, horticultural and animal husbandry areas with the best prospects for continued or expanded use.*
- *To protect from incompatible uses or subdivision basic raw materials priority areas and basic raw materials key extraction areas."*

The WAPC's November 2024 decision to grant consent to the preparation of this DSP represents a shift in strategic planning for the area away from agriculture and toward urbanisation. Relatively little agricultural activity remains in the area and impending cuts to the area's water allocation mean that its medium- to long-term prospects as an agricultural district are poor.

There are basic raw materials resources within the DSP area and where these are unconstrained by tuart or banksia woodlands or other vegetation complexes, they will be extracted before urbanisation occurs as part of the development process.

Progression of this DSP will enable the WAPC to consider amendment requests under the MRS and DPS 2. As outlined in Part 1 of this DSP, an amendment to DPS 2 introducing an 'Urban Development' zone, which requires and enables a Local Structure Plan, will be needed to progress the implementation of this DSP. This could be done as a concurrent amendment should the Minister exercise discretion under Section 126(3) of the *Planning and Development Act 2005*.

2.6 State Planning Policies & Other State Policies

The following State Planning Policies (SPPs) and other State policies are relevant to the DSP and have informed its preparation:

- SPP 2.4: Basic Raw Materials
- SPP 2.5: Rural Planning
- SPP 2.9: Water Resources
- SPP 3.5: Historic Heritage Conservation
- SPP 3.6: Infrastructure Contributions
- SPP 3.7: Bushfire
- SPP 4.2: Activity Centres
- SPP 5.4: Road and Rail Transport Noise
- Operational Policy 2.4: School Sites
- *Liveable Neighbourhoods*

The DSP's response to the relevant requirements of these policies is described in Sections 3 and 5 of this report.

Liveable Neighbourhoods is an operational policy which serves as the primary tool for guiding the planning and design of greenfield areas. The principles and requirements of *Liveable Neighbourhoods* have informed the DSP, particularly in relation to the spatial distribution of non-residential land uses (e.g. schools and activity centres, with respect to their catchments) depicted on the DSP Map, and establishment of the internal road hierarchy. *Liveable Neighbourhoods*, or its successor/s, will guide subsequent planning processes including the LSP/s and subdivision design exercises. Specifically, the LSP and subdivision design stages.

Other high-level SPPs, including SPP 1: State Planning Framework, SPP 2: Environment and Natural Resources and SPP 3: Urban Growth and Settlement were considered by the WAPC in making its decision to support the preparation of this DSP and enable the Carabooda area to be urbanised.

3. Site Analysis

3.1 Climate

Combined with topography and geology, the climate experienced at the DSP area is highly relevant to the nature of the remnant flora and fauna, the agricultural patterns and practices of the past century or so, and the design of the future urban precinct.

The DSP area is part of the Swan Coastal Plain and like the rest of that region, it experiences a climate characterised by hot, dry summers and cool, relatively wet winters. The Noongar people recognise two summer seasons, being Birak (December and January) and Bunuru (February and March), with February usually being the hottest month of the year. Near the coast, temperatures in the summer seasons are moderated by the effect of the ocean and a reliable afternoon sea breeze. Further inland, a morning easterly wind is a more pronounced feature and the sea breeze arrives later in the day, if at all. The DSP area is approximately 5km from the coast and therefore will benefit from the moderation in temperature that comes with the afternoon sea breeze.

The DSP area receives moderate and highly seasonal rainfall. Winters are relatively cool and wet, with most of Perth's annual rain falling between May and September during the Noongar seasons of Djeran (April and May), Makuru (June and July) and Djilba (August and September).

The nearest weather station recording both temperature and rainfall is Gingin Aero, located at RAAF Gingin approximately 20km to the north-east. Here:

- The average annual rainfall between 1996 and 2023 was 620.7 mm, with the highest monthly rainfall occurring from May to September.
- The wettest year between 1996 and 2023 was 1999, with an annual rainfall of 881.6 mm, and the driest was 2010, recording just 421.8 mm. The 'record' from 1999 was not, historically, a significantly above-average total if the longer-term average is considered.
- The average monthly maximum temperature for Gingin ranges from 18.4°C in July to 33.2°C in January and February. Average monthly minimum temperature ranges from 6.5°C in July to 17°C in February.
- The site is closer to the coast than Gingin, so a narrower range of temperatures can be expected due to the moderating effect of the coast and slightly lower rainfall due to the lower altitude.

Some of the key influences of the local climate have been and will be:

- The need for extensive irrigation of horticultural crops due to the highly seasonal nature of the rainfall and the high infiltration rates of the sandy soils;
- The need for drought-tolerant flora species in landscaping to minimise demand for water from landscaped areas, both public and private;
- The need for afternoon shade in public and private spaces, as despite the moderating effect of the coast, the summer seasons in particular are relatively warm and sunny;
- The need for windbreaks in any high, exposed public spaces to create protected areas against the summer sea breezes.

Lastly, Perth's declining rainfall over the past 50 years or so has been well-documented. At the Bureau of Meteorology's Perth weather station, average rainfall in the period 1876-2016 is 844.5mm, whilst the average for 1994-2019 is 727.2mm, translating to a 16% decline. This highlights the challenges facing local horticulturalists and provides context to the impending 10% cut in water allocations for the area. It also demands careful consideration of the species to be used in landscaping and emphasises the importance of the benefit from urbanisation that is expected for Lake Nowergup.



Above: View of site from north east boundary



Above: View of southern site area from McLennan Drive on east boundary

3.2 Environmental Assets & Constraints

The DSP area is characterised by rural activities over approximately two-thirds and remnant vegetation over the balance. There are no wetlands or watercourses but important tuart woodlands and banksia woodlands are present and the majority of these are proposed for retention.

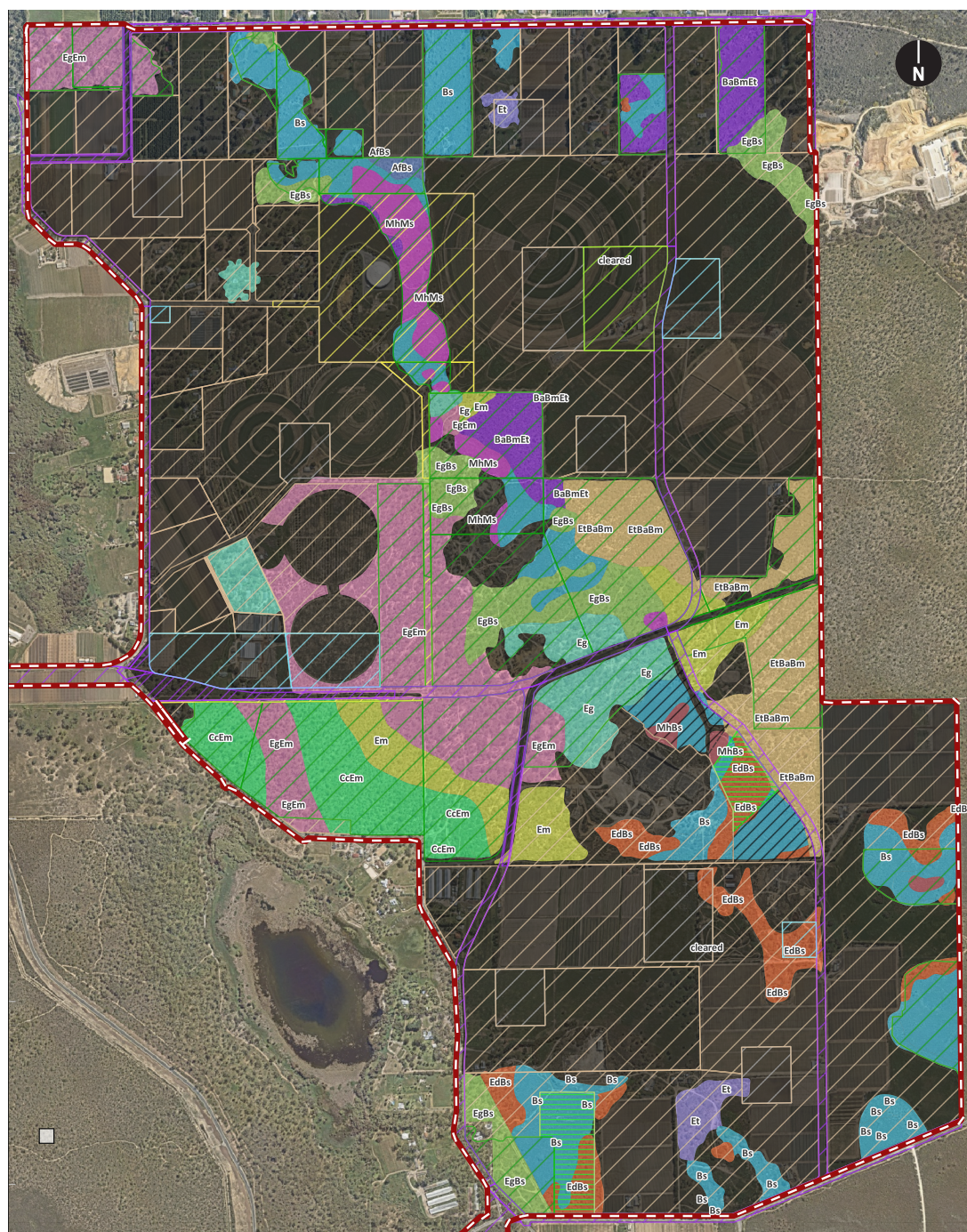
3.2.1 Flora & Vegetation

As detailed in the Environmental Assessment Report ('EAR', refer to Appendix 5) appended to this DSP, the DSP is informed by regional surveys undertaken historically by others, and detailed site-specific surveys by the DSP project team over the past decade. Collectively, these conclude that:

- Of the 333.78ha of remnant native vegetation on the site (which is 34% of the total DSP area), approximately 217.94ha (65.3%) is in 'Good' or better condition. This generally creates two ecological linkages, one from east to west and one from north to south, both of which are proposed for retention in the conservation estate.
- Thirteen discrete vegetation units have been identified. The three most common, 'Bs' (*Banksia sessilis* [parrot bush]), 'EgEm' (*Eucalyptus gomphocephala* [tuart] / *Eucalyptus marginata* [jarrah]) and 'EtBaBm' (*Eucalyptus tottiana* / *Banksia attenuate* / *Banksia menziesii*) account for approximately 52% of the remnant native vegetation.
- Four conservation-significant flora species and three conservation-significant ecological communities have been identified, most of which are within the proposed conservation estate.
- Three Threatened Ecological Communities and/or Priority Ecological Communities have been identified as follows (text quoted direct from the EAR):
 - *"Banksia woodlands of the Swan Coastal Plain ecological community (Commonwealth-listed Endangered TEC; State-listed Priority 3 PEC) (hereafter referred to as 'Banksia TEC/PEC')."*
 - *Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community (Commonwealth-listed Critically Endangered TEC; State-listed Priority 3 PEC) (hereafter referred to as 'Tuart TEC/PEC')."*
 - *Honeymyrtle shrublands on limestone ridges of the Swan Coastal Plain ecological community (Commonwealth-listed Critically Endangered TEC) which is identified as Melaleuca huegelii - Melaleuca systema shrublands on limestone ridges (FCT 26a) (State-listed Critically Endangered (hereafter collectively referred to as 'Honeymyrtle shrubland TEC')."*
 - Of the above, there is 45.01ha of Banksia TEC/PEC, 112.85ha of Tuart TEC/PEC and 12.09ha of Honeymyrtle Shrubland TEC within the DSP area. The EAR observes that 87% of Banksia TEC/PEC, 75% of Tuart TEC/PEC and 100% of Honeymyrtle Shrubland are proposed for retention within the conservation estate.

3.2.2 Fauna

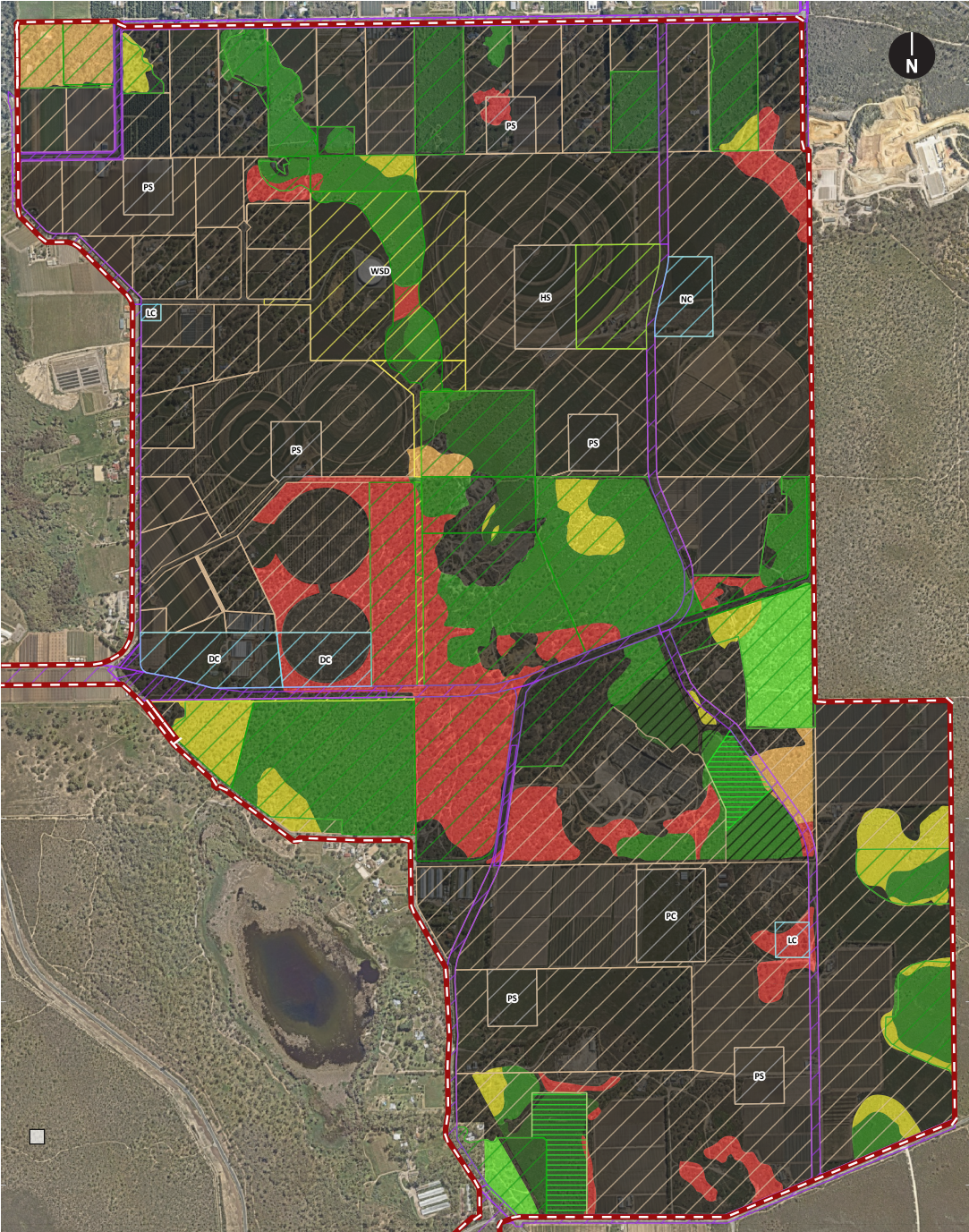
Eight conservation-significant fauna species are considered to be present, or potentially present, within the DSP area. Of these, the three local black cockatoo species, and particularly Carnaby's black cockatoos and the forest red-tailed black cockatoo, are of most note. Figures illustrating the distribution of foraging and nesting habitat across the DSP are presented in the EAR. These generally coincide with the areas of remnant vegetation in 'Good' or better condition, described above, which is primarily proposed to be included in the conservation estate.



Legend

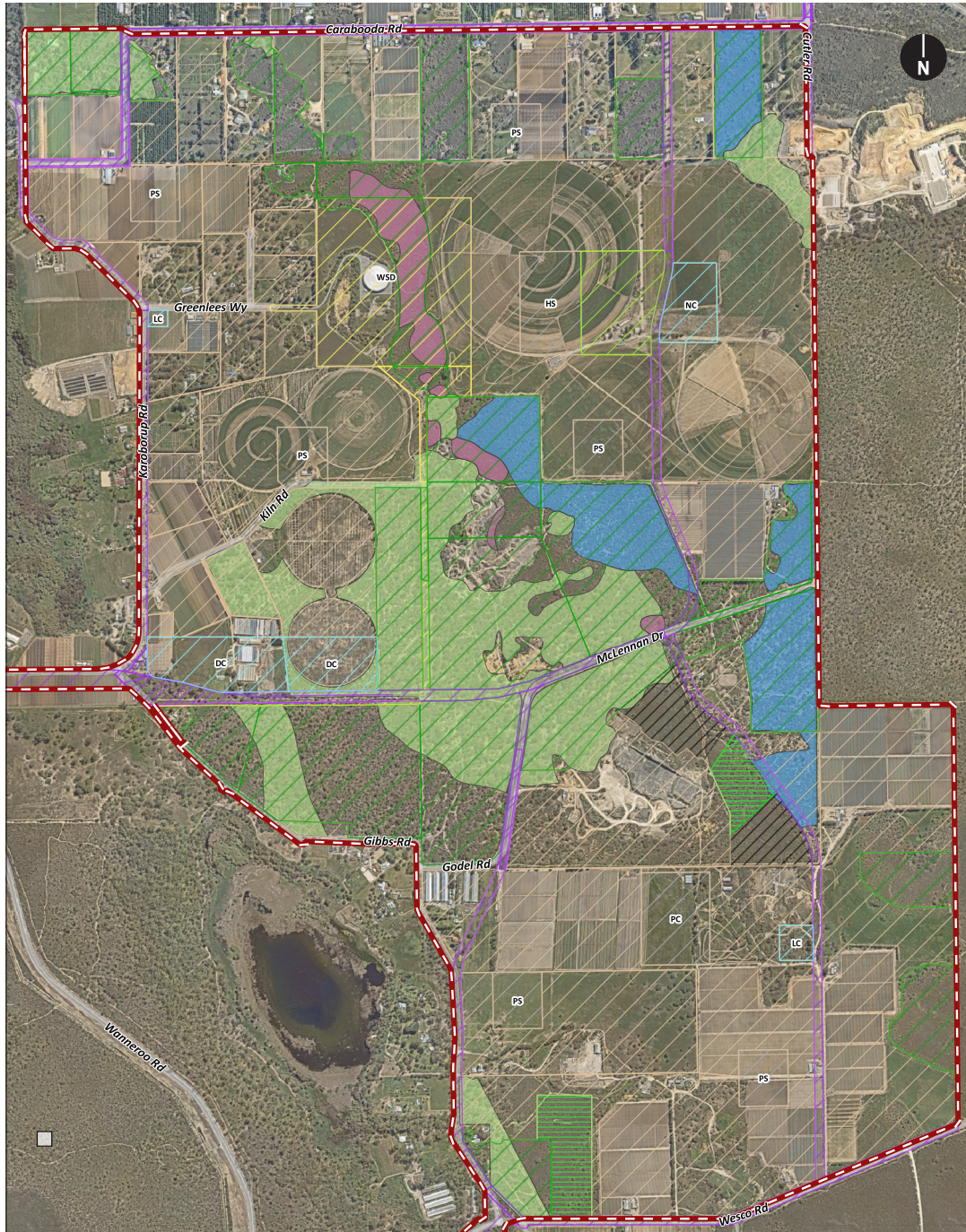
	The Site		Em	Proposed District Structure Plan  Residential  Centre  Water Authority of WA  School Site  Conservation  Potential Clearing Permit and BRM Extraction  Integrator A / Integrator B / Neighbourhood Connector A  Local Open Space for Conservation  District Open Space
Vegetation			Et	
	AfBs		EtBaBm	
	BaBmEt		MhBs	
	Bs		MhMs	
	CcEm			
	cleared			
	EdBs			
	Eg			
	EgBs			
	EgEm			

Figure 7: Vegetation Units (Source: Western Environmental)



- Legend**
- The Site
 - Vegetation Condition
 - Excellent
 - Very Good
 - Good-Very Good
 - Good
 - Good-Degraded
 - Degraded
 - Completely Degraded
 - Proposed District Structure Plan
 - Residential
 - Centre
 - Water Authority of WA
 - School Site
 - Conservation
 - Potential Clearing Permit and BRM Extraction
 - Integrator A / Integrator B / Neighbourhood Connector A
 - Roads
 - Local Open Space for Conservation
 - District Open Space

Figure 8: Vegetation Condition (Source: Western Environmental)



Legend

- | | |
|--|---|
| The Site | Roads |
| Proposed District Structure Plan | Local Open Space for Conservation |
| Residential | District Open Space |
| Centre | Conservation Significant Ecological Communities |
| Water Authority of WA | Banksia woodlands of the Swan Coastal Plain (Cwlth TEC: EN; State PEC: P3) |
| School Site | Tuart woodlands and forests of the Swan Coastal Plain (Cwlth TEC: CR; State PEC: P3) |
| Conservation | Honey Myrtle shrublands on limestone ridges of the Swan Coastal Plain (Cwlth TEC: CR); Melaleuca huegelii – M. systema shrublands on limestone ridges (FCT 26a) (State TEC: CR) |
| Potential Clearing Permit & BRM Extraction | |
| Integrator A, B, Nhd Connector A | |

Figure 9: Conservation-Significant Ecological Communities (Source: Western Environmental)

3.2.3 Bush Forever

The Bush Forever classification is given to regionally-significant bushland identified as requiring long-term protection and management. It is applied as a layer in the MRS and regulated under SPP 2.8: Bushland Policy for the Perth Metropolitan Region.

There are no Bush Forever sites within the DSP area (refer to Figure 5: MRS Plan). However, the DSP area abuts Bush Forever Site 290 to the east, within State Forest 65, and Bush Forever Site 383 to the west, within the Nowergup National Park. The bushland corridor through the centre of the DSP area, which is proposed to be protected as part of the conservation estate, is an important linkage between the two. Another narrower bushland corridor reaches northward through the DSP area toward Yanchep National Park, and this is also proposed to be part of the conservation estate.

The conservation estate in the DSP area is proposed to be reserved for 'Regional Open Space' under the MRS and managed through the Conservation Management Fund. When an MRS amendment/s are progressed to reserve the land, consideration can be given to the application of the Bush Forever layer as an additional policy measure. Protection of the vegetation is also afforded by other State and Commonwealth legislation.

3.2.4 Environmentally Sensitive Areas

Environmentally Sensitive Areas are gazetted under the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005* and have the effect of extinguishing exemptions for the clearing of native vegetation under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. They therefore will require attention at the development stage.

Two mapped ESAs apply to the DSP area; one in the north-west and one in the south-west, the latter being associated with the buffer of an off-site Conservation Category Wetland (Lake Nowergup). Any Threatened Ecological Community and its related buffer is also an ESA.

The mapped ESAs are both within the planned conservation estate. For any others (which are smaller and more localised), the EAR recommends buffers and conservation at more detailed stages of the planning process.

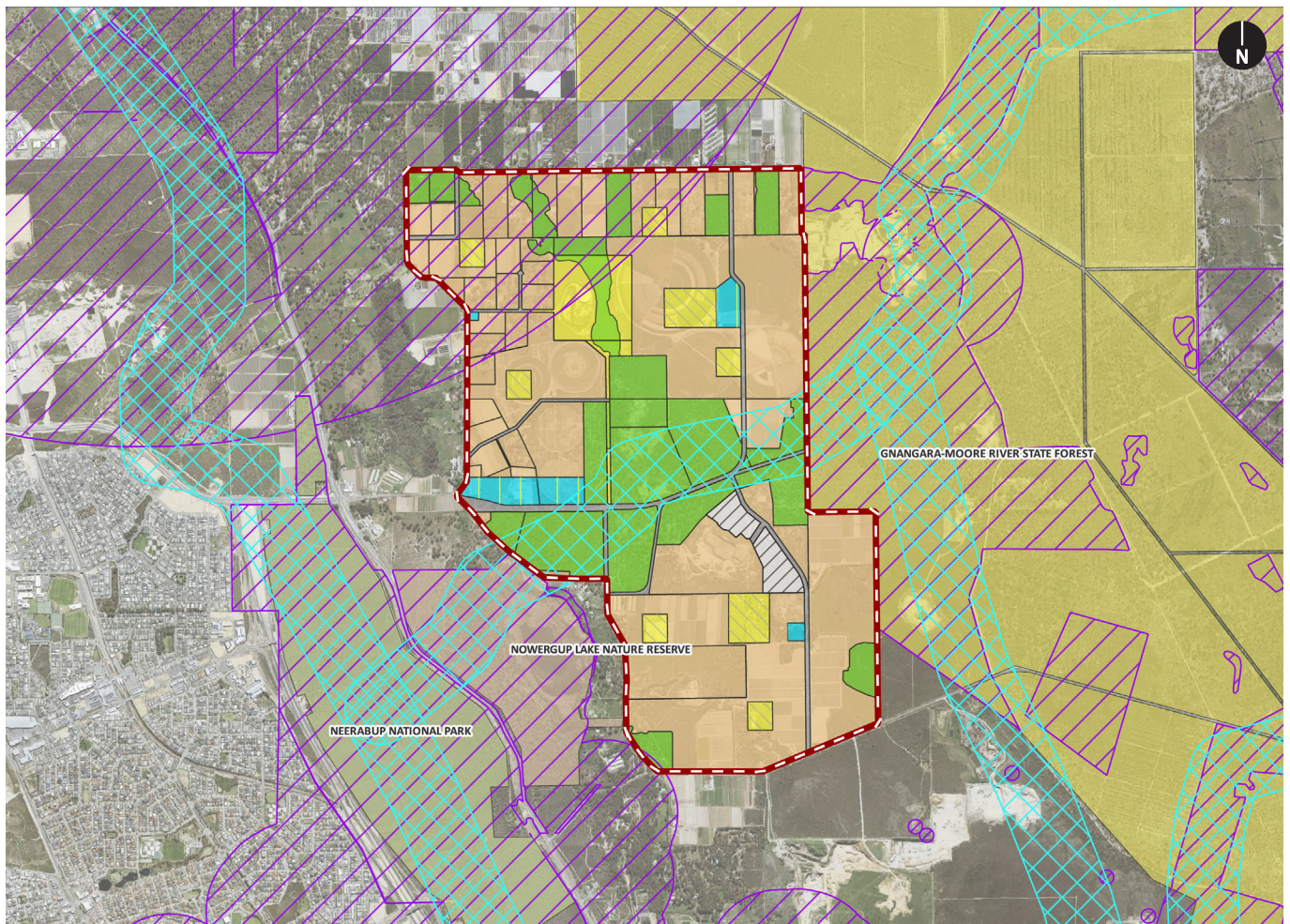
3.2.5 EPA Environmental Factors

The EAR concludes that 3 EPA Environmental Factors are relevant to the DSP; namely, Flora and Vegetation, Terrestrial Fauna and Social Surroundings. The potential impacts and proposed management measures advocated by the DSP are detailed in the EAR.

The DSP's proposal for an extensive conservation estate keeps its impact in the area of Flora and Vegetation and Terrestrial Fauna to a minimum. However, there are six MNEs present in the DSP area, as follows, and some impact at the development stage is likely:

- Carnaby's black cockatoo;
- Baudin's black cockatoo;
- Forest red-tailed black cockatoo;
- Banksia Woodlands of the Swan Coastal Plain;
- Tuart Woodlands and Forests of the Swan Coastal Plain;
- Honey-myrtle Shrubland on Limestone Ridges of the Swan Coastal Plain.

Although the majority of vegetation in the DSP area is proposed to be within the conservation estate, the EAR observes that the development of the DSP area is likely to impact the above to an extent that would constitute a Controlled Action under the EPBC Act. In that event, a referral to and assessment by the Commonwealth Government under that Act would be required.



Legend

	The Site		Potential clearing permit and BRM extraction
	Regional Ecological Linkages		Centre
	Environmentally Sensitive Areas (DWER-046)		Public Open Space
DBCA - Legislated Lands and Waters (DBCA-011)			Roads
	National Park		Urban
	Nature Reserve		School Site
	State Forest		Water Authority of WA

Figure 10: Ecological Linkages, Conservation Areas, and Environmentally Sensitive Areas (Source: Western Environmental)

3.3 Landform & Soils

3.3.1 Landform

Topographically, the DSP area is characterised by undulating Spearwood and Bassendean low dune systems running in a northwest to southeast direction, with a prominent dunal ridge east of Wanneroo Road, and an inter-dunal swale interface between the Spearwood and Bassendean soil systems. The surface elevation ranges from approximately 20 metres AHD on the south-western boundary to 70m AHD on the north-eastern boundary. Refer Figure 12.

3.3.2 Soils

Geologically, the DSP area is within a Leederville Formation area, which generally comprises sand over limestone. Karstic phenomena are in evidence in the south-western portion of the DSP area, including caves, swallows and dolines.

3.3.3 Soil Contamination

There are no sites registered under the *Contaminated Sites Act 2003*. There is one beyond the south-eastern boundary that is registered as 'Remediated for Restricted Use' and will not be relevant to development within the DSP area, as discussed in the DWMS.

The historical and current use of the DSP area for agriculture raise the potential that soil in some parts of the DSP area has been contaminated through the use of fertilisers, pesticides and herbicides and the localised, unregulated dumping of rubbish. This does not require attention at the DSP stage but will need to be assessed through a Preliminary Site Investigation at the LSP stage of the planning process.

3.3.4 Acid Sulphate Soils

Almost none of the DSP area is mapped as being at risk of acid sulphate soils disturbance within 3m of the soil surface. The one exception is a small pocket on the northern boundary on Carabooda Road, constituting approximately 2% of the DSP area. Low-lying land to the west, including Lake Nowergup and its surrounds, are mapped as having a 'High to Moderate' risk.

Notwithstanding the relative lack of risk for most of the DSP area, the DWMS notes that changes in groundwater levels over time can result in changes to the risk level for Acid Sulphate Soils. Separation to groundwater in the DSP area is significant and groundwater levels have fallen over the past 50 years, but urbanisation is likely to result in higher groundwater levels. In this dynamic environment, management measures at the development stage will be required as detailed in the DWMS. This will require further attention at the LSP stage of the planning process. Refer Figure 11.

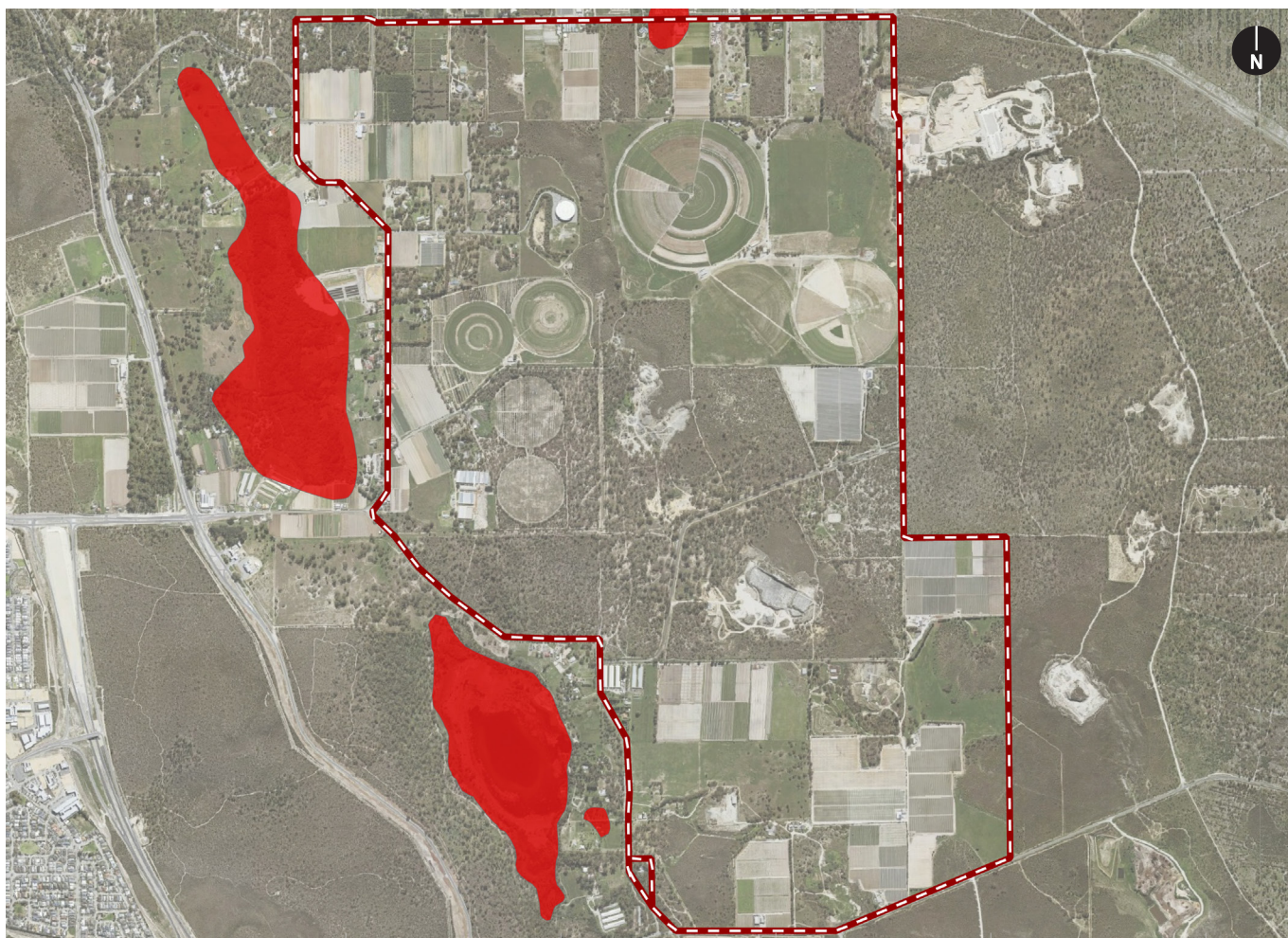
3.3.5 Karst Features

Karst features are surface or subterranean and have formed by dissolution of limestone or other soluble rocks. The scale of these features can vary from millimetres to hundreds of metres or more and can include small underground voids or cavities, caves, dolines, collapsed caves and sculpting of limestone surfaces.

The southwestern and northwestern corners of the DSP (approximately 4% of the total DSP area) are mapped as having High karst risk. These areas are likely to contain abundant karst features such as caves, dolines, and swallows.

The western portion of the DSP (approximately 18% of the DSP area) is mapped as having Medium karst risk.

In accordance with City of Wanneroo Local Planning Policy 4.13: Caves and Karstic Features, karst assessments will be undertaken prior to the preparation of LSPs to ascertain the likelihood of karstic formations and the impact on land use distribution, and whether a Karst Management Plan is required.



Legend

- The Site
- Acid Sulfate Soil Risk Map, Swan Coastal Plain (DWER-055)
- 1 - High to moderate risk of ASS occurring within 3m of natural soil surface

Figure 11: Acid Sulphate Soils (Source: Western Environmental)

3.4 Groundwater & Surface Water

A District Water Management Strategy (DWMS; refer to Appendix 6) has been prepared by project hydrologists Pentium to inform and accompany this DSP. Its purpose is to determine the existing groundwater and surface water conditions / characteristics that will guide the water management approach for the DSP. The approach to water management uses SPP 2.9: *Water Resources and Better Urban Water Management* as its basis.

3.4.1 Groundwater

The site is located on the Gngangara Groundwater System, which includes the superficial, Mirrabooka, Leederville and Yarragadee aquifers. Groundwater flow across the site is largely westward towards the coast.

The maximum groundwater contours indicate that maximum groundwater levels across the site range from 10m AHD along the north-western boundary of the site to 21.5m AHD along the south-eastern boundary. This translates to significant clearances to groundwater, ranging from 59m on the eastern boundary to 8m on the south-west corner of the site.

Based on the likely clearance to groundwater, it is not anticipated that groundwater management measures will be required, such as the import of sand fill or the installation of engineered systems to control groundwater levels.

The main priority for the DSP area in relation to groundwater management will be the maintenance of the high infiltration rates that are evident across the site in light of its sandy soils. The pre-development surface water hydrology of the site is dominated by groundwater recharge through the highly permeable Spearwood and Bassendean sands. Surface water runoff is anticipated to occur only during large storm events via overland flow to wetlands, localised low points or off-site areas. The post-development stormwater drainage strategy would need to replicate the pre-development hydrology, utilising drainage controls to infiltrate all rainfall run-off as close to source as possible and do so using water sensitive urban design in the private and public realm.

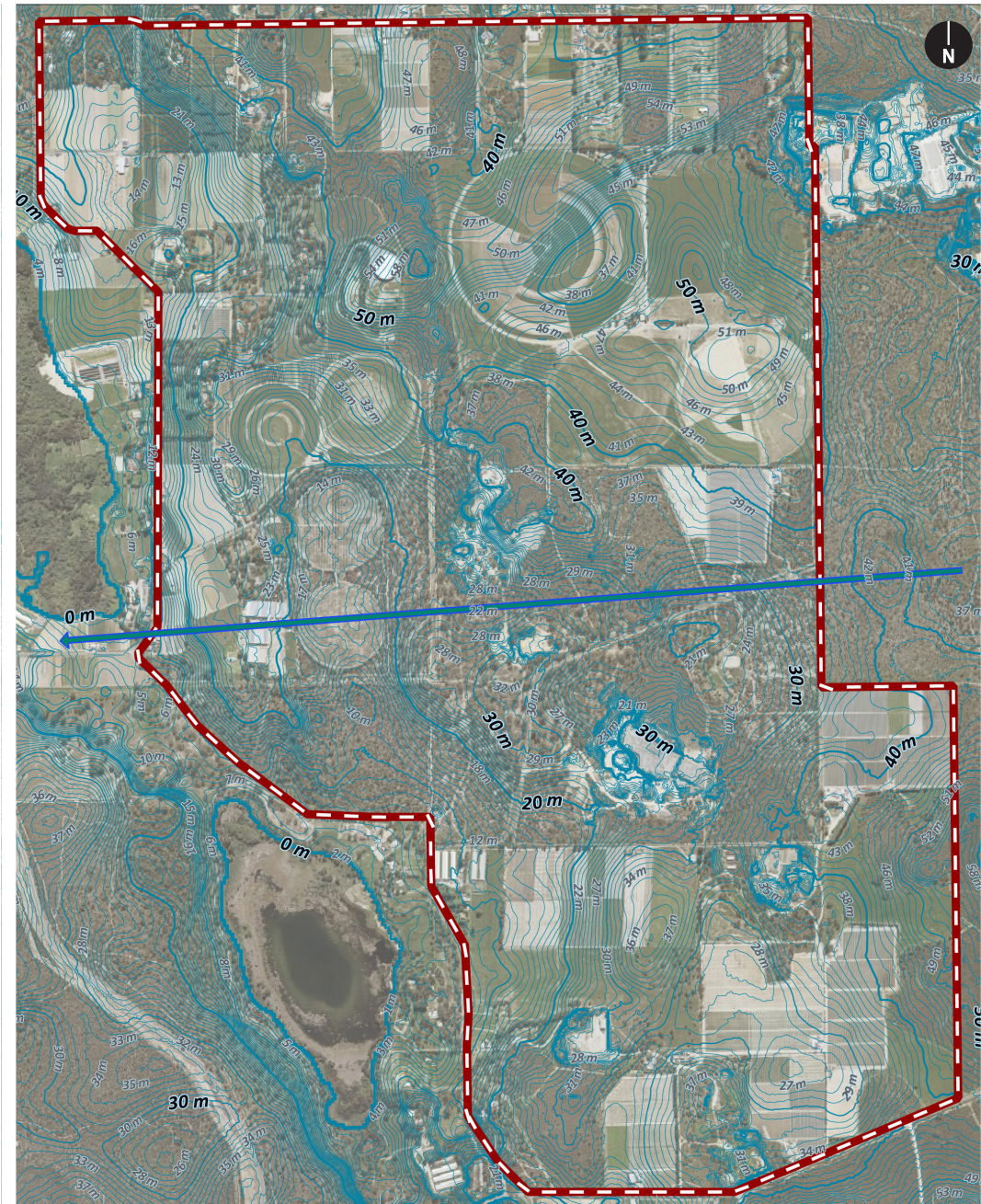
3.4.2 Surface Water

As noted, there are no wetlands or watercourses within the DSP area.

Lake Nowergup is the nearest surface water feature. This is located just beyond the south-western boundary of the DSP area and urbanisation of the DSP area will be beneficial to its health. The lake is a Conservation Category Wetland and subject to an Environmental Water Requirements ('EWR') decision made by the relevant Minister in 1988 pursuant to the *Environmental Protection Act 1986*.

Artificial lake supplementation to achieve the EWR began in 1990. By 2008, almost continual supplementation was required. The water is supplied via pumped groundwater from the Leederville aquifer, which is one treatment cycle from potable and therefore an important resource. Currently, the lake is receiving a top-up of 1.2 gigalitres per annum of Leederville water. In future, recent modelling has shown that the only way the minimum water level at Lake Nowergup can be maintained long-term is by either increasing the supplementary pumping by a factor of 5 (to 6 GL per year) or by reducing the groundwater abstraction from the surrounding sub-areas (including the DSP area) by 50%.

Urbanisation of the DSP area will result in groundwater abstraction decreasing significantly and improve infiltration into the superficial aquifer. This has the potential to save over 1.2 gigalitres of Leederville water per annum whilst enabling the EWR for Lake Nowergup to be maintained.



Legend

-  The Site
-  Inferred Regional Groundwater Direction
-  Ghangara Jandakot Depth to Groundwater (Contours) – 2019 Min (DWER-095)

Figure 12: Groundwater Contours (Source: Western Environmental)

3.5 Agriculture

The Framework states that Wanneroo has traditionally been recognised as a locationally convenient agricultural area with *“high quality soils and available water”*. However, the soils are in fact highly weathered and require a high rate of fertiliser application, and water allocations are being cut in the context of a warming, drying climate.

The North Wanneroo Agriculture and Water Taskforce investigated options to support agriculture while addressing the issue of declining water availability in Carabooda and Nowergup. Following the taskforce report, the State Government announced a 10 per cent reduction to groundwater allocations for growers in the North Wanneroo area from 2028. Major nurseries growing trees for the Perth urban canopy were exempted. This has already been, and will continue to be, detrimental to local growers, most of whom run small-scale operations and cannot realistically afford to implement the efficiency measures required to adapt to a reduced supply of water. Since the announcement, there has been a gradual shrinkage of agricultural uses within the DSP area to a current maximum use of 17% for food production. In addition, the turf growing and nursery growers currently growing have indicated they will no longer be economically viable when the 10% water cuts are implemented in 2028. The turf farm already only utilises 40% of its land area due to the current lack of water available, even before the impending cuts.

The fact that large-scale horticultural activities have been implemented in Woodridge, Gingin township surrounds and increased at scale in north Carabooda, underlines the fact that efficient use of water, and efficient scale of operations to be economically viable, is the key to horticulture surviving. Scale provides economical use of water and much higher yield crop results, because peripheral edges where quality

and growth yields are not uniform leads to wastage in small 4 and 8 hectare market gardens. Over the last 5 years, a continuous migration to scale in northern districts has occurred. There are now over 1,400 hectares of market gardens in Woodridge, over 800 hectares in Gingin and over 550 hectares of scale operations in North Carabooda, for a total of 2,750 hectares of large-scale agriculture. This continues to grow.

Strategically, population growth and the related need for urban land, combined with the environmental impact of abstracting groundwater for agriculture in a drying climate, justifies a change of use. The impact on horticultural output will not, in fact, be significant. As illustrated on Figure 13, only 17% of the DSP area is currently engaged in food production (164ha, or only 9.8% of the total for the City of Wanneroo) and another 9% in turf production, for a total of 26%. In this context, and with the need for more urban land in mind, this is a low proportion and an inefficient use of land that is proximate to existing urban areas and transport infrastructure.

Rural planning in Western Australia occurs in the context of SPP 2.5: Rural Planning, the intent of which is to *“protect and preserve Western Australia’s rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values.”* Notwithstanding, SPP 2.5 acknowledges that the conversion of rural land to other uses can occur *“where provided for in a planning strategy or scheme”*, which includes Frameworks-level decisions such as the WAPC’s in respect of this DSP (Section 5.1(a)), and where the objectives of SPP 2.5 can be met (Section 6.2, referring to Section 4). The objectives were addressed by DPLH in its report to the WAPC that resulted in the WAPC supporting the DSP area being urbanised.



Above: Active agriculture within southern site area

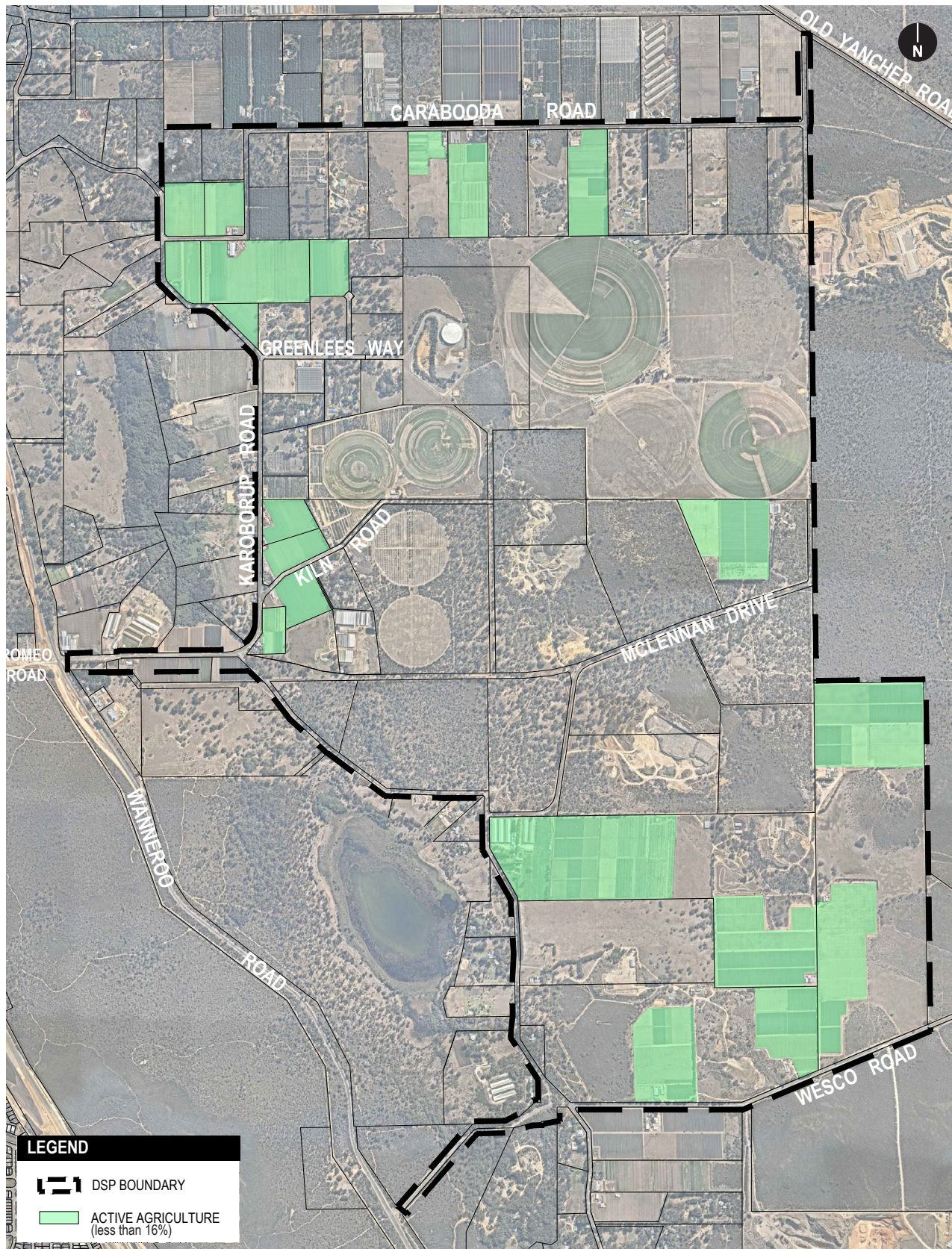


Figure 13: Active Uses (Aerial source: Nearmap)

3.5.1 Poultry Farms

There are four operational poultry farms within and surrounding the DSP area which typically attract a generic separation distance of 500 metres under EPA Guidance within which residential uses are incompatible.

Nowergup Poultry Farm, located within the DSP area at Lot 12 Gibbs Road, is owned by a CLG member and its closure will be coordinated to facilitate orderly development.

P Kyme & Co poultry farm, located west of the DSP area on Lot 501 (#23) Karaborup Road, may extend into the DSP in the vicinity of the planned district centre, however, a range of non-sensitive commercial uses can be considered therein in accordance with SPP 2.5 and EPA Guidance. Alternatively, an odour assessment may be undertaken to determine site-specific separation distances.

Yaranary Farm, located west of the DSP area at Lot 435 (#263) Gibbs Road, and Carabooda Egg Farm, located north of the DSP area at Lot 15 (#275) Carabooda Road, may impact approximately 12.5ha and 24ha of proposed urban land, respectively (excluding conservation and open space areas). Odour assessments will be undertaken to determine site-specific separation distances and non-sensitive uses considered at the local structure plan stage. This may require adjustments to the northern primary school site within Precinct 3. These potential changes are unlikely to necessitate district-level coordination and should be appropriately resolved within future local structure plans.

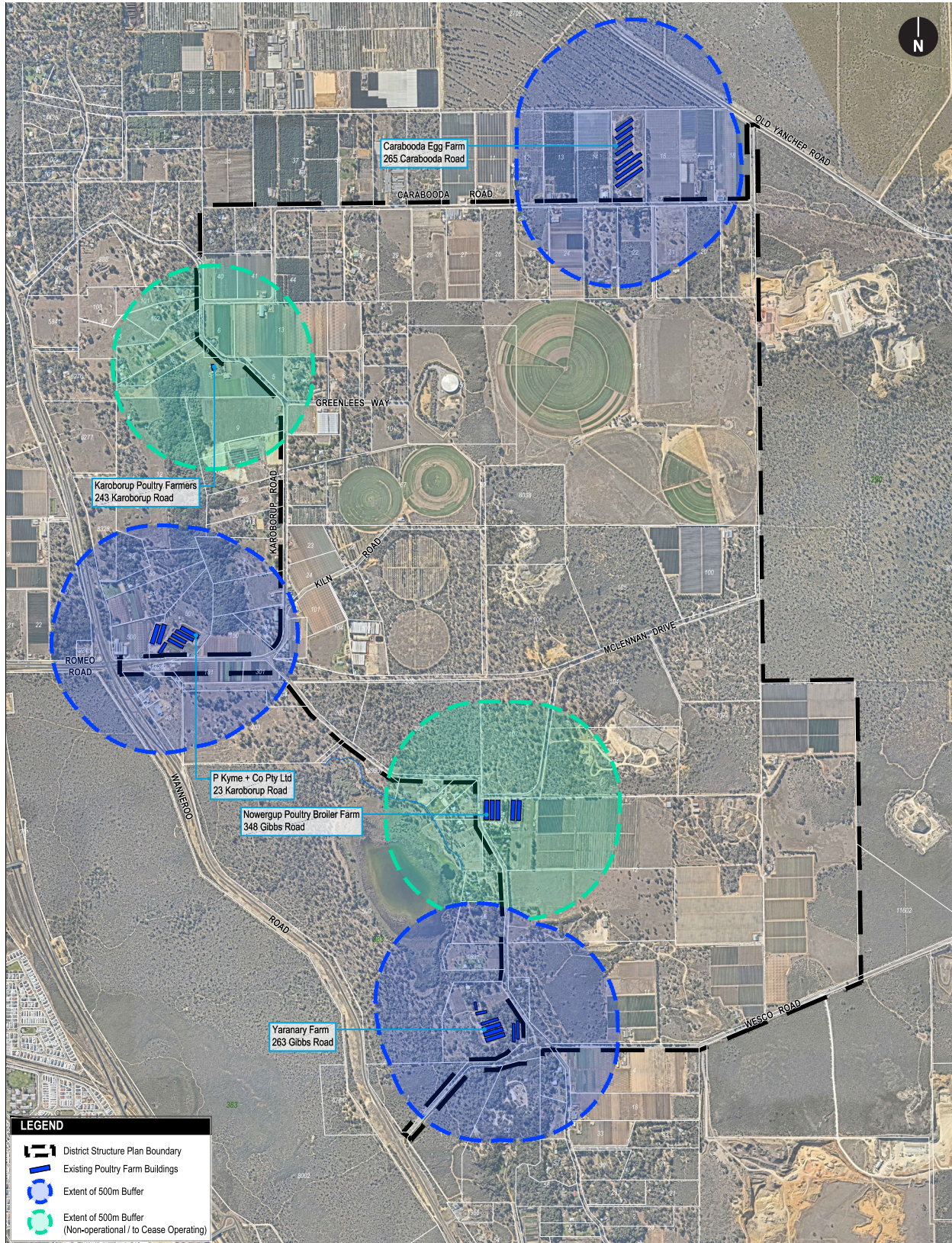


Figure 14: Poultry Farms (Aerial source: MetroMap)

3.6 Basic Raw Materials

The Framework states that the North-West sub-region contains significant limestone and sand resources and that ongoing access to these *“with cost-effective proximity to future growth areas is important to housing affordability and moderating the cost of future infrastructure projects.”* To ensure this, the Framework advocates for *“sequential land use planning principles, staging of development and land use buffers”*. This was addressed in the Request and is further detailed below.

SPP 2.4: Basic Raw Materials has the intent of ensuring that Basic Raw Materials ('BRM') and extractive industries matters “are considered during planning and development decision-making, to facilitate the responsible extraction and use of the State’s BRM resources.” To achieve this, SPP 2.4 advocates for (relevantly) *“ensure BRM and its regional importance is considered at the earliest stages of the planning process”*.

Parts of the DSP area are mapped as ‘Significant Geological Supplies’ under SPP 2.4, relating to limestone. This classification is one of the two BRM categories used by SPP 2.4, the other being ‘Extraction Sites’. SGS is used for BRM *“that represent strategic, long-term supplies of BRM requiring protection”*, with the caveat that *“The identification of BRM under these categories does not obligate the landowner to extract these resources, nor that government approvals for extraction is guaranteed.”* SPP 2.4 also identifies ‘Exclusion Areas’ within which BRM extraction is not contemplated due to environmental values, resource conflicts or for land use planning reasons.

Overall, 277.8ha of the DSP area is identified as an SGS, as illustrated by Figure 14. There is also a 3.5ha Exclusion Area off Kiln Road. Of the SGS area, the following approach is proposed:

- Approximately 51.5% (143.23ha) is under remnant vegetation proposed to be part of the DSP conservation estate, and thus in future will be mapped as an ‘Exclusion Area’.
- Approximately 40.6% (112.87ha) will be available for sequential extraction ahead of urban development.
- Approximately 4.1% (11.5ha) may be available for sequential extraction ahead of urban development pending the granting of a clearing permit.

The future Exclusion Areas correspond with important tuart woodlands and banksia woodlands, clearing of which will almost certainly never be permitted.

Where BRM is available for extraction, sequential land use principles will be applied and buffers between any active quarries and urban development will be imposed to minimise the risk of land use conflict. This strategy ensures that the objectives of SPP 2.4 to *“protect BRM in SGS areas and ES by avoiding encroachment from incompatible land uses”*, to *“ensure BRM resources are used efficiently in land use planning and development”* and to *“identify BRM extraction opportunities through sequential land use”* can be met.

It is currently anticipated that the BRM within the DSP area has a 7-10 year lifespan, making it only a short to medium-term consideration.

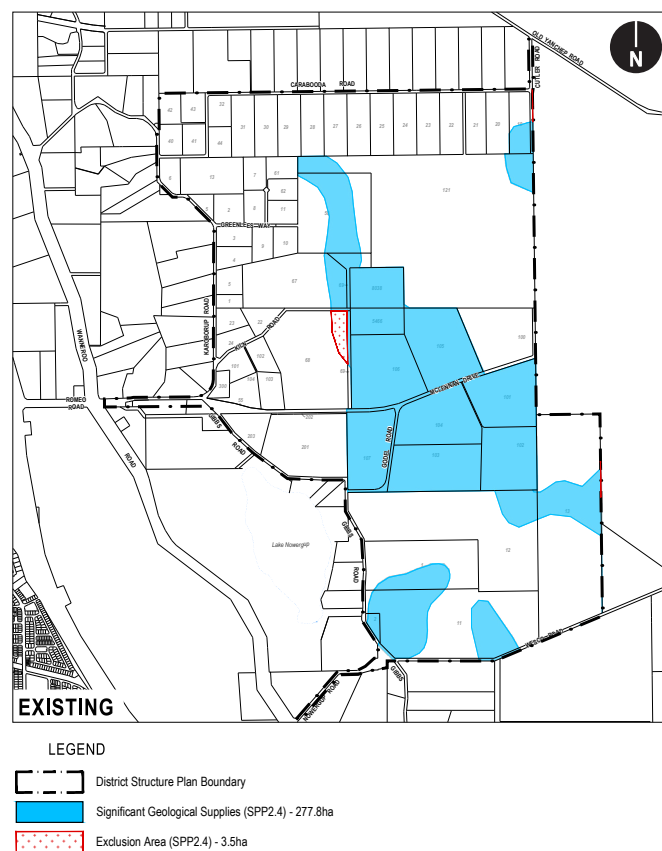
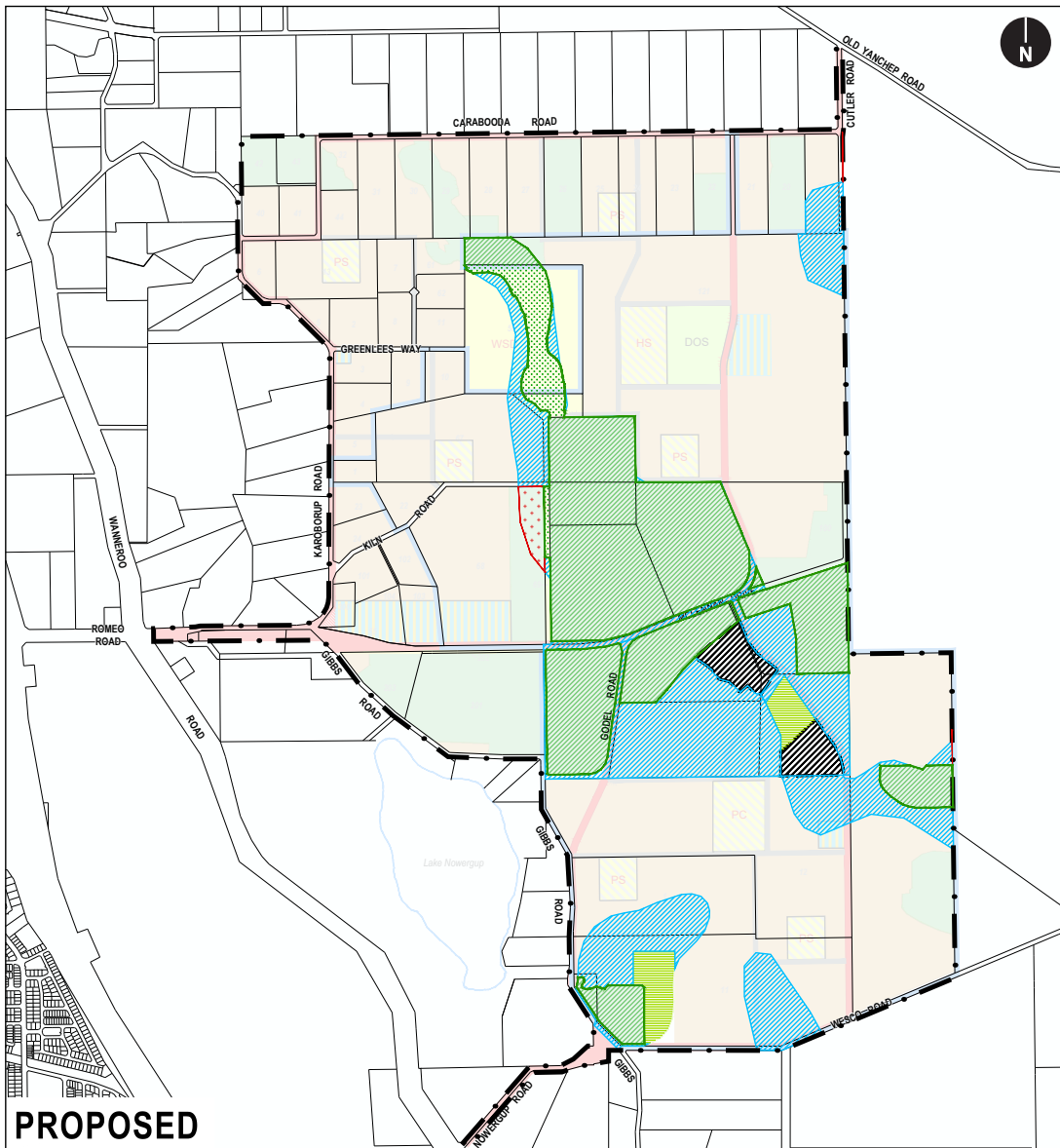


Figure 15a: Basic Raw Materials Plan (Existing)



LEGEND

	District Structure Plan Boundary		Exclusion Area (Conservation - Water Corporation) - 11.95ha
	Exclusion Area (Conservation) - 131.28ha		Local Open Space (Conservation) - 10.19ha
	Potential Clearing Permit and BRM Extraction - 11.5ha		Exclusion Area (SPP2.4) - 3.5ha
	BRM Available Prior to Development - 112.87ha		

Figure 15b: Basic Raw Materials Plan (Proposed)

3.7 Bushfire Risk

Most of the DSP area is mapped as being an Area 2 bushfire-prone area in the map database maintained by the Department of Fire and Emergency Services. Accordingly, SPP 3.7: Bushfire is applicable and this DSP incorporates a Bushfire Management Plan ('the BMP'; refer to Appendix 2).

The BMP observes that the primary, long-term bushfire hazards affecting the site are:

- Remnant vegetation being retained within the conservation estate and other POS; and
- Remnant off-site vegetation, leading to the DSP area being classified as a Broader Landscape ('BLT') Type B under Element 1: Location of SPP 3.7.

The BMP concludes that neither of these factors is an impediment to the DSP area being urbanised. Post-development:

- Bushfire Hazard Levels of 'Moderate' are expected to apply along the interfaces with remnant vegetation being retained (on and off-site) and 'Low' elsewhere, both of which can be addressed at the LSP and subdivision stages.
- A satisfactory outcomes-based approach to addressing the BLT B classification under Element 1 of SPP 3.7 is available.

It should be noted that several existing, growing and planned urban expansion areas are classifiable as BLT B, including Yanchep as a local example, so this issue is not seen to be an impediment.

With respect to the other elements defined in the SPP 3.7 Guidelines:

- Element 2 is satisfied because the areas of the subject site identified for future development achieve a post-development BHL of 'Low' or 'Moderate' and minimises the clearance of native vegetation.
- Element 3 is satisfied because existing and planned public roads provide access in more than two different directions and destinations. Future roads will meet the Acceptable Solutions pathways at the LSP and subdivision stages.
- Element 4 will be satisfied at the development stage through the provision of a reticulated water supply network as described in Appendix 4: Engineering Servicing (Infrastructure) Report.

Preparation of the BMP also included the following key assessment considerations and responses:

- Assessment of six bushfire scenarios, including a worst-case scenario involving fire impacting the full eastern boundary adjoining State Forest 65 and the central conservation corridor, demonstrating that multiple evacuation routes remain available under each scenario.
- Provision of increased hazard separation to State Forest 65 and adjoining conservation areas through managed open space and perimeter roads, achieving a maximum Bushfire Attack Level (BAL) of BAL-19, where BAL-29 is otherwise acceptable, thereby exceeding the requirements of Element 2: Siting and Design.
- Preparation of traffic modelling scenarios demonstrating that the road network has sufficient capacity to facilitate the timely evacuation of the DSP population, in the unlikely event of a full scale evacuation.

In light of the above, compliance with SPP 3.7 at the relevant stages of the planning and development process can be achieved.

3.8 Heritage

There are no sites within the DSP listed under the *Aboriginal Heritage Act 1972* or the Heritage Act 2018. However, the City of Wanneroo Local Heritage Survey includes the 'Lime Kilns – Spiers' at 115 Kiln Road as a Category 2 site, which affords a level of local protection.

The kilns are on State-owned land and are proposed to be retained within the conservation estate for long-term preservation. There is an opportunity for interpretive elements and walking trails to be installed at the development stage to enhance the kilns' heritage value to the community. This approach is consistent with the expectations of SPP 3.5: Historic Heritage Conservation for the strategic level of planning.

Lake Nowergup, located just beyond the south-western boundary of the DSP area, is a registered Aboriginal heritage site having mythological significance. Two other Aboriginal heritage sites are within 2km of the DSP area. None of these will be detrimentally affected by urbanisation in the DSP area, and as stated elsewhere the health of Lake Nowergup is expected to benefit.

3.9 Transport Noise

Road and rail transport noise in Western Australia is regulated by SPP 5.4: Road and Rail Noise. Trigger distances to transport infrastructure covered by the policy are mapped and where they coincide with a site with potential to support noise-sensitive development, such as residential development, the provisions of SPP 5.4 are applicable.

The DSP area is not currently mapped as being affected by road or rail transport noise. The nearest infrastructure covered by SPP 5.4 is Wanneroo Road to the west and the future Whiteman-Yanchep Highway to the east, along the Old Yanchep Road corridor. The trigger distances for these roads do not reach the DSP area.

The Transport Impact Assessment appended to this DSP indicates that the traffic volumes and characteristics (e.g. the proportion of heavy vehicles) of the roads proposed in the DSP are unlikely to trigger SPP 5.4. However, future TIAs prepared for future planning submissions may come to different conclusions and if this occurs, SPP 5.4 may be applicable. In that case, measures such as Quiet House construction standards might be applicable at the development stage.

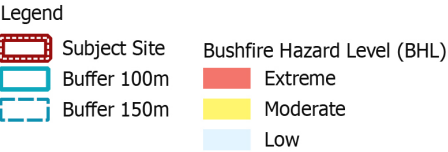
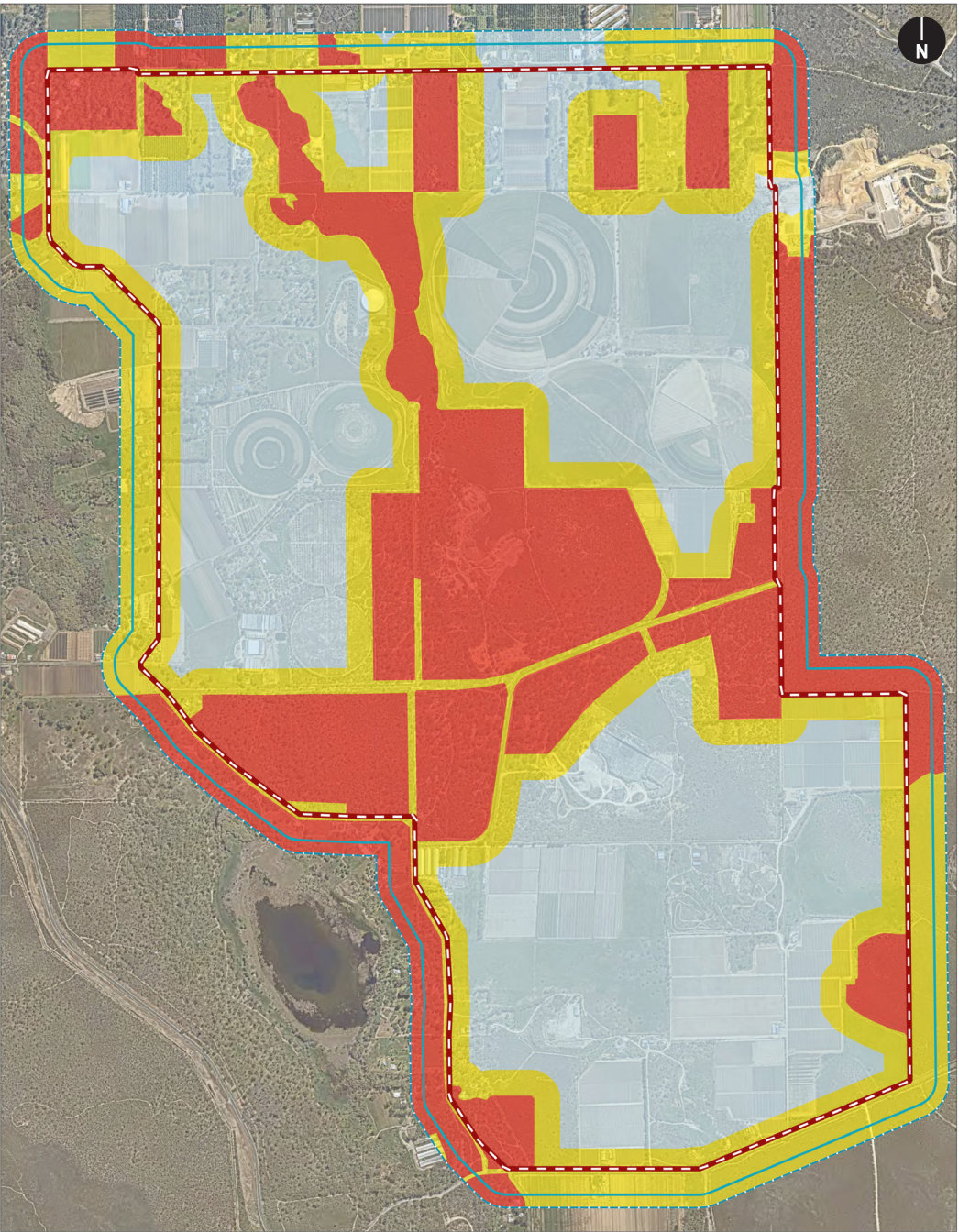


Figure 16: Bushfire Hazard Level - Post-Development (Source: Western Environmental, 2025)

4. Stakeholder & Community Engagement

This DSP is the culmination of planning investigations and discussions between local landowners, the City of Wanneroo and the State Government that date to the mid-2010s.

Background

During the advertising period for the Perth and Peel @ 3.5 Million suite of policies, including the Sub-Regional Frameworks, a submission was made by Acumen for the DSP area to be included as an 'Urban Investigation' area based on the significant opportunity it presented. The inclusion was strategically supported, however, the East Wanneroo DSP area was prioritised and Acumen was advised to recommence its representations for Carabooda once the Frameworks had been fully resolved and were due for review.

The final unresolved aspects of the Frameworks, being the 15 Planning Investigation Areas, were addressed in 2022 and 2023. Thirteen of the 15 were determined in 2022 and the final two in 2023. Discussions about Carabooda have progressed against this backdrop, with the next generation of land supply opportunities now requiring consideration by the State Government.

The proponent for this DSP, Acumen, is authorised to act on behalf of the Carabooda Landowner Group. This body comprises just six members but represents 614ha (63%) of the DSP area. The Request document lodged in December 2023 was commissioned by the Landowner Group through Acumen and followed 18 months of discussions with the WAPC, including the Chair, and DPLH, including its executive, and a briefing to the Minister for Planning.

The content of the Request was consistent with the requirements of the WAPC's correspondence from July 2023 which highlighted environmental values, bushfire risks, groundwater, agriculture, basic raw materials, employment, staging and Aboriginal cultural heritage as matters requiring particular attention. These were addressed in the Request and are covered in Sections 5 and 6 of this report.

This DSP is the product of the planning process agreed through the WAPC's July 2023 correspondence, which governed the assessment of the Request and led to the WAPC's November 2024 decision to grant consent to the preparation of the DSP.

Technical Advisory Group

The Request was submitted to the WAPC in December 2023 and to facilitate its assessment, DPLH convened a Technical Advisory Group. This comprised representatives from:

- City of Wanneroo
- Department of Biodiversity, Conservation and Attractions ('DBCA')
- Department of Education
- Department of Energy, Mines, Industry Regulation and Safety ('DEMIRS')
- Department of Fire and Emergency Services ('DFES')
- Department of Primary Industries and Regional Development ('DPIRD')
- Department of Transport
- Department of Water and Environmental Regulation ('DWER')
- Environmental Protection Authority ('EPA') Shared Services
- Main Roads
- Public Transport Authority ('PTA')
- Water Corporation
- Western Power

The TAG met three times over the course of 2024 and extensive discussions were also held out of session, including through briefings to the Councillors of the City of Wanneroo and the Ministerial Oversight Committee.

In its report to the WAPC, DPLH summarised the outcomes of the TAG members' review of the Request, summarised on Table 1.

The agency comments mentioned above were addressed by DPLH in its report to the WAPC and have therefore been considered in the decision to urbanise the DSP area.

The matters raised by the TAG members in respect of the conservation estate, road connections, basic raw materials, bushfire risk management, schools, water management, transport modelling and servicing are all addressed in the DSP design, this report and the technical appendices.

Consent from the WAPC

With reference to the material submitted by the project team and the advice of the TAG members, the WAPC considered the Request in November 2024 and resolved to grant consent to prepare this DSP.

Agency	Position	Comment
City of Wanneroo	Support	- Support additional land being identified to increase housing supply. - Vital to address loss of agricultural land. The associated Agricultural Zone proposal is strongly supported. - Management of proposed conservation areas should not increase the City's operating costs. - Additional road connections to the north and west should be investigated. - There are potentially significant community benefits set out in the plan that seek to demonstrate a balanced and socially responsible approach to urbanise the area.
DBCA	Support	Support initiatives to retain and protect significant flora and fauna habitat, noting additional studies will be needed as planning progresses.
DEMIRS	Not supported	Opposed pending extraction of basic raw material resources.
DFES	Support	A Bushfire Hazard Level assessment and Bushfire Management Plan will be required to support a DSP, and land may be required for a fire station.
Department of Education	Support	The number of school sites shown is sufficient for the expected 9,221 dwellings, with locations to be refined as planning progresses.
DPIRD	Not supported	The loss of productive land in Carabooda could have a significant impact on the supply of horticultural products.
EPA Services	Support	EPA Services officers support progression of the DSP subject to additional information being provided to quantify impacts and identify mitigation or offset requirements.
DWER	Support	The site is generally unconstrained by water issues. Management measures are to be addressed in a District Water Management Strategy.
Department of Transport (Including Main Roads and PTA)	Support	- Significant road and rail upgrades in the sub-region will complement the proposal. - Comprehensive traffic modelling will be required to identify impacts and infrastructure upgrades to form part of development contribution arrangements.
Water Corporation	Agnostic	The site is not currently serviced and planning will need to be progressed for major water and wastewater infrastructure.
Western Power	Support	Initial supply can be obtained from the surrounding network, with ultimate connection requiring a new zone substation within the site.

Table 1: Summary of Stakeholder and Community Engagement

Next Steps

Acumen has scheduled a stakeholder engagement meeting with all landowners within the DSP boundaries, for early April. This meeting will be held in a major horticultural shed located centrally within the project area. Letters of invitation have been issued to all owners of land, and approximately 80 to 90 attendees are expected to attend. We will be following the best practice, six-step process outlined in the WAPC's *Guide to Best Practice Planning Engagement in Western Australia*, and the meeting follows extensive discussions with landowners over recent years.

Following the landowners' meeting within the DSP boundary, a second major meeting for all landowners on the periphery of the DSP area will be held. Letters of invitation will be hand-delivered to all landowners within the district inviting them to attend, and 60 to 80 attendees

are expected. Both meetings will be provided with copies of the DSP plans and staging plans, information on anticipated timing of planning review and approvals, plus a set of Frequently Asked Questions. Acumen Directors will then undertake one-on-one meetings with individual landowners to follow up. Following the six-step review process, further meetings will be scheduled as required and as key issues are identified.

The above is additional to the advertising processes that will be conducted by the WAPC and/or the City of Wanneroo with respect to the DSP, future MRS amendment/s, future LPS amendment/s and future Local Structure Plans, and pre-lodgement consultation on those by individual proponents.

5. Design & Servicing Response

5.1 Vision

The future Carabooda Urban Precinct is a significant initiative that will influence the form and function of the North-West corridor as a whole. In consultation with key stakeholders, the project team's vision is for:

A regionally significant urban precinct, centred around a major urban bushland reserve, supported by existing infrastructure and delivering social and environmental outcomes through modern and conservation-oriented design.

Progression of this DSP in accordance with this Vision will enable the implementation of the WAPC's 2024 decision to support the urbanisation of the area as an extension of the North-West metropolitan corridor.



Above: Alkimos Railway Station. The new urban precinct will leverage existing infrastructure, including local rail services, to enable efficient use of prior government investment.

5.1.1 Design Response & Key Principles

The urban design approach espoused in the DSP will deliver the Vision through the implementation of the following principles:

- **Deliver** housing supply by taking the opportunity presented by the consolidated nature of local land ownership.
- **Design** in a holistic way underpinned by quality specialist inputs and stakeholder input to deliver a conservation-focused development.
- **Recognise** the area's ecological assets by prioritising the creation and maintenance of a significant conservation estate.
- **Complement** the area's natural setting by prioritising the retention of mature trees in designated conservation reserves and the planting of new trees as development proceeds, including street trees.
- **Embrace** the conservation estate as a centrepiece by minimising fragmentation and optimising visual and physical accessibility.
- **Optimise** the road and service infrastructure already available to the precinct and enable efficient use of prior government investment.
- **Implement** a Development Contribution Plan and capitalise on its potential to smooth the development process.
- **Support** the performance of the Alkimos Secondary Centre and Railway Station by enabling significant, local population growth.
- **Manage** potential land use conflict by giving consideration to existing land uses and development staging from the outset.

Observance of these principles throughout the planning and development process will enable the delivery of a significant supply of housing in a way that supports social and environmental outcomes for future residents and Perth as a whole.

5.1.2 Sense of Place

This DSP marks the beginning of planning for a new community for Perth's North-West corridor. In future, developers will create placemaking strategies that foster a sense of identity and sense of place, and these can be based on the following DSP-level provisions.

The City of Wanneroo has a Place Strategy that espouses four qualities identified by Projects for Public Spaces. The qualities are as follows, and are supported by the Carabooda project team:

1. They are accessible;
2. People are engaged in activities;
3. The space is comfortable, safe and has a good image; and
4. It is a sociable place where people can meet and relax.

The principles are worded in the context of a specific place, like a plaza or a main street. However, they are readily scalable to a higher, more strategic level and can be adopted for Carabooda. The project team also envisages a fifth quality, to be listed first, titled 'The place is distinctive'. With that in mind, the following principles will underpin place-making at the DSP area.

The place is distinctive

- Carabooda and Nowergup are both Whadjuk Noongar words that were the name of local lakes before being adopted as suburb names. 'Nowergup' means 'place of sweet water', and Lake Nowergup is an important feature in the landscape setting for the DSP area.
- The North-West corridor is predominantly coastal in character. Carabooda and Nowergup will embrace their urban forest and rural surrounds as centrepieces of their unique identity.
- The conservation estate proposed in the DSP is almost unprecedented in its scale and the level of commitment to its management. The identity of Carabooda and Nowergup will be inextricably linked with this distinctive feature.
- Consistent branding, signage and public art will promote the sense that Carabooda and Nowergup are special places designed with care in a holistic way.



Above: Lake Nowergup and surrounding bushland



Above: The heritage-listed Spiers lime kilns are a distinctive local feature

The place is accessible

- Accessibility applies from the macro to the micro level and will be approached in that way at Carabooda.
- At the macro level, Carabooda will be known as a place where all corners are accessible to all. Pedestrians and cyclists of all abilities will be encouraged through a network of paths that make use of the linear green spaces that characterise the DSP area.
- At the micro level, Carabooda will be a place where the connections between the public and private realm are seamless, both physically and psychologically, and enable everything from universal access to facilities to small interactions between friends and neighbours.

People are engaged in activities

- Carabooda offers a point of difference to the North-West corridor as a whole. Although the coast is convenient, there will be a range of other activities.
- Nature-based activities that embrace the Aboriginal and non-Aboriginal heritage of the area and its rich array of flora and fauna will be prioritised.
- The City's Rural Way tourism initiative will be prioritised and supercharged by the introduction of a large, local population. There is an opportunity for the community to engage meaningfully with the agricultural activities in the surrounding district.



Above: Walking trails through the conservation estate will be prioritised and promoted

The space is comfortable, safe and has a good image

- As a new, master-planned community, there is an opportunity at Carabooda for a holistic urban and landscape design that adopts best practice approaches for community comfort and passive safety.
- The notion of a good image encompasses many things and sustainability underpins them all. Carabooda will prioritise initiatives that enable sustainability at all levels, from habitat protection at the DSP level through to renewable energy on a lot-by-lot basis.
- The image of Carabooda as an intriguing, special place will be encouraged by the promotion of its unique assets in terms of its environment and rural setting.



Above: Large mature trees characterise the DSP area

It is a social place where people can meet and relax

- The Carabooda DSP has been designed to emphasise the role of public spaces as meeting places and advocate walkability as a key objective.
- The villages within the DSP area, with boundaries defined by the conservation estate, are designed with walkability in mind. Accessibility to schools, shops and community facilities in each is a priority.
- The innovative and industry-leading approach to conservation management and funding will create and promote a natural asset to which the community will gravitate.

The place-making process within the DSP area will unfold over the years to come, but significant work will be completed up-front over the course of 2025 and reported to the WAPC before the DSP is adopted.



The vision for Carabooda has been shaped by the opportunities of the site and the aspiration to bring forward a contemporary and conservation-oriented master planned community



5.2 Population & Employment

The DSP is primarily residential in its focus, in recognition of the significant facilities, services and employment opportunities that are already available in the North-West corridor as a whole. The DSP area is expected to facilitate 9221 residential lots and a population of approximately 23,052. Within the DSP, neighbourhoods based on a 400m walkable catchment (or a 5 minute walk) are envisaged in accordance with the New Urbanist principles espoused in *Liveable Neighbourhoods*.

Liveable Neighbourhoods envisages that the heart of each neighbourhood should be an activity centre with a compatible mix of uses including retail floorspace, services, community facilities and/or public spaces such as a square. This DSP adopts this approach, with 400m catchments designed to be focused on a local, neighbourhood or district activity centre, or a school. Detail on the design of these focal points will be required with future Local Structure Plans.

5.2.1 Residential Densities

The DSP requires future LSPs to deliver a minimum residential density of 15 dwellings per hectare of gross Urban-zoned land and an average of 22 dwellings per hectare of Net Developable Area, consistent with *Liveable Neighbourhoods*. To achieve this, a base residential density coding of R20 should be applied at a minimum. A base coding of R25 or R30 would be preferable for locations within 400m of an activity centre or school.

Within 200m of a Local Centre or Neighbourhood Centre, the density requirement from SPP 4.2: Activity Centres applies, namely, a minimum residential density of 25 dwellings per gross Urban-zoned hectare. Residential density codings of R40 to R60 should be applied in these catchments and consideration could be given to R80 codings for land abutting or within a centre. Land adjacent to amenities such as public open space (local, district or regional) and public transport stops is also, in general, suitable for relatively higher densities than the local average.

The District Centre proposed for McLennan Drive is intended for vehicle-oriented service commercial development.

5.2.2 Residential Built Form

Residential built form will be regulated by the Residential Design Codes ('R-Codes') and any relevant Local Planning Policies at the subdivision and development stage. Variations to the deemed-to-comply pathways in the R-Codes may also be approved via Local Development Plans at that stage.

5.2.3 Rural Interfaces

In some places, the interface between urban areas and rural areas can benefit from a transitional zone or residential coding. Visually, this softens the contrast between the two land uses and can minimise the effect of off-site impacts from either use to the other. However, this DSP does not envisage any transitional zones or codings, for the following reasons:

- The majority of the 'residential to rural' interfaces comprise Integrator roads that will be of a sufficient width, and sufficiently planted with verge and median trees, to soften the visual impact of the residential area.
- The eastern interface is primarily with Bush Forever Site 290, which is reserved as 'State Forest' under the MRS and will be separated from future residential land by a low-order road; probably an Access Street, that is wide enough to facilitate bushfire hazard separation. This is not a prominent or visually sensitive interface, so no particular density controls, for example a rural-residential zoning, are proposed. Residential development will be set back for bushfire-related reasons and future residents will benefit from views to the bush.

Land use conflicts with existing and future surrounding agricultural uses are to be mitigated in accordance with SPP 2.5, the Department of Health Guidelines for Separation of Agricultural and Residential Land Uses (2012) and EPA Separation Distances between Industrial and Sensitive Land Uses (GS3) (2005). In that regard, a vegetated buffer may be required along the perimeter of the DSP area to protect agricultural land from the encroachment of sensitive uses within the DSP. Interim buffers will similarly be considered to agricultural uses within the DSP area as staged development progresses.

Local structure plans will also consider and mitigate the impact of poultry farms and designate compatible uses within separation distances as prescribed in EPA Guidance or as determined through site-specific odour assessments, as appropriate.

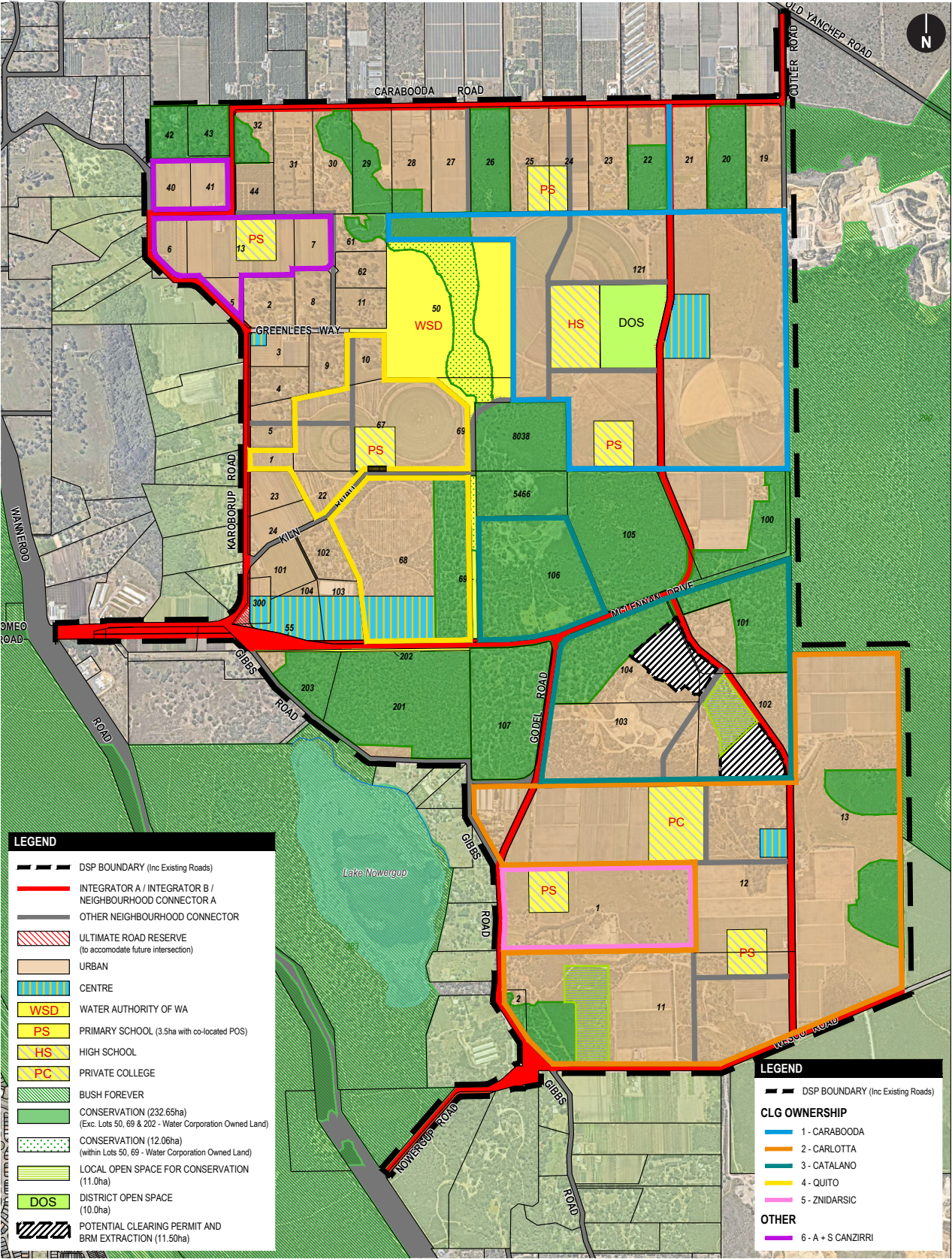


Figure 17: Concept Plan (Source: Nearthmap)

5.2.4 Activity Centres

Consistent with Section 3.2 of the SPP 4.2 Guidelines, this DSP identifies new District, Neighbourhood and Local Centres. The purpose of doing so is to fulfil the aims of SPP 4.2, which include the requirement to consider the distribution, function, broad land use, access and urban form of future Activity Centres to an appropriate level of detail at each stage in the planning process.

The DSP area is convenient to the Alkimos District Centre and will support its completion and patronage. The Activity Centres proposed in the DSP are therefore local in focus to ensure the DSP area does not undermine the established hierarchy within the North-West corridor.

With reference to the Activity Centre hierarchy defined in SPP 4.2 and the Economic and Employment Analysis prepared by Pracsys (refer to Appendix 3), the Activity Centres proposed in the DSP comprise the following:

- North-West Local Centre
- North-East Neighbourhood Centre
- South-East Local Centre
- Romeo Road District Centre

A summary of each Activity Centre is provided on the following pages.



Above: A hierarchy of Activity Centres will deliver a range of facilities and services that will meet the needs of future communities

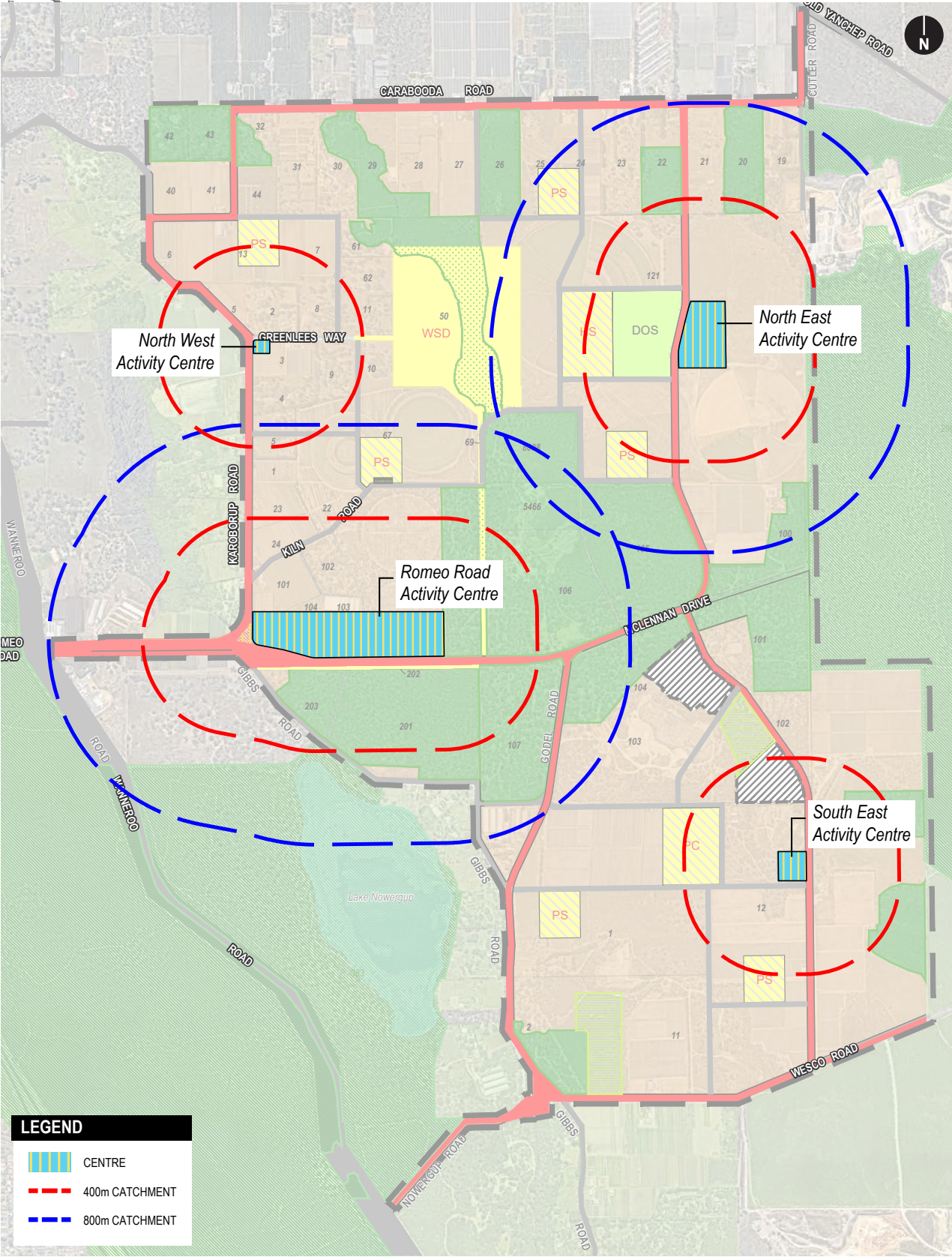


Figure 18: Centre Catchments Plan

Type	Local Centre
Gross area	1ha
Assumed GFA	2,500sqm
Target density and catchment	25 dwellings per gross Urban-zoned hectare within 200m.
Role	Convenience retail, small office spaces and services.
Access	• Pedestrian accessibility from residential catchment to the north, south and east. • Bus routes along Karoborup Rd and, potentially, Greenlees Way. • Vehicular access from Karoborup Rd and Greenlees Way. • Vehicle-oriented land uses to be positioned toward Karoborup Rd to enable eastern parts of the site to be pedestrian-oriented. • Parking to be preferably on-street to enable commercial tenancies to have short setbacks and direct pedestrian access from the footpath, not through a carpark.
Desired land uses	As per SPP 4.2: Activity Centres for Local Centres, with further detail to be developed for the relevant LSP.
Typical urban form	As per SPP 4.2: Activity Centres for Local Centres, with further detail to be developed for the relevant LSP.
Potential community facilities	Not required in this centre. Local (active) open space envisaged as co-located infrastructure with one or both of the nearby Primary Schools.
Pathway	Precise size and location to be determined through the relevant LSP, and the site to be shown in the LPS 'Commercial' zone in the relevant LSP. An indicative layout should be included with the relevant LSP.

Table 2: North-West Local Centre

Type	Neighbourhood Centre
Gross area	5.4ha
Assumed GFA	16,200sqm
Target density and catchment	25 dwellings per gross Urban-zoned hectare within 200m.
Role	Convenience retail, office spaces and services, plus floorspace to cater for the community's weekly shopping needs (i.e. a full-line supermarket) and specialty stores, and residential (multiple dwelling) development.
Access	• Pedestrian accessibility from residential catchment to the north, south and from the High School to the west. • Bus routes along the north-south Integrator road and east-west Neighbourhood Connector road. • Vehicular access from the north-south Integrator road and east-west Neighbourhood Connector road. • Vehicle-oriented land uses to be positioned toward the north and east to enable southern and western parts of the site to be pedestrian-oriented. Parking to be preferably on-street to enable commercial tenancies to have short setbacks and direct pedestrian access from the footpath, not through a carpark.
Desired land uses	As per SPP 4.2: Activity Centres for Neighbourhood Centres, with further detail to be developed for the relevant LSP.
Typical urban form	• Generally as per SPP 4.2: Activity Centres for Neighbourhood Centres, with further detail to be developed for the relevant LSP. • Focused on a main street, with private carparks and shop entries to be on or very close to the main street to facilitate foot traffic. • Respectful of the character of the surrounding residential area, but with distinctive elements that create a sense of place and identity.
Potential community facilities	Community centre (local), and District Open Space envisaged as co-located infrastructure with the nearby High School site. Alternative District Open Space sites exist in the LSP 1 area adjacent to the private college site, or in the LSP 2 area north of the District Centre.
Pathway	Precise size and location to be determined through the relevant LSP, and the site to be shown in the LPS 'Commercial' zone in the relevant LSP. An indicative layout should be included with the relevant LSP, with particular focus on the interface with the adjacent secondary school, should the two abut in the final LSP design.

Table 3: North-East Neighbourhood Centre

Type	Local Centre
Gross area	1.5ha
Assumed GFA	4,500sqm
Target density and catchment	25 dwellings per gross Urban-zoned hectare within 200m.
Role	Convenience retail, small office spaces and services.
Access	• Pedestrian accessibility from residential catchment to the north, south and west, including the private school site to the west. • Bus routes along the north-south Integrator road and east-west Neighbourhood Connector road. • Vehicular access from the north-south Integrator road and east-west Neighbourhood Connector road. • Vehicle-oriented land uses to be positioned toward the south and east to enable the northern and western parts of the site to be pedestrian-oriented. • Parking to be preferably on-street to enable commercial tenancies to have short setbacks and direct pedestrian access from the footpath, not through a carpark.
Desired land uses	As per SPP 4.2: Activity Centres for Local Centres, with further detail to be developed for the relevant LSP.
Typical urban form	As per SPP 4.2: Activity Centres for Local Centres, with further detail to be developed for the relevant LSP.
Potential community facilities	Community centre (local). Local (active) open space envisaged as co-located infrastructure with one or both of the nearby Primary Schools.
Pathway	Precise size and location to be determined through the relevant LSP, and the site to be shown in the LPS 'Commercial' zone in the relevant LSP. An indicative layout should be included with the relevant LSP and should address the prioritisation of pedestrian connectivity and amenity, as well as design considerations that support active modes of travel both to and from the Centre.

Table 4: South-East Local Centre

Type	District Centre
Gross area	15.5ha
Assumed GFA	46,500sqm
Target density and catchment	25 dwellings per gross Urban-zoned hectare within 200m.
Role	Primarily vehicle-oriented service commercial floorspace, and secondarily convenience retail, office spaces and services (including medical services), plus floorspace to cater for the community's weekly shopping needs (i.e. full-line supermarket/s) and specialty stores.
Access	• Pedestrian accessibility from residential catchment to the north. • Bus routes along McLennan Drive and Karoborup Road • Vehicular access from McLennan Drive. • Vehicle-oriented land uses to be positioned toward the south, east and west to enable the northern parts of the site to be pedestrian-oriented.
Desired land uses	As per SPP 4.2: Activity Centres for District Centres, with further detail to be developed for the relevant LSP.
Typical urban form	As per SPP 4.2: Activity Centres for District Centres, with further detail to be developed for the relevant LSP.
Potential community facilities	Community centre (district) and library
Pathway	Precise size and location to be determined through the relevant LSP, and the site to be shown in the LPS 'Commercial' zone in the relevant LSP. An indicative layout should be included with the relevant LSP, with particular focus on the interface with the abutting conservation reserve, pedestrian connectivity and amenity, and support for active transport modes. A Local Development Plan may be required to provide site-specific detail if deemed necessary at the LSP stage.

Table 5: McLennan Drive Activity Centre

5.3 Environment & Heritage

5.3.1 Conservation Estate

Approximately 25% of the DSP area is proposed to be reserved for the purpose of conservation. The conservation reserves coincide with consolidated remnant vegetation across the site and create two ecological corridors, one running north-west to south-east, and another running from east to west. Other, smaller areas of quality vegetation will also be reserved for conservation.

The land reserved for conservation under ownership of the Carabooda Landowners Group will ultimately be ceded free of cost.

The management of the reserves will require sustained funding. To this end, the Landowner Group has proposed a permanent funding mechanism referred to as the Conservation Management Fund (CMF). The CMF comprises two distinct elements:

- Seed capital from the land developers through DCP, who will pay incrementally at the subdivision stage pursuant to a condition of approval; and
- Annual contributions via a Specified Area Rate charged to each household as part of the City's annual rates notice. The SAR charge would be determined according to estimated management costs and in accordance with the Local Government Act 1995.

Strategic environmental management plans prepared at LSP stage will identify and coordinate conservation actions. Landowners may be required to undertake conservation-specific activities such as rehabilitative planting through conditions of subdivision approval where such items cannot be accommodated in a DCP.

The CMF will require appropriate levels of administration and funding as a responsibility of the City of Wanneroo. Through the Development Contribution Plan outlined in Part 1 of the DSP, the City will have control of payment collection on a per lot basis from landowners/developers (at subdivision clearance stage) to establish the capital funding. The SAR will then provide ongoing funding to the City for the management of the conservation estate.

The operation of the CMF will be guided by a Reference Group consisting of representatives from the City, DWER, DBCA and the landowners/developers (for the extent of the project delivery timeframes). Initially, the landowners/developers will be represented on the Reference Group by nominated personnel from Acumen Development Solutions within the scope of their Landowner Representation and Development Management Agreements.

The CMF will fund the establishment of the conservation estate and POS as development progresses. Initial improvement works will include fencing, weed management, pest management, interpretive signage, walking trails and preservation of the lime kilns.

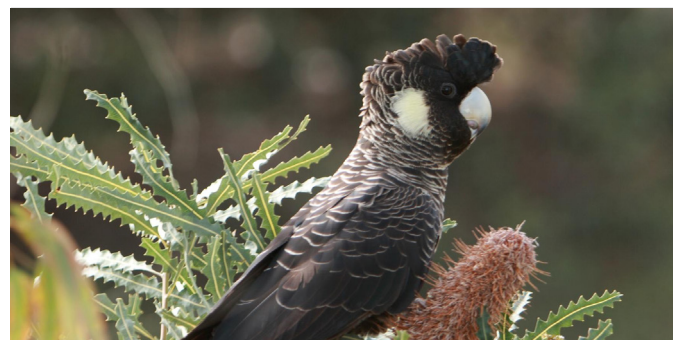
Upon maturity of the CMF, should the balance of funds not be required for conservation maintenance it will be applied to the upkeep of local POS, part of which will contain significant stands of native vegetation and habitat.

Following the completion of project delivery, the developers' representatives will no longer be required on the Reference Group and the City can assume ongoing responsibility. The extent of future involvement of DWER and DBCA representatives can be determined at that time.

The establishment of such a large-scale conservation estate anchored by a permanent funding mechanism for maintenance (the CMF) is a unique proposition for Western Australia and will deliver an environmental benefit to the State with costs shared across stakeholder groups.



Above: Banksia trees



Above: Black Cockatoo

Section 16 EPA Advice

The Environmental Protection Authority (EPA) prepared advice for the WAPC under Section 16 of the *Environmental Protection Act 1986* (EP Act) to identify the key environmental values within the DSP at its formative stages. The advice also identified the level of protection and/or enhancement that may be required to ensure consistency with the EPA's environmental objectives.

The advice was provided as a pilot project for interagency engagement between the EPA and WAPC as part of district structure planning and was proactively sought by the proponent. This enabled the EPA to provide early, project specific guidance on key environmental matters before the DSP was considered by the WAPC for consent to advertise. This collaborative approach is intended to improve the certainty and efficiency of any referral under section 48A of the EP Act, when future MRS Amendments associated with the DSP are referred to the EPA in accordance with section 38 of the *Planning and Development Act 2005*. Ultimately, the process is intended to facilitate timely decision-making while achieving improved environmental outcomes.

The EPA initially provided its advice on 4 April 2025, with supplementary advice issued in November 2025. Both advice documents are published on the EPA's website and are appended to the DSP's Environmental Assessment Report (EAR).

In response to the EPA's advice dated 4 April 2025, the DSP was amended to include:

- An additional 7.44ha of Regional Open Space for conservation purposes; and
- Approximately 11ha of local open space for conservation purposes, to be identified through future LSPs.

These amendments provide additional protection for native vegetation mapped as being in 'Excellent' and 'Very Good' condition, together with additional foraging habitat for the Carnaby's black cockatoo. They also establish environmental stepping stones along the eastern boundary of the project area and result in approximately 75% of the native vegetation across the DSP being identified for retention. The EPA also commended the proponent on its proposal to establish the CMF and recognised this as an innovative and forward-thinking initiative that provides a model for long term retention, protection and active management of the identified environmental conservation areas.

Compliance with SPP 3.6: Infrastructure Contributions

With reference to Sections 6.1 and 6.2 of SPP 3.6, the CMF is a suitable community infrastructure item for a DCP because:

- There is a need, for environmental and social reasons, to protect and manage vegetation identified in environmental policies as being conservation-significant. There is a clear nexus between the conservation estate and the proposed development, because the development would not be possible without a holistic approach to environmental management and because the social benefit of access to the natural environment will accrue significantly to the residents of the DSP area in the same way as community infrastructure such as a library or function space.
- The landowner agreement between the proponent of this DSP and the Carabooda Landowner Group was made several years ago before the DSP Request was submitted to the WAPC in November 2023. It underpins the landowners' relationship with each other and the proponent with respect to the DSP and from the outset, it included provisions about cost-sharing for the CMF and other infrastructure. With reference to several of the principles underlying infrastructure contributions from SPP 3.6, it confirms mutual understanding and forms the basis for contributions that are transparent, equitable, certain, efficient, consistent and accountable. As noted above, costings have been done and are understood by all participants.
- The conservation estate is a piece of community infrastructure and in the context of the site, is seen as an indispensable amenity needed for the community and neighbourhoods to function effectively. It is ideal that SPP 3.6 puts in place a DCP framework to facilitate cost-sharing not only among the Carabooda Landowner Group, but crucially from future landowners participating in the development process.
- SPP 3.6 includes reference to 'cultural' and 'recreation' facilities in its definition of community infrastructure and specifically contemplates 'other community services and facilities' (other than infrastructure such as sporting facilities, community buildings and community services) where the local government and WAPC agree.

Overall, the CMF is a robust framework that will ensure that the management of the planned conservation estate is properly funded in perpetuity with no cost to the public sector, and the use of a DCP to administer it is appropriate in the context of SPP 3.6.

5.3.2 Local Open Space

The conservation estate is a regional-scale reserve. It is being proposed in addition to the local public open space ('POS'), to be set aside at the local structure plan and subdivision stages.

In accordance with Development Control Policy 2.3: Public Open Space in Residential Areas and *Liveable Neighbourhoods* (Element 4), LSPs and subdivision applications will be required to demonstrate how and where POS will be delivered. As stated in Part 1, in accordance with Development Control Policy 2.3 – Public Open Space in Residential Areas and *Liveable Neighbourhoods*, the WAPC may consider that land reserved for Regional Open Space under the Metropolitan Region Scheme may be included as part of the 10 percent public open space contribution where it can be demonstrated to the satisfaction of the WAPC and the City of Wanneroo that the subject land can be used for an appropriate local (as well as a regional) purpose. Local POS provision is required to cater to the active and passive recreational needs of the community and local POS would still be expected to comprise a minimum of 8% of the gross subdivisible area.

POS provision will need to have regard for the objectives of *Liveable Neighbourhoods* or its successor, which in the context of the DSP area require:

- Passive and active recreational space to complement the conservation-focused nature of the conservation estate described above.
- Integration of local landmarks such as the water tower and historic lime kilns both in a visual sense (e.g. through the creation of viewlines) and physically (e.g. in terms of landscaping and access).
- Incorporation of linear open space, incorporating the conservation estate where appropriate, to facilitate walking and cycling throughout the DSP area.
- Provision of local (<0.3ha) and neighbourhood parks (0.3-0.5ha) and the landscaping and short-term management of these by the developer.
- Finalisation of designs and plans for any POS that may be co-located with a school, including with respect to shared ovals or accessible conservation areas that abut school sites.
- Incorporation of drainage infrastructure as appropriate and within the creditable POS restrictions imposed by *Liveable Neighbourhoods*.
- Accommodation of water-sensitive urban design principles that are responsive to the permeable, sandy local soils and support the health of remnant vegetation in a drying climate.

Once created at the subdivision stage by the developer and maintained through the maintenance period, the POS will become the responsibility of the City. Maintenance funding will be allocated by the City from its municipal funds, as normal, and supplemented by the CMF.

As all of the POS contemplated in this sub-section will be primarily of local benefit, it is unlikely for them to be included as items of shared infrastructure in a DCP.



Above: Local public open space with a mix of uses



Above: Public space overlooking conservation area

5.4 Natural Resources

The DSP area is coincident with mapped Significant Geological Supplies areas under SPP 2.4 and the majority of these areas are under remnant vegetation that is not proposed to be cleared. Of those that are not, most are within or adjacent to the quarry on Godel Road.

At the time of writing (early 2025), the Godel Road quarry was not active, but BRM resources remain. The owner is currently prioritising limestone extraction from another site (on Wesco Road) under lease. Once that resource has been exhausted and/or the lease ends, the owner will revert to their Godel Road quarry.

The Godel Road quarry has a 7-10 year lifespan, depending on the rate of extraction and market conditions. This is a relatively significant timeframe and as such, the quarry has been given its own designation on the DSP. If and when the quarry permanently ceases to operate, the BRM Extraction Area designation shall cease to apply and the quarry area can be considered a 'Residential Neighbourhood' area for the purpose of any future LSP and/or subdivision application. This is consistent with the principle of sequential land use defined in SPP 2.4.

SPP 2.4 specifies the importance of avoiding or minimising encroachment on identified BRM resources and extractive industry operations. This will be achieved at the DSP area by the imposition of a buffer around the active operations within the BRM Extraction Area. SPP 2.4 does not prescribe default buffer distances, rather, reference to the Environmental Protection Authority's *Guidance for the Assessment of Environmental Factors: Separation Distances between Industrial and Sensitive Land Uses* is made. Residential development is a sensitive land use and quarries are covered by the Guidance.

The Guidance sets a default buffer of 1000m for extractive industries where blasting is occurring, and 300-500m for sand and limestone extraction where no grinding or milling is occurring. Other types of extraction activities are to be buffered on a 'case by case' basis.

At the LSP stage, a buffer related to the nature and extent of the active operations at the time should be shown. Subdivision and development within the buffer should not be permitted until and unless the buffer is no longer required, i.e. when the nature and extent of the active operations justifies encroachment.

At the LSP stage, consideration should be given to the access routes used by trucks and other traffic relating to the BRM Extraction Area. When it was operating, the Godel Road quarry was accessed from Gibbs Road to Wanneroo Road either north or south. To ensure that the interaction of quarry traffic with urban-generated traffic is kept to a minimum as development proceeds, consideration should be given to quarry traffic being directed away from the urban front. If, for example, urban development commences from the south-western corner of the DSP area and quarrying is still active when residents take up occupancy, quarry traffic could be directed to Wanneroo Road via Gibbs Road and Karoborup Road (the northern route) rather than Gibbs Road and Nowergup Road (the southern route).

Any potential future BRM extraction occurring outside the Extraction Area shown on the DSP map shall be managed using the same principles as outlined above.



Above: View of quarry site adjacent to eastern site boundary

5.5 Community Infrastructure

The DSP proposes six public primary school sites, one public secondary school site and one private college site, and a range of community facilities.

5.5.1 Primary Schools

The anticipated dwelling yield of 9,221 correlates to approximately 6.1 primary schools when calculated against the Department of Education's (DoE) preferred ratio, which is 1,500 dwellings per primary school as expressed in Operational Policy 2.4: Planning for School Sites ('OP 2.4'). This translates to the proposed total of 6 for this DSP.

Consistent with the *Liveable Neighbourhoods* provisions for their location, the primary schools are each on a proposed Neighbourhood Connector road between neighbourhoods and are spaced with reference to a 400m walkable catchment. Each primary school has been located such that the 400m walkable catchment for each overlaps as little as possible with that of the next school, which optimises pedestrian accessibility for each. Street interfaces for each school site will be confirmed at the LSP stage as required by *Liveable Neighbourhoods*.

Each primary school site is proposed to be rectangular and cover 3.5 hectares, consistent with OP 2.4 for primary schools with co-located ovals. The precise dimensions and size of each school site will be refined at the LSP stage in consultation with DoE and in accordance with *Liveable Neighbourhoods* and OP 2.4 and they should be reserved on the LSP and (ultimately) the LPS for 'Public Purpose'.

Liveable Neighbourhoods and OP 2.4 both state that primary schools are to be ceded to the Crown free of cost, with compensation payable to any landowners who contribute more of a school site than their individual development justifies in terms of demand. This occurs at the subdivision stage and will be done in accordance with the finalised location and dimensions of the school site lot shown on the subdivision plan.

5.5.2 Other Schools

OP 2.4 advocates a ratio of one secondary school for every 4-5 public primary schools. Accordingly, one 8ha co-located public secondary school site is proposed within the DSP area and will be reserved under the MRS for 'Public Purposes-High School' in due course. A 8ha co-located private college site (K-12) is also proposed and can be developed on land zoned 'Urban' as normal for private schools.

The secondary school site is located in a highly accessible part of the northern half of the DSP area. Consistent with *Liveable Neighbourhoods*, it is close to, but does not front, North-South Road 1 and has frontages to two Neighbourhood Connectors. The other frontages will be Access Streets defined at the LSP stage. The secondary school is envisaged to have an interface with the adjacent North-East Neighbourhood Centre, which will:

- Support the centre in terms of patronage;
- Enable shared bus services, supporting patronage, service quality and accessibility;
- Provide amenity to students and staff at the school.

Similar characteristics are applicable to the private college. It is in the southern half of the DSP area and is close to, but does not front, North-South Road 1 and has frontages to two Neighbourhood Connectors. The other frontages will be Access Streets defined at the LSP stage, and the South-East Local Centre is close by, bringing similar advantages to those expected for the North-East Neighbourhood Centre.

5.5.3 Community Facilities

The Economic and Employment Assessment report prepared by Pracsys to support this DSP (refer Appendix 3) assesses the potential population and demographics across the DSP area and, with reference to relevant guidelines, makes recommendations for community infrastructure as follows:

- One district-scale community centre.
- One district-scale library.
- Two local-scale community centres.
- Two local-scale active open space facilities.

Detail on cost apportionment for these facilities will be provided in a Shared Development Contribution Plan being prepared separately. This will cover cost estimates and anticipated timing, and apportion costs on a per-lot basis against each landowner's anticipated lot yield. Based on 2023 cost and yield estimates, the per-lot rate for community infrastructure across the DSP area is \$4,000, with this to be confirmed once local-level community infrastructure proposals are confirmed at the LSP stage. A figure of this magnitude, would be consistent with the cost cap specified in SPP 3.6 for community infrastructure.

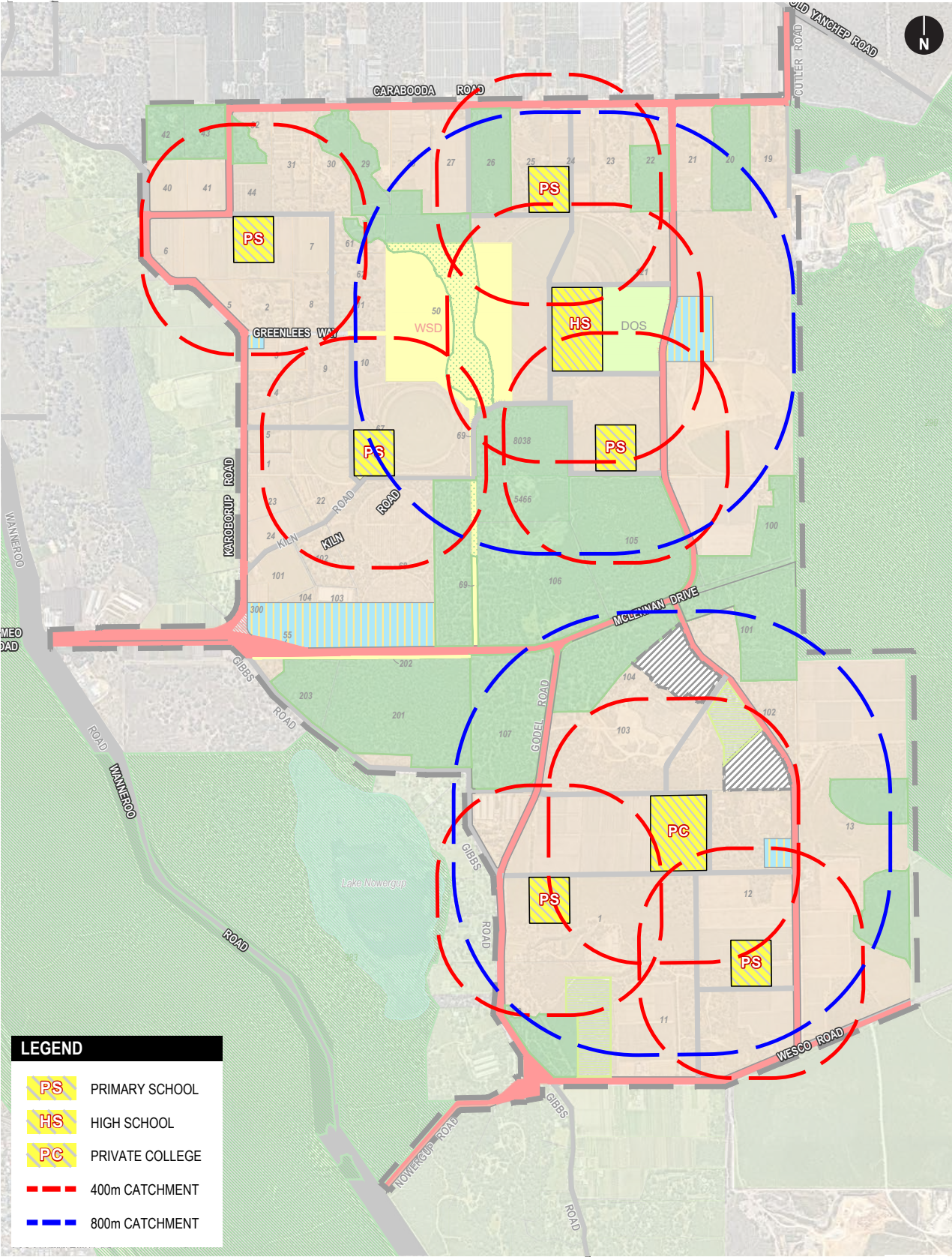


Figure 19: School Catchments Plan

5.6 Movement & Access

This DSP is informed by a Transport Impact Assessment (PIA, January 2025; 'the TIA', refer to Appendix 7) prepared in accordance with the WAPC's Transport Impact Assessment Guidelines. It makes recommendations for a movement network throughout the DSP area based on the assumption that at completion, the DSP area will generate 89,500 vehicle movements per day and that these will be 74% directed externally and 26% internally. Of the external movements, most will travel in the direction of Wanneroo Road.

The DSP defines a movement network down to the level of a Neighbourhood Connector. Beneath this, at the LSP and subdivision stage, access streets and laneways will need to be laid out in accordance with *Liveable Neighbourhoods* and other applicable policies. The indicative road hierarchy proposed in this DSP is shown in Figure 20.

At all levels in the road hierarchy, the DSP's intention is that streets will play a role as green linkages between nodes of activity such as activity centres, schools, parks and conservation areas. To achieve this, street tree plantings will be prioritised as a means of creating beautiful streetscapes that are welcoming for pedestrians and form a functional part of the ecological network across the DSP area.

The DSP area is convenient to numerous external road connections, both existing and planned. These include:

- From the west, Romeo Road, which connects to Wanneroo Road at a new intersection with Karoborup Road and, 500m further west, intersects with the Mitchell Freeway. Romeo Road is a four-lane, dual-carriageway District Distributor A road.
- From the north-west, Karoborup Road, which connects to Wanneroo Road. Karoborup Road is a Local Distributor road that will be upgraded as the DSP area urbanises.

- From the south-west, Nowergup Road, which connects to Wanneroo Road within the section scheduled to be upgraded to a dual-carriageway in 2025. Nowergup Road is a Local Distributor road that will be upgraded as the DSP area urbanises.
- From the east, Wesco Road, which connects to Old Yanchep Road. Wesco Road is a Local Distributor road that will be upgraded as the DSP area urbanises and Old Yanchep Road in this location is the future Whiteman-Yanchep Highway corridor.
- From the north-east, Cutler Road, which connects to Old Yanchep Road. Cutler Road is an Access Road that will be upgraded as the DSP area urbanises and Old Yanchep Road in this location is the future Whiteman-Yanchep Highway corridor.

Collectively, these roads create connections in five directions for the DSP area. The entry points form the basis of the road network described in the following sub-sections of this report. The costs associated with the road network described below are to be shared, as the infrastructure forms the basis of the new urban precinct and is of shared benefit.

Detail on cost apportionment is provided will be provided in a Development Contribution Plan being prepared separately. This will cover cost estimates and anticipated timing, and apportion costs on a per-lot basis against each landowner's anticipated lot yield. Based on 2023 cost and yield estimates, the per-lot rate for roads is \$6,900, with this to be confirmed in the Development Contribution Plan.

The following sub-sections outline the key components of the proposed movement network, most of which comprise existing roads planned to be upgraded. Detail on the proposed road hierarchy and intersection treatments is in the TIA and summarised within this section.

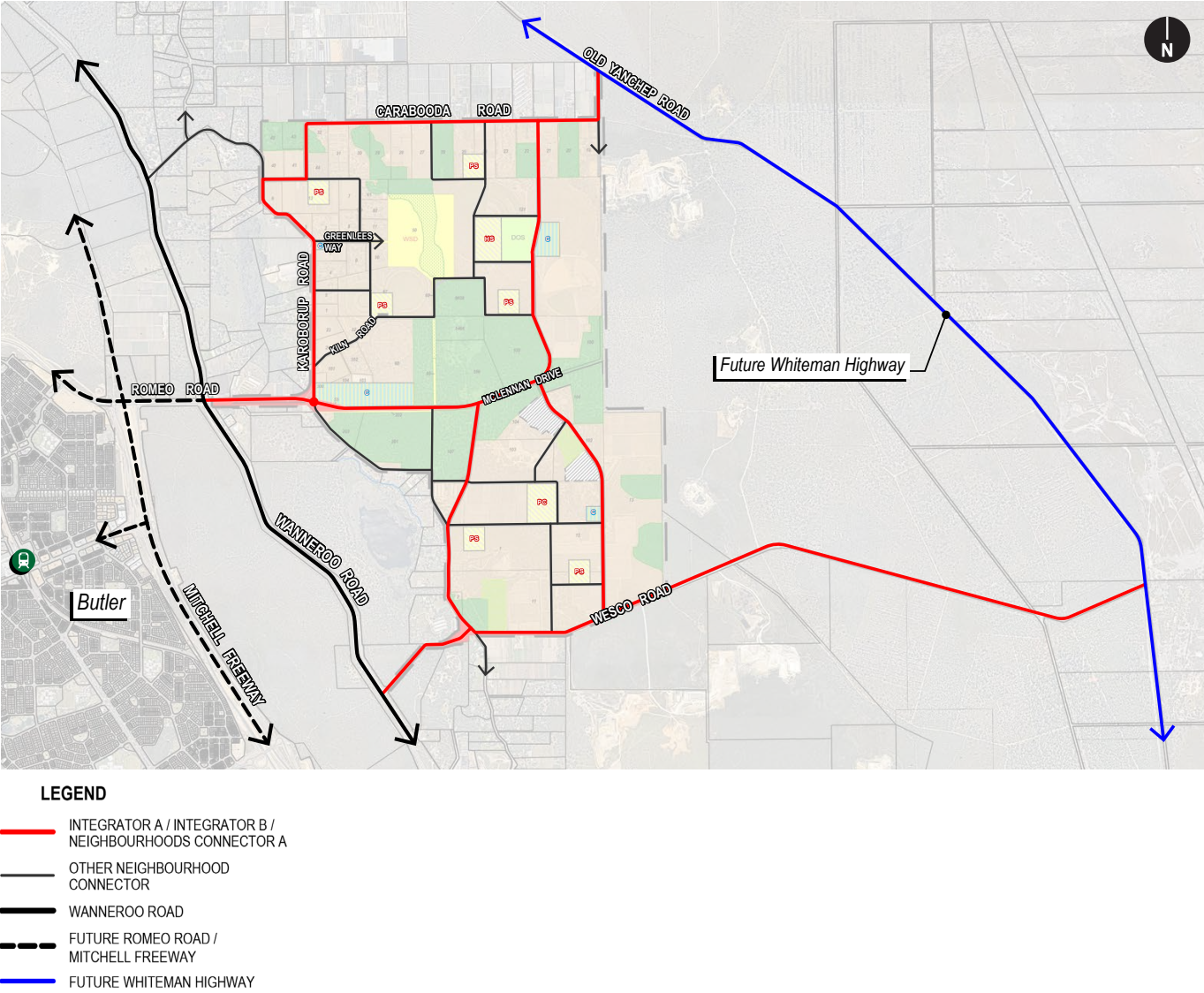


Figure 20: Movement Network



Above: View west from centre of site towards Romeo Road, with Butler Station and Alkimos Station in the background

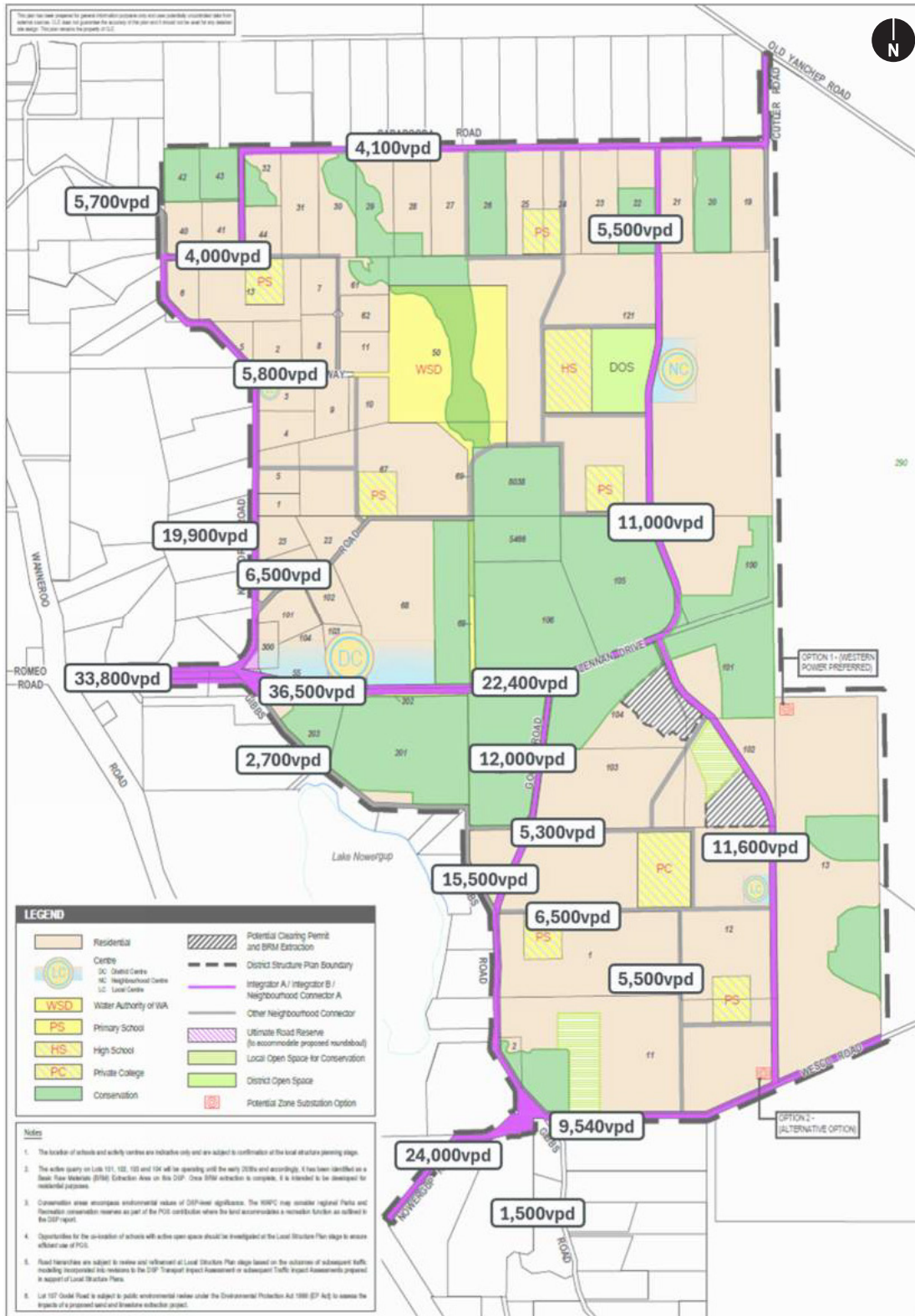


Figure 21: Road Hierarchy Plan (Source: PJA)

5.6.1 McLennan Drive

McLennan Drive crosses the centre of the DSP area on an east-west alignment and will connect to Romeo Road via Karoborup Road in the ultimate development scenario.

DSP Proposal	
Role	- Connect DSP area to Wanneroo Road and Mitchell Freeway - Provide an east-west arterial route for feeder roads leading northward and southward - Provide vehicle access to service commercial development - Provide access and a hard interface to the abutting conservation estate
Terminii	- Romeo Road (west, via Gibbs Road and Karoborup Road) - Eastern boundary of DSP area
Proposed status	Integrator A as far east as North-South Road 1
Anticipated design	Boulevard, as per <i>Liveable Neighbourhoods</i> , with 4 traffic lanes, a central median with trees, bus lanes, cycle lanes, shared paths, service roads as required and verge trees.
Funding	DCP

Table 6: McLennan Drive

5.6.2 Carabooda Road

Carabooda Road forms the northern boundary of the DSP area. It is on an east-west alignment and connects Karoborup Road to Cutler Road.

DSP Proposal	
Role	- Connect DSP area to Wanneroo Road and (ultimately) Whiteman-Yanchep Highway; Old Yanchep Road in the interim - Provide an east-west arterial route for feeder roads leading southward - Provide access and a hard interface to the abutting rural-zoned land to the north and pockets of conservation estate to the south
Terminii	- Wanneroo Road (west, via Karoborup Road) - Old Yanchep Road (east, via Cutler Road)
Proposed status	Neighbourhood Connector A
Anticipated design	Boulevard, as per <i>Liveable Neighbourhoods</i> , with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths and verge trees.
Funding	DCP

Table 7: Carabooda Road

5.6.3 Wesco Road

Wesco Road forms the southern boundary of the DSP area. It is on an east-west alignment and connects Nowergup Road to Old Yanchep Road.

DSP Proposal	
Role	- Connect DSP area to Wanneroo Road and (ultimately) Whiteman-Yanchep Highway; Old Yanchep Road in the interim - Provide an east-west arterial route for feeder roads leading northward - Provide access and a hard interface to the abutting rural-zoned land to the south
Terminii	- Wanneroo Road (west, via Nowergup Road) - Old Yanchep Road (east)
Proposed status	Integrator B
Anticipated design	Boulevard, as per <i>Liveable Neighbourhoods</i> , with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths and verge trees.
Funding	DCP

Table 8: Wesco Road

5.6.4 Karoborup Road

Karoborup Road forms the western boundary of the DSP area, north of McLennan Drive. It is on an irregular, roughly north-south alignment and connects to Wanneroo Road in the north and the south (i.e. is a loop).

DSP Proposal	
Role	- Connect DSP area to Wanneroo Road in the north and the south - Provide a north-south arterial route for feeder roads leading eastward - Provide access and a hard interface to the abutting rural-zoned land to the west
Terminii	- Wanneroo Road (north) - Wanneroo Road (south, to the west of the Karoborup Road / McLennan Drive / Gibbs Road intersection, which is proposed to be a roundabout, in the ultimate scenario)
Proposed status	- Integrator B between Greenlees Rd and McLennan Dr - Neighbourhood Connector A north of Greenlees Rd
Anticipated design	- Boulevard, as per <i>Liveable Neighbourhoods</i>, with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths and verge trees. - East-west section located west of the merge point with McLennan Drive and Gibbs Road likely to be renamed 'McLennan Drive' for legibility and simplicity.
Funding	DCP

Table 9: Karoborup Road

5.6.5 Gibbs Road

Gibbs Road forms the western boundary of the DSP area, south of McLennan Drive. It is on an irregular, roughly north-south alignment and connects to McLennan Drive in the north and Nowergup Road / Wesco Road in the south. In the early stages of development, Gibbs Road will continue to provide access to the Godel Road quarry to keep quarry traffic separate from residential traffic.

DSP Proposal	
Role	- Connect DSP area to Wanneroo Road in the north and the south, via McLennan Drive and Nowergup Road - Provide a north-south arterial route into McLennan Drive for feeder roads leading eastward - Provide access and a hard interface to the abutting rural-zoned land to the west
Terminii	- McLennan Drive (north) - Nowergup Road / Wesco Road (south)
Proposed status	- Integrator B (including new section north of Godel Rd) - Neighbourhood Connector B north of Godel Rd (existing section)
Anticipated design	- Integrator B section: Boulevard, as per <i>Liveable Neighbourhoods</i>, with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths and verge trees. - Integrator B section likely to be aligned northward from Godel Road in lieu of current more westerly alignment, leaving original Gibbs Road (northern section) to provide access to rural properties and the conservation estate. - Neighbourhood Connector B section: generally as per <i>Liveable Neighbourhoods</i>, with 2 traffic lanes and shared paths; no median, bus lanes, cycle lanes or parking. Flush or no kerbing to reflect rural context
Funding	DCP

Table 10: Gibbs Road

5.6.6 North-South Road 1

'North-South Road 1' is a new proposed road between Carabooda Road and Wesco Road.

DSP Proposal	
Role	Provide a north-south arterial route for feeder roads leading eastward and westward connecting to McLennan Drive, Carabooda Road and Wesco Road.
Terminii	- Carabooda Road (north) - Wesco Road (south) - Significant intersection at McLennan Drive (roundabout proposed)
Proposed status	Integrator B
Anticipated design	- Boulevard, as per <i>Liveable Neighbourhoods</i>, with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths, service roads as required and verge trees. - Northern and southern sections could be named separately, with preferred options being an Aboriginal name and/or a prominent family name and/or a name reflective of a local landmark or characteristic.
Alignment	- Aligned to facilitate an eastern and western catchment rather than along the DSP boundary (one catchment). - Adopts an existing private road (farm track) off Carabooda Road, then crosses cleared farmland before crossing McLennan Drive. Proceeds southward along an existing private road (sealed driveway) then skirts a vegetated BRM site before adopting the alignment of a series of farm tracks to Wesco Road.
Funding	DCP

Table 11: North-South Road 1

5.6.7 Kiln Road

Kiln Road is a rural road extending east from Karoborup Road and terminating near the heritage-listed Spiers lime kilns. It is proposed to be extended into parent Lot 121.

DSP Proposal	
Role	- Provide an east-west Neighbourhood Connector route linking Karoborup Road with the eastern part of LSP 2. - Provide a hard interface to the abutting conservation estate.
Terminii	- Karoborup Road (west) - North-south Neighbourhood Connector proposed to the west of North-South Road 1 (east)
Proposed status	Neighbourhood Connector A
Anticipated design	Boulevard, as per <i>Liveable Neighbourhoods</i> , with 2 traffic lanes and provision for buses, a central median with trees, cycle lanes, shared paths and verge trees.
Funding	DCP

Table 12: Kiln Road

5.6.8 Neighbourhood Connectors

The DSP proposes a network of Neighbourhood Connectors emanating from the roads described above. They are aligned and positioned to:

- Create the basis for a series of interconnected neighbourhoods with a high level of internal connectivity and safe, legible external linkages.
- Create defined edges to the district-level non-urban land uses such as the conservation estate, public purpose reserves, abutting rural land and quarries.
- Spread traffic loads, act as bus routes and cycle routes, and support the accessibility of activity centres and schools.
- Create physical and visual links to amenities such as the conservation estate and other POS to foster a sense of place.
- Enable, at the LSP stage, the creation of walkable catchments comprising Access Streets and pedestrian routes that create permeable, accessible neighbourhoods.

Most lower tier roads are likely to be primarily of benefit to an individual developer or a small group of developers, meaning that it is unlikely to be necessary to include them as items of shared infrastructure in a DCP.

5.6.9 Pedestrians and Cyclists

As a high-order strategic planning document, it is not necessary for the DSP to define the local network of roads and paths. Subsequent local structure plans will define the more detailed planning in this regard, informed by the following principles:

- Prioritisation shall be given to direct and legible connections westward into the Alkimos Railway Station;
- Integrator arterial roads are to have footpaths on both sides of the street with on-street cycle lanes provided;
- A district-level pedestrian / cycle network aligned with integrator roads as depicted on the DSP Map, connecting with existing and/or future networks on Wanneroo Road (and beyond) and the Whiteman-Yanchep Highway;
- Neighbourhood Connector roads are to have footpaths or shared paths on both sides of the street, depending on whether on-street cycling facilities are provided;
- Access streets are to have footpaths or shared paths on one side of the street;
- A safe and efficient network of shared paths and crossing facilities is to be provided for residents to access key trip attractors such as school sites and activity centres; and
- Opportunities to provide pedestrian / cycle paths through the conservation estate to facilitate interaction and activity therein, and direct connections, are to be investigated and pursued.

The above are largely reflective of standard *Liveable Neighbourhoods* requirements and the provisions of the City of Wanneroo Pathways Policy and will be refined at future, more detailed stages of the planning process.

5.6.10 Public Transport

The proximity of the DSP area to existing and planned public transport service networks is a significant attribute. Currently, no Public Transport Authority (PTA) services are provided in the area, but this is a product of its historical and current rural character rather than a constraint. The role of the DSP is to highlight the potential routes and destinations and set an expectation for the refinement and development of these in future.

The North-West sub-region's movement network has historically focused on accessibility to the Perth CBD, evidenced by the concentration of north-south transport links to the Central sub-region. Key linkages include the Mitchell Freeway, Wanneroo Road, Marmion Avenue,

Connolly Drive and the Yanchep railway line (via Alkimos station). This DSP represents an opportunity to diversify the range of transport options and destinations beyond the traditional radial system emanating from the Perth CBD, similar to the process that occurred in the south-west corridor after the Mandurah railway line opened in 2007. McLennan Drive, which is proposed as an 'Integrator A' road with a bus lane, will be the arterial route between Alkimos station and the DSP area.

A movement network that focuses transport (particularly public transport) on a more mature, east-west basis will open opportunities for a more diverse range of residents and employment options and is consistent with the objectives of the Framework.

The Department of Transport supported the Request and noted that the DSP area can make use of significant existing and planned regional transport infrastructure, including Alkimos station (approximately 3km west of the site), Mitchell Freeway, Wanneroo Road, Romeo Road and the planned Whiteman-Yanchep Highway. The DSP's relationship to these and is explored in detail in the Transport Impact Assessment appended to this report (refer to Appendix 7).

The DSP envisages that the sub-region's passenger rail network will be accessed via bus services. Local bus services will be future-proofed through the provision of electric-ready bus facilities that including recharging infrastructure. Active transport opportunities will be provided by integrating a comprehensive internal cycling and pedestrian network with existing and planned shared paths along the Mitchell Freeway, Whiteman-Yanchep Highway, Nowergup Road, Romeo Road and Wanneroo Road in accordance with the Department of Transport's 'Long Term Cycle Network' plan.

In future, the DSP area will be further supported by the planned Whiteman-Yanchep Highway and the Neaves Road-Flynn Drive corridor. This road will form part of the freight network and be upgraded to a primary distributor in order to improve its capacity and efficiency for freight and general traffic. It will provide an important east-west link to the North-East sub-region, particularly the potential Bullsbrook intermodal terminal and industrial areas in that area.

5.7 Service Infrastructure

The DSP area can be readily connected to existing service infrastructure, and this is a major attribute for the area as a future urban precinct.

The Alkimos Wastewater Treatment Plant is within 5km of the site. A large DN1500 collector sewer has been extended under the rail to facilitate wastewater flows from land east of the rail and provides the ideal discharge point for flows from within the site. Wastewater infrastructure within the site will be delivered in a streamlined and well-defined developer funded headworks delivery process and refunded by the Water Corporation via the five-year capital works program. Lot production will be delivered in a staged manner starting from the western end of the development and progressing east thereby delivering the wastewater infrastructure in the most efficient manner commencing from a location closest to the ultimate discharge location.

The Alkimos Seawater Desalination Plant (ASDP) was announced in May 2022 with construction works underway and expected to be operational by 2028. As part of the Mitchell Freeway and Romeo Road package of works, a DN900 recycled watermain and DN1400 potable watermain have been extended along Romeo Road and across Wanneroo Road where they terminate within close proximity of the Site. The ASDP potable watermain will connect to the Carabooda Tank and then south east to the Wanneroo Reservoir with approximately 6,300m of watermain commencing in 2025. Development of the site will be in a sequential manner and be supplied from the existing water distribution mains that traverse the site within existing and proposed road reserves.

The Western Power 'Yanchep' zone substation is located adjacent to the site at the corner of Wanneroo Road and Romeo Road. Existing 132kVA and a series of 22kVA transmission and distribution lines traverse the site providing good connectivity to the electricity network. Proposed development staging commencing from west to east allows cost effective and efficient delivery of power with the first stages closest to the existing 'Yanchep' zone substation thereby minimising the length of network feeder cables.

Significant gas and telecommunications infrastructure is available in the Wanneroo Road corridor and can be extended into the DSP area.

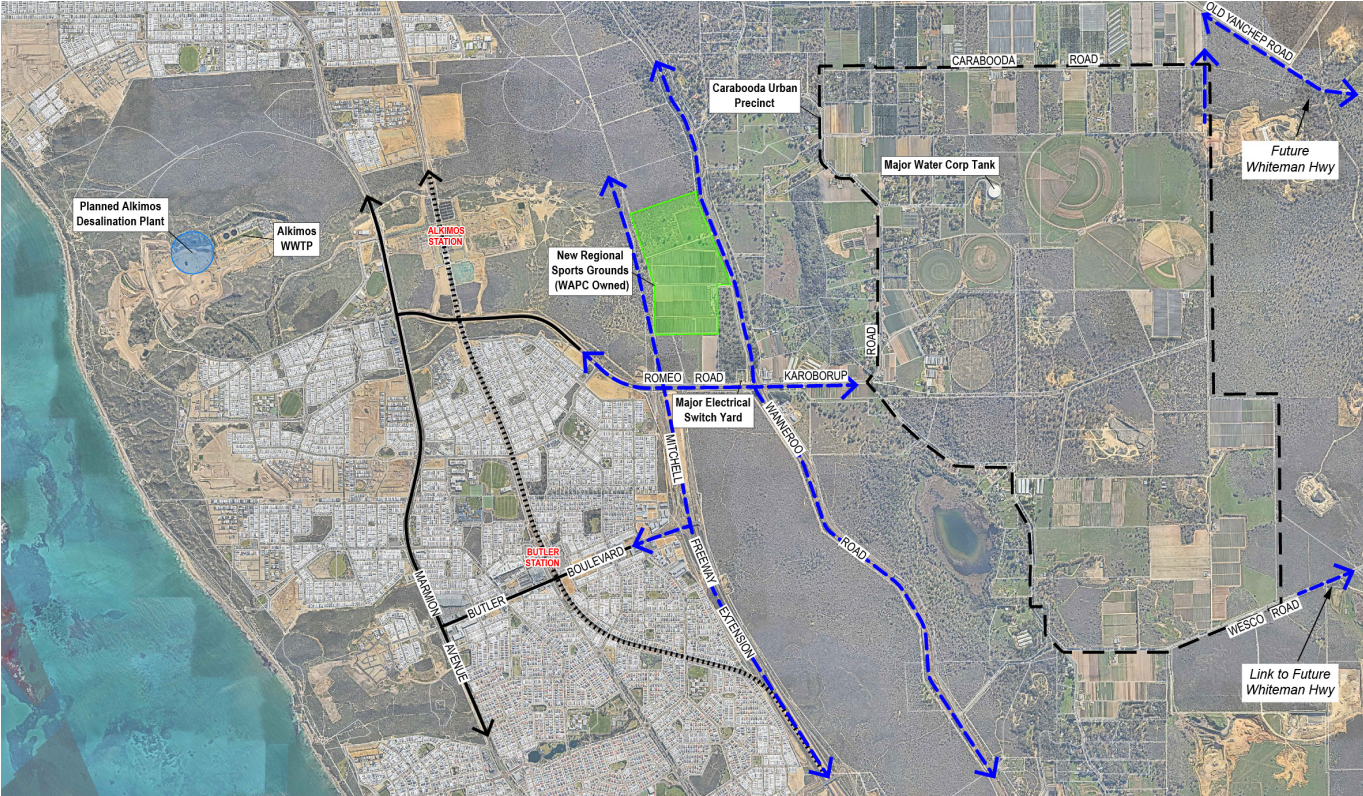


Figure 21: Infrastructure Context



Alkimos Station (DSP in the background)



Mitchell Freeway extension (Source: Main Roads WA website)

5.8 Staging

Development in the DSP area will be staged generally in accordance with Figure 22. This proposes two development fronts, one in the north and one in the south. This is possible because of:

- The availability of existing road infrastructure to provide access to both areas;
- The availability of existing service infrastructure for each area;
- The consolidated nature of land ownership, which simplifies land assembly arrangements and development investment.

Existing service infrastructure in the vicinity of the DSP area facilitates relatively easy and low-cost connections to and throughout the DSP area, generally starting from the west.

Southern front

The southern front would utilise the existing external access point provided by Nowergup Road to Wanneroo Road and proceed in a north-easterly direction. Extraction activities at the Godel Road quarry are expected to have been completed by the time development reaches that area. If not, a buffer may be required.

The southern front has provisionally been named the 'Nowergup' front, reflecting the existing locality name. One LSP is envisaged for this area.

Northern front

The northern front would utilise the existing external access point provided by Karaborup Road / McLennan Drive and proceed northward from there in the initial phases of development. Later, development could begin further east from McLennan Drive, also proceeding northward.

The northern front has provisionally been named the 'Carabooda' front, reflecting the existing locality name. Two LSPs are envisaged for this area.

5.8.1 Relationship with LSP Boundaries

The intended staging of development is reflected in the LSP boundaries described in Part 1 of this DSP. LSPs 1 and 2 will be the initial priorities, facilitating short- to medium-term development on land owned by supportive proponents. LSP 3 has relatively fragmented land ownership and a higher proportion of proponents with longer-term intentions. Each LSP area correlates to the intended location of facilities and services and has regard to the availability of access.

Particular attention has been given to access for the eastern part of LSP 2. This area has few constraints to development, being cleared of native vegetation and predominantly in single ownership (as Lot 121 Carabooda Rd). The Staging Plan presented in Part 2 of the DSP report reflects this, showing this area as a short- to medium-term priority despite its distance from the main entrances to the DSP area to the west. The intended LSP boundaries also reflect this, with LSP 2 being one of the two LSPs likely to proceed as a priority. This includes a new connector road crossing the Water Corporation Land as an east/west link.

Ultimately, most traffic from the Lot 121 area will obtain east-west access to external routes via McLennan Drive, however, this is a significant piece of infrastructure for which there is no short-term need. As such, the Lot 121 area is proposed to initially obtain access to external routes via an extension of Kiln Road across the conservation estate, south of the water tank. This interim arrangement ensures that Lot 121 can develop concurrently with, or even ahead of, other land in LSP 2 further west. It also ensures that residential traffic will not interact with truck traffic related to the Godel Road quarry, which will be operating until the early 2030s and uses the eastern section of McLennan Drive for access (connecting into Godel Road and Gibbs Road). If McLennan Drive is constructed through to Romeo Road too soon, truck traffic and residential traffic will interact, and this is not preferred.

In the ultimate scenario, at full buildout, McLennan Drive and Kiln Road will share the role of servicing the east-west traffic from the Lot 121 area. In the meantime, Kiln Road will perform that role alone until the construction of McLennan Drive to its ultimate standard is necessary due to development reaching completion on land east of the conservation estate and enabled by the conclusion of operations at the Godel Road quarry.

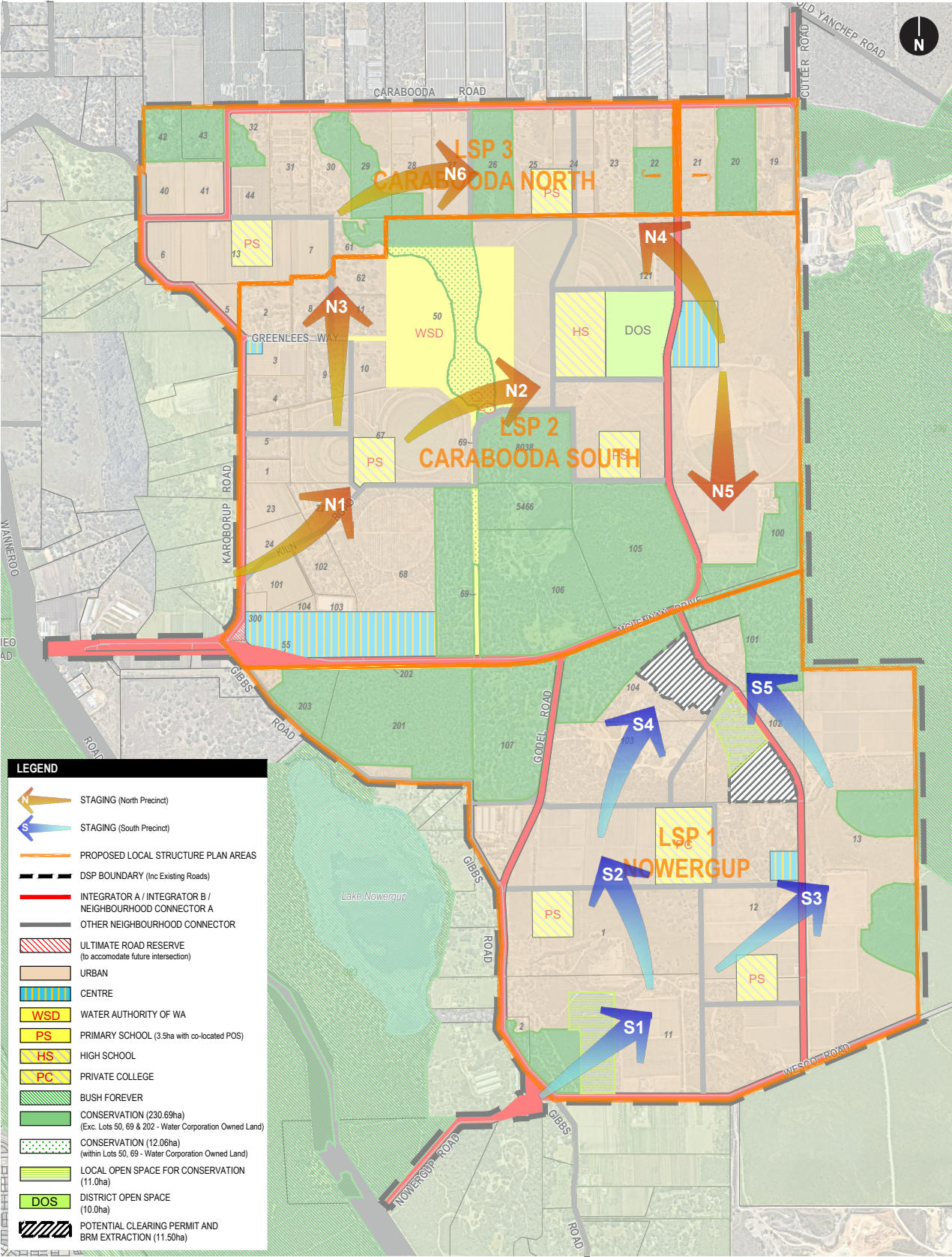


Figure 23: Indicative Staging Plan

Appendices

[Appendix 1: Suite of Executive Summaries](#)

Appendix 2: Bushfire Management Plan

Appendix 3: Economic and Employment Assessment

Appendix 4: Engineering Servicing (Infrastructure) Report

Appendix 5: Environmental Assessment Report

Appendix 6: District Water Management Strategy

Appendix 7: Transport Impact Assessment

