



# Karnup District Structure Plan

## Background Report

**DECEMBER 2023**

Note: The three (3) scenario options referred to in this Report have been removed from this document. The scenarios were prepared to assist consideration and discussions with DPLH/WAPC and Agencies regarding mosquito risk, and were not intended to provide design solutions for the DSP area.

The visioning and design process, informed by stakeholder engagement and technical investigations, is subject to subsequent project phases.

To avoid confusion and misrepresentation of the scenarios in the early stages of this project, the scenario plans have been removed.

# Karnup District Structure Plan.

## Background Report

**DECEMBER 2023**

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# **Part One – Key Findings and Recommendations**

KARNUP DISTRICT STRUCTURE PLAN



# Key Findings and Recommendations

## Karnup District Structure Plan

### 1. PROJECT OVERVIEW

#### 1.1 Purpose

The purpose of this Background Report is to provide a general overview of 'matters to be considered' for the benefit and understanding of the Western Australian Planning Commission (WAPC) and City of Rockingham Elected Members ahead of formal preparation of the **Karnup District Structure Plan (KDSP)**.

This section (Part One) offers a summary of 'matters to be considered' based on the preliminary reporting undertaken by the specialist consultant Project Team; and with full reporting for each specialist consultant included under the attached **Appendices**, should the reader seek to further analyse the key findings and recommendations included under this Part.

Urban design and planning findings and recommendations are also summarised under Part One, with a detailed review of opportunities and constraints, as guided by a literature review of City of Rockingham and State government policies, publications and preliminary consultation, included under **Part Two**.

The urban design and planning findings are strongly influenced by the Mosquito Risk Assessment and Management Plan (MRAMP) prepared for the KDSP area. The MRAMP is a critical study undertaken by Rankin Mosquito Management and Emerge Associates, in association with the City of Rockingham, to address the WAPC's recommendations per its June 2022 decision to support preparation of the KDSP.

Following commencement of the KDSP background reporting in March 2023, as a result of the preliminary findings of the mosquito monitoring process, the preliminary recommendations of the Department of Planning, Lands and Heritage (DPLH) were for the Project Team to prepare three development scenarios to highlight mosquito risk and its potential impact on the urbanisation of the KDSP area. Three development scenarios were established as follows –

- A. **restricted land uses** in identified mosquito risk areas – generally defined by non-sensitive land uses developed within a designated 1km flight range of the mosquito source;
- B. **uncontrolled land uses** in identified mosquito risk areas – generally meaning that no development restrictions of sensitive land uses would apply within a designated 1km flight range of the mosquito source; and
- C. a **balanced land use** approach between the two scenarios above – meaning a greater focus on non-sensitive land uses within a designated 1km flight range of the mosquito source is to apply, and with option for sensitive land uses, including residential development, to develop in these areas over time on the basis that mosquito mitigation is better managed as development progresses.

These scenarios form the basis for seeking WAPC direction on the KDSP (refer Figures Part One – A – C).

The information presented in this report is not intended to provide design solutions at this early stage; this task is subject to subsequent planning phases, and to the outcomes of the MRAMP in conjunction with formal community consultation and government stakeholder engagement. This report does include a consolidated Opportunities and Constraints Plan(s) to illustrate key design

parameters for the KDSP area. Ultimately, the KDSP will guide the progressive subdivision and development of the Karnup locality in response to the urbanisation objectives established in the South Metropolitan Peel Sub-Regional Planning Framework, 2018 (Planning Framework).

## 2. Project Team Findings and Recommendations

### 2.1 Mosquito Risk Assessment and Management Plan (MRAMP)

Refer Appendix 1 for detailed reporting and mapping

#### *Key Findings*

- Urban expansion in areas located within reasonable proximity to saltmarsh and wetlands means that residents, visitors and occupants are at risk of being affected by mosquito-borne disease that can cause detriment to health, wellbeing and loss of amenity.
- Historical and contemporary monitoring undertaken adjacent to or within the subject land indicates the presence in high numbers of species of mosquitoes known to carry the Ross River Virus (RRV) and Barmah Forest Virus (BFV) that breed in fresh and brackish water habitats.
- The MRAMP analysed the relevant adult and larval mosquito data and outlined recommended design controls for implementation into the KDSP area consistent with the Peel Mosquito Management Group's (PMMG)'s mosquito management program. The key findings and recommendations of the MRAMP included as follows:
  - Based on long period sampling at a series of sampling sites within and immediately adjacent to the DSP area:
    - both the Serpentine wetlands (Site HT-04) and Anstey Swamp (Sites HT-02 and DOH13) are close to sources of mosquito breeding.
  - In relation to intensive adult monitoring:
    - Traps established along Paganoni Road returned consistently high adult numbers, with breeding sites likely from Paganoni Swamp, Anstey Swamp and the Serpentine River system, or any combination of these;
    - Returns from both the western and eastern most sites were influenced by occasional adult outbreak events. Average numbers were generally within trigger levels;
    - Adults trapped at the central site (Mallee Drive) were always elevated (14 of the 18 sampling events exceeded the trigger);
    - Sites comprising the northern traverse and northern outliers were influenced by occasional adult outbreak events. Average numbers were generally within trigger levels.
- The data analysis has identified that mosquito issues are more widespread and potentially more impactful from a public health perspective than previously thought, with significant breeding indicated from both the Serpentine wetland chain to the east of the KDSP area, and Paganoni Swamp / Anstey Swamp to the south and west.
- Best practice Integrated Mosquito Management combines various methods to minimise interaction between mosquitoes and the public and to reduce the risk of mosquito-borne disease. 'Direct' interventions include but are not limited to:
  - Removal of breeding habitat by physical modification;
  - Application of larval growth inhibitors / pesticides.

- There are various 'indirect' approaches to reduce human-mosquito conflict, generally through means of creating land use buffers, building designs, construction management, stormwater management, ongoing funding mechanisms for monitoring and mitigation/management, development covenants and public education strategies.
- Risk Assessment Considerations
  - Jardine, et al. (2015) provided empirical data on the prevalence of mosquito-borne virus infections within zones (1 km interval) radiating from mosquito breeding habitat within the Peel region concluding that overall, the data shows that those living within 2 km of a mosquito breeding habitat were at increased risk of RRV disease;
  - Risk mapping prepared reflects zones within the DSP that occur within 1km and 2km of known mosquito breeding habitat, and risk assessment that identifies the various strategies that combine to be Integrated Mosquito Management;
  - The risk assessment identified that the pre-mitigation risk is generally assessed in the moderate to high range, with a single extreme assignment associated with the construction of residences within close proximity (assessed to be < 1km) from known mosquito breeding habitat;
  - Implementation of key mitigation measures has the potential to effectively reduce all identified risk scores to the moderate range; this may be achieved via adequate separation, reduction of productive mosquito breeding habitat and avoiding the potential for, and areas of, mosquito activity whenever practicable.

### ***Recommendations***

- If subdivision and development of the KDSP area is to occur in accordance with the Planning Frameworks, mosquito habitat areas will need to be appropriately managed to minimise public health risk.
- It is acknowledged that the mosquito nuisance and disease risk will not be fully eradicated, however the proposed development scenarios and strategies provide a framework on which to guide land use spatial planning in the DSP area to arrive at a balanced outcome.
- Several monitoring and management recommendations are provided within the MRAMP with the aim of establishing the mosquito population and larvae present to enable effective management of vector and nuisance mosquitoes.
- At this point in time, it is unclear whether direct interventions to reduce mosquito numbers can be effectively implemented without the on-ground changes to vegetation and access to the mosquito source areas. This critical matter will need to be further explored with all key planning and environmental stakeholders, the PMMG and the City of Rockingham, as the DSP progresses.



## 2.2 Environmental Assessment

Refer Appendix 2 for detailed reporting and mapping

### *Overview*

- The Preliminary Environmental Investigations report includes:
  - Constraints and opportunities mapping for the various environmental, hydrology, bushfire, and heritage matters that may influence the KDSP design (including consideration of the landscape values to be later explored) sourced from available and desktop information.

### *Key Findings*

- Two EPBC Act listed TECs occur within the site;
  - Banksia Woodlands of the Swan Coastal Plain; and
  - Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain (ecological community).
- Foraging, roosting and breeding habitat for the three Commonwealth and State protected black cockatoo species (Carnabys, Baudins and Forest red-tailed black cockatoo) occurs within the site.
  - Up to 1,811 black cockatoo habitat trees (breeding habitat) have been recorded within accessible and inaccessible lots (of which 111 have hollows potentially suitable for breeding by black cockatoos).
- Flora, vegetation and fauna surveys are currently being undertaken.
  - These surveys will assist in refining key areas for environmental consideration and providing referral advice pursuant to both State and Commonwealth Environmental Protection Acts;
  - This is important in establishing an avoidance of impacts to Matters of National Environmental Significance (MNES) at a DSP level.
- A review of the ACHIS Directory (DPLH 2023) indicates the site contains three heritage sites for which an Aboriginal Heritage assessment will be undertaken as part of the formal KDSP Environment Assessment Report.
  - Registered Aboriginal Site 3582, Serpentine River;
  - Registered Aboriginal Site 37720 Karnup Station Scarred Tree; and
  - Registered Aboriginal Site 3723 Stake Hill Burial.

### *Recommendations*

- Environmental considerations and constraints for the DSP area will be further undertaken by Emerge recognising:
  - only some of the properties (around 22% of the DSP area) have been inspected at this time following landowner consent, with the others requiring inspection at Local Structure Plan (LSP) stage;
  - Information from the site inspections has been overlaid with other spatial data to inform background findings; and
  - several on-site studies have commenced but data has yet to be formally recorded.
- The results of these surveys will assist in refining key areas for environmental consideration and provide referral advice pursuant to both State and Commonwealth Environmental Protection Acts.
- For 'Remnant Vegetation (Requiring Further Review)' sites:

- Detailed flora and fauna surveys will be required at LSP stage to assess the condition of these sites and determine their suitability as potential Parks and Recreation or public open space reserves;
  - This analysis is recommended to be undertaken early in the preparation of LSPs in consultation with the DPLH and other agencies, to enable land requirements to be reserved under the MRS, prior to the LSPs being formally submitted to the City of Rockingham; and
  - The opportunity to consolidate larger contiguous portions of bushland to provide links between bushland areas should be investigated.
- The balanced cut to fill objective underpinning any future bulk earthworks studies will need to carefully consider the City of Rockingham's robust objective of retaining natural topography and trees wherever possible through development.

## 2.3 Wetlands

Refer Appendix 2 and 6 for detailed reporting and mapping

- The Geomorphic Wetlands, Swan Coastal Plain dataset (DBCA 2023) indicates that within the KDSP boundary there are:
  - 6 x Conservation Category Wetland (CCW);
  - 7 x Resource Enhancement Wetlands (REW); and
  - 4 x Multiple Use Wetlands (MUW).
- The westerly located wetlands are subject to inundation during periods of elevated rainfall.
- A Wetland Assessment will be undertaken as part of the DSP process to determine quality and value of these wetlands and specify the wetland boundaries.

## 2.4 Hydrology

Refer Appendix 2 and 6 for detailed reporting and mapping

### *Overview*

- Urban Water Management (UWM) and Water Sensitive Design (WSD) is a key part of any development process incorporating the principles of integrating water and land use planning, considering all water sources in water planning, integrating water use and natural water processes and total catchment integration of natural resource use and management.
- Stormwater drainage management is a major component of an overall UWM strategy where achievement of the principles of the plan may be facilitated through the application of *Water Sensitive Urban Design* (WSUD) techniques during planning, design and construction of urban development projects.

### *Key Findings and Recommendations*

- A District Water Management Strategy (DWMS) was prepared by GHD in 2014 which encompasses the Development Area and provides recommendations for Stormwater Quantity Management to guide the future development of the KDSP.
- As the City of Rockingham will ultimately own and maintain all stormwater infrastructure, the design and construction work will need to be undertaken in accordance with its guidelines and standards, as well as the Local Government Guidelines for Subdivisional Development (IPWEA).
- There is a potential for mosquito breeding due to the wetlands / water bodies present in the area. Adequate consideration shall be made in the planning of drainage systems to:

- reduce excessive mosquito breeding, such as a provision of semi-aquatic or aquatic vegetation planned along the water source to remove nutrients;
  - piping as much of the stormwater network as possible; and
  - treatment of open drains to reduce the risk, and minimising the stormwater runoff retention time in basins (i.e., minimise standing water).
- As development progresses within the KDSP Area, developers will need to prepare Urban Water Management Plans (UWMP) to guide their individual developments.
  - It is recommended that the GHD DWMS be reviewed and updated and that the KDSP be structured so that these UWMP's are prepared in accordance with the DWMS to ensure the Stormwater Management Strategy as a whole is consistent to achieve the best WSD outcome.

## 2.5 Bushfire Management

[Appendix 2 for detailed reporting and mapping](#)

### *Key Findings and Recommendations*

- The majority of the site is located within and bound by Bushfire Prone Areas as identified within the Department of Fire and Emergency Services (DFES) mapping.
- A Bushfire Management Plan (BMP) will be prepared to support the KDSP, in accordance with *State Planning Policy 3.7 – Planning in Bushfire Prone Areas and Guidelines*.
- More detailed, site specific, BMPs will also be required to support LSPs, subdivision stages and development.

## 2.6 Acoustic Management

[Refer Appendix 3 for detailed reporting and mapping](#)

### *Key Findings and Recommendations*

- In accordance with *State Planning Policy 5.4 – Road and Rail Noise*, there are two aspects to consider which 'trigger' a formal acoustic assessment:
  - Rail: Applicable to the Perth – Mandurah Rail line interfacing with the south-western boundary and north-western boundary of the KDSP area; and
  - Roads: Applicable to the Kwinana Freeway interfacing the entire eastern boundary of the KDSP area, and south-west corner pertaining to Mandurah Road.
- For the purpose of the KDSP, acoustic reporting will essentially flag the areas at risk of rail and road traffic noise, including general mitigation criteria.
- More detailed, site specific, acoustic reports will also be required to support LSPs, subdivision stages and development, including physical noise mitigation measures (i.e., noise walls/bunds) and/or Quiet House design packages.

## 2.7 Retail and Employment

[Refer Appendix 4 for detailed reporting and mapping](#)

### *Overview*

- To offer a conservative approach to future retail/employment planning the reporting assumes CDP's 'Development Scenario C'.

### *Key Findings*

The following key findings are informed by the current population of Karnup, which will evolve during the development of the KDSP area.

- Demographics & Population Projections
  - Karnup has a significant number of young families; notably, high proportions of individuals aged 0- 9 and 20-40;
  - A considerable increase in dwellings is projected, indicating an influx of young families, necessitating planning for suitable amenities such as open space and playgrounds.
- Education Profile
  - There is a high proportion of residents with Certificates III & IV, suggesting a workforce skilled in trades, potentially linked to local construction industry growth;
  - The local economy may benefit from greater entertainment and food and beverage facilities due to the spending habits of the trades workforce.
- Socioeconomic Profile
  - Karnup has a lower proportion of high-income earners compared to Greater Perth, implying a focus on convenience retail over luxury or comparison goods;
  - Income dynamics may shift with the development of Westport at the Western Trade Coast, potentially attracting higher- income roles and impacting local spending patterns.
- Employment Summary
  - Construction, Health Care, Retail Trade, and Manufacturing are the top employing industries;
  - The high concentration of families with children and an aging population are expected to support increases in demand for Secondary Education and Aged Care services.
  - Population growth and the development of Westport will support growth in the Construction industry;
  - The Westport industrial area is likely to drive employment growth in defence, manufacturing, renewables and other strategic sectors. This is likely to influence the catchment by absorbing available land in the Western Trade Coast and pushing less strategic (but still potentially strategic) uses to other employment centres.
- Population/Dwelling Forecasts
  - Population growth in Karnup is expected to be significant, with a forecast of at least 44,183 additional residents by 2046;
  - The peak residential growth is anticipated between 2031-2041, highlighting the need for timely development of District and Neighbourhood Centres.
- Educational Facility Considerations
  - By 2046, Karnup may need at least 11 Primary and at least 2 Secondary Schools (NB. Potentially additional Primary and Secondary schools subject to mosquito mitigation and management measures and ability to free up developable land).
- Activity Centre Considerations
  - State Planning Policy 4.2 (SPP 4.2) sets out planning guidelines for activity centres based on their hierarchy and associated population thresholds;
  - Karnup is expected to require a District Centre (~20,000sqm retail NLA) by 2036 and at least three neighbourhood centres (~5,000sqm retail NLA each) by 2046;
  - Non-retail floorspace in activity centres is influenced by factors other than local population, such as (*inter alia*):
    - The population catchment, noting that the 'catchment' for non-retail activities might be more extensive than the retail catchment;
    - The characteristics of the local workforce, and in particular the numbers of professionals and small-business owners in the surrounding area;



- The location of government administration services, health facilities, and other community uses;
  - The location of service business and semi-industrial precincts in or adjoining activity centres;
  - Whether the centre is designed as a single-ownership activity centre, or a more diverse collection of properties that has evolved over time;
  - The amenity of a centre and whether it has a range of eating establishments (cafes, restaurants etc), surrounding parkland, and other features that might make the centre a more attractive place to set up a small business.
- **Employment Considerations**
    - The Planning Framework has set a target Employment Self-Sufficiency (ESS) of 74% by 2050 for the region, with the City of Rockingham aiming for 83%.
    - The 2020 Rockingham Employment Study identified Karnup as a key future employment area and proposed a Specialised Node which could be a business park or industrial estate, potentially providing between 10,000 to 22,000 jobs depending on development.
    - By 2041, the Karnup core Specialised Node is anticipated to generate 8,621 full-time equivalent jobs.

### ***Recommendations***

- Whilst current investigations are focused on developing a 33ha Specialised Node including a potential health campus and TAFE facility, consideration should be made towards a secondary area for light industry/bulk retail which aligns with the employment study's investigations of allocation of up to 100ha of employment land. The location may be considered adjacent the Specialised Node for general synergies of employment lands, or an alternative location based on mosquito mitigation, commercial viability or combination of these and other design factors.
- The recommended allocation and location of Neighbourhood Activity Centres will need to be refined subject to the final dwelling yields and spatial planning considerations between centres, particularly if 'Development Scenario B' is pursued.

## **2.8 Transport Planning**

Refer Appendix 5 for detailed reporting and mapping

### ***Overview***

- To offer a conservative approach to future traffic planning and road upgrades, the traffic reporting assumes the more intensive full-build out of the KDSP area (per CDP's 'Development Scenario B').
  - This option includes the following assumptions:
  - 20,000 residential dwellings generating approx. 160,000 trips per day (avg 8 per household);
  - 25,000m<sup>2</sup> Gross Floor Area of Retail/Commercial generating approx. 19,500 trips per day;
  - Up to 13 Primary Schools with 7,000 students (avg 540 students/school) generating approx. 14,000 trips per day (2 trips per student).
  - Up to 3 Secondary Schools with 4,350 students (avg 1,450 students/school) generating approx. 8,700 trips per day (2 trips per student).
  - A hospital/medical precinct generating approx. 6,000 trips per day.

### ***Key Findings***

- Total traffic projections of (2041) and road hierarchies for the Structure Plan area under this scenario comprise of:

<b>Road</b>	<b>Hierarchy</b>	<b>Projected Traffic Volumes (vehicles per day)</b>
<b>Main Roads WA</b>		
Kwinana Freeway	Primary Regional Road	TBA/External to project boundary
Mandurah Road	Primary Regional Road	TBA/External to project boundary
<b>City of Rockingham</b>		
Stakehill Road (west of Nairn Drive)	Integrator A	15,000 – 20,000
Stakehill Road (east of Nairn Drive)	Integrator B	15,000 – 16,000
Paganoni Road	Integrator A	20,000 – 30,000
Nairn Drive	Integrator A	15,000 – 20,000
Karri Street Extension (Nairn – Fwy)	Integrator B	10,000 – 16,000
Baldivis Road	Neigh Connector A	3,000 – 7,000
Karnup Transit Rd (Dampier – Paganoni)	Neigh Connector A	3,000 – 7,000
Fletcher Road	Neigh Connector B	1,000 – 3,000

- Paganoni Road serves as the shortest east-west route between Kwinana Freeway and Mandurah Road, making it an attractive route for regional traffic movements.  
Note: Traffic modelling suggests that Paganoni Road will need to be upgraded to four lanes in the near future; regardless of development of the KDSP area.
- Site challenges, namely the rail overpass on the westerly approach to Mandurah Road, will restrict upgrading opportunities for Paganoni Road; as too will the Dampier Drive connection to Mandurah Road over the established rail line.
- Dampier Drive east of Mandurah Road, whilst identified in the Planning Framework and a PCA, has not been confirmed due to outstanding environmental considerations.

### ***Recommendations***

- Subject to final traffic modelling, the proposed key road cross-sections to comprise:
  - Integrator A roads – projected 4 lanes for traffic flows of up to 35,000vpd.
  - Integrator B roads – projected 2 lanes for traffic flows of up to 15,000vpd.
  - Neighbourhood Connector Roads – per Liveable Neighbourhood requirements.
- Detailed traffic studies are recommended in consultation with the City of Rockingham and MRWA to confirm all required road upgrades.
- Further investigation is required to determine if dedicated bus priority lanes (rapid transit corridors) are warranted for the KDSP area based on the projected volumes presented.

## 2.9 Service Infrastructure

Refer Appendix 6 for detailed reporting and mapping

### *Overview*

- To offer a conservative approach to future servicing infrastructure planning the reporting assumes a full build-out under a 'Development Scenario B' for the KDSP area.
- This option includes the following assumptions over an approx. 1624.69ha total land area, and comprising:
  - 17,000 dwellings
  - 47.313ha as uncreditable open space
  - 88.920ha as Community/Commercial purposes (i.e., Government Schools, District Centre)
  - 107.25ha as Public Open Space
  - 637.064ha as Net Residential Area

### *Key Findings*

- Groundwater and Management
  - The KDSP falls outside of the data area depicted in DWER's Perth Groundwater Mapping, however a DWMS (GHD, March 2014) provides commentary on the groundwater levels and locality.
  - The Development Area falls within the Rockingham-Stakehill proclaimed groundwater area for which:
    - The KDSP is within the Churcher (East), Karnup (East) and Stakehill confined sub areas.
    - Department of Water and Environmental Regulation (DWER) maintains a regional bore network to monitor water levels and water quality, and is responsible for implementation of water allocation decisions and regulation of water use based on local annual licensed and unlicensed volumes;
    - Variation in on site topography to maximum recorded groundwater level varied between 1.38 m below ground level (BGL) to the west of KDSP, and 12.31m BGL in the centre of the KDSP.
  - The key objectives for groundwater management, in conjunction with Hydrology studies, are:
    - Protection of infrastructure and assets from flooding and inundation by high seasonal groundwater levels, perching and/or soil moisture;
    - Protection of groundwater dependent ecosystems from the impacts of urban runoff;
    - Managing and minimising changes in groundwater levels and groundwater quality following development/redevelopment;
- Geological Conditions
  - The 1:50,000 scale Environmental Geology sheet "Rockingham" indicates that the near surface geology, in its undisturbed natural state, comprises:
    - Majority of the site: Sand derived from Tamala Limestone (Tamala Sand, S7) - "pale yellowish brown, fine to coarse grained, subangular quartz trace feldspar, moderately sorted, of residual origin";
    - Smaller pockets of Bassendean Sand (Qpd), Peaty Clay (Cps) Clayey Sand (Scp) can also be found.
- Acid Sulphate Soils

- Acid Sulfate Soil mapping (DWER) indicates:
  - mostly no known risk of Acid Sulfate Soils (ASS) occurring within 3m of natural soil surface;
  - low to moderate risk of ASS in the eastern portion of the site adjacent to Kwinana Freeway;
  - Scattered pockets of high to moderate risk of ASS occurring within 3m of natural soil surface.
- Bulk Earthworks and Contamination
  - Subject to further assessment a balanced cut to fill should be the aim of the earthworks strategy to minimise import or exportation of material from site, albeit recognising the following constraints:
    - Containment of stormwater drainage onsite and drainage outfall levels for the stormwater pit and pipe drainage system (up to and including the 1 in 5-year ARI);
    - The invert level of the existing gravity sewer mains being discharged into.
    - Neatly tying into the existing levels of the adjacent (retained) lots, Kwinana Freeway, Stakehill Road, Paganoni Road and Fletcher Road and areas of environmental and hydrological significance;
    - Based on the data available on the DWER Contaminated Sites Database there are no known / registered contaminated sites within the development area;
    - Mining activities undertaken in the northeast corner of the site may require remediation prior to any development.
  - The balanced cut to fill strategy will also need to carefully consider the City of Rockingham's robust objective of retaining natural topography and trees wherever possible through development; to be guided by the ongoing KDSP environmental studies.
- Roadworks
  - Existing district roads interfacing the KDSP are under the control and maintenance of the City of Rockingham and as such all works on and abutting the public roads will be subject to its approval.
- Sewer Reticulation
  - The Water Corporation (WC) owns and maintains the sewerage reticulation system in the vicinity of the KDSP area. Any connection into this system will need to be designed, approved and constructed in accordance with standard WC requirements and guidelines.
  - WC was consulted by the project engineer in June 2023 – refer consultation section in Part 2.
    - JDSi identified two alternative sewer discharge locations to the Magenta Crescent, Baldivis, Wastewater Pump Station (WWPS) recommended by the WC, including:
      - The southern portion of the development being discharged via a proposed sewer pressure main to an existing discharge manhole located in Warnbro Sound Avenue, approx. 2000m to the west of Paganoni Road; and
      - The northern portion being discharged via a proposed sewer pressure main to a discharge manhole located in Sixty-Eight Road, approx. 3000m to the north of the subject site.
- JDSi project 11 new wastewater pump stations will need to be constructed to service the KDSP area.



- The KDSP is proposed to be serviced by the East Rockingham Wastewater Treatment Plan (WWTP) located on Chesterfield Road, East Rockingham however, there is no conveyance system between the Development Area and the WWTP.
  - WC advised that the above infrastructure is not currently scheduled in its 5-year Capital Investment Program the works may need to be delivered as part of a Development Constructed Works Agreement where the works are pre-funded by developers.
  - Further negotiation with WC will be required to establish agreed connection points for the proposed development.
- Water Reticulation
  - The Water Corporation (WC) owns and maintains the potable water reticulation system in the vicinity.
    - Any connection into this system will need to be designed, approved and constructed in accordance with standard WC requirements and guidelines.
  - The water supply will be achieved via extensions and connection of the existing water reticulation network around the KDSP area, namely a proposed:

#### Proposed Main

#### Notes

DN300P-12	Main extension approx. 1km long connecting to existing DN600 steel main located in Crystaluna Drive west of the subject area.
DN700	Water main extension approx. 4km long connecting to existing DN600 steel main located in Warnbro Sound Avenue west of the subject area.
DN375/400	Water main extension approx. 4.5km long connecting to existing DN600 steel main located in 4.5km north of the subject area.
DN600	Water main extension approx. 3.2km long extending from Baldivis Road north of the subject area.

#### *Power Supply*

- Western Power (WP) owns and operates all electrical supply network assets within the KDSP area;
- Meadow Springs Zone Substation is the current substation servicing the vicinities of the proposed development;
  - NCMT has the zone substation feeder available for the area has a forecasted to have 10 to 15MVA available for connection for 2025. Actual capacity and network conditions to be confirmed by WP at time of connection;
  - Based on the load of 87MVA, it is estimated that approximately 140 Transformers and 120 switchgears will be required. Additionally, a substantial amount of HV cables to create a power network will be needed to sustain the development as required by WP.
  - Any existing WP overhead lines within or adjacent to the Development will be required to be undergrounded / removed to satisfy WAPC requirements.

#### *Gas*

- ATCO Gas owns and maintains all gas reticulation systems in the area;
- Developers may be required to fund new works or the upgrading of existing works.
  - ATCO Gas headworks are assessed on a case-by-case basis and may be required, however until their assessment is completed an amount is unknown;
  - ATCO Gas identifies opportunities to co-contribute or to fully meet the cost of extending natural gas infrastructure to new subdivisions.

### ***Telecommunications***

- Consultation with NBN Co determined:
  - The proposed development is outside the existing NBN fixed line network footprint and it is currently serviced by fixed wireless and satellite.
  - Extension to existing FTTP is approx. 7km away at the intersection of Mandurah Road with Paganoni Road would most likely incur backhaul charges (subject to confirmation of lot count) to service this development with Fibre to the Premises (FTTP) services with capacity to cater for residential grade connections.

### ***Recommendations***

- The DWMS (GHD, March 2014) be updated to confirm groundwater modelling to inform the proposed development.
- Groundwater monitoring bores are limited within the KDSP, therefore additional bores are recommended to be installed and monitored to greater understand the groundwater levels and fluctuations to guide future development and ground water separation.
- A Groundwater Management Strategy should be developed for the KDSP area to ensure that separation to groundwater is maintained, and abutting groundwater dependent ecosystems are not adversely impacted by the development.
- Site-specific geotechnical investigations are recommended to be carried out to further inform the civil and structural design for future development. This report should include, as a minimum, testing to confirm:
  - Existing soil characteristics (PSD, Atterberg Limits, MMDD, soil profile)
  - Pavement design parameters (CBP, Swell %)
  - Bearing capacities
  - Site preparation and compaction recommendations
  - Subsurface conditions (karst features such as cavities or loose zones)
- Investigation of the occurrence of Acid Sulfate soils should be included in future geotechnical and environmental investigations to identify and areas requiring remediation.
- The current conceptual planning and pump station catchments provided by the WC will need to be reviewed when future staging, development and future topography is understood. Decisions on the staging and timing of the planned headworks assets will be essentially based on the staging of the future subdivisions and growth of the area.
- Availability of reticulated water of sufficient capacity to serve the proposed area is lacking.
  - To meet the future KDSP and surrounding region demands, construction of several headworks size water mains is essential as part of the subdivision process.
  - WC necessitates 20m wide headworks main routes (i.e., generally via road reserves) for maintenance and potential future expansion for water mains.
  - Decisions on the staging and timing of the planned headworks mains will be essentially based on the staging of the future subdivisions and growth of the area; and noting the construction of these mains is not currently scheduled in WC's 5-year Capital Investment Program.
- Given the estimated proposed load for the development it is highly suggested that WP is engaged to undertake high-level planning and transmission assessment as early as possible to advise if any power network augmentation is required to sufficiently supply the proposed site.

## 2.10 Community Infrastructure Planning

### *Overview*

- Increasing from a population 2,204 in 2021 to an estimated 12,018 in 2031 and to over 48,500 by 2046, this population increase, along with the growth of Baldivis to the north and the coastal suburbs to the west, requires the *Karnup Community Infrastructure Plan 2023* (KCIP) to be developed in order to guide the development of community infrastructure in a planned and prioritised manner to best meet the needs of the community.
- Preliminary planning suggests the need for multiple community infrastructure items by 2046, including land and facilities for Active Open Space (Indoor and Outdoor Recreation spaces), Community Centres, Libraries, Lawn Bowling Club and Youth Centre). The number of items will be subject to confirmation of the nett developable area guided by the KDSP design.

### *Recommendations*

- Finalisation of the *Karnup Community Infrastructure Plan 2023* (KCIP) by the City of Rockingham to assist in informing the KDSP design and to:
  - Clearly identify the services and facilities required for the City's emerging Karnup population and broader City of Rockingham community based upon supply/demand analysis and identification of service catchments and provision standards;
  - Guide the development, and potential timing of community infrastructure over the next 20 years; and
  - Provide the City with a documented framework of community infrastructure planning principles and guidelines.

## 2.11 Urban Design and Planning

Refer Part Two for detailed reporting and mapping

### *Mosquito Risk Findings*

Part One – Project Overview introduced the three urban development scenarios prepared to address mosquito risk in the KDSP area (refer Figures A - C). In preliminary consultation with the DPLH it was concluded that:

- **Scenario A** was considered too restrictive by virtue of the development limitations of the Karnup Station Precinct, inconsistency with the objectives of the Planning Framework, and on the basis that suitable mosquito management strategies could potentially be implemented for the area by State Government.
- **Scenario C**, and ultimately **Scenario B**, is the preferred scenario to progress subdivision and development of the KDSP area.

**Scenario C** offers a practical balance between:

- the ‘full residential’ development build-out expectations of landowners/developers, and consistency with the Planning Framework; and
- the more cautious approach taken by the Department of Health and City of Rockingham in ensuring the long-term public health and safety and comfort of its future Karnup residents in minimising mosquito-borne diseases and illness, and general nuisance.

### *Outstanding Consultation that may Influence KDSP Design*

Informal consultation with various Government agencies and service providers has been ongoing since inception of the KDSP preparation in March 2023. Consultation to date has been more a fact-finding assignment, than formal engagement, and advice to understand the high-level opportunities and constraints of the site from the perspective of each agency.

The following items have been flagged as critical matters requiring further investigation with respective agencies during the KDSP formal engagement and design process:

- Department of Health and DPLH
  - Understanding and general support towards objectives, management strategies, and development strategies detailed within the MRAMP to enable the DSP to progress under a more intensive ‘Development Scenario C’ and ultimately, ‘Development Scenario B’.
  - Advice regarding the need, spatial requirements, and preferred location of a Health Campus (hospital) within the KDSP area.
  - Potential inclusion of Mosquito Management funding under a State funding arrangement.
- Public Transport Authority
  - Confirmation or commitment relating to any alignment of the future Perth – Bunbury Rail service through the KDSP area.
  - City of Rockingham’s desire to explore a dedicated public transport corridor through the area, requiring detailed consultation with the PTA.
- DPLH and Department of Transport
  - Confirmation of road planning within established Planning Control Areas
    - PCA155 – Stakehill Road  
Noting the City’s preferred position that a buffer or interface be provided between the DSP and Special Rural land to north, with the road reserve to accommodate a service road and landscaping, and retain establish trees.
    - PCA176 – Dampier Drive



Noting the current alignment will be subject to EPA review at the time of any MRS Amendment, acknowledging the road will dissect an environmental link between Anstey and Paganoni Swamp Regional Reserves.

- Comment on potential third east-west Integrator Road (i.e., Anstey Road link) in conjunction with State environmental approval agencies (refer section 5.2 in Part 2).

### ***Formal Preparation of the KDSP and external pressures***

Pursuant to the June 2022 recommendations of the WAPC, progress of the KDSP is to be a 'whole of Government' direction in the review of the key findings and recommendations under this Background Report, ahead of the formal KDSP engagement and design process commencing.

The progress of third-party development ahead of finalisation of the KDSP may be influenced by factors including:

- Pressure by State Government to expedite State controlled/owned land to be developed to meet current state-wide land and housing demand and shortages;
- Pressure by private landowners to expedite the development of specific landholdings where it can be demonstrated to State Government that development will not compromise land use planning at a District level.

Timing of development will need to be monitored to correspond to the objectives and spatial land use planning outcomes of the broader KDSP. The following items will require further investigation should the DPLH (WAPC) resolve to advance any LSP(s) ahead of finalisation of the KDSP:

- The size (NLA) and location of the proposed District Activity Centre (DAC)
  - DevelopmentWA's preferred site may compromise the spatial planning or retail catchments of other local or neighbourhood centres yet to be planned (holistically) throughout the KDSP area.
  - DevelopmentWA may not seek to take on the responsibility of delivering an early DAC, therefore, it may be necessary to consider the DAC site being located on an alternative landholding so it may be developed sooner.
- The size (NLA) and location of the proposed retail/commercial/service commercial land uses within the Lot 877 and 878 Stakehill Road LSP and Karnup Station PSP.
  - These sites may compromise the spatial planning or retail catchments of other local or neighbourhood (or District) centres yet to be planned (holistically) throughout the KDSP area.
- Interface with the final location and configuration of the Specialised Node and District Open Space to the east of the DSP area, which may potentially be reconfigured to address mosquito management issues;
- The potential need for additional employment areas based on findings under the preliminary retail analysis, and potential suitability of these areas to be positioned adjacent to the Specialised Node to create a larger employment hub;
  - i.e., Employment Nodes may be suitably located adjacent the Freeway/Paganoni Road intersection to address mosquito management land use planning and to maximise commercial exposure.
- The impact on the final alignment and width of critical road and trunk service infrastructure for the broader KDSP area, namely along Stakehill Road (PCA155), Nairn Drive and Karri Street extension (i.e., new Freeway access points);

- The final alignment and width, or actual construction, of Dampier Drive given the localised environmental constraints, and pressure on nearby road infrastructure, alternative public transport routes, and trunk service infrastructure alignments should it not be constructed;
- The impact on broader KDSP spatial planning of local Primary and Secondary schools and active parklands on adjacent landholdings, which may impact catchments should early progressed LSPs take on an 'internalised' design approach.

### ***Future Planning Phases***

There are a number of changes to the existing planning framework that are required before land within the KDSP area may be subdivided and developed. The implementation framework below outlines the essential steps for amending the MRS and the City of Rockingham Town Planning Scheme No. 2. The process has three sequential parts:

Phase	Key Steps
<b>District Level Process</b>	<ul style="list-style-type: none"> <li>▪ District Structure Plan</li> <li>▪ MRS Amendment(s)</li> <li>▪ (District) Development Contributions Plan</li> </ul>
<b>Local Level Process</b>	<ul style="list-style-type: none"> <li>▪ Lifting of Urban Deferment</li> <li>▪ Local Structure Plan(s)</li> <li>▪ Local Scheme Amendment(s) (Rezoning)</li> <li>▪ (Local) Development Contributions Plan</li> </ul>
<b>Subdivision Process</b>	<ul style="list-style-type: none"> <li>▪ Subdivision and development</li> </ul>

All district level processes relevant to an LSP area, must be completed prior to the formal commencement of any LSP process. Likewise, all LSP processes must be completed prior to subdivision and development occurring within that precinct.

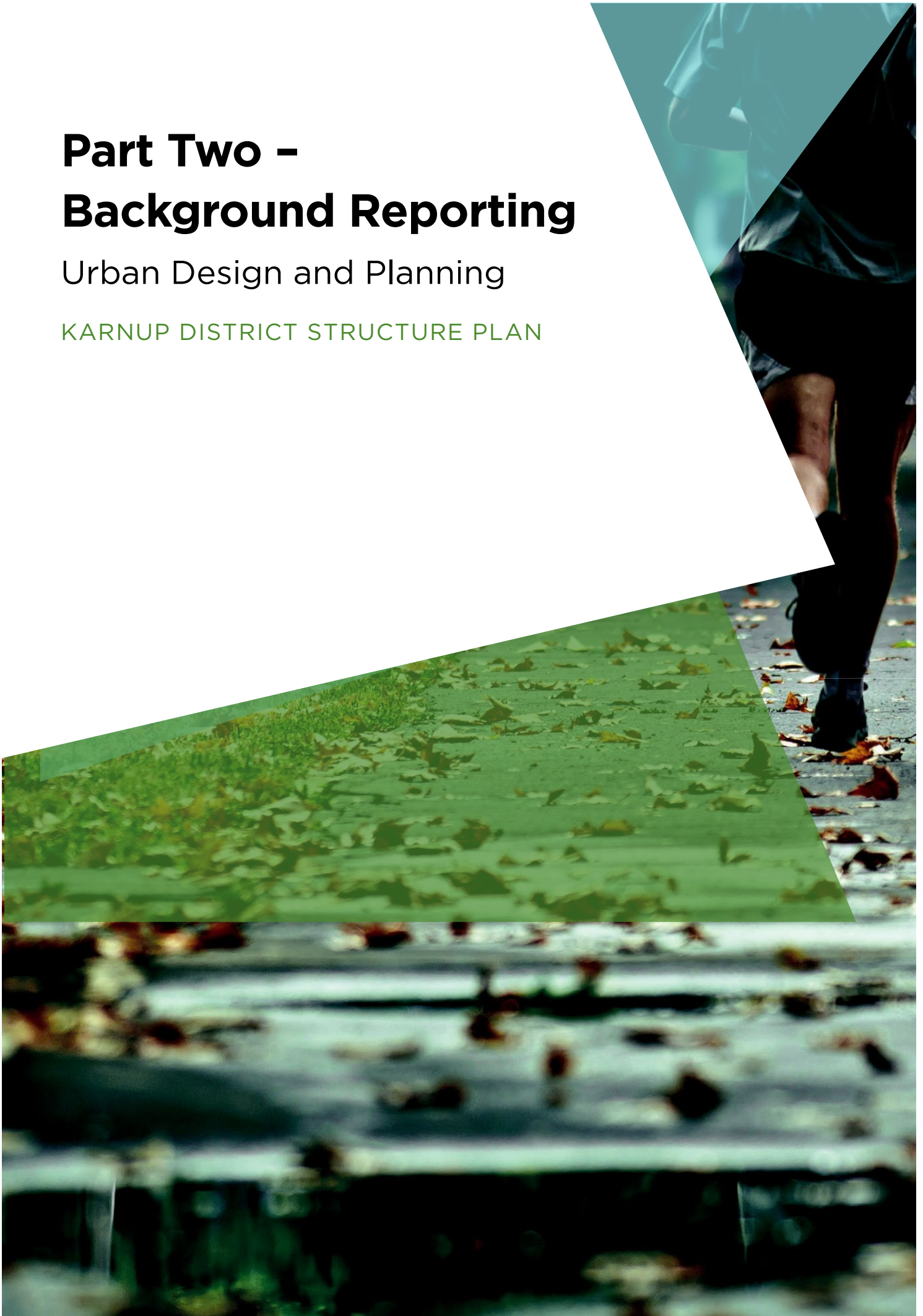
It is recommended that the KDSP encourages processes to be undertaken in parallel or concurrently where possible, in line with the principles of orderly and proper planning.

A detailed Implementation Strategy is included under Part Two.

# **Part Two – Background Reporting**

Urban Design and Planning

KARNUP DISTRICT STRUCTURE PLAN



# Background Reporting – Urban Design and Planning

## KARNUP DISTRICT STRUCTURE PLAN

### 1. Overview

The purpose of this Background Report is to provide a general overview of ‘matters to be considered’ for the benefit and understanding of the WAPC and City of Rockingham and its Elected Members, ahead of formal preparation of the **Karnup District Structure Plan (KDSP)**.

Part Two is not intended to present design solutions at this early stage; this task is subject to subsequent planning phases, the agreed outcomes of the MRAMP, and in conjunction with formal community consultation and government stakeholder engagement. This report does include preliminary reporting undertaken by the Project Team, and a literature review of City of Rockingham and State government policies and publications, and includes the preparation of a consolidated Opportunities and Constraints plan(s) to illustrate key design parameters for the KDSP area (refer **Figure 13**).

Ultimately, the KDSP will guide the progressive subdivision and development of the Karnup locality in response to the urbanisation objectives established in the South Metropolitan Peel Sub-Regional Planning Framework, 2018 (Planning Framework).

The KDSP area covers approx. 1,624 hectares and includes a decommissioned munitions depot, and a mix of mainly rural land uses such as market gardens, equestrian activities and rural lifestyle properties that are surrounded by regionally significant parks and wetlands of high environmental value.

The protection of natural, historical, and cultural values is a critical objective of this future development, and functional and environmentally responsive residential neighbourhoods will be serviced by a District Activity Centre, multiple government Primary and Secondary Schools, complementary active and passive parklands, and a potential Specialised Node, supported by other future employment opportunities.

### 2. Planning Framework

#### 2.1.1 South Metropolitan Peel Sub-Regional Planning Framework (Planning Framework)

In 2018 the State Government released the Perth and Peel @ 3.5 Million strategy and the associated Planning Framework.

Identified as a future urban cell within strategic plans dating back to the 1980’s, the current Framework designated Karnup as an ‘Urban’ and ‘Urban Expansion Area’ to serve as a key urban growth corridor.

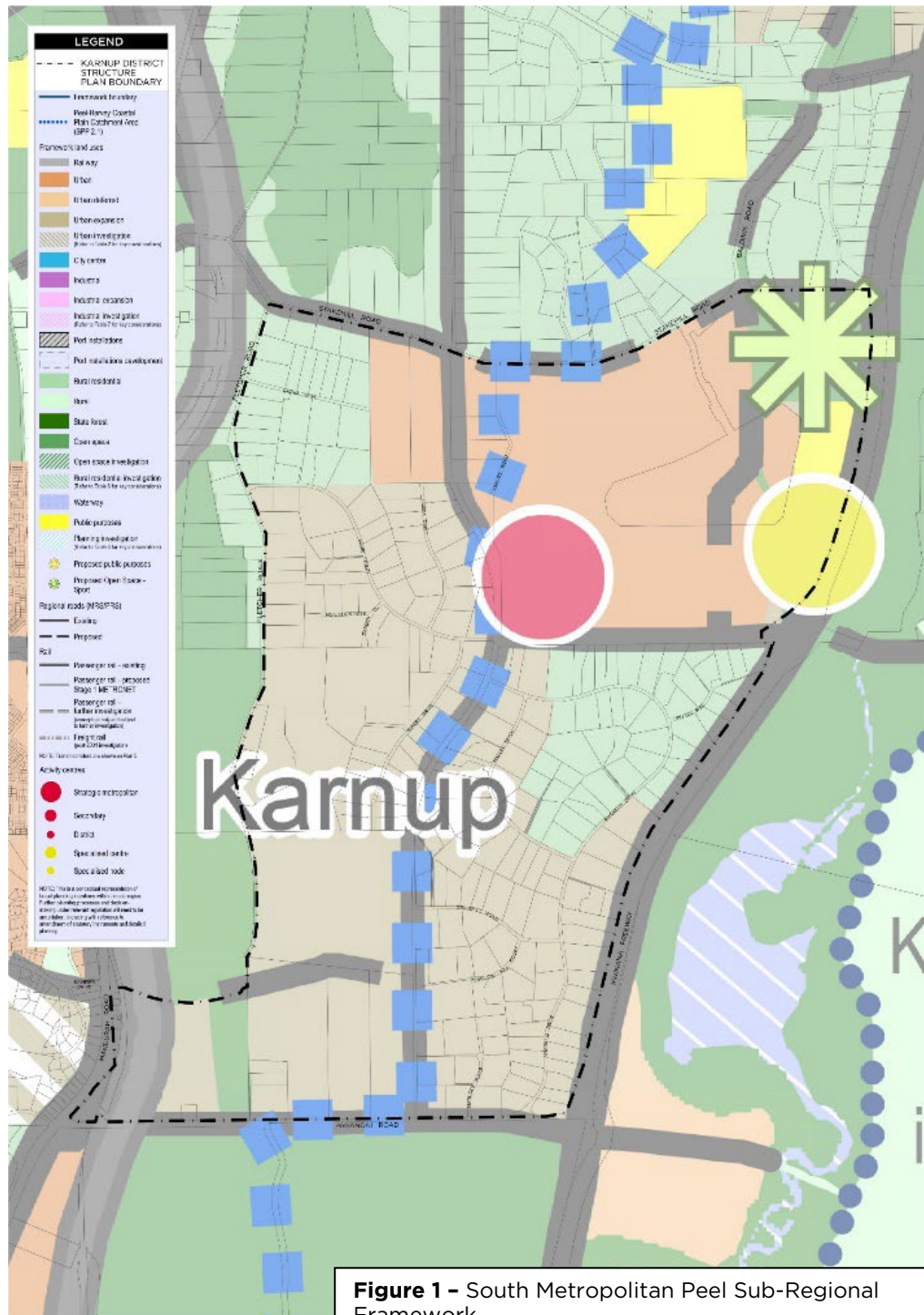
Based on preliminary studies prepared as part of this Background Reporting, the ultimate development is expected to fulfill the projected land uses outcomes under the Framework, namely:

- a new residential corridor, south of the developing Baldivis corridor
- a new District Centre;
- a Specialised Node as a strategic site for longer-term public uses, centrally located between Rockingham-Kwinana and Mandurah-Pinjarra, and providing for a range of regional public facilities which may include education, health and other future ancillary uses;
- a 50ha Regional Sporting Facility site;
- a future railway station and transit orientated development on the Mandurah Railway Line, supported by a network of High Priority Transit Corridors and High Frequency Transit



- a review and update of the regional transport hierarchy.

The Planning Framework requires the City to prepare a DSP, for the approval of the State Government, in advance of rezoning and subdivision within the area.



## 2.1.2 Zoning & Reservations

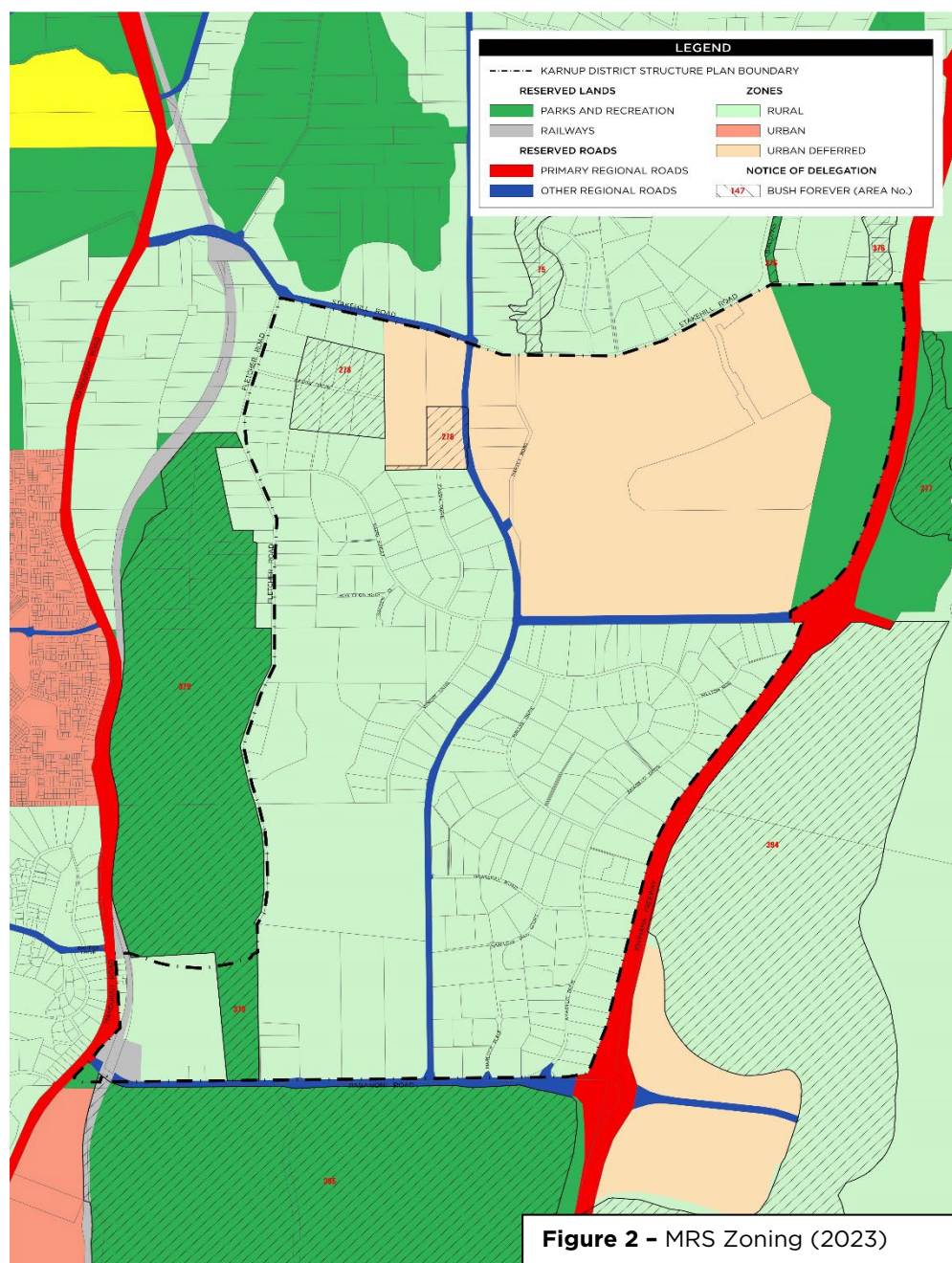
### Metropolitan Region Scheme

Developable land within the KDSP area is currently zoned 'Rural' and 'Urban Deferred'.

'Other Regional Roads' relates to Stakehill Road (west of Nairn), Paganoni Road and the unconstructed portions of Nairn Drive, and Karri Street extending east to Kwinana Freeway ('Primary Regional Roads'). Mandurah Road ('Primary Regional Roads') and 'Railway Reservations' border the south-west boundary.

'Parks and Recreation' reservations are located in the north-east and south-west of the KDSP area and border the western (Anstey Swamp - Bush Forever Site 379) and southern (Paganoni Lake - BF Site 395) boundaries. BF Site 279 is situated in the north-western portion of the KDSP area.

Nairn Drive and Karri Street extend east to Kwinana Freeway ('Primary Regional Roads'). Mandurah Road ('Primary Regional Roads') and 'Railway Reservations' border the south-western boundary.

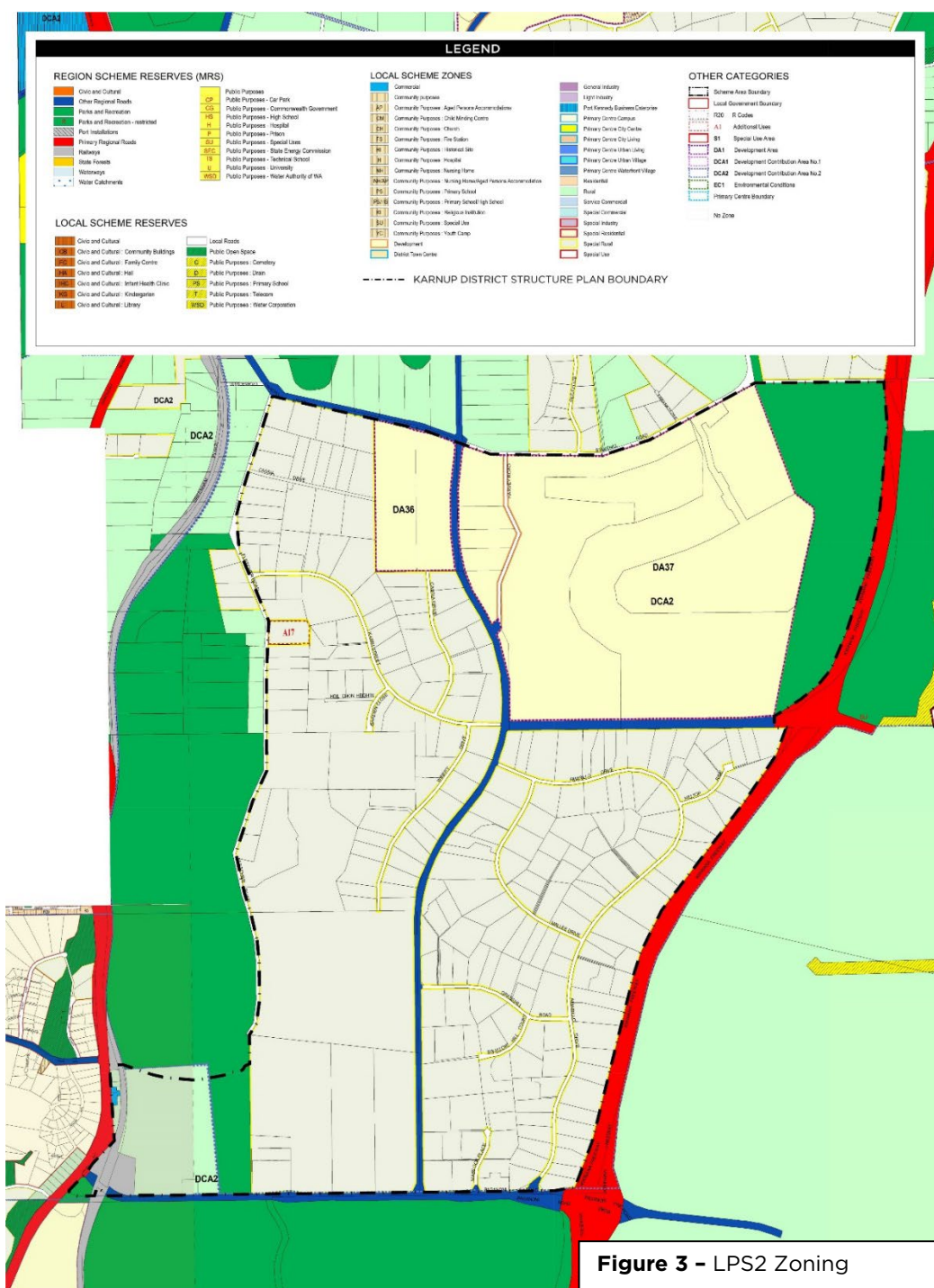




### 2.1.3 City of Rockingham Local Planning Scheme No.2

Developable land within the KDSP area is currently zoned 'Special Rural' and 'Development'.

Key road and Parks and Recreation Reservations correspond to the MRS status. The rezoning process to 'Development' under the Local Planning Scheme is outside the scope of the DSP process, typically corresponding with preparation of a LSP following rezoning of the land to Urban under the MRS.



### 3. Consultation

Formal engagement with all relevant Government agencies, local landowners and general public will be undertaken in subsequent planning phases in accordance with the *Community Stakeholder and Engagement Plan* (CSEP) prepared by project consultants, 361 Degrees (**Appendix 7** refers).

The CSEP provides the necessary guidelines and procedures for managing community and stakeholder engagement and communications for the project. This is a practical tool describing the processes by which the KDSP project will manage communications and stakeholder relationships for its duration and describes the philosophy that underpins the Project Team's genuine commitment to positive and proactive community relations.

Informal consultation with various Government agencies and service providers has been ongoing since inception of the KDSP preparation in March 2023. Consultation to date has been more a fact-finding assignment than formal engagement and advice to understand the high-level opportunities and constraints of the site from the perspective of each agency.

**Table 1** provides a brief summary of key items and preliminary responses to date.

**Table 1. Preliminary Government Agency and Service Provider Consultation**

Key Agency	Status	Comments
Dept Planning Lands and Heritage	Consulted Various Mar – Nov 2023.	<p>Various briefings during preparation of initial background reporting and mosquito management studies, including meeting attendance with METRONET team.</p> <ul style="list-style-type: none"> <li>▪ Reporting of Mosquito Risk Assessment and Management Plan (MRAMP) findings.</li> <li>▪ Providing a recommendation to prepare Development Scenarios to determine the impact on land uses within the 1km Mosquito Flight Path, including the strategic Karnup Station Precinct.</li> <li>▪ Reviewing 3 x Development Scenarios prepared by the City's consultants and providing general comment on those findings, with preference to advance Scenario C and ultimately Scenario B.</li> <li>▪ Committing to refer the Background Report to relevant Government agencies and holding a high-level meeting to discuss the report outcomes; prior to referring the matter to the WAPC to provide a 'whole of Government' direction to the City on progressing the DSP.</li> </ul>
Dept of Transport Public Transport Authority / METRONET	Consulted Consulted June 2023	<p>Key Items Discussed:</p> <p><b>METRONET Input:</b></p> <ul style="list-style-type: none"> <li>▪ Karnup Railway Station- Precinct Structure Plan (PSP) <ul style="list-style-type: none"> <li>◦ Update on the progress of the PSP;</li> </ul> </li> <li>▪ DPLH will need take into consideration the outcomes of the (Market Lead Proposal) 'Problems and Opportunity Statement'.</li> <li>▪ The indicative yield ranges between 780-820 dwellings.</li> <li>▪ Neighbourhood Centre @ approx. 4,000 sqm – 'daily needs' shopping.</li> <li>▪ Dampier Drive Extension subject to environmental assessment and decision on construction</li> <li>▪ Primary access to the north of the PSP area.</li> <li>▪ Potential EPA issues during rezoning- as proposed road passes through Rockingham Lakes Regional Park.</li> </ul>

Key Agency	Status	Comments
		<ul style="list-style-type: none"> <li>- Paganoni Road and the future intersection to Mandurah Road is in a Planning Control Area (PCA).</li> <li>- Strategic firebreak to be provided between Station Precinct and extension of Fletcher Road.</li> </ul> <p><b>PTA Input on Karnup PSP:</b></p> <ul style="list-style-type: none"> <li>▪ PTA will need to undertake an internal review regarding the location of the Bus Depot previously notated in the north-west portion of the PSP.</li> <li>▪ DPLH in consultation with the Minister's office recommended Depot be relocated elsewhere to optimise developable land in proximity to the station.</li> <li>▪ PTA officers noted the Mandurah and Rockingham Depots are at capacity.</li> <li>▪ General depot requirements: <ul style="list-style-type: none"> <li>○ 1.5 – 2ha in land size</li> <li>○ “close as possible” (within 1-2 kms) to Karnup Station.</li> </ul> </li> <li>▪ Regional rail planning <ul style="list-style-type: none"> <li>○ Bunbury team – high level feasibilities being undertaken.</li> <li>○ There is no preferred strategy for a future rail alignment to connect to Bunbury.</li> <li>○ Several (planning) options considered with no immediate plans prior to 2050 (planning).</li> </ul> </li> </ul> <p><b>PTA General Comments – District Structure Plan</b></p> <ul style="list-style-type: none"> <li>▪ Public Transport Strategy – Bus Feeder Network <ul style="list-style-type: none"> <li>○ DSP to provide a broader road network showing connectivity to areas outside DSP boundary.</li> </ul> </li> <li>▪ Straight/direct alignments to and from key nodes to service the future residential areas and road dimensions per LN review (2015)</li> <li>▪ Public transport routes to be generally located 1km apart with the potential for 2-3 routes throughout the DSP.</li> <li>▪ Link up with Baldivis network (e.g., Karnup – Warnbro link)</li> <li>▪ Specific transit corridors not warranted – subject to traffic numbers (and any potential congestion) identified under the DSP studies. Note: the City intends to explore this concept further with PTA through the DSP process.</li> <li>▪ N-S connection along Nairn Drive with a PTA priority lane? <ul style="list-style-type: none"> <li>○ Subject to expected traffic volumes</li> <li>○ Nairn Road is seen as a ‘severance road’ which is high speed and high traffic volume and is not good from a bus catchment point of view.</li> </ul> </li> <li>▪ Opportunities to provide Principle Shared Paths (PSPs) for pedestrians and cyclists to access future railway station.</li> <li>▪ District Activity Centre requirements <ul style="list-style-type: none"> <li>○ No bus overlay/terminus required – terminus focussed on connecting train station(s)</li> </ul> </li> </ul>

Key Agency	Status	Comments
		<ul style="list-style-type: none"> <li>○ DAC to serve more of 'passing through' function.</li> <li>▪ Bus Stops to generally follow the urban front.</li> <li>▪ Secondary School – public transport routes can deviate a few blocks from the standard direct routes to cater for this community infrastructure. <ul style="list-style-type: none"> <li>○ District/Regional Playing Fields are not a high priority service area for public transport (bus)</li> <li>○ Baldivis Road Extension into the KDSP area.</li> </ul> </li> <li>▪ Baldivis routes include several areas without a development front (i.e., weak or one-sided public transport catchments).</li> <li>▪ Baldivis area identified as hard to serve enroute to Warnbro given convoluted routes.</li> <li>▪ Future route – transit corridor between Fletcher/Nairn recommended.</li> </ul>
Dept of Health	Consulted Various, Mar – Nov 2023	<p><b>Land Use Planning</b> – No consultation to date re: Health Campus; awaiting DoH feedback on site and facility needs, including land area and site and design parameters.</p> <p><b>Mosquito Management</b> – per Extract Appendix 1</p> <p>Preliminary consultation with DoH officers has indicated that:</p> <ul style="list-style-type: none"> <li>▪ Approval of a DSP and subsequent development will increase the risk of mosquito-borne disease being acquired in the area, and recognising there is no guaranteed mitigation solution in this high risk area. DoH will continue working with the City to mitigate the risk, albeit recognising that it will not be properly alleviated.</li> <li>▪ Emphasis will be placed on the City to alert future residents of the risks, along with increased mosquito management activities in the area including potentially more frequent aerial larviciding.</li> <li>▪ Urbanisation of the KDSP is comparative to other developments in other high-risk areas around Mandurah and elsewhere in the southwest.</li> </ul> <p>Notwithstanding the above, the following design considerations should be thoroughly investigated when preparing the DSP:</p> <ul style="list-style-type: none"> <li>▪ The City should use built form design measures in the construction of accommodation and recreational areas to protect future residents from mosquitoes.</li> <li>▪ Public open space with limited vegetation should be located between the mosquito breeding sites and residential areas to reduce the number of mosquitoes impacting residents.</li> <li>▪ Preference for periphery areas, closest to the known breeding sites, to be kept as either public open space, or as low density as possible (industry, retail etc).</li> <li>▪ Development of more intensive residential development (i.e., dwelling units) can cause problems with mosquito harbourage. These land uses can be accommodated however would be recommended to include residual sprays on the external walls to mitigate mosquito harbourage.</li> <li>▪ Built form design measures (i.e., insect screening on doors and windows and screened outdoor enclosures), public education</li> </ul>

Key Agency	Status	Comments
		<p>packages and public signage are encouraged to be included as part of the State and City of Rockingham conditions of approval, consistent with current practices.</p> <ul style="list-style-type: none"> <li>Development of school sites is possible, but the risk of <i>Ae. vigilax</i> during summer periods may cause nuisance when the staff/students are outside.</li> <li>Public education of residents and workers is the onus of the City and/or developers. Education programs to raise awareness of mosquito-borne diseases among residents and workers employed for future projects should entail: <ul style="list-style-type: none"> <li>Avoidance of biting mosquitoes</li> <li>Use of appropriate clothing (supply long-sleeved, light, loose fitting clothing)</li> <li>Use of personal insect repellents (supply workers with repellents containing DEET, picaridin or OLE).</li> </ul> </li> </ul>
Dept Training and Workforce Development (DTWD)	Consulted Sep 2023	<p>DTWD noted in its high-level review of the KDSP:</p> <ul style="list-style-type: none"> <li>reference to the Karnup Specialised Node, including space for a TAFE site.</li> <li>Noted newly constructed TAFE sites are very rare – with renovations/upgrade of existing campuses typically pursued.</li> <li>New sites reliant on State Funding, albeit there is no ability to land bank sites ahead of its formal use.</li> <li>TAFE students typically travel (regional/district) distances for education. Proximity to high frequency public transport is desirable.</li> <li>Location nearby to Secondary Schools is not critical however can sometimes serve as feeder institutions (i.e., for VET programs).</li> <li>Nearby TAFE has specialised function – Mandurah (Hospitality);</li> <li>Need for a general or specialist centre at Karnup is yet known – may be subject to Baldivis and Karnup employment base.</li> <li>DTWD to provide formal comments as part of further engagement during formal KDSP advertising.</li> </ul>
Dept of Education	Consulted Aug 2023	<ul style="list-style-type: none"> <li>Spatial plans (Opportunities and Constraints) prepared by CDP were forwarded and reviewed as part of initial discussions.</li> <li>DoE acknowledged/supportive of 1500 population catchments and resultant need for 9 - 11 Primary Schools and 2 - 3 Secondary Schools, subject to the full build out of the area, and based on addressing Mosquito Management factors.</li> <li>DoE to provide formal comments as part of further engagement during formal KDSP advertising.</li> </ul>
Main Roads WA	Not Consulted	<p>No consultation to date.</p> <p>All KDSP intersections and access to the Kwinana Freeway and Mandurah Road acknowledged and confirmed as part of preliminary designing.</p> <p>MRWA to be engaged during DSP engagement process, and to provide comments during formal KDSP advertising.</p>
DWER	Not Consulted	Refer Appendix 2.

Key Agency	Status	Comments
DBCA	Not Consulted	<p>DBCA and DWER mapping datasets have been used in all preliminary research.</p> <p>Agencies to be engaged during DSP engagement process, and to provide comments during formal KDSP once all Environmental studies have been completed.</p>
Water Corporation	Consulted Jun 2023	<p>Water Corp advised:</p> <ul style="list-style-type: none"> <li>KDSP is located within the current conceptual wastewater planning scheme.</li> <li>Several pump station catchments are identified, however there are no pump stations established within these catchments.</li> <li>WC conceptual plan illustrates the Baldivis South Main Sewer is proposed as an outlet that is planned to head north and discharge into the Magenta Crescent Wastewater Pump Station (WWPS). The Baldivis South Main sewer is not incorporated in WC's 5-year Capital Invested Program and is not expected to be constructed for at least 10 years.</li> <li>Alternative outlets may need to be investigated subject to KDSP development staging.</li> <li>The proposed pump stations and associated pressure mains and collection sewers (headworks assets) are not scheduled on the 5-year Capital Investment Program. These headworks assets will be required to be constructed as part of the subdivision process and a requirement of routes of 20 metres wide (in form of road reserves) for the headworks mains.</li> </ul> <p>There is presently no wastewater infrastructure in or close to the proposed site. It is anticipated that the KDSP will be serviced via DN150 up to DN600 gravity sewer networks and will discharge via pressure mains to a nearest existing wastewater discharge manholes or discharge into the Magenta Crescent Wastewater Pump Station (WWPS).</p>
Western Power	Consulted	Refer to Appendix 6
NBN Co	Mar – Nov 2023	Preliminary (informal) consultation has been undertaken by JDSi in preparation of the Service Infrastructure Background Reporting.
ATCO Gas		Agencies to formally comment as part of further engagement during formal KDSP advertising.

### 3.1 Active Developers/Landowners

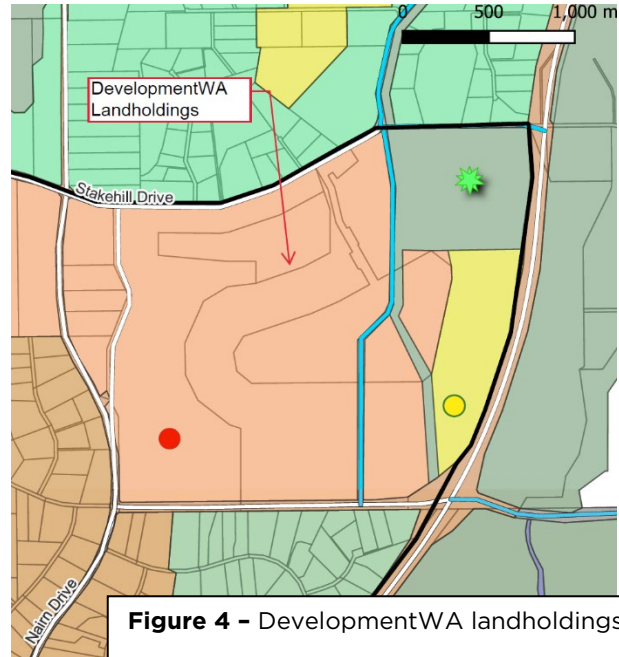
#### Development WA

- In October 2013, DevelopmentWA (then LandCorp) requested the City consider the preparation of a LSP over the majority of the now decommissioned Karnup Munitions Depot site, ahead of the preparation of a DSP for the broader Karnup locality.
- In January 2014, the City advised that, following consultation with the DPLH (then Department of Planning), the City could only consider the preparation of a LSP that would not prejudice planning at a State or Regional level.
- In February 2016, the Council considered a proposed LSP on Lots 316 and 1340 Stakehill Road following the completion of public advertising. The LSP addressed the provision of services and key land uses required to support its local population. The LSP provided for



primarily residential land uses, complemented by a Primary School, Local Centre and District Centre.

- The Council recommended to the WAPC that the applicant address:
  - setback requirements to established rural land uses adjacent to the LSP area;
  - alignment and profile of Stakehill Road to address rural amenity;
  - removal of a portion of the District Centre shown in the LSP; and
  - various minor technical changes identified within the City's assessment of the proposal.
- In June 2017, DevelopmentWA withdrew its application from the WAPC's determination, advising that the proposal would be reconsidered at a future date pending the resolution of regional and district planning considerations.
- As part of preparation of the KDSP (2023), DevelopmentWA has engaged with the City and DPLH in addressing those site opportunities and constraints identified in the previous Structure Plan submission; primarily the design of Stakehill Road and Nairn Drive (within WAPC's Planning Control Area No.155).
- Timing of development will need to be monitored to correspond to the objectives and spatial land use planning outcomes of the broader KDSP.
  - The 'Urban Deferred' landholding comprises approx. 25% of the overall KDSP area and is likely to include the Karnup District Centre within its boundary, therefore any design elements proposed by DevelopmentWA on its landholding may impact the spatial planning of interfacing or nearby landholdings.
  - The following items will require further investigation should the DPLH resolve to advance any LSP(s) over this land ahead of the KDSP:
  - The size (NLA) and location of the proposed District Activity Centre land use.
    - DevelopmentWA's preferred site may compromise the spatial planning or retail catchments of other local or neighbourhood centres yet to be planned (holistically) throughout the KDSP area.
    - DevelopmentWA may not seek to take on the responsibility of a DAC, or initiate early development of the site, thus consideration towards the DAC site being on an alternative landholding so to be developed sooner may need to be investigated.
  - Interface with the final location and configuration of the Specialised Node and Regional Playing Fields east of site, which may potentially be reconfigured to address mosquito management issues.
  - The potential need for additional employment areas based on findings under the preliminary retail analysis, and potential suitability of these areas to be positioned adjacent to the Specialised Node, for example, to create a larger employment hub.
  - The impact on the final alignment of critical road and trunk service infrastructure for the broader KDSP area, namely along Stakehill Road, Nairn Drive and Karri Street extension (i.e., new Freeway access points).



**Figure 4 - DevelopmentWA landholdings**

- DevelopmentWA has flagged concerns about the potential land-take to accommodate the preferred wider road reserve planned along Stakehill Road, potentially up to 6ha of its landholding, and an item which cannot be adequately resolved until the broader KDSP dwelling yields and traffic planning and management response has been progressed.
- The impact on broader KDSP spatial planning of local Primary and Secondary schools and active parklands on adjacent landholdings



**Figure 5 – Draft LSP, Lots 877 & 878 Stakehill Rd**

- These matters will be ultimately addressed in the formal preparation of the KDSP.

### Lots 877 and 878 Stakehill Road, Karnup

- Lots 877 and 878 Stakehill Road are located in the north-western portion of the broader KDSP area, directly west of DevelopmentWA's landholding.
- In August 2021, the Council of the City of Rockingham considered a LSP for the 48.7ha 'Urban Deferred' site, proposed for subdivision and development for primarily residential land uses, with Commercial and Service Commercial sites interfacing Stakehill Road. The LSP included a reserve to protect a Bush Forever site.
- The Council resolved to recommend that the advertised application not be approved for a range of reasons including:
  - Prematurity of the proposal, as approval of the LSP in its current form would undermine and not satisfactorily integrate with future district level planning for the Karnup locality;
  - The proponent had not satisfied the requirements to lift 'Urban Deferment';
  - A Negotiated Planning Solution had not been determined over Bush Forever Site 278B.
  - The proposal did not adequately address funding requirements for service infrastructure;
  - Insufficient investigation into the odour impacts from adjacent poultry farms.
- The City further discussed the matter with DPLH in May 2023 following further discussions regarding the lifting of Urban Deferment and request for feedback on the status of the LSP:
  - The City maintained its position that progressing the LSP, along with revised designs proposed by DPLH for Nairn Drive, is inconsistent with orderly and proper planning and is not supported by the City prior to advancement of the KDSP.
  - The WAPC noted these views but stated it was expecting to progress the Lifting of Urban Deferment and the revised design for Nairn Drive in the latter part of 2023.

- In relation to the DSP, timing for development should be consistent with the objectives and spatial land use planning outcomes of the KDSP. The following items will require further investigation should the LSP be advanced ahead of the KDSP:
  - The actual provision, size (NLA) and location of the proposed commercial/service commercial land uses.
    - i.e., These sites may compromise the spatial planning or retail catchments of other local or neighbourhood (or District) centres yet to be holistically planned throughout the KDSP area.
  - The impact on the final alignment of critical road and trunk service infrastructure for the broader KDSP area, namely along Stakehill Road and Nairn Drive.
  - The impact on spatial planning of local Primary and Secondary schools on adjacent landholdings, so to offer a walkable catchment for residents of this LSP area.

### METRONET (WAPC) – Karnup Station Precinct

- The State Government (METRONET) is committed to building a new rail station at Karnup via continued investment opportunities with the Federal Government. There is currently no timeframe for the construction of the station.
- It is proposed that the Karnup Station will be complemented by other integrating transport services, housing, and recreational uses within a broader 35ha station ‘precinct’; with subdivision and development guided by a Precinct Structure Plan (PSP).
- Subdivision and development of the adjacent landholding will value-add to the feasibility of the new station when an investment decision on the construction of the station has been made.
- METRONET has significantly advanced the necessary studies required to formulate the PSP, however, has yet to formally lodge and seek advertising consent.
- In May 2023, State Government announced the *Karnup Station Precinct Problem and Opportunity Statement* with feedback sought from interested parties in building a new station, and transit-oriented community on behalf of State Government.



**Figure 6 – Draft Karnup Station PSP**

- Whilst submission closed late July 2023, an update on the Expression of Interest has not yet been conveyed by METRONET to the City of Rockingham.

- In October 2023 the WAPC (Commission Agenda) considered a request to initiate a 'Standard' MRS Amendment for the Karnup Station Precinct to facilitate:

- The transfer of approx. 61 hectares of land from the 'Rural' zone and 'Railways' reservation to 'Urban', 'Urban Deferred' zones and 'Parks and Recreation' and 'Public Purposes' reservations under the MRS.
- Development for urban uses, protection of environmental assets (including Tuart Banksia woodland), and to provide for future delivery of PTA, MRWA, and WP infrastructure.

- The DPLH (Infrastructure Planning and Policy) has offered the following preliminary advice:

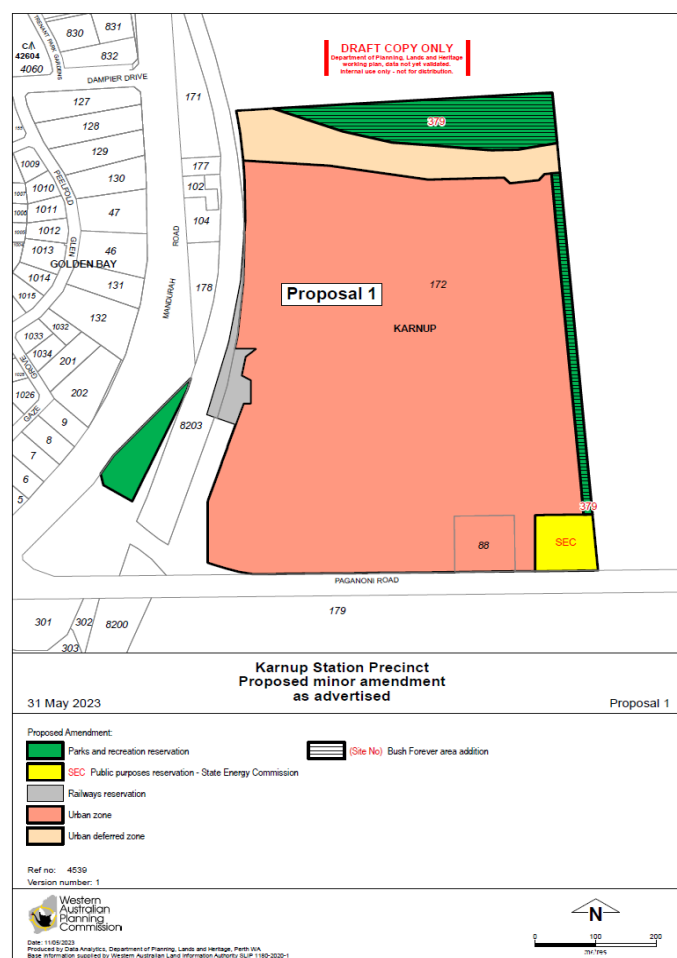
- Planning for the proposed Dampier Drive extension is ongoing and PCA 176 has been declared to protect the proposed alignment. Whilst detailed planning for the extension is yet to be undertaken, it is anticipated that a north-south connection, between Dampier Drive and Paganoni Road, may be required if the project proceeds.

- There is no intention at this stage to reserve the north-south connection under the MRS. It is proposed to rezone the area included in PCA 176 from 'Rural' to 'Urban Deferred' zone under the MRS. This recognises that further detailed planning, including resolution of environmental issues, is required to progress the proposal.

- The City of Rockingham has provided the following preliminary advice:

- It broadly supports the MRS amendment, and subsequent amendment of TPS No.2 to rezone the precinct from 'Rural' to 'Development' zone.
- A range of outstanding issues will require resolution as part of further detailed planning, including arrangements for management of the public open space reserves and wetlands, as well as mosquito management.
- The development will need to consider the objectives of the KDSP being prepared as a high-level strategic plan to guide development and subdivision and help coordinate the provision of future services and infrastructure such as major roads, water reticulation and wastewater infrastructure.

- Timing of development will need to be monitored to correspond to the objectives and spatial land use planning outcomes of the broader KDSP.
- A range of matters will require further investigation should the DPLH resolve to advance the PSP ahead of the KDSP – noting the City of Rockingham has yet to receive or provide formal comment on the draft PSP:



- The size (NLA) of the proposed commercial land uses adjacent the Station site, understood to be a Local Centre only, and any potential impact on the broader KDSP area.
- The final alignment or actual construction of Dampier Drive given the localised environmental constraints, and pressure on nearby road infrastructure, alternative public transport routes, and trunk service infrastructure alignments should it not be constructed.
- The impact on spatial planning of local Primary and Secondary schools on adjacent landholdings, to offer a walkable catchment for residents of the PSP area.

## 4. Design Response

### 4.1 Land use Summary

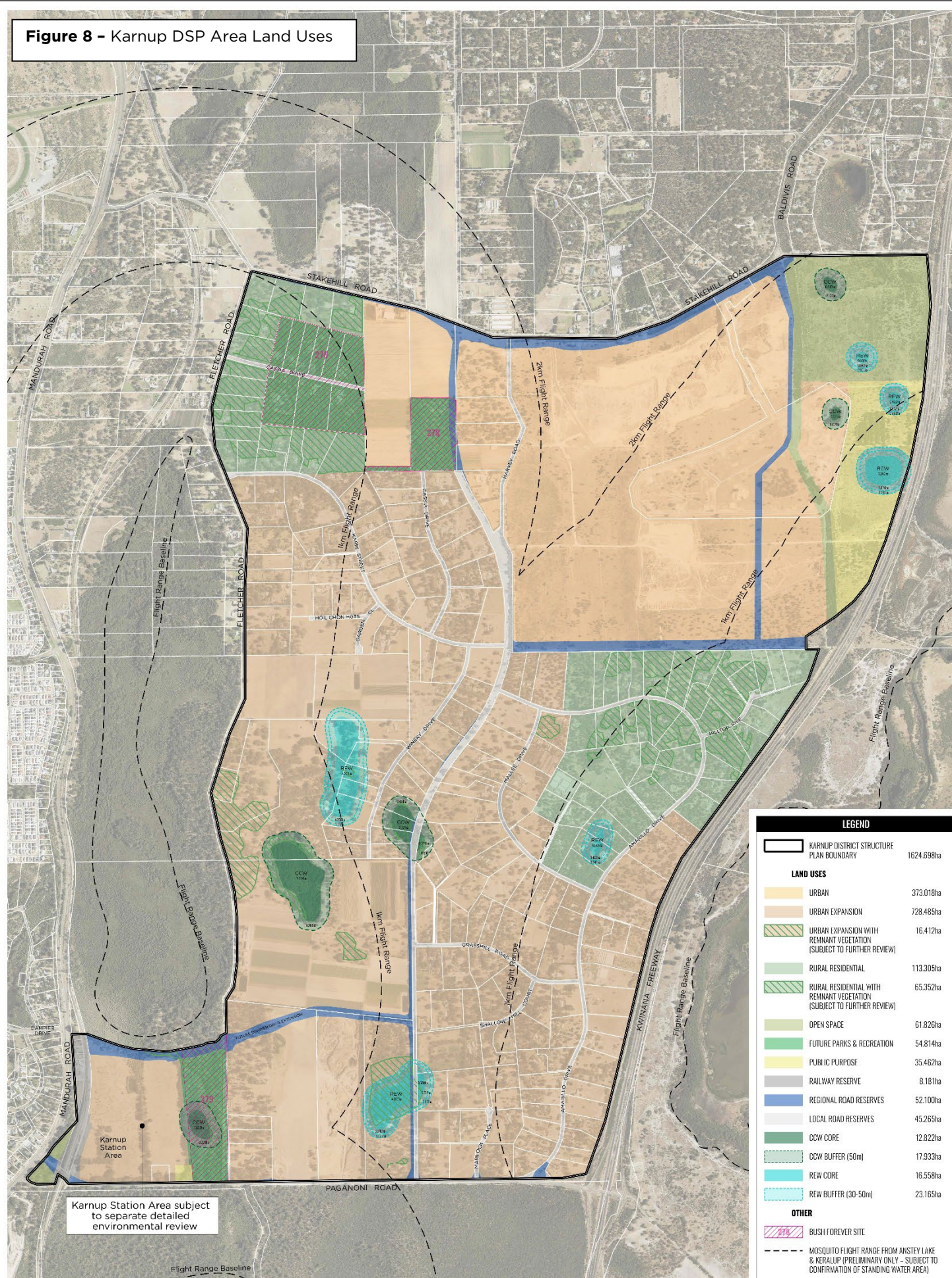
In accordance with the Planning Framework, a generic 'Base Plan'(Figure 8) has been prepared to define the KDSP area. The allocation of land uses is based on a combination of the current Framework, MRS and TPS2 zonings, and includes environmental agency datasets to identify key environmental areas (wetlands, bushland and other areas of known environmental value) that will influence the DSP engagement and design phase.

**Table 2. Karnup Preliminary Land Uses – per Figure 8**

Key Statistics and Outcomes	Area/Quantity (Ha)	Notes
Urban	373.018	
Urban Expansion – Total	744.897	# Remnant Vegetation (Requiring Further Review) – relates to specific sites that have been identified as high priority for further investigation for protection as they may contain a combination of: <ul style="list-style-type: none"> <li>Threatened Ecological Communities (Tuart Woodland)</li> <li>Carnaby Cockatoo foraging habitat</li> <li>Representation of important regional vegetation complexes</li> <li>Declared rare flora.</li> </ul>
<ul style="list-style-type: none"> <li>Main Portion</li> </ul>	(728.485)	
<ul style="list-style-type: none"> <li>Portion with Remnant Vegetation (Requiring Further Review) #</li> </ul>	(16.412)	
Rural Residential – Total	178.657	
<ul style="list-style-type: none"> <li>Main Portion</li> </ul>	(113.305)	
<ul style="list-style-type: none"> <li>Portion with Remnant Vegetation (Requiring Further Review) #</li> </ul>	(65.352)	
Open Space	61.826	
Future Parks and Recreation	54.814	
Public Purpose	35.462	
Railway Reserve	8.18	
Regional Road Reserves	52.10	
Local Road Reserves	45.265	
Conservation Category Wetland (CCW)	12.822	
CCW Buffers (50m)	17.933	
Resource Enhancement Wetland (REW)	16.558	
REW Buffers (30 – 50m)	23.165	
<b>TOTAL KDSP AREA:</b>	<b>1624.698</b>	



**Figure 8 - Karnup DSP Area Land Uses**



Karnup Station Area subject to separate detailed environmental review

# **BASE PLAN** **KARNUP**

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**DRAFT**

Scale: 1:20 000 @ A3  
PLAN ROCKA-1-001  
DATE: 08/11/2023  
PROJECTION: MGA 50  
(DATUM: AHD)

**cdp**  
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## 4.2 Mosquito Management Considerations

In addition to the generic land uses illustrated in the KDSP Base Plan (Figure 8), the plan also references areas of known mosquito habitat, defined by:

- *A Mosquito 'Flight Range Base' – taken from the defined areas of standing water in which mosquito populations breed;*
- *Mosquito Flight Ranges – 1km and 2km ranges are represented, consistent with the recommendations of the MRAMP.*

Preliminary discussions with DPLH officers proposed that a number of development scenarios be explored to understand the potential impact of the Mosquito Risk Assessment and Management Plan (MRAMP) findings – **Appendix 1** refers.

The development scenarios are intended to assist WAPC in resolving an approach to progress development of the DSP area in consultation with Department of Health, City of Rockingham and other agencies as required.

The three (3) development scenarios (as illustrated in **Figures 10 - 12**) are as follows –

- restricted land uses** in identified mosquito risk areas – generally defined by non-sensitive land uses developed within the 1km mosquito flight range;
- uncontrolled land uses** in identified mosquito risk areas – generally meaning that no development restrictions of sensitive land uses would apply within the 1km mosquito flight range; and
- a **balanced land use** approach between the two scenarios above – meaning a greater focus on non-sensitive land uses within a designated 1km flight range of the mosquito source is to apply, and with option for sensitive land uses, including residential development, to develop in these areas over time on the basis that mosquito mitigation is better managed as development progresses.

Further discussion with DPLH concluded that:

- **Scenario A** was considered too restrictive by virtue the development limitations of the Karnup Station Precinct and the objectives of the Planning Framework on the basis suitable mosquito management strategies could potentially be implemented for this specific area, led by State Government.
- Should Scenario A be advanced, the resultant loss on developable land (i.e., residential) within the 1km Mosquito Flight Zone would equate to (**Figure 9** refers):
  - Western Periphery: Approx. 277.71ha.
  - Eastern Periphery: Approx. 145.817 hectares.

Adopting Scenario A would yield approximately 5596 less dwellings than Scenario B.

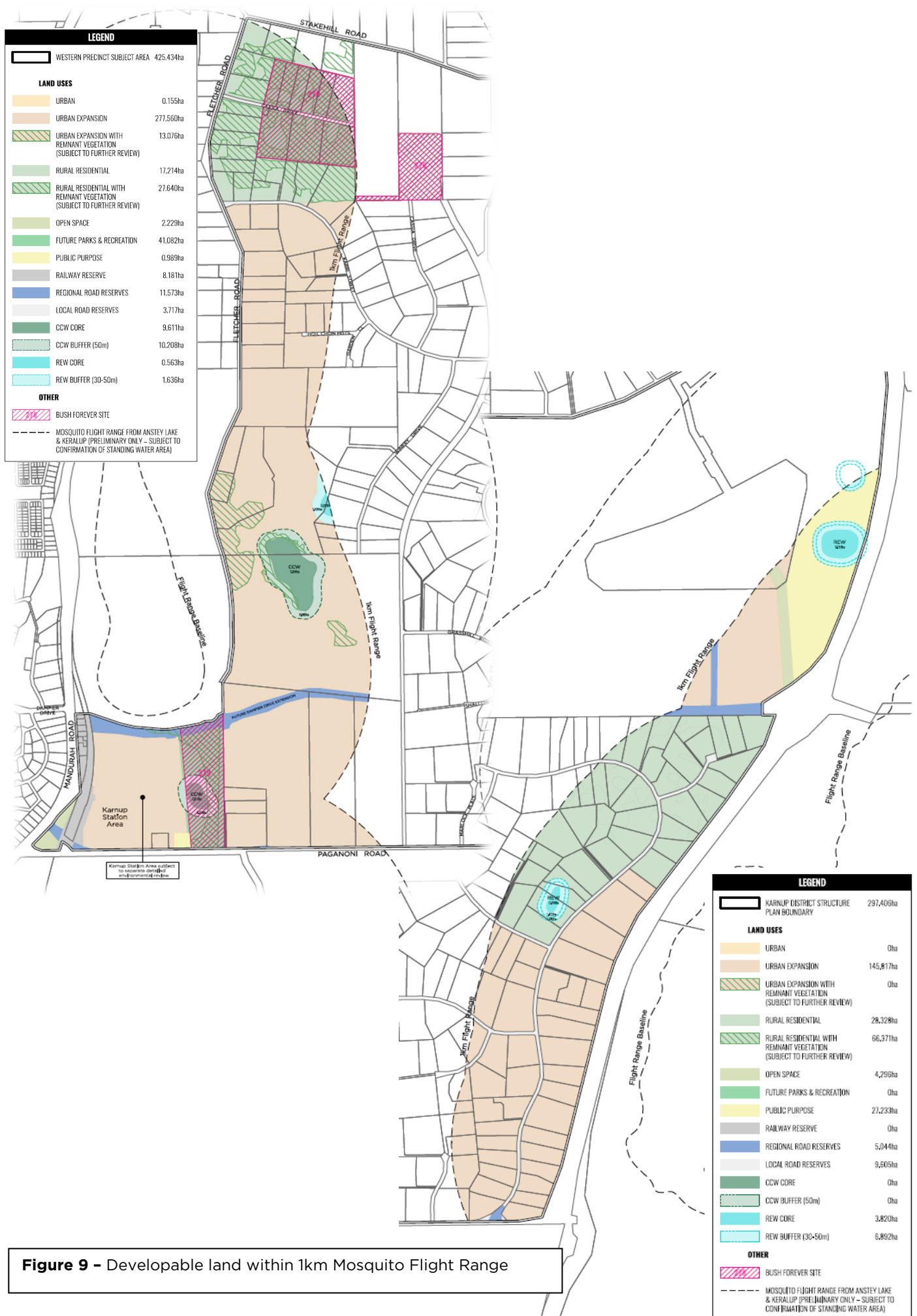
- **Scenario C**, and ultimately **Scenario B**, is the preferred scenario to progress subdivision and development of the KDSP area.
- **Scenario C** offers a practical balance between:
  - the 'full residential' development build-out expectations of landowners/developers, consistent with the Planning Framework; and
  - the more cautious approach taken by Department of Health and City of Rockingham in ensuring the long-term public health and safety and comfort of its future Karnup residents in minimising mosquito borne diseases and illness, and general nuisance.
- This scenario will:

- require restriction of certain landholdings from developing sensitive land uses (including residential development) unless specific mosquito mitigation measures are adhered to, both during subdivision and development, and long term.
- enable interim non-sensitive land uses to be considered, and later replaced by sensitive land uses on the basis mosquito mitigation is better managed over time as the DSP area is gradually built out.
- The potential development yields, and supporting community and commercial related infrastructure, has been projected for the Scenario B and Scenario C options.

Traffic modelling, Community Infrastructure Planning (and to a lesser extent retail analysis) is undertaken under Scenario B so ensure no shortcomings in the ultimate district and neighbourhood road designs.

It is also recognised that, with suitable mosquito management for the entire KDSP area, Scenario C would essentially transform into Scenario B over time. Scenario C would be a staged approach to Scenario B, whereby the areas at highest mosquito risk would be the last areas developed, on the assumption mosquito management would improve over time and the areas of highest risk would be more intensively mitigated by the approaching subdivision and development.

Mosquito management and mitigation is not a localised issue, with the adjoining saltmarsh areas extending almost the full extent of eastern, western, and southern boundaries of the KDSP area. As such, an 'all-in' landowner approach to mosquito management, rather than a subdivision-by-subdivision approach would provide the most holistic outcome. Implementation of this suggested collaborative approach to mosquito management is addressed in latter stages of this report and Appendix 1.



**Figure 9 - Developable land within 1km Mosquito Flight Range**

## 5. Design Considerations

Derived from the preliminary reporting undertaken by the specialist consultant team, the literature review of City of Rockingham and State government policies and publications, and preliminary stakeholder engagement, CDP has prepared a consolidated Opportunities and Constraints plan to illustrate key design parameters for the KDSP area (**Figure 13** refers).

### 5.1 Urban Design Principles

The general objective of the KDSP is to deliver a coherent urban structure comprising compact and well connected, walkable neighbourhoods that are sensitively integrated with the natural environment. In the next stage of work, a visioning process will define the Vision for the project, along with objectives, based on outcomes from stakeholder, including community and elected member, engagement.

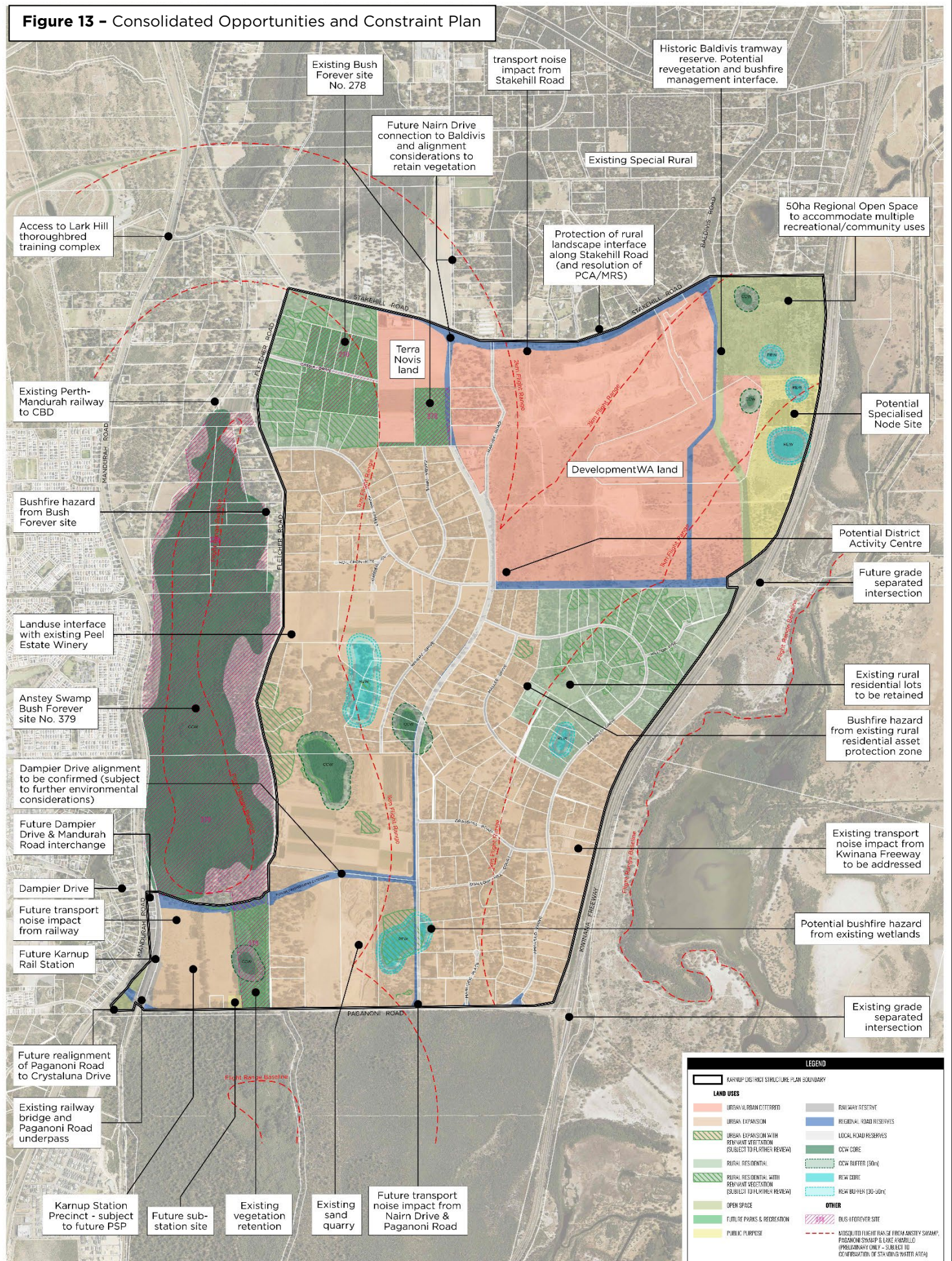
Neighbourhoods are to be conceptually defined by a community (ped-shed) of 1,500 dwellings and around a central community focus, typically a Government Primary School. The ped-sheds will be positioned where the catchment is maximised and not be disrupted, wherever possible, by major environmental features or key movement corridors.

Below are the key physical elements that will influence the final KDSP design:

- A District Activity Centre to generally service a population of 40,000 – 50,000 people.
- Service Commercial areas to provide supplementary retail and commercial services, along with employment opportunities, to support the residents of the KDSP.
- Specialist Node to assist with the employment self-sufficiency targets set by the State Framework.
  - The Specialist Urban Node could facilitate a Medical and TAFE Precinct, a light industrial estate and/or a Business Park to provide between 10,000 to 18,000 jobs in the area.
- Regional Sporting Facility (50ha) earmarked for the north-east portion of the KDSP area.
- A Transit Oriented Development (Precinct) adjacent to the future Karnup railway station, providing the anchor for a network of public transport connections within the KDSP area to access the station precinct.
- A minimum of 3 Neighbourhood Activity Centres within the KDSP to service the future residential neighbourhoods.
- Based on a 1,500 Dwelling Urban Neighbourhood, the potential for between 9 – 13 Urban Neighbourhoods.
  - Supported, in principle, by 9 – 11 Primary Schools, and 2 – 3 Secondary Schools.
- Existing 'tourism' sites that have significant investment and may remain long term, and will need to be integrated into the KDSP include:
  - Peel Manor House and Peel Estate Winery (Fletcher Road), and
  - Peel Ridge Winery (Winery Drive).
- The KDSP will preserve two 'Special Rural' zoned precincts which represent approx. 226 hectares of land to be nestled between future residential areas. The vegetation within these precincts has important ecological linkages and rural landscape context. These areas are also identified in part as Bush Forever sites.
- Eleven geomorphic wetlands are identified within the KDSP. These natural features are to be integrated into the future urban development footprint to provide local context and character, native habitats and ecological linkages, water sensitive urban design and to address bushfire hazards.



**Figure 13 – Consolidated Opportunities and Constraint Plan**



# OPPORTUNITIES & CONSTRAINTS

KARNUP

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**DRAFT**

Scale: 1:25 000 @ A3  
 0 250 500 750m  
 PLAN: ROCKA-S-036  
 DATE: 28/11/2023  
 PROJECTION: MGA 50  
 DATUM: AD83  
 REVISION:  
 DRAWN: JP  
 PLANNER: CM  
 CHECK: JT

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## 5.2 Key Opportunities and Constraints

The following items will need to be considered as part of the formal design and consultation process:

### 5.2.1 Movement Network

Road widening, upgrade, realignment and/or access restrictions relating to the proposed key network to accommodate projected 2041 vehicles traffic volumes is tabled under Part One - Section 2.8.

- Interface and access of road infrastructure will need to carefully considered across or around:
  - Perth to Mandurah Railway Line
  - Conservation and Resource Enhancement Wetlands areas
- Interface and access of bus services and infrastructure between the KDSP area and:
  - Karnup Transit Station
  - Warnbro Transit Station

#### ***Stakehill Road – Planning Control Area No. 155***

In August 2020, the WAPC declared a Planning Control Area No.155 (PCA155) over land for Stakehill Road in Karnup.

The purpose of the PCA155 is for the protection of future widening and upgrading of Stakehill Road between the western boundary of Fletcher Road to the Kwinana Freeway at Karnup Road.

The PCA155 ensures that no development occurs on this land which might prejudice this purpose until it may be reserved for 'Other Regional Roads' in the MRS.

The final design of Stakehill Road is recommended to be addressed during the DSP design phase as:

- The design will guide the final MRS 'Other Regional Roads' alignment, which may form part of the MRS Amendment for the broader KDSP area to 'Urban' (or 'Urban Deferred'); and
- The design will set key access points and the design interface of established rural-residential development (north side) and future residential development on the southern side of this road, including space for 'cap' roads and other traffic calming measures.
- Noting the City's preferred position that a buffer or interface be provided between the DSP and Special Rural land to north, with the road reserve to accommodate a service road and landscaping and retain establish trees.

#### ***Dampier Drive – Planning Control Area No. 176***

In February 2023, the Minister for Planning granted approval to the declaration of a Planning Control Area over land west of Swallow Hill Court and east of Warnbro Sound Avenue/Dampier Drive intersection (PCA176).

The purpose of PCA176 is to protect land required for the proposed Dampier Drive extension corresponding to the State Framework (2018).

The WAPC considers that the planning control area is required to ensure that no development occurs on this land which might prejudice its purpose until it may be reserved for an 'Other Regional Road' and 'Primary Regional Road' in the MRS.



It is also recognised that the current alignment will be subject to EPA review at the time of any MRS Amendment, acknowledging the road will dissect an environmental link between Anstey Swamp and Paganoni Lake Regional Reserves.

The final design of Dampier Drive is recommended to be addressed during the DSP design phase as:

- The design will guide the final MRS 'Other Regional Roads' alignment, which may form part of the MRS Amendment for the broader KDSP area to 'Urban Deferred' (or 'Urban'); and
- The inclusion of this road will be critical to the traffic planning of the broader KDSP area, notably:
  - the design and upgrade of Paganoni Road to address district traffic capacity/demands;
  - the design of interconnecting roads for the circulation of private and public transport vehicles into the Karnup Station Precinct; and
  - the design will set key access points and the design interface of future residential development on the southern side (Karnup Station Precinct) and eastern portion of this road.

#### ***Potential East-West Road Crossing in the Anstey Swamp Locality***

During the background investigations, a suggestion was made to investigate a new connection directly west of the proposed new Freeway interchange to provide direct connection to Anstey Road and the broader Secret Harbour/Golden Bay locality.

This proposed new east-west road offers merit in that it may assist with district road movements between Mandurah and the Kwinana Freeway, particularly given the uncertainty of Dampier Drive (via an environmental review) and the limitations of upgrading Paganoni Road on approach to Mandurah Road due to the rail overpass. However, a direct road link to Anstey Road will be highly scrutinised by the Environmental Protection Authority and other agencies, particularly given the road would cross a regionally significant and environmentally sensitive wetland (Anstey Swamp). A further challenge would be how the new road crosses the existing rail line, with limited space available to design grade separation (bridge) between Mandurah Road and the rail line.

An alternative location may be to create an east-west connection further north, suggested in the vicinity of Karri Street and connecting to Surf Drive. This option is at the northern end of Anstey Swamp where the apparent vegetation is less dense/significant (albeit subject to environmental site survey). This option could be assisted by the additional space between Mandurah Road and rail line to provide a suitably graded separation (bridge) over the rail line, however an existing house and the topography on the east side of the rail line may create some initial alignment and design challenges.

The significant infrastructure costs associated with this Karri Street – Surf Drive option would need to be weighed up against the cost of the district traffic driving marginally north to use the Stakehill Road route to and from the Kwinana Freeway. Further consideration of a new east-west district road may occur via the next review of the Planning Framework.

In November 2023, the DPLH raised several significant constraints and preliminary issues associated with this potential road connection, which will require detailed consideration if the proposal were to proceed. These matters included, but are not limited to:

- The Planning Framework does not depict a road in this location
- Provision and funding for a new/modified intersection to Mandurah Road, a Primary Regional Road under Main Roads WA jurisdiction.

- Provision and funding for a new bridge over the existing Mandurah passenger rail line under PTA jurisdiction.
- Provision and funding for environmental investigations and impact reports and required WAPC, EPA and possibly Commonwealth Government approvals for vegetation clearing and road development within a Conservation Category wetland area and designated Bush Forever site (No.379).
- Consideration of Aboriginal heritage and community amenity impacts.
- Road reserve land assembly requirements and acquisition costs.
- Road construction costs, including engineering feasibility/constructability across wetland soils.
- The Regional traffic requirements and possible alternate options should be collectively considered and evaluated once DSP traffic modelling is completed.

### 5.2.2 Wetland Related Considerations

The following items will need to be considered as part of the formal design and consultation process, and without prejudice of the ongoing environmental studies being undertaken by Emerge and Associates throughout the KDSP area:

**Table 6. Wetland Areas**

Wetland Type	Approx. Total Area (Ha) in KDSP
<b>Conservation Category (CCW) – 5 x Identified</b>	
Wetland (Core)	12.80 hectares
Wetland (Buffer @ 50m)	17.93 hectares
<b>Resource Enhancement (REW) – 6 x Identified</b>	
Wetland (Core)	16.56 hectares
Wetland (Buffer @ 30 - 50m)	12.89 hectares

### 5.2.3 Remnant Bushland and Biodiversity

The identified vegetation area in the KDSP is already protected through such mechanisms as Bush Forever sites. Other opportunities include the use of local conservation reserves and MRS Parks and Recreation reserves.

Outside of the long-term 'Special Rural' sites (per section below), other pockets of remnant vegetation have been identified as 'requiring further review' within planned 'Urban' areas. These sites have been initially identified as high priority for further investigation for protection as they may contain a combination of:

- Threatened Ecological Communities (Tuart Woodland);
- Carnaby Cockatoo foraging habitat;
- Representation of important regional vegetation complexes; and/or
- Declared rare flora.

### 5.2.4 Special Rural Precincts

Two precincts within the KDSP will remain as 'Rural' zone under the MRS and 'Special Rural' zone under the City's TPS2 to protect the existing quality remnant vegetation throughout. Whilst these precincts are expected to remain in their current form, they have been included within the KDSP boundary so to ensure a suitable transition of future land uses to these areas, including consideration towards interface treatments and road connections for the future urban areas.

These two areas are also identified in the City's LPP 3.1.1 *Rural Land Strategy*, and comprise:

**Table 7. Special Rural Precincts**

Precinct	Approx. Total Area (Ha) in KDSP	Local Context
<i>Precinct 1A – Rural Wedge (South)</i> <i>Cassia Drive Area</i>	91 hectares	<ul style="list-style-type: none"><li>▪ This area forms part of an important rural transition between the inland and coastal urban corridors and maintains the important rural vista adjoining public roads.</li><li>▪ This area has high ecological values and linkages.</li></ul>
<i>Precinct 1D – Karnup (North-East)</i> <i>Amarillo Road Area</i>	135 hectares	<ul style="list-style-type: none"><li>▪ Objective is to protect the remnant vegetation from clearing, future urban and rural development pressures.</li><li>▪ This precinct has been identified to have important ecological habitats, visually sensitive landscape, undulating and elevated landform, a wetland and vegetation that provide an essential landscape and rural context.</li></ul>

### 5.2.5 Karnup Community Infrastructure Planning

The City of Rockingham is currently preparing the *Karnup Community Infrastructure Plan 2023* (KCIP) to assist in informing the KDSP. The KCIP will be further reviewed following the outcome of the KDSP design process, and this review will include detailed consideration of the type, scope and timing of Community Infrastructure to meet future estimated population yields for the KDSP.

Increasing from a population 2,204 in 2021 to an estimated 12,018 in 2031 and to over 48,500 by 2046, this population increase, along with the growth of Baldivis to the north and the coastal suburbs to the west, requires the KCIP to be developed in order to guide the development of community infrastructure in a planned and prioritised manner to best meet the needs of the community.

The purpose of the KCIP is as follows:

- Clearly identify the services and facilities required for the City's emerging Karnup population and broader City of Rockingham community based upon supply/demand analysis and identification of service catchments and provision standards;
- Guide the development, and potential timing of community infrastructure over the next 20 years; and

- Provide the City with a documented framework of community infrastructure planning principles and guidelines.

Using established City facility provision guidelines, and applying a range of leisure planning principles, the KCIP identifies the type and hierarchy of future community infrastructure to be planned for and delivered between 2031 and 2046 – the preliminary findings included in the following table.

**Table 8. Community Infrastructure Planning**

Item	Ratio	2031		2046	
		Forecast population 12,018		Forecast population 48,664	
		Catchment	Predicted Shortfall / Surplus	Catchment	Predicted Shortfall / Surplus
Active Open Space	1:75,000 - 125,000	District (181,501)	1	District (243,641)	1
	1:25,000 - 75,000	Sub District	0	Sub District	1
	1:15,000 - 25,000	Neighbourhood	0	Neighbourhood	1
Aquatic Centre	1:75,000 - 125,000	District (181,501)	0	District (243,641)	0
Community Centre	1:75,000 - 125,000	District (181,501)	0	District (243,641)	1
	1:25,000 - 75,000	Sub District	0	Sub District	1
	1:15,000 - 25,000	Neighbourhood	0	Neighbourhood	2
Library	1:75,000 - 125,000	District (181,501)	0	District (243,641)	1
	1:25,000 - 75,000	Sub District	0	Sub District	1
Indoor Recreation	1: 25,000 - 75,000	District (181,501)	0	District (243,641)	1
Outdoor Hard Courts	1:75,000 - 125,000	District (181,501)	0	District (243,641)	1
	1:25,000 - 75,000	Sub District	0	Sub District	1
	1:15,000 - 25,000	Neighbourhood	0	Neighbourhood	2
Outdoor Recreation Space	1:75,000 - 125,000	District (181,501)	0	District (243,641)	1
	1:25,000 - 75,000	Sub District	0	Sub District	1
	1:15,000 - 25,000	Neighbourhood	0	Neighbourhood	2
Lawn Bowling club	1:25,000 - 75,000	Sub District	0	Sub District	1
Youth Centre	1:75,000 - 100,000	District	0	District	1

## 6. Planning Framework

### 6.1.1 State and Local Government Studies

- Regional and sub-regional planning strategies provide guidance for the preparation and implementation of statutory planning schemes and policies.
- State Planning Policies (SPPs) are prepared under Part 3 of the *Planning and Development Act 2005* and are the highest level of planning policy control and guidance.
- Local Planning Policies (LPPs) are prepared under the local planning scheme and deemed provisions, as set out in the *Planning & Development (Local Planning Schemes) Regulations 2015*.

All policies are 'due regard' documents to be considered in planning decision making.

- Operational Policies (OPs), also known as Development Control Policies (DCs), are WAPC policies that provide guidance on specific aspects of subdivision and development.

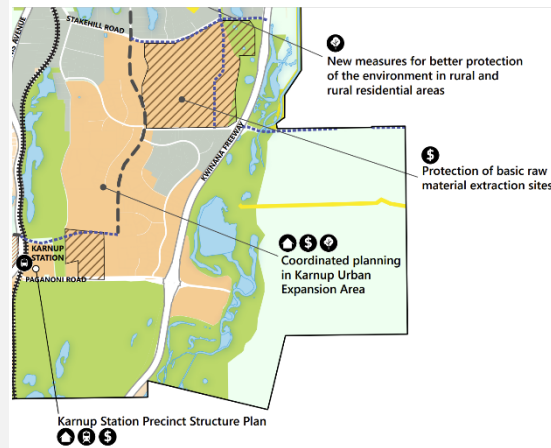
**Table 9** summarises the applicable planning strategies, SPPs, LPPs, and OPs and responses (as required) where directly influencing the preparation of the KDSP.

**Table 9. State and Local Planning Review**

Planning Document	Key Provisions/Triggers	KDSP Response
<b>Regional and District Strategies</b>		
<i>Directions 2031 and Beyond</i>	<p>This regional strategy provides for the growth of the Perth Metropolitan Region to accommodate a population of 2.2 million by 2031.</p> <p>The strategy provides planning guidance for housing, infrastructure, services and employment within the Metropolitan Region.</p> <p>Directions 2031 identifies six sub-regional planning areas with the DSP relating to the South Metropolitan Peel sub region.</p> <p>Directions 2031 identifies Karnup as a 'emerging district centre'.</p>	<p>Urbanisation of Karnup is consistent with the intent of Directions 2031 in providing housing, infrastructure, services and employment within the metropolitan region.</p> <p>The DSP will consider a 'District Centre' in accordance with the strategy and <i>SPP 4.2 Activity Centres</i></p>
<i>South Metropolitan Peel Sub-Regional Planning Framework (March 2018)</i>	<p>Supporting Directions 2031, the South Metropolitan Peel Sub-Regional Planning Framework designates the subject land as 'Urban Expansion' noting that the site is located at the periphery of the existing metropolitan region urban footprint.</p> <p>WAPC support for a change from the existing zoning is dependent on the outcome of investigations on the following matters, which shall be addressed in KDSP:</p> <ul style="list-style-type: none"> <li>- Biodiversity Value Protection.</li> <li>- Bushfire Risk.</li> <li>- Drainage</li> <li>- Landscape Value Protection</li> <li>- Protection of Significant Environmental Values</li> <li>- Utility Services Capacity.</li> <li>- Water Source Impact (ground and surface water).</li> <li>- Regional Road Access.</li> <li>- Road and Rail Noise</li> </ul>	<p>Urbanisation of the KDSP area is consistent with the intent of the <i>Planning Framework</i>.</p> <ul style="list-style-type: none"> <li>• Protects areas of existing biodiversity value and promotes improved biodiversity in previously degraded areas.</li> <li>• Responds to bushfire risk through urban structure and landscape management.</li> <li>• Directs overland flow to perimeter drains and improves the environmental qualities and values of Water Corporation drains.</li> <li>• Minimise the need for bulk earthworks.</li> <li>• Encourages lightweight construction methods to reduce demand for sand fill to create Grade A sites.</li> <li>• Supports and encourages fit-for-purpose technology to deliver local services.</li> </ul>



Planning Document	Key Provisions/Triggers	KDSP Response
	<ul style="list-style-type: none"> <li>- Basic Raw Material Demand.</li> <li>- Geotechnical Factors.</li> <li>- Aboriginal Heritage.</li> </ul> <p>The sub regional strategy identifies Karnup as a strategic opportunity for a long-term public use that provides for a range of regional public facilities which may include education, health, and other ancillary uses.</p> <p>The sub regional strategy also states that with population growth over time, there will be a requirement for a regional health facility with eight hectares of land being retained as a potential long-term option at Karnup (East).</p> <p>The strategy also states that with increased population growth there will be increased demand for additional regional and district level sporting space with a future possible site being Karnup (East) – 50ha.</p>	<ul style="list-style-type: none"> <li>• Encourages investigation of alternative models of utility service delivery.</li> <li>• Encourages waterwise and climate resilient public open space.</li> <li>• Sensitively conserves and interprets aboriginal heritage, including and beyond the Registered Site.</li> </ul>
<i>Draft City of Rockingham Local Planning Strategy</i>	<ul style="list-style-type: none"> <li>• The strategy identifies that the DSP area will include: <ul style="list-style-type: none"> <li>○ Karnup Station Precinct;</li> <li>○ Karnup Urban Expansion Area;</li> <li>○ North-South continuation of Baldivis Road (Integrator Arterial Road);</li> <li>○ North-South continuation of Eighty Road (Nairn Drive) terminating at Paganoni Road; and</li> <li>○ East-West Integrator Arterial Road connection through the Karnup station Precinct to Eighty Road (Nairn Drive).</li> </ul> </li> <li>• An objective is for the City to advocate for establishment of the Rockingham-Karnup and Baldivis-Warnbro Transit Corridors with State Government. Further investigations to: <ul style="list-style-type: none"> <li>○ Determine optimal alignment and stop locations;</li> <li>○ Confirm level of urban infill possible to support and enable public transport investment into proposed transit corridors;</li> <li>○ Identify opportunities to enhance provision of local employment.</li> </ul> <p>This design consideration will need to be examined with PTA as part of the DSP process.</p> </li> <li>• Significant increase in non-retail floorspace for the City is supported by both the City of Rockingham and the WA Tomorrow Population Projection scenarios. <p>Non-retail floorspace should be distributed in Port Kennedy Business Enterprise Park, Dixon Road area and at the northern end of Baldivis District Centre, and possibly in the future as part of the Karnup Specialised Node.</p> </li> </ul>	<p>The Draft Local Planning Strategy concluded advertising in September 2022 with the strategy endorsed by Council for public advertising in April 2023.</p> <p>The draft LPS is now being reviewed by the DPLH to ensure it is broadly consistent with State policies and guidelines, prior to submitting it to the WAPC.</p> <p>The WAPC will determine whether the draft LPS is in a suitable form for public advertising, with or without modifications. It is anticipated that the WAPC will make a determination towards the end of 2023 and following that the City may be able to conduct further community consultation on the draft Strategy in early 2024.</p> <p>It is not expected that the general LPS objectives for the KDSP area will be modified given the strategic importance of the site as a 'Future Urban Growth' area.</p> <p>Consistent with the LPS, the KDSP will be supported by the following specialist studies/reports:</p> <ul style="list-style-type: none"> <li>• Environmental Assessment Report (including detailed flora and veg surveys, black cockatoo surveys)</li> <li>• Bushfire Management Plan</li> <li>• Wetland Management Plan</li> <li>• Tree Survey</li> <li>• Indicative Earthworks Plan</li> <li>• Landscape &amp; Visual Impact Assessment</li> <li>• Local Water Management Strategy</li> </ul>



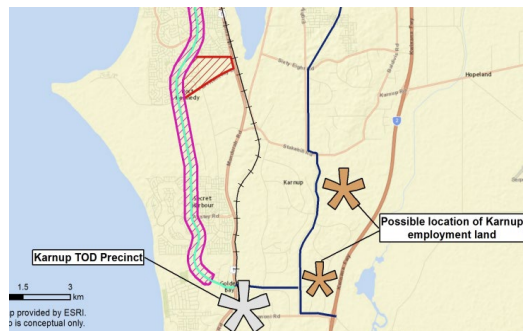
*City of Rockingham Transport and Employment Strategy*

The Transport and Employment study models employment and traffic considerations for the City in line with the population forecasts of *Directions 2031 and Beyond*.

#### Section 4.2.2 Karnup

The report identifies there is a general longer-term need for additional employment land in the region and Karnup is identified as well located.

The report notes a suitable location being the 'development' zoned land south of Stake Hill Road with the potential to generate 12,500 jobs. Another significant area of land is the land identified as Urban Expansion in the south which could generate 12,400 jobs giving Karnup a possible employment capacity of 24,900.



Preliminary research undertaken by Pracys notes that whilst current investigations are focused on developing a 33ha specialised node including a potential health campus and TAFE facility, there should be consideration made towards a secondary area for light industry/bulk retail which aligns with the employment study's investigations of allocation of up to 100ha of employment land.

This will be reviewed as part of the formal KDSP preparation.

*City of Rockingham Economic Development Strategy 2020 - 2025*

The strategy reflects the City's ongoing commitment to addressing the needs of local businesses, attracting new and diverse investments, and delivering increased economic and social benefits to the community.

The strategy identifies land east of the Kwinana Freeway in Karnup as a potential opportunity for employment generating land.

The strategy sets out an action for the city to advocate the State Government that the WAPC expands the amount of employment generating land in Karnup, Port Kennedy, and Baldivis as a matter of priority.

The strategy identifies Karnup as a potential site for General and Heavy Industry. The strategy does not define a specific location for the employment generating land.

The KDSP area is not expected to accommodate heavy industry within its boundary, however there is option for less intrusive service and light industrial opportunities as part of the formal KDSP design process.

It is recommended that alternative sites be considered for heavy industrial purposes within or in proximity to the City of Rockingham's jurisdiction.

Use of land impacted by the mosquito 1km flight path for employment purposes may be considered as part of the DSP design phase.

Planning Document	Key Provisions/Triggers	KDSP Response
<i>City of Rockingham Sustainability Strategy</i>	<p>The strategy provides a framework for working towards a healthy and sustainable City for future generations.</p> <p>The overarching objectives of the strategy are to improve the City's environmental performance and practices whilst integrating sustainability into the planning and delivery of infrastructure, services, facilities, and planning functions.</p> <p>The strategy identifies five key elements of sustainability being energy and emission, water, waste and resources, health and nature and education and engagement.</p> <p>The sustainability strategy doesn't include any specific provisions relating to the Karnup area.</p>	The five key elements of sustainability are to guide objectives of the KDSP and subsequent LSP and subdivision and development phases.
<i>City of Rockingham Local Commercial Strategy</i>	<p>The Local Commercial Strategy is intended to provide the basis for appropriate provisions to be provided in the City's future town planning scheme that will guide the continuing evolution and development of the commercial structure of Rockingham.</p> <p>The Local Commercial strategy provides guidance for a future identified district centre, specialised node; and railway station precinct that have been identified within the Karnup locality in draft <i>State Planning Policy 4.2 Activity Centres</i>.</p> <p>The strategy identifies a shortfall in bulky goods retail floorspace in the City of Rockingham with a potential long-term solution being the Karnup Specialised Node.</p>	Noted and recognised as a key consideration in the preparation of the KDSP.
<i>Waterwise Council Action Plan 2021</i>	The Waterwise Council Program is a partnership between the Water Corporation, Department of Water and Environmental Regulation and local governments aimed at improving water efficiency and management.	The action plan is noted; however, implementation is outside the scope of the more strategic KDSP document.
<b>State Planning Policies</b>		
<i>SPP 2.0 Environment &amp; Natural Resources Policy</i>	<p>SPP 2.0 aims to integrate environmental considerations into planning decisions and avoid unacceptable environmental damage. Requiring planning decisions to consider (As relevant):</p> <p>Water Resources.</p> <ul style="list-style-type: none"> <li>• Air Quality</li> <li>• Soil and Land Quality</li> <li>• Biodiversity</li> <li>• Agricultural Land and Rangelands</li> <li>• Minerals, Petroleum and Basic Raw Materials</li> <li>• Marine Resources and Aquaculture</li> <li>• Landscapes</li> <li>• Greenhouse gas Emissions and Energy Efficiency</li> </ul>	Noted and will be considered as part of the design process and integrated with the supporting environmental related studies.
<i>SPP 2.4 Planning for Basic Raw Materials</i>	<p>The northeastern portion and southwestern portion of the site is identified as Basic Raw Material extraction sites.</p> <p>Extractive industries require a separation distance from sensitive land uses such as residential.</p> <p>The north-eastern site (Mining tenement M70/1046) relates to sand extraction. The required sensitive use buffer from sand</p>	<p>The northeastern site will be managed by DevelopmentWA as part of its landholdings.</p> <p>KDSP Project Team to have ongoing liaison with Development WA to determine a preferred staging strategy; this addressed at the DSP stage but implemented as part of the LSP and</p>

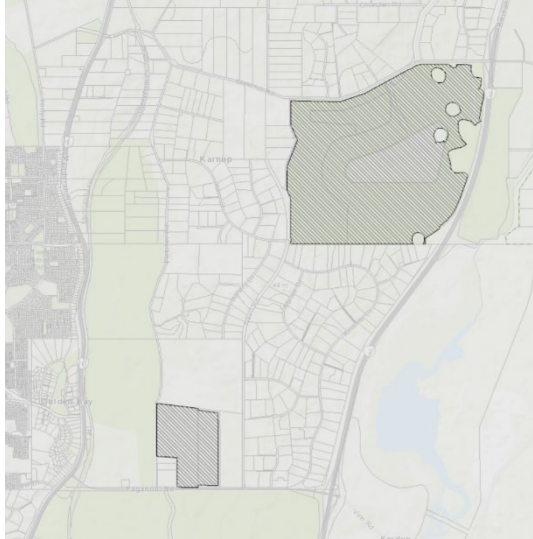
## Planning Document

## Key Provisions/Triggers

## KDSP Response

extraction is 300 – 500m depending on size. The tenement is live and is currently due to expire in November 2027.

The southwestern site also relates to sand extraction (Paganoni Road Sand Quarry) requiring a separation distance of 300-500m. Mining License L8551/2011/1 states that Lot 11 has been excluded from the licence as the



resource has been exhausted. The license expired on the 24 June 2020.

subdivision and development phases by DevelopmentWA.

### *Draft SPP 2.9 Planning for Water*

Advertised in 2021, Proposed to streamline and simplify the current water-related policy framework. Covers matters currently addressed by the following pertinent policies:

- SPP 2.7 Public Drinking Water Source Policy.
- SPP 3.4 Natural Hazards & Disaster
- Better Urban Water Management.
- Government Sewerage Policy.

Until its gazettal, the existing policy provisions continue to apply.

Draft SPP 2.9 aims to:

- Maintain or enhance water quality and hydrological regimes to protect public health and support healthy ecosystems.
- Ensure adequate foreshore areas and wetland buffers to protect values.
- Protect and, where appropriate, promote associated Aboriginal and historic cultural heritage values.
- Maintain and enhance appropriate access to water resources.
- Enhance and protect associated amenity and sense of place.
- Manage flood prone land.
- Protect public drinking water sources.
- Reduce water use and maximise sustainable supply.
- Respond to climate change.
- Manage wastewater for environmental and public health outcomes.

The proposed development is proximate to natural water assets so interface considerations will be addressed as part of environmental and hydrological studies and integrated in the KDSP design process.



*SPP 3.0 Urban Growth & Settlement*

Applicable to proposed rezoning to allow urban development, SPP 3.0 aims to:

- Promote a sustainable and well-planned pattern of settlement.
- Build on existing communities and infrastructure.
- Manage growth and development of urban areas.
- Promote sustainable and liveable neighbourhoods.
- Co-ordinate development and the provision of infrastructure.

Noted and will be considered as part of the KDSP design process.

*SPP 3.4 Natural Hazards & Disasters.*

SPP 3.4 aims to minimise the adverse impacts of natural disasters on communities, the economy, and the environment by considering them in all planning documents. As a minimum, structure plans should have regard to natural elements that create hazards including –

- Climate
- Geology
- Soils
- Vegetation Cover
- Slopes
- Landforms
- Hydrology

Of most relevance to the KDSP are policy provisions relating to bushfire, flooding risk and climate change.

*SPP 3.7 - Planning in Bushfire Prone Areas*

SPP 3.7 seeks to implement effective risk-based development to preserve life and reduce the impact of bushfire on property and infrastructure. It requires structure plans to include a bushfire risk assessment and where relevant a Bushfire management plan outlining how bushfire protection measures can be achieved.

The policy applies as majority of the DSP area is mapped as bushfire prone.

The KDSP being adjacent to Anstey Swamp and Paganoni Swamp will be affected by the possibility of bushfire hazard.

Other sources of bushfire hazards found within the site includes CCW and buffers, REW and buffers, Bush Forever sites and special rural sites.

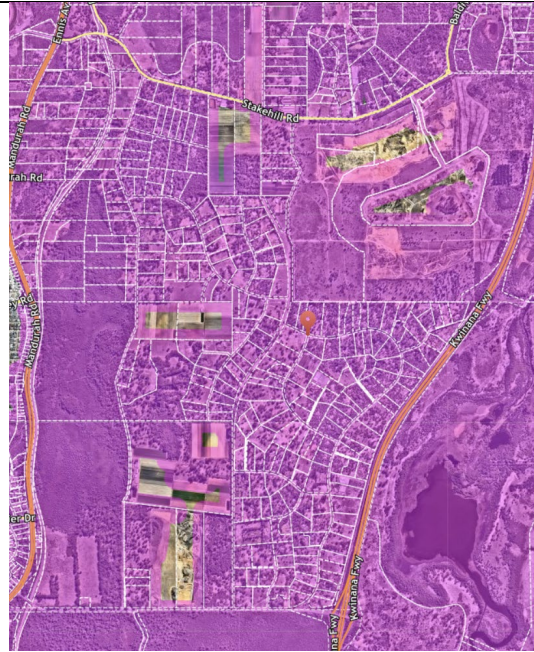
The KDSP will flag these risk areas however more detailed LSP and subdivision phases will address bushfire hazards; offering a balance between environmental and landscape value protection and urban development and safety.



## Planning Document

## Key Provisions/Triggers

## KDSP Response



*Draft SPP 4.2 – Activity Centres*  
Advertised February 2021

Draft SPP 4.2 identifies Karnup as an emerging District Centre.  
SPP 4.2 prescribes a residential target of 30+ dwellings per gross urban zone hectare within a walkable catchment (400m) for a district centre.  
The District Centre should have a greater focus on servicing the daily and weekly needs of residents. Its relatively smaller scale catchment enables it to have a greater local community focus and provide services, facilities and job opportunities that reflect the needs of its catchment.

Noted, and suitable densities and design outcomes to be considered as part of the KDSP design process.

*SPP 5.4 Road and Rail Noise*

Parts of the KDSP area are within trigger distance of Strategic freight and major traffic routes (Kwinana Freeway) and other significant freight/traffic route (Mandurah Road) as defined by SPP 5.4.

SPP 5.4 Implementation Guidelines will apply.

The KDSP area is exposed to an acoustic assessment with noise received from transportation (both Rail and Road).

Under the Environmental Protection (Noise) Regulations 1997, noise received from commercial premises are also to be assessed at noise sensitive premises.

For rail noise – only the south-western portion of the KDSP is within the ‘trigger’ distance.

The Kwinana Freeway exposes the eastern portion of the KDSP to traffic noise assessment.

It is noted that sections of the Freeway boundary have an existing wall which was constructed as part of the Freeway extension and if the zoning for these residences does not change, they are not subject to an SPP 5.4 assessment.

Mandurah Road will also have an impact on the south-western portion of the KDSP.

Planning Document	Key Provisions/Triggers	KDSP Response
<p>Design WA</p> <p><i>SPP 7.0 Design of the Built Environment.</i></p> <p><i>SPP 7.1 Neighbourhood Design</i> (future replacement for Liveable Neighbourhoods draft not yet released)</p> <p><i>SPP 7.2 Precinct Design</i></p> <p><i>SPP 7.3 Residential Design Codes Vol. 1</i></p> <p><i>SPP 7.3 Residential Design Codes - Medium Density Codes.</i> (Deferred gazettal, will replace part of existing Vol 1).</p>	<p>The Design WA suite of policy documents aims to ensure that all new built development is well designed and place-responsive, addressing the Ten Principles of good design:</p> <ul style="list-style-type: none"> <li>Context and Character</li> <li>Landscape Quality</li> <li>Built Form and Scale</li> <li>Functionality and Build Quality</li> <li>Sustainability</li> <li>Amenity</li> <li>Legibility</li> <li>Safety</li> <li>Community</li> <li>Aesthetics</li> </ul>	<p>All elements will be considered as part of the KDSP design process.</p>
<b>Local Planning Policies</b>		
<i>Planning Policy No. 3.1.1 – Rural Land Strategy</i>	Sets out the objectives and policy provisions which the Council shall have due regard to in the assessment of land use planning proposals on rural land in the City.	Noted, and existing sites to be preserved under KDSP design process. Also refer section 4 of this report.
<i>Planning Policy No.3.4.1 Public Open Space</i>	<p>Policy applies to the assessment of proposed structure plans in the Development Zone to ensure all residential development is complemented by well-located areas of POS.</p> <p>LPP 3.4.2 enables the required 2% of 'restricted use' public open space to comprise of</p> <ul style="list-style-type: none"> <li>Natural areas and cultural features;</li> <li>Urban Water Management measures such as stormwater detention areas;</li> <li>Artificial lakes/permanent drainage ponds; and</li> <li>Natural Wetlands.</li> </ul> <p>Under Liveable neighbourhoods (2007), the Commission may allow for the following to be included in 'restricted use' POS:-</p> <ul style="list-style-type: none"> <li>Buffers to an Environmental Protection Policy, conservation category wetland or wetland of a similar environmental value;</li> <li>A resource enhancement wetland, multiple use wetland or wetland of a similar environmental value.</li> </ul>	<p>The policy is noted; however, implementation is outside the scope of the more strategic KDSP document.</p> <p>Local structure planning will need to comply.</p>
<i>Planning Policy No. 3.4.3 Urban Water Management</i>	<p>Policy applies to all structure plans and articulates the City's position on the planning, design and construction of Urban Water Management proposals.</p> <p>Policy requires a DWMS to be prepared to support a DSP and/or component of an amendment to the MRS.</p>	<p>Noted and will be considered as part of the design process and integrated with the supporting environmental and hydrological related studies.</p> <p>Mosquito management will be a major influence in any future urban water management design considerations.</p>
<i>Planning Policy No.7.2 Local Bushland Strategy</i>	Deals with bushland of local significance and provides guidance on the assessment of proposals to rezone, subdivide and develop land within the city.	Noted and will be considered as part of the design process and integrated with the supporting environmental related studies.
<i>Planning Procedure No.1.23 Environmental Assessment</i>	Applies specific rigor to strategic and statutory proposals for development by ensuring that the objectives and intent of approved Scheme Amendments, Structure Plans, subdivision, and development are appropriately implemented so that there are no unacceptable environmental impacts.	Noted and will be considered as part of the design process and integrated with the supporting environmental related studies.

Planning Document	Key Provisions/Triggers	KDSP Response
<i>Planning Procedure No.1.6 Preparation and Assessment of Structure Plans</i>	The Planning procedure sets out the statutory requirements for the preparation, assessment, determination and adoption of structure plans in the development zone.	The KDSP will conform with City and DPLH requirements (including new State Guidelines for Structure Planning).
<b>Operational Policies (Formerly Development Control Policies)</b>		
<i>OP 1.5 Bicycle Parking</i>	Design of local movement. Accommodates safe cycling routes in design of movement and open space networks.	OPs are noted; however, implementation is generally outside the scope of the more strategic KDSP document.  To be considered at LSP and subdivision phases.
<i>OP 1.6 Planning to Support Transit Use &amp; Development</i>	Design of local movement network. Accommodates public transport routes.	
<i>OP 1.7 General Road Planning</i>	Design of local movement network. Provides roads according to hierarchy as agreed with the City of Rockingham.	
<i>OP 2.2 Residential Subdivision</i>	Residential Development. Provides for subdivision that can comply with requirements.	
<i>OP 2.3 Public Open Space in Residential Areas.</i>	Residential Subdivision. Provides at least 10% public open space	
<i>OP 2.4 School Sites</i>	Residential subdivision generating need and nexus of School Sites.	
<i>OP 2.6 Residential Road Planning</i>	Design of local movement network	
<i>Liveable Neighbourhoods</i> Currently under review and will be replaced by a future SPP 7.2 <i>Neighbourhood Design</i>	This policy guides planning and development of greenfield sites like the KDSP area, covering important elements of neighbourhood design: <ul style="list-style-type: none"> <li>• Community Design</li> <li>• Movement Network</li> <li>• Lot Layout</li> <li>• Public Parkland</li> <li>• Urban Water Management</li> <li>• Utilities</li> <li>• Activity Centres and Employment</li> <li>• Schools</li> </ul>	

## 7. Development Contributions

The preparation of a Development Contribution Area/Plan (DCP) for the entirety of the DSP area is anticipated in accordance with *State Planning Policy 3.6 - Infrastructure Contributions (SPP3.6)*.

It is recommended the following items be considered by a DCP:

- acquisition of land, and construction of integrator arterial and key neighbourhood connector roads;
- wetland management plans – sites to be determined; and
- construction of district level community facilities – to be determined by a City of Rockingham prepared CIP

Prepared by either the City of Rockingham or DPLH, in consultation with the other, the DCP is to be first progressed as an amendment to the operative City of Rockingham Local Planning Scheme; potentially requiring all land in the Structure Plan area, zoned 'Urban' under the MRS, to pay contributions in respect to these items.

It is recommended that the Amendment be substantially commenced – inclusive of public consultation – prior to the rezoning of any within an LSP area to 'Urban' (or the Lifting of Urban Deferment) under the MRS.

## 7.1 Funding of Mosquito Management

A Planning Strategy was prepared by CDP, in conjunction with the City of Rockingham, in August 2023 to assist Rankin/Emerge in the preparation of the Management Plan component of the MRAMP – **Appendix 1** refers.

It is acknowledged that mosquito mitigation in the KDSP area requires an upfront implementation strategy with a ‘one-in-all-in’ development approach for all landholdings within the DSP boundary; to ensure the orderly and proper planning of the area from a land use spatial planning perspective.

There may be an expectation for those unimpacted landowners beyond the 1km flight zone and of less risk to mosquito-borne diseases and nuisance to develop in isolation of those impacted landowners. However, the adhoc development of isolated landholdings should be discouraged as, without the rigours of District planning, the equitable provision and distribution of community and service infrastructure and complementary land uses will not occur. Without District planning, to identify local needs, the absence of suitable land uses to support residential development will exacerbate the shortcomings of the local area over time, while also placing unnecessary community and servicing infrastructure pressures on adjoining neighbourhoods/districts.

The ‘one-in-all-in’ approach to the preparation of a mosquito management strategy and potential funding to assist with mitigation will assist the KDSP area being developed to its full potential.

In light of above, the MRAMP Planning Strategy includes potential (and preferred) State funding arrangements for interim and ongoing mosquito management measures across the KDSP area. As a secondary alternative, Development Contribution Plan (DCP) advocacy and funding scenarios could be considered, and may include the following parameters:

- At the time of subdivision and development, landowners pay a per hectare/per lot contribution towards the initial mosquito mitigation measures – including:
  - early revegetation and landscaping of identified wetlands adjacent the DSP periphery and/or internal to the DSP area, and
  - open space distribution and landscaping considerations where influenced by mosquito management best practice;
- Funding is also allocated (held) for long-term mosquito management to be undertaken by the PMMG, involving the City of Rockingham and/or State Government.
- Funding for detailed pre-development works undertaken by the State, City of Rockingham, DoH or other agreed parties related to mosquito mitigation – including:
  - vegetation management; and/or
  - other agreed mitigation measures that have clearly demonstrated they assisted the expedited urbanisation of the KDSP area.

### 7.1.1 SPP3.6 Considerations

The purpose of SPP3.6 is to set out the principles and requirements that apply to the establishment and collection of infrastructure contributions in new and established areas. The policy also provides the framework to facilitate the coordination and delivery of infrastructure in greenfield locations, infill locations, activity centres, corridors and high-frequency public transport routes, industrial nodes and station precincts, where there is demand for additional services and facilities.

The key principle in the application of infrastructure contributions is that the ‘beneficiary’ pays.

SPP3.6 provides the framework to ensure that the infrastructure contributions system is transparent, equitable, and accountable and provides for efficient dispute resolution at critical junctures in the process to ensure effective administration of the system.



SPP3.6 refers to alternative approaches and mechanisms for funding that may need to be considered to, *“... ensure the timely and coordinated redevelopment of an area, especially where the early of delivery of infrastructure is essential.”*

Alternative approaches may include:

- incentive and performance-based provisions in local planning frameworks that are linked to the delivery of broader community benefits, including infrastructure and public realm upgrades; or
- use of rating mechanisms available under the Local Government Act 1995.”

The objectives of this policy are:

- to facilitate the efficient and effective provision of infrastructure and facilities that are essential to meet the demands arising from population growth and development.
- to provide a system for the coordinated delivery of infrastructure necessary to facilitate new urban growth opportunities to achieve compact, consolidated towns and cities.

The City of Rockingham does not support an alternative ‘rating mechanism’ approach (eg., ‘Special Area Rate’) for the long term management of mosquitos. This is on the basis that future residents paying the special area rates will have an expectation that the mosquito nuisance will be fully mitigated. However, as addressed in the MRAMP, the complete mitigation of mosquito risk is highly unlikely to be achieved within the KDSP area

Whilst the preparation of a DCP for the purpose of mosquito management does not directly correspond to the typical ‘Development’ and ‘Community’ infrastructure definitions prescribed by SPP3.6, urban development in the KDSP area, as intended by the Planning Framework, cannot proceed without mosquito mitigation given the identified public health risk.

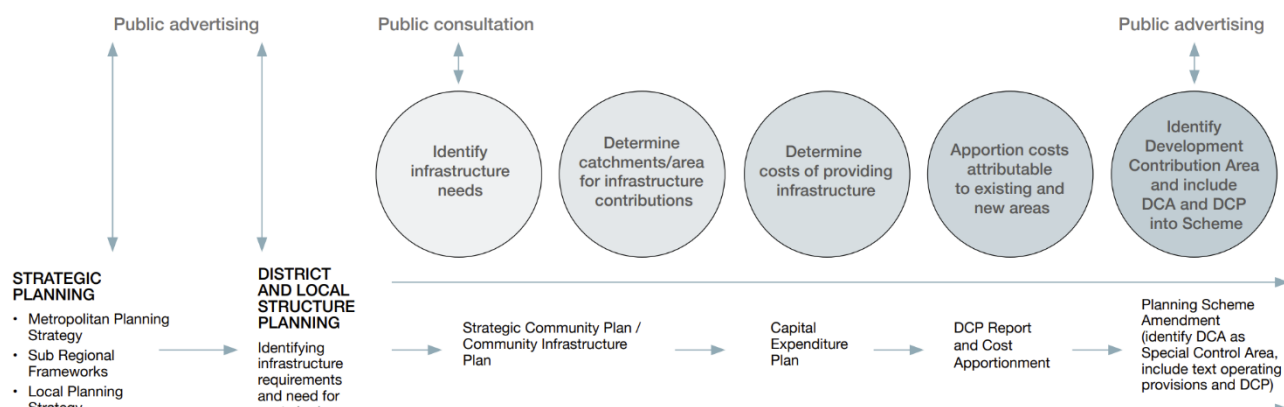
It can be argued that mosquito mitigation is required to facilitate development, support orderly development, and to support the future residential communities to function effectively. The key principle is beneficiary pays - the developers are benefitting. On this basis, including mosquito mitigation costs in a DCP could be justified.

A DCP for mosquito mitigation “works” would need to be supported by a technical document(s) that describes the proposed management programme and estimates the total cost of implementing this program. The cost of preparing this documentation, and all other DCP documentation, can also be recovered through the DCP.

The key matters to address within a DCP Report would be:

- Define/identify what is being included;
- Define the programme and responsibilities – what? when? who?;
- Justify the “one-in all-in” development approach;
- Identify and justify DCP timeframe and prepare a Capital Expenditure Plan;
- Respond to need and nexus principle;
- Respond to equity principle - “existing need” (or lack of);
- Respond to all other SPP 3.6 principles;
- Identify other possible funding mechanisms or discuss why these are not available;
- What happens when the DCP ends? Does other funding need to be implemented?;
- Rate of development vs need for mosquito management – is interim funding necessary until DCP collects enough?
- Define the contribution area (developable land).

## DCP preparation process



**Figure 14 - DCP Process (Extract SPP3.6)**

## 8. Implementation Considerations

### 8.1 Future Planning Phases

There are a number of changes to the existing planning framework that are required before land within the KDSP area may be subdivided and developed. The implementation framework below outlines the essential steps for amending the MRS and the City of Rockingham Town Planning Scheme No. 2.

The process has three sequential parts:

**Table 10. Future Planning Processes**

Phase	Key Steps
<b>District Level Process</b>	<ul style="list-style-type: none"> <li>District Structure Plan</li> <li>MRS Amendments</li> <li>(District) Development Contributions Plan</li> </ul>
<b>Local Level Process</b>	<ul style="list-style-type: none"> <li>Lifting of Urban Deferment</li> <li>Local Structure Plan</li> <li>Local Scheme Amendment (Rezoning)</li> <li>(Local) Development Contributions Plan</li> </ul>
<b>Subdivision Process</b>	<ul style="list-style-type: none"> <li>Subdivision and development</li> </ul>

All district level processes relevant to a precinct (LSP area), must be completed prior to the formal commencement of any local level process. Likewise, all local level processes must be completed prior to subdivision and development within that area.

It is recommended that the KDSP encourage processes to be undertaken in parallel or concurrently where possible, in line with the principles of orderly and proper planning.

## 8.2 Rezoning and LSP Processes

More specific to the processes outlined in the above table, the KDSP will need establish parameters for the subsequent rezoning and LSP phases that follow. It is recommended that the City of Rockingham and DPLH consider the following parameters when preparing the KDSP:

- Rezoning of land within the DSP area to 'Urban' is required before urban development can proceed, including land zoned 'Urban Deferred', following an administrative process in accordance with the WAPC's *Lifting of Urban Deferment (LUD) Guidelines*.
- Initial recommendation is to progress an MRS Amendment for the residual of the Framework's 'urban expansion' area to 'Urban Deferred' to be undertaken by the City of Rockingham.
- The MRS Amendment could be initiated concurrently with the KDSP once it is a 'seriously entertained document', or otherwise on finalisation/adoption of KDSP by the WAPC.
- The MRS Amendment process may potentially be led by proponents on a staged basis, generally corresponding to a designated LSP area that will be informed by the KDSP. This is only recommended where the LSP proponent demonstrates that coordination with adjoining LSP areas will not be compromised.
  - Note: Each precinct (LSP) may have generic and/or localised criteria to be addressed as part of the LUD process; this to be informed by the final KDSP.
- The requirement for a formal EPA assessment may, at the time of MRS Amendment, influence whether an englobo or staged amendment process will be actioned by the City of Rockingham or third parties.
- Once the LSP for a particular area has been approved, subdivision may progress under standard practice.

## 8.3 Development Contribution Arrangements

In the event State funding for mosquito management is not forthcoming and/or the WAPC determines that a DCP is required for mosquito management within the KDSP area (this in addition to traditional DCP items which will be included in a proposed DCP), the following parameters need to be considered:

- An amendment to the City's Scheme will be required to introduce a new Development Contribution Area (DCA) and the associated DCP into the Scheme.
- A comprehensive DCP Report will be required to inform and support the Scheme Amendment. All will be subject to a public advertising period.
- The City of Rockingham would expect the WAPC/DPLH to prepare and manage any DCP given its purpose is to facilitate regional planning objectives. Given the nature and duration of the DCP, the City of Rockingham is not prepared to take on this responsibility. Note: The City may be prepared to take on responsibility for a DCP addressing other matters such as CIP requirements – this matter will be addressed as the KDSP process progresses.
- Funds for mosquito management would be expected to manage the KDSP area as it is within the Serpentine River System by PMMG. Discussions with PMMG and related parties will be required in this regard.
- Legislative change may also be required for the State to manage this funding arrangement in lieu of the City of Rockingham.

## 8.4 KDSP Preparation

Commensurate with the WAPC Structure Plan frameworks, the DSP report preparation will be guided by the following headings:

Suggested Contents		
	Section	Sub-Sections
<b>Part One</b>		
	Executive Summary/Vision	
	Introduction and Purpose	
	DSP Area and Operation	
	Application	
	Implementation Process	<ul style="list-style-type: none"> <li>Region Scheme Amendments</li> <li>District Development Contribution Plan</li> <li>Rezoning of Rural Land</li> <li>Bush Forever Sites (Negotiated Planning Outcomes)</li> <li>Lifting of Urban Deferment</li> <li>Local Planning Scheme Amendment (Zoning)</li> <li>Local Structure Planning</li> <li>Local Development Contribution Plans</li> <li>Subdivision and Development</li> <li>Managing the transition from Rural to Urban</li> </ul>
	District Structure Plan Elements	<ul style="list-style-type: none"> <li>District Centre</li> <li>Neighbourhood Centres</li> <li>Urban Neighbourhoods</li> <li>Suburban Neighbourhoods</li> <li>Karnup Station Precinct</li> <li>Special Rural Neighbourhoods</li> <li>Movement Network</li> <li>Parklands</li> <li>Schools and community facilities</li> <li>Specialised Node</li> <li>Other Employment Areas</li> </ul>
	Local Precinct (LSP) Objectives	
	Local Structure Plan Requirements	<ul style="list-style-type: none"> <li>Local structure plan inputs</li> <li>Local structure plan outputs</li> <li>Local Precinct development contribution items</li> </ul>
	Staging of Development	Timeframes and review period
<b>Part Two</b>		
	Introduction and Purpose	
	Background Studies	
	Existing Land Use	
	Planning Framework	
	Regional and Sub-Regional Planning	Perth and Peel @ 3.5 million and Southwest Sub-Regional Planning Framework
	Zoning and Reservations	Metropolitan Region Scheme Town Planning Scheme No. 2 (TPS2)
	State Planning Policies	Liveable Neighbourhoods
	Consultation	
	Site Considerations	<ul style="list-style-type: none"> <li>Existing land conditions</li> <li>Landform, Landscape and Soils</li> <li>Water</li> </ul>



		<ul style="list-style-type: none"> <li>▪ Remnant Bushland and Biodiversity</li> <li>▪ Bushfire Management</li> <li>▪ Aboriginal and European Heritage</li> <li>▪ Road and Rail Noise</li> </ul>
	District Structure Plan Response	<b>Urban Structuring</b> <ul style="list-style-type: none"> <li>▪ District Centre</li> <li>▪ Neighbourhood Centres</li> <li>▪ Urban Neighbourhoods</li> <li>▪ Suburban Neighbourhoods</li> <li>▪ Karnup Station Precinct</li> <li>▪ Special Rural Neighbourhoods</li> <li>▪ Movement Network</li> <li>▪ Parklands</li> <li>▪ Schools and community facilities</li> <li>▪ Specialised Node</li> <li>▪ Other Employment Areas</li> <li>▪ Residential density</li> </ul>
		<b>Schools and Community Facilities</b> <ul style="list-style-type: none"> <li>▪ Secondary Schools</li> <li>▪ Primary Schools</li> <li>▪ Community Facilities</li> </ul>
		<b>Movement Network</b> <ul style="list-style-type: none"> <li>▪ Regional Road Network</li> <li>▪ Integrator Arterial Network</li> <li>▪ Other roads and streets</li> <li>▪ Street design and place-making</li> <li>▪ Metropolitan Rail</li> <li>▪ Regional Rail (Future)</li> <li>▪ Bus services</li> </ul>
		<b>Parkland</b> <ul style="list-style-type: none"> <li>▪ New Parks and Recreation Reserves</li> <li>▪ Potential Parks and Recreation reserves subject to further investigation</li> <li>▪ Bush Forever sites - negotiated planning outcomes</li> <li>▪ Wetlands</li> <li>▪ Local Parkland</li> <li>▪ Parkland Links</li> </ul>
		<b>Water Management</b> <ul style="list-style-type: none"> <li>▪ Groundwater</li> <li>▪ Drainage Management Methods</li> <li>▪ Acid Sulphate soils</li> </ul>
		<b>Employment Opportunities</b>
		<b>Servicing and Infrastructure</b> <ul style="list-style-type: none"> <li>▪ Reticulated water</li> <li>▪ Wastewater</li> <li>▪ Electricity network</li> <li>▪ Reticulated gas</li> <li>▪ Telecommunications</li> </ul>
		<b>Precincts for Local Structure Planning</b> <ul style="list-style-type: none"> <li>▪ Local Precinct (LSP) Objectives</li> </ul>
	Implementation Process	<ul style="list-style-type: none"> <li>▪ Region Scheme Amendments</li> <li>▪ District Development Contribution Plan</li> <li>▪ Rezoning of Rural Land</li> <li>▪ Bush Forever Sites (Negotiated Planning Outcomes)</li> <li>▪ Lifting of Urban Deferment</li> <li>▪ Local Planning Scheme Amendment (Zoning)</li> <li>▪ Local Structure Planning</li> <li>▪ Local Development Contribution Plans</li> <li>▪ Subdivision and Development</li> </ul>

	▪ Managing the transition from Rural to Urban
	Definition of Terms
	Abbreviations

# **Background Reporting**

KARNUP DISTRICT STRUCTURE PLAN

## **Appendices.**

# Appendix 1

## Mosquito Risk Assessment and Management Plan (MRAMP)



# Appendix 2

## Environmental Assessment

# Appendix 3

## Acoustic Assessment

# Appendix 4

## Retail and Employment

# Appendix 5

## Transport Planning

# Appendix 6

## Service Infrastructure



# Appendix 7

## Community Stakeholder and Engagement Plan



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