







STRUCTURE PLAN

LOT 50 (NO. 193) BARFIELD ROAD HAMMOND PARK

DOCUMENT CONTROL

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This structure plan is prepared under the provisions of the City of Cockburn Town Planning Scheme No. 3.

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON: 10 FEBRUARY 2022

| Signed for and on behalf of the Western Australian | Planning Commission |
|---|---------------------|
| an officer of the Commission duly Juthorised by the Section 16 of the Planning and Development Act 2 presence of: | |
| O. C | Witness |
| 14 February 2022 | Date |
| 10 February 2032 | Date of Expiry |

■ TABLE OF AMENDMENTS

| AMENDMENT NO. | SUMMARY OF THE AMENDMENT | AMENDMENT TYPE | DATE APPROVED BY WAPC |
|------------------|-----------------------------|----------------|--------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

▲ TABLE OF DENSITY PLANS

| DENSITY PLAN NO. | AREA OF DENSITY PLAN APPLICATION | DATE ENDORSED BY WAPC |
|------------------|----------------------------------|-----------------------|
| | | |
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| | | |

EXECUTIVE SUMMARY

Rowe Group acts on behalf of the landowner of Lot 50 (No. 193) Barfield Road, Hammond Park (herein referred to as the 'subject site'). We have been instructed by our Client to prepare and lodge a Structure Plan over the subject site.

The proposed Structure Plan is located adjacent to the existing Structure Plan for the Vivente estate (currently under construction), within the Southern Suburbs (Stage 3, Hammond Park / Wattleup) District Structure Plan area.

The proposed Structure Plan seeks to facilitate the subdivision and development of the subject site for residential purposes, providing for seamless connections with the surrounding urban environment, existing and planned. Specifically, the Local Structure Plan provides:

- Residential lots, with a proposed R30 density code; and
- Public Open Space, designed in accordance with the requirements of Liveable Neighbourhoods.

The proposed Structure Plan has been prepared in accordance with the provisions of Part 4 of Schedule 2 of the Planning and Development (Local Planning Schemes) Regulations 2015 ('Planning Regulations') and provides the planning framework to guide and facilitate the urban residential development of the subject land.

The preparation of the Structure Plan has been undertaken in consultation with the City of Cockburn and other relevant stakeholders.



✓ STRUCTURE PLAN SUMMARY

| ITEM | DATA | | SECTION NUMBER REFERENCED IN PART 2 OF REPORT |
|---|--|---------|---|
| Total area covered by the Structure Plan | 1.86 hectares | | 1.2.2 |
| Area of each land use proposed: Residential | 1.20 hectares | 32 lots | 3.3 |
| Total estimated lot yield | 32 lots | | 3.3 |
| Estimated number of dwellings | 32 dwellings | | 3.3 |
| Estimated residential site density | 26.28 dwellings per res site hectare 17.2 dwellings per gross hectare | | 3.3 |
| Estimated population | 96 people | | 3.3 |
| Number of high schools | 0 high schools | | 3.6 |
| Number of primary schools | 0 primary schools | | 3.6 |
| Estimated commercial floor space | 0 hectares | | 3.7 |
| Estimated area and percentage of public open space given over to: - Regional open space - District open space - Neighbourhood parks - Local parks | 0 hectares, 0% 0 hectares, 0% 0 hectares, 0 parks 0.20 hectares, 1 park | | 3.2 |
| Estimate percentage of natural area | 0 hectares, 0 % | | 3.2 |

TABLE 1: STRUCTURE PLAN SUMMARY

Note: All information and areas are approximate only and are subject to survey and detailed design.



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- 5. PUBLIC OPEN SPACE SCHEDULE



▲ TECHNICAL APPENDICES

| APPENDIX NUMBER | DOCUMENT TITLE | NATURE OF DOCUMENT | REFERRAL/APPROVAL AGENCY | APPROVAL STATUS AND MODIFICATIONS |
|--------------------|---|-----------------------|--|---|
| 1 | Certificate of Title | Supporting | | |
| 2 | Bushfire Management Plan | Requires Approval | Department of Fire and Emergency Services | |
| 3 | Environmental Assessment Management Strategy | Supporting | Department of Biodiversity, Conservation and Attractions | |
| 4 | Transportation Noise Assessment | Requires Approval | Main Roads WA | |
| 5 | Indicative Landscape Concept | Supporting | City of Cockburn | |
| 6 | Engineering Servicing and Traffic Report | Supporting | City of Cockburn | |
| 7 | Local Water Management Strategy | Requires Approval | Department of Water and Environmental Regulation | Approved |
| 8 | LWMS Approval | Supporting | Department of Water and Environmental Regulation | |

TABLE 2: TECHNICAL APPENDICES



PART ONE IMPLEMENTATION



STRUCTURE PLAN AREA

This Structure Plan applies to Lot 50 (No. 193) Barfield Road, Hammond Park, being the land contained within the inner edge of the line denoting the Structure Plan Boundary on the Structure Plan Map (Refer Plan 1 situated at the end of Part 1 of this Structure Plan Report).

2. OPERATION

In accordance with Schedule 2, Part 4 of the *Planning and Development (Local Planning Schemes) Regulations 2015* ('Planning Regulations'), this Structure Plan shall come into operation when it is approved by the Western Australian Planning Commission ('WAPC').

Pursuant to clause 27(1) of Schedule 2 of the Planning Regulations:

A decision-maker for an application for development approval or subdivision approval in an area covered by a structure plan that has been approved by the Commission is to have due regard to, but is not bound by, the structure plan when deciding the application.

Pursuant to clause 28(1) of Schedule 2 of the Planning Regulations this Structure Plan has effect for a period of 10 years, commencing on the day which the WAPC approves the plan.

3. STAGING

Given the size of the site, development within the proposed Structure Plan area is intended to occur as a single stage.

4. SUBDIVISION & DEVELOPMENT REQUIREMENTS

4.1 LAND USE PERMISSIBILITY

The Structure Plan Map (Plan 1) outlines land use, zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to the land within it as if the zones and reserves were incorporated into the *City of Cockburn Town Planning Scheme No.3*.

4.2 PUBLIC OPEN SPACE

The Structure Plan is to provide for a minimum of ten percent (10%) of the gross subdivisible area as Public Open Space in accordance with the WAPC's *Liveable Neighbourhoods* document. Public open space shall be provided generally in accordance with Plan 1 – Structure Plan Map.

4.3 RESIDENTIAL DENSITY

The residential density codes applicable to the Structure Plan shall be in accordance with those shown on the Structure Plan Map (Plan 1).

In accordance with Liveable Neighbourhoods and Directions 2031 targets, the Structure Plan area shall provide for an average minimum of 22 dwellings per residential site hectare and 15 dwellings per gross urban hectare.



5. LOCAL DEVELOPMENT PLANS

- a) The WAPC may require, as a condition of subdivision approval, a Local Development Plan(s) be prepared in accordance with Part 6 of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2021*, prior to the creation or development of lots:
 - i. of irregular shape or less than 260m² in area;
 - ii. affected by road or rail noise exceeding the targets set out in *State Planning Policy 5.4:*Road and Rail Noise and the associated implementation guidelines;
 - iii. where vehicular access is obtained from a rear laneway, or right of way, or is otherwise constrained;
 - iv. abutting areas of public open space; and/or
 - v. intended to accommodate grouped or multiple dwellings.
- b) Local Development Plans are to address the following matters, as required:
 - i. street and boundary setbacks;
 - ii. dwelling orientation;
 - iii. uniform fencing requirements;
 - iv. open space requirements;
 - v. garage setbacks and width;
 - vi. vehicular and pedestrian access;
 - vii. parking requirements;
 - viii. overshadowing;
 - ix. visual privacy;
 - x. quite house design and/or construction requirements; and
 - xi. any variations to the Residential Design Codes

6. OTHER REQUIREMENTS

6.1 NOTIFICATION(S) ON TITLE

Notification(s) is/are to be placed on Title of all affected lots to advise:

- a) the lot is located near a transport corridor and higher construction standards may be required to reduce transport noise to acceptable levels in accordance with *State Planning Policy 5.4: Road and Rail Noise*;
- b) the lot is located within an area which has been declared bushfire prone and may be subject to a Bushfire Management Plan, and where additional construction requirements may



apply in accordance with *Australian Standard (AS3959) Construction of Buildings in Bushfire Prone Areas* (as amended).

6.2 RESTRICTIVE COVENANT

A Restrictive Covenant is to be placed on Titles of all affected lots that have been assessed as BAL-40 or BAL-Flame Zone, with a notice of this restriction to be included on the Diagram or Plan of Survey (Deposited Plan) to advise no habitable buildings are to be built within areas identified as BAL-40 or BAL-Flame Zone.

6.3 BUSHFIRE CONSTRUCTION STANDARDS

This Structure Plan is supported by a Bushfire Management Plan (April 2021). Regardless of whether the land has been formally designated as bushfire prone, any buildings to be erected on land identified as falling within 100 metres of a bushfire hazard shall comply with the requirements of *Australian Standard (AS3959) Construction of Buildings in Bushfire Prone Areas* (as amended).

6.4 DEVELOPMENT CONTRIBUTIONS

The Structure Plan area is included within Development Contribution Areas 9, 13 and 26 under the City of Cockburn Town Planning Scheme No. 3. Contribution costs are to be paid in accordance with the requirements of the Scheme at subdivision and development stage.

6.5 ENVIRONMENTAL AND HERITAGE FEATURES

A Landscape Management Plan is to be provided at the subdivision application stage, identifying any trees worthy for retention, where not affected by subdivision works.

Prior to the commencement of subdivisional works, a Tree Protection Management Plan is to be prepared and approved to ensure the protection and management of the site's environmental assets, with satisfactory arrangements being made for the implementation of the approved plan.

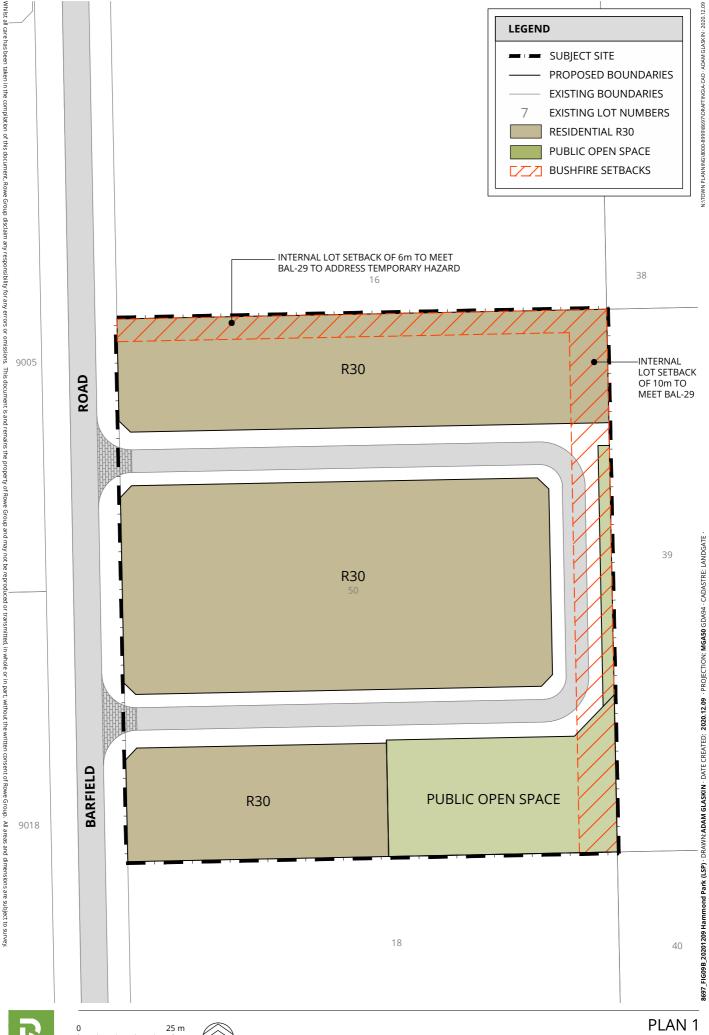
A Fauna Survey and Relocation Management Plan will be required to be undertaken at the subdivision stage.

A Bushfire Attack Level Assessment and Contour Plan will be required to be submitted with any Subdivision Application/s.

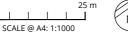
7. ADDITIONAL INFORMATION

| ADDITIONAL INFORMATION | APPROVAL STAGE | CONSULTATION REQUIRED |
|--|-------------------------|---------------------------------------|
| Landscape Management Plan | Subdivision Application | City of Cockburn |
| Urban Water Management Plan (unless exempt) | Subdivision Application | DWER and City of Cockburn |
| Fauna Survey and Relocation Management Plan | Subdivision Application | DBCA and City of Cockburn |
| Tree Protection Management Plan | Subdivisional Works | City of Cockburn |
| Bushfire Attack Level Assessment and Plan | Subdivision Application | DPLH and City of Cockburn |
| Acoustic Assessment | Subdivision Application | Main Roads WA and City of Cockburn |

TABLE 3: ADDITIONAL INFORMATION











PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

The purpose of this Structure Plan is to facilitate the development of the Urban zoned land comprising Lot 50 (No. 193) Barfield Road, Hammond Park ('the subject site') for residential purposes.

The following multi-disciplinary project team has been engaged by the proponent to progress the preparation of the Structure Plan:

| DISCIPLINE | CONSULTANT | |
|--------------------------|------------------------|--|
| Acoustic | Lloyd George Acoustics | |
| Bushfire | Emerge Associates | |
| Civil Engineering | BPA Engineering | |
| Environmental | Emerge Associates | |
| Hydrological | Emerge Associates | |
| Town Planning and Design | Rowe Group | |

Table 4: Project Team

Rowe Group is the primary point of contact for all matters relating to the Structure Plan submission.

1.1.1 PRE-LODGEMENT CONSULTATION

The proposed Structure Plan was lodged with the City of Cockburn in October 2019. Following a period of review, the City of Cockburn provided comments on the proposed Structure Plan and LWMS, and sought additional information to support the proposal. Since that time, there has been ongoing liaison with the City's Planning and Engineering teams in regard to the proposed layout, with specific focus on the drainage and public open space.

This Structure Plan therefore reflects a refinement of the originally lodged request, addressing the various recommendations of the City of Cockburn and providing the additional required supporting information.

1.2 LAND DESCRIPTION

1.2.1 LOCATION

The subject site is located within the municipality of the City of Cockburn, within the locality of Hammond Park. The site is situated approximately 24 kilometres south of the Perth Central Area and is accessible via the Kwinana Freeway (via Rowley Road). The Aubin Grove/ Success passenger railway station is located approximately 2.4 kilometres north east of the subject site and Cockburn Central approximately 5.5 kilometres north of the site.

The site is generally bound by Barfield Road to the west, privately held land (future residential) to the north and south, and the Western Power high voltage power line easement / Kwinana Freeway to the east.

Refer to Figure 1 – Regional Location and Figure 2 – Local Location.

1.2.2 AREA AND LAND USE

The subject site comprises approximately 1.86 hectares of land situated in Hammond Park, with frontage to Barfield Road.

The subject site is currently vacant, with some existing vegetation.

There is existing development to the west of the site on the opposite side of Barfield Road, comprising the Vivente estate. Land to the immediate south of the site will be developed as the final stages of that estate.

Land to the immediate north of the site is currently vacant, with no known timeframes for planning and development being undertaken on that land.

The site adjoins a Western Power high voltage power line easement on its eastern boundary. This does not impact the residential development potential for the site.

Refer Figure 3 - Site Plan.

1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

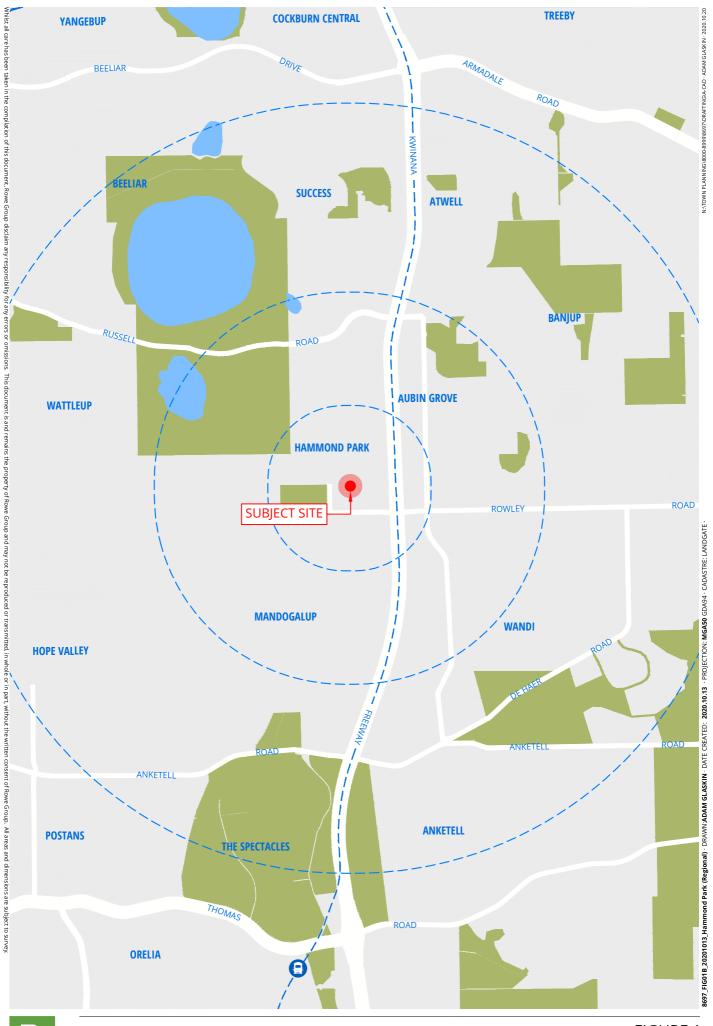
The Structure Plan comprises one land parcel, legally described as follows:

| LOT NUMBER | STREET ADDRESS | DIAGRAM NO. | VOL / FOLIO | PROPRIETOR(S) |
|------------|-------------------|-------------|-------------|--|
| 50 | 193 Barfield Road | 65995 | 1678 / 32 | Glenbrook Civil Engineering Contractors Pty Ltd |

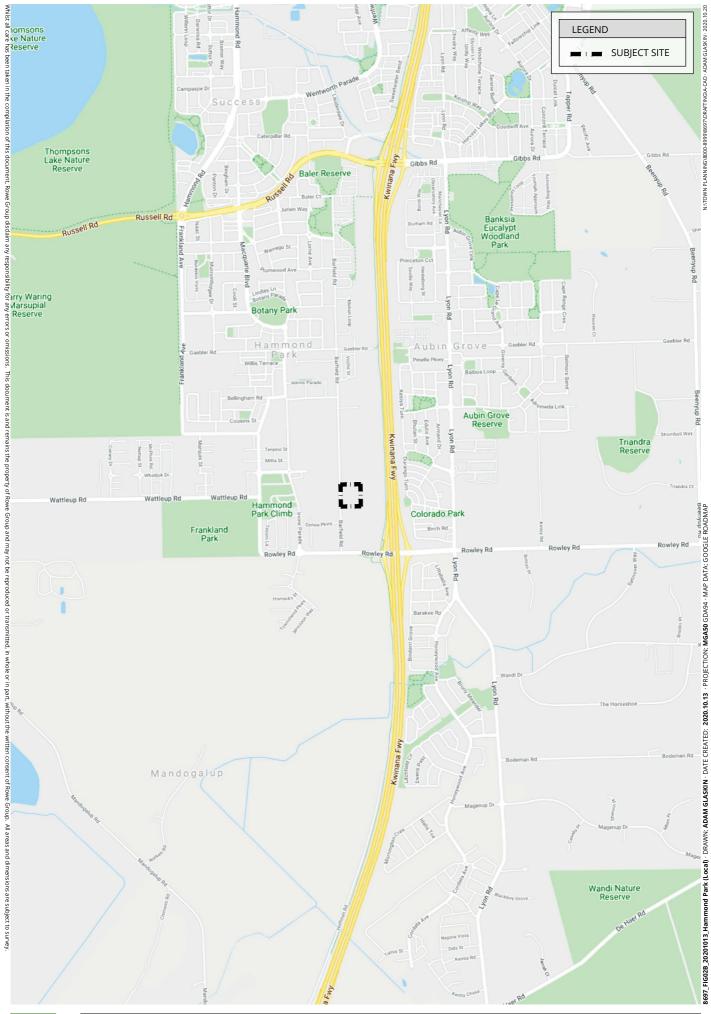
Table 5: OWNERSHIP DETAILS

The Structure Plan area comprises an area of approximately 1.86 hectares.

Refer to **Appendix 1** – Certificate of Title.















1.3 PLANNING FRAMEWORK

1.3.1 ZONING AND RESERVATIONS

The subject site is zoned 'Urban' under the provisions of the Metropolitan Region Scheme (MRS), and 'Development' under the provisions of the City of Cockburn Town Planning Scheme No. 3 (TPS 3).

The objectives of the 'Development' zone, as stated in TPS 3, are:

To provide for future residential, industrial or commercial development to be guided by a comprehensive Structure Plan prepared under the Scheme.

This Structure Plan has been prepared in a manner consistent with these objectives and which provides a framework for further subdivision and development at the subject site.

Refer to **Figure 4** – Metropolitan Region Scheme Zoning.

Refer to Figure 5 - City of Cockburn Town Planning Scheme No. 3 Zoning.

1.3.2 PERTH AND PEEL @ 3.5 MILLION AND SOUTH METROPOLITAN PEEL SUB-REGIONAL PLANNING FRAMEWORK

Perth and Peel @ 3.5 Million seeks to meet the targets identified under Directions 2031 and Beyond ('Directions 2031') and the State Planning Strategy 2050. The suite of documents also includes four sub-regional planning frameworks for the Central, North-West, North-East and South Metropolitan Peel sub-regions. The four sub-regional planning frameworks detail where future homes and employment should be located, and where important environmental assets should be avoided and protected.

The subject site is located within the *South Metropolitan Peel Sub-Regional Planning Framework* (the Framework). The Framework represents a whole of State Government approach to managing the future urban form within the sub-region and identifies sufficient land to meet the increased demand for residential dwellings. Within the Framework, the City is expected to require an additional 30,120 dwellings by 2050.

Both *Perth and Peel @ 3.5 Million* and the *South Metropolitan Peel Sub-Regional Framework* identify the subject site as 'Urban', consistent with the zoning of the site under the MRS.

1.3.3 CITY OF COCKBURN SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN

The *Southern Suburbs District Structure Plan* ('SSDSP') provides a framework for subdivision and development in Success, Hammond Park, Atwell and Aubin Grove. The SSDSP is now in stage 3, which is the remaining area of development and comprises the area of Hammond Park west of the Freeway and south of Gaebler Road.

The SSDSP Stage 3, comprises the following design principles:

- ✓ Provide a framework for urban land uses within the District Structure Plan area that integrates with the Sub Regional Context;



- ✓ Provide a framework for future Local Structure Planning and subdivision, allowing for refinement of detail and recognition of previous uses;
- Provide for a variety of housing choice through a range of densities, with higher codings being located near public open space, centres and along high frequency public transport routes;
- Define a robust road network reflecting and accommodating public and private transport priorities, responding to the Sub Regional transport network;
- Main-street based centres;
- ▲ An integrated open space, conservation and drainage network, balancing environmental, recreational and drainage objectives;
- ✓ Provide for sustainable land use and lot design that responds to solar orientation principles as well as Crime Prevention Through Environmental Design ('CPTED');
- ▲ Encourage local employment within centres, as well as through home based businesses;
 and
- ▲ Reflect and integrate the development area with surrounding land uses.

The subject site is identified as 'Medium Density Residential' under the SSDSP, which requires a minimum base coding of R30. The proposed Structure Plan designates a density code of R30, consistent with the SSDSP.

The SSDSP requires structure plans to achieve a minimum of 15 dwellings per gross urban zoned hectares of land and a minimum of 22 dwellings per site hectare of residential land. Based on preliminary subdivision design, it is anticipated the Structure Plan area will yield approximately 32 dwellings, with an average of 17.2 dwellings per gross urban zoned hectare and 26.28 dwellings per residential site hectare.

The Structure Plan has been designed with consideration of the surrounding road network, including intersection spacing, and the adjoining proposed lot layout, including consideration of site levels and drainage requirements.

The Structure Plan is therefore considered to be consistent with the principles of the SSDSP.

1.3.4 PLANNING POLICIES

1.3.4.1 LIVEABLE NEIGHBOURHOODS

Liveable Neighbourhoods represents the WAPC's primary policy to guide the design and assessment of residential structure plans and subdivision. The underlying objective of Liveable Neighbourhoods is to create safe, sustainable and attractive neighbourhoods with a strong site responsive identity that reduce dependency on private vehicles and are more energy and land efficient. As such, Liveable Neighbourhoods seeks to promote an urban structure based on walkable, mixed-use neighbourhoods with interconnected street patterns. It functions by drawing together key policy aspects into a single 'integrated planning and assessment policy' to provide for a performance-based approach to planning assessment. These aspects include:

- ▲ Community;
- Movement;
- ▲ Lot Layout;
- Urban Water Management;
- Public Open Space; and
- Schools.

Liveable Neighbourhoods identifies a series of objectives and requirements for structure plans that, when met, demonstrate compliance with the overall outcomes sought by *Liveable Neighbourhoods*. These objectives and requirements relate to items such as road layout, relationship of housing to open space and schools, school location/distribution, public open space layout and location, and housing densities.

Working with the site constraints, the Structure Plan has been prepared to satisfy the various objectives and requirements of *Liveable Neighbourhoods* to ensure that more detailed proposals at subdivision stage are also capable of satisfying the relevant criteria.

1.3.4.2 STATE PLANNING POLICY 3 – URBAN GROWTH AND SETTLEMENT

State Planning Policy 3 – Urban Growth and Settlement ('SPP 3') sets out the principles and considerations which apply to planning for urban growth and settlement in WA. SPP 3 recognises that:

The orderly planning of urban growth and settlement should be facilitated by structure plans, which should take into account the strategic and physical context of the locality, provide for the development of safe, convenient and attractive neighbourhoods which meet the diverse needs of the community, and facilitate logical and timely provision of infrastructure and services. Structure plans may consist of a hierarchy of plans ranging from broad district structure plans to more detailed plans for neighbourhoods and precincts.

Proposals for future urban growth will be determined having regard to

- the State Planning Strategy, relevant statements of planning policy and regional and subregional strategies in the State Planning Framework;
- population projections provided by the Department for Planning and Infrastructure;
- land release plans published by the Commission; and
- local planning strategies prepared by local government and endorsed by the Commission.

The proposed Local Structure Plan is consistent with the abovementioned objectives for future urban growth. Consideration of the strategic and physical context of the subject site is discussed further within this document and more detailed design provisions are to be addressed and considered at subdivision stage.



1.3.4.3 STATE PLANNING POLICY 3.7 – PLANNING IN BUSHFIER PRONE AREAS

State Planning Policy 3.7 – Planning in Bushfire Prone Areas ('SPP 3.7') seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The subject site is identified by the Department of Fire and Emergency Services ('DFES') Map of Bush Fire Prone Areas as being "bushfire prone" with the mapped bushfire risk coming from the adjacent areas of remnant vegetation.

Due to the subject site being identified as 'bushfire prone', the principles and objectives of SPP 3.7 need to be considered as part of the structure planning process. A Bushfire Management Plan ('BMP') has therefore been prepared by Emerge Associates in support of the proposed Structure Plan.

Refer **Appendix 2** – Bushfire Management Plan.

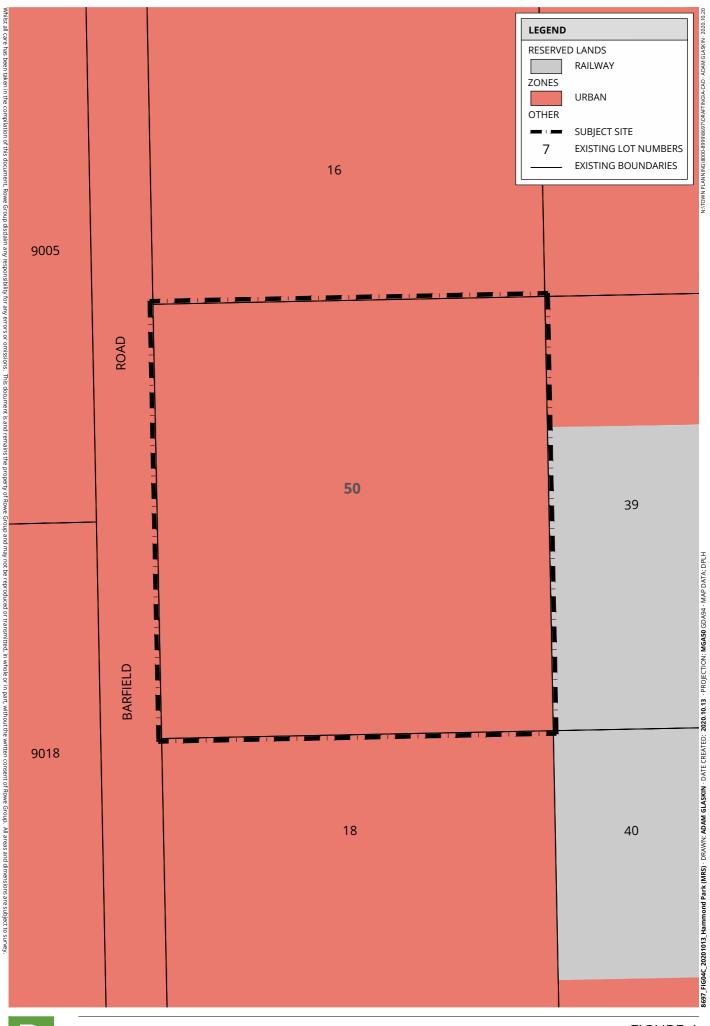
1.3.4.4 STATE PLANNING POLICY 5.4 - ROAD AND RAIL NOISE

The general objectives of *State Planning Policy 5.4 - Road and Rail Noise* ('SPP 5.4') are to ensure people are protected from unreasonable levels of transport noise and to ensure new development is compatible with existing transport corridors and freight operations. Given the Kwinana Freeway (Primary Regional Road) and Perth to Mandurah Railway Line are situated to the east of the subject site, the provisions of SPP 5.4 are applicable to proposed development.

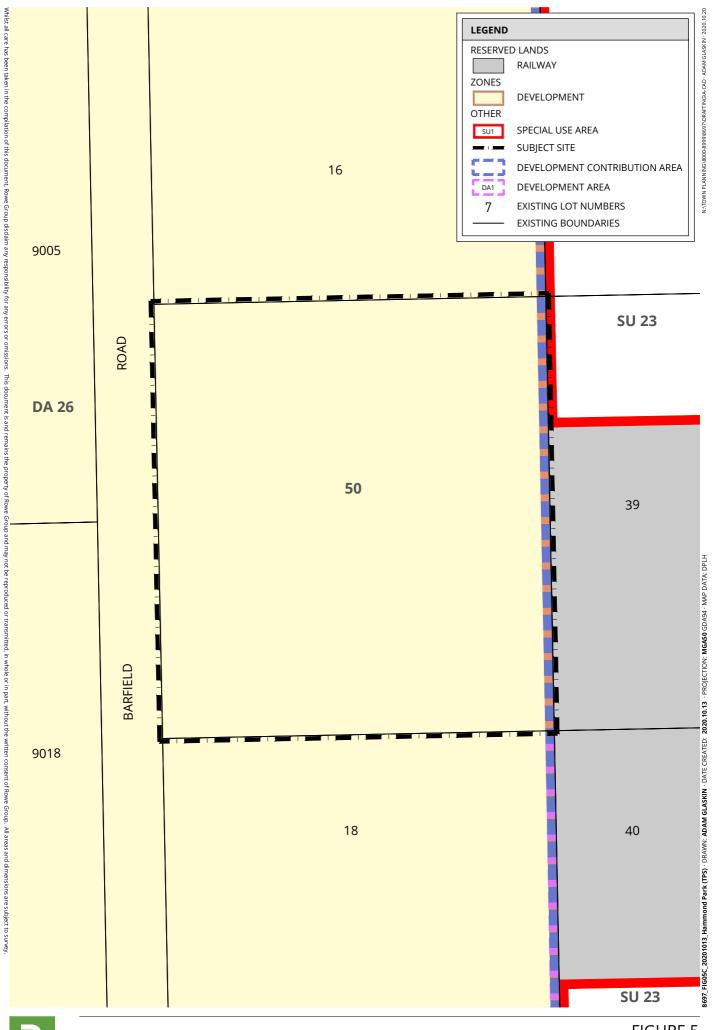
In this regard, and in accordance with SPP 5.4, a Traffic Acoustic Assessment has been prepared by Lloyd George Acoustics. The Acoustics Assessment is contained at **Appendix 4** of this report. The Traffic Acoustic Assessment demonstrates compliance with SPP 5.4.

1.3.4.5 LOCAL PLANNING POLICY

The City of Cockburn *Local Planning Policy 1.2 – Residential Design Guidelines* is to be addressed and considered through the subdivision and detailed design stages.







2. SITE CONDITIONS AND CONSTRAINTS

The following provides a summary of the environmental site conditions and constraints. For further detailed information, refer to the Environmental Assessment and Management Strategy contained at **Appendix 3**.

2.1 BIODIVERSITY AND NATURAL AREA ASSETS

2.1.1 FLORA AND VEGETATION

A total of 123 species were recorded during a Detailed Flora Survey undertaken in Spring 2018. Of the 123 plant species, 36 were non-native (weed) species, which is present across approximately 1.02 hectares of the subject site. One native plant community ("BaBm") was identified within the north-eastern and south-eastern edges of the site, which comprises part of a larger patch directly east of the subject site, extending north and south.

There was one declared pest on site under s22 of the *Biosecurity and Agriculture Management Act* 2007:

No threatened or priority flora species were recorded within the subject site. Furthermore, there were not any locally or regionally significant flora species recorded within the subject site.

Whilst the site is proposed to be cleared to facilitate the proposed development, there may be some scope for the retention of significant trees and vegetation within public open space and road reserves through translocation. This will be reviewed in further detail at the subdivision implementation stage, through the detailed civil design process, and facilitated through the preparation and implementation of a *Landscape Management Plan* and *Tree Protection Management Plan*.

2.1.2 FAUNA

A fauna survey and targeted black cockatoo habitat assessment was carried out by Emerge Associates in 2018, to determine the fauna values associated with the subject site. A total of eight native fauna species were observed within the subject site, with the majority of species recorded as common widespread bird species.

Fauna habitat values within the subject site have been compromised by historical clearing, with the remaining areas of remnant vegetation having little value for fauna.

No signs of black cockatoos were observed during the site inspection. The subject site contains a number of foraging places for black cockatoos (especially Carnaby's black cockatoo). In addition, two mature tuart trees and a planted pine tree are present in the centre of the site, within the disturbed, non-native portion of the site. Due to the size, these trees have the potential to provide some foraging values. Further site-specific investigations undertaken for these trees confirm they are not suitable for nesting.



A Fauna Survey and Relocation Management Plan will be undertaken at the subdivision stage. In addition, a Landscape Management Plan will be prepared (at the subdivision stage), identifying any trees capable and worthy of retention.

2.1.3 WETLANDS

The Department of Biodiversity Conservation and Attractions (DBCA) Wetland Mapping does not identify any wetlands within the subject site.

2.2 LANDFORM AND SOILS

2.2.1 TOPOGRAPHY

The topography of the site grades from approximately 26 metres Australian height datum ('AHD') in the south east of the site up to 37 metres AHD in the north east corner of the subject site. Gradients vary across the site from 1:12 to 1:21.

2.2.2 GEOLOGY

Regional soil association mapping indicates the subject site is within the Bassendean association, which is described as "sand plains with low dunes and occasional swamps; iron or humus podzols; areas of complex steep dunes".

2.2.3 ACID SULPHATE SOILS

The Department of Water and Environmental Regulation ('DWER') Acid Sulphate Soils ('ASS') Mapping identifies the site as having a "moderate to low" risk of ASS occurring within 3 metres of the natural soil surface. It is therefore anticipated that development of the site can be undertaken with minimal adverse future risk of ASS occurring.

Notwithstanding, any management measures required to address any potential risk from ASS will be further explored prior to subdivision, and will be subject to more detailed engineering and environmental advice at that time.

2.2.4 CONTAMINATION

The DWER Contaminated Sites Database does not list the subject site as being a known or suspected contaminated site.

2.3 GROUNDWATER AND SURFACE WATER

2.3.1 GROUNDWATER

DWER Water Register indicates the site is underlain by a multi-layered aquifer system comprised of the following resources:

- ✓ Perth Superficial Swan (unconfined)
- ✓ Perth Leederville (confined)
- ✓ Perth Yarragadee North (confined)



The Department of Water Perth Groundwater Map indicates historical maximum groundwater levels across the site are approximately 21 metres AHD. Based on the topographic contours, groundwater is expected to be located within approximately 12 metres to 14 metres of the surface across the subject site. Groundwater is expected to generally flow in an east to west direction.

2.3.2 SURFACE WATER

The subject site is located within the Cockburn/Kwinana Coastal Catchment and sub-catchment, as identified through the DWER Hydrographic Catchments dataset. No surface water features occur within the site itself.

The subject site is situated north of the Peel Main Drain catchment. The Peel Main Drain is a rural drain that runs from north to south, forming a regional drainage network. It flows in a southerly direction and passes through several pools and wetlands before discharging into the Serpentine River. The development of the subject site is not expected to have any impact on the hydrology of the Peel Main Drain.

2.4 BUSHFIRE MANAGEMENT

The subject site is identified on the Department of Fire and Emergency Services (DFES) mapping as being bushfire prone. A Bushfire Management Plan has therefore been prepared for the site in support of this Structure Plan, with a copy provided at **Appendix 2**.

The BMP considers the bushfire hazards within the subject site and surrounding area, and the associated bushfire risk readily manageable through standard management responses. It is considered that on implementation of the proposed management measures, the subject site will be able to be developed with a manageable level of bushfire risk, while maintaining full compliance with the relevant controls.

A Bushfire Attack Level ('BAL') Assessment has been provided on the basis that the vegetation within the subject site will be removed and the surrounding area is to remain in its current state. In accordance with the BAL Assessment, a BAL Rating of BAL-FZ to BAL-19 has been identified along the northern and eastern boundaries of the subject site, with a majority of the western boundary identified as BAL-19.

In accordance with the BAL Assessment, majority of the subject site is capable of being developed to a BAL 12.5 standard. There are some portions of the site, along the northern and eastern boundaries, where lots will be impacted by ratings above BAL 29. To ensure development compliance, the BMP and Structure Plan has provided for the provision of Asset Protection Zones, to ensure all development occurs in areas capable of achieving BAL 29 or below.

A further BAL assessment and contour plan will be required to be submitted with any subsequent subdivision applications.

Refer **Appendix 2** – Bushfire Management Plan.



2.5 HERITAGE

2.5.1 ABORIGINAL HERITAGE

A search of the Department of Planning, Lands and Heritage Aboriginal Heritage Inquiry System identified no registered sites within the Structure Plan area or immediate surrounds.

2.5.2 EUROPEAN HERITAGE

A search of the Western Australian Register of Heritage Places identified no sites of State heritage significance within the subject site or immediate surrounds.

A search of the City of Cockburn's Municipal Heritage Inventory identified no sites of local historic significance within the subject site or immediate surrounds.

3. LAND USE AND SUBDIVISION REQUIREMENTS

3.1 LAND USE

The Structure Plan sets out land use, residential densities, public open space, public and private transport provision, environmental considerations and servicing requirements.

The Structure Plan comprises residential development with a density code of R30. The Structure Plan also comprises a single area of public open space.

The following describes the design response underpinning the Structure Plan, and addresses the relevant elements of Liveable Neighbourhoods. Please also refer to the Land Use Summary Table provided within the Executive Summary on Page IV of this report.

Refer Plan 1: Structure Plan.

3.2 PUBLIC OPEN SPACE

The Structure Plan makes provision for a single area of public open space, with an area of approximately 1920m², equating to 10.51% of the gross subdivisible area, comprising 8.4% unrestricted open space (approximately 1535.8m²).

Refer **Figure 6** – Public Open Space Plan, and below Public Open Space Schedule.

| PUBLIC OPEN SPACE SCHEDULE | | | | | | |
|--|-----------------------|------------------------|------------------------|--|--|--|
| Site Area | 18,602 m ² | | | | | |
| Deductions | | | | | | |
| 1:1 year ARI Drainage | 320 m ² | | | | | |
| Total | | 320 m ² | | | | |
| Gross Subdivisible Area | 18282 m² | | | | | |
| POS @ 10% | | | 1828 m² | | | |
| Public Open Space Contribution | | | | | | |
| May Comprise: | | | | | | |
| - Min. 80% unrestricted F | POS | 1462.56 m ² | | | | |
| - Min. 20% restricted POS | 5 | 365.64 m ² | | | | |
| Total Required POS | | | 1828.20 m² | | | |
| POS Provision | 1:1 Year ARI Drainage | Restricted POS Sites | Unrestricted POS Sites | | | |
| POS Area 1 – 1920.8 m² | 320 m ² | 65 m ² | 1535.8 m ² | | | |
| Percentage of Gross Subdivisible Area | 1.75% | 0.36% | 8.40% | | | |

Table 6: Public Open Space Schedule.



The public open space is proposed as a 'Local Park', in accordance with the principles of *Liveable Neighbourhoods* and provides a dual functionality, providing for passive and active recreation functions, as well local drainage. All proposed dwellings within the Structure Plan are situated within a 100 metre walkable catchment of the park.

The park is proposed to be located in the south east corner of the site. Given the various engineering constraints, specifically in regard to site levels, earthworks requirements and hydrological functions, and taking into account bushfire management requirements, there is limited opportunity to provide the open space elsewhere in the Structure Plan area.

The levels and hydrology of the site require the drainage to be located in the south east corner, and given the relatively small scale of the Structure Plan area (and therefore limited open space requirement), the most logical and appropriate outcome is to provide a combined public open space and drainage feature.

In addition, we understand the adjoining landowner to the north has no intention of progressing planning and development of their land in the foreseeable future. This reduces any scope to coordinate engineering design and undertake earthworks over the wider area to provide further opportunity for dispersing levels and retaining across the site, thereby modifying the drainage functions to facilitate an alternate public open space location.

Further, to facilitate fire management for the site, a 10 metre Asset Protection Zone (APZ) is required to provide separation to the existing bushfire hazard within the adjacent Western Power easement. This is most appropriately dealt with through the provision of public open space and road reserves, which can be readily maintained by the Crown in perpetuity. We acknowledge there are some circumstances where this separation may be taken up within private lots, however this is not ideal and should be avoided where possible. Indicative subdivision design for the site indicates only one lot will be impacted by the required APZ for the Western Power easement. Other APZ requirements for the site come from temporary hazards to the north.

The proposed public open space location is therefore considered to be the most logical and appropriate from an engineering, hydrological and fire management perspective.

3.2.1 PUBLIC OPEN SPACE DESIGN AND FUNCTION

Please refer to **Appendix 5** - Indicative Landscape Concept.

Indicative concept planning for the park provides for a vegetated drainage basin in the eastern portion of the open space, adjacent to the Western Power high voltage power line easement, providing a degree of separation and screening of the powerlines and Kwinana Freeway to the east. The basin is anticipated to be in the order of 390m², with 1:6 graded batters to allow access and maintenance. The basin may provide for some passive recreation opportunities, subject to detailed design at subdivision stage.

Majority of the park will comprise unrestricted open space (approximately $1535m^2$), incorporating a flat kickabout space as the central feature. Indicative concept planning suggests this area may be in the order of $450m^2$, to enable perimeter planting, as well as the inclusion of a footpath



network, play space and picnic facilities. The final design and layout will be subject to further discussions with the City of Cockburn at subdivision and detailed design stage.

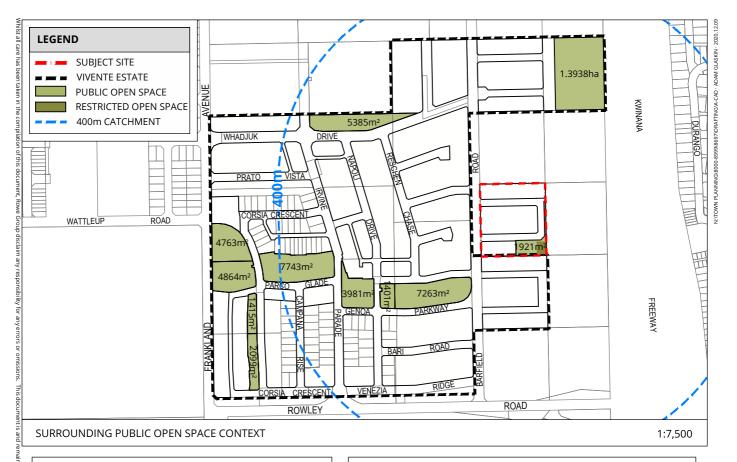
Subject to engineering design, there may be opportunities to retain some of the existing mature trees within the open space. This will be reviewed in further detail at subdivision stage as part of the detailed civil design, and facilitated through the preparation and implementation of a Landscape Management Plan and Tree Protection Management Plan.

Given the location of the open space, the Structure Plan provides for direct frontage lots, facilitating passive visual surveillance. These lots are intended to have direct access to the open space, through the inclusion of gates and footpath connections. To ensure the passive visual surveillance of the open space, a Local Development Plan will be required for these lots, providing the following controls:

- ✓ Uniform fencing to be provided along the public open space boundary. Uniform fencing will be required to be maintained as visually permeable above 1.2 metres;
- ✓ The location of the main outdoor living area adjacent to the boundary with the open space; and
- ✓ Primary dwelling orientation (positioning of habitable rooms and external architectural design features) to address the open space.

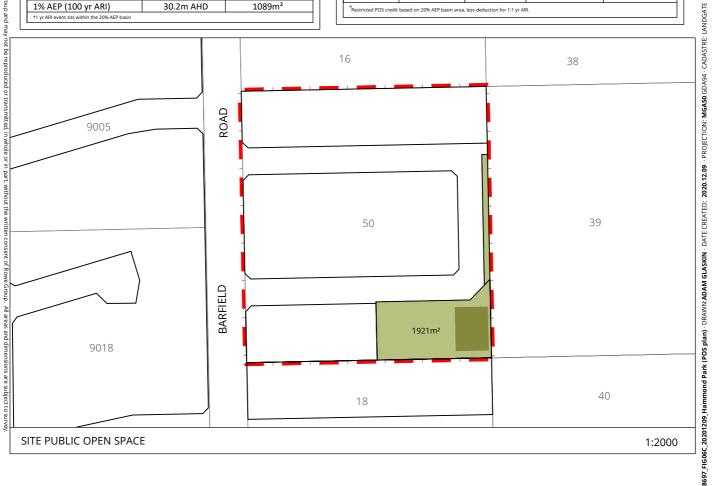
Notwithstanding the above, to provide a level of security for the proposed lots, a degree of separation will be maintained between the dwelling and the open space through level differences (approximately 1 metre). The lots will be retained at the boundary, with the open space grading down from that point.





| DRAINAGE CONSIDERATIONS | | | | | |
|---|-----------------|--------------------------------|--|--|--|
| EVENT | TOP WATER LEVEL | TOP WATER LEVEL FOOTPRINT AREA | | | |
| 1EY (1yr ARI)* | 29.9m AHD | 320m² | | | |
| 20% AEP (approx 5yr ARI)* | 30.0m AHD | 385m² | | | |
| 1% AEP (100 yr ARI) | 30.2m AHD | 1089m² | | | |
| *1 yr ARI event sits within the 20% AEP basin | | | | | |

| PUBLIC OPEN SPACE PROVISION | | | | | | |
|--|-------------|---------------------------|---------------------------|-------------------------|--|--|
| PARK TYPE | APPROX AREA | DEDUCTION (1:1 YR ARI) | RESTRICTED POS CREDIT* | UNRESTRICTED POS CREDIT | | |
| Local Park | 1920.8m² | 320m² | 65m² | 1535.8m² | | |
| *Restricted POS credit based on 20% AEP basin area, less deduction for 1:1 yr ARI. | | | | | | |



3.3 RESIDENTIAL

The Structure Plan allocates a residential density code of R30 across the site, consistent with the existing surrounding development, local structure planning and the SSDSP.

Based on the R30 density code and indicative concept planning undertaken for the site, the Structure Plan is anticipated to yield approximately 32 dwellings. On this basis, the site is expected to deliver an approximate density of 26.28 dwellings per residential site hectare and 17.2 dwellings per gross urban hectare. These densities are consistent with the targets set out under both Liveable Neighbourhoods and the Planning Framework, which specify a minimum average of 22 dwellings per residential site hectare and 15 dwellings per gross urban hectare.

In accordance with the Australian Bureau of Statistics 2016 census data, the average household size for Hammond Park is 3 people per household. Therefore, based on an indicative yield of 32 dwellings, the proposed Structure Plan is expected to provide a population of approximately 96 people.

Refer to Figure 7 - Indicative Subdivision Concept.

3.3.1 LOCAL DEVELOPMENT PLANS

The WAPC may require, as a condition of subdivision approval, that a Local Development Plan(s) be prepared in accordance with Part 6 of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2021*, prior to the creation or development of lots:

- ✓ of irregular shape or less than 260m² in area;
- affected by road and rail noise exceeding the targets set out in State Planning Policy 5.4:

 Road and Rail Noise and the associated implementation guidelines;
- where vehicular access is obtained from a rear laneway, or right of way, or is otherwise constrained;
- ▲ abutting areas of public open space; and/or

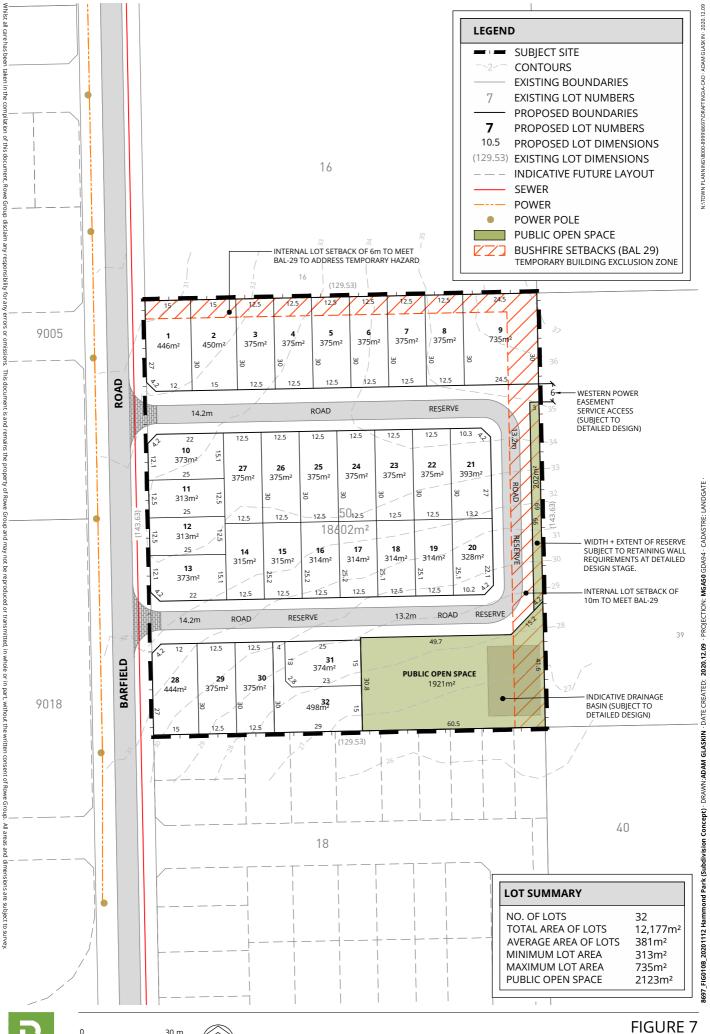
Local Development Plans are to address the following matters, as required:

- street and boundary setbacks;
- dwelling orientation;
- uniform fencing requirements;
- open space requirements;
- garage setbacks and width;
- vehicular and pedestrian access;
- parking requirements;
- overshadowing;



- ✓ visual privacy;
- quiet house design and/or construction requirements; and
- any variations to the Residential Design Codes which may be required.

In preparing Local Development Plans, the design responses and interface treatments between the subject site and the adjoining Vivente estate will need to be considered to ensure an effortless transition between the two developments.



3.4 MOVEMENT NETWORK

3.4.1 EXISTING ROAD NETWORK

Barfield Road

Barfield Road runs along the western boundary of the subject site, providing gazetted road frontage and access.

Barfield Road is classified as a 'Local Distributor Road' under the Main Roads WA Functional Road Hierarchy. However, it is understood Barfield Road will be downgraded in the future and the intersection with Rowley Road closed, to facilitate upgrades to Rowley Road as a designated freight route. Upon closure of this intersection, the primary north-south movements through the locality will be via the Neighbourhood Connector (Irvine Parade) within the Vivente estate.

3.4.2 PROPOSED ROAD NETWORK

The Structure Plan layout proposes an Access Street D loop road, intersecting with Barfield Road at two points. Consistent with Liveable Neighbourhoods, this road will be constructed to a 14.2 metre reserve width, reduced to 13.2 metres where adjoining public open space and the Western Power easement. Estimated traffic volumes for the proposed Structure Plan are anticipated to be less than 1000 vehicle movements per day, based on 10 vehicle movements per dwelling per day.

The proposed intersections with Barfield Road have been designed as such that they achieve a minimum separation distance of 20 metres between existing and planned intersections on either side of the road, in accordance with Liveable Neighbourhoods requirements.

Further information relating to traffic is contained in **Appendix 6** – Engineering Servicing and Traffic Report.

3.4.3 PUBLIC TRANSPORT

There are currently no existing public transport services operating within reasonable walking distance from the subject site. As development progresses within the surrounding area, it is recommended that the City consult with the Public Transport Authority in regard to expanding the existing bus routes and frequencies or to introduce new services to encourage use of public transport.

The closest existing bus route is number 536, approximately 800 metres to the north west of the site, generally at the intersection of Irvine Parade and Mitta Street. This route services the Aubin Grove train station.

The Aubin Grove train station is situated approximately 2.5 kilometres to the north of the site.

3.4.4 PEDESTRIAN AND CYCLE NETWORK

Footpaths are proposed on at least one side of all internal roads, in accordance with Liveable Neighbourhoods requirements.

All cycling within the Structure Plan area is proposed to be either on-road or on proposed footpaths. Internal traffic volumes are expected to be low enough such that on-road cycling will not pose a high risk to cyclists.



3.5 WATER MANAGEMENT

A Local Water Management Strategy (LWMS) has been prepared in support of the proposed Structure Plan, provided at **Appendix 7.**

The LWMS has been prepared in accordance with the design objectives outlined in *Better Urban Water Management* (2008) and proposes an integrated water cycle management approach.

The overall objective for integrated water cycle management for urban development is to minimise pollution and maintain an appropriate water balance. The design objectives presented in the LWMS for the proposed Structure Plan seek to deliver best practice outcomes using a water sensitive urban design (WSUD) approach, including detailed management objectives for:

- Water supply and conservation;
- Stormwater management; and
- Groundwater management.

The overall approach to water supply is to utilise scheme water and implement water conservation measures (e.g. water efficient fixtures, use of WSUD measures, and planting of water wise species) to reduce water requirements. Non-potable water for irrigation purposes will be supplied by groundwater.

The stormwater management plan focuses on the treatment of the small event (1 year 1 hour average recurrence interval (ARI)/63% annual exceedance probability (AEP)) and detention of the major event (100 year ARI/1% AEP) to maintain the existing hydrological regime. Small event runoff within the entire site will be treated within a bio-retention area (BRA), which is collated with a flood storage area (FSA) in the downstream public open space. Major event stormwater runoff for the majority of the site will be managed within the FSA, which is sized to retain the major (1% AEP) event. Two lots fronting Barfield road are not able to be managed within the site, hence will discharge into the Barfield road drainage network during the major event; this mimics the existing hydrological regime. Stormwater quality will be addressed through structural measures (i.e. a vegetated BRA) and non-structural measures (i.e. street sweeping, minimising fertiliser use, and provision of educational materials).

Groundwater management will include the use of imported fill to maintain sufficient clearance to groundwater in lower areas of the site. Groundwater quality will be managed through the appropriate treatment of surface runoff prior to infiltration to groundwater, and management of landscape management practices (i.e. minimising fertiliser use).

Refer **Appendix 7** – Local Water Management Strategy.

Approval for the enclosed LWMS was issued by the Department of Water and Environmental Regulation on December 8, 2020 (refer **Appendix 8**). The City of Cockburn has also previously provided comments on the LWMS, with the enclosed LWMS reflective of the City's requirements.

3.6 EDUCATION FACILITIES

In accordance with the SSDSP, no primary or high school sites are proposed within the Structure Plan area.

The subject site is in proximity to the following schools:

- → Hammond Park Catholic Primary School (0.3km);
- Hammond Park Secondary College (0.5km);
- Aubin Grove Primary School (0.9km);
- Hammond Park Primary School (1.5km);
- Honeywood Primary School (2.1km);
- Success Primary School (2.8km); and
- ▲ Atwell College (3.8km).

3.7 ACTIVITY CENTRES AND EMPLOYMENT

In accordance with the SSDSP, no activity centres are proposed within the Structure Plan area.

There are existing local convenience shopping and services within relatively close proximity to the subject site within Hammond Park and Aubin Grove. There is also a planned local centre situated approximately 750 metres to the west of the site on Whadjuk Drive.

In accordance with hierarchy detailed under *State Planning Policy 4.2 - Activity Centres for Perth and Peel* ('SPP 4.2'), the closest secondary centre to the subject site is Cockburn Central, located approximately 5.5 kilometres to the north of the site. This centre offers a range of economic and community services.

The future Wandi District Centre is located approximately 3.8 kilometres to the south of the subject site on Anketell Road. The purpose of the centre will be to provide a mix of smaller scale every day uses, including food and beverage outlets, retail shops, offices and other complementary uses such as warehouse / showroom type uses.

3.7.1 COMMUNITY FACILITIES

The subject site is located in relatively close proximity to the Aubin Grove Sport and Community Facility, as well as Botany Park, which contains an AFL oval and athletic facilities with change rooms and toilets. The SSDSP also proposes three future local centres to the west of the subject site.

In this regard the subject site is considered to be well serviced in terms of existing community facilities and therefore, does not require the provision of additional facilities as a result of the proposed population increase.



3.8 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

An Engineering Service Report was prepared by BPA Engineering, assessing the servicing and infrastructure provisions for the subject site. Refer **Appendix 6**.

3.8.1 SFWFR

The Structure Plan area is proposed to be serviced by gravity sewer designed and installed to the Water Corporations standards and specification. At present, there is no sewer infrastructure in the vicinity of the site.

Water Corporation planning shows that sewerage infrastructure for the subject site will be connected to the proposed wastewater reticulation being installed within the Vivente subdivision to the west of the site along Barfield Road.

Standard Water Corporation sewerage headworks will be payable on all lots as they are developed.

3.8.2 WATER

The Structure Plan area is proposed to be serviced by a reticulated water supply, designed and constructed in accordance with the Water Corporation manuals. The reticulation mains will be constructed at the developers cost.

Water Corporation planning shows the water supply for the Structure Plan area will be via a connection to the proposed reticulation being installed within the Vivente subdivision to the west of the site along Barfield Road.

The Water Corporation will impose standard headworks charges on the development on a per lot basis.

3.8.3 POWER

All power within the Structure Plan area will be underground.

Any requirements for a transformer site will be determined following receipt of a design information package from Western Power at the subdivision and detailed design stage. Initial advice indicates a new transformer and switchgear will be required for the proposed development. This will be connected to the HV network on the western side of Barfield Road.

Given the site's proximity to existing high voltage overhead transmission lines, Western Power may request a transmission EPR/LFI report be prepared to determine any specific development/construction requirements for the site. This will be determined at subdivision stage.

The cost of the power infrastructure, including any systems charges, is payable by the developer. HV costs may be payable by the HV pool.

3.8.4 RETICULATED GAS

There are no existing WA gas network underground assets / pipes present in the vicinity of the subject site. However, gas reticulation is planned through the Vivente subdivision to the west of the site. The proposed development is expected to be serviced via a connection to that infrastructure.



Headwork costs may be applicable to extend the service to the site.

Gas reticulation within the development incurs no cost to the developer, providing the mains are laid in the same trench as the water reticulation.

3.8.5 TELECOMMUNICATIONS

Future development within the Structure Plan area will be serviced via the existing pit and pipe installed along Barfield Road.

There is a P8 connection currently servicing Lot 50. Depending on the position of the P8 relative to the intersection of the proposed road network, relocation may be necessary. This will be further investigated at the detailed design stage.

NBN headworks charges will apply.

3.9 DEVELOPER CONTRIBUTION ARRANGEMENTS

Under the provisions of TPS 3, the Structure Plan is subject to Development Contribution Area 9 ('DCA 9'). Contributions shall be made towards the following items:

- Proportional (61.6%) cost of widening and upgrading of Hammond Road between
 Gaebler Road and Rowley Road including:
 - Construction of one carriage way comprised of two lanes for Hammond Road and where the reserve width is less than 40 metres wide, kerbing to the verge side of the carriageway shall be provided;
 - The purchase of land reserved for Hammond Road under the Metropolitan Region Scheme; o Full earthworks;
 - Dual use path (one side only);
 - Pedestrian crossings (where appropriate at the discretion of the local government); o Land and infrastructure associated with the drainage of Hammond Road:
 - Costs associated with the relocation of servicing infrastructure resulting from the implementation of this scheme, where appropriate;
 - Traffic management devices (traffic lights to the intersection of Hammond Rd and the realigned Wattleup Road to facilitate traffic and pedestrian/cyclist movement).
- Costs associated with the provision of regional drainage infrastructure;
- Costs to administer cost sharing arrangements preliminary engineering design and costing's, valuations, annual reviews and audits and administration costs.

Future residential development within the Structure Plan area will be required to pay contributions in accordance with DCA 9.

