



**LEGEND**

**REGION SCHEME RESERVE**

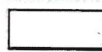
 Primary Regional Road

**LOCAL SCHEME**


**LOCAL SCHEME ZONE**

 Residential (R40)

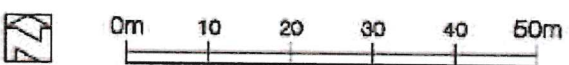
**LOCAL SCHEME RESERVE**

 Local Road

**OTHER CATEGORY**

 Structure Plan Boundary

It is certified that this Structure Plan was approved by resolution of the Western Australian Planning Commission on 20 / 12 / 2018  
 This Structure Plan expires on 20 December 2028  
 Signed *[Signature]*  
 Director, Planning and Development  
 File No. 110/175



PLAN 1 - Structure Plan Map



Lots 35-36 (No. 590-588) Rockingham Road,  
Munster

# STRUCTURE PLAN





# DOCUMENT HISTORY AND STATUS

**Lots 35-36 (# 590-588) Rockingham  
Road, Munster  
Structure Plan**

**Prepared By:  
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Town Planning and Design**

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**In association with:  
Strategen  
KCTT  
Herring Storer Acoustics**

Revision	Reviewer	Date Issued
17/040-0	ST	22 June 2017
17/040-1	ST	29 June 2017
17/040-2	ST	3 August 2017
17/040-3	ST	13 December 2018

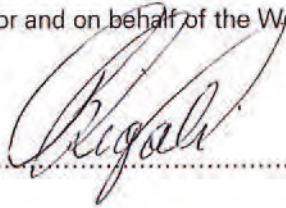
# APPROVAL

This Structure Plan is prepared under the provision of the City of Cockburn Town Planning Scheme No.3.

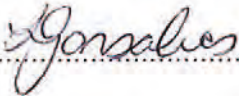
IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

20.December.2018..... Date

Signed for and on behalf of the Western Australian Planning Commission



an officer of the Commission duly authorised by the Commission pursuant to section 16 of the *Planning and Development Act 2005* for that purpose, in the presence of:



Witness

20 December 2018... Date

20 December 2028... Date of Expiry

# TABLE OF AMENDMENTS

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC

# TABLE OF DENSITY PLANS

Each time a density plan is approved, the plan is to be recorded in the table of density plans at the front of the Structure Plan.

Density Plan title	Where is the plan to be recorded?	Date Approved by WAPC



# EXECUTIVE SUMMARY

This Structure Plan is prepared to guide the subdivision and development of Lots 35-36 (No. 590-588) Rockingham Road, Munster (hereafter referred to as 'subject land').

The subject land is located:

- Within the municipality of the City of Cockburn;
- Approximately 20 km southwest of the Perth Central Business District (CBD); and
- Approximately 300 metres south of Beeliar Drive.

The Structure Plan proposes development of land for:

- Residential purposes comprising a mix of low to medium residential densities; and
- Access streets.

Item	Data	Structure Plan Ref. (Section No.)
Total area covered by the Structure Plan	8860m <sup>2</sup>	1.2.3
Area of each land use proposed:		3.3
• Zones		
• Residential	0.6128 ha	
• Reserves	0.0230 ha	
• Road reserve	0.2502 ha	
• Public open space & drainage	Cash-in-lieu	
Total estimated lot yield	24 lots	3.3.1
Estimated number of dwellings	24 dwellings	3.3.1
Estimated residential site density	0.37 dwellings per site/ha	3.3.1
Estimated population	Approximately 65 people (based on 2.72 persons / dwelling)	3.3.1



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# PART ONE IMPLEMENTATION

# 1 STRUCTURE PLAN AREA

This Structure Plan shall apply to Lots 35-36 Rockingham Road, being the land contained within the inner edge of the line denoting the structure plan boundary on the Structure Plan map (**Plan 1**).

# 2 OPERATION

This Structure Plan commences operation on the date it is approved by the Western Australian Planning Commission (WAPC).

# 3 STAGING

Development staging is still to be refined, however, it is likely that the subject land will be developed in 1 stage. The staging and development will be influenced by market forces, connection to infrastructure and changes to the road network.

# 4 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

## 4.1 LAND USE

The Structure Plan Map (**Plan 1**) identifies the following zones and reserves:

- Residential (R40); and
- Local Road Reserves.

Land use permissibility within the Structure Plan area shall accord with the land use permissibility of the corresponding zone/reserve in the City of Cockburn (City) Town Planning Scheme No. 3 (TPS 3).

### 4.1.1 PUBLIC OPEN SPACE

The proposed Structure Plan does not include the provision of public open space, but rather proposes a requirement for a cash-in-lieu contribution.

## 4.2 DEVELOPMENT

Development of land within the subject land is to be generally in accordance with the standards and requirements of TPS 3.

### 4.3 NOTIFICATION OF TITLE

In respect of applications for the subdivision of land, the Council shall recommend to the WAPC that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate of Titles to advise the following:

- i. Land or lots to be affected by an identified noise impact as outlined within the 'Noise Assessment' contained within **Appendix F**.
- ii. Construction standards to achieve quiet house design in accordance with State Planning Policy 5.4 *Road and Rail Transport Noise and Freight Considerations in Land Use Planning* (SPP 5.4); and
- iii. Land or lots deemed to be impacted by midge nuisances as identified in Local Planning Policy 1.11 Residential Rezoning and Subdivision Adjoining Midge Infested Lakes and Wetlands.

## 5 RESIDENTIAL DESIGN CODE VARIATIONS

### 5.1 LOCAL DEVELOPMENT PLANS

Local Development Plans (LDPs) are required to be prepared and implemented for lots comprising of one or more of the following:

- Lots which are affected by SPP 5.4; and
- Lots with a Bushfire Attack Level (BAL) of BAL-12.5 or greater.

A LDP will be a condition of subdivision approval.



# 6 THE REQUIREMENTS

## 6.1 BUSHFIRE MANAGEMENT

This Structure Plan is supported by a bushfire management plan (BMP), prepared by Strategen Environmental and is contained at **Appendix A**.

Development will have regard to the BAL assessment contained in this report and be determined in accordance with Schedule 2, Part 10A of the Planning and Development (Local Planning Schemes) Regulations 2015 and Section 6.3 of *State Planning Policy Planning in Bushfire Prone Areas* (SPP 3.7).

## 6.2 ROAD WIDENING

The SP (Plan 1) depicts Land reserved for Primary Regional Road along the eastern boundary of the subject land to facilitate widening/upgrading of Stock Road. The widening of Stock Road is in accordance with the reservation under the MRS and has been taken into account in the design process. The land required for road widening shall be set aside at the time of subdivision of adjacent land.

## 6.3 DEVELOPMENT CONTRIBUTIONS

The developer is to make satisfactory arrangements with the City to provide proportional contributions towards those items of development infrastructure defined by the City TPS 3 for Development Contribution Area No. 6 (DCA 6) and Development Contribution Area No. 13 (DCA 13).

The provision of DCA 6 is a proportional contribution towards widening and upgrading of Beeliar Drive (Mayor Road), between Stock and Cockburn Roads. The provision of DCA 13 requires a per lot/dwelling contribution towards the provision of Community Infrastructure in the Munster catchment.

## 7 ADDITIONAL INFORMATION

Prior to any subdivision or development of the land being supported, the following management plans, reports and strategies are to be prepared, as applicable, to the satisfaction of the relevant authority and provided at the relevant submission stage nominated in **Table 1**.

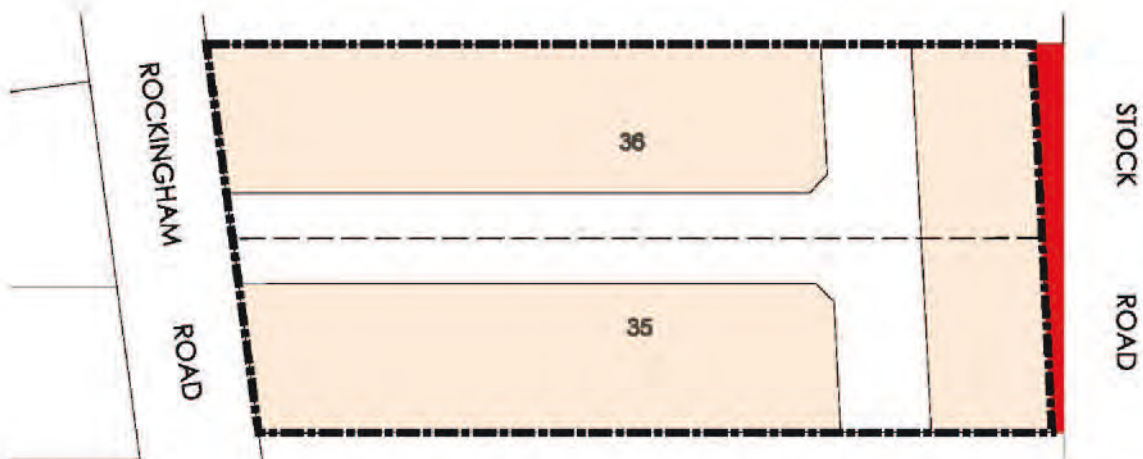
**TABLE 1: MANAGEMENT PLANS, REPORTS AND STRATEGIES**

Additional information	Approval stage	Approving Authority
<b>Water Management</b>		
Urban Water Management Plan (UWMP)	Condition of subdivision	WAPC, City, DoW
<b>Environment</b>		
Bushfire Management Plan	Condition of structure planning stage	WAPC, City
Acoustic Assessment	Condition of structure planning stage	City
<b>Engineering</b>		
Servicing Report	Documented in Structure Plan Condition of Subdivision	City, Water Corp, Western Power, ATCO Gas
Acid Sulphate Soils	Condition of Subdivision	DWER
Geotechnical	Condition of Subdivision	City
<b>Other</b>		
Local Development Plan(s)	Condition of subdivision if deemed necessary by City	City
Midge	Condition of Subdivision - Notification on title	City

**City** City of Cockburn


**WAPC** Western Australian Planning Commission

**DWER** Department of Water and Environmental Regulation




**LEGEND**

**REGION SCHEME RESERVE**


 Primary Regional Road

**LOCAL SCHEME**


**LOCAL SCHEME ZONE**

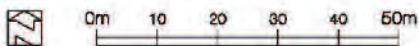
 Residential (R40)

**LOCAL SCHEME RESERVE**

 Local Road

**OTHER CATEGORY**

 Structure Plan Boundary



PLAN 1 - Structure Plan Map

# PART TWO EXPLANATORY INFORMATION



# 1 PLANNING BACKGROUND

## 1.1 INTRODUCTION AND PURPOSE

This documentation has been prepared by Taylor Burrell Barnett and the project team, on behalf of Progress Developments, to facilitate the assessment and approval of a Structure Plan for Lots 35-36 Rockingham Road, Munster (the 'subject land').

The Structure Plan outlines the vision for the ultimate development of the subject land and establishes key requirements. The Structure Plan also includes information assessing the proposed development in context with the surrounding physical and natural environment. The Structure Plan has been prepared to address the requirements of the City of Cockburn (City) Town Planning Scheme No.3 (TPS3) and the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations).

The project team responsible for preparing the information contained within this report is detailed in **Table 1**.

**TABLE 1: PROJECT TEAM AND RESPONSIBILITIES**

Project Role	Consultant
Town Planning and Urban Design	Taylor Burrell Barnett
Civil Engineering	KCTT
Traffic and Transport	KCTT
Environmental Assessment	Strategen
Bushfire Management	Strategen
Acoustic Assessment	Herring Storer Acoustics

## 1.2 LAND DESCRIPTION

### 1.2.1 LOCATION

The subject land is within the municipal boundaries of the City, approximately 20 km southwest of the Perth CBD.

The subject land is situated within the suburb of Munster and is bounded by Stock Road to the east, Rockingham Road to the west, Lot 586 to the northern boundary and Lot 592 to the southern boundary (refer to **Figure 1**).

The subject land is well connected to the regional movement network, being located on Rockingham Road, approximately 0.45km to Stock Road (Primary Regional Road) and Beeliar Drive (Other Regional Road) intersection and approximately 2.0 km to the Cockburn Road (Primary Regional Road) and Mayor Road (Other Regional Road) intersection.

The subject land benefits from its proximity to two district centres; Phoenix District Centre (approximately 4 km) and Cockburn Central District Centre (approximately 7 km) and is in close proximity Merevale Gardens Neighbourhood Centre (approximately 1.5 km). The subject land is also in close proximity to Churchill Avenue Local Centre (approximately 0.4 km) and Fairbarin Road Deli Local Centre (approximately 2 km).


## 1.2.2 LAND USE

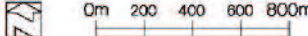
Both existing lots are primarily cleared of native vegetation and already used for residential purposes with one existing dwelling located in the western portion of each lot.

Surrounding land is largely cleared for residential purposes, with low density residential development to the north of the subject land and predominately established low to medium density residential development to the south and west of the subject land.



**LEGEND**

 Subject land

 0m 200 400 600 800m

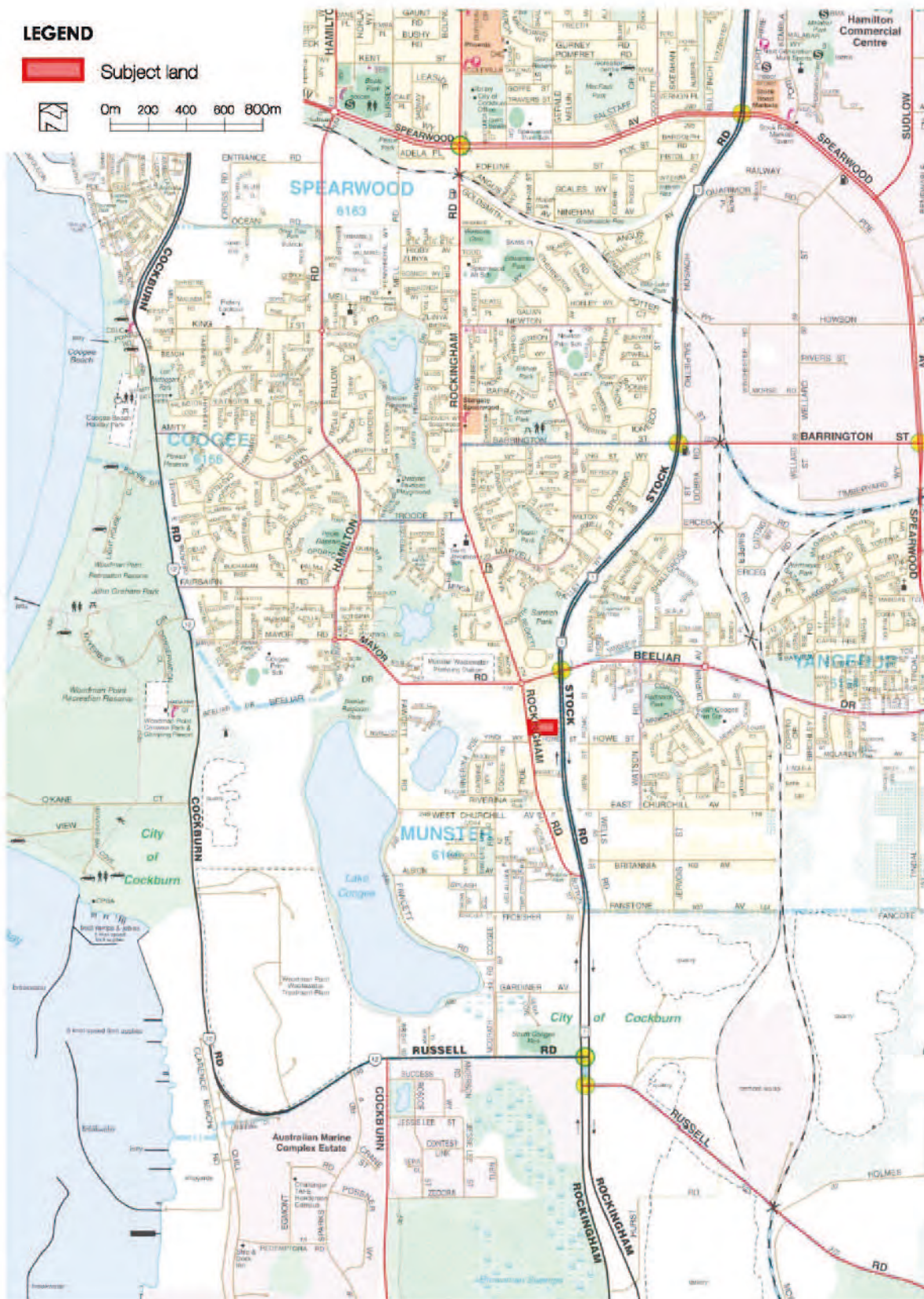


FIGURE 1 - Location plan

### 1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The subject land is approximately 8860m<sup>2</sup> in area comprising Lots 35-36 Rockingham Road (refer **Figure 2** and **Table 2**), and may be described as follows:

**TABLE 2 - LAND TENURE**

Lot	Landowners	Plan Number	Volume/Folio	Area (m <sup>2</sup> )
35	Papasergio, Shelley Mihaljevich, Frances Bilcich, Josie	P3562	1172/969	4360
36	Bilich, Danica Mihaljevich, Frances Bilcich, Josie Papasergio, Shelley Bilcich, Paul Steven Bilcich, Steven Vincent	P3562	1197/514	4500
<b>Total</b>				<b>8860m<sup>2</sup></b>





FIGURE 2 - Site Plan



## 1.3 PLANNING FRAMEWORK

### 1.3.1 ZONING AND RESERVATIONS

#### METROPOLITAN REGION SCHEME

The subject land is predominately zoned urban under the Metropolitan Region Scheme (MRS). Land reserved as a Primary Regional Road is located along the eastern boundary of the subject land to facilitate widening/upgrading of Stock Road. The widening of Stock Road is in accordance with the reservation under the MRS and has been considered in the design process.

The majority of the surrounding area is zoned urban.

#### CITY OF COCKBURN TOWN PLANNING SCHEME NO. 3

The subject land is predominately zoned development under the City TPS 3. Consistent with the reservation under the MRS, the subject land is also affected by the Primary Regional Road reservation under the City's TPS 3.

The subject is within Development Area 5 (DA 5) as prescribed in Table 9 – Development Areas within TPS 3. Table 9 of TPS 3 outlines the provisions applicable to DA 5, outlining that an approved Structure Plan together with all approved amendments shall be given due regard in the assessment of applications for subdivision and development in accordance with clause 27(1) of the deemed provisions within the Regulations.

The references to DCA 6 and DCA 13 within TPS 3 require developer contributions.

#### DIRECTIONS 2031 AND BEYOND

*Directions 2031 and Beyond* is Western Australia's high level spatial framework and strategic plan. The document provides a vision for future growth of the metropolitan Perth and Peel region, with the aim of achieving a pattern of growth which promotes a better balance between greenfield and infill development.

The subject land is located within the southwest sub-region as identified by Directions 2031, where it is noted that an additional 208,000 dwellings are required in order to accommodate a projected population of 278,000 in the region by 2031. This growth is to be achieved through a combination of infill and greenfield development and presumes that all urban zoned land within the southwest sub-region is made available to accommodate this objective.

#### PERTH AND PEEL @ 3.5MILLION AND SUB-REGIONAL PLANNING FRAMEWORK

Perth and Peel@3.5Million is a suite of documents released by the WAPC in 2018 for the Perth and Peel metropolitan regions to identify:

- where future homes and jobs should be located;
- how to protect important environmental assets;
- how to best utilise existing and proposed infrastructure; and
- appropriate areas for greater infill development and residential density.

As part of this documentation, sub-regional planning frameworks have been prepared to guide future development. The subject land is included within the South Metropolitan Pell Sub-regional Planning Framework (Sub-regional Planning Framework). The Sub-regional Planning Framework identifies the subject land within a pocket of urban.



The minimum urban infill dwelling targets identified for the City of Cockburn are 2,794 dwellings in 2016-21 and 1,689 dwellings from 2021-26. This local structure plan will assist in achieving the infill dwelling targets for the City.

## 1.3.2 PLANNING POLICIES

### STATE PLANNING POLICIES (SPP)

#### PLANNING IN BUSHFIRE PRONE AREAS (SPP 3.7)

SPP 3.7 provides precautionary guidance to reduce the bushfire risk to people, property, and infrastructure by encouraging a conservative approach to strategic planning, subdivision, development, and other planning decisions proposed in bushfire prone areas.

SPP 3.7 applies to all land which has been designated as bushfire prone by the Fire and Emergency Services (FES) Commissioner as identified on the Map of Bush Fire Prone Areas. The subject land is identified as bushfire prone on the Map of Bush Fire Prone Areas.

Accordingly, a Bushfire Management Plan (BMP) has been prepared for the subject land. A copy of the BMP is included at **Appendix A**.

#### ROAD AND RAIL TRANSPORT NOISE AND FREIGHT CONSIDERATIONS IN LAND USE PLANNING (SPP 5.4)

SPP 5.4 seeks to minimise the adverse impact of transport noise, without placing unreasonable restrictions on noise sensitive residential development.

Due to the nature and volume of traffic along Stock Road, a Noise Assessment has been undertaken in accordance with the requirements of SPP 5.4 and to inform the SP design. A copy of the Noise Assessment is contained in **Appendix F**.

### LOCAL PLANNING POLICIES

#### LOCAL PLANNING POLICY 1.11 RESIDENTIAL REZONING AND SUBDIVISION ADJOINING MIDGE INFESTED LAKES AND WETLANDS

The subject land is within the 500 metre and 800 metre buffers of Market Garden Swamp 2 and 3 and therefore subject to the requirements of the LPP 1.11.

In accordance with this policy, as a condition of subdivision, a notification pursuant to Section 70A of the *Transfer of Land Act 1893* is to be placed on the certificates of title of the proposed lots advising of the existence of a hazard or other factors.

#### LOCAL PLANNING POLICY 1.16 SINGLE HOUSE STANDARDS FOR MEDIUM DENSITY HOUSING IN THE DEVELOPMENT ZONE

LPP 1.16 outlines the acceptable variations to the deemed-to-comply provisions of the Residential Design Codes (R-Codes) for medium density single dwellings in areas zoned Development under the City TPS 3.

The purpose of LPP 1.16 is to replace the deemed-to-comply requirements of the following clauses of the R-Codes with those set out in the provisions of the policy:

- Building and Garage setbacks – Clauses 5.12, 5.13 and 5.21;

- Open Space – Clause 5.1.4;
- Parking – Clause 5.3.3;
- Visual Privacy – Clause 5.4.1; and
- Solar Access – Clause 5.4.2.

It is intended that medium-density single house development standards apply to all land designated R40 on Plan 1, substituting the deemed-to-comply provisions of the R-Codes. All other R-Codes standards apply.



## 2 SITE CONDITIONS AND CONSTRAINTS

An environmental assessment report has been prepared by Strategen Environmental to support the Structure Plan. This report is included at **Appendix B**.

### 2.1 BIODIVERSITY AND NATURAL AREA ASSETS

The subject land currently comprises remnant vegetation, cleared areas and two existing residential buildings, reflecting the subject land's previous rural use.

#### 2.1.1 WETLAND, BUFFERS AND RECLASSIFICATION

The nearest Conservation Category Wetland (CCW) is Lake Coogee (UFI 12394) located approximately 800 m southwest from the subject land.

### 2.2 LANDFORM AND SOILS

#### 2.2.1 LANDSCAPE AND TOPOGRAPHY

The subject land is located on the swan coastal plain, which is characterised by a low-lying coastal plain, mainly covered with woodlands. The subject land has a slope of approximately 2%, rising from a low point of 10m AHD at Rockingham Road to 19m AHD at Stock Road.

#### 2.2.2 CONTAMINATED SITES

A review of aerial imagery from 1953 to 2017 has identified no potential contaminating activities expected to have impacted the subject land. The subject land has been vacant (with the exception of two residential buildings since 1963-2017, where previously aerial imagery demonstrated potential market gardening activities in the north western portion of the subject land.

Furthermore, based on review of the DWER Contaminated Sites Register, the subject land is not classified as a contaminated site under the *Contaminated Sites Act 2003* (CS Act).

### 2.3 SURFACE WATER

#### 2.3.1 SURFACE WATER

No surface water expressions are present within the site.

The soils are mapped as sand derived from limestone which generally has a high infiltration rate and consequently runoff from the site in a pre-development state would be limited. The topography indicates any stormwater would drain towards Binjar Lake to the west of the site, identified as UFI 6369 on Figure 4 of the EAR (refer **Appendix B**). The City Intramaps identifies existing drainage in Yindi Way that drains towards Bindjar Lake. Post-development flows are also anticipated to drain towards Bindjar Lake.

The minor events including the 1 in 1 year Average Return Interval event is anticipated to be managed through soakage on site. Larger events will be managed through the local drainage network. The drainage design will be developed at the subdivision stage in consultation with the City.

## 2.3.2 BUSHFIRE HAZARD

The BMP is a strategic level plan which identifies the bushfire protection measures to be applied to development on the subject land to accommodate compliance with:

- SPP 3.7;
- Guidelines for Planning in Bushfire Prone Areas; and
- Australian Standard 3959 – Construction of buildings in bushfire prone areas (AS 3959).

## BUSHFIRE ATTACK LEVEL ASSESSMENT

As part of the BMP, a BAL Contour Map has been prepared which identifies the worst-case BAL in relation to the subject land.

Proposed lots abutting the northern and southern boundaries of the project area are subject to a worst-case BAL of BAL-FZ due to the potential for unmanaged grassland to occur on adjacent lots at these interfaces. The rationale behind this is that the firebreak notice does not require management of grassland for properties larger than 2,023 m<sup>2</sup>. Strategen does not consider that these BAL impacts are prohibitive of development as an internal APZ setback of 5 m could be accommodated within all but three of the proposed lots to ensure that future development on these lots is subject to BAL-29 or lower. The three remaining lots share a side boundary with adjacent grassland, rather than a rear boundary, meaning that the lot orientation will not enable the internal 5 m wide APZ setback to be accommodated. As such, a staged approach to development of the site will need to be taken so that development on the three affected lots is restricted until the adjacent hazards to the north and south have been removed and/or managed. This is considered to be an appropriate strategy to ensure that no future development occurs on land subject to BAL-40/FZ.

Main Roads WA (MRWA) has advised that it conducts regular inspections and maintenance of the road reserve. Weed spraying and grass slashing are carried out as part of their Annual Works Program. Additional vegetation control activities including mowing, pruning and removal of dead branches, shrubs and trees are prioritised across the metropolitan region in accordance with risk assessment of fuels, fire spread paths and adjacent land uses. MRWA has also advised that the proposed 5.7 m vegetation clearing and crushed limestone base (or similar) as indicated in the BMP may be supported on the basis that the vegetation is degraded with limited public amenity, biodiversity and habitat values.

The bushfire construction provisions of the National Construction Code will be applied to proposed buildings in accordance with the assessed BAL under AS 3959, provided the building is a Class 1, 2 or 3 building or a Class 10a structure associated with a Class 1, 2 or 3 building as defined within the Building Code of Australia.

The BAL contour assessment is considered suitable for the purposes of informing future planning/building stages, however, acceptance of the BAL contour map at future planning/building stages is at the discretion of the City and reassessment of the BAL may be required at future planning/building stages.

## 2.4 EXISTING MOVEMENT NETWORK

A Transport Impact Statement has been prepared by KCTT to support the Structure Plan. This report is included at **Appendix C**.

### 2.4.1 REGIONAL ROADS

The subject land is connected to the Primary Regional Road network (Stock Road) via Rockingham Road which connects into Mayor Road/ Beeliar Drive.



## 2.4.2 DISTRICT AND LOCAL ROADS

### ROCKINGHAM ROAD

To the west, the subject land fronts Rockingham Road. Rockingham Road is a significant single carriageway local distributor with a road reserve and pavement width of approximately 20 metres and 10 metres respectively.

Based on the traffic count information sourced, Rockingham Road carried the following number of vehicles per day (vpd) in October 2016:

- Rockingham Road (North of Beeliar Drive) with approximately 9 654 vpd including 8.1% for heavy vehicles;
- Rockingham Road (South of Beeliar Drive) with approximately 7 076 vpd including 5.9% for heavy vehicles; and
- Rockingham Road (100m North of Stock Road) with approximately 4 174 vpd including 7.0% for heavy vehicles.

## 2.4.3 PEDESTRIAN NETWORK AND CYCLING

There are presently no formal pedestrian paths within the subject land which is consistent with the existing land use.

Shared paths within a 400m radius of the subject land are located along Rockingham Road (North of Beeliar Drive), Beeliar Drive (East of Rockingham Road), Mayor Road (West of Rockingham Road) and Riverina Parade. High quality shared paths are located along Beeliar Drive (East of Stock Road) and unclassified paths are located along Bamboore Street, Datatine Way, Pekin Pass and Greenie Chase.

Cyclist's access to the subject land is available via the bicycle lanes/sealed shoulders along Beeliar Drive (East of Stock Road) and Stock Road.

## 2.4.4 PUBLIC TRANSPORT

The subject land is served by four bus service located within 400 m (are outlined below):

Bus Route	Description	Peak Frequency	Off-Peak Frequency
530	Cockburn Central Station - Fremantle Station via Yangebup Road	10 minutes	60 minutes
531	Cockburn Central Station – Fremantle Station via Marvell Avenue & The Grange	10 minutes	60 minutes
532	Cockburn Central Station – Fremantle Station via Beeliar Drive	10 minutes	60 minutes
548	Fremantle Station – Rockingham Station via Rockingham Road & Kwinana Town Centre	10 minutes	60 minutes

## 2.4.5 NOISE

A Noise Assessment has been prepared by Herring Storer Acoustics to support the Structure Plan and is contained in **Appendix F**.

The purpose of this assessment is to assess noise received within the development from vehicles travelling along Stock Road. If noise levels exceed determined criteria, required attenuation measures to control noise intrusion to acceptable levels have been identified.

Noise received at the residences in close proximity to Stock Road would, as shown by the noise contour plot (refer Figure 1C in Appendix C of the Noise Assessment), exceeds SPP 5.4 Noise Limits. For these residences to achieve compliance with SPP 5.4 the construction of a 1.8m high solid noise wall along the eastern boundary between the residential development and Stock Road is required. The barrier will have a surface density of 15kg/m<sup>2</sup>. In addition to this, Lots 10 to 15 would require architectural treatment packages (Quiet Noise Design) and notifications on certificates of title.

## 2.5 CONCEPT PLAN

The Structure Plan for Lot 38 Rockingham Road, Munster, is shown in **Figure 3**. This Structure Plan has demonstrated a coordinated approach proposing a comprehensive design consistent with the broader layout. This includes, providing an appropriate interface with adjoining lots and proposed lot depths of 20 metres for lots located adjacent to Stock Road, consistent with the overall Structure Plan proposed for Lot 38 Rockingham Road.

This Structure Plan also proposes a movement network consistent with the broader area, considering integration with the neighbouring areas and allowing for future connections to be provided to the north and south of the subject land.



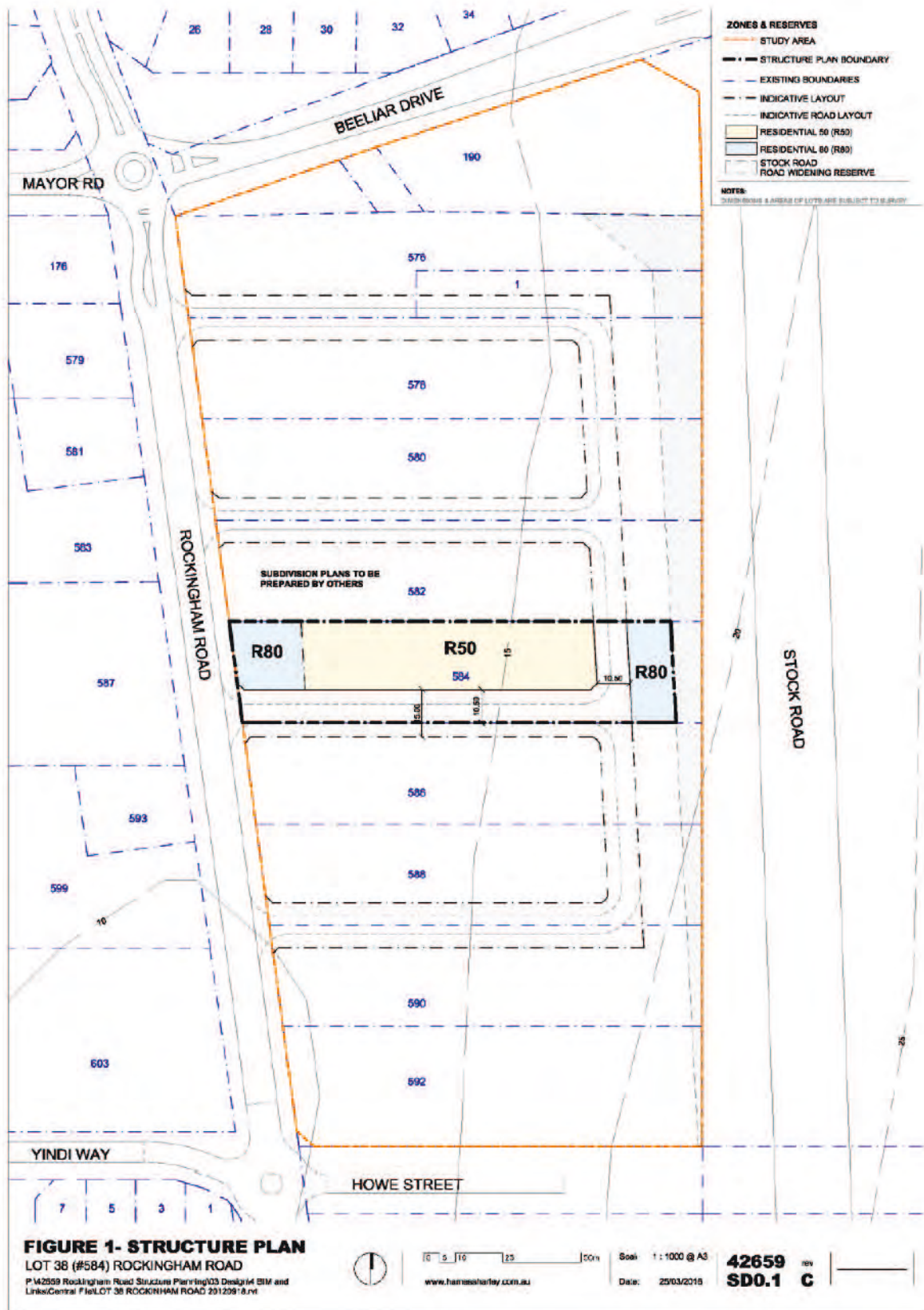


Figure 3 – Indicative Plan (Lot 38 Rockingham Road)

## 3 STRUCTURE PLAN

### 3.1 DESIGN PRINCIPLES

There are a number of fundamental design principles that underpin the proposed Structure Plan, as summarised below:

- Provide for lot diversity that will enable the construction of a diverse range of housing types to accommodate different housing demands;
- Provide for development to extend into adjacent land holdings in the future in the form of future road connectivity;
- Provision of attractive, safe and convenient local roads; and
- Provide for the future widening of Stock Road in accordance with the Region Scheme.

### 3.2 DEVELOPMENT CONCEPT PLAN

In addition to the Structure Plan Map included within Part 1 – Implementation (**Plan 1**), a Development Concept Plan (**Figure 4**) has been prepared to provide an illustration of the development intent. This graphical representation is indicative only, however, it indicates how the streetscapes and residential development will occur.

The Development Concept Plan has been prepared based on the following key design considerations:

- **Road Structure** – The existing road reserves for Rockingham Road and Stock Road have defined the structure of the Concept Plan. A local access street connection from Rockingham Road is proposed. A temporary turn around will facilitate movement within the Structure Plan area until future connections are established to facilitate development on adjacent properties.
- **Residential Development** – The Structure Plan provides for a variety of housing choices through the designation of R40. A diverse range of lot sizes and housing types is achievable based on the proposed street block structure through the use of different lot depths on street block ends and frontages.
- **Integration** - The Development Concept Plan demonstrates how the development integrates with the adjacent proposed development north and south of the subject land (Lot 34 and 37 Rockingham Road).



**LEGEND**

- Subject Land
  - Residential (R40)
  - Future Access Street
  - Temporary Bin Pad Locations
  - 1 Temporary turn-a-round
  - 2 Future connections to facilitate development on adjacent properties
  - 3 Future Stock Road Widening
  - 4 Lot Depth 20 metres
-  0m 10 20 30 40 50m



FIGURE 4 - Development Concept Plan

### 3.3 LAND USE

The primary land use within the Structure Plan area is Residential. A summary of the land uses and areas is provided in **Table 3**:

**TABLE 3 – LAND USE**

Zone / Reserve	Area (m <sup>2</sup> )
Residential	6,128
Roads	2,502
Primary Regional Road	230
<b>Total</b>	<b>8,860m<sup>2</sup></b>

#### 3.3.1 RESIDENTIAL

It is intended that medium density single house development standards apply to all land designated R40 on **Plan 1**.

The density codes and indicative yield are detailed in **Table 4**.

**TABLE 4 – ESTIMATED DWELLING YIELD**

Density Code/Zone	Yield
R40	24
<b>TOTAL</b>	<b>24</b>

### POPULATION TARGET

The Development Concept Plan suggests a potential yield of at least 24 lots. This could accommodate a total population of up to 65 people based on 2.72 per household (Id Community 2016).

### 3.4 OPEN SPACE

#### 3.4.1 PUBLIC OPEN SPACE

In accordance with Draft Liveable Neighbourhoods (2015) the provision of POS is considered impractical in terms of use and management as the subject land is less than 1 hectare. Therefore, given the relatively small size of the subject (0.886 ha), the 10 per cent contribution of POS would be too small to be of practical use, and a cash-in-lieu contribution is a better outcome for the subject land and the surrounding locality. This approach has been discussed and agreed with the City of Cockburn.

A requirement for a cash-in-lieu contribution towards the provision of POS is to be implemented as a condition of future subdivision and will allow for funds to be allocated towards the maintenance of existing or future areas of POS.

A POS calculation has been prepared in accordance with Liveable Neighbourhoods, as detailed in **Table 5**. A total of 863m<sup>2</sup> of POS is required for the Structure Plan area.



**TABLE 5 - PUBLIC OPEN SPACE SCHEDULE**

PUBLIC OPEN SPACE	
<b>Gross Site Area</b>	<b>8860m<sup>2</sup></b>
<b>DEDUCTIONS</b>	
<b>MRS Road Widening</b>	<b>230m<sup>2</sup></b>
<b>Total Deductions</b>	<b>230m<sup>2</sup></b>
<b>Gross Subdivisible Area</b>	<b>8630m<sup>2</sup></b>
<b>Creditable Public Open Space Required @ 10%</b>	<b>863m<sup>2</sup></b>
<b>PUBLIC OPEN SPACE PROVISION</b>	<b>0</b>

### 3.5 MOVEMENT NETWORK

KCTT has undertaken an analysis of the existing movement networks in the vicinity of the subject land and assessed the impact of the proposed development on these existing networks. The Transport Impact Assessment is included at **Appendix C**.

#### 3.5.1 ROAD NETWORK AND TRAFFIC VOLUMES

##### LOCAL ACCESS STREETS

Two local access roads Road 01 and Road 02 (extension of Howe Street West) are proposed within the subject land and are classified as local access streets on the basis that they are expected to carry volumes below 1,000 vpd. The typical road reserve for an Access Street D includes a road reserve width ranging from 15 m, with a 3m road pavement width per traffic lane.

Based on the indicative dwelling yield of 24, it is expected that the proposed development will generate up to 216 vpd (198 vpd additional traffic on the surrounding network).

#### 3.5.2 PEDESTRIAN AND CYCLING NETWORK

A path network is proposed, inclusive of a 2.3 metre path on one side of the road. The proposed network will focus on providing linkages to the broader pedestrian network.

The exact location of the provision of footpaths will be determined at the detailed design stage, to the satisfaction of the City.

#### 3.5.3 DELIVERY AND SERVICE VEHICLES

It is expected that delivery and service vehicles (such as waste removal vehicles) servicing the residential area will not require designated parking spaces given that they can operate safely within the road reserve. All intersections and temporary turnarounds at ends of development stages will be designed in accordance with the turning circle requirements of delivery and service vehicles. Temporary bin pads for Lots 11-16 will be placed at various locations around the proposed temporary turnaround (refer **Figure 4**).

Temporary bin pads and turnaround proposed will be removed as future access connections are constructed on adjacent properties.

## 3.6 WATER MANAGEMENT

### STORMWATER DRAINAGE STRATEGY

The Department of Water and Environmental Regulation have advised that a Local Water Management Strategy (LWMS) is not required to support this Structure Plan (refer to **Appendix G**).

A Stormwater Drainage Strategy (SDS) has been prepared by KCTT in support of the Structure Plan to suit the existing site characteristics to effectively manage the runoff generated in 1, 5, 20 and 100 year ARI events. The SDS has been developed in compliance with the Australian Standards and regulatory requirements inclusive of City stormwater management requirements.

Storm events up to a 20% AEP, 5-minute event will be managed by soakage pits, with run off exceeding this directed to the Rockingham Road reservation where it will be managed as per the city's stormwater management system, as approved by the City. Runoff generated from road reserve areas in the 20% (1:4.48 ARI) event is to be captured and infiltrated in soakage pits with combined side entry pit lids.

As the existing drainage system in Rockingham Road does not have sufficient capacity, the lots will be required to store and infiltrate runoff for events up to and including the 5% AEP (1:20 ARI) onsite.

The SDS is included at **Appendix D**.

## 3.7 EDUCATION FACILITIES

South Coogee Primary School is the closest primary school, just outside 800 metres of the subject land will serve the subject land in the short term. However, Lots 35 and 36 Rockingham Road form part of the City TPS 3 DA 5, for which a Structure Plan has not been prepared.

Additional existing education facilities located within close proximity to the subject land include the following:

- St Jerome's Primary School (1km);
- Coogee Primary School (1.5km); and
- South Metropolitan TAFE-ACCEPT Campus (1.5km).

## 3.8 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

The project's civil engineering consultant, KCTT, has prepared an Infrastructure Servicing Report. This report is included as **Appendix E**, and a summary of the utility infrastructure advice is outlined as follows:

### 3.8.1 WATER SUPPLY

Water main infrastructure will be provided adjacent to the subject land on the opposite side of Rockingham Road. Existing water reticulation services are available for connection, sourced from Dial Before You Dig (DBYD) and the Water Corporation Electronic Submissions Interface (ESInet) and TPS 3.

Water Corporation infrastructure has sufficient capacity to service the development.

### 3.8.2 WASTEWATER

Water Corporation planning shows the subject within a wastewater catchment that is to connect to a proposed 450mm diameter gravity sewer main along Forrest Road in Hamilton Hill. Through the review of Water Corporation sewer planning, the sewer reticulation has sufficient capacity for the proposed development.



### 3.8.3 POWER SUPPLY

The information gathered from Western Power shows sufficient power supply for the development. This is illustrated via high voltage (HV) and low voltage (LV) overhead power lines directly adjacent to the landholding on the western side of the subject land. Additionally, low voltage (LV) underground power is aligned adjacent to the western boundary of the development.

### 3.8.4 TELECOMMUNICATIONS

Existing underground telecommunication services are available and suitable for connection immediately adjacent to the subject land, located on both sides of the road reserve and are considered suitable for the proposed development.

### 3.8.5 GAS SUPPLY

A gas service exists adjacent to the subject land on the opposite side of Rockingham Road. Gas services are to be designed in conjunction with ATCO Gas with sufficient capacity for the Structure Plan.

### 3.8.6 RETAINING WALLS

The topography of the subject land has an average 7% grade from west to east, requiring an increase in the general retaining requirements. The required retaining is expected to be 2-3 course exposed limestone retaining between lots for side boundaries and 1-2 course exposed limestone for rear boundaries.

## 3.9 TECHNICAL STUDIES APPENDICES INDEX

Appendix	Document Title	Assessment Agency	Approval Status
A	Bushfire Management Plan	Strategen	
B	Environmental Assessment Report	Strategen	
C	Transport Impact Statement	KCTT	
D	Stormwater Drainage Strategy	KCTT	
E	Infrastructure Servicing Report	KCTT	
F	Noise Assessment	Herring Storer Acoustic	