Lot 51 Mayor Road, Munster

Structure Plan

April 2019

Prepared by:
element

CERTIFICATON OF APPROVED STRUCTURE PLAN

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:

27 May 2019

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

28 May 2019 Date

27 May 2029 Date of Expiry of this Structure Plan

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

Executive Summary

This Structure Plan (SP) encompasses Lot 51 Mayor Road, Munster (the subject site), which is located in the City of Cockburn. The subject site is situated to the south of Mayor Road and has a total land area of 1.4164 hectares.

The intent of this SP is to guide the subdivision and subsequent development of the subject site for residential purposes, along with ensuring appropriate provision of access via three (3) new public roads and the provision of two (2) separate reserves for local parks and recreation.

The subject site is proposed to be subdivided and developed for residential purposes, with vehicle access provided via new public roads under construction (or proposed to be constructed), originating from Rockingham Road and Yindi Way to the south and Preston Drive to the west of the subject site. There will be no permanent vehicle access provided from the development to Mayor Road. Only pedestrian access is to be provided. Two (2) separate Public Open Space (POS) reserves are proposed, one in the southwest corner of the subject site and one along the eastern boundary, with a combined area of 1,401 m^2.

This SP takes into account the statutory and strategic planning framework applicable to the subject site, outlining development principles and assessments as they relate to environmental, engineering and servicing, transport impact and bushfire risk management issues.

Item	Data	Structure Plan Reference
Total area covered by the SP	1.4164 ha	1.2.2 Area and Land Use
Estimated population	96 people	3.3 Residential Density
Area of residential land proposed	0.8579 ha	3.1 Land Use
Estimated residential site density	44 dwellings per site hectare as per Liveable Neighbourhoods	3.3 Residential Density
Estimated area and percentage of public open space given over to: • Local Parks	0.1401 ha, representing 10% of the gross subdividable area.	3.2 Public Open Space

Table of Contents

Part One: Implementation

1. Structure Plan Area

The Structure Plan Area encompasses Lot 51 Mayor Road, Munster.

This Structure Plan shall apply to the land contained within the inner edge of the line denoting the structure plan boundary on 'Plan 1 – Structure Plan Map'.

Refer to Plan 1 – Structure Plan Map

2. Operation

This Structure Plan commences operation on the date it is approved by the Western Australian Planning Commission and is valid for a period of ten (10) years from such time. Due regard to its intent shall be given when considering future subdivision and development of the land.

3. Staging

This Structure Plan is to be developed in a single stage, noting that there are no specific triggers that would require staging of the development.

4. Subdivision and Development Requirements

No.	Category	Requirement
4.1	Land use permissibility	The land use classifications within the structure plan area are shown on Plan 1 (the structure plan map). These will guide the future subdivision and development of the land for residential purposes. Land use permissibility within the structure plan area shall be in accordance with the structure plan map and the corresponding zones and reserves set out in the City of Cockburn Town Planning Scheme No. 3.
4.2	Residential density	Residential densities applicable to the structure plan area are shown on the structure plan map.
4.3	Development standards	Variations to State Planning Policy 3.1: Residential Design Codes set out in: (a) *Planning Bulletin 112: Medium-density Single House Development Standards – Development Zones; and* (b) *City of Cockburn Local Planning Policy 1.16: Single House Standards for Medium Density Housing in the Development Zone,* may be applied to residential development within the structure plan area. This structure plan is supported by a bushfire management plan (included in Appendix A) which identifies bushfire attack levels. Where land falls within an area with a bushfire attack level of 12.5 or greater, additional development standards may apply.
4.4	Access restrictions	Where an application proposes to create lots abutting Mayor Road, the City of Cockburn may recommend a covenant preventing vehicular access onto Mayor Road be lodged on the certificate(s) of title of the proposed lot(s) at the full expense of the landowner/applicant.

No.	Category	Requirement
4.5	Temporary vehicle access arrangements	A temporary cul-de-sac head 18 metres in diameter is to be provided at the eastern terminus of Road 2 (abutting Lot 22 Mayor Road) and is to remain in place until Lot 22 Mayor Road is developed, and the road reserve extended through Lot 22 Mayor Road. Any approval to create Road 2 and the abutting lots will require: (a) the temporary cul-de-sac head be provided; and (b) a public access easement be placed over those parts of the cul-de-sac head which encroach on freehold land. Notwithstanding the vehicle access restriction required under clause 4.7 (above), the lot in the northeast corner, as depicted on the subdivision concept plan (Figure 4) is permitted to have temporary vehicle access via Mayor Road. Following approval of the Structure Plan, and the subsequent approval and implementation of the subdivision, the temporary access shall be removed and no further access to Mayor Road will be permitted.
4.6	Transport noise	Any application to subdivide land within the structure plan area is to be supported by an acoustic assessment, prepared by a suitably qualified consultant, which quantifies the impact of transport noise and identifies measures required to mitigate that noise, in accordance with *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land Use Planning.*
4.7	Treatment of road reserve	Dual use pathways are to be constructed adjacent to all roads within the structure plan area. On-street parking is to be provided adjacent to the public open space reserve located in the southwest corner of the structure plan area and within the road reserve for Road 3. Street trees should be provided in accordance with *City of Cockburn Local Planning Policy 5.18: Subdivision and Development – Street Trees.*
4.8	Road widening	Land which falls within the Other Regional Roads reservation under the Metropolitan Region Scheme is to be set aside as a separate lot for the future extension and widening of Beeliar Drive (currently Mayor Road). An easement, to the benefit of the local government, is to be provided over the lot and is to provide for vehicular access, right of footway, water, sewer, drainage, gas, electricity, television, telecommunications and other necessary service infrastructure, pending construction of the future road widening.
4.9	Notifications on title (all lots)	In respect of applications to subdivide land within the structure plan area, the City of Cockburn may recommend the following notification be placed on the certificate of title: *This land may be affected by midge from nearby lakes and/or wetlands. Enquiries can be made with the City of Cockburn Environmental Services.*
4.10	Notifications and covenants on title (specific lots)	Where an application proposes to create lots with a bushfire attack level of 12.5 or above, the landowner/applicant may be required to lodge the following notification on the certificate(s) of title of the proposed lot(s):

No.	Category	Requirement
		"This land is within a bushfire prone area as designated by an order made by the Fire and Emergency Services Commissioner and is/may be subject to a bushfire management plan. Additional planning and building requirements may apply to development on this land." Where the acoustic assessment indicates that lots are likely to be affected by levels of transport noise which merit advising the landowner of the impact of transport noise, the City of Cockburn may recommend the following notification be placed on the certificate of title: *"This lot is situated in the vicinity of a transport corridor and is currently affected, or may in the future be affected by transport noise."*
4.11	Public open space	In approving an application to subdivide land within the structure plan area, the Western Australian Planning Commission may require the preparation and implementation of a wetland rehabilitation plan for that part of Market Garden Swamp (southwest of the structure plan area) and/or its buffer that falls within the structure plan area. Further to the above: (a) vegetation within the nominal 50 metre buffer to Market Garden Swamp is to be retained for the purposes of wetland protection; and (b) a dual use pathway is to be constructed around the periphery of Market Garden Swamp.
4.12	Site contamination	As the site has, historically, been used for horticultural purposes, the potential for soil and groundwater contamination exists. For this reason, the City of Cockburn recommends: (a) the proponent liaise with the Department of Water and Environmental Regulation (contaminated sites branch) in relation to the potential for soil and groundwater contamination; and (b) any future application to subdivide the site be referred to the Department of Water and Environmental Regulation (contaminated sites branch).

5. Local Development Plans

Local development plans are to be prepared in accordance with Part 6 of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015,* prior to the creation or development of lots:

(a) abutting public open space; and/or

(b) where vehicle access and egress needs to be controlled.

6. Other Requirements

The developer is to make satisfactory arrangements with the City of Cockburn to provide proportional contributions toward those items of development infrastructure defined in the City of Cockburn Town Planning Scheme No. 3 for Development Contribution Area 13 (DCA13) and Development Contribution Area 6 (DCA6).

7. Additional Information

Additional Information	Approval Stage	Consultation Required

Plan 1

Structure Plan Map

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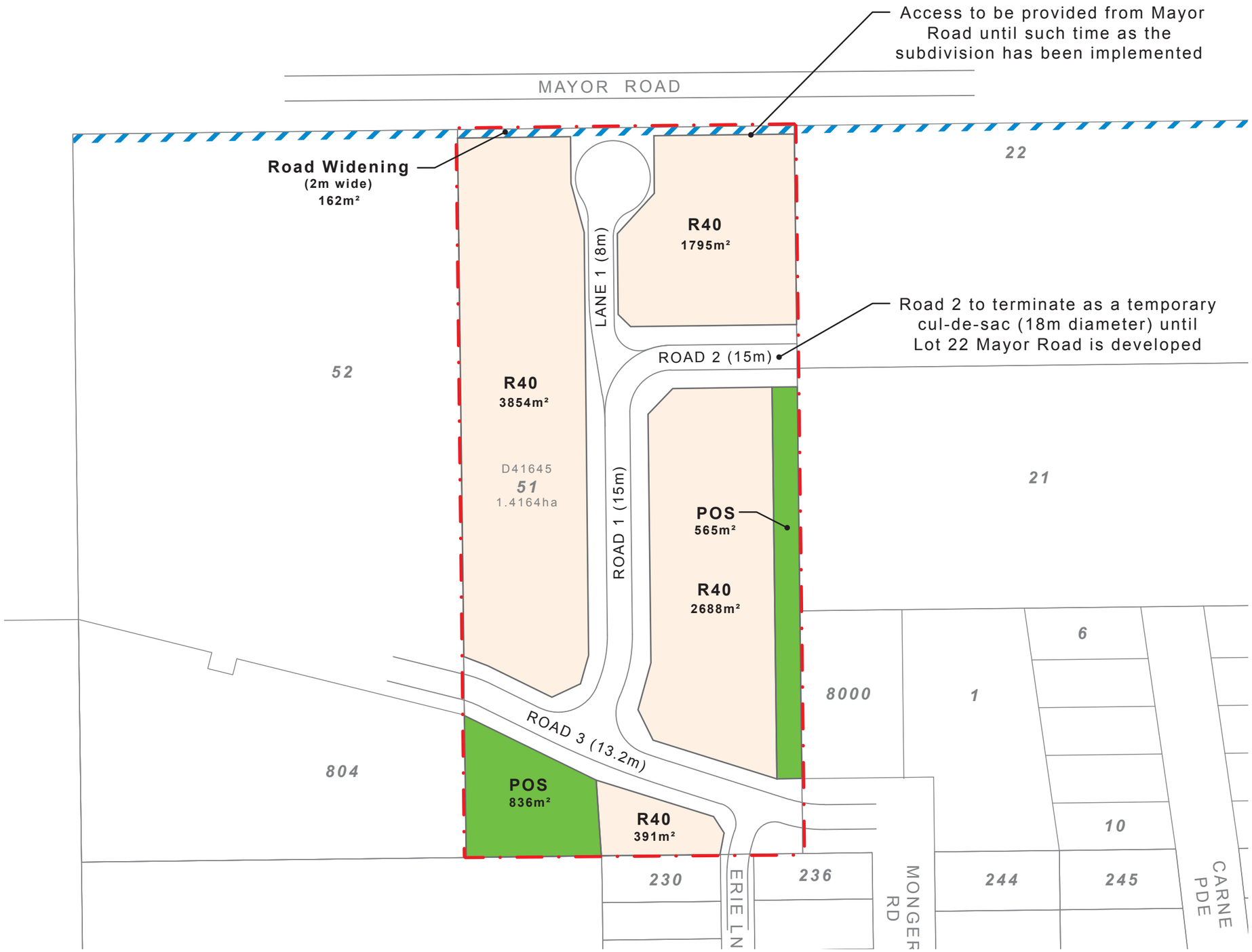

LEGEND

LOCAL SCHEME RESERVES

- Parks & Recreation
- Local Roads

LOCAL SCHEME ZONES

- Residential R40

OTHER CATEGORIES

- Structure Plan Boundary
- Land to be set aside as a seperate lot for WAPC acquisition for Metropolitan Region Scheme 'Other Regional Road' Reserve

Plan 1: Structure Plan

Lot 51 Mayor Road, Munster

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Part Two: Explanatory Report

1. Planning Background

1.1. Introduction and Purpose

Part Two of this Structure Plan comprises an explanatory report that outlines site details, the applicable planning framework, site conditions and constraints and the design rationale for the structure plan.

Part Two should be read in conjunction with the Structure Plan Map (Plan 1) and any figures and appendices that relate to applicable site investigations.

The purpose of the Structure Plan is to guide the subdivision and subsequent development of Lot 51 Mayor Road, Munster for residential purposes. The preparation of a Structure Plan is in accordance with the requirements for Development Areas under Part 5.4 of the City's Town Planning Scheme No. 3 (TPS3) and Part 4 of the deemed provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

1.2. Land Description

1.2.1. Location

The subject site is described as Lot 51 Mayor Road, Munster and is located within the City of Cockburn local government area.

The subject site is situated to the south of Mayor Road and to the west of the intersection of Rockingham Road and Mayor Road / Beeliar Drive. The subject site is located to the west of the City of Cockburn local government area and approximately 20 kilometres southwest of the Perth Central Business District. The Munster Pump Station No. 2 is located approximately 100 metres north-west of the subject site.

Cockburn Central Train Station is located approximately seven (7) kilometres east of the subject site. Bus Routes 530, 531 and 532 provide connections between the subject site and the Cockburn Central Train Station, and bus route 549 provides a connection between the subject site and the Fremantle Train Station. Bus stops are located approximately 200 metres east of the subject site along Beeliar Drive and 350 metres west along Mayor Road.

South Coogee Primary School is located approximately one (1) kilometre to the east of the subject site, St Jerome's Primary School approximately 800 metres to the north and Coogee Primary School approximately 1.2 kilometres to the west.

Lakeland Senior High School is located approximately five (5) kilometres northeast of the subject site. Fremantle College officially opened at the beginning of 2018 and is located approximately seven (7) kilometres north of the subject site. The college was opened following the merger of Hamilton Senior High School and South Fremantle Senior High School.

Refer to Figure 1 – Context Plan

1.2.2. Area and Land Use

The subject site encompasses the whole of Lot 51 Mayor Road, Munster and has a total land area of 14,164 m^2.

The subject site is currently vacant and awaiting development. A separate application for subdivision approval will be submitted in due course to the Western Australian Planning Commission to create separate lots for future dwellings.

1.2.3. Legal Description and Ownership

The Certificate of Title details for the subject site are summarised in the following table.

Table 1 – Certificate of Title Particulars

Lot	Survey	Volume/Folio	Area	Registered Proprietor
51	D41645	582-199A	14,164 m^2	Michael Tomasich

Refer to Figure 2 – Site Plan

1.3. Planning Framework

1.3.1. Zoning and Reservations

The subject site is primarily zoned 'Urban' under the provisions of the Metropolitan Region Scheme (MRS), with a two (2) metre wide portion to the north of the subject site reserved for 'Other Regional Roads' under the MRS. As part of a future application for subdivision approval, this MRS reserved portion of the subject site will be set aside as a separate lot for WAPC acquisition, for the future widening of Beeliar Drive (currently Mayor Road).

The subject site is zoned 'Development' under the provisions of the City of Cockburn Town Planning Scheme No. 3 (TPS3). The purpose of the Development zone is '*to provide for future residential, industrial or commercial development to be guided by a comprehensive Structure Plan prepared under the Scheme*'. In this regard, Development Areas are designed to:

a) Identify areas requiring comprehensive planning; and

b) Coordinate subdivision and development in areas requiring comprehensive planning.

The subject site is located within Development Area 5 (DA5) under TPS3; with Table 9 of TPS3 identifying that DA5 is to predominantly provide for new residential development.

TPS3 also states that the subdivision and development of land within a Development Area is generally to accord with any agreed structure plan pertinent to the land. Refer to Section 5.2 of TPS3.

The subject site is subject to Development Contribution Area 13 (DCA 13), which establishes a developer contribution arrangement for the upgrade of local and regional recreational and landscape facilities within the whole of the City of Cockburn and Development Control Area 6 (DCA6), which establishes a developer contribution arrangement specifically for the Munster locality.

Pursuant to the City of Cockburn TPS3, residential development is not supported within the Munster pump station's odour buffer (inclusive of the subject site). It is advised that the pump station was decommissioned in 2002 by the Water Corporation and therefore the mapped odour buffer should not prevent residential development within the structure plan area.

1.3.2. Planning Strategies

1.3.2.1. Perth and Peel @ 3.5 Million

The Perth and Peel @ 3.5 Million framework was adopted in March 2018 and is a spatial framework, a high level strategic plan that establishes a vision for the future growth of the Perth and Peel metropolitan region. The framework builds on the vision laid down by Directions 2031 and Beyond, a superseded planning framework. It aims to achieve a more consolidated urban form to meet long-term housing needs and strengthen key activity centres and employment nodes as the Perth and Peel population grows to 3.5 million.

The framework identifies the subject site as being located within the South Metropolitan Peel Sub-Region. The City of Cockburn is assigned an urban infill target of an additional 14,680 dwellings to achieve a City of 3.5 million.

The SP responds to objectives outlined in Perth and Perth @ 3.5 million by introducing a planning framework to facilitate the orderly development of the subject site for new residential dwellings in close proximity to existing community infrastructure, public open space and high frequency public transport services. Based on the above, the proposed SP is considered to demonstrate State strategic planning merit.

1.3.3. Planning Policies

1.3.3.1. Liveable Neighbourhoods

Liveable Neighbourhoods is an operational policy, adopted by the WAPC, for the design and assessment of new structure plans and subdivisions. The elements of Liveable Neighbourhoods primarily relate to larger-scale structure plans and subdivisions and accordingly a detailed assessment of this structure plan against these elements is not considered necessary in this instance due to its small scale and simple nature.

However, it is acknowledged that the general intent and objectives of Liveable Neighbourhoods are considered relevant in terms of addressing such elements as connectivity and walkability, provision of public parkland, urban water management and utilities. A detailed description of the design rationale for the SP is therefore provided in Section 3 of this Structure Plan report.

1.3.3.2. City of Cockburn Local Planning Policies

LPP 1.11 – Residential Rezoning and Subdivision Adjoining Midge Infested Lakes and Wetlands

The City's Policy Residential Rezoning and Subdivision Adjoining Midge Infested Lakes and Wetlands outlines the City's approach with respect to new residential development in close proximity to midge infested lakes and wetlands.

The Policy identifies that the subject site is located within 500 metres of Market Garden Swamp 3 (to the southwest) and is therefore potentially subject to midge infestation during the spring and summer seasons. As such and in accordance with Clause 2 of the Policy, a Notification will be placed on all future titles stating that:

This land may be affected by midge from nearby lakes and/or wetlands. Enquiries can be made with the City of Cockburn Environmental Services.

LPP 1.1 – Residential Design Codes Alternative Deemed to Comply Provisions

The purpose of the City's Policy Residential Design Codes Alternative Deemed to Comply Provisions is to supplement the existing 'deemed to comply' criteria and 'design principles' of the R-Codes with alternative standards that the City believes either meet the general objectives of the Codes or are warranted to address specific local objectives.

The Policy does not seek to replace or provide more onerous requirements than the existing R-Codes provisions and therefore a development may be deemed to be compliant if it conforms to either the 'deemed to comply' provisions of the R-Codes, the 'design principles' of the R-Codes, or the provisions of the Policy.

The requirements under the City's Policy can be applied at the future subdivision and development stages.

LPP 1.2 – Residential Design Guidelines

The City's Policy Residential Design Guidelines aims to improve the design of medium to high density residential developments within the City of Cockburn. The Policy applies to all grouped and/or multiple dwelling developments within the TPS3 scheme area, as well as all single houses on lots with a frontage of less than 10 metres wide or lots less than 260 m^2.

The requirements of the Policy will need to be addressed in relation to any single dwelling development with a frontage of less than 10 metres at the development application stage.

LPP 1.16 – Single House Standards for Medium Density Housing in the Development Zone

The City's Policy Single House Standards for Medium Density Housing in the Development Zone replaces the deemed to comply provisions of the R-Codes with respect to certain elements, for single dwelling residential development in R25-R60 density coded areas.

The requirements of the Policy will need to be addressed in relation to any single dwelling development at the development application stage, given the proposed R40 density coding of the SP.

LPP 5.6 – Vehicle Access

The City's Policy Vehicle Access provides a framework for the planning and development of safe and efficient movement of motorists, public transport users, pedestrians and cyclists, where a coordinated approach to vehicle access is required. The objectives of the Policy are as follows:

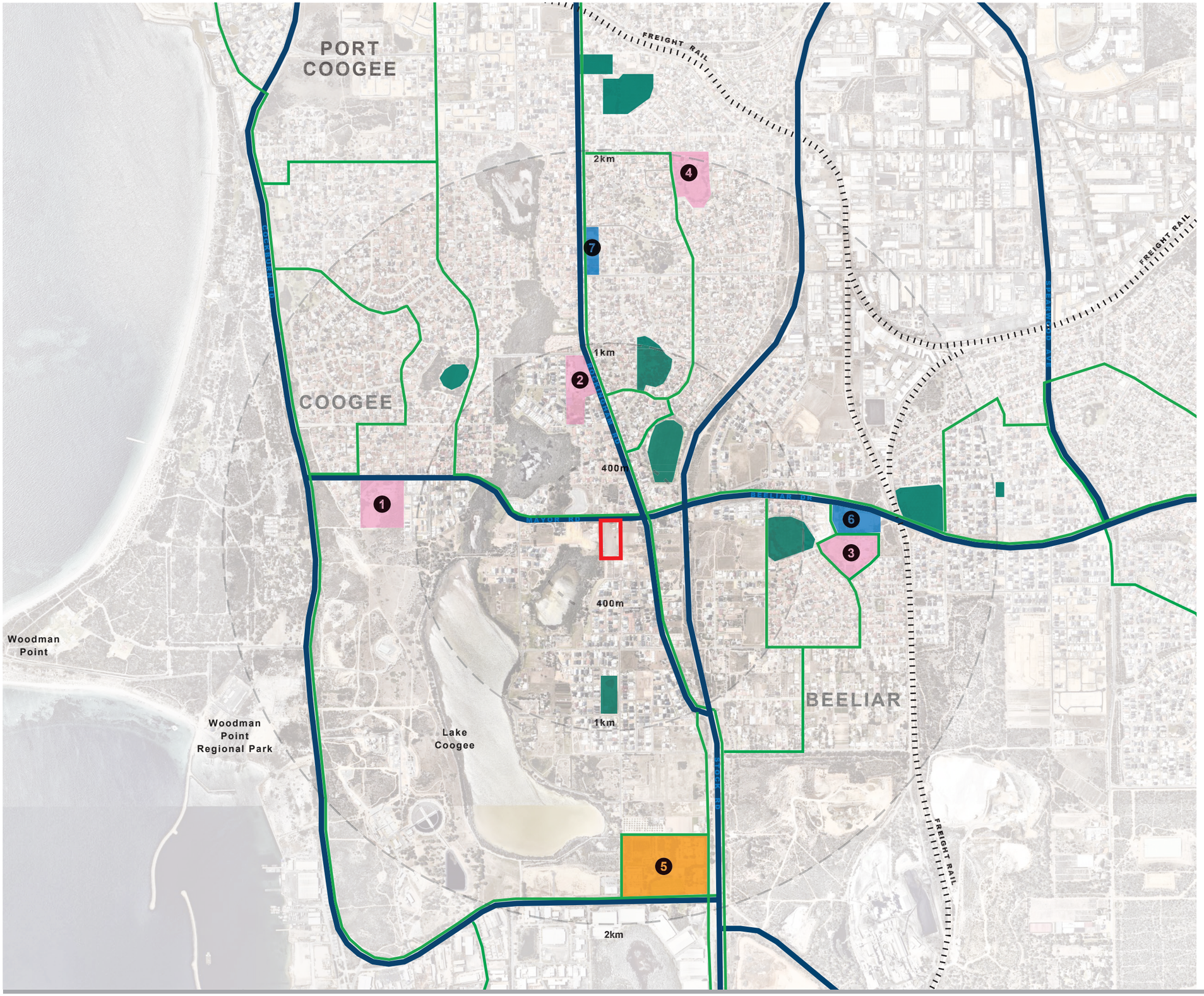
- Provide for safe and efficient movement of motorists, public transport users, pedestrians and cyclists;
- Provide for safe and efficient movement of waste management and other service vehicles;
- Minimise the potential for conflict between through and local traffic;
- Provide visually attractive road environments; and
- Provide for reasonable property access that is direct, convenient and safe.

In accordance with the above, the Structure Plan layout has been designed to provide for the safe and efficient movement of pedestrians and vehicles, whilst allowing for direct, safe and convenient property access from gazetted public roads. Access to Mayor Road is provided for pedestrians only, eliminating the potential impacts of vehicle "rat-running" and other traffic issues. Providing pedestrian access to Mayor Road is pivotal in connecting residents to public transport routes servicing Mayor Road.

It is proposed that temporary vehicle access be permitted to Mayor Road for the lot identified in the Subdivision Concept Plan at Figure 4 (in the north-east corner of the Structure Plan Area), to enable the development of a single house with access to Mayor Road. Following approval of the Structure Plan, and subsequent approval and implementation of the subdivision, the temporary access shall be removed, and vehicle access to the proposed house shall be via proposed Lane 1.

1.4. Pre Lodgement Consultation

In formulating this SP proposal, the landowner's representatives (Proven Project Management and element) have liaised with the City of Cockburn planning services in April, August and September 2018.



LEGEND

- Subject Site
- Key Roads
- Freight Rail Line
- Bus Routes
- Walkable Catchment Radius
- Shopping Centre
- Public Open Space
- Tertiary Education
- Primary Schools

1. Coogee Primary School
2. St Jerome's Primary School
3. South Coogee Primary School
4. Newtown Primary School
5. Challenger TAFE
6. Merevale Gardens / Neighbourhood Centre
7. Barrington Street Neighbourhood Centre

Figure 1: Context Plan

Lot 51 Mayor Road, Munster

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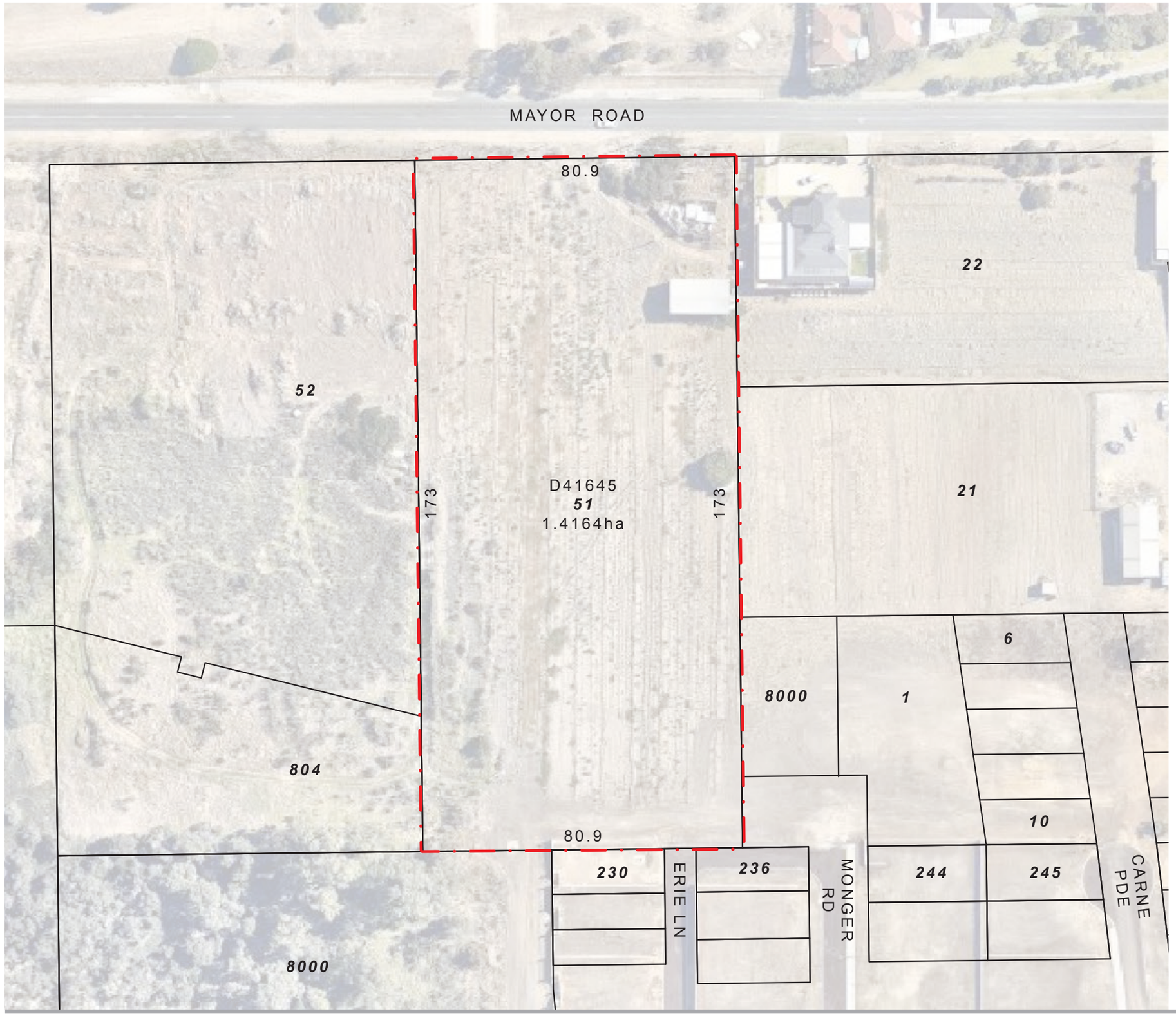

LEGEND

Structure Plan Boundary

Figure 2: Site Plan

Lot 51 Mayor Road, Munster

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2. Site Conditions and Constraints

2.1. Biodiversity and Natural Area Assets

The subject site was previously zoned 'Rural', is now predominantly zoned 'Urban' and has been used for a market garden, before being cleared for residential purposes. There is no remaining remnant vegetation on the subject site associated with the wetland to the southwest of the subject site.

A resource enhancement wetland (REW) exists to the southwest of the subject site. The REW currently receives surface runoff from the subject site.

A desktop search of Landgate's Shared Land Information Platform indicates that the wetland area to the southwest of the subject site is a registered Bush Forever Site (Site No. 429).

2.2. Landform and Soils

The subject site is predominantly underlain by sands derived from Tamala Limestone and is mostly identified as having no known risk of acid sulfate soils. The wetland area to the south of the subject site is identified as having a high to moderate risk of acid sulphate soils occurring within 3.0 metres of the natural soil surface.

The subject site slopes gradually to a low point of approximately 2 metres AHD within the proposed POS area to the south of the subject site. The lowest elevation within the developable portion of the subject site is to be 2.5 metres AHD. Topographic contours are shown on Figure 3 of the approved Local Water Management Strategy (LWMS) prepared by Emerge Associates in support of the SP proposal and included as Appendix B.

It is noted that the subject site was previously a market garden. It is therefore suggested that a preliminary site investigation be carried out as part of the future subdivision application, to determine whether the site may be contaminated.

2.3. Groundwater and Surface Water

Pursuant to the LWMS, the topography of the subject site ranges between less than 1 m AHD and 9 m AHD. As mentioned the subject site is predominantly underlain by sands derived from Tamala Limestone, with an area of swamp deposits associated with the wetland in the western portion of the subject site. The high infiltration rate of the underlying sands and the topography of the subject site results in little water ponding at the surface during storm events.

Lake Coogee, located approximately 500 metres southwest of the subject site, is considered to be an expression of the regional groundwater table (refer to Appendix B – Local Water Management Strategy). The long term water level records within Lake Coogee, as monitored by the Department of Water and Environmental Regulation (DWER), indicate that the average annual minimum and maximum water levels within Lake Coogee are 0.3 metres AHD and 0.8 metres AHD, respectively. This represents an average annual fluctuation of 0.5 metres AHD. The maximum recorded water level within Lake Coogee was 1.06 metres AHD, measured on 21 August 1967.

By applying the average seasonal variation within Lake Coogee to the minimum groundwater level of 0.8 metres AHD, an estimated average annual maximum groundwater level (AAMGL) of 1.3 metres AHD was estimated for the subject site (refer to Appendix B – Local Water Management Strategy). Similarly, by applying the maximum recorded water level within Lake Coogee, an estimated maximum groundwater level (MGL) of 1.58 metres AHD has been adopted for the subject site.

The depth to the adopted MGL across the developable portion of the subject site is therefore estimated to range from 1.42 metres in the southwestern portion of the subject site and groundwater elevations will be close to or at the surface.

The average annual maximum AAMGL and maximum groundwater level MGL at the subject site are estimated to be 1.3 metres AHD and 1.58 metres AHD, respectively.

There are no permanent surface water features within the subject site and any runoff that does not infiltrate onsite will flow toward the resource enhancement wetland (REW) in the western portion of the subject site.

Groundwater quality investigations have not been undertaken, as advice received from the DWER confirms that assessment of the pre-development groundwater quality conditions was not required prior to the development of an LWMS due to the following considerations:

- The developable yield of the subject site is low;
- A large distance to groundwater for a majority of the developable portion of the subject site will reduce urban environmental impacts; and
- Nutrient inputs of the proposed land use are less intensive than the previous land use.

Similarly, surface water quality investigations have not been undertaken, as there are no defined surface water channels within the subject site and most rainfall events are either infiltrated on site or discharged from the subject site as shallow sheet flow.

The approved LWMS is discussed in further detail at Section 3.5.

2.4. Bushfire Hazard

A Bushfire Management Plan (BMP) has been prepared by Entire Fire Management to identify the Bushfire Attack Level (BAL) and provide guidance on how to plan for and manage the potential bushfire threat to the subject site and its subsequent subdivision and development for residential purposes.

The BMP outlines the responsibility and timing for implementing and maintaining the fire protection measures and strategies contained within the BMP, allocating these responsibilities between individual landowners, the developer and the City of Cockburn. The BMP will become operational as a condition on any future subdivision approval.

Acceptable management solutions applicable to proposed lots and POS areas identified as having a BAL of 19 or higher, including:

- POS areas to be maintained in a low threat state;
- All future residences shall plant and maintain vegetation in accordance with the Asset Protection Zone standards; and
- All proposed roads shall meet outlined vehicular access requirements.

It is noted that while proposed development is located nearby a Bush Forever Area site, no modification or clearing of native vegetation will be required in the process of establishing the subdivision.

Refer to Appendix A – Bushfire Management Plan

2.5. Heritage

A desktop search indicates that the subject site has no known European heritage significance.

A desktop search of the Department of Aboriginal Affairs' Aboriginal Heritage Inquiry System indicates the subject site has no known Aboriginal heritage significance.

3. Land Use and Subdivision Requirements

3.1. Land Use

The City of Cockburn Town Planning Scheme No. 3 (TPS3) states that the development and use of land within a 'Development Zone' is to be guided by a comprehensive Structure Plan. The land uses proposed as part of this SP are as indicated on 'Plan 1 – Structure Plan Map'.

This SP identifies a 'Residential' zoning over the majority of the subject site, with a density code of R40, so as to enable potential single and grouped dwelling development.

The SP also identifies two (2) separate 'Parks and Recreation' reserves, one in the southwest corner of the subject site and the other along the eastern boundary, which together, will provide passive local community recreation spaces for the structure plan area.

The total land area for the residential component is 0.8579 hectares.

3.2. Public Open Space

The provision of Public Open Space (POS) within new residential areas is a key factor in the consideration of structure plans, particularly in terms of the dimensions and functions of the POS areas provided. There are several City policies that are relevant in terms of assessing the location and layout of POS areas, however it is ultimately the Western Australian Planning Commission that determines the required POS provision, having regard to Liveable Neighbourhoods and Development Control (DC) Policy 2.3 – Public Open Space in Residential Areas (DC2.3).

Both DC2.3 and Liveable Neighbourhoods require a minimum contribution of 10% of the gross subdividable area to be given up for public parkland. In accordance with the above, the SP Map indicates two (2) distinct POS areas, one in the southwest corner of the subject site and the other along the eastern boundary with a combined area of 1401 m^2, representing 10% of the gross subdividable area of the subject site.

The proposed location of the POS areas allows for co-location of areas between landholdings, noting the approved POS areas on Lot 19 Rockingham Road, Munster to the south and Lot 21 and former Lot 20 Rockingham Road, Munster to the east.

In addition, POS has been located along the southwest boundary of the subject site so as to mitigate the bushfire risk associated with bushland areas within the adjoining Resource Enhancement Wetland. These areas will be maintained to the Building Protection Zone standard as indicated in the enclosed Bushfire Management Plan (Appendix A).

The provision of public roads and residential lots fronting the POS will provide for an appropriate level of amenity, safety and security for POS users and residents, in accordance with the provisions of Liveable Neighbourhoods. As noted in Part One of the SP at Section 5, Local Development Plans will be required for lots with direct boundary frontage to the POS, so as to manage this interface and establish the requirement for dwellings to address and achieve passive surveillance of the POS.

Accessibility to the POS will be maximised via the provision of on-street car parking bays adjacent to the south-western public open space, within Road 3.

Refer to Figure 3 – Public Open Space Plan

3.3. Residential Density

One of the primary aims of this SP is to provide for higher density lot sizes and diversity of dwelling types, in accordance with the aims and objectives of Perth and Peel @ 3.5 Million – South Metropolitan Peel Sub-Region framework. In this regard, the SP proposes a residential density of R40, allowing medium density development to occur.

The density proposed is considered appropriate on the basis that:

a) Providing for increased density fronting Mayor Road is consistent with the State Government objective of increasing densities along major transit corridors, whilst allowing for dwellings fronting Mayor Road with rear driveway access. Provision of pedestrian access to Mayor Road will enable residents to use public transport services along Mayor Road;

b) Providing increased density around Parks and Recreation areas is in accordance with the provisions of Liveable Neighbourhoods and will provide for increased passive surveillance of public parkland areas; and

c) The density proposed will contribute to diversity in lot sizes and dwelling types, in accordance with the aims and objectives of Perth and Peel @ 3.5 Million framework.

The SP allocates a residential site density of 38 dwellings, based on the zoning of R40. The total area allocated for residential development is 8,579 m^2, resulting in an estimated 38 dwellings to be developed on the subject site, as guided by the provisions outlined in Liveable Neighbourhoods planning framework.

Based on this, the number of dwellings per site hectare is 44 and the number of dwellings per gross hectare is 26. Based on the above and the average household size of 2.55 people (Census, 2016), the estimated population for the subject site is 96.

Refer to Figure 4 – Subdivision Concept Plan

3.4. Movement Networks

Access to the subject site is to be provided by new public roads to connect to Erie Lane, Monger Road and Preston Drive to enable access within the surrounding structure plan areas to the south, east and west, with the road layout designed to integrate with adjoining structure plan areas and allow for future connections to Lot 22 Rockingham Road to the east and Lot 52 Mayor Road to the west. It is anticipated that most residents will access the site primarily via the Rockingham Road and Yindi Way intersection, south east of the subject site. It is noted that no permanent vehicle access is to be provided to Mayor Road.

Internal vehicle access is to be provided via new public roads, varying in width from an 8 metre laneway through to 15 metres. The proposed public roads will provide for the safe and efficient movement of vehicles and pedestrians throughout the structure plan area, as well as direct and convenient access to all proposed residential lots. Pedestrian paths will be provided along all roads within the Structure Plan area.

A Transport Impact Statement (TIS) has been prepared by KCTT in support of the Structure Plan proposal and is included as Appendix C. The TIS provides detailed commentary and analysis on the potential traffic and transport impacts associated with the proposed subdivision and subsequent development of the subject site for residential purposes. The scope of the TIS includes detailed assessment of the following:

- Existing traffic flows and vehicular volumes on roads that front the subject site, including Mayor Road, Rockingham Road and Coogee Road;
- Collation of existing crash data on roads that front the subject site, including Mayor Road and Rockingham Road and review of accidents at the intersection of Rockingham Road and Mayor Road;
- Confirmation of trip attraction rates and requirements for cars, bicycles and pedestrians;
- Provision of a Transport Impact Statement in accordance with WAPC Guidelines; and
- Trip Models for 2016 and 2026.

The TIS statement concludes the following with respect to the proposed subdivision of the subject site:

- The proposed structure plan will generate approximately 198 vehicular movements per day with a forecast impact of approximately 18 vehicles per hour in the peak hour;
- The expected traffic impact from the surrounding structure plan areas to the south and west of the proposed subdivision will need to be added to the expected traffic generated from the development of the subject site. Once the proposed developments to the south and west of the subject site are completed, it is expected that the traffic generated by the subject site will be redistributed;
- All roads within the proposed subdivision will have less than 3,000 VPD with the following classification;
    - Access Street C - give way street with target operating speed 40 to 50 kph.
- The internal roads have been sized to cater for their respective daily vehicular flows;
- All crossovers of the future subdivision lots will provide safe access/egress and meet the location requirements as stipulated in AS 2890.1:2004 Off-street parking; and
- Pedestrian paths shall be provided on all road reservations within the proposed subdivision.

3.5. Water Management

3.5.1 Background

A Local Water Management Strategy (LWMS) has been prepared by Emerge Associates in support of a previously proposed structure plan incorporating both Lot 51 Mayor Road, Munster (the subject site) and Lot 22 Mayor Road, Munster (east of the subject site). Additionally, the LWMS included neighbouring sites (former Lots 18, 19 and 25 Rockingham Road, Munster), which have since been progressed through separate and now approved structure plans. The then Department of Water approved the LWMS on 21 July 2016, which was then supported by the City on 28 July 2016 (via correspondence). A copy of the LWMS and the letter received from the Department is included as Appendix B for reference.

Although Lot 22 Mayor Road, Munster has since been removed from the proposed structure plan area, it is reasoned that the LWMS is still valid in supporting this proposed structure plan which incorporates Lot 51 Mayor Road, Munster (the subject site) only. The road network and location and area of Public Open Space (POS) in the proposed structure plan is not materially different to that in the previously proposed structure plan (which incorporated a wider area). Additionally, the previous structure plan was designed to cover a larger area; as this revised structure plan incorporates a smaller area it is therefore logical to determine that the LMWS is sufficient in meeting reduced drainage and management requirements. Consequently, it is proposed that the approved LWMS and outlined management strategies contained in Appendix B be adopted as the LWMS applicable to this proposed structure plan.

3.5.2 Approved LWMS Summary

As mentioned, the LWMS had been prepared to cover Lot 51 and Lot 22 Mayor Road, Munster as well as the adjoining lots to the south of the subject site, being former Lots 18, 19 and 25 Rockingham Road, Munster. The subdivision of Lots 18, 19 and 25 Rockingham Road, Munster has previously been approved by the Western Australian Planning Commission (WAPC). The conditions of approval have since been satisfied and the subdivision of these lots is completed. The intention of the LWMS is to provide a coordinated drainage strategy across landholdings, so as to make efficient use of required drainage infrastructure.

The drainage strategy within Lots 18, 19 and 25 Rockingham Road, Munster included the use of a temporary basin, sized to retain runoff generated during the 5-year average recurrence interval (ARI) storm event. The design and implementation of a permanent stormwater management approach was deferred pending the preparation of a Structure Plan over the subject site.

The LWMS has been developed in accordance with Better Urban Water Management (WAPC 2008a), State Planning Policy 2.9 Water Resources (WAPC 2006a) and Planning Bulletin 92 Urban Water Management (WAPC 2008b). Water will be managed using an integrated water cycle management approach, developed using the philosophies and design approaches described in the Stormwater Management Manual for Western Australia (DWER 2007).

The overall objective for integrated water cycle management for residential developments is to minimise pollution and maintain an appropriate water balance. The LWMS design objectives seek to deliver best practice outcomes using a Water Sensitive Urban Design (WSUD) approach, including detailed management approaches for:

- Potable water consumption;
- Flood mitigation;
- Stormwater quality management; and
- Groundwater management.

The criteria proposed within the LWMS are based on the characteristics of the existing environment and a contemporary best-practice approach to integrated water cycle management.

The overall approach to water conservation is to reduce the amount of scheme water required within the development at both a lot and an estate scale. The water conservation measures proposed include fit-for-purpose water sources, including groundwater for POS irrigation, scheme water for potable uses within lots and potentially harvested rainwater for irrigation of private lot gardens and to supplement potable water use within dwellings. Within the lot, in addition to the potential use of rainwater tanks, scheme water will also be reduced by use of water efficient fittings and appliances and implementation of waterwise gardens. On an estate scale, water will be reduced by use of waterwise landscaping practices including use of native vegetation within POS areas where possible.

Stormwater management measures focus on the quantity and quality of surface runoff. The principle behind the stormwater management strategy for the subject site is to mimic the existing hydrology. The first 15 mm of runoff from the subject site will be retained as close to source as possible using a combination of soakwells and subsurface storage chambers within the proposed new road reserves. Runoff from events greater than the first 15 mm of rainfall will be conveyed downstream via surface flow and the road network to be discharged into the adjacent wetland buffer, at peak flow rates that do not exceed the pre-development conditions. Stormwater quality will be addressed using a treatment train approach, utilising the storage provisions indicated above.

A summary of the relevant stormwater design criteria and how these will be addressed for the subject site is provided in the following table. Further details on the proposed stormwater management methodology can be found in the LWMS included as Appendix B.

Table 2 – Stormwater Design Criteria.

Criteria Number	Description	Manner in which compliance is achieved
SW1	Retain the first 15 mm of runoff at source or as close to source as practicable.	The first 15 mm of runoff from road reserve and impervious portions of the front of lots will be retained in subsurface storage within road reserves. All lots will retain the 100 year ARI event runoff from the roof and rear of lots within the lot. Storage can be provided within soakwells, RWTs and infiltration within the rear of the lots.

Criteria Number	Description	Manner in which compliance is achieved
SW2	The post-development critical 5 year and 100 year ARI peak flows leaving the development shall not exceed the pre-development conditions.	All runoff in excess of the storage provided in lots and road reserves will be discharged into the adjacent wetland buffer. This is consistent with the existing hydrology of the subject site. Surface runoff modelling has demonstrated that the post-development discharge rates will not exceed the pre-development conditions.
SW3	The piped drainage network will be designed to convey stormwater runoff generated during the 5 year ARI rainfall event.	The piped network will be sized to convey the 5 year ARI event, thus ensuring minor roads will remain passable in a 5 year ARI event.
SW4	Reduce nutrient loads by applying appropriate non-structural measures.	Minimising use of fertilisers for the establishment and maintenance of vegetation within POS areas and road verges.
		Use of WWG principles in POS.
		Street sweeping and removal of sediments and gross pollutants.
SW5	Finished floor levels must achieve a minimum of 500 mm clearance above the 100 year ARI flood levels.	Earthworks strategy to be designed such that all lots will be at least 500 mm above the 100 year ARI event flood levels in the adjacent wetland.

3.6. Education Facilities

The subject site is well serviced by existing education facilities, with South Coogee Primary School located approximately one (1) kilometre to the east, St Jerome's Primary School approximately 800 metres to the north and Coogee Primary School approximately 1.2 kilometres to the west of the subject site. A further six (6) public primary schools are available within a five (5) kilometre radius of the subject site.

Lakeland Senior High School is located approximately five (5) kilometres northeast from the subject site. Hamilton Senior High has recently amalgamated with South Fremantle Senior High School to form the new Fremantle College which opened at the beginning of 2018. The new Fremantle College is located on the site of the former South Fremantle Senior High School, approximately seven (7) kilometres north of the subject site.

Challenger Institute of Technology is located approximately one kilometre to the south of the subject site, with Murdoch University located approximately seven (7) kilometres to the northeast. The University of Notre Dame is also located approximately nine (9) kilometres north of the subject site within the Fremantle Strategic Metropolitan Centre.

Refer to Figure 1 – Context Plan

Please note that no additional education facilities are proposed as part of this Structure Plan.

3.7. Activity Centres and Employment

The subject site is located approximately nine (9) kilometres south of the Fremantle Strategic Metropolitan Centre, which provides a full range of economic and community services for the surrounding area and is a significant employment node within the south metropolitan region.

The nearest secondary centre is located approximately seven (7) kilometres east of the subject site at Cockburn Central. Secondary centres share similar characteristics with strategic metropolitan centres but serve smaller catchments and offer a more limited range of services, facilities and employment opportunities. They perform an important role in the City's economy and provide essential services to their catchments. Cockburn Central also serves an important public transport node, accessed via existing high frequency bus services operating along Mayor Road / Beeliar Drive and providing connections to the Perth to Mandurah railway line via Cockburn Central Train Station and the broader bus network via the Cockburn Central Bus Station.

The nearest neighbourhood centre is Beeliar Village, which is located approximately one kilometre to the east of the subject site and provides for a range of daily and weekly household shopping needs, community facilities and other convenience services. Phoenix Shopping Centre is also located approximately three (3) kilometres to the north of the subject site.

Additional local centres in close proximity to the subject site include the Churchill Avenue Local Centre to the south and the Marvell Avenue Local Centre to the north.

3.8. Infrastructure Coordination, Servicing and Staging

A Civil Engineering Servicing Report has been prepared by Wood & Grieve Engineers and is included as Appendix D. The report provides preliminary advice regarding wastewater reticulation, water reticulation, road works, footpaths, stormwater drainage, earthworks, retaining walls, fencing, underground power, communications and gas reticulation to service the proposed lots.

Refer to Appendix D – Civil Engineering Servicing Report

3.8.1. Preliminary Earthworks

Wood & Grieve Engineers has also prepared a preliminary earthworks plan in support of the proposed future subdivision and development of the subject site. This preliminary design provides indicative finished road levels to tie-in to the existing and proposed surrounding road network, and the indicative locations of retaining walls. It should be noted that this is a preliminary plan only at this stage, and will be subject to refinement during the detailed engineering design phase associated with the proposed future subdivision.

Refer to Figure 5 – Preliminary Earthworks Plan

3.8.2. Roads

Proposed roads within the subdivision will likely be 6 metre wide kerbed pavements, with the exception of the Erie Land extension, which will be a 5.7 m wide kerbed pavement to match existing. The City has advised that Mayor Road will be upgraded in the future by the City and Funded under a Developer Contribution Arrangement. Assuming that the development of Lot 22 Mayor Road has not occurred prior to development of the subject site, a temporary turnaround facility will be required at the eastern end of Road 2. Removal of temporary turnaround facilities within adjoining landholdings will likely be required with the proposed subdivision.

3.8.3. Waste Water Reticulation

The Water Corporation has advised that the subject site is capable of being serviced with gravity fed wastewater reticulation and is addressed in their scheme planning.

The subject land is proposed to discharge to the existing gravity network to the south of the subject site. It is envisaged that the subject site will discharge to DN150 reticulation in the POS area west of Erie Lane. While this is an efficient servicing outcome, due to the existing landform it is likely that the southwest corner of the subject site will require fill to provide cover to the proposed pipework and satisfy Water Corporation servicing criteria.

Regardless of the servicing strategy, disconnection of plumbing to septic systems and connection to the proposed reticulated wastewater services will be required upon completion of the wastewater reticulation works.

3.8.4. Water Reticulation

The Water Corporation has advised that the subject site is capable of being serviced with water reticulation and is addressed in their scheme planning.

Water mains constructed to service the subdivision will be connected to the existing Mayor Road and Erie Lane reticulation mains. Proposed mains may also connect to future mains within Lot 52 Mayor Road and former Lot 20 Rockingham Road given these may be installed prior to development of the subject land.

Construction of a DN200 PVC water main will be necessary to link the proposed sections of DN200 reticulation within Lot 52 Mayor Road and former Lot 20 Rockingham Road. It is envisaged that remaining mains within the subdivision will be DN100 PVC reticulation.

3.8.5. Electricity

Western Power's Underground Distribution Scheme (UDS) policy details that all new land developments are provided with an authority point of connection via an underground power service. New residential subdivisions are provided with a minimum load allocation of 4.7 kVA per lot for single-dwelling lots and 4 kVA per dwelling for multi-dwelling lots.

The power distribution system is reticulated via the provision of HV switchgears at 22 kV, with transformers stepping the voltage down to 415 V. Low Voltage (LV) cables are then installed to distribution pillars located within lots.

The proposed subdivision will likely require one (1) Western Power owned switchgear and one (1) Western Power owned transformer to reticulate the distribution system throughout the proposed development, however this will be confirmed during detailed design.

If required, the transformer and switchgear will be located within road reserve widenings adjacent to proposed lots or POS.

Based on a review of Western Power's Network Mapping tool it appears that the existing High Voltage (HV) network has the capacity to supply the proposed development load, however this is to be confirmed by Western Power via a future feasibility study or Design Information Package application.

3.8.6. Communications

Current communications legislation stipulates that for developments greater than 100 lots, NBN are the Wholesale Provider of Last Resort (WPOLR) and for developments fewer than 100 lots, Telstra are the Infrastructure Provider of Last Resort (IPOLR).

While NBN won't be deemed the IPOLR for the proposed development, recent changes to their policy encourages developers of subdivisions fewer than 100 lots to apply to connect to their network. NBN have provided a Feasibility Assessment letter (included as Appendix 7 of the Engineering Servicing Report) indicating that it is willing to service the proposed subdivision / development.

Given NBN have indicated a willingness to service the development and Telstra are obligated to service the development as the IPOLR, the proponent will have the option to proceed with either provider. NBN typically provides a superior level of service and Telstra costs are likely to be in excess of NBN's in this instance. It is therefore likely that the developer will wish to proceed with NBN servicing of the subdivision, however this will be confirmed at a later development stage. It is understood that the development will be required to fund and arrange installation of a pit and pipe system to NBN requirements.

3.8.7. Gas Reticulation

ATCO Gas have confirmed that the proposed subdivision is capable of being serviced via the extension of existing infrastructure in Erie Lane to the south of the subject site. Connection to proposed infrastructure within adjoining landholdings can also be undertaken should the installation of infrastructure within the adjoining landholdings precede development of the subject land.

ATCO Gas have also confirmed that connection to existing medium pressure infrastructure in Mayor Road and/or Rockingham Road is not necessarily required for the proposed subdivision.

3.9. Developer Contribution Arrangements

Under the City of Cockburn Town Planning Scheme No. 3 (TPS3), the subject site is subject to both Development Contribution Area 13 (DCA 13), which establishes a developer contribution arrangement for the upgrade of local and regional recreational and landscape facilities within the whole of the City of Cockburn; and Development Control Area 6 (DCA6), which establishes a developer contribution arrangement specifically for the Munster locality.

No additional developer contribution arrangements are proposed as part of this Structure Plan.

3.10. Acoustic Considerations

A Noise Management Plan prepared in accordance with State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning (SPP5.4) and the City of Cockburn Local Planning Policy 1.12 Noise Attenuation, will be required as a condition of subdivision approval to identify those lots requiring Noise Insulation Packages to be applied, as well as any other noise attenuation requirements for the site.

Notwithstanding, in accordance with the draft SPP5.4 provisions, a Noise Exposure Forecast Worksheet has been prepared to demonstrate that at a high level, the subject site is suitable for residential subdivision and development as proposed, and that acoustic impacts associated with surrounding roads can be appropriately mitigated.

Refer to Appendix E – Noise Exposure Forecast Worksheet

LEGEND

REGION SCHEME RESERVES

Parks & Recreation

Land to be set aside as a seperate lot for WAPC acquisition for Metropolitan Region Scheme 'Other Regional Road' Reserve

LOCAL PLANNING SCHEME ZONES

Residential

OTHER

Structure Plan Boundary

Table 1: Public Open Space Schedule

Site Area		
Structure Plan Area		1.4164ha
Net Site Area		1.4164ha
Deductions		
Road Widening	0.0162ha	
Total Deductions		0.0162ha
Gross Subdivisible Area		1.4002ha
Public Open Space Contribution		
Public open space @ 10 per cent		0.1400ha
May comprise: • minimum 80 per cent Unrestricted Public Open Space • maximum 20 per cent restricted Public Open Space	 0.1120ha 0.0280ha	
Total Required Public Open Space		0.1400ha
Unrestricted Use Public Open Space Sites		
Public Open Space Provision		0.1401ha (10.0%)

Figure 3: Public Open Space Plan

Lot 51 Mayor Road, Munster

Date: 26 Apr 2019 Team: DL_GA_GW
Scale: 1:1000 @ A3 Checked: DL
File: 715-399 ST-4 A

0 10 20m

element.

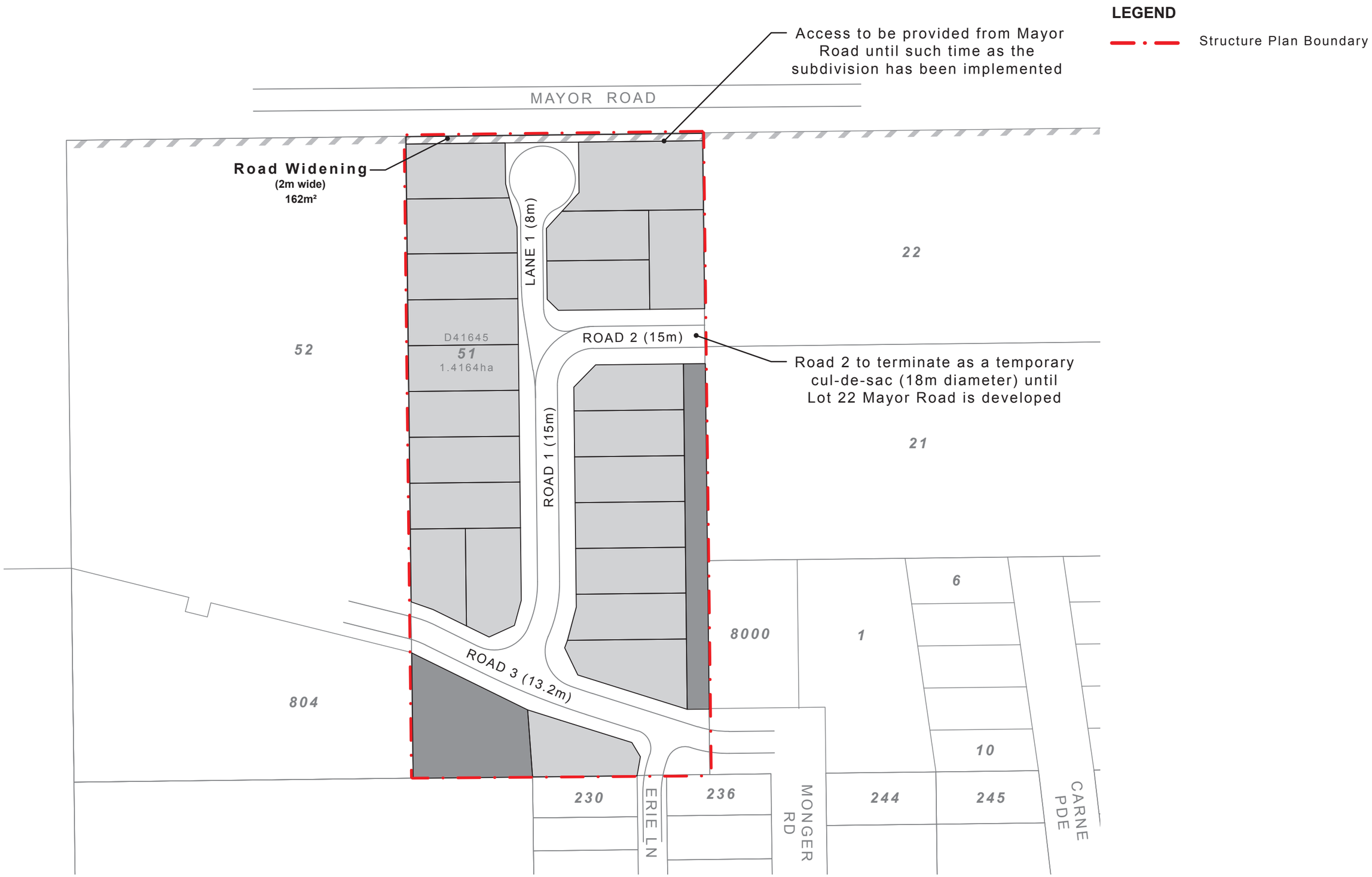


Figure 4: Subdivision Concept Plan

Lot 51 Mayor Road, Munster

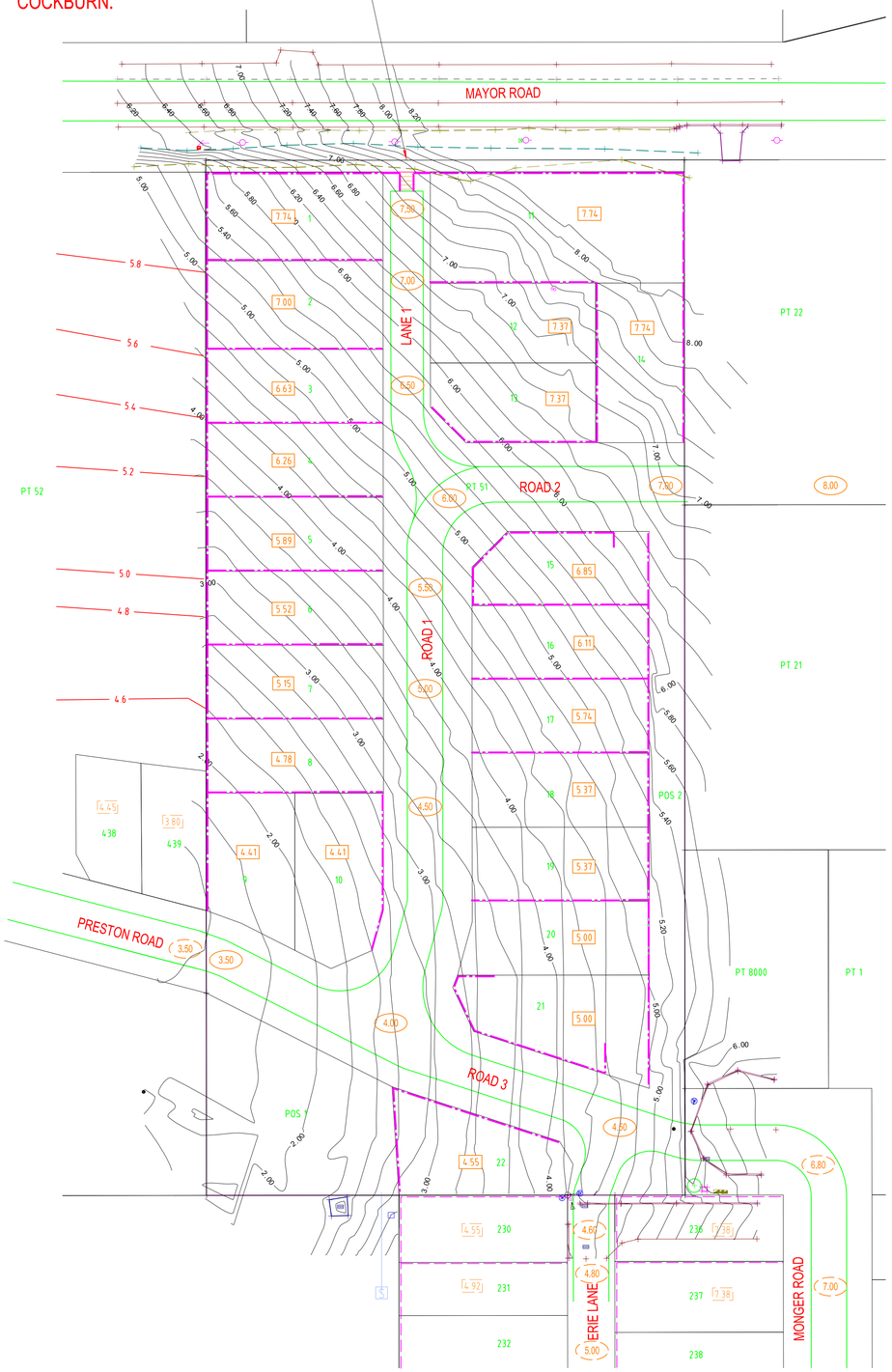
Date: 26 Apr 2019 Team: DL_GA_GW
Scale: 1:1000 @ A3 Checked: DL
File: 715-399 ST-5 A

0 10 20m

element.

www.elementwa.com.au t: +61 08 9289 8300 ©

NOTE : ULTIMATE VERGE LEVELS REMAIN SUBJECT TO FUTURE MAYOR ROAD DUPICATION DESIGN LEVELS, BY CITY OF COCKBURN.



PLAN
SCALE 1:500

NOTES

1. GENERAL
1.1 LEVELS ARE REDUCED FROM A.H.D
1.2 DESIGN LEVELS SHOWN ARE PRELIMINARY ONLY AND REMAIN SUBJECT TO DETAIL ENGINEERING DESIGN.

LEGEND

- 10.0 — DESIGN CONTOURS
- 10.0 — EXISTING CONTOURS
- 5.52 — PROPOSED PAD LEVEL
- 4.55 — EXISTING PAD LEVEL
- 7.50 — PROPOSED ROAD LEVEL
- 4.50 — EXISTING ROAD LEVEL
- PROPOSE RETAINING WALL
- EXISTING RETAINING WALL
- PROPOSED ROAD KERB

REV	DESCRIPTION	DRW	DGN	VER	APPROVED	DATE
2	ROAD NAMES AMENDED	KH	AIN	MPAL	M.DEL BORRELLO	13/09/18
1	LOT LAYOUT AMENDED (22 LOTS)	AIN	AIN	MPAL	M.DEL BORRELLO	07/09/18
0	ORIGINAL ISSUE	AIN	AIN	MPAL	M.DEL BORRELLO	01/06/18

0 5 10 25
A1 @ 1:500 (A3 @ 1:1000)

WAPC No.	COORDINATES	DATUM
N/A	PCG94	AHD

CLIENT
MIKE TOMASICH
PROJECT
LOT 51 MAYOR ROAD MUNSTER
TITLE
PRELIMINARY EARTHWORKS PLAN

WOOD & GRIEVE ENGINEERS

PROJECT No.	DRAWING No.	REVISION
29028	CI-100-EW-P1	2

4. Technical Studies Appendices Index

No.	Document Title	Nature of Document	Approval Status	Approval Agency
A	Bushfire Management Plan	Supporting Document – Approval at Subdivision Stage	N/A	Department of Fire and Emergency Services
B	Local Water Management Strategy	Approval Required	Already Approved	Department of Water and Environmental Regulation, City of Cockburn
C	Transport Impact Statement	Supporting Document	N/A	N/A
D	Engineering Servicing Report	Supporting Document	N/A	N/A
E	Noise Exposure Forecast Worksheet	Supporting Document	N/A	N/A

Appendix A

Bushfire Management Plan

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Appendix B

Local Water Management Strategy and Department of Water Correspondence

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Appendix C

Transport Impact Statement

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Appendix D

Engineering Servicing Report

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Appendix E

Noise Exposure Forecast Worksheet

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