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Project details

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	Bushfire	Bushfire Safety Consulting
	Landscaping	Plan E Landscape Architects
	Hydrology	JDA Consultant Hydrologists
	Servicing	Taylors

Document control

Revision number	File name	Document date
Rev 0	191204 6149 Structure Plan Report	04 December 2019
Rev 1	200327 6149 Structure Plan Report (Rev 1)	27 March 2020
Rev 2	211216 7491 Structure Plan Report (Rev 2).docx	05 May 2022

This structure plan is prepared under the provisions of the City of Mandurah
Local Planning Scheme No. 3

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

29 March 2005

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b)
of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Date of Expiry: 19 October 2025

Table of amendments

Amendment No.	Summary of the Amendment	Amendment type	Date approved by WAPC
0	Original Outline Development Plan	n/a	29 March 2005
1	Minor amendments.		6 June 2007
2	Remove all streets except for along western boundary. Remove all residential lots and public open space. Introduce lifestyle village (over 45s) use over site, including park home sites and internal roads, clubhouse and recreation, family centre, workshop, orchard and vegetable garden, and boat & caravan parking.		7 February 2012
3	Remove lifestyle village. Include streets, residential, public open space, and special use (nursing home).		10 May 2022

Executive summary

This Structure Plan is prepared to facilitate the coordinated development of Lot 7 (33-69) Bailey Boulevard, Dawesville (subject site), located within the municipality of the City of Mandurah. It forms part of a broader development area that is progressively being developed for residential purposes.

The proposed Structure Plan is intended to facilitate the subdivision and development of the subject site for aged care and residential purposes. Specifically, the proposal will designate the northern portion of the subject site as a 'Special Use' zone to accommodate the intended land use of a residential aged care facility (RACF). Land to the south of the RACF is designated an 'R20' density to facilitate appropriate residential subdivision, along with associated public reserves (Local Recreation, 10m Wide Landscape Buffer, and Local Roads).

The justification and rationale for the proposed RACF, residential densities, street block and road layout, and positioning of public open space is contained within this Structure Plan, with details provided on the planning background, site conditions and proposed concept plan.

This Structure Plan is intended to provide the necessary information and justification to support the subject site being subdivided and developed for a mix of single residential lots and a single storey RACF.

Table (i) below provides a summary of the proposed structure plan.

Table (i) – Structure plan summary table

Item	Data	Structure Plan Ref (section no.)
Total area covered by the structure plan	12.1361 ha (121,360m ²)	Part 2, Section 1.2
Area of each land use proposed:		
• Residential (R20)	55,245m ²	Part 1, Section 4.1 – 4.2 Part 2, Section 3
• Special Use (Nursing Home)	24,768m ²	
• Local Recreation	10,619m ²	
• 10m Wide Landscaped Buffer	3,820m ²	
• Local Roads	26,909m ²	
Estimated lot yield	107	Part 2, Section 3.3
Estimated number of dwellings	107 dwellings	Part 2, Section 3.3
Estimated residential site density	19.4 dwellings per residential site hectare	Part 2, Section 3.3
Estimated population	397 people (assumes 2.36 persons per dwelling)	Part 2, Section 3.3
Number of high schools	Nil	N/A
Number of primary schools	Nil	N/A
Amount of Public Open Space	1.0619 hectares (11.45%)	Part 2, Section 3.2
Amount of unrestricted / restricted Public Open Space as per <i>Liveable Neighbourhoods</i>	1.0619 hectares (unrestricted) (100%)	
Composition of Public Open Space - Local Recreation	1.0619 hectares – 100%	Part 2, Section 3.2

Table of contents

PART ONE

1	Structure Plan area	1
2	Operation	1
3	Staging.....	1
4	Subdivision and development requirements.....	1
4.1	Land uses.....	1
4.2	Land use permissibility.....	2
4.3	Development requirements	2
4.4	Bushfire hazard	2
4.5	Transportation noise	2
4.6	Interface to adjoining land	3
5	Local Development Plans.....	3
6	Other requirements.....	4
7	Additional information.....	4

PART TWO

1	Planning background.....	6
1.1	Introduction and purpose.....	6
1.2	Land description.....	6
1.3	Pre-Lodgement consultation	7
1.4	Planning framework	9
2	Site conditions and constraints.....	18
2.1	Biodiversity and natural area assets.....	18
2.2	Landform and soils.....	19
2.3	Groundwater and surface water	19
2.4	Bushfire hazard	20
2.5	Heritage.....	20
2.6	Transport noise	21
2.7	Context and other land use constraints and opportunities.....	21
3	Structure Plan.....	23
3.1	Land use	23
3.2	Open space.....	23
3.3	Residential	24
3.4	Movement network.....	25
3.5	Water management.....	27
3.6	Education facilities	28
3.7	Activity centres and employment.....	28
3.8	Infrastructure coordination, servicing and staging	29
3.9	Developer contribution arrangements	30

Plans

Plan 1: Structure Plan

Figures

Figure 1: Aerial Photograph
Figure 2: Peel Region Scheme Zoning
Figure 3: Local Planning Scheme Zoning

Technical appendices index

Appendix No.	Document title	Approval required OR supporting document only	Approval status	Approval agency
1	Certificate of Title and Plan	Supporting document	N/A	N/A
2	Feature Survey	Supporting document	N/A	N/A
3	Transport Impact Assessment	Supporting document	N/A	N/A
4	Geotechnical Report	Supporting document	N/A	N/A
5	Flora and Vegetation Survey	Supporting document	N/A	N/A
6	Environmental Assessment Report	Supporting document	N/A	N/A
7	Bushfire Management Plan and BEEP	Supporting document	N/A	N/A
8	Transportation Noise Assessment	Supporting document	N/A	N/A
9	Landscape Concept Plan	Supporting document	N/A	N/A
10	Local Water Management Strategy	Supporting document	N/A	N/A
11	Servicing Report	Supporting document	N/A	N/A
12	Subdivision Concept Plan	Supporting document	N/A	N/A

PART ONE: IMPLEMENTATION

1 Structure Plan area

This Structure Plan applies to Lot 7 (33-39) Bailey Boulevard, Dawesville, being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan 1), herein referred to as the Structure Plan area.

Refer to Plan 1 – Structure Plan Map.

2 Operation

This Structure Plan constitutes a structure plan pursuant to the deemed provisions of the City of Mandurah Local Planning Scheme No.3 at Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Pursuant to clause 27(1) of the deemed provisions at Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015*, a decision-maker for an application for development approval or subdivision approval in the Structure Plan area is to have due regard to, but is not bound by, this Structure Plan (including the Structure Plan Map (Plan 1), Part One: Implementation, Part Two: Explanatory Section and technical appendices) when considering the application.

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

3 Staging

The development of the Structure Plan area is intended to occur in two stages. The first stage comprises a 144-bed single-level residential aged care facility (RACF) in the northern portion of the site, accessed via a new public road along the site's western boundary. The second stage comprises a residential subdivision of the balance of the site south of the RACF. This Structure Plan can be implemented once it is approved by the WAPC.

4 Subdivision and development requirements

4.1 Land uses

The Structure Plan Map (Plan 1) outlines land uses applicable within the Structure Plan area. Decisions relating to the future subdivision and development of the land within the Structure Plan area shall have due regard to the detail contained within this Structure Plan including the technical appendices.

The Structure Plan consists of the following land uses:

- Residential ('R20')
- Special Use (Nursing Home)

- Local Recreation
- Landscaped Buffer
- Local Road

4.2 Land use permissibility

In considering an application for development approval for land within the Structure Plan area, the local government is to have due regard to the land use classifications and residential density codes depicted on the Structure Plan map.

Land use permissibility within the Structure Plan area shall be in accordance with the corresponding zone or reserve under the City of Mandurah Town Planning Scheme No. 3.

4.3 Development requirements

The City of Mandurah's Local Planning Policy 1 – Residential Design Codes Policy (LPP1) sets out acceptable variations to the deemed-to-comply provisions of the Residential Design Codes (R-Codes) for medium density single houses in structure plan areas. The variations set out in LPP1 apply to this Structure Plan and thereby constitute acceptable development within the Structure Plan area.

4.4 Bushfire hazard

The Structure Plan area is located within an area designated as a bushfire prone area on the Department of Fire and Emergency Services *Map of Bushfire Prone Areas 2019*. The staged clearing of the Structure Plan area, adequate separation of future built assets from classified vegetation, and ongoing fuel management will be undertaken to ensure future dwellings and the RACF will be located in areas with an appropriate Bushfire Attack Level (BAL) rating.

A bushfire management plan (BMP) has been prepared in support of this Structure Plan, which identifies the bushfire management measures required to be implemented by the developer in the initial stages of subdivision to ensure the relevant standards and performance criteria are met. All lots with a BAL rating above BAL-LOW will have a section 165 memorial placed on the title.

4.5 Transportation noise

The Structure Plan area is affected by road noise emanating from the Dawesville Bypass, to the east. As such, any application (whether subdivision or development) seeking approval a noise sensitive land use (for example, residential development) is to be accompanied by a site-specific noise assessment prepared by a suitably qualified acoustic consultant, in accordance with the requirements of *State Planning Policy 5.4: Road and Rail Noise* and the associated implementation guidelines.

A transportation noise assessment has been prepared in support of this Structure Plan, and this identifies noise management measures to be implemented by the landowner/developer when the land is subdivided/developed. These measures will ensure relevant standards and performance criteria are met.

In this regard, the WAPC may require:

- (a) a notification be placed on the certificate(s) of title, advising that the lot is in close proximity to a regional road and may be affected by transport noise;
- (b) the preparation of a local development plan which sets out quiet house design and construction requirements; and/or
- (c) the construction of a noise mitigation wall.

4.6 Interface to adjoining land

The Structure Plan provides for an extension to Dandaragan Drive and eight new access streets extending from Bandicoot Way, Wallaby Road, Turtle Way, Cockatoo Way, Ringtail Parkway and Waterbird Vista from the adjoining residential area to the west. A roundabout is the proposed form of control for the Dandaragan Drive and Bailey Boulevard intersection.

The Structure Plan has been designed to integrate seamlessly with the adjoining land, and provides a logical progression of residential development extending from the west.

Where proposed local streets connect to existing streets, the design is to use traffic calming measures and changes in pavement materials to ensure the provision of a low-speed environment.

5 Local Development Plans

The WAPC may require, as a condition of subdivision approval, that a local development plan(s) be prepared in accordance with Part 6 of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015*, prior to the creation or development of lots:

- (a) of irregular shape;
- (b) where vehicular access is obtained from a rear laneway or right of way or is otherwise constrained;
- (c) intended to accommodate grouped or multiple dwellings;
- (d) abutting areas of public open space; and/or
- (e) affected by transport noise exceeding the targets set out in *State Planning Policy 5.4: Road and Rail Noise* and the associated implementation guidelines.

Local development plan(s) are to address the following matters, as required:

- (a) street and boundary setbacks;
- (b) dwelling orientation;
- (c) fencing;
- (d) open space;
- (e) garage setbacks and width;
- (f) vehicular and pedestrian access;
- (g) parking requirements;
- (h) overshadowing; and
- (i) visual privacy.

6 Other requirements

The Structure Plan area is capable of being serviced through the extension of existing service infrastructure located in the surrounding area.

As the Structure Plan area is subdivided, the WAPC may require the landowner/developer make a pro-rata contribution (to Main Roads WA) towards the cost of the underpass which has been constructed beneath the Dawesville Bypass on the northern side of Bailey Boulevard.

7 Additional information

The following additional information is required to be submitted at the subdivision or development stage.

Additional information	Approval stage	Consultation required
Waste Management Plan	Development Application stage for the Special Use (aged care) site.	City of Mandurah
Fauna Management Plan	Subdivision	Department of Biodiversity, Conservation and Attractions, in consultation with the City of Mandurah



LEGEND

	Subject Site
	Residential R20
	Local Recreation
	Special Use (Nursing Home)
	10m Wide Landscape Buffer
	Local Roads



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Part Two: Explanatory Section

1 Planning background

1.1 Introduction and purpose

This Structure Plan has been prepared on behalf of Signature Care Land Holdings Pty Ltd, the registered proprietor of Lot 7 (33-69) Bailey Boulevard, Dawesville (subject site)

Structure plans are forward planning documents that provide a guiding framework for subdivision and development. Structure plans coordinate the provision of land use, road networks, public open space, community facilities, schools and centres of activity, services and infrastructure.

This Structure Plan has been prepared in accordance with the City of Mandurah (City) Local Planning Scheme No. 3 (LPS3) and the relevant Deemed Provisions in Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015 (deemed provisions)*. The purpose of the Structure Plan is to facilitate the urban development of the subject site.

This Structure Plan replaces the previous Structure Plan (Outline Development Plan) that was first prepared for the subject site in 2005 and was last amended in 2012.

With the support of the technical data, the proposed Structure Plan provides for the following:

- Pattern of land use.
- Network of roads.
- Public open space.
- Bushfire management.
- Noise Management.
- Water management.
- Servicing strategy.

Once endorsed, the proposed Structure Plan will guide the subdivision, land use and residential density for the subject site. In accordance with the deemed provisions, the proposed Structure Plan does not seek to provide detailed development standards, nor does it seek to vary the requirements of the Residential Design Codes (R-Codes). Local Development Plans are able to fulfil this role if required.

The proposed Structure Plan has been prepared in accordance with the requirements of *Liveable Neighbourhoods (LN)*, and has been structured in accordance with the requirements of LPS3 and the WAPC's *Structure Plan Framework (August 2015)*.

1.2 Land description

1.2.1 Legal description and ownership

The subject site is currently held in single land ownership. The lot details are outlined in Table 1.

Table 1 – Lot details

Lot	Plan	Volume	Folio	Registered Proprietor	Area (ha)
7	17257	1854	946	Signature Care Land Holdings Pty Ltd	12.1361

Refer to Appendix 1 for a copy of the Certificate of Title and Plan.

1.2.2 Location and regional context

The subject site has a street address of 33 Bailey Boulevard, Dawesville, and is located within the City of Mandurah local government area. It is situated approximately 79km south of the Perth City Centre, 15km south of the Mandurah City Centre and 71km north of the Bunbury City Centre.

The subject site is bound by residential dwellings to the west, Bailey Boulevard to the north, Dawesville Bypass to the east and a 20m road reserve along the southern boundary. A Regional Open Space reserve (Reserve 33139) is located to the south of the site. Dawesville Bypass provides convenient access to metropolitan Perth and Peel and regions beyond.

1.2.3 Area and land use

The subject site comprises a single lot, with an area of approximately 12.14 hectares. The site provides frontages of approximately 194m to Bailey Boulevard, 521m to Dawesville Bypass and 250m to the 20m road reserve / Regional Open Space Reserve to the south.

The subject site is currently undeveloped, having been partially quarried in the past. The site contains some remnant native vegetation as well as some regenerated / regrowth areas, with approximately two thirds of the subject site having either little or no vegetation. The site is surrounded by a mix of residential land uses and regionally reserved bushland. The land immediately west of the subject site and land to the eastern side of Dawesville Bypass comprises predominantly single storey residential dwellings. The land to the north of the Bailey Boulevard is undeveloped and identified for development of a future high school. The land south of the subject site comprises bushland and is not expected to be developed in the immediate future given its Regional Open Space reservation under the PRS.

The topography of the subject site is variable, but generally rises from approximately 6m AHD in the west to 16m AHD in the eastern portion of the site and to the south west. The topography of the site is reminiscent of a shallow valley, with the low point in the south. Refer to Appendix 2, Feature Survey.

Refer to Figure 1, Aerial Photograph.

1.3 Pre-Lodgement consultation

1.3.1 City of Mandurah

Consultation and pre-lodgement engagement has occurred with the City with respect to this Structure Plan.

On 30 May 2019, Planning Solutions and a representative of Croft Developments Pty Ltd met with officers of the City regarding the proposed development of the subject site. The City's officers advised that a new structure plan is required site prior to considering an application for development approval for a residential aged care facility, and provided the following preliminary comments with respect to the proposal:

- Structure Plan report is to comply with the WAPC's current framework.



LEGEND
 - - - - - Subject Site



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- Structure Plan report should address the following:
 - Traffic.
 - Bushfire.
 - Land use – impact on community, need for the proposed uses.
 - Road noise (Dawesville Bypass, noise wall).
 - Servicing report.
 - Local Water Management Strategy.
 - Public Open Space landscape concept.

1.4 Planning framework

1.4.1 Zoning and reservations

1.4.1.1 Peel Region Scheme

Under the provisions of the Peel Region Scheme (PRS) the subject site is zoned Urban. The subject site fronts Dawesville Bypass to the east, reserved Primary Regional Roads under the PRS. A Regional Open Space reserve is located to the south of the south site.

The proposed Structure Plan applies only to the subject site and its Urban zoning, and is therefore consistent with the provisions of the PRS.

Refer to Figure 2, PRS zoning map.

1.4.1.2 City of Mandurah Local Planning Scheme No. 3

The subject site is zoned Urban Development under the provisions of the City of Mandurah Local Planning Scheme No. 3 (LPS3). Refer to Figure 3, LPS3 zoning map. Clause 4.9.1 states the objective of the Urban Development zone is:

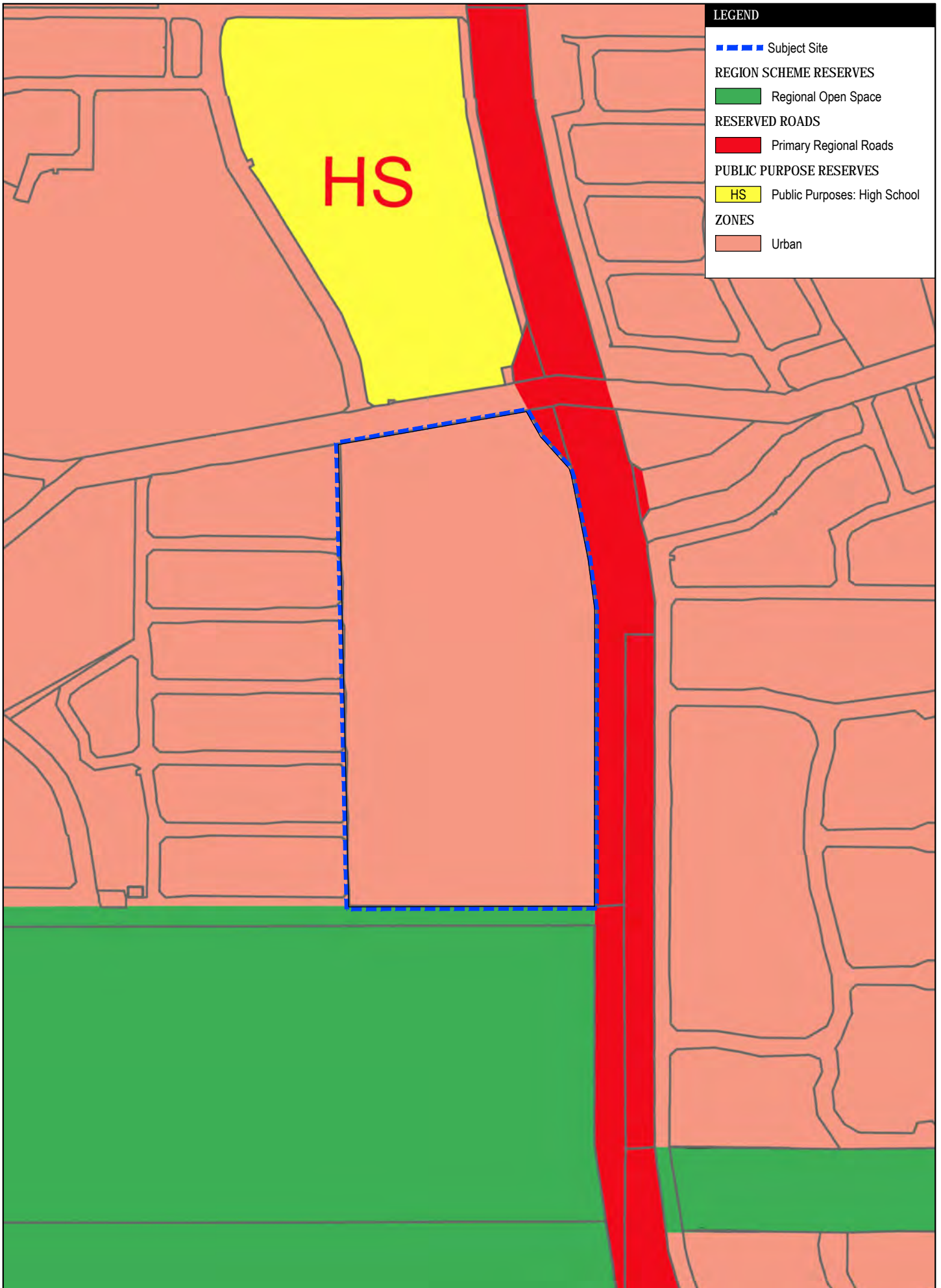
*To provide for **future residential** and urban related development after comprehensive planning of the land has been carried out resulting in an approved Outline Development Plan.*

The proposed Structure Plan facilitates the coordinated development of the subject site for residential and residential aged care purposes. It takes into consideration future development and the existing predominantly residential land uses surrounding the subject site. The proposed Structure Plan has been prepared with due regard to the amenity of the existing locality and will demonstrate how integration with the surrounding land uses has been achieved. As such, the proposed Structure Plan is consistent with the objectives of the Urban Development zone.

The deemed provisions automatically form part of every local planning scheme in the State. Where a provision is inconsistent with a local law, the Deemed Provisions prevail. Clause 27 of the deemed provisions relates to the effect of a structure plan, with clause 27(1) stating:

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

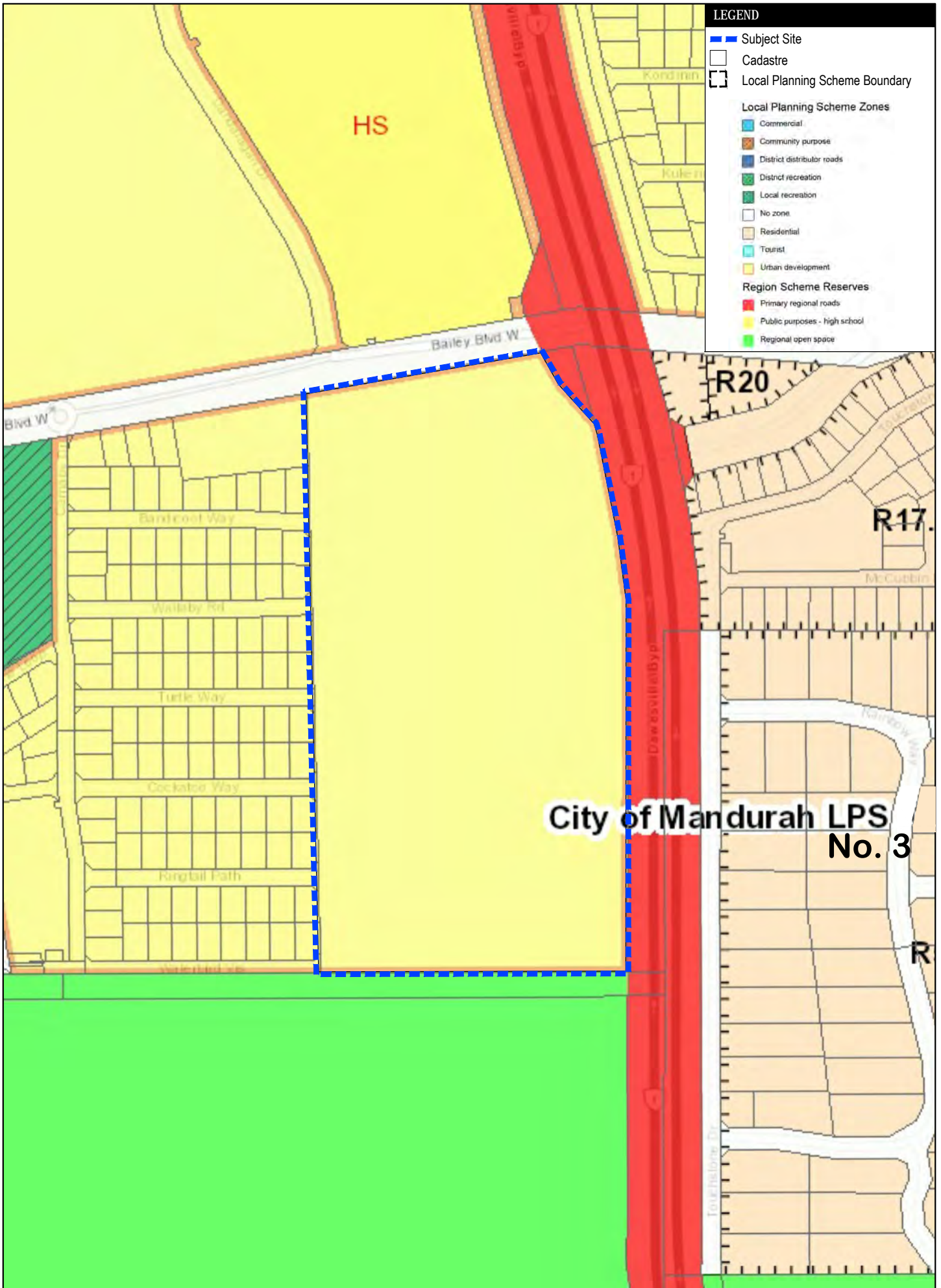
Consistent with the provisions of the deemed provisions and LPS3, the proposed Structure Plan will guide the future subdivision and residential development of the subject site.



LEGEND

- - - - Subject Site
- REGION SCHEME RESERVES**
- Regional Open Space
- RESERVED ROADS**
- Primary Regional Roads
- PUBLIC PURPOSE RESERVES**
- HS Public Purposes: High School
- ZONES**
- Urban

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LEGEND	
	Subject Site
	Cadastr
	Local Planning Scheme Boundary
Local Planning Scheme Zones	
	Commercial
	Community purpose
	District distributor roads
	District recreation
	Local recreation
	No zone
	Residential
	Tourist
	Urban development
Region Scheme Reserves	
	Primary regional roads
	Public purposes - high school
	Regional open space

City of Mandurah LPS No. 3

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1.4.2 Planning strategies

1.4.2.1 State Planning Strategy 2050

The State Planning Strategy 2050 is an integral part of the Western Australian planning system designed to inform planning policies and decisions throughout the State. Its vision is that by 2050, Western Australia will have a diverse range of interconnected and vibrant local communities and regional centres, with living standards continuing to be amongst the highest in the world. It promotes a 'can do' attitude.

Relevantly to this proposal, the State Planning Strategy 2050's principle for infrastructure provides:

All levels of government have a role to play in the coordinated delivery of the 'hard' elements of community infrastructure, including schools, hospitals, civic centres, aged care facilities and public open spaces, as well as the 'soft' elements of community infrastructure, which include social services, community building, and culture and arts programs. [emphasis added]

In considering social infrastructure, the State Planning Strategy 2050 also states:

Ensuring people who are ageing can remain in their long-term communities through the provision of aged care retirement housing options and land tenure arrangements will ease the stress on the State's service delivery programs.

In considering the vision and principles of the State Planning Strategy 2050 in the context of this Structure Plan, the need to provide aged care facilities is apparent, as is the role of government in supporting planning proposals that increase availability to aged care facilities.

1.4.2.2 Directions 2031 and Beyond

Directions 2031 and Beyond (Directions 2031) is the overarching spatial framework and strategic plan that establishes a vision for the future growth of the Perth and Peel regions. It provides the framework to guide detailed planning and delivery of housing, infrastructure and services for a variety of growth scenarios. A medium density connected city model is put forward as the preferred means to achieve a liveable, prosperous, accessible, sustainable and responsible city.

In relation to the proposed structure plan, Directions 2031 promotes a diversity of dwelling types and increases in choice for residential areas. Directions 2031 seeks to address population growth scenarios and land use patterns for the medium to long-term increase of more than half a million people in Perth and Peel by 2031, as well as being prepared to provide for a city of 3.5 million people after 2050.

Directions 2031 sets a target of 15 dwellings per gross urban zoned hectare of land in new development areas. The residential (southern) portion of the proposed Structure Plan area provides for approximately 107 dwellings, including 107 single residential R20 lots. This equates to a density of approximately 8.8 dwellings per gross urban zoned hectare when the whole area of the subject site is considered. The density falls short of the target set under Directions 2031. When the 2.4768ha Special Use is subtracted from the gross site area, a density of approximately 11.1 dwellings per hectare results.

Due to the size and complexity of strategic planning for the metropolitan area, sub-regional strategies are prepared to provide guidance at the local level. The subject site falls within the Peel sub-region, identifying a target of an additional 26,000 dwellings, totalling 64,000 by 2031.

The proposed residential densities within this structure plan area, which are below Directions 2031 objectives and density targets, reflect the subject site's location on the far edge of the city's urban fringe where higher density does not have the benefit as a location in an activity centre or station precinct.

1.4.2.3 Perth and Peel @ 3.5million and South Metropolitan Peel Sub-Regional Planning Framework

Perth and Peel@3.5million provides an overarching strategic framework for the Perth and Peel region for the next 35 to 40 years. It provides guidance on where development should occur to ensure sustainable urban growth, protecting the environment and heritage and making the most effective use of existing infrastructure.

It states that in 2015, around 13% of people in Perth and Peel were aged over 65; this is expected to rise to 22% by 2051 with the forecast average increase in life expectancy for all Australians at six years (84.2 years for males and 87.7 years for females).

Perth and Peel@3.5million requires that as the composition of the population changes, planning must respond by anticipating the evolving needs and making provision for different types of housing in terms of size, type and location of homes. In this respect, the proposed minor modification to the Structure Plan will improve access to facilities for care of aged persons, which will relieve pressure in the community for accommodation that is suitable for aged persons needing care.

The South Metropolitan Peel Sub-Regional Planning Framework (Sub-Regional Framework) is a strategic planning document intended to guide the delivery of the objectives of Directions 2031. The Sub-Regional Framework covers an area of almost 5,000 square kilometres, and sets out proposals to meet future housing, employment and infrastructure needs while protecting environmental and landscape values. In order to progress urban growth in a coordinated and sustainable manner, the Sub-Regional Framework suggests the development of land zoned Urban and Urban Deferred is to accommodate increased urban infill development and higher densities in undeveloped areas already zoned for urban use.

The Sub-regional Framework sets a dwelling target of an additional 75,510 dwellings by 2031, with 14,510 additional dwellings targeted for the Mandurah local government area.

1.4.2.4 City of Mandurah Planning Strategy

The City of Mandurah Planning Strategy has been prepared to provide the direction for planning and development of the City in conjunction with LPS3. The City's Local Planning Strategy identifies the subject site as within the Dawesville District, described as:

A large lot rural-residential haven, with its residents enjoying and caring for the estuary coastline and preserved bushland area, with ready connections to the city centre and its services.

The Local Planning Strategy acknowledges that Mandurah's population is expected to continue growing steadily, reaching approximately 120,000 sometime in the next 20 years and home to almost 50,000 new residents over the next two decades. The Structure Plan will facilitate the subdivision and development of the subject site for residential purposes to accommodate the City's future growth.

The Local Planning Strategy also acknowledges that Mandurah's population will continue to be an ageing one, with the need to provide diversity in housing choice. Specifically, the Planning Strategy identifies an increased demand for:

- *smaller dwellings / accommodation;*
- *housing which is adaptive over time to allow people to age 'in-place';*
- *housing which is designed to allow extended families to share homes whilst retaining some level of independence; and*

- residential lots which provide a sufficient land area in which to establish affordable, separate dwellings/accommodation for a range of generations.

The proposed Structure Plan caters for dwellings with R20 densities, catering for a range of social demographics. The proximity of the future dwellings to the RACF will allow residents convenient visitation to the RACF, should any friends or family utilise the facility.

In summary, the proposed Structure Plan is consistent with the aims of the City’s Local Planning Strategy.

1.4.3 State Planning Policies

1.4.3.1 State Planning Policy 3 Urban Growth and Settlement

State Planning Policy 3 – Urban Growth Settlement (SPP3) applies to all development throughout Western Australia. The policy notes that orderly planning of urban growth and settlement should be facilitated by structure plans, which should take into account the strategic and physical context of the locality, provide for the development of safe, convenient and attractive neighbourhoods which meet the diverse needs of the community, and facilitate logical and timely provision of infrastructure and services. The Structure Plan is consistent with the intent of SPP3 in terms of attaining the policy’s stated objectives. Accordingly, the proposed Structure Plan for the subject site warrants the support and endorsement of the determining authorities.

1.4.3.2 State Planning Policy 7.0 – Design of the Built Environment

State Planning Policy 7.0 – Design of the Built Environment (SPP7.0) is the lead policy that elevates the importance of design quality, and sets out the principles, processes and considerations which apply to the design of the built environment in Western Australia, across all levels of planning and development.

SPP7.0 establishes a set of ten ‘Design Principles’, providing a consistent framework to guide the design, review and decision-making process for planning proposals.

An assessment of the proposed development against the 10 Design Principles of SPP7.0 is provided in Table 2 below.

Table 2 - SPP7.0 Design Principles Statement

SPP7 DESIGN PRINCIPLE	DESIGN RESPONSE
<p>1. Context and character <i>Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.</i></p>	<p>The Structure Plan area is located within a recently established urban area, adjacent existing residential land uses. The subject site is bound by roads on two sides, including Dawesville Bypass along its eastern boundary and Bailey Boulevard along its northern boundary. A local road reservation also exists within the site along its southern boundary. This, along with the existing local road network to the west of the subject site, has heavily informed the configuration and orientation of development on the site.</p> <p>Areas of POS have been located in the western aspect of the subject site, where the site abuts the existing residential properties. The RACF is located in the northern portion of the site, adjacent to Dawesville Bypass and Bailey Boulevard. Interface with the existing residential properties to the west and the future residential properties to the south have been considered in the context of land uses proposed by the structure plan.</p>

SPP7 DESIGN PRINCIPLE	DESIGN RESPONSE
	The site has been identified for many years as a location for residential development and a form of residential aged care, with surrounding development occurring with this in mind. Pre-lodgement engagement with the City and review of the previously prepared ODP has informed the layout of the Structure Plan design and character of the development.
<p>2. Landscape quality <i>Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.</i></p>	A landscape report has been prepared by Plan E to ensure the proposed landscaping and POS is implemented to the highest standard.
<p>3. Built form and scale <i>Good design provides development with massing and height that is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.</i></p>	The future built form massing has been carefully considered having regard for residential interface and potential noise from Dawesville Bypass.
<p>4. Functionality and build quality <i>Good design meets the needs of users efficiently and effectively, balancing functional requirements to deliver optimum benefit and performing well over the full life-cycle.</i></p>	The proposed structure plan area has been designed to be highly functional and accessible, through extensions of the existing local road network. Areas of POS will contribute to an amiable neighbourhood.
<p>5. Sustainability <i>Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.</i></p>	<p>The proposed Structure Plan will deliver the following positive environmental, social and economic outcomes:</p> <ul style="list-style-type: none"> • <u>Environmental</u> – Best practice design and landscaping methodologies, (including the use of native flora to maximise summer shade and winter sunlight) serve to improve energy efficiency and reduce the environmental impact of the proposal. • <u>Social</u> – The provision of a new neighbourhood in this location will encourage social interaction between residents, particularly through the introduction of the proposed POS. • <u>Economic</u> – New employment opportunities associated with both the future construction and operational stages of the development. The provision of neighbourhood level aged care also helps to reduce travel costs (both time and financial) for local residents, who may currently need to travel further to visit family or friends in aged care facilities.
<p>6. Amenity <i>Good design optimises internal and external amenity for occupants, visitors and neighbours, contributing to living and working environments that are comfortable and productive.</i></p>	<p>The provision of amenity for future residents, existing nearby residents and visitors has been central to the design of this Structure Plan.</p> <p>Amenity has been enhanced through the provision of high quality POS, including public seating and rest opportunities, shade trees and structures, easy pedestrian and bike access and high-quality landscaping.</p> <p>Amenity has been preserved through the consideration of the noise generated by Dawesville Bypass to the east and the requirement to implement noise mitigation measures at the development application / detailed design stage.</p>

SPP7 DESIGN PRINCIPLE	DESIGN RESPONSE
<p>7. Legibility Good design results in buildings and places that are legible, with clear connections and memorable elements to help people find their way around.</p>	<p>The Structure Plan provides clear and legible local roads for access to the existing surrounding road network. At the detailed design stage, logical and clearly defined pedestrian paths/crossings throughout the structure plan area will ensure ease of movement and navigation.</p>
<p>8. Safety Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.</p>	<p>The Structure Plan layout and orientation helps to ensure visibility and passive surveillance throughout the site.</p>
<p>9. Community Good design responds to local community needs as well as the wider social context, providing buildings and spaces that support a diverse range of people and facilitate social interaction.</p>	<p>The Structure Plan provides for an essential community function, being the care of aged persons. Social interaction is promoted through quality areas of POS. The residential dwellings and aged care facility will encourage a diverse range of people on the subject site.</p>
<p>10. Aesthetics Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.</p>	<p>The proposed Structure Plan has been expertly informed by a collaborative and iterative design process with project team members, as well as feedback received from the City. The result is an attractive, highly accessible and inviting new area that will provide amenable living opportunities for a residents and the elderly.</p>

The proposed development suitably responds to the SPP7 design principles, and warrants approval accordingly. SPP7.0 will also be considered as part of any future application for development approval.

1.4.3.3 State Planning Policy No. 7.3 – Residential Design Codes (Volume 1)

State Planning Policy 7.3 – Residential Design Codes (Volume 1) (R-Codes) applies to all residential development with densities of less than R40 in Western Australia. Clause 5.1.3 of LPS3 requires the development of land for residential purposes to conform to the provisions of the R-Codes.

The R20 density code identified on the proposed Structure Plan are interpreted by the R-Codes. Future subdivision and residential development across the subject site is to comply with the requirements of the R-Codes.

1.4.3.4 State Planning Policy No. 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP3.7) seeks to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfires on property and infrastructure, and is supported by the *Guidelines for Planning in Bushfire Prone Areas*. The policy contains objectives and policy measures, which apply to all land-use development proposals at varying stages of the development process. Refer to section 2.4 of this report for further detail in relation to bushfire risk management.

1.4.3.5 State Planning Policy No. 3.6 – Development Contributions for Infrastructure

State Planning Policy 3.6 – Development Contributions for Infrastructure (SPP3.6) outlines the relevant considerations and principles for developer contributions for infrastructure, and the preparation of development contribution plans. The subject site is capable of being developed independently through the extension of surrounding roads and services.

Refer section 3.9 for further consideration of development contributions.

1.4.3.6 State Planning Policy No. 5.4 – Road and Rail Noise

State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4) aims to promote a system in which sustainable land use and transport are mutually compatible. Under SPP 5.4, Dawesville Bypass / Old Cost Road is classified as a primary strategic freight and/or major traffic route, under Main Roads jurisdiction. According to Main Roads Traffic map, Dawesville Bypass (north of Dawesville Road) carried an average 8,142 vehicles per day Monday to Sunday in 2017/18, with Dawesville Bypass (south of Esperance Avenue) carrying 9,099 vehicles per day in the same period. A Transport Noise Assessment has been prepared to assess the potential impact of traffic noise on future dwellings; refer section 2.6 of this report for further detail.

1.4.3.7 Liveable Neighbourhoods

The proposed Structure Plan has been prepared in accordance with the current (January 2009) version of Liveable Neighbourhoods (LN) as outlined in section 3 of this report.

An updated version of LN was released by the DPLH for the purposes of public review in October 2015. More recently, the DPLH has announced an intention to prepare a neighbourhood design policy which will replace LN. Accordingly, the draft October 2015 version of LN has not been considered.

1.4.3.8 Draft Development Control Policy 5.1 – Regional Roads (Vehicular Access)

The WAPC's draft Development Control Policy 5.1 Regional Roads (Vehicular Access) (DCP5.1) sets out the principles to be applied when considering proposals for vehicle access to or from developments abutting regional roads. No direct vehicular access between the subject site and Dawesville Bypass is proposed, with the future development of the subject site not considered to adversely affect the function of Dawesville Bypass. Vehicles will access the subject site via the extension of Dandaragan Drive at the Dandaragan Drive / Bailey Boulevard intersection to the north.

Refer to Appendix 3 Transport Impact Assessment for consideration of the above factors.

1.4.3.9 Planning Bulletin 112/2016 – Medium-density single house development standards – Development Zones

Planning Bulletin 112/2016 – Medium-density single house development standards – Development Zones (R-MD Codes) outlines acceptable variations to the deemed-to-comply provisions of the R-Codes for medium-density single houses in development areas for consistent application across the State. Implementation of the R-MD Codes can be either through incorporation into a local planning scheme or by the adoption of a local planning policy. The City's Local Planning Policy 1 Residential Design Codes (LPP1) incorporates the R-MD Codes. This Structure Plan does not intend to apply the R-MD Codes or the R-MD provisions of LPP1, given it only codes land for R20 single dwelling sites that do not benefit from application of the R-MD Codes.

1.4.3.10 Local Planning Policies

The City's planning framework comprises a suite of local planning policies pertaining to various matters and planning considerations. Relevant are the following local planning policies, which have been paid due regard in the preparation of the proposed Structure Plan:

- LPP1.
- Local Planning Policy 15 – Water Sensitive Urban Design.

2 Site conditions and constraints

2.1 Biodiversity and natural area assets

2.1.1 Vegetation and Flora

The Structure Plan area currently consists of cleared areas and areas of native vegetation, primarily in the central and south eastern parts of the site. A site visit conducted by PGV Environmental identified a total of 81 plant species, consisting of 42 native species and 39 introduced species. No Threatened flora species were recorded within the subject site, as listed under section 178 of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) or pursuant to Schedule 1 of the *Wildlife Conservation Act 1950* and as listed by Department Biodiversity, Conservation and Attractions (DBCA) or Priority flora species as listed by Western Australian Herbarium.

Vegetation condition within the subject site ranged from Completely Degraded or Degraded to Good based on the *EPA Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment*. The main vegetation type was an Open Heath of *Melaleuca huegelii/Spyridium globulosum/M. systena* occurring on limestone outcropping soils. Some areas with WA Peppermint (*Agonis flexuosa*) were in the mid-western and south eastern parts of the site. Some remnant Tuart trees were scattered on the site with WA Peppermint over a weedy understorey. The vegetation is not part of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Communities listed (TEC) due to the absence of any of the four key Banksia tree species on the site. The vegetation containing Tuart trees is not representative of the Tuart Woodlands and Forests of the Swan Coastal Plain TEC due to the poor condition of the understorey and small size of the areas containing Tuart trees.

Based on the results of the assessment, it is determined that the vegetation associations within the subject site do not meet the minimum patch size diagnostic criteria for the Banksia Woodlands Swan Coastal Plain TEC; and do not resemble any other TEC's listed under the EPBC Act or Priority Ecological Communities listed by the DBCA.

Refer to Appendix 5, Flora and Vegetation Survey prepared by PGV Environmental.

2.1.2 Fauna

Four fauna habitats were found to be present on the site, including Woodland Habitat, Scrubland Habitat, Heath Habitat and Cleared Habitat. The intact native vegetation in Good condition is considered to be Good Fauna Habitat. Listed species that were found to have the potential to utilise the site are the Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) (Endangered), the Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) (Endangered), the Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable) and the Western Ringtail Possum (*Pseudocheirus occidentalis*).

The site contains a small amount of foraging habitat for the three Black Cockatoo species as well as potential breeding and potential roosting habitat trees with a few large Tuarts on the site. It is recommended that a fauna relocation program be undertaken prior to clearing targeting common and potential conservation significant species.

In summary, the site has limited flora, vegetation and fauna values that would be impacted by clearing. In addition, no other environmental characteristics of the site, such as soil type, hydrology or heritage are a constraint development of the site in accordance to the proposed Structure Plan.

The structure plan includes a requirement for a fauna management plan to be prepared at subdivision stage.

Refer to **Appendix 6**, Environmental Assessment Report prepared by PGV Environmental.

2.2 Landform and soils

2.2.1 Topography

The topography of the site is variable but generally trending from approximately RL 7m AHD in the west to a high point of RL 16m AHD at a hill dominating the eastern portion of the site and high ground to the south west. Topsoil and sand stockpiles are present within the north section of the site adjacent to Bandicoot Way and Wallaby Road.

Refer to **Appendix 2**, Feature Survey and **Appendix 4**, Geotechnical Report.

2.2.2 Soils

The site is mapped as part of the Spearwood System, which has the highest relief of the dune systems on the Swan Coastal Plain. The Spearwood system consists of slightly calcareous Aeolian sand remnant from leaching of the underlying Pleistocene Tamala limestone.

Two Spearwood soil units are mapped on the site and are described as follows:

- Spearwood S2a Phase (211Sp_S2a) which are located on the lower slopes of dune ridges and are moderately deep to deep siliceous yellow-brown sands or pale sands with yellow-brown subsoils and minor limestone outcrop; and
- Spearwood S2b Phase (211Sp_S1b) which are on the lower slopes of dune ridge and are shallow to deep siliceous yellow-brown sands and common limestone outcrop.

Refer to **Appendix 5** for a copy of the Flora and Vegetation report prepared by PGV Environmental.

2.2.3 Acid Sulphate Soils

A search of the Acid Sulphate Soil (ASS) Risk Map, Swan Coastal plan (DWER-055) shows that the whole site has no known risk of ASS occurring within 3m of natural surface.

2.2.4 Contamination

The subject site is not listed as a contaminated site on the DWER database.

2.3 Groundwater and surface water

Groundwater under the site is at approximately 4m AHD, which is between 2m and 12m below ground level. There are no surface water features on the site or within 50m that would constrain development of the site. Stormwater is considered to be able to be managed adequately by on-site infiltration in areas with sandy soils.

Refer to **Appendix 6**, Environmental Assessment report prepared by PGV Environmental.

2.4 Bushfire hazard

The Bushfire Management Plan (BMP) for the subject site has been prepared by Bushfire Safety Consulting. Refer to Appendix 7, Bushfire Management Plan. The purpose of the BMP is to address the fire protection risks within the subject site. Implementation of the BMP will reduce the threat to the landowners, residents, visitors and firefighters in the event of a bushfire within or near the site. It achieves this by presenting the minimum requirements to be implemented.

Bushfire Safety Consulting undertook a bushfire assessment of the vegetation within the subject site and surrounding 150m, in accordance with the *Guidelines for Planning in Bushfire Prone Areas v 1.3 (Guidelines)* and AS 3959-2009 *Construction of Buildings in Bushfire Prone Areas*. The bushfire assessment identified two vegetation classes and exclusions within the assessment area, comprising Class A forest and Class D scrub, and exclusions of single areas of vegetation less than 1 hectare in size, non-vegetated areas and low-threat vegetation.

As part of the subdivision process, the on-site vegetation extent is proposed to be predominantly cleared to enable the development of the land, with managed landscaping in the areas of public open space. Bushfire hazards can therefore be managed through a staged clearing process, adequate separation of future built assets from classified vegetation, and ongoing fuel management within and around the site.

The BMP demonstrates post-development BAL ratings of BAL-Low to BAL-29 over the site, subject to management requirements. The BAL 29 rating is in the northern and southern aspects of the site. The BMP includes a list of bushfire protection requirements which will provide for an adequate standard of bushfire protection for the Structure Plan area. The future subdivision of the land must comply with the approved BMP for the subject site, and future dwellings must comply with the required building construction standards to achieve an appropriate BAL rating and to meet the requirements of Australian Standard 3959-2009 where applicable.

Such management measures include:

- An internal perimeter Asset Protection Zone (APZ) being established on the north, east and southern lot boundaries, adjacent to the new roads. This will ensure a maximum rating of BAL-29 within the Structure plan area.
- Reduction of the fuel load in the road reserve at the southern boundary of the subject site.
- The landscaping within the POS in the western aspect of the site is to be maintained to a low fuel condition.

Having regard for the classification of a residential aged care facility as a 'vulnerable' land use, a Bushfire Emergency Evacuation Plan (BEEP) has also been prepared in support of the proposed structure plan.

The BMP concludes that the proposed development of the subject site is consistent with the aims and objectives of SPP3.7 and associated Guidelines for the site, and should be supported accordingly.

2.5 Heritage

2.5.1 Aboriginal heritage

A search of the DPLH Aboriginal Heritage Inquiry System has confirmed there are no Registered Aboriginal Site affecting the Structure Plan area.

2.5.2 European heritage

There are no sites of European heritage significance listed for the subject site on any Commonwealth, State or Local heritage lists and inventories. The subject site is not constrained from development in this regard.

2.6 Transport noise

A Transportation Noise Assessment (TNA) for the subject site has been prepared by Lloyd George Acoustics, as the Structure Plan area is located adjacent to the Dawesville Bypass. The assessment was undertaken in accordance with the requirements of *State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning (SPP5.4)*. Refer to **Appendix 8, Transportation Noise Assessment**.

The TNA proposes a noise wall to be constructed along the eastern boundary of the subject site, with the wall to be solid, free of gaps and having a minimum surface mass of 15kg/m².

Even with the wall, the TNA confirms the noise target will be exceeded. Therefore noise mitigation (in addition to the bund/wall) will be provided by way of architectural packages, taken from the SPP5.4 Guidelines. The TNA states these packages can be altered if supported by a report undertaken by a suitably qualified acoustical consultant (member firm of the Association of Australasian Acoustical Consultants).

With regard to the Special Use (Nursing Home) site, only part of the building is noise-affected. As such, the TNA recommends a specific building assessment to minimise project costs during detailed design.

All affected lots are to have notifications on lot titles as per SPP5.4 requirements.

2.7 Context and other land use constraints and opportunities

The site context and constraints have been identified and are discussed below.

2.7.1 Residential interface

The subject site abuts residential development to the west. Integration with the surrounding residential development is an important factor which has been considered in the preparation of the Structure Plan. The existing approved road network through the land to the west has influenced the road configuration through the subject site to ensure seamless connectivity. The existing residential dwellings to the west have also influenced the location of the POS along the western lot boundary, providing an attractive interface to the Structure Plan area. The residential density of R20 and the RACF proposed under the Structure Plan are compatible with the land to the west of the site.

2.7.2 Bailey Boulevard and Dawesville Bypass interface

The subject site fronts Bailey Boulevard to the north and Dawesville Bypass to the east. Dawesville Bypass is reserved 'Primary Regional Roads' under the provisions of the PRS, while Bailey Boulevard is a local road under the jurisdiction of the City of Mandurah. Accordingly, vehicular access to the Structure Plan area is intended to be taken through extension of Dandaragan Drive from the north and the extension of the existing local roads from the west.

In addition to traffic and access considerations, Dawesville Bypass creates potential traffic noise impacts on future residential properties, with SPP5.4 classifying Dawesville Bypass as a 'primary strategic freight and/or major traffic route' under Main Roads jurisdiction. Future dwellings and the RACF will need to be appropriately designed and constructed to minimise any potential adverse noise impacts on future residents. A noise wall is also recommended adjacent to Dawesville Bypass.

3 Structure Plan

3.1 Land use

The proposed Structure Plan (refer to Plan 1) provides for the development of the subject site for residential and residential aged care purposes, consistent with the intent of the 'Urban Development' zoning of the subject site under LPS3 and the 'Urban' zoning under the PRS. The proposed Structure Plan will facilitate the development of a residential aged care facility and single housing across the subject site, designating the following zones, residential densities and reserves:

Zones and Residential Design Codes Densities

- Residential (R20)
- Special Use (Nursing Home)

Reserves

- Local Recreation
- Local Roads
- 10m Wide Landscape Buffer

The proposed land uses (Nursing Home and Residential) integrate with the existing uses of the land in the vicinity for residential purposes, and proposes a logical extension of urban development extending from the west. The proposed land uses complement and integrate with the current and future use of the surrounding land for predominantly residential purposes and cater for the growing demand of quality residential aged care facilities.

3.2 Open space

The proposed Structure Plan contains two defined areas for 'Local Recreation' and one area for '10m Wide Landscape Buffer'.

The total proportion of public open space (POS) provided is 11.45% of the gross subdivisible area of subject site – refer to Table 3, Public Open Space Schedule.

Table 3 - Public Open Space Schedule

PUBLIC OPEN SPACE SCHEDULE		
Site area		12.1361 ha
Deductions:		
Residential aged care facility site	2.4768 ha	2.8588 ha
10m wide Dawesville Bypass landscape buffer	0.3820 ha	
Gross subdivisible area ¹		9.2773 ha

¹ Gross Subdivision Area defined by Liveable Neighbourhoods "means the total site area of a subdivision proposal less deductions for non residential uses such as school sites, drainage sites, retail and related land uses, community facilities etc (table 11).

PUBLIC OPEN SPACE SCHEDULE		
Public open space @ 10 per cent		0.9277 ha
May comprise:		
Minimum 80% unrestricted public open space	0.7421 ha	0.9276 ha
Maximum 20% restricted use public open space	0.1855 ha	
Breakdown of POS provided		
Unrestricted use public open space		
• Public park	0.9619 ha	1.0619 ha
• North eastern lot	0.1000 ha	
Restricted use public open space		
• (nil)	0 ha	0 ha
Total public open space provision (ha)		1.0619 ha
POS Provision as Percentage of Gross Subdivisible Area		11.45%

Consistent with the objectives of LN, the POS provided will serve a number of functions, including recreation activities and enhancing the amenity of the area. It is intended the centrally-located local park will incorporate two play fields, playground, half-court and barbeque facility for use by local residents.

The 1,000m² in the southeast corner will provide additional amenity for the adjacent RACF.

The POS is intended to be ceded free of cost to the Crown under Section 152 of the *Planning and Development Act 2005*. The POS will be developed to acceptable standards.

Refer Appendix 9 for a copy of the landscape concept plan prepared by Plan E Landscape Architects, depicting the proposed landscaping of the POS.

3.3 Residential

The proposed Structure Plan will apply a residential density of R20 across the residential area, reflective of the existing and proposed surrounding residential development, which generally ranges from R5 to R30.

A concept plan has been prepared to demonstrate one way in which the subject site could be subdivided in accordance with the proposed Structure Plan (refer to Appendix 12).

Residential lots will be oriented toward the primary street and POS where possible, and all single lots will gain direct access from the internal road network.

The proposed Structure Plan will provide for the development of approximately 107 R20 single residential lots. The potential residential lot and dwelling yield is summarised in Table 4 below.

Table 4 - Yield summary

Zoning	Average lot size	Estimated number of lots	Estimated number of dwellings
Residential R20	498.4m ²	107	107
Special Use (Nursing Home)	24,180m ²	1	0
	Total	108	107

Assuming an average household size of approximately 2.36 based on current and future trends within Mandurah and the 144 bed RACF, the estimated population within the subject site equates to approximately 397 people.

The proposed residential densities are in accordance with the objectives of State-level strategic planning documents, which advocate increased housing diversity, adaptability, affordability and choice. The Structure Plan concept plan (Appendix 12) has been prepared in accordance with LN design principles and provides for increased residential densities in areas of high amenity.

The dwellings capable of being achieved under the Structure Plan do not meet the applicable density targets set out under the State planning framework, as outlined in Table 5 below.

Table 5 - Structure Plan density calculations

Strategy / Policy Document	Density Target	Structure Plan area	Density Achieved (based on 107 lots)
Perth and Peel @ 3.5 million	26 dwellings per residential site hectare	5.52ha residential site area (excludes local road reserves and POS)	19.4 dwellings per residential site hectare

The proposed residential density of 19.4 dwellings per residential site hectare is considered to be entirely appropriate for the following reasons:

- The subject site is located approximately 79km south west of the Perth City Centre, on the outer fringe of the metropolitan area. Opportunities for the higher density outlined in Perth and Peel @ 3.5 million are better suited closer to the key metropolitan centres, around activity centres, station precincts and along high-frequency public transport routes.
- The subject site is not located within an existing area of high density, with the site surrounded by predominantly low residential densities. It would be out of context to achieve the density target of Perth and Peel @ 3.5 million.
- The proposed density is in accordance with Urban Consolidation Principle 1 – Housing, of Perth and Peel @ 3.5 million. The Structure Plan provides for well-designed higher-density housing that considers local context, siting, form, amenity and the natural environment.

3.4 Movement network

A Transport Impact Assessment (TIA) has been prepared by Cardno to address the traffic implications of the proposed Structure Plan, including estimation of the traffic which would be generated by the subject site and the resultant impacts on the surrounding road network. The TIA includes a capacity analysis of the proposed Structure Plan internal road network and the key local intersections as well as making recommendations for any traffic management measures that may be required to ensure satisfactory traffic operations. Refer to Appendix 3 for the complete TIA.

3.4.1 Road hierarchy

Bailey Boulevard is classified as a local distributor road under the Main Roads WA Functional Road Hierarchy. Bailey Boulevard runs between the Dawesville Bypass to the east and ends some 180 metres past Melros Beach Road to the west. Bailey Boulevard is generally an undivided carriageway providing traffic flow in each direction. A posted speed limit of 60 km/h applies to Bailey Boulevard, however, MRWA lists Bailey Boulevard as 50km/h applicable which should be considered once the area has been developed.

The proposed internal road network will be accessed largely by residents and visitors to the future RACF and residential lots. A new street will form a new southern leg of the Bailey Boulevard / Dandaragan Drive roundabout running in a north-south direction provided with a 7-metre-wide pavement. Future streets running in an east-west direction will become extensions of the roads from the existing neighbouring residential estate. These will service the proposed residential lots and have been provided with a 6-metre-wide pavement to accommodate two-way travel. Similar to the existing neighbouring estate, on-street parking will be permitted throughout the development, additionally, the street along the southern side of the RACF site will include indented parallel parking expected to facilitate visitor parking.

It is anticipated that the subdivision will operate as a low speed environment (30-40km/h). Proposed traffic control measures will be implemented at all inter-road intersections to control vehicle speeds including contrasted thresholds at all internal intersections. These treatments are in line with the existing contrasted treatments used in the adjoining streets and surrounding road network.

Where proposed local streets connect to existing streets, the design is to use traffic calming measures and changes in pavement materials to ensure the provision of a low-speed environment.

The maximum desirable traffic volume for the southern extension of Dandaragan Drive is 3,000 vehicles per day (vpd), with the maximum desirable traffic volumes for other streets within the subdivision being 1000 vpd. The typical road reserve under the current LN provisions entails a width of 14.2m with 6m wide trafficable carriageway pavement and 4.1m wide verges on both sides. Structure Plan proposes road reserves of 15.0m and 7m wide trafficable carriageway pavements.

The street network provides a high level of internal connectivity and good external linkages for local vehicle, pedestrian and bike movements. The layout of streets enables development to front all streets and areas of POS.

3.4.2 Traffic projections and distribution

The level of traffic expected to be generated by the proposed RACF is considered to be very low at around 30 vehicle movements per hour (including both arrivals and departures). This equates to an average of approximately 1 vehicle movement every 2 minutes and is not expected to have any noticeable effect of the operations of Bailey Boulevard and the surrounding road network.

For the residential portion, the subject site is expected to generate approximately 10 vehicular trips per day per lot, equating to approximately 1,220 total daily vehicular trips for a typical weekday. The total daily vehicular traffic includes both inbound and outbound trips. Trip generation during the AM and PM peak periods for the subject site is estimated to be in the order of 122 trips per hour.

Of the generated daily traffic, 610 vehicle movements are assumed to be inbound and 610 vehicle movements are assumed to be outbound. Based on the connectivity of the surrounding road network, various trip purposes and the surrounding land uses, it is expected that proportionally more traffic from the subject site will access the distributor road network using the intersection of Bailey Boulevard and Dandaragan Drive compared to the road network to the west. The additional increase in traffic from the Structure Plan area can be readily accommodated within the spare capacity of the surrounding road network, particularly as the subject site is adjacent to Dawesville Bypass.

Based on the above, it is concluded that the adjacent road network has the capacity to accommodate the anticipated Structure Plan traffic.

3.4.3 External intersections

A new roundabout is proposed at the intersection of Bailey Boulevard and Dandaragan Drive to provide vehicular access to the new development.

3.4.4 Public transport

The subject site has good access to public transport, with bus stops located on Bailey Boulevard within 150m walking distance of the site. Bus service Route 593 travels along Bailey Boulevard and connects the subject site to the Mandurah City Centre to the north.

3.4.5 Pedestrian and cycling facilities

The southern side of Bailey Boulevard has a foot path adjacent to the subject site, crossing to the northern side of Bailey Boulevard via a kerbed median crossing. The path then directs north and underpasses Dawesville Bypass to the east. Local access roads Wallaby Road and Cockatoo Way immediately west of the subject site have a footpath on one side to accommodate the local residential pedestrian and cyclist movements, connecting to Carnaby Drive and then north to Bailey Boulevard. The path network will be extended through the subject site, and integrated with the existing surrounding path network.

Due to the relatively low level of traffic forecast for internal Structure Plan roads, cyclists and vehicles can be expected to safely share the road network, and no dedicated cyclist facilities are proposed or required for the Structure Plan area.

3.5 Water management

A Local Water Management Strategy (LWMS) has been prepared by JDA Consultant Hydrologists in support of this Structure Plan (Refer to **Appendix 10**). The proposed subdivision layout and drainage network has been designed to meet best practice water management requirements and promote the integration of stormwater management into the urban form.

The LWMS contains the following design principles and criteria for subdivision and development.

Table 6 - LWMS key elements and criteria

Key elements	Criteria
Surface water management	<ul style="list-style-type: none"> All stormwater is to be retained on site for events up to 1% AEP. No stormwater will be discharged into the reserve to the south including overland flows. Road reserve will have pit and pipe system sized up to 20% AEP storm events. Residential Development: Soakwells will be installed on residential lots to retain and infiltrate onsite stormwater volumes up to 1% AEP storm events. POS infiltration basin and underground infiltration storage will be designed to contain up to 1% AEP storm events. Aged Care Development: Soakwells will be installed to provide storage for the first 15mm rainfall. Underground infiltration cells and infiltration basins are sized to contain up to 10% AEP storm events. Surface runoff for greater than 10% AEP will be overflowed to adjacent roads or outflowed via pipes into adjacent land, ultimately captured by infiltration basins or underground infiltration storage. Minimum finished lot level will provide 0.30m freeboard from the infiltration basin top water level for 1% AEP storm events.
Groundwater management	<ul style="list-style-type: none"> Minimum of 2.0m separation to the estimated pre-development groundwater level 0.2mAHD. No subsoils are proposed in the proposed development.
Water conservation and efficiency	<ul style="list-style-type: none"> Irrigation is only required for turf within POS area. Drainage Basins and other planting areas will be either retained understorey or non-irrigated revegetation. Use of water-wise practices at lot scale including water efficient fixtures and fittings (taps, showerheads, toilets and appliances, rainwater tank, water-wise landscaping) and 6 star appliance rating schemes. All houses to be built to 6 star building standards as per Building Code of Australia (2012).
Monitoring and implementation	<ul style="list-style-type: none"> Monitoring of the proposed infiltration basin and underground infiltration storage for 12 months

3.6 Education facilities

There are no education facilities proposed as part of this Structure Plan. The subject site is located opposite a PRS reserve for Public Purposes – High School, across Bailey Boulevard to the north. The subject site is located within the local intake areas for St Damien’s Catholic Primary School and Ocean Road Primary School, located approximately 860m and 1km to the north.

The existing education facilities located in the surrounding area are considered adequate to cater to the primary and secondary schooling needs of the community.

3.7 Activity centres and employment

There are no activity centres proposed as part of this Structure Plan. The Dawesville Shopping Centre is located approximately 300m east of the subject site, at the corner of Dawesville Road and Old Coast Road. The local centre includes an IGA supermarket, liquor store, café, fish and chips shop, fashion / gift retailer, medical centre and pharmacy. The local centre provides for the daily convenience shopping needs and health needs for local residents, as well as providing employment opportunities.

The subject site is also located in close proximity to the Florida Local Structure Plan (FLSP) area to the north. The FLSP provides for a mix of residential densities lot sizes (R15, R20 and R30) appropriate to the local area, a legible, efficient and site-responsive movement network, public open space facilitating active and passive recreation, two co-located primary schools and a neighbourhood centre. The future neighbourhood centre will also provide for the daily convenience shopping needs and opportunities for local employment for future residents.

Furthermore, the future RACF will provide employment opportunities for residents.

3.8 Infrastructure coordination, servicing and staging

Investigations into the engineering works and civil infrastructure required to develop the site has been undertaken by Taylors. Refer to **Appendix 11** for the complete Servicing Report.

3.8.1 Siteworks and earthworks

Clearing of existing vegetation will be required to accommodate the future subdivision and development, with minor cut and fill likely to be required. It is expected a Class A site will be achieved.

It is anticipated that imported fill will be required to achieve suitable site classifications in accordance with Australian Standard AS2870-1996.

3.8.2 Water supply

Direct connections to and extension of the existing 100mm water mains to the west will be made to service the subject site.

3.8.3 Sewer reticulation

An existing DN225 sewer main connects to the subject site at the end of Wallaby Road at an invert level of 4.62m AHD. As part of the future expansion of Water Corporation's sewer network, it is proposed that this DN225 sewer is extended south east to the eastern side of Dawesville Bypass where it will provide gravity control to future residential developments east of the Subject Site. The majority of the Subject Site will be controlled by this proposed DN225 sewer, with exception of the South-West corner which may require connection to the existing DN150 sewer in Waterbird Vista which discharges West into the Westbury Way Sewer Pump Station.

3.8.4 Power supply

Existing electricity infrastructure is located as follows:

- Overhead HV electricity cables (up to 33kV) and poles along the southern side of Bailey Boulevard.
- Underground HV and LV network cables in the existing residential development to the west.
- Ring Main Loop and Transformer Site on the south-west corner of Carnaby Drive and Cockatoo Way.

High voltage infrastructure, including transformers and switchgears, may be required to service the subject site with low voltage servicing each lot. It is anticipated direct connections to the adjoining existing infrastructure can be made.

3.8.5 Telecommunications

The NBN fixed line fibre to the node (FTTN) network is currently available within the six residential roads immediately west of the subject site. As the proposed development will comprise of approximately 101 residential lots and the NBN rollout has already been completed the area to the west, NBN is likely to accept the application to supply the structure plan area.

3.8.6 Gas

A 110mm diameter High Pressure (PEHP 350kPa) gas main exists along the southern side of Bailey Boulevard, adjacent the northern boundary of the subject site. In addition, a 40mm diameter High Pressure (PEHP 350kPa) gas main existing within the six adjacent residential roads immediately west of the subject site.

It is anticipated that connection will be made to the existing 110mm main in Bailey Boulevard with extension and connection of the 40mm mains in the adjacent residential development.

3.8.7 Waste

Residential lots will be provided with the standard waste collection service by the local government.

A waste management plan will be required for development of the Special Use (Nursing Home) site.

3.9 Developer contribution arrangements

The Structure Plan area is capable of being serviced through the extension of existing service infrastructure located in the surrounding area.

As the Structure Plan area is subdivided, the WAPC may require the landowner/developer make a pro-rata contribution (to Main Roads WA) towards the cost of the underpass which has been constructed beneath the Dawesville Bypass on the northern side of Bailey Boulevard.

Appendix 1 Certificate of Title and Plan

Appendix 2 Feature Survey

Appendix 3 Transport Impact Assessment

Appendix 4 Geotechnical Report

Appendix 5 Flora and Vegetation Survey

Appendix 6 Environmental Assessment Report

Appendix 7 Bushfire Management Plan and BEEP

Appendix 8 Transportation Noise Assessment

Appendix 9 Landscape Concept Plan

Appendix 10 Local Water Management Strategy

Appendix 11 Servicing Report

Appendix 12 Subdivision Concept Plan