

**CITY OF COCKBURN  
STRUCTURE PLAN**

This Structure Plan was adopted by Council on 11 / 6 / 15

Signed \_\_\_\_\_  
**DIRECTOR OF PLANNING & DEVELOPMENT**

File No: .....

This Structure Plan was endorsed by the Western Australian  
Planning Commission on 10 / 8 / 15

Signed \_\_\_\_\_ **ATKINS PARADE**  
**DIRECTOR OF PLANNING & DEVELOPMENT**

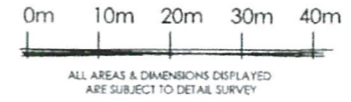
**LEGEND**

	LOCAL STRUCTURE PLAN AREA
	LOCAL SCHEME RESERVES
	PUBLIC PURPOSE
	PARKS AND RECREATION
	LOCAL ROADS
	ZONES
	RESIDENTIAL (R30)
	OTHER
	INDICATIVE SHARED PATH
	INDICATIVE FOOT PATH

**PLAN 1 - STRUCTURE PLAN**  
LOT 33 BARFIELD ROAD, HAMMOND PARK

ANDREW PAWLUK | TOWN PLANNER  
ph: 0408 200 647 | email: pawluka@inet.net.au

scale - 1:1000 @ A3 | date - 17 JUNE 2015  
plan no. 13-003-004 (REVISION - 1)



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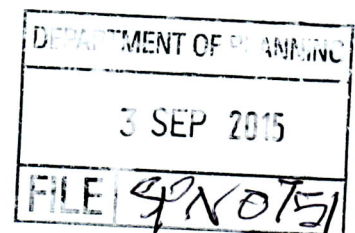


# STRUCTURE PLAN

LOT 33 BARFIELD ROAD

HAMMOND PARK

September 2015



Prepared By: West Coast Plan

For: Passione Family

Prepared for: Passione Family (Estate of Vincenzo Ipsaro-Passione)

Prepared By: West Coast Plan  
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Date: July 2015

Project Planner: Andrew Pawluk

File Reference: 63~13

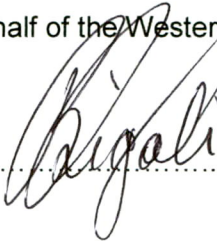
Status: Updated 1 September 2015 to include endorsement  
modifications as per WAPC letter of 19 August 2015

# CERTIFICATION OF APPROVED STRUCTURE PLAN

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

10 Aug 2015 Date

Signed for and on behalf of the Western Australian Planning Commission



An officer of the Commission duly authorised by the Commission pursuant to section 24 of the *Planning and Development Act 2005* for that purpose, in the presence of:

M. Wieclaw Witness

3 September 2015 Date

AND ADOPTED BY  
RESOLUTION OF THE COUNCIL OF THE CITY OF COCKBURN ON:

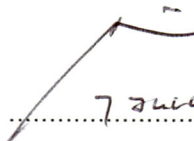
11.06.15 Date

AND PURSUANT TO THE COUNCIL'S RESOLUTION HEREUNTO AFFIXED IN THE PRESENCE OF:



7/7/2015 Date

Mayor, City of Cockburn



7 July 2015 Date

Chief Executive Officer, City of Cockburn



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

## TABLE OF VARIATION(S) TO STRUCTURE PLAN

Variation No.	Description of Variation	Date Adopted by Council	Date Endorsed by the WAPC (if required)

## EXECUTIVE SUMMARY

This Structure Plan has been prepared for Lot 33 Barfield Road, Hammond Park being a 4.0469ha lot located within the Southern Suburbs District Structure Plan No. 3 development area.

The Structure Plan will facilitate future subdivision to create approximately 43 residential lots at an R30 density, provide a local passive open space area and designates land in accordance with a Caveat over the Title for excision to the Minister for Education for the proposed Hammond Park Secondary School.

The Structure Plan is the initial structure plan for Lot 33 Barfield Road and accommodates the design objectives as provided in the Southern Suburbs District Structure Plan No. 3 and the approved Hammond Park LSP which covers land adjoining immediately to the subject site's north and west (partial).

Item	Data	Section number referenced within the Structure Plan Report
Gross Structure Plan Area	4.0469 hectares	Part 2, Section 1.2.3
Area of each land use proposed		
<u>Zones</u> Residential	1.5780 hectares being 39%	-
<u>Reserves</u> Amount of Public Open Space	0.3007 hectares being 10.76%	Part 2, Section 3.2
POS area including non-credited 1:1 drainage	0.3330 hectares being 11.9%	Part 2, Section 3.2
Amount of restricted Public Open Space as per Liveable Neighbourhoods	0.0132 hectares being 4.3% of POS (all of which is passive)	Part 2, Section 3.2
High school	1.1135 hectares being 27.5% of total area	Part 2, Sections 1.1 and 3.6.1
Composition of Public Open Space		
- District Parks	0.0 hectares 0 %	Part 2, Section 3.2
- Neighbourhood Parks	0.0 hectares 0 %	
- Local Park	0.3007 hectares 10.76%	
Estimated Lot Yield	43 lots	Part 2, Section 3.3.2
Estimated Number of Dwellings	43 dwellings	Part 2, Section 3.3.2
Estimated Residential Density		
- dwellings per gross hectare	10.6 dwellings	Part 2, Section 3.3.2
- dwellings per gross hectare less high school site	15.2 dwellings	
As per Directions 2031		
- dwellings per site hectare (excludes high school site, streets and POS)	27.2 dwellings	Part 2, Section 3.3.2
As per Liveable Neighbourhoods		
Estimated Population	120 people @ 2.8 people/household	Part 2, Section 3.3.2
Number of Secondary Schools	1 (portion of)	Part 2, Section 3.6.1
Number of Primary Schools	0	-

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- 1 Certificate of Title, Diagram and Caveat (Minister for Education)
- 2 Flora and Vegetation Survey
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# Part One | Statutory Section

## PART ONE – STATUTORY SECTION

### 1.0 Structure Plan Area

The Structure Plan is identified as the Structure Plan Lot 33 Barfield Road, Hammond Park and is depicted in **Plan 1 – Structure Plan**.

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

### 2.0 Structure Plan Content

The Structure Plan comprises the following sections:

- (i) Part One – Statutory Section.  
This section includes the Structure Plan Map and any textual provisions, standards or requirements that require statutory effect.
- (ii) Part Two – Explanatory Section (Non-Statutory).  
This section provides the planning context and justification for the Structure Plan Map and the textual provisions contained in Part One of the Structure Plan. Part Two is to be used as a reference to guide interpretation and implementation of Part One.
- (iii) Appendices.  
This section includes specialist consultant reports and documentation used in the preparation of and to support the land use outcomes of the Structure Plan.

### 3.0 Interpretation and Relationship with City of Cockburn Town Planning Scheme No.3

3.1	Terms and Interpretations	As per Clause 6.2.6.3 of the City of Cockburn Town Planning Scheme No.3.
3.2	Relationship of the Structure Plan with City of Cockburn Town Planning Scheme No.3	This Structure Plan has been prepared under Clause 6.2 of the City of Cockburn Town Planning Scheme No.3 as the subject land is zoned 'Development' and contained within Development Area No.26 which is shown on the Scheme Map and contained within Schedule No.11.
3.3	Provisions	Pursuant to Clause 6.2.6.3 and Clause 6.2.12.2 of the City of Cockburn Town Planning Scheme No.3.
3.4	Land Use Permissibility	As per Clause 4.3.2 of the City of Cockburn Town Planning Scheme No.3.

### 4.0 Operation

4.1	Operation Date	As per Clause 6.2.12 of the City of Cockburn Town Planning Scheme No. 3.
4.2	Variation to Structure Plan	As per Clause 6.2.14 and Clause 6.2.15 of the City of Cockburn Town Planning Scheme No.3.

### 5.0 Land Use

5.1	Residential Density	Residential densities applicable to the Structure Plan area shall be those residential densities shown on the
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	Structure Plan Map.
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## 6.0 Subdivision / Development

6.1	Notifications on Title	<p>In respect of applications for the subdivision of land the Council shall recommend to the Western Australian Planning Commission that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate(s) of Title(s) to advise of the following:</p> <ol style="list-style-type: none"> <li>1. Land or lots deemed to be affected by a Bush Fire Hazard as identified in a Bushfire Management Plan as outlined within the Bushfire Management Plan contained within Appendix 5.</li> <li>2. Building setbacks and construction standards required to achieve a Bushfire Attack Level 29, 19 and 12.5 or lower, in accordance with Australian Standards (AS3959-2009): Construction of buildings in bushfire prone areas.</li> </ol>
6.2	Detailed Area Plans (Local Development Plans)	<ol style="list-style-type: none"> <li>1. Detailed Area Plans (DAP's) are required to be prepared and implemented pursuant to Clause 6.2.15 of the City of Cockburn Town Planning Scheme No. 3 for lots comprising one or more of the following site attributes: <ul style="list-style-type: none"> <li>(i) Lots with rear-loaded vehicle access;</li> <li>(ii) Lots with direct boundary frontage (primary or secondary) to an area of Public Open Space;</li> <li>(iii) Lots deemed to be affected by a recognised Bush Fire Hazard, as identified spatially in Appendix G of the accompanying Bushfire Management Plan, under Appendix 5.</li> <li>(iv) Lots on the corner of New Road A and Irvine Parade where vehicle access may be problematic.</li> </ul> </li> <li>2. DAP's are required to be prepared and implemented pursuant to Clause 6.2.15 of the City of Cockburn Town Planning Scheme No. 3.</li> </ol>
6.3	*Other provisions / standards / requirements	<ol style="list-style-type: none"> <li>1. Designated Bushfire Prone Areas - Construction Standards <p>This Structure Plan is supported by Bushfire Management Plan (BMP) in Appendix 5. Any land falling within 100 metres of a bushfire hazard identified in the BFHA/BMP is designated as a Bushfire Prone Area for the purpose of the Building Code of Australia.</p> </li> <li>2. Table 1 sets out variations to the <i>Residential Design Codes</i> that constitute deemed to comply standards for development within the Structure Plan area and</li> </ol>

		which, therefore, do not require neighbour consultation and planning approval.
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7.0 Other Requirements

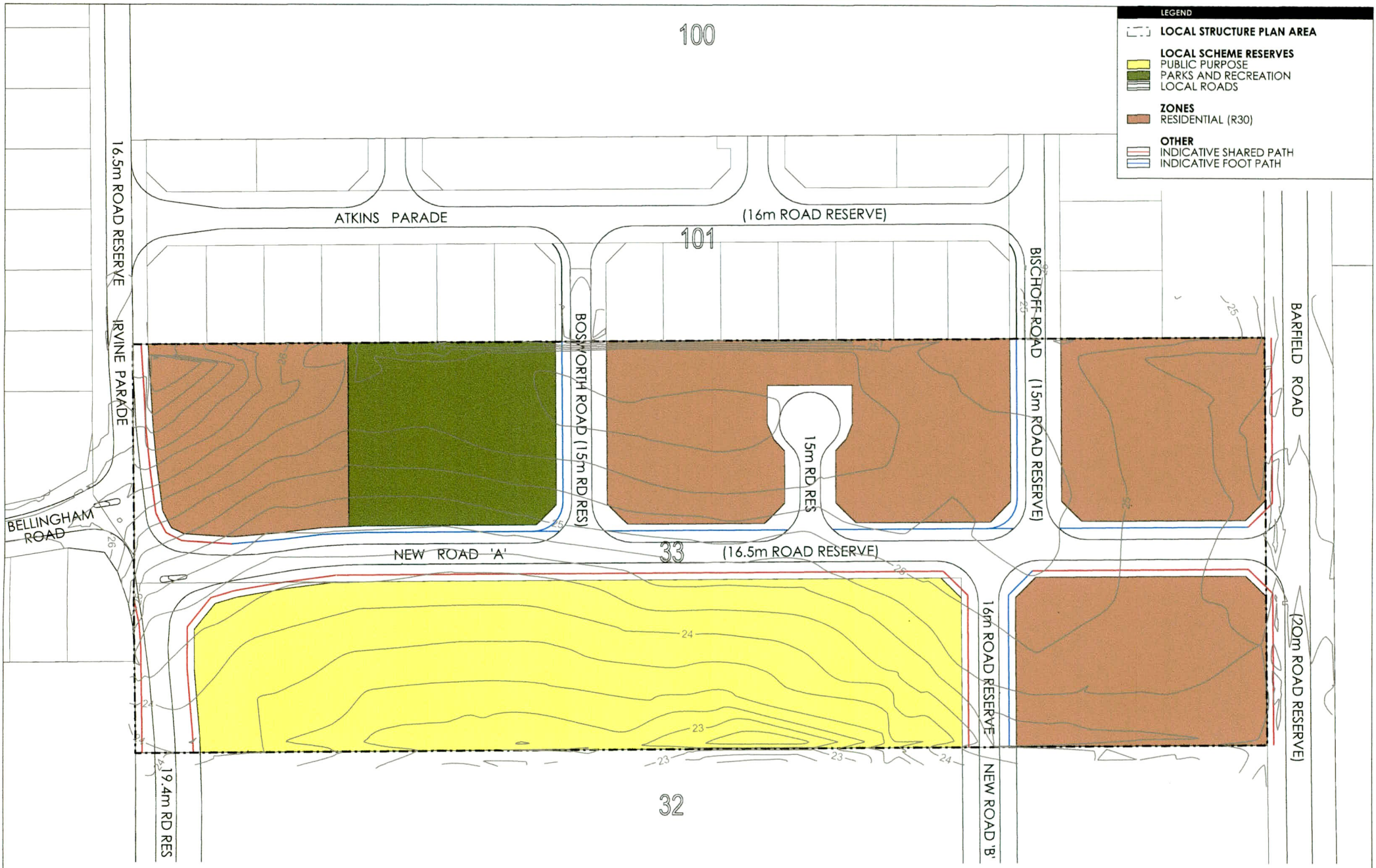
7.1	Development Contribution Items and Arrangements	<ol style="list-style-type: none"> <li>1. Contribute proportional amount as per DCA 9 and DCA 13 Common Infrastructure requirements as prescribed in City of Cockburn Town Planning Scheme No. 3.</li> <li>2. Road Upgrades – Barfield Road where it abuts is to be upgraded to an urban standard.</li> </ol>
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Table 1

SINGLE HOUSE STANDARDS FOR MEDIUM DENSITY HOUSING IN STRUCTURE PLAN AREAS (R-MD Codes)

R-Code	Lot type and size	Street setback and front fences		Lot boundary setback		Open space		Garage setback and width and vehicular access		Parking		Overshadowing		Privacy	
		R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision
RMD -R60	<p><u>Rear load</u> 5m x 30m – 150m<sup>2</sup> 6m x 30m – 180m<sup>2</sup></p> <p><u>Front load</u> 8.5m x 20m – 170m<sup>2</sup> 7.5m x 25m – 187.5m<sup>2</sup></p>	2m	<p>2m minimum, no average</p> <p>1m to porch / veranda no maximum length</p> <p>1m minimum to secondary street</p> <p>Front fences within the primary street setback area being a maximum height of 900mm above natural ground level, measured from the primary street side of the front fence.</p>	<p><u>Boundary setbacks</u> 1 to 1.5m for wall height 3.5m and less (subject to wall length and major openings)</p> <p><u>Boundary walls</u> 2/3 length one side boundary, max 3.5m high and 3m average height</p>	<p><u>Boundary setbacks</u> 1.2m for wall height 3.5m or less with major openings</p> <p>1m for wall height 3.5 or less without major openings</p> <p><u>Boundary walls</u> No maximum length to both side boundaries</p>	<p>40% open space (60% site cover)</p> <p>16m<sup>2</sup> courtyard</p> <p>1/3 required outdoor living area (OLA) may be covered</p> <p>Minimum dimension 4m</p>	<p>An outdoor living area (OLA) with an area of 10% of the lot size or 20m<sup>2</sup>, whichever is greater, directly accessible from a habitable room of the dwelling and located behind the street setback area.</p> <p>At least 70% of the OLA must be uncovered and includes areas under eaves which adjoin uncovered areas</p> <p>The OLA has a minimum 3m length or width dimension</p> <p>No other R-Codes site cover standards apply</p>	<p><u>Rear load</u> Nil – provided laneway is minimum of 6m wide</p> <p><u>Front load</u> 4.5m or 0.5m behind dwelling alignment subject to averaging requirements</p> <p>Garage width limited to maximum 50% of lot frontage where garage in front of or within 1m of building</p>	<p><u>Rear load</u> 0.5m garage setback to laneway</p> <p><u>Front load</u> 4.5m garage setback from the primary street and 1.5m from a secondary street</p> <p>The garage setback from the primary street may be reduced to 4m where an existing or planned footpath or shared path is located more than 0.5m from the street boundary.</p> <p>For front loaded lots with street frontages between 10.5 and 12m, a double garage is permitted to a maximum width of 6m as viewed from the street subject to:</p> <ul style="list-style-type: none"> <li>- Garage setback a minimum of 0.5m behind the building alignment</li> <li>- A major opening to a habitable room directly facing the primary street.</li> <li>- An entry feature consisting of a porch or veranda with a minimum depth of 1.2m; and,</li> <li>- no vehicular crossover wider than 4.5m where it meets the street</li> </ul> <p>Lots with a frontage less than 10.5m or not compliant with above require single or tandem garaging</p>	Two on-site bays	One on-site bay where dwelling has two bedrooms or less	50% of the adjoining site area	No maximum overshadowing	3m to bedrooms and studies	No privacy provisions apply
RMD -R40	<p><u>Rear load</u> 7.5m x 30m – 225m<sup>2</sup></p> <p><u>Front load</u> 8.5m x 30m – 255m<sup>2</sup> 8.5m x 25m – 212.5m<sup>2</sup> 10 x 20m – 200m<sup>2</sup> 10 x 25m – 250m<sup>2</sup> 12.5m x 20m – 250m<sup>2</sup></p>	4m	<p>2m minimum, no average</p> <p>1.5m to porch / veranda no max length</p> <p>1m minimum to secondary street</p> <p>Front fences within the primary street setback area being a maximum height of 900mm above natural ground level, measured from the primary street side of the front fence.</p>	<p><u>Boundary setbacks</u> 1 to 1.5m for wall height 3.5m and less (subject to wall length and major openings)</p> <p><u>Boundary walls</u> 2/3 length one side boundary, max 3.5m high and 3m average height</p>	<p><u>Boundary setbacks</u> As per RMD - R60</p> <p>1/3 required OLA area may be covered</p> <p>Minimum dimension 4m</p>	<p>45% open space (55% site cover)</p> <p>20m<sup>2</sup> courtyard</p> <p>1/3 required OLA area may be covered</p> <p>Minimum dimension 4m</p>	As per RMD – R60	<p><u>Rear load</u> Nil – provided laneway is minimum of 6m wide</p> <p><u>Front load</u> 4.5m or 0.5m behind dwelling alignment subject to averaging requirements</p>	As per RMD – R60	Two on-site bays	As per R-Codes	35% of the adjoining site area	<p>No maximum overshadowing for wall height 3.5m or less.</p> <p>No maximum overshadowing for wall height greater than 3.5m where overshadowing is confined to the front half of the lot. If overshadowing intrudes into rear half of the lot, shadow cast does not exceed 35%</p>	<p>4.5m to bedrooms and studies</p> <p>6.0m to all other major openings</p> <p>7.5m to balconies or similar</p>	<p>With the exception of RMD 60, R-Codes clause 5.4.1 C1.1 applies to RMD R40, 30 &amp; 25, however the setback distance is 3m to bedrooms and studies, 4.5m to major openings to habitable rooms other than bedrooms and studies and 6m to unenclosed outdoor active habitable spaces.</p>

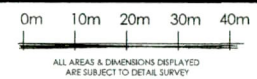
R-Code	Lot type and size	Street setback and front fences		Lot boundary setback		Open space		Garage setback and width and vehicular access		Parking		Overshadowing		Privacy	
		R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision	R-Codes	R-MD provision
RMD-R30	<u>Rear load</u> 10m x 30m – 300m <sup>2</sup> <u>Front load</u> 10m x 30m – 300m <sup>2</sup> 15m x 20m – 300m <sup>2</sup>	4m	2m min, no average  1.5m to porch / veranda no max length  1m min to secondary street  Front fences within the primary street setback area being a maximum height of 900mm above natural ground level, measured from the primary street side of the front fence.	<u>Boundary setbacks</u> 1 to 1,5m for wall height 3.5m and less (subject to wall length and major openings)  <u>Boundary walls</u> 2/3 length one side boundary, max 3.5m high and 3m average height	<u>Boundary setbacks</u> As per RMD – R60  <u>Boundary walls</u> To both side boundaries subject to: 2/3 length to one side boundary, 1/3 max length to second side boundary for wall height 3.5m or less	45% open space (55% site cover)  24m <sup>2</sup> courtyard  1/3 required OLA area may be covered  Minimum dimension 4m	As per RMD – R60	<u>Rear load</u> Nil – provided laneway is minimum of 6m wide  <u>Front load</u> 4.5m or 0.5m behind dwelling alignment subject to averaging requirements	As per RMD – R60	Two on-site bays	As per R-Codes	35% of the adjoining site area	As per RMD – R40	4.5m to bedrooms and studies  6.0m to all other major openings  7.5m to balconies or similar	As per RMD – R40
RMD-25	<u>Front load</u> 12.5m x 25m – 312.5m <sup>2</sup>  15m x 25m – 375m <sup>2</sup>  12.5m x 30m – 375m <sup>2</sup>	6m	3m minimum  1.5m to porch / veranda no max length  1.5m min to secondary street  Front fences within the primary street setback area being a maximum height of 900mm above natural ground level, measured from the primary street side of the front fence.	<u>Boundary setbacks</u> 1 to 1,5m for wall height 3.5m and less (subject to wall length and major openings)  <u>Boundary walls</u> 2/3 length one side boundary, max 3.5m high and 3m average height	<u>Boundary Setbacks</u> As per RMD – R60  <u>Boundary walls</u> As per RMD – R30	50% open space (50% site cover)  30m <sup>2</sup> courtyard  1/3 required OLA area may be covered  Minimum dimension 4m	As per RMD R-60	<u>Rear load</u> Nil – provided laneway is minimum of 6m wide  <u>Front load</u> 4.5m or 0.5m behind dwelling alignment subject to averaging requirements	As per RMD – R60	Two on-site bays	As per R-Codes	25% of the adjoining site area	As per RMD – R40, however If overshadowing intrudes into rear half of the lot, shadow cast does not exceed 25%	4.5m to bedrooms and studies  6.0m to all other major openings  7.5m to balconies or similar	As per RMD – R40



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	LOCAL STRUCTURE PLAN AREA
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 LOT 33 BARFIELD ROAD, HAMMOND PARK

ANDREW PAWLUK | TOWN PLANNER  
 ph: 0408 200 647 | email: pawluka@inet.net.au  
 scale - 1:1000 @ A3 | date - 17 JUNE 2015  
 plan no. 13-003-004 (REVISION - 1)



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**Part Two | Explanatory Section**



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## **1 PLANNING BACKGROUND**

### **1.1 Introduction and Purpose**

This Structure Plan (SP) report has been prepared on behalf of the Passione family, owners of Lot 33 Barfield Road, Hammond Park. A Caveat has been secured by the Minister for Education over a 1.22 hectare portion of Lot 33 which is to be acquired and amalgamated with adjoining land to the south as part of land for a high school site.

This report represents an application to the City of Cockburn to consider a Structure Plan over Lot 33 Barfield Road. The Structure Plan provides for the creation of R30 residential lots, a public open space area and provision of land for a portion of a designated high school site. The Structure Plan design over Lot 33 respects the adjoining built design and provides for ease of connection with adjoining development land.

This report and the Structure Plan have been prepared in consultation with the Education Department. The Education Department will in due course submit to the City of Cockburn a Structure Plan covering the whole of high school site.

This Structure Plan report has been prepared with due regard to the Western Australian Planning Commission's Structure Plan Preparation Guidelines and the City of Cockburn's Town Planning Scheme No. 3 requirements.

### **1.2 Land Description**

#### **1.2.1 Location**

The subject land is located within the suburb of Hammond Park and is situated approximately 25 kilometres south of Perth City and about 5km south of the Cockburn Central regional commercial centre. The land is bounded by Barfield Road to the east and Irvine Parade to the west. **(Refer Figure 1, Location Plan)**

#### **1.2.2 Legal Description and Ownership**

The subject land is legally described as Lot 33 on Diagram 32142 Certificate of Title Volume 1273 and 1275 and Folio 113 and 408, respectively.

A Caveat has been secured by the Minister for Education over a 1.22 hectare portion of Lot 33 which is to be eventually amalgamated with adjoining land to the south for a government high school site. A copy of the Certificate of Title, Diagram and the Caveat over Lot 33 is provided in **Appendix 1**.

### 1.2.3 Area and Land Use

The subject land incorporates the single lot of Lot 33 Barfield Road. Lot 33 is 4.0469ha in area. The excision of the portion of the site for the proposed high school of 1.22ha will reduce the developable area to 2.8269ha.

The lot contains no structures and is covered by native bushland. An aerial photo is provided in **Figure 2 (Aerial Photo Local Context Plan)** which also provides the immediate local context.

## 1.3 Statutory Planning Framework

### 1.3.1 Metropolitan Region Scheme

The subject land is zoned 'Urban' under the Metropolitan Region Scheme. **(Refer Figure 3, Metropolitan Regions Scheme - Zoning)**

### 1.3.2 City of Cockburn Town Planning Scheme No. 3

The subject land is zoned 'Development' under the City of Cockburn's Town Planning Scheme No.3 (TPS3). **(Refer Figure 4, Town Planning Scheme No.3 - Zoning)**

The objective of the 'Development' zone is:

*"To provide for future residential, industrial or commercial development in accordance with a comprehensive Structure Plan prepared under the Scheme."*

TPS3 also identifies the subject land within 'Development Area No. 26' under Schedule 11 which provides the following provisions:

1. *Structure Plan/s adopted and endorsed in accordance with Clause 6.2 of the Scheme to guide subdivision, land use and development.*
2. *To provide for residential development and compatible land uses.*
3. *The provisions of the Scheme shall apply to the land uses classified under the Structure Plan in accordance with Clause 6.2.6.3.*

In regard to the provisions of Development Area No. 26 a (local) structure plan is required to be adopted prior to subdivision and development of the land.

The subject land is located within two Special Control Areas being, 'Development Contribution Area 9 (DCA 9) and 'Development Contribution Area 13 (DCA 13). DCA 9, was recently introduced into the Scheme through Amendment 28 to cover land within Development Area no. 26, it facilitates developer contributions towards the upgrade of Hammond Road and regional drainage infrastructure as detailed in Schedule 12 of TPS3. The DCA13 covers a broader district area and

provides for developer contributions for 'Community Infrastructure' in accordance with Development Contribution Plan 13 as detailed in Schedule 12 of TPS3.

## **1.4 Strategic Planning Framework**

### **1.4.1 Directions 2031 and Beyond**

Directions 2031 are a high level spatial framework and strategic plan that establishes a vision for future growth of metropolitan Perth and the Peel region. It provides a framework to guide detailed planning and delivery of housing, infrastructure and services to accommodate growth. A key objective for Directions 2031 for new development areas is to seek a target of achieving 15 dwellings per hectare of gross urban zoned land. The residential lot and dwelling yield of the SP is considered to meet the objectives of Directions 2031 and is discussed in Section 3.3.2.

### **1.4.2 Draft Outer Metropolitan Perth and Peel Subregional Strategy**

The Outer Metropolitan Perth and Peel Sub-regional Strategy (2010 Draft) provides a framework for delivering the objectives for Directions 2031 specifically for the outer sub regions of metropolitan Perth and the Peel region. Lot 33 Barfield Road lies within the 'South-west sub-region' and more specifically in the area denoted as "SOU1" on the Spatial Framework map which indicates a target of 3000+ new dwellings. The area of the Southern Suburbs District Structure Plan No. 3 reflects the area of 'SOU1'.

### **1.4.3 Southern Suburbs District Structure Plan No. 3**

The SP area is subject to the provisions and design requirements of the Southern Suburbs District Structure Plan Stage 3 (SSDSP3) adopted by the City of Cockburn in September 2012. **(Refer Figure 5, Southern Suburbs District Structure Plan No. 3)**

The SSDSP3 provides a framework for urban land uses that integrates with the broader Sub-Regional context. Under the SSDSP3 plan medium density residential development, a portion of high school site and a public open space area are identified for the SP area. The SSDSP3 plan also identifies three key roads within the SP area, being, Irvine Parade providing a key north-south link through the district and forming the western boundary, Barfield Road providing a local north-south link and forming the eastern boundary and (a proposed extension of) Bellingham Drive an east-west local distributor road forming the northern boundary of the proposed high school site. The proposed SP provides for medium density residential development, incorporates the portion of high school site and the three key roads consistent with the SSDSP3 plan, albeit with a variation of the eastern extension of 'Bellingham Drive' indicated as "New Road A" as is discussed in Section 3.4.2. The public open space (POS) area is provided in an alternate location as it incorporates 'very good' rated vegetation as compared to the 'good' rated vegetation found in the area identified under the SSDSP3 plan (section 3.2 refers in more detail).

The SP is considered consistent with the intent of the SSDSP3 providing medium density residential development; the portion of high school site; the three key roads and a POS area.

#### 1.4.4 Hammond Park Local Structure Plan

Residential development and road networks already exist to the west and to the north of Lot 33 designed in accordance with the approved Hammond Park Local Structure Plan. The Lot 33 SP design accommodates the two local roads, Bosworth and Bischoff, from the north to ensure connectivity between the estates and to continue to provide an open road network to the future development area to the south (Lot 32).

The Hammond Park LSP design proposes a roundabout for the intersection of Irvine Parade and Bellingham Drive but bases this road intersection treatment on an incorrectly assumed alignment for the eastern link of future Bellingham Drive through the subject SP area. An alternate design for this intersection is required. The matter of Irvine/Bellingham intersection design is further discussed under section 3.4.2.

#### 1.4.5 Barfield Road Local Structure Plan

Consideration has been given to the approved Barfield Road Local Structure Plan particularly in regard to the broader road network and road hierarchy that it defines under the Traffic Impact Assessment. Regard has been given to incorporating into the SP the extension of Irvine Parade as a neighbourhood connector B road and the north-south road along the eastern boundary of the high school site as a local access link road.

### 1.5 Policies

#### 1.5.1 State Planning Policies and Guidelines

The SP has been designed with regard to the following relevant state policies and guidelines:

- WAPC SPP1 – State Planning Framework;
- WAPC SPP2 – Environmental and Natural Resources;
- WAPC SPP3 - Urban Growth and Settlement;
- WAPC - relevant Development Control Policies;
- WAPC - Liveable Neighbourhoods;
- WAPC – Planning for Bushfire Protection;
- WAPC – Planning for Bushfire Risk Management Guidelines (draft); and
- Better Urban Water Management Guidelines.

#### Liveable Neighbourhoods

The SP has been designed having due regard to the design principles and requirements of the WAPC's Liveable Neighbourhoods – Edition 3 (LN3) design control policy.

LN3 is a WAPC operational design policy used to guide the design and assessment of structure plans (regional, district and local) and subdivision for new urban areas. It provides design measures to facilitate the design of walkable neighbourhoods, places that support community and provide a sense of place, mixed uses and active streets, accessible and sustainable parks, energy efficient design and housing choice.

The preparation of this SP has had due regard to the list of requirements as required to be shown at the SP application level as prescribed under the heading 'Applications' and 'Application Requirements Checklist Table 1' and 'Information Requirements Table 2' as provided in LN3.

The relevant design considerations in respect of LN3 are addressed in Section 3 of this report.

1.5.2 City of Cockburn Local Planning Policies

The SP has been designed with consideration to relevant Local Planning Policies of the City of Cockburn.

## 2 SITE CONDITIONS AND CONSTRAINTS

A Context and Constraints Plan has been prepared to illustrate the key site conditions, and constraints relating to the subject site. (Refer Figure 6, Context, Land Use, Opportunities and Constraints Plan)

### 2.1 Biodiversity and Natural Area Assets

#### 2.1.1 Flora and Vegetation

A Level 2 Flora and Vegetation Survey was conducted over the whole of Lot 33 Barfield Road by 360 Environmental. A copy of the Survey report is provided in **Appendix 2**.

Just over 80% of the existing vegetation over the site consists of low and central open Banksia woodland with remainder being degraded or burnt.

The Flora and Vegetation survey found:

*"No Threatened species pursuant to the Environment Protection and Biodiversity Conservation Act 1999 and/or gazetted as Declared Rare Flora (Threatened) pursuant to the Wildlife Conservation Act 1950 were recorded during the survey."*

*"No Priority species as listed by Western Australian Department of Parks and Wildlife (DPaW) were recorded during the survey."*

*"Eight species listed as Threatened under the EPBC Act, seven of which are also listed under the WC Act, were identified as potentially occurring in the study area based on the database results. Of these one is considered likely to occur, Caladenia huegelii and one is considered as possibly occurring, Drakaea elastica. The remaining six are considered unlikely to occur due to the lack of suitable habitat. The spring survey was undertaken inside the known flowering period for Caladenia huegelii, however, no specimens were recorded despite suitable habitat being recorded. Drakaea elastica is known to grow in white or grey sand in low-lying situations adjoining winter-wet swamps. The study area does not have any adjoining winter-wet areas and even though the site is considered to be low lying with the orchids known associated species, the understorey is thought to be too dense, as Drakaea elastica favours open areas. For these reasons it is unlikely that the orchid is present in the study area."*

*"A total of seven introduced species were recorded during the survey. None of which are listed as Declared under the Biosecurity and Agriculture Management Act 2007 or as Weeds of National Significance."*

The Flora and Vegetation Survey report concluded:

*"The vegetation association BaBm described for the project area is considered to be the Priority Ecological Community, SCP21c- Low lying Banksia attenuata woodlands or shrublands (Priority 3). Priority Ecological Communities are known as ecologically valuable communities that need further investigation before possible nomination for Threatened Ecological Community status. The vegetation within the project area can be considered of conservation significance."*



*Priority communities listed by Department of Parks and Wildlife have no formal protection. There is no written policy on how to respond to the presence of Priority Ecological Communities within proposed development sites and the presence of these communities is dealt with by Department of Parks and Wildlife on a case by case basis."*

### 2.1.2 Fauna

A Level 1 Fauna Assessment over the whole of Lot 33 Barfield Road was undertaken by Greg Harewood. A copy of the Fauna Assessment report is provided in **Appendix 3**.

The Fauna Assessment included a targeted assessment of the site's significance to the black cockatoo due to them being known to occur in the general area.

The key findings of the Fauna Assessment are:

*"Most of the vegetation onsite has been rated as being in excellent to good condition (360 Environmental 2014) and this combined with fact that the site forms part of a larger remnant that extends to the south (see Figure 1) would suggest that fauna habitat values of the site are relatively good despite some disturbance in the form of tree deaths (presumably from dieback), clearing for firebreak construction, felling of live and dead trees for firewood collection and common invasive weeds.*

*Biodiversity values would have however been reduced a certain degree from original pre-disturbance levels due to the overall fragmentation of vegetation in the wider area primarily for residential developments, roads and freeway construction, along with the likelihood of more frequent fires and the likely presence of feral predators such as cats and foxes. The site itself is relatively small and is unlikely to have the capacity to support, in isolation, populations of most fauna species (i.e. the persistence of most species in Lot 33 would require the existence of populations within the larger areas of habitat in adjoining areas)."*

A one day on site survey was conducted which found:

*Evidence of one listed threatened species was observed (Carnaby's black-cockatoo (chewed banksia cones). Diggings attributed to the southern brown bandicoot, a DPaW Priority 5 species, were found at a number of locations and one rainbow bee-eater, a listed migratory EPBC Act species, was observed foraging near the southern boundary of the site during the survey period.*

*The habitat tree assessment located six specimens that fit DoE's (SEWPaC 2012) criteria for black cockatoo breeding habitat (i.e. suitable tree species with a diameter at breast height (DBH) of >50cms) (Figure 3). Three of the trees were identified as coastal blackbutt (*E. todtiana*) and one as jarrah (*E. marginata*). The remaining two specimens were dead and could not be identified to species level.*

*All but one of the identified habitat trees contained hollows of some type but none were assessed at the time of the survey to be suitable for black cockatoos to use for nesting purposes due to their apparent small size (entrance and likely internal dimensions)."*

The Fauna Assessment concluded:

*“Irrespective of what areas of vegetation are retained, one primary impact on all fauna species in general is the potential for individuals, of those species currently resident on site, to be injured or killed during clearing operations when final development plans are approved and construction proceeds. While the loss of some fauna is in most cases unavoidable it is recommended that a fauna management plan be formulated for implementation during development at the site to minimise this risk. A series of recommendations aimed at reducing the impact on fauna as much as reasonable and practicable are provided for guidance for the formulation of a fauna management plan.*

*It has been concluded based on an assessment of published criteria that while some generalised EPBC Act referral guidelines may be triggered by future development at the site, actual “significant impact” (as defined by the DoE) on black cockatoos and migratory birds, can in this case be considered unlikely.”*

## **2.2 Landform and Soils**

The subject land is slightly undulating with a general slope from the north to the south of the site. A high of around RL26 AHD is recorded in the north western corner to a low point of around RL 23 AHD at a central location on the southern boundary. The total fall of about 3m over 121m provides a gradient of about 2.47.

The Perth Environmental Geology Mapping (Gozzard JR 1983 Fremantle Part Sheets 2033 I and 2133 IV)<sup>1</sup> indicates that the site area is defined as Bassendean Sand – light grey at the surface and yellow at depth. It is noted to be a good groundwater recharge area although the soils are generally recognised as having poor ability to attenuate pollutants. In essence the site consists of well graded sands of high permeability meaning that soakage will be effective on the site.

No geomorphic wetlands, minor or major drainage lines are located within or adjoining the subject land.

Landgate’s Acid Sulphate Soils mapping (SLIP) identifies the site as having low to medium risk of Acid Sulphate Soils or Potential Acid Sulphate Soils occurring within 3m of the natural surface.

## **2.3 Groundwater and Wetlands**

### **2.3.1 Groundwater**

The groundwater has been mapped with an AAMGL beneath the site grading from RL22.5m AHD on the eastern boundary to RL21.00m AHD just west of the site boundary. In general, the groundwater is a minimum of 2.5m below the site levels.

### **2.3.2 Wetlands**

A desktop review of the DEC’s Geomorphic Wetland Database Mapping indicates no wetlands within or adjacent to the subject SP area.

## 2.4 Bushfire Hazard

A Bushfire Management Plan (BMP) has been prepared in accordance with the requirements of Planning for Bushfire Protection – Edition 2 (WAPC, 2010) and the 'draft' Planning for Bushfire Risk Management Guidelines (WAPC, 2014) and is provided in **Appendix 5**.

Lot 33 has been rated as having a 'moderate bushfire hazard' as defined by the two WAPC bushfire documents 2010 and 2014 due to the presence of adjacent 'woodland bushfire risks' from the high school site to the south. Given the 'moderate' bushfire risk the development is required to meet 'Performance Principle' and 'Acceptable Solutions' criteria.

The BMP has been developed to meet the "Performance Principles" and the "Acceptable Solutions" as outlined in Planning for Bushfire Edition 2 (WAPC 2010) (current and endorsed guidelines) and Draft Planning for Bushfire Risk Management Guidelines, (WAPC, 2014) with specific recommendations for:

- The layout of the subdivision and the facilities proposed have been designed to reduce the fire threat to persons and property within the development (i.e. Internal road design, access in alternative directions);
- Accessible "Fire Service Access" and "Emergency Access Ways" along road reserves in opposing directions through the subdivision for access and egress in fire events along the proposed and existing road reserves.
- A 20m BPZ can be achieved through the construction of roads and building setbacks and is not reliant on the High School site being cleared, meeting Acceptable Solutions.
- Building to BAL and AS3959-2009 where 100m HSZ cannot be achieved to the woodlands south and east in the SP, meeting Acceptable Solutions.
- Scheme water to Water Corporation WA standards; and
- Building to **BAL 29, 19 or 12.5** and AS3959-2009 where setbacks of 100m from external remnant vegetation areas cannot be achieved. (Refer Figure E BAL Rating Plan in Appendix 5).

If at the time when subdivision clearances are applied for and the High School site (to the south) is not cleared/constructed then BAL and AS3959-2009 requirements will apply. If the high school site is cleared (anticipated by Education Department to be no later than 2018) prior to the clearance of lots then BAL and building to AS3959-2009 may not apply to all proposed lots. An updated BAL Rating Plan shall be supplied at time of subdivision.

## 2.5 Heritage

There are no buildings or structures on the site and accordingly no heritage sites.

A desktop investigation of the Department of Aboriginal Affairs Aboriginal Heritage Inquiry System found no sites of significance or Registered Aboriginal Sites within or adjoining Lot 33 Barfield Road.

## 2.6 Context, Land Use, Constraints and Opportunities

A summary of the context of the site and immediate surrounds and the resultant constraints or opportunities afforded to the SP site is depicted in **Figure 6**. and discussed in **Table 1** below.

In addition to the summarised context as provided in **Figure 6** and **Table 1** the detailed technical reports covering environment, local water management, fire management also provide detailed context of the site conditions and should also be read in conjunction with this structure plan.

Table 1 - Constraints and Opportunities

SUMMARY OF CONSTRAINTS AND OPPORTUNITIES		
	Context	Constraints and Opportunities
1	High Point RL 27.3 AHD at north western corner	North to south gradient will afford some scarp based views on lots fronting New Road A
2	Low Point RL 22.7 AHD central position on southern boundary	Low point dictates location for site drainage. Drainage however needs to be located on high side of New Road A due to high school site. Increases area dedicated for drainage.
3	Residential Existing	No options with rear fence interface on adjoining developed land on northern boundary.
4	Future Residential	Noted
5	SSDSP3 and Hammond Park Local Structure Plan indicate roundabout for intersection of Bellingham with Irvine	The actual alignment of the intended extension of Bellingham Drive east of Irvine Parade does not align with the existing Bellingham Drive west of Irvine Parade. A set of staggered 'T' junctions of Bellingham Drive (west of) and New Road A (east of) with Irvine Parade is proposed as the best traffic solution outcome. The intersection design was designed in consultation with Cockburn's technical services department and in liaison with Education Department.
6	Irvine to provide main north-south local connector link road and future bus route as per SSDSP3	Accommodated.
7	New Road A to provide east-west local connector link road between Bellingham Drive and Barfield Road as per SSDSP3	Accommodated.
8	Road extension from existing residential development	Road linkages extended into SP design.
9	Alternate position of POS provided to that shown on SSDSP3	POS on proposed SP located on land with 'very good' to 'excellent' condition vegetation cover and more centrally located compared to the POS location in SSDSP3 which has only 'good' condition vegetation cover.
10	Developed local public open space located close by	High level local open space located close by to the west of the site.
11	400m Walkable Catchment to local centre	R30 residential provided. Attempts made to increase density to R40 adjoining POS within walkable catchment but block depth and access constraints did not allow.
12	Secondary School (State) within and adjoining site south proposed to be operational by 2020 school year	Playing fields anticipated to be located at the northern end adjoining SP area providing open aspect and further recreational opportunities.
13	Hammond Park Catholic Private	Primary school level of education opportunity located

	Primary School Existing	close by.
14	20m BPZ setback identified for lots fronting the high school site under Fire Management Plan	Location of 20m BPZ setback line is equal to or less than 4m primary setback for R30 residential development. Will have only small impact on housing design in respect to minimising options to averaging front setback. Setback may be removed or reduced if vegetation removed from high school site prior to issue of lot clearances.
15	BAL provisions (may) apply as identified in Fire Management Plan	Lot purchasers will need to design housing in accordance with appropriate BAL design measures. BAL provisions may be removed if vegetation removed from high school site prior to issue of lot clearances.

### 3 STRUCTURE PLAN

#### 3.1 Land Use

The proposed land uses consist of R30 medium density residential use, a local public open space area and portion of proposed Hammond Park Secondary School site. The land uses are consistent with the land uses as depicted in the SSDSP3 plan, except for the open space area being located in an alternate position.

The proposed land use layout is set out in the Structure Plan provided as **Figure 7 (Structure Plan)**.

#### 3.2 Public Open Space

##### 3.2.1 Public Open Space Provision

The SSDSP3 requires 10% local public open space to be provided within the Lot 33 SP area. A single public open space inclusive of a (non credited) drainage area totalling 3330m<sup>2</sup> has been provided on the north-west corner of New Road A and Bosworth Road. The area includes a dedicated POS area of 3007m<sup>2</sup> representing a 10.76% provision of POS. A non-credited additional drainage area to accommodate 1:1 flood events of 323m<sup>2</sup> adds to achieve a total combined POS and drainage area of 3330m<sup>2</sup> (being 11.9%). The POS Schedule as per Liveable Neighbourhood requirements is provided below in **Table 2**.

Table 2 – Public Open Space Schedule

PUBLIC OPEN SPACE SCHEDULE - LOT 33 BARFIELD ROAD HAMMOND PARK		
Site Area (ha)		4.0469
Less		
Nil		
Total	0.0000	
Net site area		4.0469
<b>Deductions</b>		
High School	1.2208	
Restricted Open Space - Drainage Basins (1 in 1)	0.0323	
Other approved contingencies – Power Transformer reserve #	0.0000	
Total	1.2531	
	Total Deductions	1.2531
	Net Subdivisible Area	2.7938
	Required Public Open Space (10%)	0.2794
<b>Public Open Space Requirements</b>		
Unrestricted public open space - minimum 80%	0.2235	
Restricted public open space - maximum 20%	0.0559	
	Total	0.2794
<b>PUBLIC OPEN SPACE PROVISION</b>		
Unrestricted Public Open Space		
POS (ex 1 in 1 and 1 in 5)	0.2875	

Total Credited Unrestricted POS		0.2875
<b>Restricted Public Open Space</b>		
Drainage Basins (1:5 yr storm event)	0.0132	0.0132
<i>Restricted public open space - maximum 20%</i>	<i>0.0559</i>	
Total Restricted POS		0.0132
Total Restricted and Credited Unrestricted POS		0.3007
Percentage of Credited POS (Restricted and Credited Unrestricted POS Contribution)		10.76%

**NOTE: POS area = 3007m<sup>2</sup> + (1:1 flood area above ground of) 323m<sup>2</sup> = 3330m<sup>2</sup> of POS and non-credited Drainage Area**

# A power transformer may be required to be located within the POS area. A surplus of POS area has been provided at this SP stage to allow for excision of a reserve for a power transformer at the subdivision stage.

The surplus of POS beyond the minimum 10% requirement allows for the retention of some existing native bushland as required in the City's conditional approval of 11 June 2015 of the Structure Plan.

The POS area has been located on the SP in an alternate location to that identified in the SSDSP3 plan. The proposed location of the POS is located on land with 'very good' to 'excellent' condition vegetation cover and is in a more centrally located position to that location in SSDSP3 which has only 'good' condition vegetation cover.

### 3.2.2 Public Open Space - Landscape Strategy

The approach to the landscape of the POS area is to retain key native vegetation where possible and create a useable small park for recreation while integrating the drainage swale and presenting an easily maintained and managed POS. The park will present as a small native woodland area that incorporates an open lawn area. Existing specimens of banksias, jarrah and tuart trees within the native planting buffer and native tree planting areas will be identified, tagged and retained in consultation with the City of Cockburn.

The park is designed to be a low water user by minimizing irrigated grass to a small informal area and by planting with appropriate local native species. The 1:1 year storm event basin is located to the west of the central area of the POS area and it is proposed to use littoral planting and Melaleuca trees within this area. Trees species to be located within the POS are to be suitable to their growing conditions, i.e. Melaleucas to lower damper areas and Eucalypts elsewhere. All plants selected are 'water wise' plants requiring no long term irrigation being native.

Pedestrian circulation through the area needs to respect the privacy of adjacent existing private lots to the north while allowing access from the proposed new lots within the estate and accommodating general public use. A system of paths has been proposed to serve each purpose. The footpath along the eastern edge of POS provides pedestrian connectivity from the existing POS to the north to the proposed secondary school site to the south. The footpath that runs across the POS provides a definitive edge to maintenance and access to the kick-about grassed area. The conceptual design of the POS area is provided in the **Landscape Strategy Plan, Figure 8.**

### 3.3 Residential

#### 3.3.1 Design

The SP has been designed to reflect the design requirements as prescribed by SSDSP3 and the approved SP's of Hammond Park Local Structure Plan and Barfield Road Local Structure Plan to the south. Given the existing development and fixed 'block depth' between the high school and northern boundary of the subject site, residential lot design options are constrained.

Lots on New Road A have been designed to orient towards the high school site to provide passive surveillance. Lots adjoining the POS and opposite on Bosworth Road have been designed, where practical, to orient to the POS to provide passive surveillance. The predominantly north-south road network configuration provides for the remainder of lots to enjoy an east-west aspect allowing for passive solar design of living spaces.

The POS has been located in a more central position within the SP and over land which enjoys a higher quality level of vegetation cover than that than that as shown on the SSDSP3.

The SP design provides for ease of connectivity with the only immediate adjoining development site of Lot 32 to the south.

#### 3.3.2 Density and Lot Size

An R30 density has been applied to all the residential land within the SP area. Consideration had been given in the design formulation of incorporating R40 density to land adjoining and opposite the POS within the 400m walkable catchment to the proposed local centre. Due to 'block depth' limitations, access constraints from New Road A/Irvine Parade intersection and most critically the 20m BPZ setback (discussed in section 2.4), R40 sized lots were not considered feasible.

All lot sizes proposed fall within the R30 size designation and are intended as freehold lots. Consideration has been given to providing a range of lot sizes and configurations within the R30 code requirements to meet Liveable Neighbourhood objectives of providing lot style choice. Lot sizes have been allocated under current working lot layout concept plan with consideration to locational context. Larger lots (within R30 context) have provided in the interface to existing R25 sized lots on Irvine Parade. These larger lots also assist in reducing the amount of access points to Irvine Parade for safety reasons given the proximity to intersection of New Road A. Larger lots are also proposed fronting Barfield Road to reduce access points to this local connector and given the inherent block depth constraints. Where achievable, small lots down to 260m<sup>2</sup> have been proposed. Elsewhere, lots around the average for R30 of 300m<sup>2</sup> are intended.

The current 'working lot layout' design for Lot 33 achieves a total of 43 lots facilitating 43 dwellings. This yield achieves a ratio of 10.6 dwellings per gross urban zoned hectare which falls under the Directions 2031 desired ratio of 15 dwellings. This low yield is resultant due to over 30% of the site being lost to the high school site and the constraint in design options due to lot shape and the 'block depth' between the high school site and the northern boundary limiting design options and the road



commitments from the adjoining Hammond Park subdivision to the north. Excluding the high school site a yield of 15.2 is achieved over the developable area. This yield given site constraints is considered to meet Directions 2031 objectives.

The 43 dwellings at a generation of 2.8 persons per dwelling will yield a population of 120 residents.

### 3.3.3 Single House Development Standards

The structure plan provides for medium density single house development. In order to allow for an improved streetscape outcome than that provided for under the Residential Design Codes 2013, the RMD R-30 single house standards have been incorporated in Part One.

## 3.4 Movement Network

### 3.4.1 Road Network

The road network has been designed in response to the existing road and proposed road network as defined by the SSDSP3, the approved Hammond Park Local Structure Plan and Barfield Road Local Structure Plan. The SP design integrates with and accommodates extensions of the existing roads adjoining, being Irvine Parade, Bellingham Drive (offset link via New Road A), Bischoff Road, Bosworth Road and Barfield Road to connect with adjoining development land and the wider road network. The SP plan accommodates the required north-south link road on the eastern perimeter of the high school site to connect to Lot 32 and other southern developing estates. One new cul-de-sac road is provided within the SP.

The SP design incorporates the following hierarchy of roads:

- Irvine Parade south of Bellingham Drive/New Road A as a Neighbourhood Connector B with 19.4m road reserve
- Irvine Parade north of Bellingham Drive as a Neighbourhood Connector tapering from 19.4m to meet the existing developed 16.5m width
- 'New Road A' (proposed link between Bellingham and Barfield) as an Access Street B with a 16.5m road reserve
- 'New Road B', the proposed road adjoining the eastern boundary of high school as an Access Street D with a 16.0m wide road reserve
- Barfield Road is an Access Street and will retain its current 20m wide road reserve
- Bischoff and Bosworth extensions as Access Street D continuing the existing 15.0m wide road reserve
- New cul-de-sac with a 15.0m width

The hierarchy designations for Irvine Parade south, north-south link road adjoining east side of high school and Barfield Road have been derived from the Traffic Impact Assessment undertaken for the Barfield Road Local Structure Plan and advice from the City of Cockburn.

The new cul-de-sac road incorporates an 18m diameter head to accommodate turning circle of Council rubbish trucks.

#### 3.4.2 Irvine Parade, Bellingham Drive and New Road A Intersection Design

The Hammond Park LSP design indicates a roundabout for the intersection of Irvine Parade and Bellingham Drive but based this road intersection treatment on an incorrectly assumed alignment for the eastern link of future Bellingham Drive through the subject SP area. The alignment for the future eastern link of Bellingham Drive was predicated on an assumed northern boundary of the future high school site. The actual northern boundary of the high school results in the centre of the intended future Bellingham Drive east of Irvine Parade being offset about 17m south of the central alignment of the existing Bellingham Drive to the west of Irvine Parade. In addition to this misalignment the southern unconstructed portion of Irvine Parade south also does not align with the existing Irvine Parade north. The central alignment of Irvine Parade south is offset about 9m east of the central alignment of existing Irvine Parade to the north.

Accordingly a review of the intended roundabout intersection treatment was required to overcome the inherent misalignments of both Bellingham and Irvine.

The City was consulted and advised that the north-south flow of Irvine should be the predominant route in the design of the intersection. Consideration was given to a short boulevard link, an elliptical shaped roundabout and a bone-a-bout shaped roundabout but each of these designs were problematic. Following ongoing consultation with the City's planning and technical services departments a pair of staggered 'T' junction intersections of Bellingham with Irvine has been negotiated with and accepted by the City. Given that what was to be the eastern link from Bellingham Drive does not now align with the existing Bellingham Drive west of Irvine Parade the City has required that a new name will be given to this eastern link road. For the purposes of the SP report this road is referred to as "New Road A". The design of the Bellingham/Irvine/New Road A intersection as included in the SP design is provided in detail in **Figure 9, Irvine Parade/Bellingham Drive/New Road A Intersection Design.**

#### 3.4.3 Public Transport

##### Rail

Transperth's Perth to Mandurah train line operates a high frequency service which runs within the Kwinana Freeway. The nearest operating station is Cockburn Central located 5.2 kms north of the SP site. The State Government has committed to building a new Aubin Grove station to be located just north of Russell/Gibb Roads intersection with the Mitchell Freeway about 1.8kms north of the site. Pedestrian and cycle access linkage to the both stations will be provided along Barfield Road. The Public Transport Authority has advised that the Aubin Grove station is expected to open in early 2017.

##### Bus

The nearest existing bus routes are the 525 and 526 operated by Transperth. Both routes provide a medium frequency connection (about each half hour) from Gaebler Road through the suburbs of

Hammond Park and Success to Cockburn Gateway Shopping Centre and Cockburn Central train station. The nearest bus stop is located about 350m walking distance from the SP site.

Under the SSDSP3 Irvine Parade is identified as providing the future main bus route for the Hammond Park area. Under the SP, Irvine Parade has been provided with a 19.4m wide reserve and designated as a Neighbourhood Connector B level road to accommodate a future bus route.

#### 3.4.4 Pedestrian and Cycle Networks

##### Cycle

Cycle (Shared) paths are to be provided along Irvine Parade and Barfield Road in accordance with the SSDSP3. A cycle (shared) path is anticipated along the northern boundary of the high school along New Road A providing a link between the cycle (shared) paths on Irvine Parade and Barfield Road.

##### Pedestrian

Pedestrian footpaths will be provided along all the SP roads, except the proposed cul-de-sac, in accordance with Liveable Neighbourhood requirements.

#### 3.4.5 Streetscape

The notional streetscape planting for all roads is provided in the Landscape Strategy at **Figure 8, Landscape Plan**.

### 3.5 Educational Facilities

#### 3.5.1 High (Secondary) School

The Education Department has advised that the 'high school site' will accommodate the future 'Hammond Park Secondary School'. The site is partially located within the SP area and is designated by the Education Department to be operational by the school year 2020. The Education Department has advised that the school will cater for up to 1450 students in permanent facilities built in one or two stages from Y7 to Y12. The secondary school is included within the State Government's initiative for joint venture development with private enterprise. Upon selection of a joint venture partner there is a possibility of a review to an earlier operational time.

The Minister for Education's Caveat over the land is to purchase 1.22ha for the school site, this is inclusive of the road reserve for Irvine Parade (south). Following the introduction of the staggered 'T' intersection design a sliver of high school site is needed for the revised staggered 'T' intersection. This additional excision together with the required road reserve to for Irvine Parade leaves a 'nett' area of high school site of 1.1135ha. The Education Department has been made aware of the reductions to the school site area due to the Irvine/Bellingham/New Road A intersection design.

#### 3.5.2 Primary School

The Hammond Park Primary School located on the corner of Gaebler Road and Frankland Avenue provides Kindergarten to Year 6. It is located about 700m north-west of the SP area and opened for the 2014 school year. It accommodates up to 450 students in permanent facilities.

The Hammond Park Catholic Primary School is located immediately west of the SP area. Stage 1 has been developed providing for early childhood. Two further stages are to be constructed which will provide for junior primary (Stage 2) and upper primary (Stage 3). The Stage 3 development will include a car parking area with vehicle and pedestrian access from (the future) Irvine Parade.

### **3.6 Activity Centres and Employment**

There are no activity centres located within the SP area. The proposed high school site will provide an employment opportunity within the SP area.

A great array of employment opportunities exist in the district context including the developing Latitude 32 Industrial precinct covering over 1400ha of proposed industrial development and the existing industrial areas of Naval Base, Kwinana, Henderson and Jandakot.

### **3.7 Infrastructure Coordination, Servicing and Staging**

#### **3.7.1 Earthworks and Retaining Walls**

The site is proposed to be earthworked is to be of a similar level to the existing development area to the north and to match the existing levels of Irvine Parade and Barfield Road on each side of the site.

When completed, the site will be reasonably flat, however there will be some retaining required at interface to the public open space and to reconcile falls across the site and to ensure that flat building pads are provided for allotments.

#### **3.7.2 Roads**

All roads will be constructed to City of Cockburn standards and approval, including asphalt, kerbing and piped drainage plus provision of footpaths as required. Barfield Road where it abuts the subject land will be upgraded to an "urban standard" with kerbing and piped drainage and existing roads to the north will be linked into the development.

#### **3.7.3 Power Supply**

The site has an existing underground supply connection off Irvine Parade.

#### **3.7.4 Water Supply**

A 250mm reticulation water main is located along the western verge of existing Irvine Parade to the west of the site. A 150mm stub has been run under Irvine Parade by the neighbouring developer that will be extended through to the northern and southern site boundaries on the western side of

existing Barfield Road in order to serve the development, and which will be connected to by future developers to the north and south. Two 100mm diameter main connections will be made to form loops with the servicing for the Atkins Parade development to the north: one to the cap end on Bischoff Road, and one that will need to be extended along Bosworth Road to connect to the 100mm diameter main running along the southern side of Atkins Parade.

### 3.7.5 Sewer

The site currently falls within the gravity sewer catchment connected to the Bibra main sewer and will require the extension of a 225mm gravity sewer from Irvine Parade west of the site. Water Corporation planning for the area shows a portion in the central southern area of the site that requires minimum fill levels of RL26.7mAHD due to a 150mm service to the school site. Subsequently it has been confirmed that the 150mm service will not be located as on the dated WC plan, therefore the minimum fill requirement stated on the plan can be disregarded.

### 3.7.6 District Water Management

This area forms part of the Water Corporation controlled Southern Lakes Main Drainage catchment which consists of groundwater controlled pumping arrangement. The whole of this area drains north to Lake Copulup (Also known as the Russell Road Buffer Lake) located just north of the intersection of Russell Road and Hammond Road in Hammond Park.

Subsequent to the Water Corporation proposal, the City of Cockburn commissioned the Russell Road Arterial Drainage Scheme to provide guidelines for the development levels of the area and for the drainage strategies to ensure that the groundwater levels in the general area were controlled using drainage basins set defined levels. A basin was proposed and has been constructed on Gaebler Road which controls the rise of the groundwater levels in this area (Russell Road Arterial Drainage Scheme, David Wills and Associates, 2002).

### 3.7.7 Local Water Management

A Local Water Management Strategy has been prepared by Development Engineering Consultants over Lot 33 Barfield Road to accord with the requirements of the Russell Road Arterial Drainage Scheme and is provided in **Appendix 4**.

A single public open space area is proposed as part of the structure plan, in which an underground storage facility in conjunction with a drainage basin are proposed to provide soakage at source.

The detention basin will be constructed in the POS and will cater for both major and minor storm events. The basin will be sized in order to retain the major storm on site and roads shaped to this location to ensure overland flow paths are routed to the basin. The detention basin will be designed to infiltrate all storms up to and including the 100 year ARI.

Information packages will be provided to all lot purchasers to:

- (a) Fully inform lot owners of the requirement to install two 1,500mm diameter by 1,500mm deep soakwells prior to an outflow connection to the drainage system;
- (b) To encourage the use of rainwater tanks;

- (c) To utilise water efficient devices and appliances throughout their homes; and
- (d) To maximise the use of water- and nutrient-wise plants, and minimise the use of lawns.

All piped drainage systems will be designed to accommodate the 1 in 5 year ARI event.

Where possible piped drainage will be excluded in preference of swale drains and overland flow.

All lot owners will be encouraged to install rainwater tanks plumbed into their homes for household use in order to assist to contain the 1 year - 1 hour ARI event on-site in lieu of soakwells.

All lots are required to install the equivalent of two 1200mm diameter by 1200mm deep soakwells to hold the relevant storm events on site.

### 3.7.8 Telecommunications and NBN

The site will be serviced by Telstra or potentially NBN if it has been brought into the development as part of the peripheral subdivision.

### 3.7.9 Gas

Gas is available off Irvine Parade and will be extended to this development by ATCO in the normal way, with trenching done by the developer.

## 3.8 Developer Contribution Arrangements

The subject land is located within two Special Control Areas being, 'Development Contribution Area 9 (DCA9) and 'Development Contribution Area 13 (DCA 13). DCA9, was recently introduced into the Scheme through Amendment 28 to cover land within Development Area No. 26, it provides for developer contributions towards the upgrade of Hammond Road and regional drainage infrastructure as detailed in Schedule 12 of TPS3. DCA13 covers a broader district area and provides for developer contributions for 'Community Infrastructure' in accordance with Development Contribution Plan 13 as detailed in Schedule 12 of TPS3.

Accordingly developer contribution will be applicable on the subdivision of the land as per the Developer Contribution Plan provided in Schedule 12 of TPS 3 for both DCA9 and DCA13.

The landowner is aware of his obligation to contribute to both DCA9 and DCA13 at the subdivision stage.

## 3.9 Other Requirements

Detailed Area Plans (DAP) are to be lodged for the proposed lots fronting the corner of Irvine Parade and New Road A and fronting the POS area. DAP's may also be provided for those lots (potentially) located within the 20m BPZ and BAL 29, BAL 19 and 12.5 designated area and those lots oriented to

the POS area and those lots which incorporate a frontage of less than 12m. DAP's will address design principles including setbacks, open space requirements, vehicular access locations, the public edge, safety and fire management.

### 3.10 Staging

The SP facilitates a relatively small residential estate and accordingly subdivision will be implemented in one stage with all infrastructure being provided to service all lots. The proposed secondary school site will be excised at the time of subdivision (or potentially before if undertaken independently by the Education Department) and any infrastructure or servicing can be provided for that lot by the Education Department at the time the school is developed.

### 3.11 Consultation

The following Table 3 provides a summary of the Consultation undertaken during the formulation of the Structure Plan with relevant stakeholders including Government agencies and owners or agents for adjoining properties.

Table 3 Summary of Consultation

SUMMARY OF CONSULTATION				
Who	Property	Contact & Date	Purpose	Outcome
City of Cockburn Planning & Technical Services Department Roberto Colalillo	Lot 33	Initial meeting 17.07.2013 Various phone calls for guidance on matters of detail.	Seek SP requirements and general status of surrounding dev't.	Guidance as to process and req't's for SP and copies of various surrounding SP plans.
Lorenzo Santoriello, John McDonald	Lot 33	Various phone and email from January 2014 on design matters until lodgement, including meeting on 08.07.2015	Discuss design elements and Irvine/Bellingham intersection, R Code Density, POS location departure from SSDSP3 position.	Acceptance of Irvine/Bellingham intersection and general concept plan for SP
Ossie Pereira, John McDonald, Tim Crane	Bellingham/ Irvine Intersection	Sep't through Oct 2014 various email contacts	Design detail of Irvine/Bellingham intersection	Acceptance by CoC Tech Services Dep't to staggered 'T' intersection
City of Cockburn Technical Services Dep't	Lot 33	Phone from Lot 33 project engineers	To determine the City's infrastructure requirements	Establish the City's infrastructure requirements
City Of Cockburn	Lot 33	Phone November	Seek guidance for	Obtain guidance

SUMMARY OF CONSULTATION				
Who	Property	Contact & Date	Purpose	Outcome
Environment Dep't Linda Metz, Chris Beaton		2013  Phone/email 03.04.2014	flora and fauna survey requirements.  Officer review of final draft flora and fauna reports	of req't for flora and fauna reports.  Acceptance to content of flora and fauna reports.
Sandra Daughter of owners	Lot 32 Barfield	By Email 31.01.2015	Forwarded our final draft SP Plan to seek neighbour support	No response received from owner
Bill Carmody Gold Estates	Lot 31 Barfield	Various phone and emails early to mid 2014  Early 2015 Lot 33 project engineers (DEC) spoke with Gold Estate engineers	General liaison swap concept designs for road designs west and east of school site  To coordinate location of sewer extension along future Irvine Parade	Understanding of proposed road design for Lot 31 and dev't to the south of Lot 31  Establish technical specifications for extension of sewer line along future Irvine Parade.
Ed Dep't Michael Cooper, Stephen Muldoon, Phil Newnham	Proposed Hammond Park Secondary School site	Initial meeting 17.10.13  Meeting 17.10.14  Meeting 28.10.14 with owners/agents for all lots	To seek input from Ed Dep't to our SP design; inform Ed Dep't of issues during formulation of SP, particularly the design of the Irvine/Bellingham intersection.  School status and implications for our Fire Mgt Plan Intention for Federal Env Referral. Status of school site amalgamation / subdivision  To discuss development timing intentions	Understanding each other's objectives.  Details of school status.  Advise Ed Dep't our advice is to refer. Noted.  Understanding each adjoining properties



SUMMARY OF CONSULTATION				
Who	Property	Contact & Date	Purpose	Outcome
		accommodating the secondary school site	for each parcel including school site.	development intentions
DoW Jane Sturgess	Lot 33	Phone and emails August and December 2013	To ascertain groundwater monitoring requirements	Guidance as to DoW reqt's for number of water bores and quality and groundwater monitoring on our site
DPaW David Lodwick	Lot 33	Phone 22.09.2014  12.12.2014 Draft SP report emailed to DPaW	Seek guidance for EPBC Act referral.  Seek preliminary assessment of SP from DPaW (as per CoC Env Dep't recommendation).	Advice received.  No advice received.
Water Corporation Land Dev't Branch	Lot 33	Lot 33 project engineers (DEC) contacted Land Dev't Branch	Seek location of existing water and sewer mains	Establish location of water sewer mains.

#### **4 CONCLUSION**

This SP report, accompanying Plan 1 - Structure Plan (and Figure 7) and accompanying technical reports provided for Lot 33 Barfield Road, Hammond Park have been prepared in accordance with the City of Cockburn's TPS3 requirements, the Western Australian Planning Commission's Structure Plan Preparation Guidelines and the requirements of the Southern Suburbs District Structure Plan No. 3. The design of the SP Plan 1 addresses the design objectives of the Western Australian Planning Commission's Liveable Neighbourhoods design guidelines.

The formulation of the report and accompanying technical reports has considered the advice as provided during consultation with various Government agencies.

The resultant Plan 1 – Structure Plan (and Figure 7) provides a natural extension of the existing adjoining residential estates and will provide a well planned logical link to the yet to be developed land adjoining to the site's south. The SP Plan 1 provides for the excision of the secondary school site for the Education Department.

The SP report and Plan 1 – Structure Plan provides the necessary information to guide the orderly and proper development of Lot 33 Barfield Road Hammond Park for residential purposes and accordingly the support of the City of Cockburn and the Western Australian Planning Commission is respectfully requested.

# FIGURES



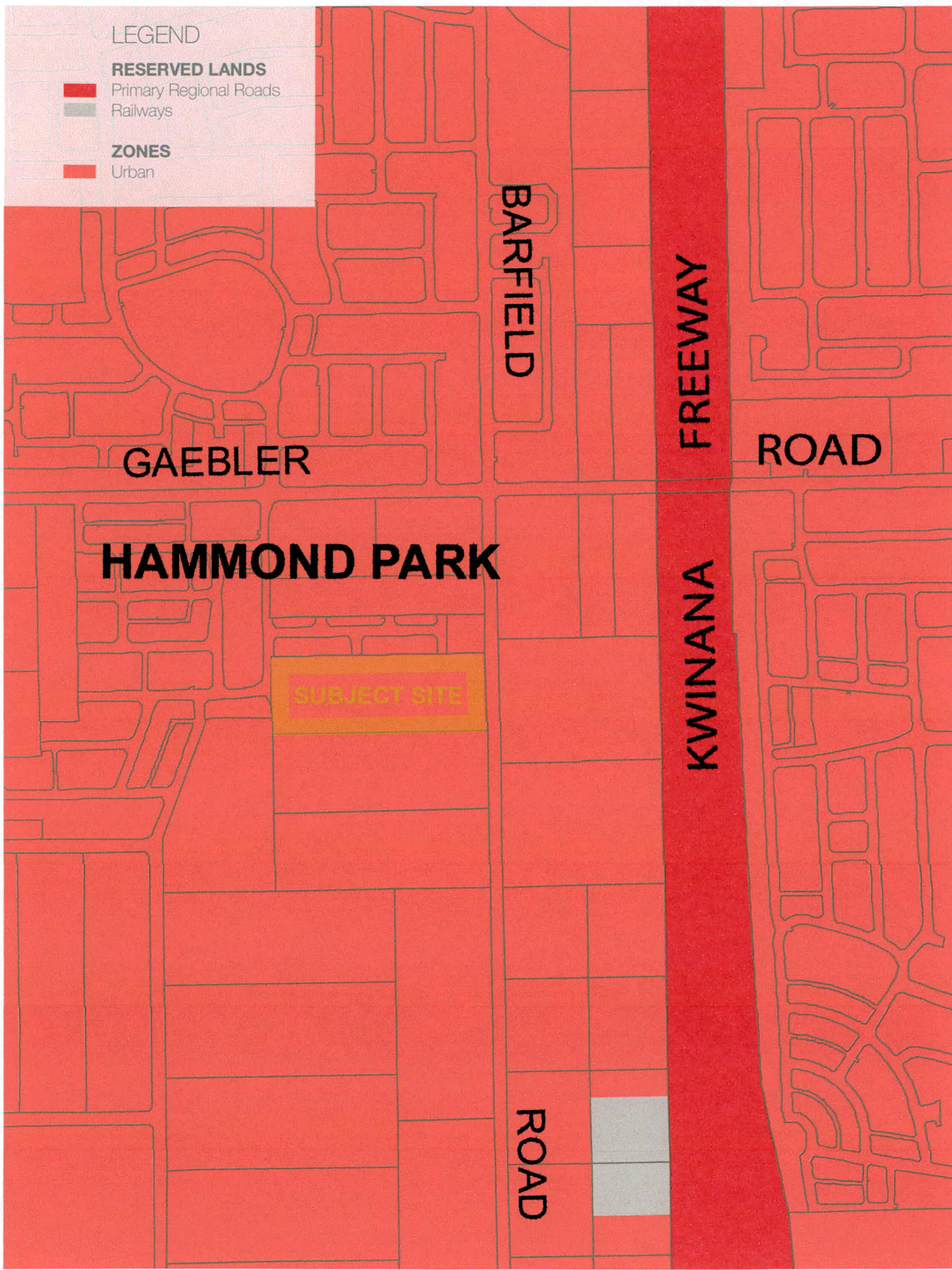


AERIAL PHOTO - LOCAL CONTEXT PLAN

Lot 33 Barfield Road, Hammond Park



Figure 2



METROPOLITAN REGION SCHEME - ZONING

Lot 33 Barfield Road, Hammond Park



Figure 3

LEGEND

**METROPOLITAN REGION SCHEME RESERVES**

-  Primary Regional Roads
-  Railways

**LOCAL SCHEME RESERVES**

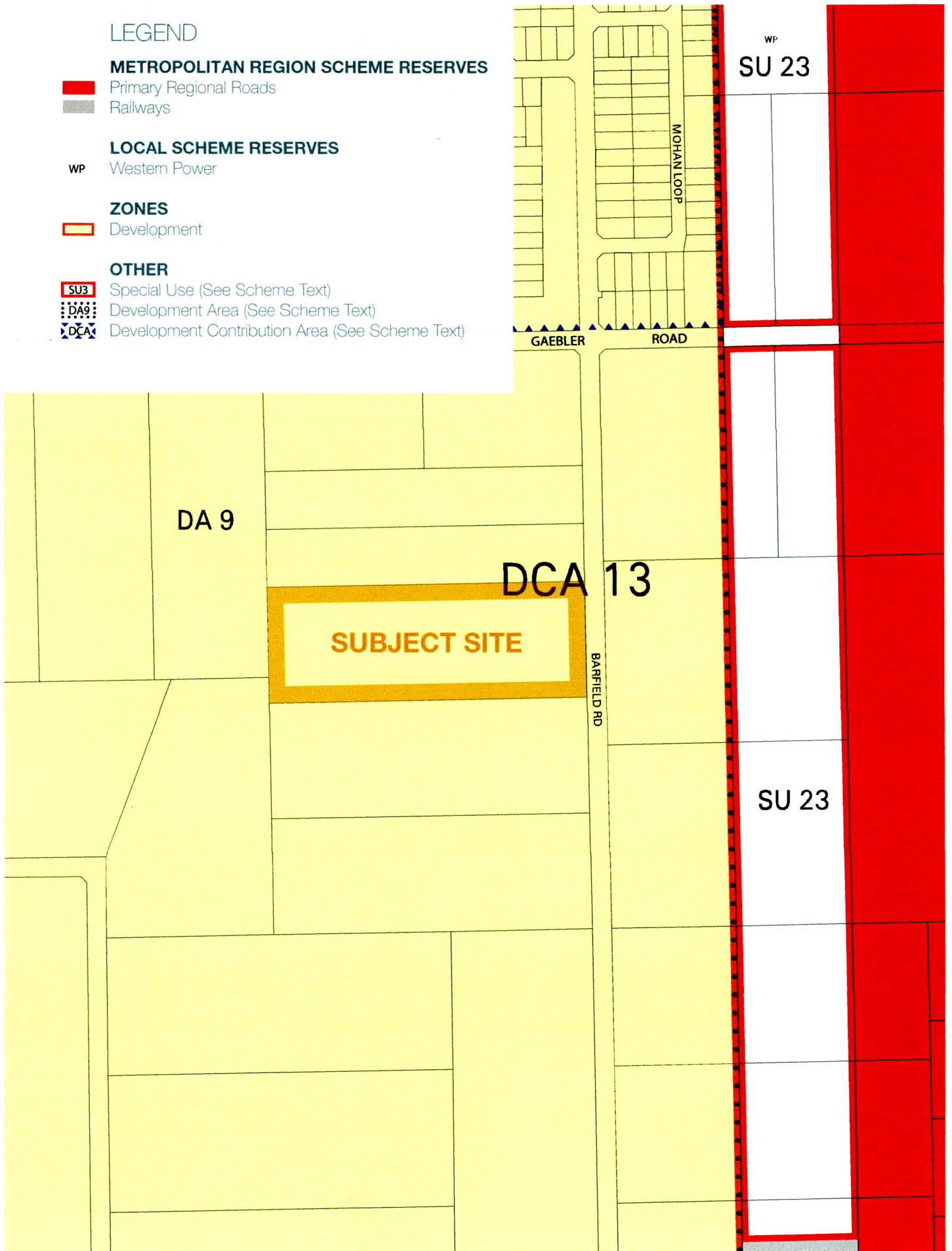
- WP Western Power

**ZONES**

-  Development

**OTHER**

-  Special Use (See Scheme Text)
-  Development Area (See Scheme Text)
-  Development Contribution Area (See Scheme Text)



**PLAN NOTES**

1. FUTURE RESIDENTIAL DEVELOPMENT SHALL NOT DIRECTLY ABUT ROWLEY ROAD. FUTURE LOCAL STRUCTURE PLANNING IS TO DEMONSTRATE A SUITABLE INTERFACE TREATMENT (E.G. ENLARGED SERVICE ROAD DESIGN WITH FRONTING RESIDENTIAL DEVELOPMENT AS A MINIMUM ) BEING PROVIDED TO THE FUTURE ROWLEY ROAD FREIGHT ACCESS ROUTE.

2. FUTURE ACCESS ROAD TO BE PROVIDED AS A FULL INTERSECTION UNTIL ROWLEY ROAD IS UPGRADED AND CONSTRUCTED TO A REGIONAL ROAD AT WHICH TIME THE INTERSECTION WILL BE CONVERTED AND MAINTAINED AS LEFT IN/LEFT OUT ACCESS ONLY. ( SUBJECT TO MAIN ROADS WA APPROVAL).

3. AS PART OF THE UPGRADE OF ROWLEY ROAD, GRADE SEPARATED PEDESTRIAN AND VEHICULAR ACCESS IS TO BE PROVIDED AS A CONTINUATION OF BARFIELD ROAD, IN ORDER TO MAINTAIN CONNECTIVITY BETWEEN FUTURE DEVELOPMENT TO THE SOUTH OF ROWLEY ROAD THIS MAY BE FURTHER RATIONALISED THROUGH SUBSEQUENT LOCAL STRUCTURE PLANNING TO DETERMINE HOW THIS SPECIFIC ACCESS IS CREATED.

4. FUTURE STRUCTURE PLANNING OF THE CELL SOUTH OF WATTLEUP ROAD MUST PROVIDE AN APPROPRIATE INTERFACE WITH RESIDENTIAL DEVELOPMENT NORTH OF WATTLEUP ROAD. THIS IS TO HAVE PARTICULAR REGARD TO THE POSITION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION IN RESPECT OF ITS POSITION ON THE ACCEPTABILITY (OR OTHERWISE) OF RESIDENTIAL DEVELOPMENT SOUTH OF WATTLEUP ROAD, AND ALTERNATIVE (NON-RESIDENTIAL) LAND USES THAT MAY BE REQUIRED, ANY IMPACTS ASSOCIATED WITH THE FUTURE DEVELOPMENT OF NON-RESIDENTIAL LAND USES IN THE CELL SOUTH OF WATTLEUP ROAD MUST BE FULLY CONTAINED WITHIN THE CELL BOUNDARIES.

5. NEIGHBOURHOOD CENTRE - THE DESIGN AND FUNCTION OF THE PROPOSED NEIGHBOURHOOD CENTRE SHALL BE BASED ON MAIN STREET' PRINCIPLES AND RELEVANT PROVISIONS OF LIVEABLE NEIGHBOURHOODS. ANY ASSOCIATED LOCAL STRUCTURE PLAN MUST ADEQUATELY DEMONSTRATE THROUGH CONCEPT PLANS AND/OR DETAILED AREA PLANS THE MANNER IN WHICH THE CENTRE ADDRESSES THE REQUIREMENTS OF THE RELEVANT SECTIONS OF THE SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN - STAGE 3 REPORT, AND PARTICULARLY THE NEIGHBOURHOOD CENTRE CONCEPT PLAN PROVIDED WITHIN THE REPORT DOCUMENT.

6. NEIGHBOURHOOD NODES - THE DESIGN AND FUNCTIONALITY OF THE NEIGHBOURHOOD NODES SHALL BE DISTINCTLY DIFFERENT TO THE PRIMACY OF THE NEIGHBOURHOOD CENTRE. THESE LOCATIONS ARE TO PROVIDE FOR A RANGE OF MORE LOCALLY FOCUSED ACTIVITIES AND FUNCTIONS, WHERE RETAIL IS PROPOSED, THESE ARE TO NOT EXCEED A MAXIMUM RETAIL FUNCTION OF 300SQM, WITH SUCH FUNCTION BASED UPON A 'CONVENIENCE STORE' TYPE USE.

7. CENTRAL PRECINCT - A COMPREHENSIVE LOCAL STRUCTURE PLAN WILL BE REQUIRED FOR THE CENTRAL NEIGHBOURHOOD CENTRE AND ADJACENT DEVELOPMENT. THE CITY WILL NOT CONSIDER INDIVIDUAL STRUCTURE PLANS IN THIS LOCATION DUE TO THE NEED TO ENSURE THE SUITABLE INTEGRATION OF DEVELOPMENT.

**GENERAL NOTES**

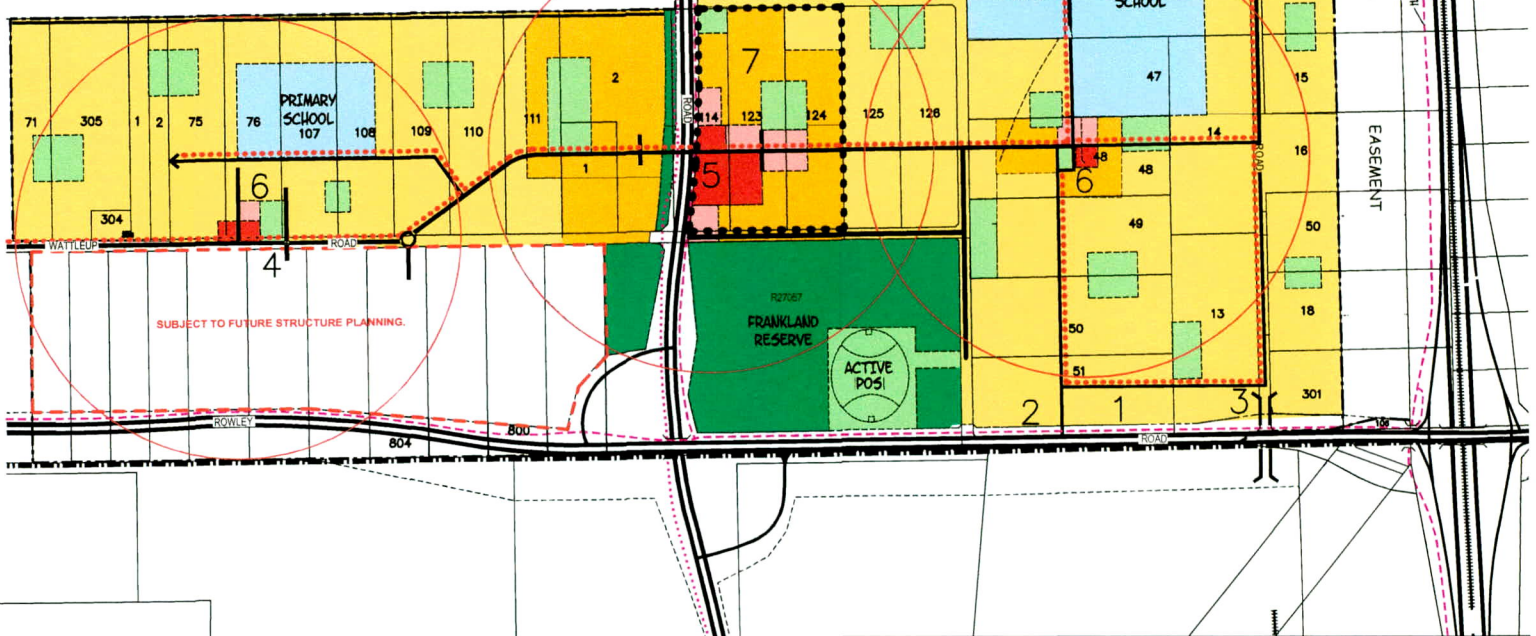
- A. ALL LOCAL STRUCTURE PLANS MUST INCLUDE AND BE INFORMED BY:
- i) DETAILED LWMS BASED UPON REGIONAL DRAINAGE STUDY,
  - ii) DETAILED NOISE MANAGEMENT STRATEGY WHERE LSP ADJOINS ROWLEY ROAD,
  - iii) FIRE MANAGEMENT PLAN WHERE LSP IS LOCATED NEAR ROS OR SIGNIFICANT POS,
  - iv) FLORA AND FAUNA MANAGEMENT PLAN,
  - v) TRAFFIC MANAGEMENT PLAN,
  - vi) CONTAMINATED SITES & ACID SULPHATE SOILS MANAGEMENT PLAN WHERE REQUIRED,
  - vii) HERITAGE STUDY WHERE LSP INCLUDES FORMER HISTORIC TRAMWAY,
  - viii) TRANSITION AND/OR INTERFACE STRATEGY IN RESPECT OF EXISTING RURAL USES,
  - ix) NEIGHBOURHOOD CENTRE CONCEPT PLAN AND DETAILED AREA PLAN WHERE INCLUDED WITHIN LSP AREA,
  - x) NEIGHBOURHOOD NODE CONCEPT PLAN AND DETAILED AREA PLAN.

B. LOCAL STRUCTURE PLANS SUBDIVISION AND DEVELOPMENT OF THE SUBJECT AREA IS TO BE IN ACCORDANCE WITH AN ENDORSED APPLICABLE LOCAL STRUCTURE PLAN.

C. PUBLIC OPEN SPACE AND DRAINAGE  
PUBLIC OPEN SPACE AREAS ARE INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN AND MODELING AT THE LOCAL STRUCTURE PLAN STAGE. ALL LOCAL STRUCTURE PLANS MUST ALSO INCORPORATE A LOCAL WATER MANAGEMENT STRATEGY TO DEMONSTRATE THE MANNER IN WHICH DRAINAGE CAN BE SELF-CONTAINED WHILST TAKING INTO CONSIDERATION THE DISTRICT/REGIONAL DRAINAGE OBJECTIVES, AND ENSURING BEST PRACTICE WATER SENSITIVE URBAN DESIGN. THE FUNCTIONALITY OF OPEN SPACE FOR INFORMAL ACTIVE RECREATION MUST ALSO BE CONSIDERED AS PART OF FUTURE OPEN SPACE AND DRAINAGE CO-PLANNING.

D. RESIDENTIAL  
i) USES WITHIN THE RESIDENTIAL AREAS ARE AS PER THE CITY OF COCKBURN'S TOWN PLANNING SCHEME NO 3 USE CLASS TABLE  
ii) RESIDENTIAL DENSITIES ARE INDICATIVE ONLY AND SHALL BE REFINED AT THE LOCAL STRUCTURE PLAN STAGE IN ACCORDANCE WITH THE LOCAL CRITERIA AS DEFINED WITHIN THE ASSOCIATED SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN - STAGE 3 REPORT  
iii) THE BASE CODING/MINIMUM DENSITY APPLICABLE TO THE DISTRICT STRUCTURE PLAN AREA IS TO BE CONSISTENT WITH DIRECTIONS 2031 IN REQUIRING GENERALLY 15 DWELLINGS/HA AND 25 DWELLINGS/HA IN AREAS NEAR 'CENTRES' AND AREAS OF 'AMENITY'.

E. DEVELOPMENT CONTRIBUTIONS  
DEVELOPMENT IN THIS AREA IS ALSO SUBJECT TO DEVELOPMENT CONTRIBUTIONS, SCHEDULE 12 OF TOWN PLANNING SCHEME NO. 3 DETAILS DEVELOPMENT CONTRIBUTION AREA PROVISIONS. PERSONS OR COMPANIES PROPOSING TO UNDERTAKE SUBDIVISION IN THIS AREA SHOULD REVIEW SCHEDULE 12 AND ALSO CONTACT THE CITY'S STRATEGIC PLANNING TEAM TO ASCERTAIN THERE ARE NO PENDING AMENDMENTS TO THIS SCHEDULE.

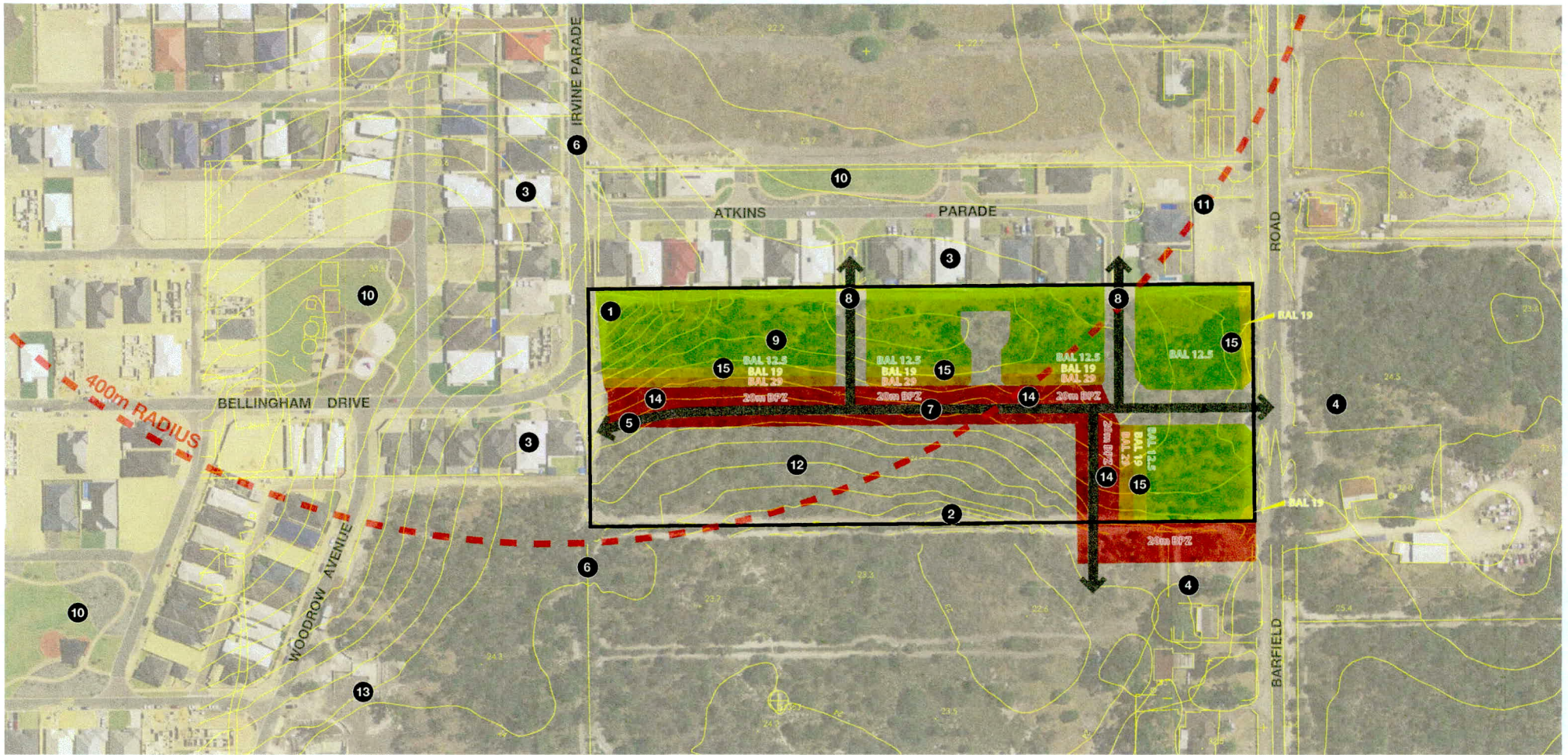


City of Cockburn  
GNA 2/05  
0 250m

<b>Residential Density</b>	<b>Local Centre (Pedestrian Based Retail)</b>	<b>Key Open Space Areas:</b>	<b>Key Road Structure (Existing and Proposed)</b>
High	Local Centre (Pedestrian Based Retail)	Public Open Space	Major Shared Path
Medium	Mixed Business / Commercial / Home Based Business	Regional Open Space	Historic Baldwin's Tramway Trail
	Community Facilities / Schools etc		400m Walkable Catchment
	Conservation Category		Central Precinct
	Wetland* * In accordance with DEC Geomorphic Wetlands Swan Coastal Plain dataset		

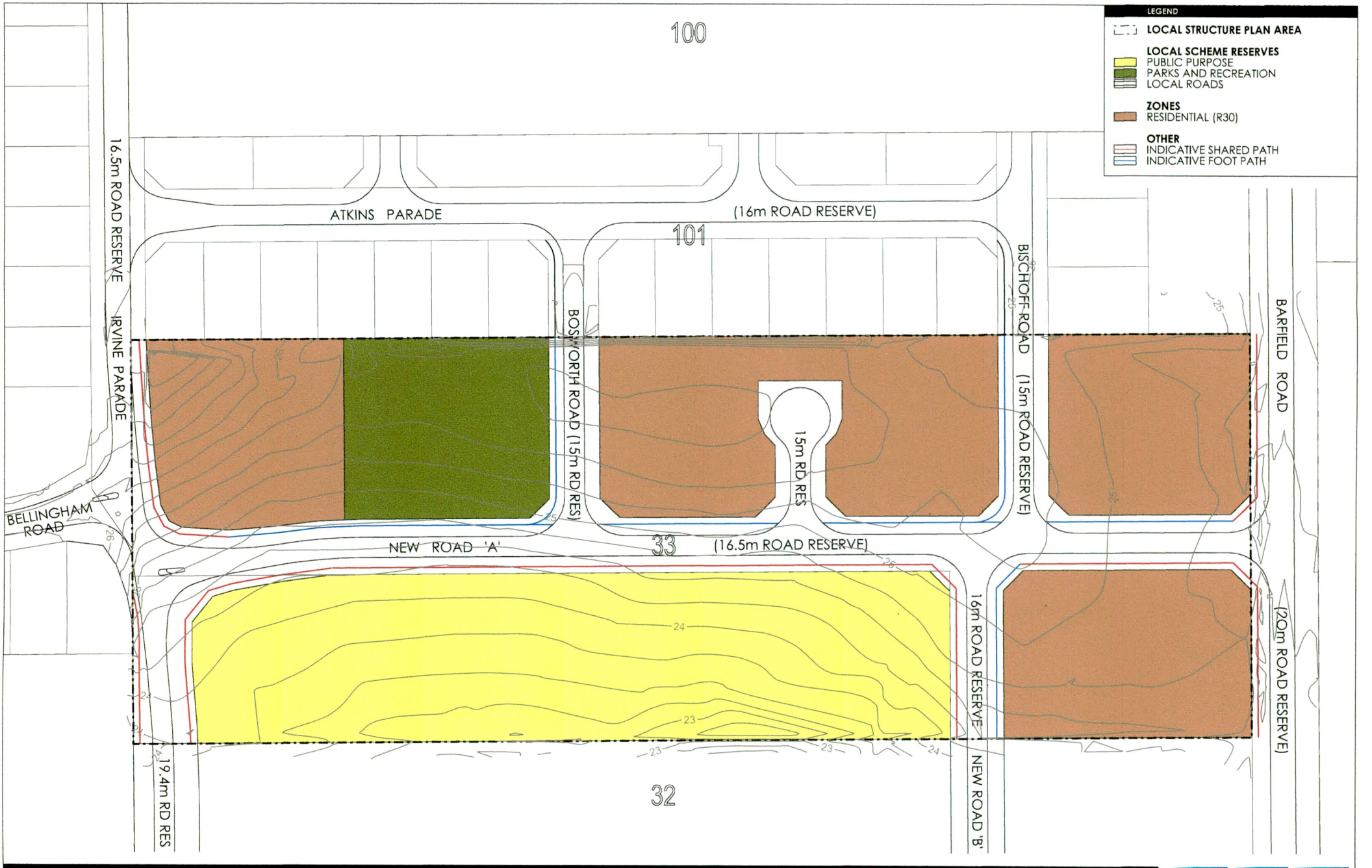
**SOUTHERN SUBURBS DISTRICT STRUCTURE PLAN**  
- STAGE 3, HAMMOND PARK / WATTLEUP





**LEGEND**

- 1 High Point RL 27.3 AHD. Downward slope will afford views from residential lots fronting Bellingham.
- 2 Low Point RL 22.7 AHD. Constrains location of drainage to high side of Bellingham Drive
- 3 Existing Residential.
- 4 Future Residential.
- 5 Proposed link road between existing Bellingham Drive and Barfield Road does not align with the existing alignment of Bellingham Drive west of Irvine Parade.
- 6 Irvine provides main north-south neighbourhood connector link road and future bus route.
- 7 New east west road neighbourhood connector road.
- 8 Road extension linkages to existing residential.
- 9 POS Located on 'very good' to 'excellent' quality vegetation cover. Preferred location to that as shown on SSDSP3 which only has 'good' quality vegetation cover.
- 10 Existing developed local level public open space.
- 11 400m Walkable Catchment to proposed local centre.
- 12 High School Proposed to be operational 2020 school year. Playing fields anticipated to be located at the northern end providing open aspect to residential lots fronting Bellingham and east side of school site.
- 13 Hammond Park Catholic Private Primary School.
- 14 20m BPZ setback line. Setback line is equal to or less than 4m primary setback for R30 residential development. Will have small impact on housing design. Setback may be removed or reduced if vegetation removed from high school site prior to issue of lot clearances.
- 15 BAL 29; BAL 19 and BAL 12.5 provisions (may) apply as identified in Fire Management Plan.



**STRUCTURE PLAN**

LOT 33 BARFIELD ROAD, HAMMOND PARK



ANDREW PAWLUK | TOWN PLANNER  
 ph: 0408 200 647 | email: pawluka@iinet.net.au

scale - 1:1000 @ A3 | date - 17 JUNE 2015  
 plan no. 13-003-004 (REVISION - 1)

0m 10m 20m 30m 40m

ALL AREAS & DIMENSIONS DISPLAYED  
 ARE SUBJECT TO DETAIL SURVEY

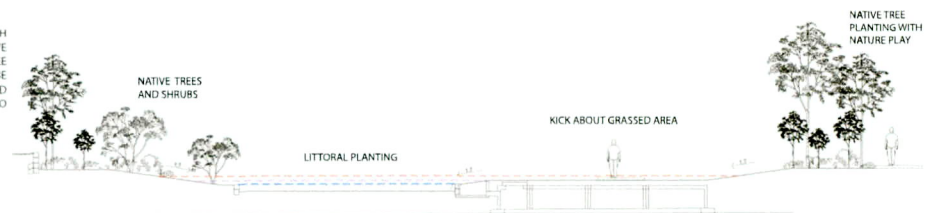
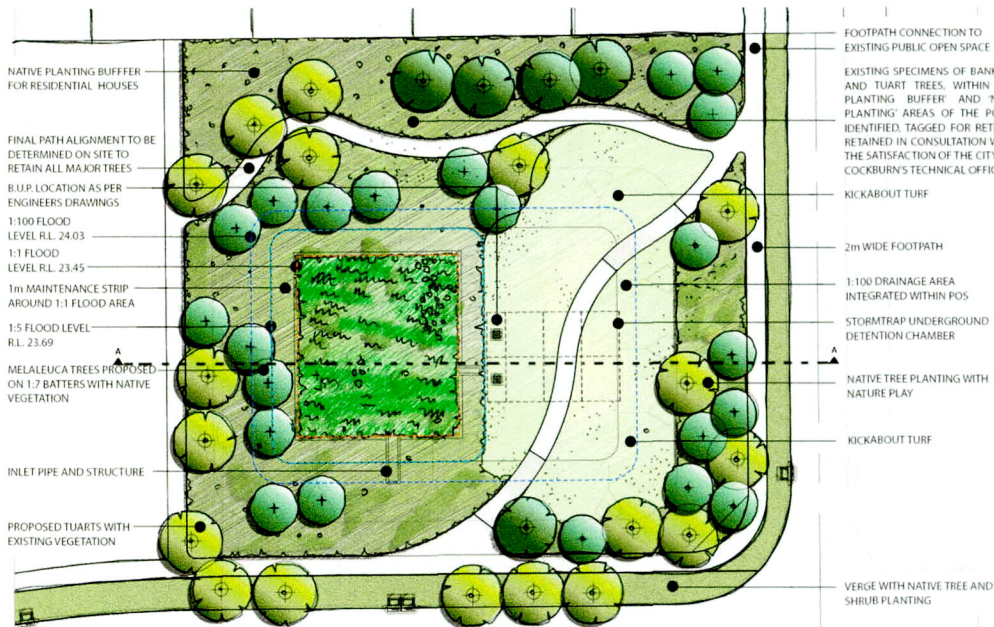
CLIENT | PASSIONE

Figure 7





OVERALL STREETScape : PLAN



TYPICAL SECTION A-A (NTS)

**PROPOSED SHRUB SPECIES**  
*Adenanthos sericeus*  
*Anigozanthos flavidus*  
*Grevillea crithmifolia*  
*Grevillea 'Gin gin Gem'*  
*Leucophyta brownii*  
*Lomandra 'Little Con'*  
*Melaleuca incana nana*

**PROPOSED TREE SPECIES IN POS**  
*Melaleuca raphiophylla*  
*Melaleuca quinquenrvia*  
*Eucalyptus gomphocephala*  
*Eucalyptus leucoxylon rosea*

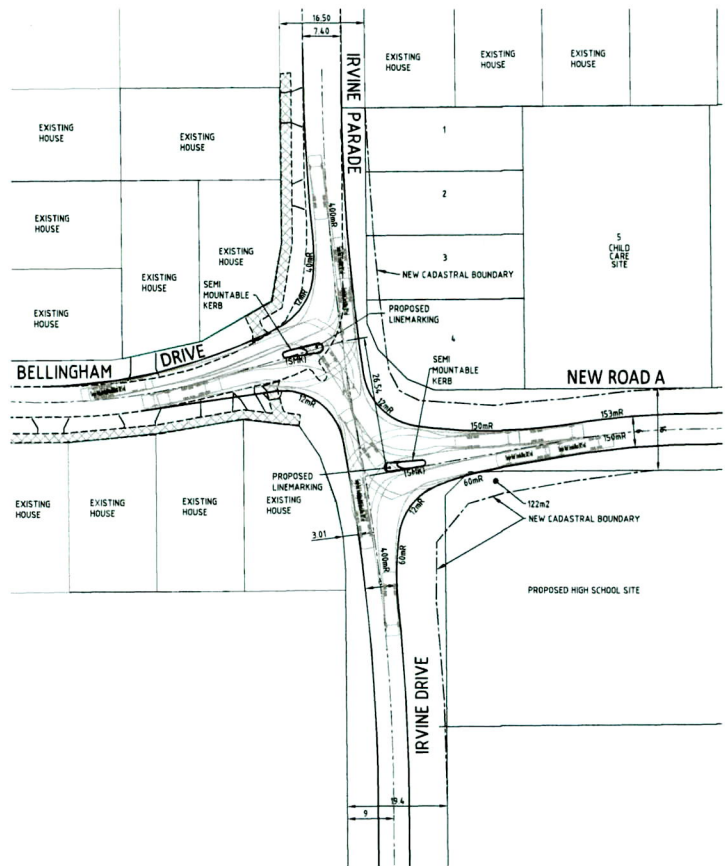
**PROPOSED STREET TREE SPECIES**  
*Agonis Flexuosa*  
*Corymbia ficifolia*  
*Metrosideros excelsa*  
*Erythrina Indica*

**PROPOSED LITTORAL PLANTING IN 1:1 DRAINAGE BASIN**  
*Baumea pretssii*  
*Isoplepis nodosa*  
*Juncus kraussii*  
*Juncus pallidus*

**Note:**  
 Individual specimens of Banksia, Jarrah and Tuart Trees, within the 'native planting buffer' and 'native tree planting' areas of the must be identified, tagged for retention and retained in consultation with and to the satisfaction of the City of Cockburn's technical officers.

Refer to Engineers drawings for detail on drainage infrastructure

Landscape Plan is indicative Only. Details and species to be finalised at detailed documentation



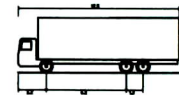
PLAN  
SCALE 1:250

**NOTES**

1.0 ALL INTERSECTION LAYOUTS AND RADII SUBJECT TO DETAILED DESIGN

**LEGEND**

- PROPOSED REINFORCED FLUSH KERB
- PROPOSED MOUNTABLE KERB
- PROPOSED SEMI MOUNTABLE KERB
- EXISTING KERBLINE
- EXISTING FOOTPATH
- DESIGN VEHICLE SWEEP PATH (12.5m SINGLE UNIT)



Single Unit Truck/Bus (12.5 m)  
 Overall Length 12.500m  
 Overall Width 2.500m  
 Overall Body Height 4.500m  
 Min Body Ground Clearance 0.500m  
 Track Width 2.500m  
 Lock-to-lock Time 8.80s  
 Curb to Curb Turning Radius 12.500m

**DESIGN VEHICLE SPECIFICATION**

**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
 The location of underground cables are approximate only and their exact position should be checked on site. No guarantee is given that all existing cables and services are shown. Locate all underground cables and services before commencement of work. Refer to Worksafe Publication 3.21.

**DIAL 1100 BEFORE YOU DIG**

**PRELIMINARY DRAWING**  
 NOT TO BE USED FOR CONSTRUCTION PURPOSES

REV No.	DATE	DRAWING CHECK	DESIGN REVIEW	REV'D P.MGR	APPRO'D P.DIR	AMENDMENT
B	24/07/14					IRVINE DRIVE ROAD RESERVE AMENDED
A	16/07/14	SM	GGA	GGA	GGA	INITIAL ISSUE

REV No.	DATE	DRAFTING CHECK	DESIGN REVIEW	REV'D P.MGR	APPRO'D P.DIR	AMENDMENT

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CLIENT			
PROJECT: HAMMOND PARK - IRVINE PARADE			
DRAFTER	DRAFTING CHECK	REVIEWED	APPROVED
S. MEWS		PROJECT MANAGER	PROJECT DIRECTOR
DESIGNED	DESIGN REVIEW		
S. MEWS			

TITLE			
IRVINE PARADE LAYOUT			
SHEET	DATUM	MAPC No.	PROJECT No.
-	AHD	SCALE 1:500	PR00138
DRAWING No.	REVISION		
SK001	B		