MERGED LOCAL STRUCTURE PLAN
REFER TO LSP MAP AND ADDENDUM TO DOCUMENT WHICH CONTAINS THE EARLIER WAPC ENDORSED LSP (FORMER PT LOT 128).

Local Structure Plan

Part Lot 9002 and Lot 292 Kimberley Street BULLSBROOK

on behalf of DJM Bullsbrook No.2 Pty Ltd

Local Structure Plan

Part Lot 9002 Kimberley Street, Bullsbrook

Prepared by:
PETER D WEBB & ASSOCIATES
PO Box 920
SUBIACO WA 6904

T: (08) 9388 7111
F: (08) 9388 7240
E: planning@webbplan.com.au

Consultant: Ms Clare McLean
Job Number: C2038
Version/Date: V3/November 2016

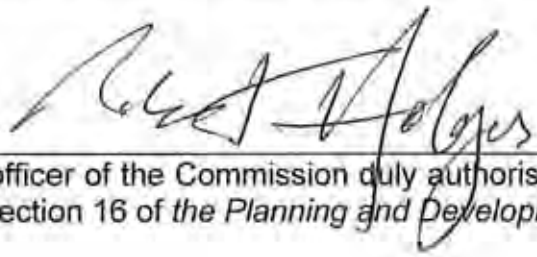
Prepared on behalf of:
DJM BULLSBROOK NO. 2 PTY LTD
PO Box 3039
EAST PERTH WA 6892

PETER D WEBB AND ASSOCIATES

CONSULTANTS IN TOWN PLANNING AND URBAN DESIGN

IT IS CERTIFIED THAT AMENDMENT NO. 2 TO NORTH AVENUE STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON: **20 October 2017**

Signed for and on behalf of the Western Australian Planning Commission



an officer of the Commission duly authorised by the Commission pursuant to Section 16 of *the Planning and Development Act 2005* for that purpose.

TABLE OF AMENDMENTS			
AMENDMENT NO.	**SUMMARY OF THE AMENDMENT**	**AMENDMENT TYPE**	**DATE APPROVED BY WAPC**

EXECUTIVE SUMMARY

The Local Structure Plan Area (LSP Area) is described as forming part of Lot 9002 and Lot 292 Kimberley Street, Bullsbrook.

The LSP Area is situated on the southern side of Kimberley Street and had previously formed the northern extent of the larger land parcel (formerly) described as Pt Lot 128 North Avenue, Bullsbrook. Former Pt Lot 128 is the subject of a WA Planning Commission (WAPC) endorsed LSP; WAPC Subdivision Approval 149018; and a Bushfire Management Plan (prepared by Fireplan WA).

The LSP Area is described on the endorsed LSP map (for former Pt Lot 128) as: 'Balance Land'; 'Proposed Drainage Reserve'; and includes the lots identified with a density code of 'R20'. (Refer to **Annexure 1**: Endorsed LSP.)

The portion of the LSP Area identified on the endorsed LSP as 'Balance Land' is currently the subject of a Metropolitan Region Scheme (MRS) Amendment (NE and NW MRS Omnibus Amendment No. 1292/52) to rezone the land from 'Rural' to 'Urban'. A concurrent amendment to the City of Swan Local Planning Scheme No. 17 (LPS 17) to rezone this part of the LSP Area from 'Rural' to 'Residential Development' is also being undertaken, pursuant to Section 126 of the *Planning and Development Act 2005*.

This Local Structure Plan (LSP) has been prepared to facilitate the final stage of urban development of former Pt Lot 128 and is lodged in anticipation of the imminent gazettal of the respective MRS Amendment and concurrent LPS 17 Amendment.

ITEM	DATA		STRUCTURE PLAN REF (Section No.)
TOTAL AREA COVERED BY THE STRUCTURE PLAN	2.51ha		2.2
AREA OF EACH LAND USE PROPOSED: – **RESIDENTIAL**	**HECTARES** 1.91	**LOT YIELD** 34	5.2
TOTAL ESTIMATED LOT YEILD	34		5.2
ESTIMATED NUMBER OF DWELLINGS	34		5.2
ESTIMATED RESIDENTIAL SITE DENSITY	R20 and R-MD25		5.2
ESTIMATED POPULATION *(based on average of 2.6 persons per dwelling, Census 2011)*	88.4 people		5.2
ESTIMATED AREA AND PERCENTAGE OF PUBLIC OPEN SPACE GIVEN OVER TO: - **LOCAL PARK**	4224m^2 (16.8%)		5.4

CONTENTS

	TECHNICAL ANNEXURES	
	ANNEXURE 1:	Endorsed LSP – Pt Lot 128 North Avenue, Bullsbrook (Structure Plan Map Only); and WAPC Approved Plan of Subdivision
	ANNEXURE 2:	Certificate of Title and Deposited Plan
	ANNEXURE 3:	Clause 42 Certificate
	ANNEXURE 4:	Proposed MRS Rezoning Map (Proposal 3, North East and North West Omnibus Amendment 1292/57)
	ANNEXURE 5:	Geotechnical Investigation, Douglas Partners (2011)
	ANNEXURE 6:	Post Geotechnical Report, Brown Geotechnical (2014)
	ANNEXURE 7:	Urban Water Management Plan, GHD Pty Ltd (2014)
	ANNEXURE 8:	Bushfire Management Plan, Fireplan WA (2016)
	ANNEXURE 9:	Proposed Plan of Subdivision
	ANNEXURE 10:	Approved Landscaping Concept, LAS (2014)
	ANNEXURE 11:	Approved Basin and Overflow Drain Design, West Coast Engineering WA (2015)
	ANNEXURE 12:	Water and Sewer Servicing Infrastructure, West Coast Engineering WA (2015)
	ANNEXURE 13:	Power and NBN Infrastructure, West Coast Engineering WA (2015)

PART ONE – IMPLEMENTATION SECTION

1.0 STRUCTURE PLAN AREA

This Structure Plan applies to part of Lot 9002 and Lot 292 Kimberley Street, Bullsbrook being the land contained within the inner edge of the line denoting the structure plan boundary on the Structure Plan Map. (Refer to **Plan 1**: Structure Plan Map.)

2.0 OPERATION

2.1	Operation	This Structure Plan commences operation on the date it is adopted by the Western Australian Planning Commission pursuant to Clause 22 of the *Planning and Development (Local Planning Schemes) Regulations 2015.*
2.2	Change or Departure from Structure Plan	Any change or departure from the Structure Plan is to be undertaken in accordance with Clause 29 of the *Planning and Development (Local Planning Schemes) Regulations 2015.*

3.0 STAGING

The development of this Structure Plan will be undertaken in a single stage, being the final stage of development of the larger land parcel formerly described as Pt Lot 128 North Avenue, Bullsbrook (subject to a WAPC endorsed Local Structure Plan (March 2016) and WAPC Subdivision Approval 149018.

4.0 LAND USE

4.1	Structure Plan Map	The uses, subdivision and development of the land are to generally accord with the Structure Plan.
4.2	Residential Density	Residential densities applicable to the Structure Plan shall be those residential densities shown on the Structure Plan Map.

5.0 SUBDIVISION/DEVELOPMENT

5.1	Local Development Plans	Local Development Plans (LDP) are required to be prepared and implemented as a condition of subdivision approval, pursuant to Part 6 of the *Planning and Development (Local Planning Schemes) Regulations 2015,* for the lots as identified on the Structure Plan Map as being: 1. the 'LDP' lots which have a dual frontage (to Kimberley Street and southern internal road), and being those lots which require vehicular access to be restricted to the southern internal road due to fill requirements; and 2. the lots identified in the Bushfire Management Plan (BMP) as having a BAL rating of 12.5.
5.2	LPP-POL-11 – Variation to deemed-to-comply requirements of the R-Codes – Medium density single house development standards (R-MD Codes)	Development on the lots contained within the LSP Area are subject to the varied deemed to comply requirements contained in the City of Swan LPP-POL-11.
5.3	Notifications on Title	Notifications are required on the lots identified as having a 12.5 BAL rating advising of the increased building standards required in accordance with AS3959 (2009), in accordance with Section 70A of the Transfer of Land Act 1983.

6.0 OTHER REQUIREMENTS

6.1	Construction of Buildings in Bushfire Prone Areas	This Structure Plan is supported by a Bushfire Management Plan (BMP). The development of the lots identified in the BMP as having a BAL 12.5 rating are required to comply with the increased construction standards, pursuant to AS 3959-2009 *Construction of buildings in bushfire prone areas*.

7.0 ADDITIONAL INFORMATION

7.1	Conditions of Subdivision Approval	The following technical reports will be required to support the subdivision of the land: 1. Post Geotechnical Report. 2. Updated Urban Water Management Plan.

PLAN 1

Structure Plan Map

EMBAYED REVERSING AREAS ARE TO BE CONSTRUCTED BY THE DEVELOPER WITHIN THE ROAD VERGE ADJACENT TO THE SEVEN (7) LOTS WITH DIRECT ACCESS TO KIMBERLEY STREET. THIS WILL ALLOW VEHICLES EXITING THESE LOTS TO REVERSE INTO THE PROTECTED EMBAYMENT AREA BEFORE ENTERING KIMBERLEY STREET IN A FORWARD DIRECTION.

KIMBERLEY STREET (20m WIDE ROAD RESERVE)

FILL REQUIREMENTS TO LOTS 301-308 NECESSITATE FRONTAGES TO THE SOUTH/INTERNAL ROAD.

R25

(15m)

50m

50 METRE SETBACK TO LOW BUSHFIRE HAZARD

15m ROAD RESERVE

100 METRE SETBACK TO MODERATE BUSHFIRE HAZARD

RAPHOE LOOP

R20

WAY

BALLYBOFEY LOOP (15m)

59m

100m

RESERVE FOR RECREATION AND DRAINAGE

GLENREE

12m ROAD RESERVE

NOTE:
No drainage to impact upon Bush Forever Stie 294

BUSH FOREVER SITE 294

RESERVE FOR RECREATION AND DRAINAGE

(12m)

NARIN LOOP (15m)

STREET (15m)

ARDARA ROAD

1m minimum front setback to achieve the setback and Building Protection Zone required for fire management set out in the approved Fire Management Plan.

LIFFORD STREET (15m)

BUNDORAN

EXISTING 10m WIDE STRATEGIC FIREBREAK

NARIN

COMMONWEALTH GOVERNMENT PUBLIC PURPOSE RESERVE

LOOP

8m front setback applies to the hatched portion of this lot to achieve the setback and Building Protection Zone for fire management set out in the approved Fire Management Plan.

8m PAW

R40

R30

NORTH AVENUE

STRUCTURE PLAN NOTATIONS

1. This Structure Plan is subject to a Bushfire Management Plan, prepared by FirePlan WA.
2. Notifications on the Certificates of Title are required as a condition of subdivision approval for the proposed lots identified as having a BAL 12.5 rating in the Bushfire Management Plan, in accordance with Section 70A of the Transfer of Land Act 1983 advising of the increased building standards in accordance with AS3959 (2009).
3. The primary frontage of Lots 301-308 is to the southern internal subdivision road, due to fill requirements.
4. The front setbacks on the Structure Plan (shown as the 'Building Exclusion Zone') shall not be varied to allow any encroachment of the building(s) to achieve the dwelling setbacks and Building Protection Zones required by the approved Bushfire Management Plan.
5. Development of the R40 site should address the Public Access Way (PAW) and provide for visually permeable fencing.

POS CALCULATION

AREA OF LOT: 8.17ha
POS REQUIREMENT @ 10%: 8170m²
TOTAL POS PROVISION: 1.17ha
unrestricted portion of POS: 9884m²
restricted portion of POS: 1810m²

LOT SUMMARY

RESIDENTIAL LOT YIELD: 117
R20 - AVERAGE LOT SIZE: 512m²
R20 - MINIMUM LOT SIZE: 402m²
R25 - AVERAGE LOT SIZE: 408m²
R25 - MINIMUM LOT SIZE: 302m²
R30 - AVERAGE LOT SIZE: 292m²
R30 - MINIMUM LOT SIZE: 284m²
R40 - AVERAGE LOT SIZE: 418m²
R40 - MINIMUM LOT SIZE: 285m²

LEGEND

- SUBJECT LAND
- RESIDENTIAL R20
- RESIDENTIAL R25
- RESIDENTIAL R30
- RESIDENTIAL R40
- LOTS SUBJECT TO INCREASED CONSTRUCTION STANDARDS (AS3959)
- LOCAL DEVELOPMENT PLAN
- NO VEHICLE ACCESS
- PRIMARY FRONTAGE
- BUILDING EXCLUSION ZONE

LOCAL STRUCTURE PLAN

LOT 128 NORTH AVENUE, BULLSBROOK
(BULLSBROOK LANDING PHASE 2)

PREPARED FOR DJM BULLSBROOK No. 2 PTY LTD

scale 0 5 10 20 25 50

SCALE: 1:1500 @ A3
DATE: 27-11-2017
FILE REF: P2038-32 LSP

PETER D WEB AND ASSOCIATES
CONSULTANTS IN TOWN PLANNING & URBAN DESIGN
PO BOX 920 SUBIACO WA 6904 TEL: 9388 7111
UNIT 2/19 YORK STREET SUBIACO FAX: 9388 7240

PART TWO – EXPLANATORY SECTION

1.0 INTRODUCTION AND PURPOSE

This Local Structure Plan (LSP) has been prepared to facilitate the urban development of part of Lot 9002 and Lot 292 Kimberley Street, Bullsbrook.

The approval of this LSP will enable the final stage of residential development of the larger land parcel formerly described as Pt Lot 128 North Avenue, Bullsbrook, which is currently proceeding through the first and second stages of construction, in accordance with the endorsed LSP and the subsequent WAPC Subdivision Approval on March 13, 2014. (Refer to **Annexure 1**: Endorsed LSP – Pt Lot 128 North Avenue, Bullsbrook (Structure Plan Map Only); and WAPC Approved Plan of Subdivision.)

The LSP Area includes:

1. the 'Balance Land' as identified on the endorsed LSP for Pt Lot 128 North Avenue, Bullsbrook.

   The 'Balance Land' (at the time of progressing the earlier now endorsed LSP) had been retained for Rural purposes due to aircraft noise (ANEF) contours associated with the Pearce Aerodrome and a Water Corporation Waste Water Treatment Buffer. These constraints no longer apply to the land with the ANEF contours and the Waste Water Treatment Buffer having now been refined, resulting in both no longer impacting on the future residential development potential of this part of the LSP Area.

   The 'Balance Land' is currently in the process of being rezoned from 'Rural' to 'Urban' in the MRS (being Proposal 3 of the North East and North West Omnibus Amendment 1292/57), which process includes a concurrent Amendment to the City of Swan LPS 17 from 'General Rural' to 'Residential Development'. Final approval of the MRS Amendment and concurrent LPS Amendment is imminent;

2. the pocket of 'R20' density coded land to the east of the 'Balance Land', with a northern frontage to Kimberley Street and a southern frontage to the northern most internal subdivisional road (forming the western extension of Balybofey Loop); and

3. the area of land described as Lot 292 on the current Deposited Plan 404683 and identified as a 'Proposed Drainage Reserve' on the earlier endorsed LSP (for former Pt Lot 128). Lot 292 is identified on the LSP map as a 'Reserve for Drainage and Recreation' and forms part of the overall recreational space provided for this residential area.

In anticipation of the imminent gazettal of the MRS Amendment rezoning the 'Balance Land' from 'Rural' to 'Urban'; and 'General Rural' to 'Residential Development' under the City's LPS 17, this LSP is formally lodged for the City's assessment.

2.0 LAND DESCRIPTION

2.1 LOCATION

The LSP Area is located approximately 54 kilometres north of the Perth Central Business District, 27km from the Midland Strategic Regional Centre and 35km from the Bindoon townsite.

The land is situated to the north of the established Bullsbrook townsite. It has a primary frontage to Kimberley Street, with its southern boundary being connected to the approved residential development of former Pt Lot 128 North Avenue, Bullsbrook (Bullsbrook Landing). The land is bound to the west by Bush Forever site 294 and vacant land which is managed by the Royal Australian Air Force's Base Pearce. (Refer below to **Figure 1**: Location Plan.)

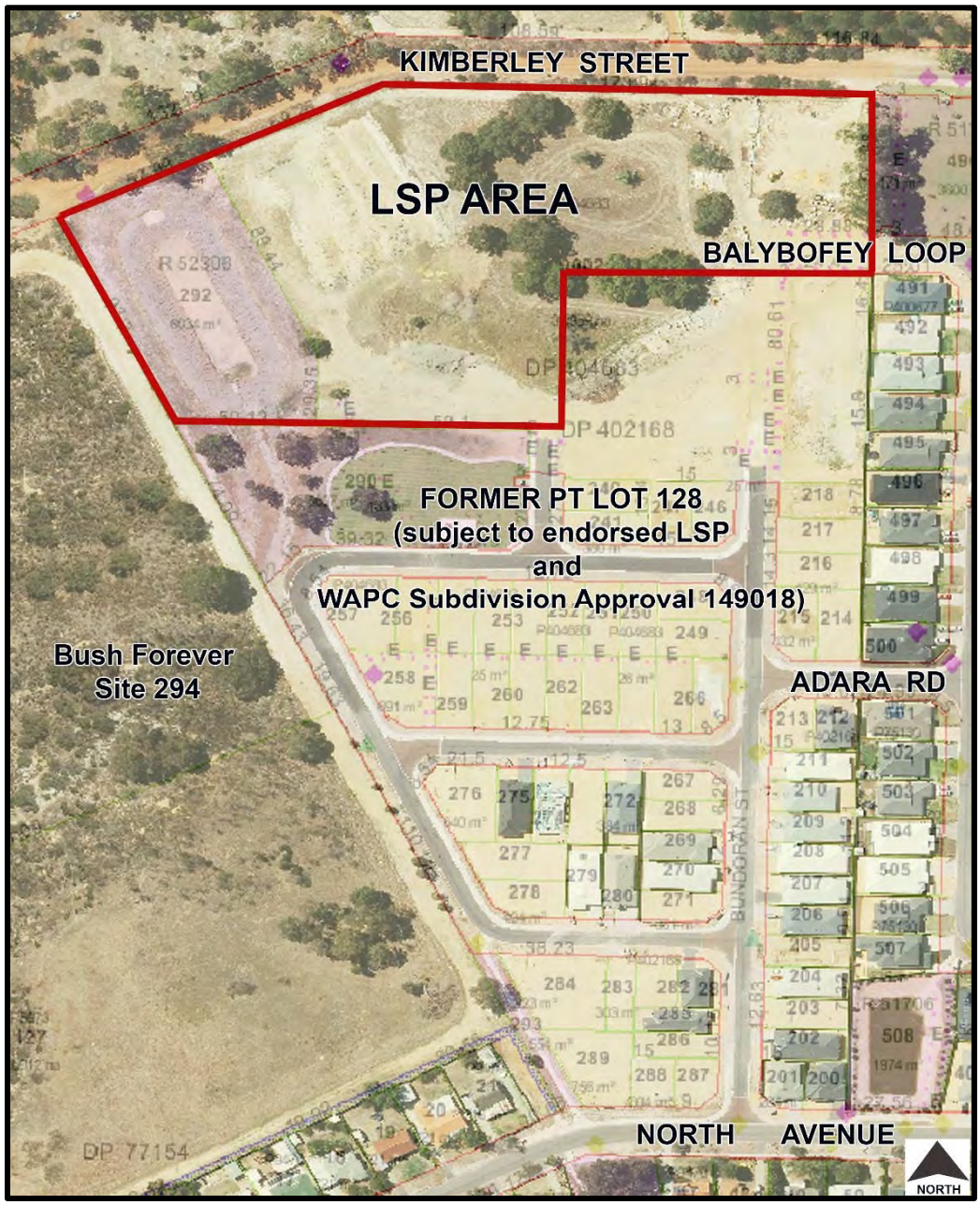


Figure 1: Location Plan *(source: Landgate, 2016)*

2.2 AREA AND LAND USE

The LSP Area has an approximate total land area of 2.51 hectares and is situated on the southern side of Kimberley Street, with a frontage to this road of 298.19 metres, and to the north of the approved subdivision of former Pt Lot 128 North Avenue, Bullsbrook, which is currently under construction by DJM Bullsbrook No. 2 Pty Ltd.

The LSP Area currently comprises of vacant land and is to form part of the urban development being constructed to the south and east.

2.3 LEGAL DESCRIPTION AND OWNERSHIP

The LSP Area is owned by **DJM Bullsbrook No. 2 Pty Ltd** and forms part of the land described on Certificate of Title Volume 2890, Folio 136 as being Lots 9002 and 292 on Deposited Plan No. 404683. (Refer to **Annexure 2**: Certificate of Title and Deposited Plan.)

3.0 PLANNING FRAMEWORK

3.1 ZONING

The majority of the LSP Area is currently in the process of being rezoned from 'Rural' to 'Urban', pursuant to the Metropolitan Region Scheme (MRS) and is the subject of a concurrent amendment to the City of Swan Local Planning Scheme No. 17 (LPS 17) to rezone the land from 'General Rural' to 'Residential Development'.

The portion of the land which is currently subject to the rezoning proposal is defined on the Clause 42 Certificate attached at **Annexure 3**. The proposed MRS rezoning map is attached at **Annexure 4.**

A small portion of the LSP Area is zoned 'Urban' under the MRS and 'Residential Development' under the LSP 17.

The approximate boundary location of the LSP Area in relation to the current zoning of the land is identified on the following **Figure 2**: MRS Zoning Map and **Figure 3**: LSP 17 Zoning Map.

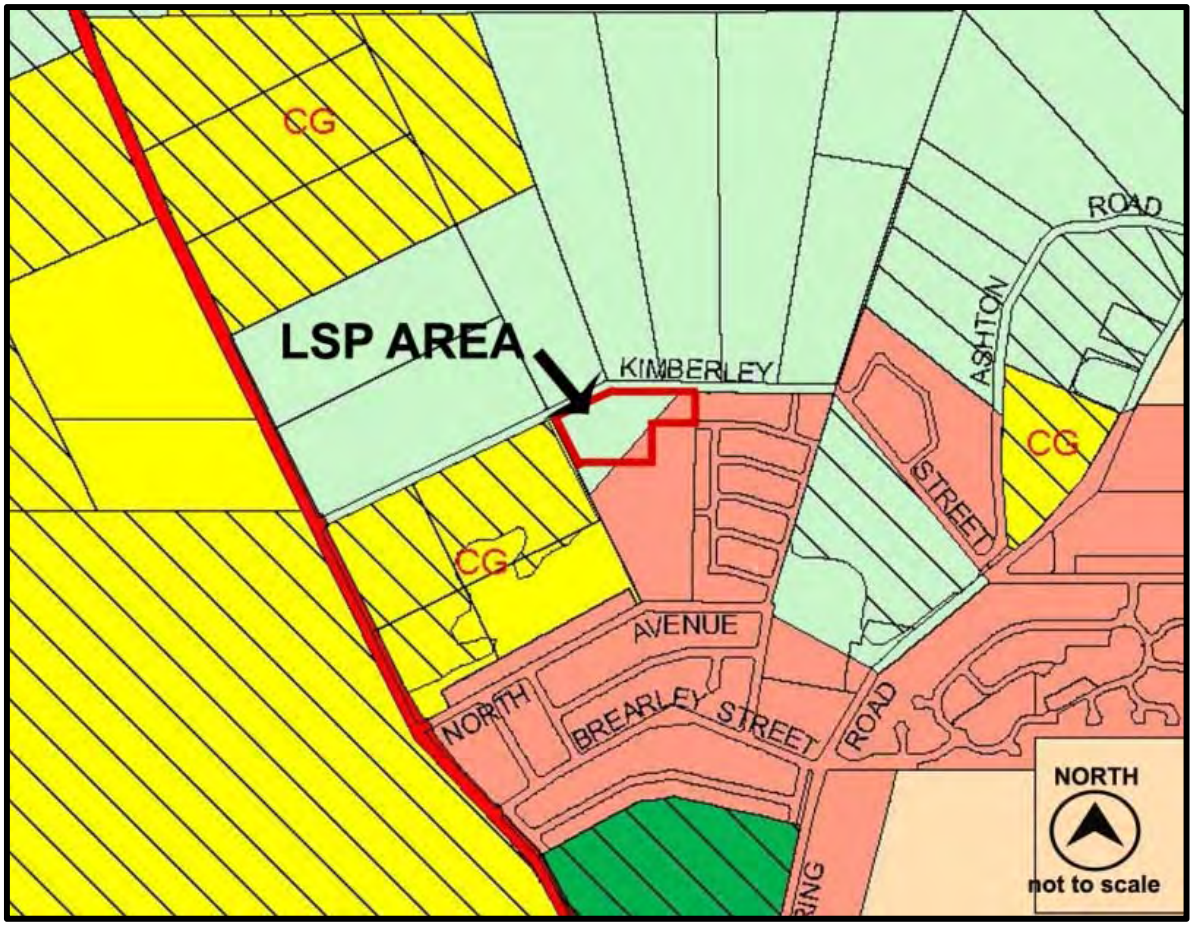


Figure 2: MRS Zoning (the subject of current MRS Amendment to rezone land to Urban)

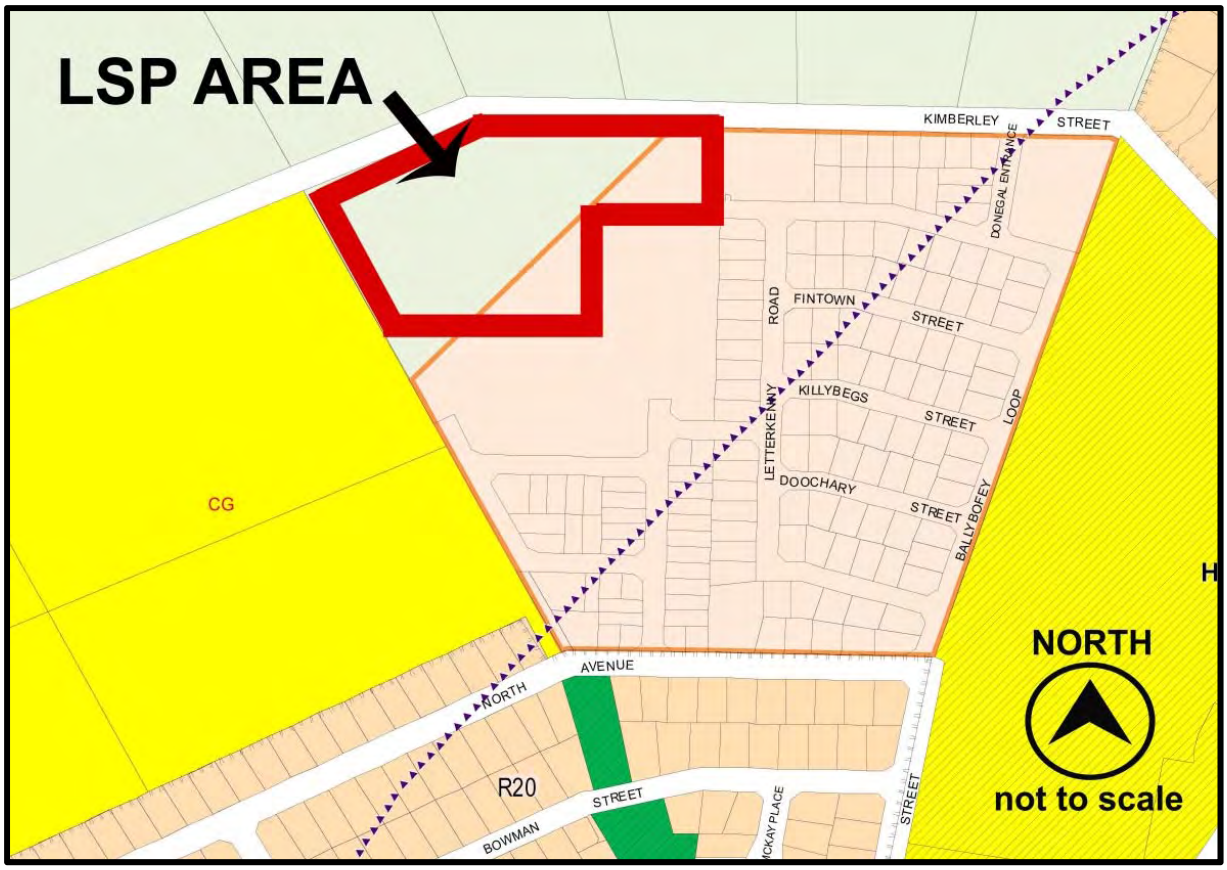


Figure 3: City of Swan LSP 17 Zoning

3.2 STATE AND REGIONAL PLANNING FRAMEWORK

3.2.1 Directions 2031 and Beyond (WAPC, August 2010)

Directions 2031 and beyond (Directions 2031) outlines the Planning framework for the future growth of the Perth and Peel Regions of Western Australia.

The proposed LSP Area is identified in Directions 2031 as forming part of the 'north east sub-region', which sub-region comprises of the local government areas of Swan, Mundaring and Kalamunda. The population forecast for this sub-region is estimated to grow to 285,000 people with an estimated total of 113,000 dwellings by 2031.

This LSP accords with the fundamental objectives of Directions 2031 which *inter alia* encourages infill development to provide additional housing stock in the vicinity of the established public transport, community facilities and other essential servicing infrastructure.

3.2.2 Liveable Neighbourhoods (WAPC, January 2009)

The proposed LSP has been designed to respond to the principle aims, objectives and relevant requirements of the Design Elements of Liveable Neighbourhoods Operational Policy (WAPC, 2009).

In particular, the LSP incorporates the following design element requirements of Liveable Neighbourhoods.

- The proposed layout ensures maximum connectivity with the existing and forming residential development of this area of Bullsbrook.
- The proposed layout of the street network ensures a high level of external and internal connectivity.
- The layout of the lots and street network ensures a seamless connection to the existing and approved surrounding residential development areas.
- The public street and footpath network is designed to be highly interconnected providing convenient access throughout the development.
- The orientation of the lots allows for environmentally and energy efficient housing design.
- The area of land set aside for the public open space together with the area approved under the earlier LSP for the adjoining land (former Pt Lot 128 North Avenue, Bullsbrook) more than adequately meets the minimum contribution of 10% of the gross subdivisional area.
- An Urban Water Management Plan has been prepared and approved for the LSP Area (as a condition of Subdivision Approval for former Pt Lot 128 North Avenue) which report includes appropriate measures to manage stormwater run-off to protect and enhance the environmental values and physical characteristics of the area.
- The development of this site will ensure each lot is provided with essential infrastructure servicing, including underground power, sewer, water, public lighting and telecommunications.

3.2.3 Bush Forever (WAPC, December 2000)

The Bush Forever Policy (WAPC) identifies regionally significant bushland for conservation purposes. No regionally significant bushland areas are listed within the LSP Area.

A Bush Forever site (No. 294) is located to the west of the land. An existing 10m wide strategic firebreak separates the Bush Forever site and the subject land.

3.3 LOCAL PLANNING FRAMEWORK

3.3.1 City of Swan Local Planning Scheme No. 17

The LSP Area is zoned 'General Rural' with a small portion of the area zoned 'Residential Development', pursuant to the City of Swan Local Planning Scheme No. 17 (LPS 17).

A concurrent amendment to LPS 17 is being undertaken to rezone the portion of the LSP Area from 'General Rural' to 'Residential Development' as part of the MRS Amendment rezoning the land – Proposal 3 of North East and North West Omnibus Amendment 1292/57). This LSP is lodged in anticipation of the imminent final approval of this MRS amendment and the site being concurrently rezoned to 'Residential Development' in LPS 17.

The Structure Plan is required to be prepared in accordance with the provisions of Clause 16 of the *Planning and Development (Local Planning Schemes) Regulations 2015*. The Structure Plan meets with the principles of the 'Residential Development' Zone of LPS 17 and complies with the requirements of the Regulations.

3.3.2 Bullsbrook Townsite Land Use Master Plan

The Bullsbrook Townsite Land Use Master Plan outlines the vision for the strategic growth of the Bullsbrook Townsite to accommodate the estimated population and meet the employment self-efficiency target of Directions 2031.

The Master Plan further refines the population forecast for Bullsbrook as being 17,146 people by 2031 and 26,483 people by 2036.

The LSP Area is subject to the Bullsbrook Townsite Land Use Master Plan and is identified at Figure 18 – Bullsbrook Townsite Land Use Master Plan as being 'Residential (approved future)'.

The residential development of the LSP Area forms part of the land identified between Kimberley and North Avenue as assisting in meeting the population growth target for Bullsbrook.

The endorsement of the LSP will result in the creation of an additional 34 lots which assists the City to achieve this target, by providing housing opportunities for an additional approximate people.

3.3.3 Endorsed Local Structure Plan - former Pt Lot 128 North Avenue, Bullsbrook

An endorsed LSP exists for the land to the south of the LSP Area (formerly described as Pt Lot 128 North Avenue, Bullsbrook). A revision to the endorsed LSP was approved by the WAPC on March 4, 2016.

The LSP Area is identified on the endorsed LSP as being: the 'Balance Land'; 'R20' lots; and the 'Proposed Drainage Basin'.

The area of the endorsed LSP identified as 'Balance Land' was retained at the time of progressing the earlier LSP due to aircraft noise (ANEF) contours associated with the Pearce aerodrome and a Water Corporation Waste Water Treatment Buffer. These constraints no longer apply and the land is progressing through the final stages of being rezoned to 'Urban' in the MRS and 'Residential Development' in the City's LPS.

The initial stages (Stages 1 and 2) of the subdivision have commenced in accordance with the endorsed LSP and the subsequent WAPC Subdivision Approval 149018. A copy of the endorsed LSP and Subdivision Approval are attached at **Annexure 1**.

The approval of this LSP will complete the overall development of former Lot 128.

4.0 SITE CONDITIONS AND CONSTRAINTS

4.1 TOPOGRAPHY

The land varies in site levels between 61m AHD in the north eastern corner to 53m AHD in the north western corner of the LSP Area.

The land drains in a north westerly direction. It does not contain any water courses nor is it subject to inundation.

4.2 FLORA AND FAUNA

The LSP Area is parkland cleared with scattered remnant trees.

There are no declared rare flora, priority species or threatened ecological communities in or near (within 1km) of the site (DEC 2009).

4.3 ACID SULFATE SOILS

The soils within the LSP Area have no known risk of acid sulfate soils (ASS) or potential acid sulfate soils (PASS) within three (3.0) metres of the ground surface (Landgate Acid Sulfate Soils Risk Map). Further, it is noted that ASS has not been encountered as part of the initial stages of construction of the land to the immediate south (being former Pt Lot 128 North Avenue, Bullsbrook).

4.4 SOIL CONDITIONS

A Geotechnical Investigation was prepared by Douglas Partners in 2011 to inform the now endorsed LSP for Pt Lot 128 North Avenue, Bullsbrook. The investigations undertaken by Douglas Partners included the land the subject of this LSP.

A summary of the findings of this investigation is provided below.

- Medium dense to dense sand overlying in turn inferred medium dense to dense gravelly sand and medium dense to very dense clayey sand with varying amount of gravel.
- A site classification of 'A' and 'S' was identified in accordance with AS2870-2011.

A complete copy of this Geotechnical Report and its detailed recommendations are attached at **Annexure 5**.

The subsequent post Geotechnical Report prepared by Brown Geotechnical (October 2014) confirms that the earthworks carried out as part of the initial stages of development of the area of the endorsed LSP comply with the recommendations of the Geotechnical Report is attached at **Annexure 6.**

4.5 GROUNDWATER AND SURFACE WATER

The Geotechnical Report prepared by Douglas Partners (May 2011) confirmed that no groundwater was observed in the test pits over the LSP Area.

A Geotechnical Report and Engineering Services Report prepared by Douglas Partners (May 2011) was undertaken for the now endorsed LSP for former Pt Lot 128 North Avenue, Bullsbrook. The investigations undertaken by Douglas Partners encompassed the LSP Area. The findings of this report concluded that there were no issues related to a high groundwater and no water dependent ecosystems over this site.

As part of the progression of the earlier now endorsed LSP (prepared by Gray & Lewis Landuse Planners), the Department of Water (DoW) confirmed that given the sufficient depth to groundwater and absence of significant environmental assets, a Local Water Management Strategy was not required to support the LSP. Instead, it was agreed with the City that an Urban Water Management Plan (UWMP) would be adequate to address the stormwater and water management requirements for this site, as a condition of Subdivision Approval. The LSP Area is an extension of that earlier endorsed LSP and therefore the position of the DoW and the agreement of the City also applies to this site.

An UWMP has been prepared by GHD Pty Ltd and approved by the City as part of the subsequent Subdivision Approval for the initial stages of the development of this land (i.e. former Pt Lot 128 North Avenue, Bullsbrook). This UWMP covers the overall development of land, including the stormwater management requirements for the LSP Area the subject of this Structure Plan.

A copy of the approved UWMP is attached at **Annexure 7** and is discussed in more detail at Section 5.5 – Water Management.

4.6 BUSHFIRE HAZARD

A Bush Fire Management Plan (BMP) has been prepared for the LSP Area by FirePlan WA (November 2016), in accordance with the requirements of the WAPC State Planning Policy 3.7 – Planning in Bushfire Prone Areas (December 2015) and the accompanying Guidelines for Planning in Bushfire Prone Areas (December 2015).

The BMP has been approved by the Department of Fire and Emergency Services (DFES) and the WAPC as part of assessment process for the rezoning of the land to Urban in the MRS, being included in Omnibus MRS Amendment 1292/57 as Proposal 3.

The LSP Area is identified as being within a designated bushfire prone area on the Department of Fire and Emergency Services (DFES) *Map of Bush Fire Prone Areas 2016*. The BMP has

assessed the land and identifies it as containing areas of 'low' and 'moderate' bushfire hazard levels.

The BMP states that all dwelling lots within 100 metres of the vegetation within the Bush Forever site to the west and within 50m of the rural lots to the north, which vegetation is identified as having a 'moderate' hazard level are assigned a Bushfire Attack Level (BAL) of 12.5. The development of these lots are required to comply with the increased construction standards in accordance with AS 3959-2009 *Construction of buildings in bushfire prone areas*. It is noted that the BAL assigned to these lots may be subject to review closer to the time of development, pending further assessment.

A complete copy of the BMP is attached at **Annexure 8.**

4.7 HERITAGE

4.7.1 Indigenous Heritage

A search of the Department of Indigenous Affairs Inquiry System has been undertaken. No Registered Aboriginal Heritage Sites are identified as being present within the LSP Area.

4.7.2 Non-Indigenous Heritage

It is understood that no non-indigenous heritage sites have been identified as being located within the boundaries of the LSP Area.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

5.1 LAND USE

The proposed land uses are illustrated on the attached Structure Plan. (Refer to **Plan 1**: Structure Plan Map.)

The proposed land uses include Residential (R20 and R-MD 25) and Public Open Space.

The LSP design accords with the guiding principles of Liveable Neighbourhoods (WAPC); the requirements of the Residential Design Codes of WA (WAPC); the City of Swan (the City) Local Planning Scheme No. 17; the Bullsbrook Townsite Land Use Master Plan; and the City's Local Planning Policy LPP-POL-11 - Variation to deemed-to-comply requirements of the R-Codes – Medium density single house development standards (R-MD Codes).

The design incorporates a strong permeable road network which provides a strong connection to the adjacent existing residential development to the east and that area currently under construction immediately to the south.

The design incorporates strong urban water management principles in accordance with the requirements of Liveable Neighbourhoods, including a bioretention basin, which will connect to and form part of the overall Public Open Space (POS) provision for the total development site (which comprises the subject LSP Area and the endorsed LSP (March 2016)). The approved water management approach for the development is detailed in the UWMP prepared by GHD Pty Ltd and approved by the City in July 2014 (Refer to **Annexure 7**).

5.2 RESIDENTIAL

The approval of the LSP will complete the overall development of former Pt Lot 128 North Avenue, Bullsbrook. The design of the LSP ensures a seamless connection to the approved subdivisional development of the land to the south, which is currently under construction.

The LSP incorporates a suitable range of lot sizes for the locality, which retains a strong preference for the more traditional sized residential dwelling. For this reason, the LSP proposes to incorporate lot sizes which accord with the density codes of Residential R20 and R-MD25. A proposed Plan of Subdivision for the LSP Area is attached at **Annexure 9** which proposes a total of 34 lots, with an average R20 density code lot size of 512m^2 and minimum lot size of 402m^2; and an average R-MD25 lot size of 390m^2 and a minimum lot size of 367m^2, pursuant to the Residential Design Codes of WA (R Codes) and the City's LPP-POL-11 – R-MD Codes.

The lots are designed to ensure a high degree of accessibility is provided to the approved area of POS to the south and the connecting 'Reserve for Recreation and Drainage' included as part of this LSP Area. A number of the lots are orientated towards this high amenity area to

take advantage of the views of this recreational area and to provide an opportunity for casual surveillance over it. The Reserve provides a stormwater drainage function and has been landscaped with native shrubs and sedges. It will remain fully accessible to the public and forms part of the overall POS provision for this development.

A Local Development Plan (LDP) is required for the lots shown on the proposed Plan of Subdivision as Lots 301 to 308. This LDP is required in order to address vehicle access being restricted to the southern internal road due to fill requirements. In addition, specific design elements are required for the lot (Lot 301) which shares a side boundary to the 'Reserve for Recreation and Drainage' area.

5.3 MOVEMENT NETWORKS

The design incorporates a permeable road network which provides a strong connection to the residential development currently under construction to the east and south (over former Pt Lot 128 North Avenue) and to the existing residential area to the east.

Footpaths are proposed along one side of each of the subdivisional roads, which paths are designed to connect to the approved footpaths of the development to the south and east to ensure convenient access to the recreational areas. The proposed pathway system is illustrated on the LSP.

5.4 PUBLIC OPEN SPACE

The public open space (POS) for the LSP Area is identified on the LSP map as 'Reserve for Recreation and Drainage'. The LSP design more than adequately meets the WAPC requirements for 10% of the gross subdividable area to be set aside for POS.

The gross subdividable area of the LSP Area is 2.51 hectares. This suggests that a total of 2501m^2 of total site area is required to be set aside for development as POS.

The Reserve for Recreation and Drainage provides approximately 4224m^2 of unrestricted use POS and approximately 1810m^2 of restricted use POS. The restricted use portion of the POS includes a bioretention basin for stormwater management purposes, which will be temporarily inundated during the winter months. Given the area of unrestricted POS more than adequately meets the requirements for POS, the restricted use portion of the POS is not included in the calculation for the provision of POS. (Refer below to **Table 1: POS Schedule**)

TABLE 1: PUBLIC OPEN SPACE SCHEDULE		
SITE AREA		**2.51ha**
Public Open Space requirement (10%)		**2501m²**
Public Open Space contribution: **POS – Active:** **POS – Restricted:**	**4224m² (16.8%)** **1810m² (bioretention basin)**	
TOTAL POS PROVISION	**Unrestricted POS:**	**4224m²**

The landscaping concept design for the LSP Area was approved by the City in August 2014. A copy of the Concept Design and supporting report prepared by Landscape Architectural Services (LAS) is attached at **Annexure 10.**

In addition, the UWMP and the basin and overflow drain design was approved by the City in 2015 (as part of the civil design works for stage 2 of the construction of the subdivision of former Pt Lot 128) and is attached at **Annexure 11.**

The landscaping for both the POS and Basin components of this Reserve has been completed as part of the previous stages of development as it incorporates the stormwater drainage functions for this site and the land contained within the earlier endorsed LSP (being former Pt Lot 128 North Avenue).

5.5 WATER MANAGEMENT

An Urban Water Management Plan (UWMP) prepared by GHD Pty Ltd has been approved as a condition of the WAPC Subdivision Approval for former Pt Lot 128 North Avenue, Bullsbrook, which plan includes stormwater and water management requirements for the LSP Area.

Water sensitive design elements for the development include the use of soakwells and the drainage basin which has been developed to form part of the open space provision for the development, remaining accessible to the public and connected to the POS area to the immediate south. The basin has been constructed of free draining porous material and planted with native shrubs and sedges to promote nutrient uptake. Road runoff discharges into the pit and pipe drainage system, which in turn discharges into the drainage basin. The stormwater captured in the basin is disposed of via infiltration and/or controlled discharge at a flow rate no greater than the pre-development flow for the storm event durations prescribed by the City. (Refer to **Annexure 7:** Approved UWMP.)

5.6 LANDSCAPING PLAN

The Landscaping Plan and planting layout was prepared by Landscape Architectural Services (LAS) for the Reserve for Drainage and Recreation (together with the adjoining POS area to the south) and approved by the City in August 2014 as part of satisfying the requirements of the conditions of the WAPC Subdivision Approval for the initial stages of subdivision of former Pt Lot 128 North Avenue, Bullsbrook.

The completed landscaping for the Reserve includes the revegetation of the basin floor and side slopes with native shrubs and sedges for nutrient stripping. The basin floor will be inundated periodically during the winter months.

The landscaping is designed to maintain visual permeability through the use of upper canopy trees and low understorey planting. The basin will remain accessible to the public for recreational use. Further detail on the landscaping of the Reserve is provided in the Landscaping Plan and detailed designs attached at **Annexure 10.**

5.7 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

The proposed lots of the LSP Area will be serviced with all essential infrastructure.

The water and sewer servicing infrastructure for the initial stages of subdivision of former Pt Lot 128 North Avenue has been designed to ensure sufficient capacity to service the lots of the LSP Area. Infrastructure servicing will be extended from the south and east to the lots of this LSP Area. Details of the approved water and sewer servicing infrastructure for the initial stages of the development are attached at **Annexure 12**.

Underground power and telecommunications (including NBN) have been designed for the initial stages of development (former Pt Lot 128) to include sufficient capacity to service the lots of the LSP Area. Details of the approved power and NBN infrastructure for the initial stages of the development to the south are attached at **Annexure 13.**

The development of the LSP Area will be undertaken in a single stage, being the final stage of the overall construction of the residential development formerly described as Pt Lot 128 North Avenue, Bullsbrook.

6.0 CONCLUSION

This LSP seeks to facilitate the final stage of residential development of the land formerly described as Pt Lot 128 North Avenue, Bullsbrook (the subject of an endorsed LSP and subsequent WAPC Subdivision Approval 149018).

The LSP responds to the fundamental objectives and principles of the guiding strategic strategies and policies of the WAPC and the City. The LSP layout provides for a high quality development which maximises access to the recreational areas to the west and south, and ensuring seamless integration with the surrounding approved residential areas, to the south and to the east.

Accordingly, the approval of this LSP by the City of Swan and the WA Planning Commission is respectfully sought.

Peter D Webb and Associates

TECHNICAL ANNEXURES

ANNEXURE 1

Endorsed LSP – Pt Lot 128 North Avenue, Bullsbrook (Structure Plan Map Only); and WAPC Approved Plan of Subdivision

Amendment No. 1 to North Avenue Structure Plan has been approved by the Western Australian Planning Commission on **4 March 2016**.

Signed by an officer duly authorised by the Western Australian Planning Commission pursuant to Section 16 of the Planning and Development Act 2005

Planning over the northern area Subject to further investigation regarding the urban zone boundary

Proposed Drainage Reserve (drainage detention area. Refer Ground Work Engineers report)

STREET

KIMBERLEY

Balance Land 2747m²

Balance Land 1.02ha

15m Road Reserve

100 METRE SETBACK TO MODERATE BUSHFIRE HAZARD

Proposed Drainage Reserve 8078m²

R20

Proposed Public Open Space by Others

15m Road Reserve

LSP AREA

R25

12m Road Reserve

Public Open Space 5665m²

Current urban / rural zone interface boundary

12m Road Reserve

15m Road Reserve

8.17ha

R25

9002 Approved Subdivision by others

NOTE:
The POS & drainage area may be adjusted once the northern area has been reviewed

NOTE:
No drainage to impact upon Bush Forever Site 294

Bush Forever Site 294

1m minimum front setback to achieve the setback and Building Protection Zone required for fire management set out in the approved Fire Management Plan.

15m Road Reserve

15m Road Reserve

EXISTING 10m WIDE STRATEGIC FIREBREAK

R25

15m Road Reserve

R25

1. At subdivision stage there will be a requirement for notifications on the relevant certificates of title in accordance with Section 70A of the Transfer and Land Act 1983 advising of the increased building standards in accordance with AS3959 (2009), or equivalent Australian Standard.
2. The front setbacks on the Structure Plan (shown as the 'Building Exclusion Zone') shall not be varied to allow any encroachment of building(s) to achieve the dwelling setbacks and Building Protection Zones required by the approved Fire Management Plan.
3. Notwithstanding any statement to the contrary within AS3959-2009, (or relevant equivalent) any buildings to be erected on lots that are either partly or wholly within 100 metres of the moderate bushfire risk of the adjacent Bush Forever site shall comply with the requirements of AS3959-2009, or relevant equivalent. The 100 metre setback to the moderate bushfire hazard (Bush Forever site) is shown on this Structure Plan.
4. Development of the R40 site should address the Public Accessway area and provide for visually permeable fencing.
5. No habitable or non habitable buildings including a single house, grouped dwelling, outbuilding, carport or garage shall be permitted in the Building Exclusion zone.
6. This amended Structure Plan has been lodged to correct an error with the earlier approved Structure Plan relating to the front setback requirement for those lots as indicated on the plan.

Commonwealth Government Public Purpose Reserve

8m front setback applies to the hatched portion of this Lot to achieve the setback and Building Protection Zone for fire management set out in the approved Fire Management Plan.

8m PAW

R40

R30

Drainage/ P.O.S. by Others

EXISTING 10m WIDE STRATEGIC FIREBREAK

NORTH AVENUE

POS CALCULATION:
Area of Lot: 8.17ha
Less Rural Area: Net (5.66ha)
POS required @ 10%: 5660m² (@ 8%: 4528m²)

LOT SUMMARY:
Total Residential Lot Yield: 90
Average Lot Size (single R20 lots): 457m²
Minimum Lot Size (single R20 lots): 390m²
Average Lot Size (single R25 lots): 407m²
Minimum Lot Size (single R25 lots): 342m²
Average Lot Size (single R30 lots): 295m²
Minimum Lot Size (single R30 lots): 285m²
Average Lot Size (single R40 lots): 406m²
Minimum Lot Size (single R40 lots): 275m²

16 17 18 19 20 21 43 44 45 46 47 48 49 65 64 R31483 8738

Subject Land.....
Residential R20.....
Residential R25.....
Residential R30.....
Residential R40.....
Building Exclusion Zone....

PROPOSED STRUCTURE PLAN (DENSITY PLAN)

PT LOT 128 NORTH AVENUE
BULLSBROOK

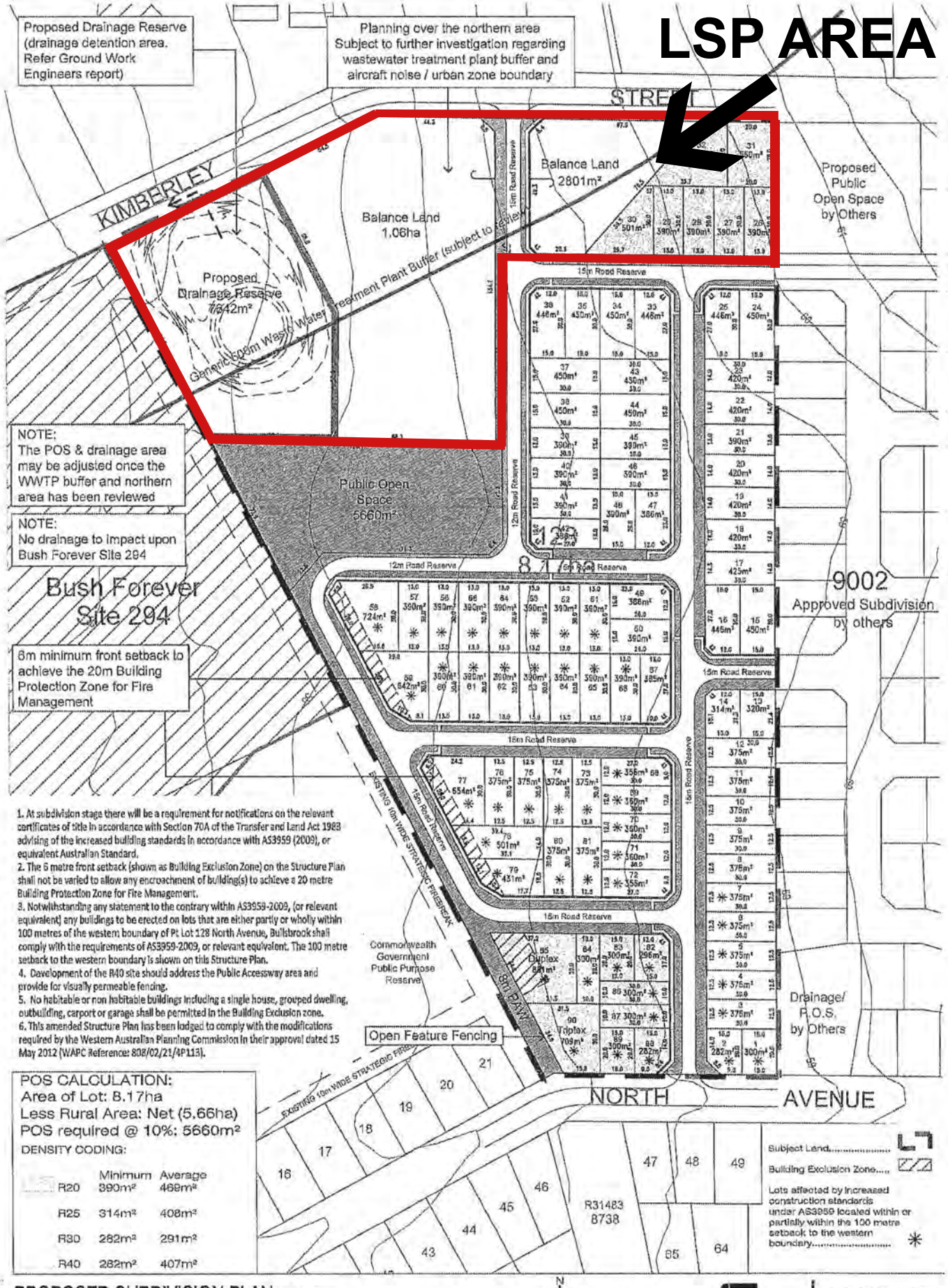
N

0 10 20 30 40 50m

SCALE 1:1500 @ A3 DATE: 07/07/2015
FILE REFERENCE: C2012

PETER D WEBB AND ASSOCIATES
CONSULTANTS IN TOWN PLANNING & URBAN DESIGN
PO BOX 920 SUBIACO WA 6904 TEL: 9388 7111
UNIT 2/19 YORK STREET SUBIACO FAX: 9388 7240

Figure 13



1. At subdivision stage there will be a requirement for notifications on the relevant certificates of title in accordance with Section 70A of the Transfer and Land Act 1983 advising of the increased building standards in accordance with AS3959 (2009), or equivalent Australian Standard.
2. The 6 metre front setback (shown as Building Exclusion Zone) on the Structure Plan shall not be varied to allow any encroachment of building(s) to achieve a 20 metre Building Protection Zone for Fire Management.
3. Notwithstanding any statement to the contrary within AS3959-2009, (or relevant equivalent) any buildings to be erected on lots that are either partly or wholly within 100 metres of the western boundary of Pt Lot 128 North Avenue, Bullsbrook shall comply with the requirements of AS3959-2009, or relevant equivalent. The 100 metre setback to the western boundary is shown on this Structure Plan.
4. Development of the R40 site should address the Public Accessway area and provide for visually permeable fencing.
5. No habitable or non habitable buildings including a single house, grouped dwelling, outbuilding, carport or garage shall be permitted in the Building Exclusion zone.
6. This amended Structure Plan has been lodged to comply with the modifications required by the Western Australian Planning Commission in their approval dated 15 May 2012 (WAPC Reference: 808/02/21/4P113).

POS CALCULATION:
Area of Lot: 8.17ha
Less Rural Area: Net (5.66ha)
POS required @ 10%: 5660m²

DENSITY CODING:

	Minimum	Average
R20	390m²	468m²
R25	314m²	408m²
R30	282m²	291m²
R40	282m²	407m²

Subject Land.....
Building Exclusion Zone.....
Lots affected by increased construction standards under AS3959 located within or partially within the 100 metre setback to the western boundary.....

PROPOSED SUBDIVISION PLAN
PT LOT 128 NORTH AVENUE BULLSBROOK

8 NOV 2013 14 OCT 13

SCALE 1:1500 @ A3 1st NOVEMBER 2013
JOB REFERENCE:100935

GRAY&LEWIS LAND USE PLANNERS
Suite 5, 2 Hardy Street South Perth, WA 6151
T (08) 9474 1722
F (08) 9474 1172
perth@graylewis.com.au

Figure 10

ANNEXURE 2

Certificate of Title and Deposited Plan

WESTERN AUSTRALIA

REGISTER NUMBER	
9002/DP404683	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	16/11/2015

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

VOLUME 2890 FOLIO 136

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 9002 ON DEPOSITED PLAN 404683

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

DJM BULLSBROOK NO. 2 PTY LTD OF C/- DJ MACCORMICK PROPERTY GROUP GROUND FLOOR, 200 ADELAIDE TERRACE, PERTH

(AF N152651) REGISTERED 12 NOVEMBER 2015

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. EXCEPT AND RESERVING METALS, MINERALS, GEMS AND MINERAL OIL SPECIFIED IN TRANSFER 7404/1923.
2. EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR DRAINAGE PURPOSES TO LOCAL AUTHORITY - SEE DEPOSITED PLAN 404683
3. EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR SEWERAGE PURPOSES TO WATER CORPORATION SEE DEPOSITED PLAN 404683
4. EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR WATER PURPOSES TO WATER CORPORATION SEE DEPOSITED PLAN 404683
5. EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR ELECTRICITY PURPOSES TO WESTERN POWER CORPORATION SEE DEPOSITED PLAN 404683
6. EASEMENT BURDEN CREATED UNDER SECTION 167 P & D ACT FOR TELECOMMUNICATIONS SUPPLY SERVICES TO NBN CO LTD SEE DEPOSITED PLAN 404683

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP404683.
PREVIOUS TITLE: 2859-593.
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.

END OF PAGE 1 - CONTINUED OVER

LOCAL GOVERNMENT AREA: CITY OF SWAN.

NOTE 1: M400742 SECTION 138D TLA APPLIES TO CAVEAT L557283
NOTE 2: N476425 DEPOSITED PLAN 409511 LODGED

WESTERN AUSTRALIA

REGISTER NUMBER	
9002/DP404683	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	16/11/2015

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

VOLUME 2890 FOLIO 136

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 9002 ON DEPOSITED PLAN 404683

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

DJM BULLSBROOK NO. 2 PTY LTD OF C/- DJ MACCORMICK PROPERTY GROUP GROUND FLOOR, 200 ADELAIDE TERRACE, PERTH

(AF N152651) REGISTERED 12 NOVEMBER 2015

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. EXCEPT AND RESERVING METALS, MINERALS, GEMS AND MINERAL OIL SPECIFIED IN TRANSFER 7404/1923.
2. EASEMENT BURDEN CREATED UNDER SECTION 167 P. & D. ACT FOR DRAINAGE PURPOSES TO LOCAL AUTHORITY - SEE DEPOSITED PLAN 404683
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* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
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----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

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SKETCH OF LAND: DP404683.
PREVIOUS TITLE: 2859-593.
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.

END OF PAGE 1 - CONTINUED OVER

RECORD OF CERTIFICATE OF TITLE

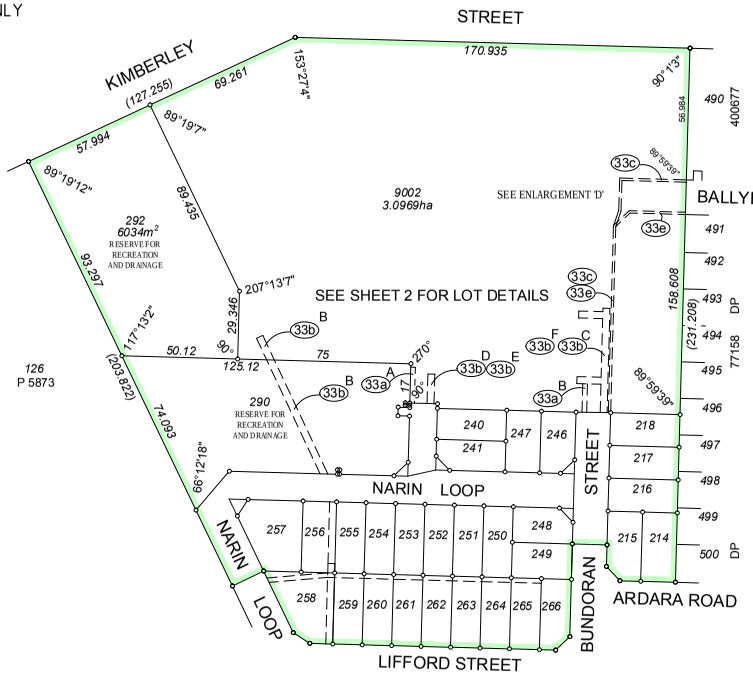
REGISTER NUMBER: 9002/DP404683 VOLUME/FOLIO: 2890-136 PAGE 2

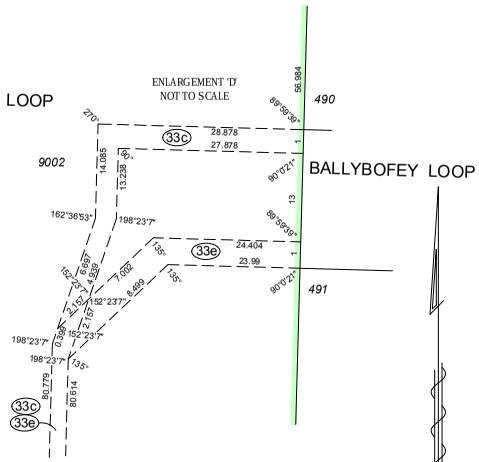
LOCAL GOVERNMENT AREA: CITY OF SWAN.

NOTE 1: M400742 SECTION 138D TLA APPLIES TO CAVEAT L557283

HELD BY LANDGATE IN DIGITAL FORMAT ONLY

SPECIAL SURVEY AREA SUBDIVISION





SCALE: 1:1500 @ A2
ALL DISTANCES ARE IN METRES

0 10 20 30 40 50

VER.	AMENDMENT	AUTHORISED BY	DATE
2	DIMENSIONS ADDED	C MILLER	29/10/2015

INTERESTS & NOTIFICATIONS

SUBJECT	PURPOSE	STATUTORY REFERENCE	ORIGIN	LAND BURDENED	BENEFIT TO	COMMENTS
33b	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT, REG 33(b)	DP 402168	LOTS 256 AND 258	WATER CORPORATION	
33a	EASEMENT (DRAINAGE)	SEC 167 OF THE P&D ACT, REG 33(a)	THIS PLAN	LOTS 258 TO 265 INCLUSIVE	CITY OF SWAN	
33a A	EASEMENT (DRAINAGE)	SEC 167 OF THE P&D ACT, REG 33(a)	THIS PLAN	LOT 9002	CITY OF SWAN	
33a B	EASEMENT (DRAINAGE)	SEC 167 OF THE P&D ACT, REG 33(a)	THIS PLAN	LOT 9002	CITY OF SWAN	
33b A	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOT 256	WATER CORPORATION	
33b B	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOTS 290 AND 9002	WATER CORPORATION	
33b C	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOT 9002	WATER CORPORATION	
33b D	EASEMENT (SEWERAGE)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOT 9002	WATER CORPORATION	
33b E	EASEMENT (WATER)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOT 9002	WATER CORPORATION	
33b F	EASEMENT (WATER)	SEC 167 OF THE P&D ACT, REG 33(b)	THIS PLAN	LOT 9002	WATER CORPORATION	
33c	EASEMENT (ELECTRICITY SUPPLY)	SEC 167 OF THE P&D ACT, REG 33(c)	THIS PLAN	LOT 9002	WESTERN POWER	
33e	EASEMENT (TELECOMUNNICATION SUPPLY SERVICES)	SEC 167 OF THE P&D ACT, REG 33(e)	THIS PLAN	LOT 9002	NBN	
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA	THIS PLAN & DOC N152652	LOTS 214 to 218 INCLUSIVE, 240, 241 AND LOTS 246 TO 266 INCLUSIVE	LOTS 214 to 218 INCLUSIVE, 240, 241 AND LOTS 246 TO 266 INCLUSIVE	EXPIRING ON 31.12.2022
LOT 290	RESERVE FOR RECREATION AND DRAINAGE	VEST IN THE CROWN UNDER SEC 152 OF THE P&D ACT				
LOT 292	RESERVE FOR RECREATION AND DRAINAGE	VEST IN THE CROWN UNDER SEC 152 OF THE P&D ACT				
	NOTIFICATION	SEC 70A OF THE TLA	DOC N152653	LOTS 250 to 265 INCLUSIVE		SUBJECT TO A FIRE MANAGEMENT PLAN

SPECIAL SURVEY AREA SUBDIVISION
SURVEY CARRIED OUT UNDER REG 26A SPECIAL SURVEY AREA GUIDELINES
SEE SURVEY SHEET(S) FOR SURVEY INFORMATION

VISION SURVEYS
Licensed & Engineering Surveyors
Land Development
Consultants
Project Managers
TEL (08) 6144 0000 FAX (08) 6144 0099
59 SCARBOROUGH BEACH RD,
SCARBOROUGH WA 6019
Email: info@visionsurveys.com.au

TYPE FREEHOLD S.S.A. YES/~~NO~~

PURPOSE SUBDIVISION

PLAN OF
LOTS 214 to 218, 240, 241, 246 TO 266, 290, 292, 9002, EASEMENTS, RESTRICTIVE COVENANT AND ROADS

FORMER TENURE
LOT 9001 ON DP402168
C/T: 2859/593

LOCAL AUTHORITY
CITY OF SWAN

LOCALITY
BULLSBROOK

D.O.L. FILE

FIELD RECORD

SURVEYOR'S CERTIFICATE - REG 54
I, CRAIG MILLER
hereby certify that this plan is accurate and is a correct representation of the -
(a) *survey; and/or
(b) *calculations from measurements recorded in the field records,
[* delete if inapplicable]
undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

2015.10.29 10:29:17 +08'00'
LICENSED SURVEYOR DATE

LODGED
20-OCT-2015 $2325.00 18268128
DATE FEE PAID ASSESS No.

I.S.C.

EXAMINED
DATE

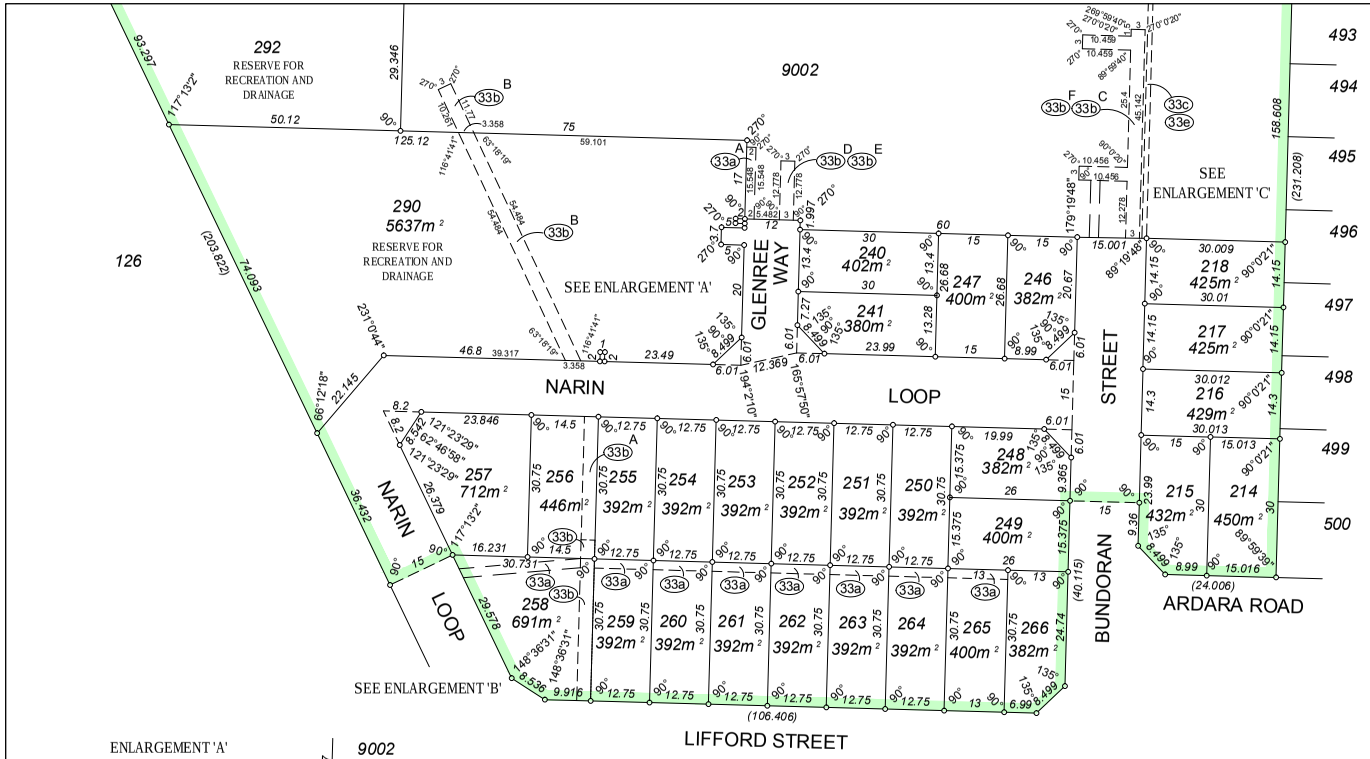
WESTERN AUSTRALIAN PLANNING COMMISSION
FILE 149018
12-Nov-2015
Delegated under S.16 P&D Act 2005 DATE

IN ORDER FOR DEALINGS
SUBJECT TO Sections 152, 167 and 168(1)(2) P & D Act
Sections 70A and 136D TLA
12.11.2015
FOR INSPECTOR OF PLANS AND SURVEYS DATE

APPROVED - reg 26A (4)
20.10.2015
INSPECTOR OF PLANS AND SURVEYS DATE
(S. 18 Licensed Surveyors Act 1909)

Landgate
Western Australian Land Information Authority

DEPOSITED PLAN
404683
SHEET 1 OF 2 SHEETS
(PLUS SURVEY SHEET(S))
VERSION 2



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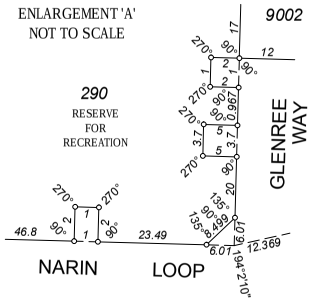
NOT TO SCALE



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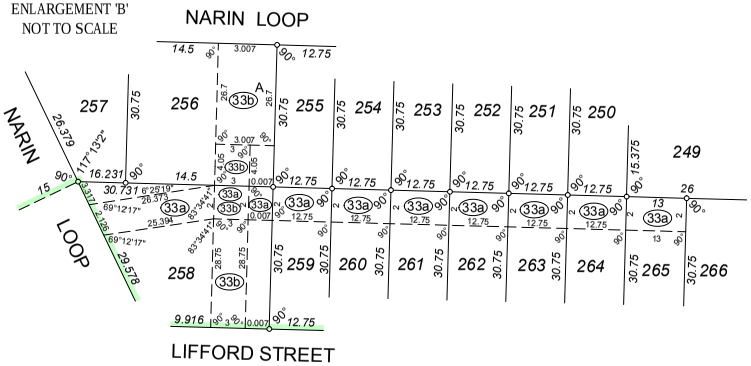

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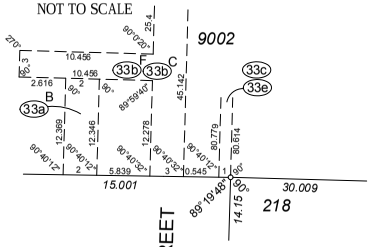


SPECIAL SURVEY AREA SUBDIVISION

SURVEY CARRIED OUT UNDER REG 26A SPECIAL SURVEY AREA GUIDELINES

SEE SURVEY SHEET(S) FOR SURVEY INFORMATION

SCALE: 1: 750 AT A2 SIZE 0 25 50 75

APPROVED BY
WESTERN AUSTRALIAN PLANNING COMMISSION

FILE .....

DELEGATED UNDER S.16 P & D ACT 2005

DATE .....

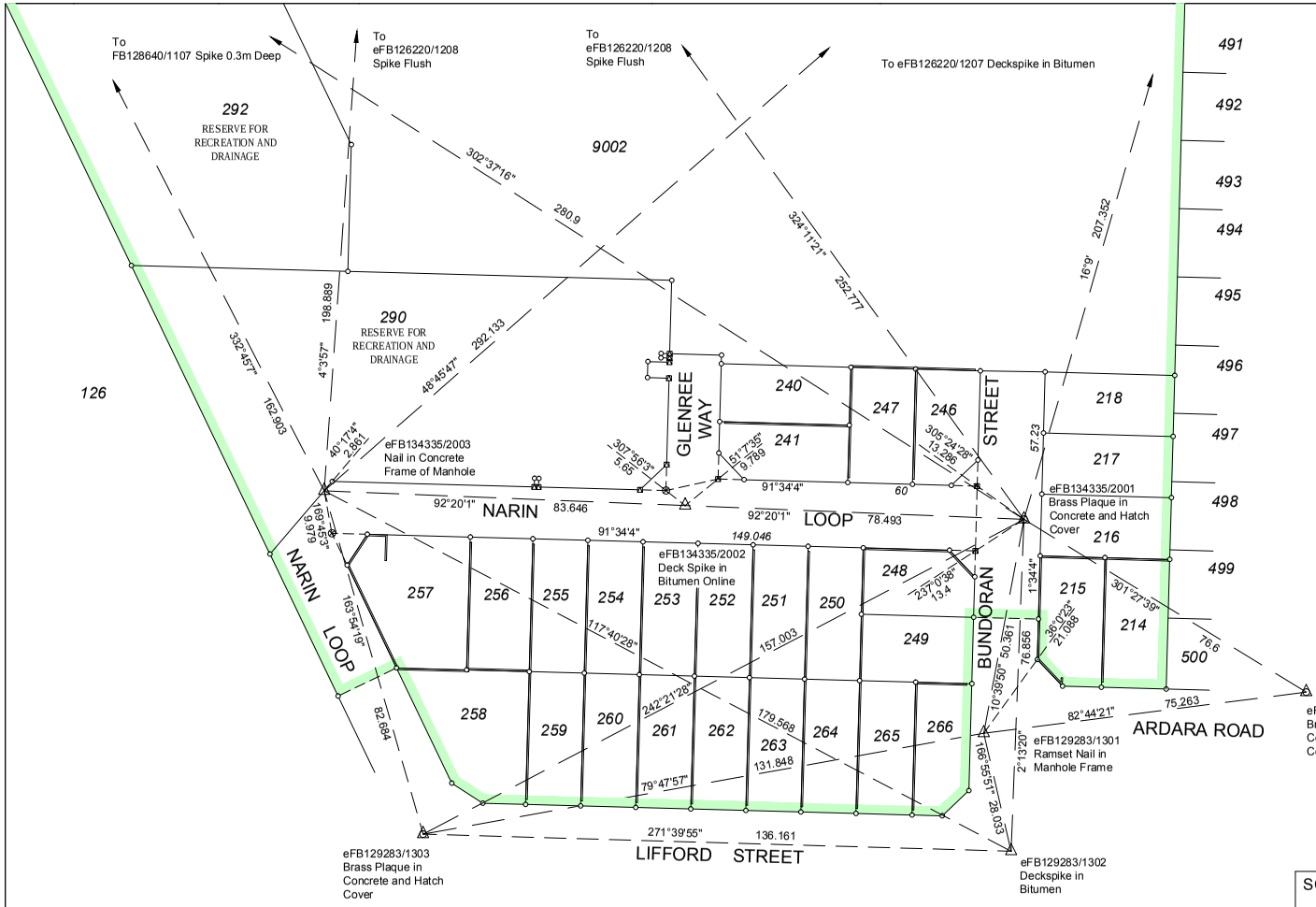
VISION SURVEYS
Licensed & Engineering Surveyors
Land Development Consultants
Project Managers
TEL 6144 0000 FAX 6144 0099
59 SCARBOROUGH BEACH RD,
SCARBOROUGH WA 6019
Email: info@visionsurveys.com.au

2015.10.29
10:29:36 +08'00'

Landgate
Western Australian Land Information Authority

DEPOSITED PLAN
404683

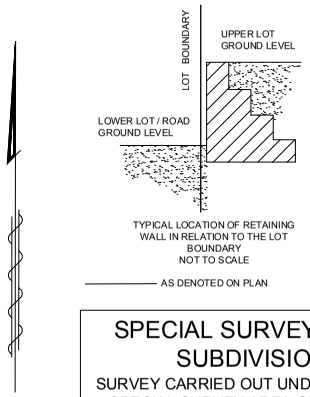
SHEET 2 OF 2
(PLUS SURVEY SHEET(S))
VERSION 2



AMENDMENTS TABLE (SURVEY SHEETS ONLY)

VERSION	AMENDMENT	AUTHORISED BY	DATE

Reg 55E: (d) The marks shown on these plans of survey were in place on the 24/10/2015



SPECIAL SURVEY AREA SUBDIVISION
SURVEY CARRIED OUT UNDER REG 26A
SPECIAL SURVEY AREA GUIDELINES

SCALE: 1: 750 AT A2 SIZE 0 25 50 75

APPROVED BY
WESTERN AUSTRALIAN PLANNING COMMISSION
FILE .....
DELEGATED UNDER S.16 P & D ACT 2005
DATE .....

VISION SURVEYS
Licensed & Engineering Surveyors
Land Development Consultants
Project Managers
TEL 6144 0000 FAX 6144 0099
59 SCARBOROUGH BEACH RD,
SCARBOROUGH WA 6019
Email: info@visionsurveys.com.au

2015.11.09
13:40:19 +08'00'

Landgate
Western Australian Land Information Authority

DEPOSITED PLAN
404683

SURVEY SHEET A
VERSION 1

SURVEY SHEET
SURVEY INFORMATION ONLY
SURVEY SHEET COMPRISES
SURVEY SHEET A

ALL BEARINGS AND DISTANCES ON THE SHEET ARE THE RESULT OF LEAST SQUARE ADJUSTMENTS CARRIED OUT ON RAW FIELD OBSERVATIONS
GRID DATUM PCG94

- STANDARD SURVEY MARK (SSM)
- PERMANENT SURVEY MARK (PSM)
- PERMANENT CONTROL MARK (PCM)
- TEMPORARY CONTROL MARK (TCM)
- SPIKE
- DECK SPIKE
- NAIL
- PEG, UNLESS OTHERWISE STATED
- NAIL AND PLATE

P404683

Lot Number	Part	Register Number	Section
214		2890/108	
216		2890/110	
218		2890/112	
241		2890/114	
247		2890/116	
249		2890/118	
251		2890/120	
253		2890/122	
255		2890/124	
257		2890/126	
259		2890/128	
261		2890/130	
263		2890/132	
265		2890/134	
290		LR 3166/377	
9002		2890/136	

Lot Number	Part	Register Number	Section
215		2890/109	
217		2890/111	
240		2890/113	
246		2890/115	
248		2890/117	
250		2890/119	
252		2890/121	
254		2890/123	
256		2890/125	
258		2890/127	
260		2890/129	
262		2890/131	
264		2890/133	
266		2890/135	
292		LR 3166/378	

ANNEXURE 3

Clause 42 Certificate

METROPOLITAN REGION SCHEME

FORM 5

No. 28688803

CERTIFICATE

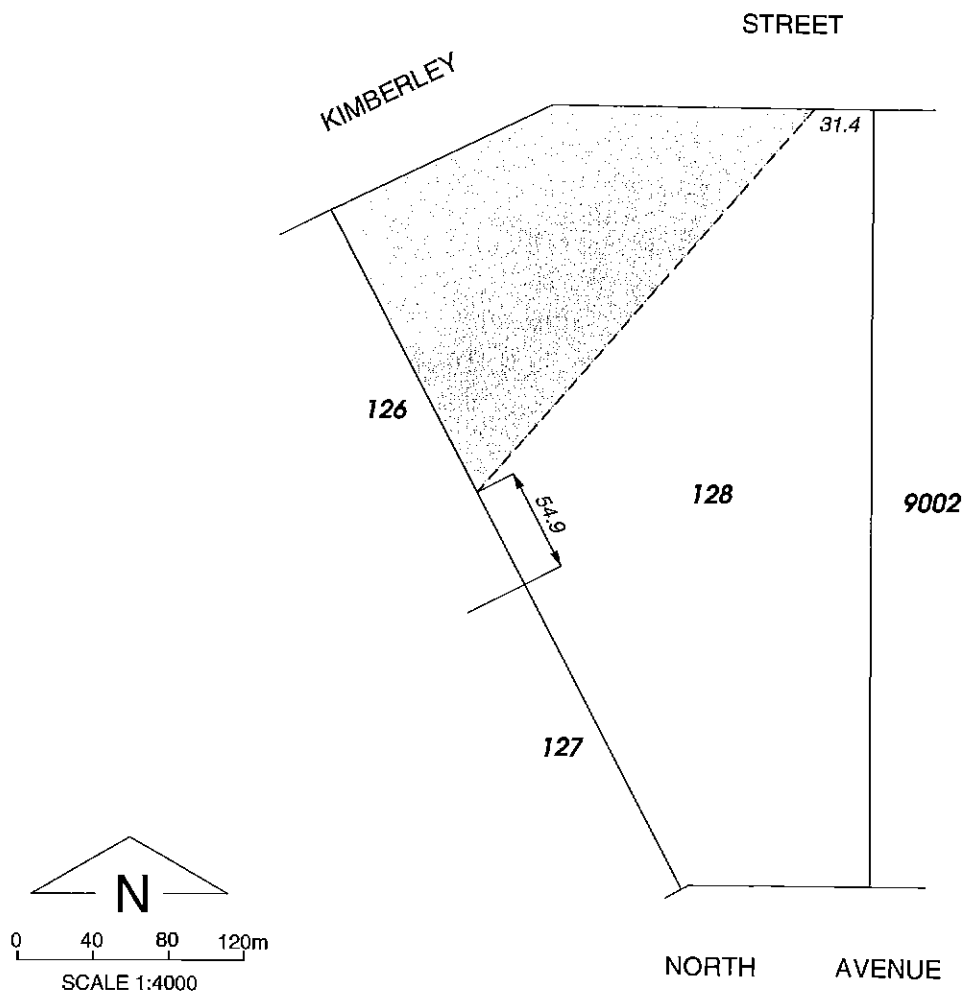
IN ACCORDANCE WITH THE PROVISIONS OF CLAUSE 42 OF THE METROPOLITAN REGION SCHEME THE FOLLOWING INFORMATION IS FURNISHED IN RESPECT OF

LOT No : 128 STREET : NORTH AVENUE

PLAN : 5873 LOC : N/A

CERTIFICATE OF TITLE : VOL : 1425 FOLIO : 212

THE LAND SHOWN STIPPLED ON THE SKETCH BELOW IS ZONED RURAL
THE REMAINDER OF THE LAND IS ZONED URBAN
THE WHOLE OF THE LAND ALSO ABUTS PUBLIC PURPOSES RESERVATION



Spatial Information & Research
Mapping & GeoSpatial Data
Note: all dimensions are in metres
SKETCH (All distances subject to survey)

This Certificate relates only to the provisions
of the Approved Metropolitan Region Scheme
and does not purport to indicate the land use allocation
under any Local Government provision.
Base information supplied by:
Western Australian Land Information Authority GL248-2007-2

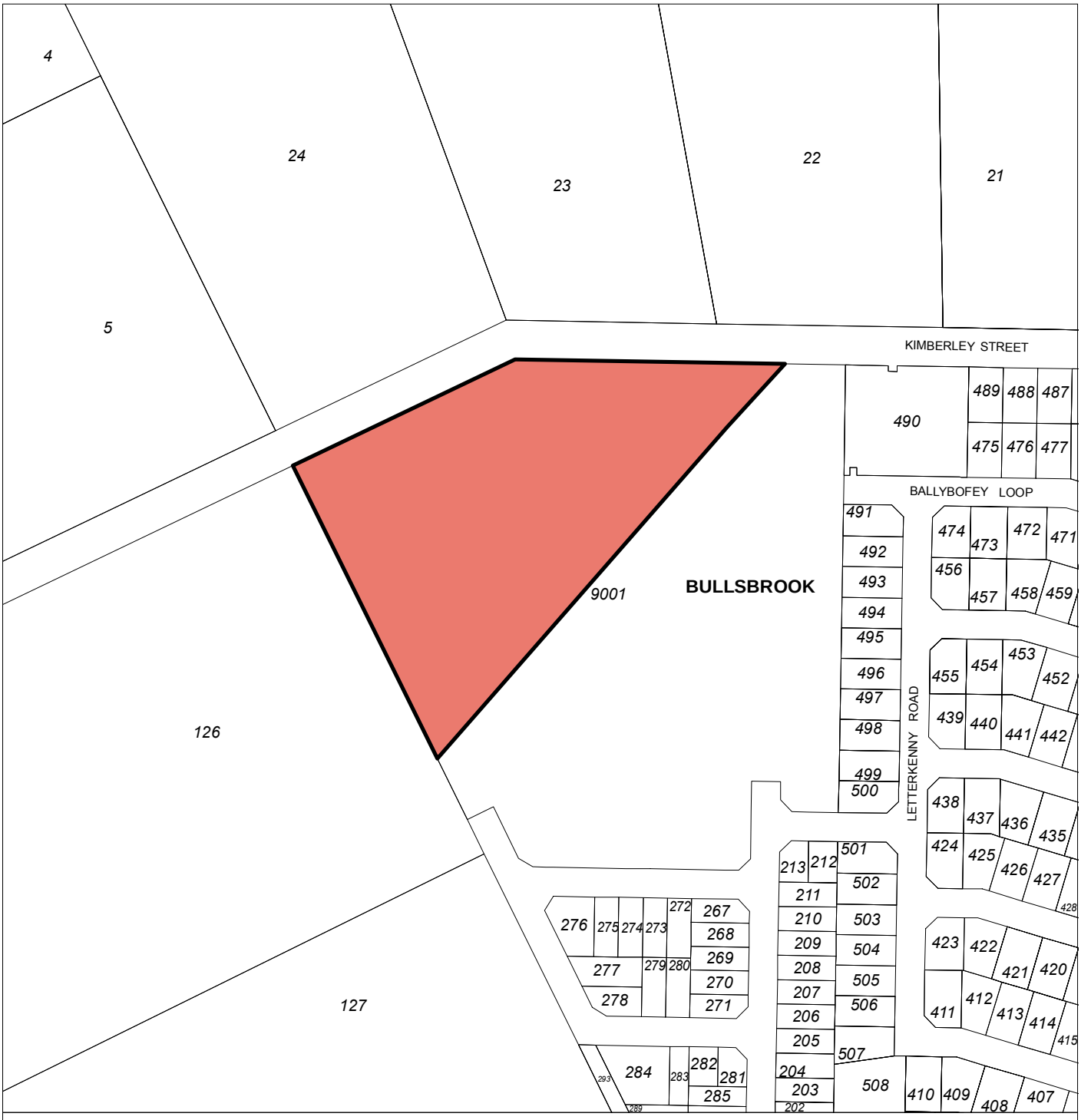
Moshe Gilovitz
SECRETARY
WESTERN AUSTRALIAN PLANNING COMMISSION

Receipt No. 42956

Date : 18 JULY 2007

ANNEXURE 4

Proposed MRS Rezoning Map
(Proposal 3, North East and North West Omnibus Amendment 1292/57)



NORTH-EAST AND NORTH-WEST DISTRICTS OMNIBUS NO.1

as advertised

31 March 2015

Proposal 3

Proposed Amendment:

Urban zone

Oracle reference no: 2792
File number: 833/02/01/0061P V
Version number: 1

Department of Planning

Western Australian Planning Commission

N

0 25 50 75 100
metres

Date: 27/03/2015
Produced by GeoSpatial Planning Support, Department of Planning, Perth WA
Base information supplied by Western Australian Land Information Authority LI 646-2014-3

ANNEXURE 5

Geotechnical Investigation,
Douglas Partners (2011)

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Geotechnical Investigation

Proposed Residential Subdivision
Lot 128 Kimberley Street, Bullsbrook

Prepared for
Sunsetwest Pty Ltd

Project 76189
May 2011

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	76189	Document No.	1
Document title	Report on Geotechnical Investigation Proposed Residential Subdivision		
Site address	Lot 128 Kimberley Street, Bullsbrook		
Report prepared for	Sunsetwest Pty Ltd		
File name	P:\76189 Lot 128 Kimberley St, Bullsbrook\Docs\76189 Report.doc		

Document status and review

Revision	Prepared by	Reviewed by	Date issued
0	Sunthar Seenu	Frederic Verheyde	26 May 2011

Distribution of copies

Revision	Electronic	Paper	Issued to
0	1	1	Groundwork Consulting Engineers

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author		26 May 2011
Reviewer	pp Frederic Verheyde	26/5/11

NCS INTERNATIONAL CERTIFIED QUALITY MANAGEMENT SYSTEM

Douglas Partners Pty Ltd
ABN 75 053 980 117
www.douglaspartners.com.au
36 O'Malley Street
Osborne Park WA 6017
Phone (08) 9204 3511
Fax (08) 9204 3522

Table of Contents

Report on Geotechnical Investigation
Proposed Residential Subdivision
Lot 128 Kimberley Street, Bullsbrook

1. Introduction

This report presents the results of a geotechnical investigation undertaken for a proposed residential subdivision at Lot 128 Kimberley Street in Bullsbrook, WA. The investigation was commissioned in a fax dated 12 April 2011 by N J Duckworth of Sunsetwest Pty Ltd and was undertaken in accordance with Douglas Partners' proposal dated 8 April 2011.

It is understood that the proposed development includes the subdivision of the site into residential and commercial allotments.

The aim of the investigation was to assess the subsurface soil and groundwater conditions across the site in order to provide:

- the suitability of the site for the proposed development;
- the groundwater level at the time of investigation, if encountered;
- the likely groundwater level and fluctuations at the site;
- the likely site classification in accordance with the requirements of AS 2870-2011;
- the likely site preparation so as to allow the development;
- suitable parameters, including California bearing ratio (CBR) for the design of new pavements, based of field observations; and
- the permeability of the soils across the site and the suitability for stormwater disposal using soakwells.

The investigation included the excavation of 34 test pits, three permeability tests and laboratory testing on selected samples. The details of the field work are presented in this report, together with comments and recommendations on the issues listed above.

2. Site Description

The site is known as Lot 128 Kimberley Street, Bullsbrook and is bounded by Kimberley Street to the north, another subdivision to the east, by North Avenue to the south and by undeveloped bushland to the west.

At the time of investigation the site was largely covered by short grass with some isolated pockets of trees to a maximum height of around 20 m. A pile of waste building material was located around the middle of the eastern side of the site.

The surface level of the site varies between an elevation of 53 m AHD in the north-western corner of the site to an elevation of 60 m AHD in the north-eastern corner according to a survey plan provided by Gray & Lewis Land Use Planners.

The 1:50 000 Muchea Geological sheet indicates that the shallow sub surface conditions at the site generally consist of sandy silt of colluvial origin.

3. Field Work Methods

Field work was carried out by Douglas Partners on 19 and 20 April 2011 and comprised:

- a site inspection;
- the excavation of 34 test pits (TP1 to TP34) to a maximum depth of 2.5 m using a Kobelco 5 tonne excavator equipped with a 400 mm wide, toothed bucket;
- one in-situ permeability tests using the constant head method at TP10;
- two in-situ permeability tests using the falling head method at TP3 and TP33;
- collection of representative soil samples from the test pits for subsequent laboratory analysis of geotechnical parameters;
- logging of the test pits, in general accordance with test procedure in AS1726 – 1993; and
- Perth sand penetrometer (PSP) tests near the test pit locations to assess the in situ relative density of the intersected material.

Test sites were located using existing site features and are shown on Drawing 1 in Appendix A. The surface elevation at each test location was interpolated from a survey plan provided by the client and is quoted relative to AHD.

4. Field Work Results

4.1 Ground Conditions

Detailed logs of ground conditions at each test location and results of field testing are presented in Appendix A, together with notes defining descriptive terms and classification methods used.

Subsurface conditions generally comprised:

- **Topsoil** – light grey sandy topsoil encountered at all test locations to depths ranging between 0.08 m and 0.14 m;
- **Sand** – medium dense to dense, white to yellow, fine to medium grained, sand with varying amount of silt encountered underlying the topsoil at all test locations and in between other soils in some of the test locations;

- **Gravelly Sand** – inferred dense to very dense, yellow, fine to medium grained, gravelly sand with varying amount of low plasticity fines encountered from depths ranging between 0.25 m and 2.1 m, at all test locations except TP2, TP5, TP10 and TP20;
- **Gravelly Clayey Sand and Clayey Sand** – dense to very dense, yellow, fine to medium grained, low to medium plasticity, gravelly clayey sand and clayey sand with varying amount of gravel, encountered at test locations TP1, TP2, TP9 to TP14, TP18 to TP22 and TP31 to depths of between 0.9 m and the termination depth of 2.5 m.

4.2 Groundwater

No free groundwater was observed in any of the test pits excavated to depths of up to 2.5 m on 19 and 20 April 2011. The test pits were backfilled following logging and this precluded prolonged monitoring of groundwater levels.

4.3 In-Situ Permeability Testing

In-situ permeability tests using the falling head method were carried out in the shallow sand at a depth of 0.9 m adjacent to TP3 and at a depth of 0.75 m adjacent to TP33. An in-situ constant head test was carried out in the gravelly clayey sand at a depth of 0.8 m adjacent to TP10. The results are summarised in Table 1.

Table 1: Summary of the In-Situ Permeability Testing and Derived Values

Pit	Depth (m)	Measured Permeability (m/s)	Material
TP3	0.90	3.5×10^{-5}	Sand with some silt, medium dense
TP10	0.80	4.5×10^{-6}	Clayey Sand, slightly gravelly, very dense
TP33	0.75	4.2×10^{-5}	Sand with some silt, medium dense

5. Laboratory Testing

A geotechnical laboratory testing programme was carried out on selected soil samples by a NATA registered laboratory. Testing included the determination of:

- the particle size distribution on eight samples;
- the Atterberg limits and linear shrinkage on five samples; and
- the shrink-swell index on two samples.

Results of the testing are summarised in Tables 2 and 3 and test certificates are presented in Appendix B.

Table 2: Results of Laboratory Testing for Soil Identification

Pit	Depth (m)	Soil Description	Fines (%)	D_{10} (mm)	D_{60} (mm)	LL (%)	PL (%)	PI (%)	LS (%)	I_{SS} (%)
TP2	2.0	Clayey sand some gravel	48	<0.0135	0.33	64	19	45	16	-
TP3	0.8	Sand some silt	10	0.08	0.55	-	-	-	-	-
TP10	0.8	Slightly gravelly clayey sand	30	<0.0135	0.50	35	14	21	7.0	-
TP11	1.2	Slightly gravelly clayey sand	-	-	-	-	-	-	-	1.4
TP13	1.1	Clayey sand some gravel	20	<0.0135	0.52	23	17	6	2.5	0.5
TP20	0.8	Slightly gravelly clayey sand	18	<0.0135	0.59	-	-	-	-	-
TP21	0.9	Slightly gravelly clayey sand	22	<0.0135	0.53	25	16	9	2.5	-
TP31	1.8	Gravelly clayey sand	23	<0.0135	0.90	33	15	19	5.0	-
TP33	0.6	Sand some silt	9	0.08	0.42	-	-	-	-	-

Where:
- The % fines is the amount of particles smaller than 75 µm
- A d_{60} of 0.23 mm means that 60% of the sample particles are finer than 0.23 mm
- A d_{10} of 0.13 mm means that 10% of the sample particles are finer than 0.13 mm
- '-' means 'Not Tested'
- LL: liquid limit
- PL: plastic limit
- PI: plasticity index
- LS: linear shrinkage
- I_{SS} : shrink swell index

6. Engineering Evaluation and Recommendations

6.1 Proposed Development

It is understood that the proposed development will comprise subdivision of the site into residential allotments and associated internal roads.

6.2 Site Classification

As noted in Section 4.1, ground conditions generally comprised medium dense to dense sand overlying in turn inferred medium dense to dense gravelly sand and medium dense to very dense clayey sand with varying amount of gravel.

Interpretation of the laboratory test results indicate characteristic surface movements (ys) of up to 15 mm for the part of the site where cohesive soils are encountered. Based on the laboratory test results and field investigation, the site classification for the proposed subdivision in its current conditions in accordance with AS2870-2011 is summarised in Table 3.

Table 3: Site Classification in accordance with AS2870-2011

Test Locations	Site Classification	Reason for Recommended Site Classification
TP3 to TP8, TP15 to TP17, TP23 to TP30 and TP32 to TP34	A	No surface movement anticipated.
TP1, TP2, TP9 to TP14, TP18 to TP22 and TP31	S	characteristic surface movements (ys) of up to 15 mm is estimated.

Generally a site classification of 'Class A' will apply to the parts of the site where more than 1.8 m of non reactive filling, such as imported sand filling, in situ sand or in situ gravelly sand, overlies the clayey sand and gravelly clayey sand.

6.3 Site Works Preparation and Compaction

Prior to the excavation for foundations and/or placement of fill, all deleterious material, including vegetation and topsoil should be stripped from within each building envelope, and either removed from site or stockpiled for possible re-use as landscaping fill only.

The clayey sand and gravelly clayey sand excavated from the site should be suitable for use as structural fill, however, these materials may be relatively difficult to handle, moisture condition and compact. The use of the clayey sand and gravelly clayey sand as filling will possibly increase the current site classification to 'Class M'.
and likely to increase the current site classification to 'Class M'.

Imported filling, if required could comprise free draining cohesionless (non reactive) soils with less than 5% by weight of particles passing a 0.075 mm sieve. The material should also be free from organic matter and particles greater than 150 mm in size. Other granular materials with up to 15% fines could be used to amend the classification, in accordance with AS 2870-2011. However, such materials would not be free draining and their implication on drainage design should be considered. It is recommended that imported non reactive filling be placed in loose lift layers of thickness between 200 mm and 300 mm within 2% of its optimum moisture content with each layer compacted to achieve a dry density ratio of not less than 95% relative to modified compaction.

During construction, some loosening of the bases of the foundation excavations in granular material is expected. Therefore the base of any excavation in sand and sandy gravel should be re-compacted using a vibratory plate compactor prior to construction of any footings.

It is recommended that the filling placement should be carried out under geotechnical supervision.

6.4 Foundation Design

Shallow foundation systems comprising slab, pad and strip footings founded in at least medium dense natural soil should be able to support proposed buildings, provided that the site preparation is undertaken as detailed in Section 6.3. These footings should be designed in accordance with AS 2870-2011 for a site classification discussed in Section 6.2.

It is emphasised that AS 2870-2011(Ref 1) applies to single houses, townhouses and the like classified as Class 1 and 10a under the Building Code of Australia. It also applies to light industrial and commercial buildings if they are similar in size, loading and superstructure flexibility to those designs included in AS 2870-2011(Ref 1). If not the case, footing systems of the proposed buildings should be designed using engineering principles. A presumptive allowable bearing pressure of 200 kPa is suggested for foundation design of strip and pad footings founded in at least medium dense natural soil or non reactive controlled filling.

6.5 Soil Permeability and Stormwater Disposal

Free groundwater was not encountered during the field work, however perched groundwater is anticipated on the clayey sand and gravelly clayey sand encountered from depths of between 0.9 m and the termination depth of 2.5 m, during wet months of the year.

As discussed in Section 4.1, the shallow ground conditions beneath the site generally comprise sand overlying in turn gravelly sand with some silt and clayey sand with varying amount of gravel. A permeability value of 1.0×10^{-5} m/s is suggested for the sand with silt and, between 1.0×10^{-7} m/s and 1.0×10^{-6} m/s for the clayey sand with varying amount of gravel encountered beneath the site. It is emphasised that a lower permeability value than that indicated may be appropriate for a long-term design value which takes into account long term bio-build up and/or siltation of the infiltration surface.

Based on the results of the investigation, use of stormwater infiltration system may be possible provided a suitable clearance, say 0.5 m, exist between the base of the soakwells and the top of the gravelly clayey sand and clayey sand with varying amount of gravel. It is emphasised that the

laboratory results indicates that the shallow sand includes a significant amount of fines and thus should not be assumed to be free draining. Their relatively low permeability (in the order of 1×10^{-5} m/s) should be considered for drainage design.

6.6 Pavement Design

Based on the results of the field work, it is suggested that presumptive design CBR values of 10% for natural sand and gravelly sand, and 4% for the clayey sand with varying amount of gravel be adopted for the design of flexible pavement.

It is also recommended that adequate surface and subsoil drainage be implemented in order to avoid saturation of the proposed pavement layers, to minimise the risk of developing excess pore pressure within the pavement layers under trafficking that could lead to pavement failure. Particular attention should be paid to prevent saturation of boxed pavement, if any.

7. References

1. Australian Standard AS 2870-2011, Residential Slabs and Footings.
2. Bremer Bay 1:250 000 Geology sheet.
3. Australian Standard AS 1726-1996, Geotechnical Site Investigations.
4. Australian Standard AS 1289-2000, Methods of Testing Soils for Engineering Purposes.
5. Australian Standard AS 3798-2007, Guidelines on Earthworks for Commercial and Residential Developments.

8. Limitations

Douglas Partners (DP) has prepared this report for a project at Lot 128 Kimberley Street, Bullsbrook, WA in accordance with DP's proposal dated 8 April 2011 and acceptance received from N J Duckworth of Sunsetwest Pty Ltd on 12 April 2011. The report is provided for the exclusive use of Sunsetwest Pty Ltd for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions only at the specific sampling or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of anthropogenic influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be limited by undetected variations in ground conditions

between sampling locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached notes and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion given in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd