

# Broome North Local Structure Plan No. 3

Addendum 1 – Amendment No. 1



Prepared for DevelopmentWA  
Prepared by Taylor Burrell Barnett  
July 2021



# Document History & Status

**Broome North Local Structure Plan  
No. 3**

**Addendum 1**

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In association with:

TABEC

GHD

Bushfire Prone Planning

Revision	Reviewer	Date Issued
13/022-0	ST	11 February 2021
13/022-1	ST	09 July 2021

# Endorsement

This Local Structure Plan Amendment No.1 is prepared under the provision of the Shire of Broome Local Planning Scheme No. 6

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

Date .....

Signed for and on behalf of the Western Australian Planning Commission

.....

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

Witness.....

Date.....

Date of Expiry.....

# Amendment 1 Executive Summary

Amendment 1 relates to the 20.35ha portion of Lot 504 south of Tanami Drive. The proposed amendment is outlined in **Table 1** below.

**Table 1 Summary of Local Structure Plan Amendments Proposed**

Proposed Amendment	Planning Rationale
Include a District Centre within southern portion of the Local Structure Plan	The Local Structure Plan amendment proposes to introduce a District Centre in the southern portion of the site, adjacent to Gubinge Road which would provide for development of a range of retail uses such as a supermarket, speciality shops, café/restaurants, as well as office / commercial uses, to align with the Shire of Broome Local Commercial Strategy (2017).

A summary of the Local Structure Plan residential density is shown in **Table 2**.

**Table 2 Local Structure Plan Summary for Portion of Lot 504 (Amendment 1)**

Item	Date	Local Structure Plan Ref. (Section No.)
Total area covered by the Local Structure Plan Addendum	20.35 ha	1.1
Area of each land use proposed:	Hectares	1.4
Residential	5.5806 ha	1.3
Local Centre	6.8208 ha	
Total Estimated Lot Yield	100 lots	1.4
Estimated No. of Dwellings	100 dwellings	1.4
Estimated Residential Site Density	7.4 Dwellings per gross site hectare (20.35ha) less Local Centre (6.8208), 18 Dwellings per net residential site hectare (5.5806ha)	1.4
Estimated Population (average 2.8 persons/ household)	280	1.4
Estimated Commercial Floor Space	1.1ha nett lettable area	1.3
Estimated area and percentage of Public Open Space given over to: Local Parks	2.7687ha 13.6% <i>(inclusive of drainage requirements. Note: 9.2% POS provided for entire Local Structure Plan area)</i>	3.2

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# 1.0 Amendment 1

## 1.1 Introduction

Amendment 1 to the approved Broome North Local Development Plan 3 (now referred to as a Local Structure Plan (LSP)) relates to the 20.35ha portion of Lot 504 south of Tanami Drive (refer **Figure 1**). **Figure 2** details the existing approved LSP, **Figure 3** illustrates the proposed modifications subject to Amendment 1, and **Figure 4** provides an extract of amendment area of the Modified LSP.



Figure 1 Site Plan



Figure 2 Approved Local Structure Plan (Local Development Plan 3)

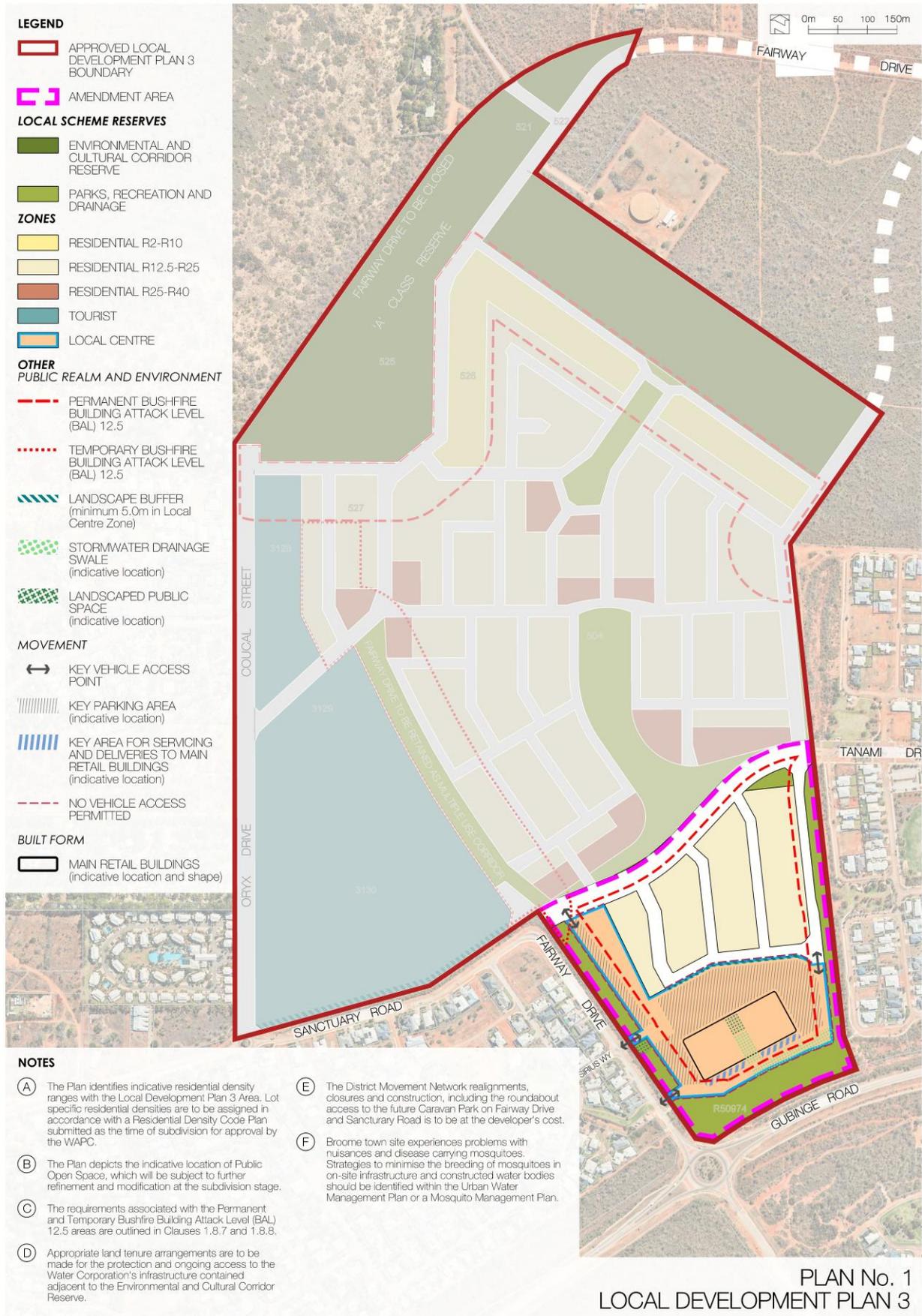


Figure 3 Modified Local Structure Plan (Inclusive of Amendment 1)

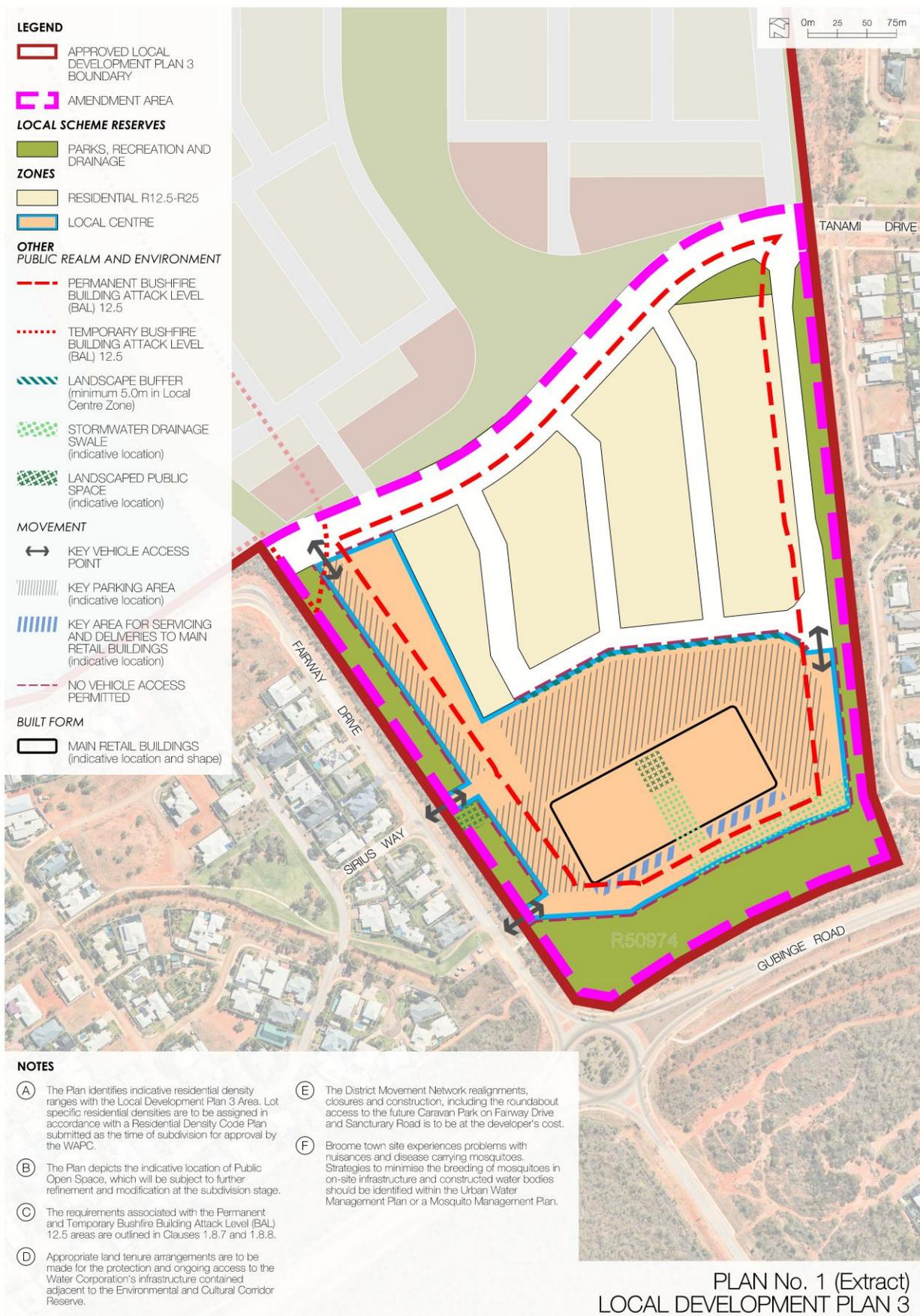


Figure 4 Modified Local Structure Plan (Extract)

## 1.2 Reasons for Modifications

The modified LSP has been prepared in response to the recommendations of the Shire of Broome's Local Commercial Strategy which was prepared in 2017. The preparation of the Local Commercial Strategy included a review of the Shire's 2007 Commercial Land Strategy, drawing on insights from local commercial enterprises, government and major facility operators, population trends and household and business expenditure data, to prepare recommendations for a new and long-term Commercial Land Strategy.

As a result of the anticipated population growth to 2031, the Local Commercial Strategy concludes there will be sufficient demand for a new District Centre within the Shire to accommodate a supermarket, specialty food, liquor, food catering and so forth on a single site. The Strategy acknowledges that while there is an abundance of vacant land upon which a new supermarket could be located, much of it is not ideally located to support the function of a District Centre. As a result, the strategy recommends a new District Centre, accommodating 8,000m<sup>2</sup>-15,000m<sup>2</sup> retail floorspace, is located in the southern portion of the Broome North LDP 3 area on the corner of Gubinge Road and Fairway Drive. To accommodate the future District Centre, the Strategy proposes the Broome North District Structure Plan is amended, supported by detailed planning and design.

As such, detailed planning has been undertaken to inform the proposed LSP amendment to accommodate a District Centre in the southern portion of the LDP 3 area to align with the recommendations of the Shire's Local Commercial Strategy.

## 1.3 District Centre

This LSP amendment proposes a District Centre in the southern portion of the LDP 3 area, adjacent to Gubinge Road, which would provide for development of a range of retail, food-and-beverage, commercial and community uses. The points outlined below also highlight the rationale for why the proposed site is much more optimal than a location alongside Tanami Drive, and how the District Centre site can accommodate the necessary retail floorspace as well as landscaping, and required servicing in the future.

The key design features of the District Centre are as follows:

- The District Centre may incorporate up to approximately 10,000m<sup>2</sup> to 11,000m<sup>2</sup> of retail floorspace (such as a supermarket, specialty shops, cafés/restaurants) and some commercial and community-related floorspace (for example, medical centre, gym, office).
- The District Centre site area is approximately 6.8ha. Using a conservative retail floorspace/site area ratio of 1:4 (to accommodate buildings, parking and access, servicing/deliveries, internal and outdoor spaces, landscaping and drainage), 11,000m<sup>2</sup> would require about 4.4ha. This leaves a substantial area for other retail, commercial and community uses to be incorporated into the site.
- There is the opportunity for a café/restaurant near the Fairway Drive-Sirius Way main entrance – designed as part of an attractive 'gateway' to the District Centre with the linear POS, and creating an appealing outdoor socialising and al-fresco dining experience.
- Loading/service areas are located away from residential development, and screened by the existing landscaped POS corridor (Reserve 50974).
- The main parking areas are accessed immediately from Fairway Drive.
- Access to the District Centre is provided via two entrances on Fairway Drive, as well as from the north from Tanami Drive (refer **Section 3.13.1- Movement Network**).

The benefits of the proposed centre location and configuration are as follows:

- The location near the corner of the intersection of the two major roads – Gubinge Road and Fairway Drive – is highly accessible, providing the ability to capture passing traffic (particularly for visitors to Broome) and reduce the traffic impacts on residents (existing and future) than an alternative site along Tanami Drive. Despite the lack of ground-level visibility from Gubinge Road (due to the retention of native bushland), signage will be visible from Gubinge Road to inform the location of the retail and commercial tenancies within the District Centre. The immediacy of the connection and proximity between site-awareness and site-access is an important consideration for the economic sustainability of the retail tenants.

- The location of the District Centre adjacent to the existing Gubinge Road landscaped corridor (Reserve 50974) and the Fairway Drive swale is beneficial in that the landscaped corridors: screen views of the District Centre service areas and parking areas from these key roads; provide a dual drainage and landscape function; accommodate shared paths, with scope for connections to other paths that connect to surrounding residential areas.
- As detailed in the Shire's Local Commercial Strategy, the proposed District Centre location is appropriate in consideration of future urban and population growth which is anticipated to occur north of Gubinge Road associated with the development of Broome North.
- A Landscape Buffer (minimum 5.0m wide) along the northern boundary of the site could be combined with the adjacent street verge to provide a wide transition between the car park and the adjacent residential development, to reduce the visual impact on residential amenity.
- A local access street along the northern boundary provides an appropriate interface to the District Centre, with vehicle access into the site through the northern boundary only provided via the north-eastern corner of the site.
- The District Centre is located to enable a logical extension of servicing infrastructure, and there are no engineering impediments to the development.
- The site can accommodate the anticipated stormwater management in accordance with best management practices.
- The configuration enables the best staging effectiveness for parking provision and access, site-design efficiency, and the ability for retail floorspace to be created in response to market demand.
- The proposed movement network will reduce the impact of through traffic movements on the residential streets and Fairway Drive, with the inclusion of the proposed roundabout at Tanami Drive.
- Numerous pedestrian/cycle connections and crossings can be provided to and through the site, linking to the surrounding networks.

### 1.3.1 Proposed Part 1 Provisions

Insert new Clause 1.4.1:

Land Use permissibility within the LSP shall be in accordance with the corresponding zone or reserve under the Shire of Broome LPS 6. Until such time as LPS 6 is reviewed and an appropriate District Centre Zone is introduced, land use permissibility for the District Centre site shall be as defined by the Local Centre Zone.

## 1.4 Residential Land

The extent of residential land south of Tanami Drive has been reconfigured in the modified LSP to accommodate the District Centre. The modified LSP includes a total of 5.57 ha of residential land south of Tanami Drive, which is identified as R12.5-R25, replacing the R12.5-R25 and R25-R40 densities identified in the same location in the approved LSP. A revised Residential Density Code has been prepared and included in **Figure 5**.

The new allocation of residential densities responds to the DevelopmentWA's understanding of the market expectations in the locality, having tested these through LDP 1, with little to no demand for R25-R40 coded lots. The R12.5-R25 zoning provides for housing opportunities for new residents seeking to capitalise on the Broome lifestyle, and provides a greater diversity of housing options in the Broome North locality.

The residential land subject to the amendment is anticipated to produce a yield of approximately 100 dwellings, resulting in a total lot yield of 721 dwellings over the entire LSP area, which is a reduction of approximately 67 dwellings compared to the approved LSP.

**LEGEND**

-  APPROVED LOCAL DEVELOPMENT PLAN 3 BOUNDARY
-  AMENDMENT AREA
-  RESIDENTIAL R2 - R10
-  RESIDENTIAL R12.5 - R25
-  RESIDENTIAL R25 - R40
-  R-AC4

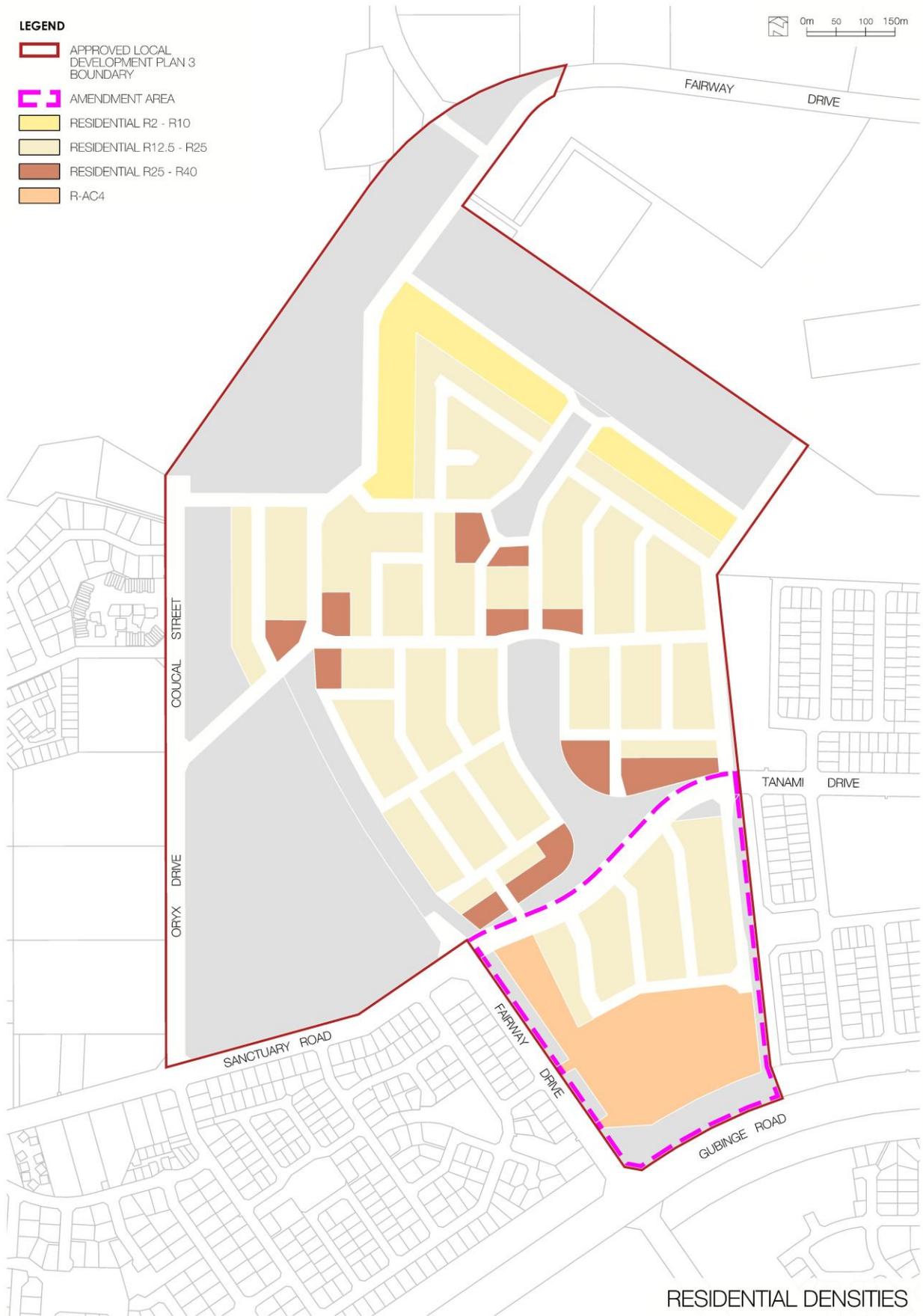
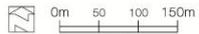


Figure 5 Residential Density Codes

## 1.5 Proposed Local Centre Zone

The Local Centre zone classification has been applied to the proposed District Centre in the absence of a 'District Centre' zone in the Shire's Local Planning Scheme No. 6 (LPS 6).

It is understood the Shire of Broome intend to introduce a new zone and associated provisions for 'District Centre' as per the *Planning and Development (Local Planning Scheme) Regulations 2015*, as per a recommendation in the Local Commercial Strategy. The timing of the introduction of the District Centre zone is yet to be determined. Until such time as a District Centre zone is introduced to the Shire's scheme, the Local Centre zone is considered to be the most suitable for the purpose of accommodating the District Centre.

LPS 6 includes two centre zones, being Local Centre and Town Centre. The Town Centre zone is not appropriate given its purpose as per Clause 3.4.1 of LPS 6 is to "ensure that the area develops and functions as the principal retail, activity and commercial centre for Broome...", which does not align with the intent of the proposed District Centre.

The purpose of the 'Local Centre' zone as per Clause 3.5.1 of TPS 6 is "to provide for convenience retailing, health, welfare and community facilities which serve the local neighbourhood, but which do not detract from Chinatown as the principal centre for retail and commercial activity". The proposed District Centre more closely aligns with the purpose of the Local Centre zone, noting the Local Commercial Strategy identifies the District Centre as complementing Chinatown in the longer term.

Additionally, the proposed District Centre generally aligns with the objectives of the Local Centre zone set out in LPS 6 (with the exception of Clause C – small scale local centre), which are to:

- (a) ensure development within the Local Centre Zone, is consistent with the Local Planning Strategy and the Local Commercial Strategy;
- (b) make provision for development providing a range of convenience goods and services whilst excluding activities which may adversely impact upon the residential amenity, generate large traffic volumes or detract from the role of the Town Centre Zone as the principal centre for retail and commercial activity;
- (c) ensure that the scale and design of development is consistent with a small scale local centre serving the day to day needs of the immediate locality;
- (d) guide and control development to achieve optimum levels of safety and accessibility and allow for strategic vehicular, pedestrian, cycling and open space linkages;
- (e) ensure that land uses and developments and open space areas are of high quality and preserve or enhance the streetscape; and
- (f) ensure that the local centre, land uses and developments are complemented by landscaping and other features which enhance the appearance and reflects Broome-style architecture as specified in clause 4.12.

## 1.6 Local Development Plan(s)

As a prerequisite to subdivision and development, a Local Development Plan (LDP) shall be prepared for the Local Centre zone, addressing key considerations including:

- Noting delivery of the District Centre is unlikely within the next 10 years, the Local Development Plan shall consider the site design and layout considerations appropriate at that time. This may result in the need for a flexible approach to the design elements currently identified on the LSP.
- Built form and vehicle-accessway design to address the positioning of loading/service areas, to minimise impact on adjacent residential areas;
- Site and built form design to address considerations such as building orientation, parking location, building height, bushfire management responses, surveillance of publicly-accessible areas, and major openings;
- Provision of publicly-accessible spaces that accommodate outdoor community gathering opportunities and public activity;
- Landscaping requirements within public spaces, carparking and verges to provide shade, amenity and suitable interface with adjacent residential areas; and
- Access arrangements, enabling effective entry/exit for delivery vehicles and service vehicles, customers, and appropriate interface with adjacent residential areas.

- Bushfire Management, in accordance with the requirements of the Bushfire Management Plan (Version 1.0, 3 February 2021), including the identification of an Asset Protection Zone (APZ) surrounding buildings within the Local Centre zone.

### 1.6.1 Proposed Part 1 Provisions

Insert a new Clause 1.8.9 A Local Development Plan shall be prepared and approved by Council prior to a development application being considered for any site within the District Centre Site identified as Local Centre on the LSP. LDPs are required to address the matters listed in Clause 48 of the Deemed Provisions of *the Planning and Development (Local Planning Schemes) Regulations of 2015*, and more specifically in relation to the District Centre, as follows:

- Site design and layout
- Built form
- Public realm and landscaping
- Access and parking
- Bushfire management

## 1.7 Development Requirements

The following Development Requirements are applicable to the amendment area, in addition to any requirements set out in the approved LSP:

The LSP Addendum is supported by a Bushfire Management Plan (BMP) prepared by Bushfire Prone Planning (Version 1.0, 3 February 2021) and is contained in **Appendix B**.

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

The Council shall recommend to the WAPC that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate of Title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor.

Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:

*“This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land.”* (Western Australian Planning Commission).

### 1.7.1 Proposed Part 1 Provisions

Insert a new provision 1.8.10 Development will have regard to the BAL Assessment contained in the addendum, and be determined in accordance with Schedule 2, Part 10A of the *Planning and Development (Local Planning Schemes) Regulations 2015* and Section 6.3 of SPP 3.7 Planning in Bushfire Prone Areas.

The Council shall recommend to the WAPC that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate of Title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor.

Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:

*“This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land.”* (Western Australian Planning Commission).

## 1.8 Developer Contribution Arrangements

The approved LSP included a note (Note E) on the LSP map which states:

*As a condition of subdivision approval for the first stage of Subdivision, the proponent is to prepare a schedule outlining relevant items (such as roads, infrastructure and community services) arising from future development contributions. The schedule will inform the preparation of a future development contributions scheme to be prepared by the proponent and the Shire of Broome for the Broome North District Development Plan area.*

The Shire prepared an amendment (LPS6/2) to implement a DCP and DCA into the LPS 6. This was supported by Council in 2017, but later refused by the WAPC as it did not comply with State Planning Policy 3.6. Given the uncertainty at this point in time, it is considered premature to include Note E on the modified LSP map. On this basis it is proposed Note E is removed from the modified LSP map.

# 2.0 Planning Framework

In addition to the Planning Framework outlined in the approved LSP, the following planning documents are relevant to the proposed LSP Amendment.

## 2.1 Shire of Broome Local Commercial Strategy

The Shire of Broome prepared a Local Commercial Strategy in 2017 to provide direction for land-use planning over the medium to long-term, and provide guidance in the review of the Shire's Local Planning Strategy and LPS 6. The Local Commercial Strategy supersedes the Shire's 2007 Commercial Land Strategy, and includes recommendations based upon insights from local commercial enterprises, government and major facility operators, population trends and household and business expenditure data.

As outlined in **Section 0** of this report, the Local Commercial Strategy recommends a new District Centre is located in the southern portion of the Broome North LDP 3 area on the corner of Gubinge Road and Fairway Drive.

The role of the District Centre should be to provide a community focal point for people services, employment and leisure, and focus on the weekly needs and services of a wider catchment. It should also provide a broad range of employment opportunities and encourage diversity.

The Strategy recommends that the District Centre should accommodate 1 full line supermarket, along with other food, retail, and local professional and service businesses by 2031, and allow for an expansion to accommodate a second full-line supermarket by 2051.

The proposed modified LSP is consistent with the recommendations of the Local Commercial Strategy, providing a District Centre, which is suitability located and will accommodate the recommended commercial and retail uses.

The proposed District Centre is also consistent with the Guiding Design Principles for District Centres included in the Local Commercial Strategy as follows:

- 1. Centres are highly accessible.** The proposed District Centre is located on the corner of two major roads, Gubinge Road and Fairway Drive, providing a high level of accessibility.
- 2. Centres do not have adverse impacts on adjoining residential areas.** The proposed District Centre has been configured to minimise adverse impacts on adjoining residential areas. The loading/service areas are located away from residential development, and the provision of landscaping surrounding the District Centre will protect the visual amenity of adjacent residential development. Additionally, the proposed movement network will reduce the impact of through traffic movements on the residential streets.
- 3. Ensure a mix of commercial and residential development.** The proposed District Centre will provide a range of commercial uses, and is located adjacent to residential development both within the Broome North LSP area, and west of Fairway Drive.
- 4. Provides for activity and accessibility at the street level.** The proposed District Centre provides for activity through the provision of landscaped public spaces, and a high level of accessibility through its location on two major roads, and via its proposed movement network.
- 5. Supports the provision of public transport and pedestrian links.** The proposed District Centre supports the provision of public transport and pedestrian links as illustrated in **Section 3.1**.
- 6. Provide for a wide range of different types of residential accommodation, including high density residential, to meet the diverse needs of the community.** The Broome North LSP provides a range of residential densities, providing suitable flexibility to meet the needs of the community.

## 2.2 Broome North District Development Plan

The Broome North District Structure Plan (DSP) was endorsed by the Shire and the WAPC in 2010 and puts in place the strategic services and infrastructure framework to guide the future development. Three Local Development Plans (1, 2 and 3) (now referred to as Local Structure Plans) have been prepared for the initial stages of the development of the DSP area. The DSP adopts a transect-based approach to planning for new development. The endorsed DSP identifies a 'Neighbourhood Living' zone over the proposed District Centre site.

The DSP is in the process of being amended to reflect the outcomes of the Local Commercial Strategy to identify the proposed District Centre, as well as remove a Local Centre in LDP area 1, and include District POS in LDP area 2 (refer **Figure 6**). It is understood the amended DSP will be presented to Council and advertised at the same time as this proposed LSP amendment.

The draft amended DSP identifies a 'Centre' on the proposed District Centre. The draft DSP introduces a transect that accords with the District Centre outcome, and introduces the following objectives specific to the Centre zone:

- Provide a social activity hub that caters for the needs of the community with high quality, walkable access from adjacent residential areas;
- For local and neighbourhood centres encourage a public realm centred on main street / town square design principles;
- Offer a mixture of retail, commercial, community, cultural, recreational or residential uses;
- Promote local cultural expression through public art, landscaping and civic buildings;
- Encourage formalistic landscaping within public space and publicly accessible private space such as squares, streets and pedestrian areas;
- Promote pedestrian activity through the use of wide, shaded paths and streets, alfresco dining and awnings for weather protection;
- Allow residential accommodation above commercial development;
- Allow for the application of residential density codes to R60 (and greater where appropriate, for instance within the District Centre);
- Encourage the development of buildings that engage the street and key pedestrian areas and that make a positive contribution to the public realm;
- For local and neighbourhood centres, facilitate parking on the street and screened behind buildings;
- Have regard for the Guiding Design Principles for District and Local Centres at Table 14 of the Local Commercial Strategy (2017).

The proposed LSP amendment is consistent with the draft amended DSP, and is in accordance with the Centre zone objectives.

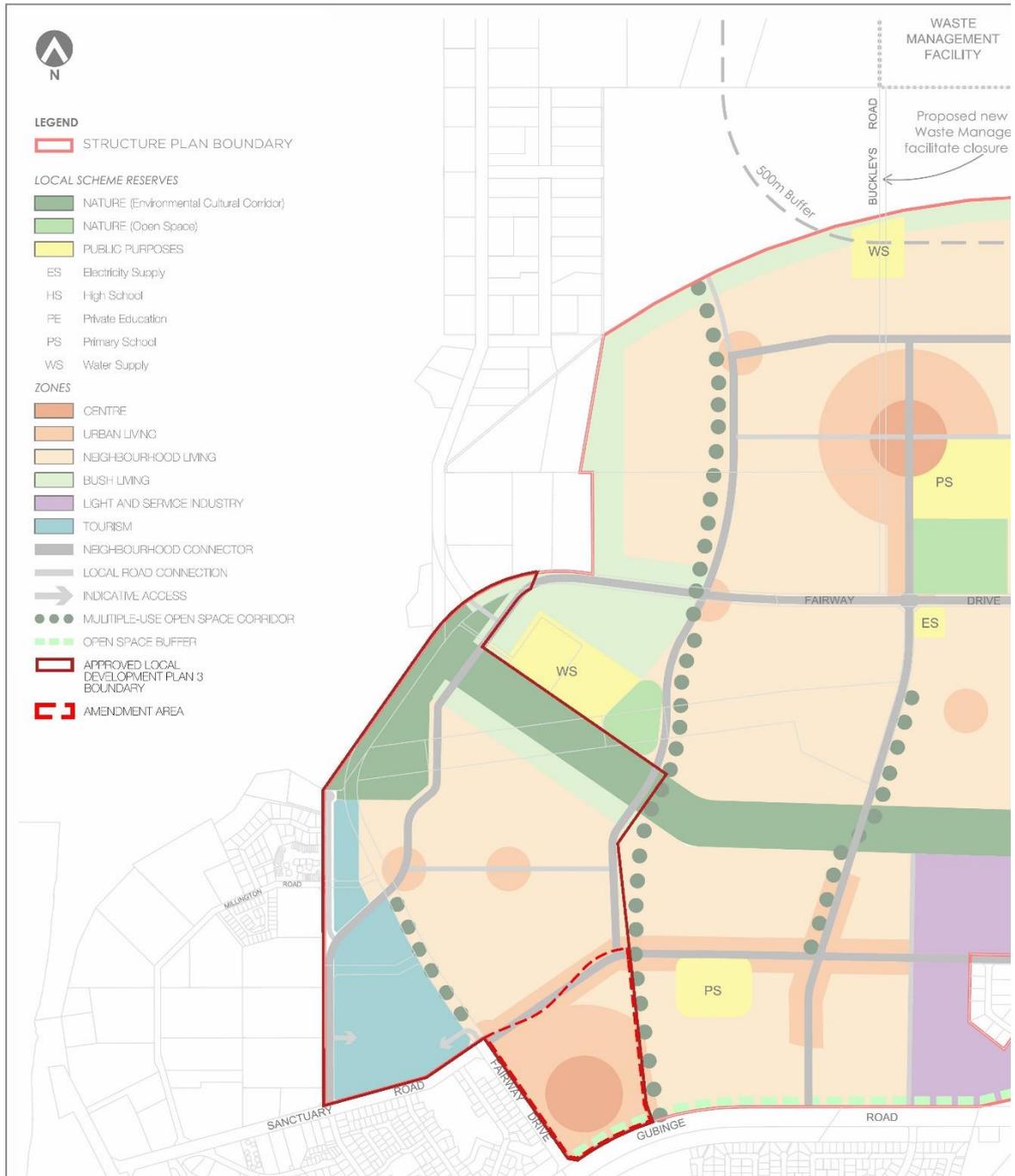


Figure 6 Draft Amended Broome North District Structure Plan Extract (Source: Hatch | Roberts Day)

# 3.0 Local Structure Plan

## 3.1 Movement Network

To support the LSP amendment, GHD has prepared an addendum to the Traffic Report prepared for the approved LSP. The Traffic Report Addenda considers the traffic generation, distributions, road reserve requirements, intersection capacity and path and public transport needs in relation to the revised LSP. The report is included in **Appendix A**.

The proposed movement network is illustrated on **Figure 7**. To accommodate the District Centre, the follow arrangements are proposed:

- **Main Entry:** a four-way roundabout intersection created with Sirius Way, to maximise ease of access to and from the District Centre; announce the arrival to the Centre; and support future ease of movement to and from Fairway Drive for Sunset Park residents, particularly when Fairway Drive traffic volumes increase.
- **Secondary Entry:** a right-in/left-in/left-out intersection on Fairway Drive, south of the main entrance, to distribute traffic along Fairway Drive and enable effective entry/exit for delivery vehicles and service vehicles.
- Access to the site from the north is proposed via a new roundabout at Tanami Drive, to reduce the impact of through traffic movements on the residential streets and Fairway Drive.
- Residential streets are aligned and designed to support good pedestrian/cycle access to the District Centre from Tanami Drive, whilst limiting non-local through-traffic.
- Numerous pedestrian/cycle connections and crossings can be provided to and through the site, linking surrounding residential areas (refer **Figure 8**).

The LSP continues to support the future upgrade of Fairway Drive as a boulevard-type street, as detailed in the approved LSP report.

The Traffic Report addendum confirms the proposed movement network is suitable to accommodate the anticipated traffic volumes in Stage 1, and under the ultimate development scenario. Additionally, the proposed intersection will operate adequately.

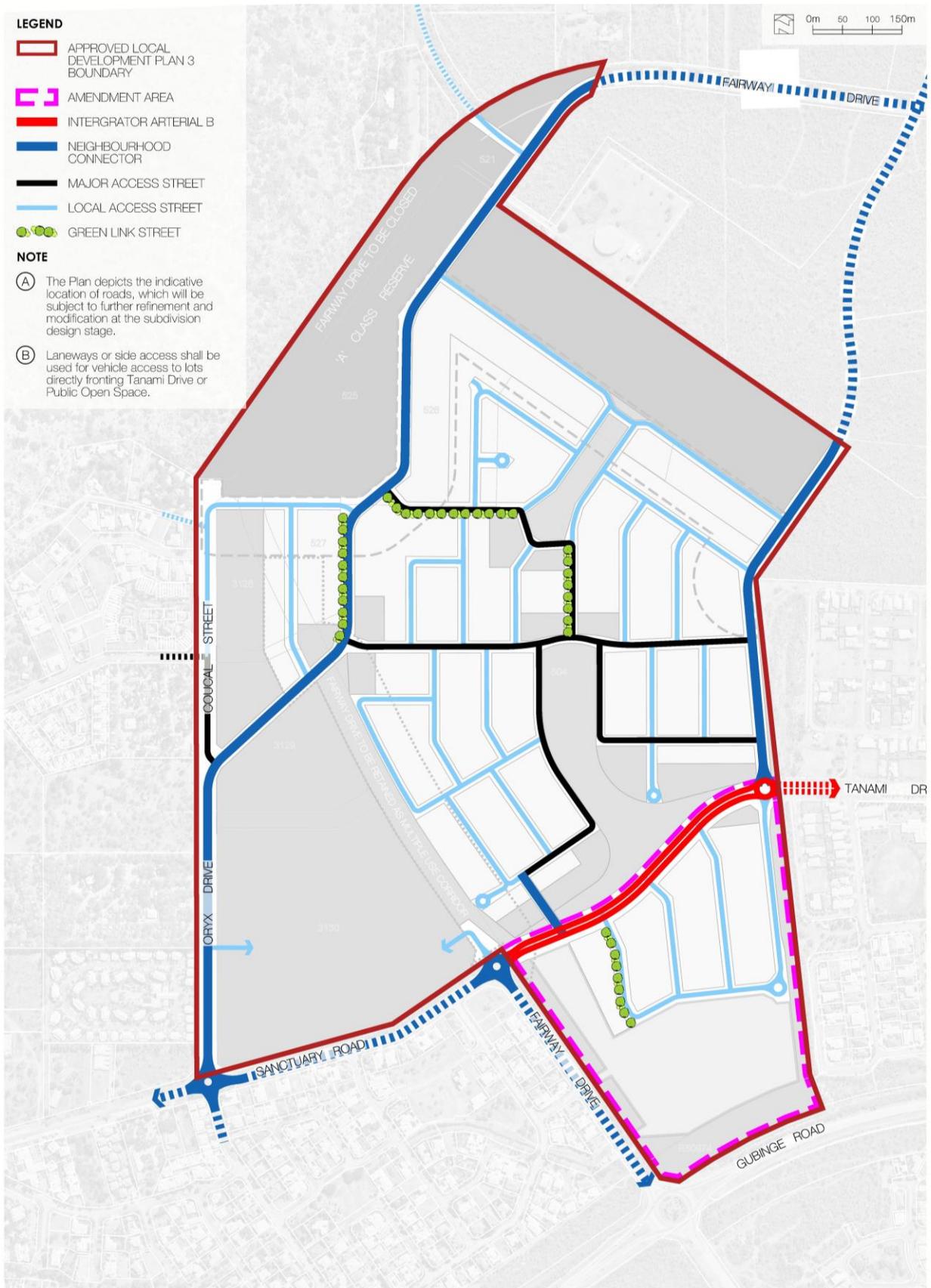


Figure 7 Movement Network Plan



Figure 8 Paths and Public Transport

## 3.2 Public Open Space

A minor modification is identified to the unrestricted POS contained within the subject site. The total drainage areas and unrestricted POS is not impacted by the proposed modifications. Overall, the allocation of POS on the modified LSP is approximately 6.6507ha, which equates to 9.2%, which is consistent with the allocation of 9.2% of POS provided in the approved LSP (refer **Table 4** and **Figure 9**).

Table 3 Public Open Space Schedule (Modified Local Structure Plan)

	ha	ha
<b>GROSS SITE AREA</b>		
<b>Total Gross Site Area</b>		<b>131.2762</b>
<b>DEDUCTIONS</b>		
D1 - Tourism	20.9471	
D2 - Existing A-Class Reserve	8.3787	
D3 - Fairway Dr Closure	3.7673	
D4 - Lot 3127	0.3784	
D5 - Water Supply Infrastructure	0.0764	
D6 - Environmental Cultural Corridor	10.2615	
D7 - Existing Oryx Dr Road Reserve	1.3350	
D8 - Existing Coucal St Road Reserve	1.7226	
D9 - Retained Fairway Dr Reserve Multiple Use Corridor	1.9995	
D10 - Additional Road Reserve (Non-Residential)	1.0242	
D11 - Local Centre	6.8208	
D12 - Drainage Land (1:1 ARI)	2.3175	
<b>Total Deductions</b>	<b>59.0290</b>	
Gross Subdivisible Area		72.2472
<b>Required Public Open Space (10%)</b>		<b>7.2247</b>
<b>PUBLIC OPEN SPACE PROVISION</b>		
<i>Unrestricted Open Space (minus 1:5 year, inclusive of 1:1 year)</i>		
A - Public Open Space (not impacted by drainage)	0.0907	0.0907
B - Public Open Space (1 in 5 = 0.455ha)	1.1145	0.6595
C - Public Open Space (not impacted by drainage)	0.0761	0.0761
D - Public Open Space (1 in 5 = 1.5715ha)	4.1032	2.5317
E - Public Open Space (not impacted by drainage)	0.1194	0.1194
F - Public Open Space (not impacted by drainage)	0.0527	0.0527
G - Public Open Space (1 in 5 = 0.2346ha)	0.2456	0.0110
H - Public Open Space (1 in 5 = 0.3475ha)	0.7724	0.4249

I - Multiple Use Corridor (not impacted by drainage)	0.1047	0.1047
J - Multiple Use Corridor (1 in 5 = 0.1675ha)	0.1675	0.0000
K - Multiple Use Corridor (1 in 5 = 0.5404ha)	0.5658	0.0254
L - Multiple Use Corridor (1 in 5 = 1.632ha)	1.7126	0.0806
<b>Total Unrestricted POS</b>		<b>4.1767</b>
<b>Restricted Open Space</b>		<b>2.4740</b>
<b>Total Restricted POS</b>		<b>2.4740</b>
<b>Total Public Open Space Provision</b>		<b>6.6507</b>
<b>Percentage of Public Open Space Provided</b>		<b>9.2%</b>

Note: Active grassed areas not affected by the 1:1 ARI and 1:5 ARI

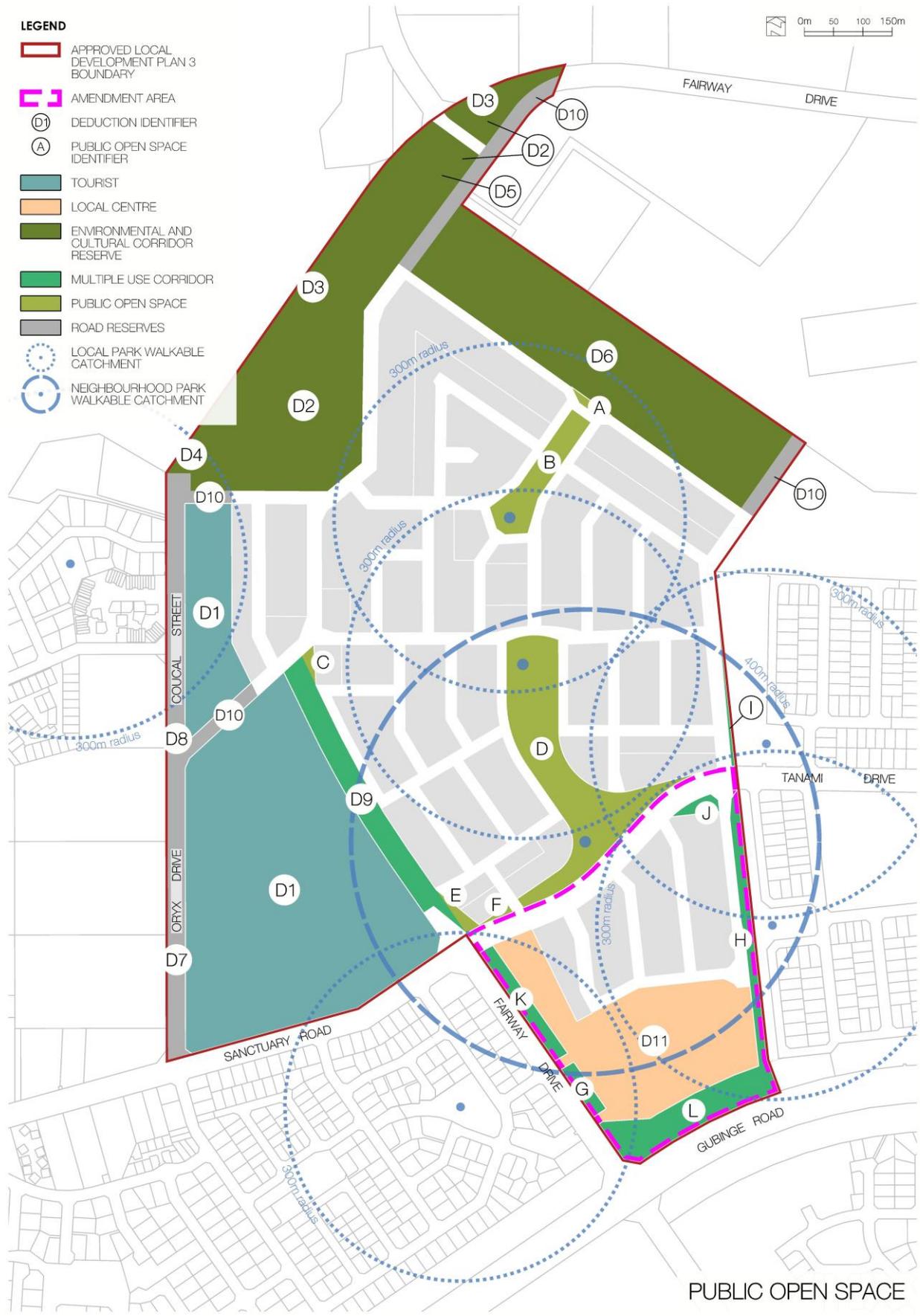


Figure 9 Public Open Space

### 3.3 Bushfire Management

To support the proposed LSP amendment, Bushfire Prone Planning has prepared a Bushfire Management Plan due to the site being designated within a bushfire prone area as per the Western Australian State Map of Bushfire Prone Areas (refer **Appendix B**). This has included the preparation of a Bushfire Hazard Level (BHL) map; identification of any bushfire hazard issues, and assessment against bushfire protection requirements under State Planning Policy 3.7 Planning in Bushfire Prone Areas and associated Guidelines.

The BMP has been prepared on the basis that all Parks, Recreation and Drainage reserves within the subject site, are to remain in their current native state, with the exception of the small triangular POS area in the north-eastern corner of the site which is expected to be managed and maintained in a low bushfire threat state. The remaining residential lots, District Centre, and road reserves are to be managed and maintained to a low bushfire threat state in perpetuity.

Overall, development of the District Centre will greatly reduce the amount of available bushfire prone vegetation that could affect existing residential lots to the east and west of the development site during a local bushfire event. Development of the District Centre will also essentially close any existing corridor of bushfire prone vegetation which currently links larger areas of bushfire prone vegetation either side of Gubinge Road.

The BMP confirms compliance with the requirements of SPP 3.7 and Guidelines can be achieved, as follows:

- The highest BAL rating for any residential lot is BAL-29, which is compliant with the requirements of SPP 3.7 and the associated Guidelines.
- BAL ratings in the District Centre site range from BAL-LOW to BAL-FZ, with the greatest portion having a BAL-LOW or BAL-12.5 rating. Construction of buildings and associated Asset Protection Zones (APZs) to attain a BAL-29 or lower rating for future developments is achievable and must be demonstrated throughout the subsequent planning and subdivision processes.
- Required APZs and areas of vegetation management, will be constrained to within the subject site.
- Where the proposed development is staged, each stage must comply with the requirements of the Guidelines for Planning in Bushfire Prone Areas and the BMP. This may require the creation of roads of management of land or installation of water supply lines outside that particular stage to achieve compliance.
- The proposed roads provide safe access and egress in two different directions to two different destinations.
- A reticulated water supply is available to the subject site and hydrants will be installed in locations as required by the relevant authorities.

Further demonstration of compliance with the requirements of SPP 3.7, the Guidelines and AS 3959 will occur at the subdivision and development stages of the subject site.

### 3.4 Stormwater Management

GHD has prepared a Water Management Strategies addendum letter to consider the impacts of the proposed LSP amendment against the total water cycle management proposed in the approved Broome North Local Water Management Strategy (LWMS) (refer **Appendix C**).

Stormwater management detailed in the approved LWMS was designed based on best practice water sensitive urban design for the Broome climate and geomorphology, considering the specific challenges for management of stormwater in the Kimberley in the wet season, and the requirement for specific infrastructure designed to handle it. The proposed modifications to the LSP do not change the local stormwater management, with earthwork concepts and servicing strategies remaining the same.

#### 3.4.1 Stormwater Quantity Management

The proposed District Centre remains within the designated DWMS catchment 'Area 3' as depicted on the Broome North DWMS. The proposed LSP amendment, alters the location of the local drainage connection to the arterial drainage corridors, however maintenance of the earthworks concept design will maintain overall flow path routes and connectivity.

Stormwater runoff will follow roads until it reaches POS and/or drainage areas, then drain south along the eastern and western drainage corridors to the Gubinge Road drainage corridor.

Stormwater management for the modified LSP area is based on the following principles, unchanged from the approved LSP:

- The development is to have a detention system so that the peak runoff outflows for 5-, 10-, 50- and 100-year average recurrence interval events are no greater than that which would occur under predevelopment conditions.
- Finished floor levels for the buildings on all lots are to be at least 0.5 m above the crown of the road to ensure that no flooding of the residences occurs.
- The 50 and 100-year average recurrence interval events are to be contained within the road reserve and the 10-year average recurrence interval event is to be contained within the kerbs.

### 3.4.2 Stormwater Quality Management

The principles for managing stormwater quality remain unchanged from the approved LWMS, with a range of best management practices incorporated into the development design of the lot, street and development scale. Key street and development scale best management practices include:

- Maximising infiltration by adopting a stormwater detention system to detain the 1 yr ARI (1 EY) storm.
- Design of a linear swale detention system to reduce peak flow rates, and assist in achieving water quality objectives and to maximise the deposition of suspended sediment and promote infiltration.
- Planting and regeneration of low-lying native vegetation in swale drains for filtering of particulates and uptake of dissolved nutrients.

### 3.4.3 Water Balance Modelling

The conceptual water balance was revised for the LSP amendment to reflect the proposed change in land use composition. The results of the water balance model identify that LSP amendment results in a decrease (8,635 kL) in the annual Drinking Water demand across the LDP3 area due to proposed change in land use from traditional residential to District Centre. The potable water and irrigation water efficiency measures proposed within the Broome North LSP LWMS (2015) remain unchanged.

## 3.5 Servicing Considerations

TABEC Pty Ltd has prepared an Engineering Services Addenda to consider the impacts of the proposed LSP amendment on the civil engineering servicing capability and requirements for the proposed development (refer **Appendix D – Engineering Services Addenda**).

The investigation has found that the proposed LSP amendment does not impact the servicing strategies and site requirements for the proposed Broome North development. Consistent with the Engineering Report included as part of the approved LSP, the land is capable of supporting development in accordance with the modified LSP, with a logical progressive extension of infrastructure and base capacity. There are no engineering impediments to the development, though coordination and cooperation with the relevant service authorities will be required as the development progresses.

The earthwork and drainage strategies, catchments, and general location of the outfalls from the site are not affected by the proposed LSP change. The majority will still outfall to the existing LDP1 swale system adjacent to Gubinge Road before ultimately discharging via culvert under Gubinge Road to the Gubinge Road Retention Area. Whilst part of the northern and western catchments will still discharge into the existing Cable Beach drainage system. Drainage links may be required through the District Centre to connect the drainage system to the Fairway Drive and Gubinge Road swales.

The sewerage, water supply, power supply and telecommunications planning, servicing strategies and site requirements are also unaffected by the LSP modification.

### 3.5.1 Wastewater

To facilitate development of the southern wastewater catchment and majority of LSP, including the proposed District Centre, an extension of the existing DN225 sewer mains that terminate at the LDP1 western boundary in Tanami Drive and Ibasco Crescent is required. The smaller northern wastewater catchment that is part of the greater Cable Beach wastewater catchment will be served by a DN150 sewer extension of the existing DN225 sewer in Millington Road.

### 3.5.2 Water Supply

The location of the connections to the existing water networks remains as per the approved LSP. The completion of the DN600 distribution main along Fairway Drive, Sanctuary Road and Coucal Street has now been undertaken by the Water Corporation, which was anticipated in the preparation of the original LSP.

### 3.5.3 Power Supply

The Horizon Power Bilingurr zone substation site, at the intersection of the future Magabala Road extension and Fairway Drive, has also been established along with the 33kV feeder cable. Power supply for the LSP area will emanate from this substation.

As per the approved LSP report, connection to the high voltage underground cables in Tanami Drive and Fairway Drive/Sanctuary Road can initially serve LDP3. Ultimately high voltage interconnection to the existing cables in Fairway Drive north of the LSP area and the aerials in Lulfitz Drive (Oryx Drive) and Coucal Street will be necessary to complete a high voltage ring.

### 3.5.4 Telecommunications

The telecommunication servicing strategy is not affected by the LSP amendment. The telecommunication network will still be an extension of the existing NBN infrastructure in LDP1 that terminates at the western boundary of Tanami Drive.

## 3.6 Staging and Delivery

To support the proposed LSP Amendment, a market review report has been prepared to consider the size, configuration and likely staging and delivery model for the District Centre (refer **Appendix E – Market Review Report**). The proposed modification to the LSP has been prepared to consider the anticipated staging of the District Centre as follows (refer **Figure 10**):

- Stage 1 – may incorporate up to 5,000m<sup>2</sup> – 6,000m<sup>2</sup> of retail floorspace (such as a supermarket, specialty shops, café/restaurant) and some office commercial floorspace (such as a medical centre). The first stage is anticipated to take up to 10 years to eventuate.
- Stage 2 - is anticipated to occur between Tanami Drive and the Fairway Drive-Sirius Way main entrance, could incorporate development of other retail, office, commercial and community uses over time
- Stage 3 – enables future development to unfold eastward without compromising the operation of earlier development and may incorporate up to approximately 5,000m<sup>2</sup> – 6,000m<sup>2</sup> of retail, office commercial floorspace and community uses. The timing of the ultimate development of the District Centre is difficult to predict with any certainty, and will depend on further population growth in the long term, and will likely occur in small increments of several years.

As per the approved LDP 3 report, Stage 1 of the overall LDP 3 development area is still intended to be the residential component south of Tanami Drive, which is located within the amendment area.

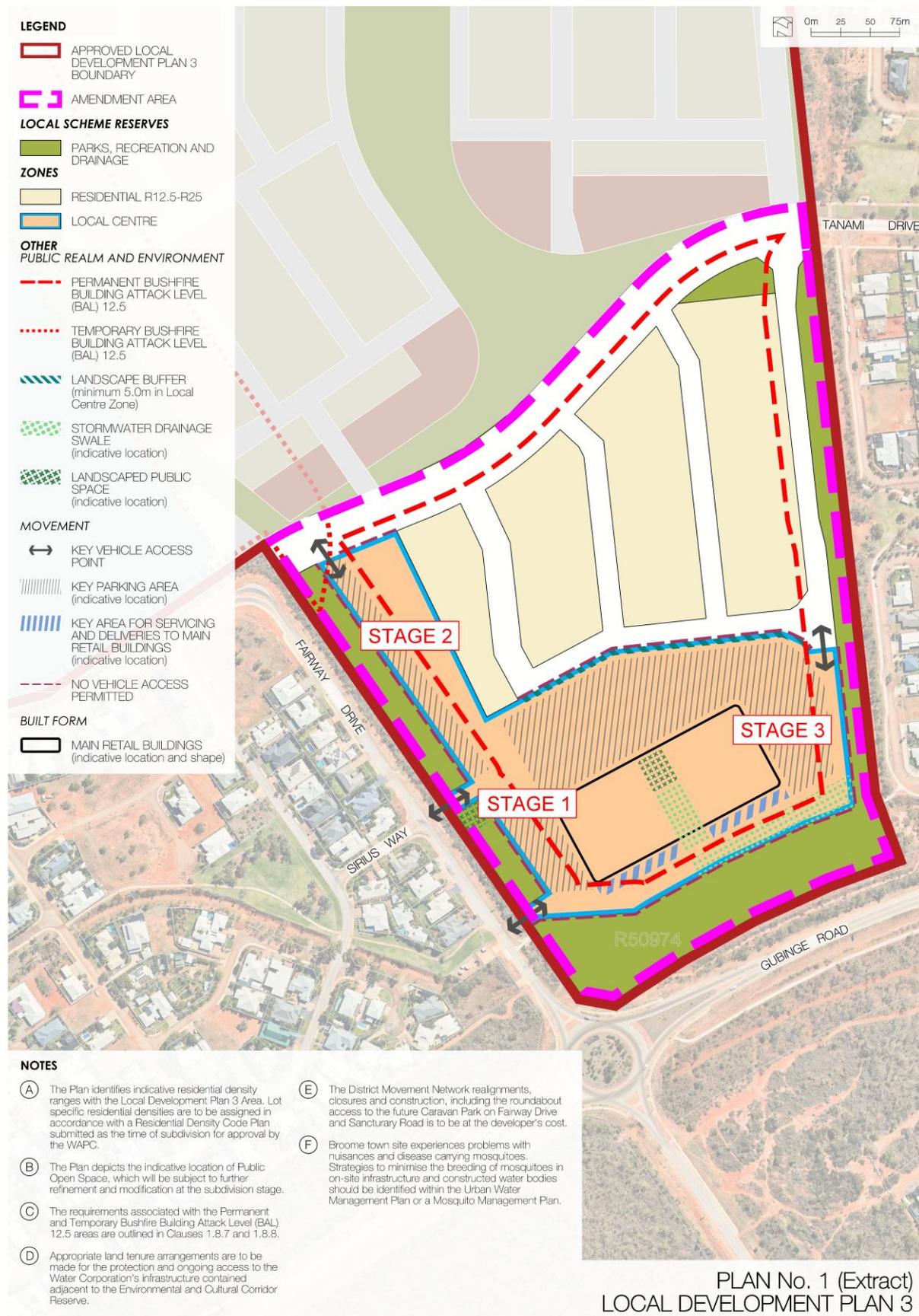


Figure 10 District Centre Indicative Staging Plan

# APPENDIX A

Traffic Report Addendum





**DevelopmentWA**  
Broome North Local Development Plan 3 Amendment  
Traffic Addenda

February 2021

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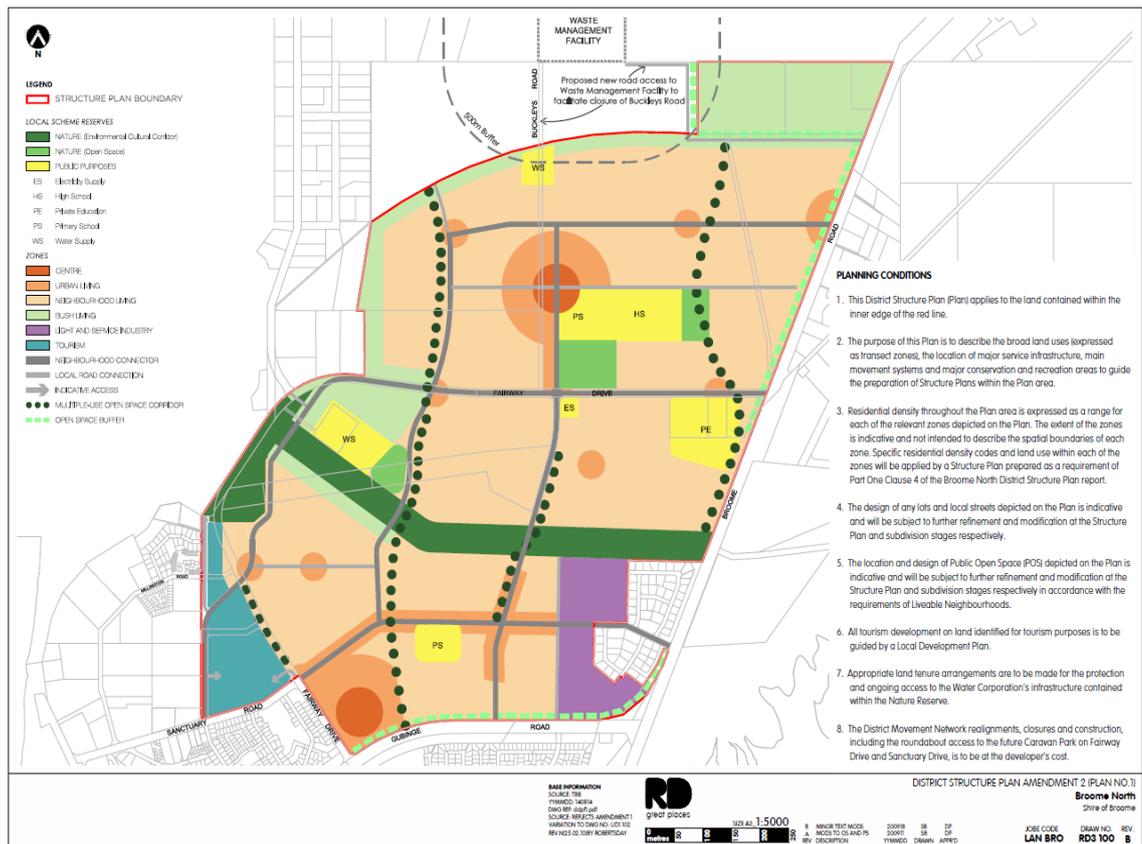
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# Appendices

Appendix A - (Broome North LDP3 Amendment)





**Figure 2 Proposed Broome North DSP**

It is understood the Shire of Broome has agreed in principle with the submission of succinct addenda to each of the technical reports accompanying the DSP. The addenda need to comment on the two major structural changes, being:

1. Removal of the local centre in the LDP and addition of a district centre in LDP3, consistent with the Shire's Local Commercial Strategy; and
2. Relocation of District Open Space per previous agreement as part of the Gujjarri Estate LDP process.

**This document provides traffic commentary on the proposed changes to the LDP3 area incorporating the District Centre.**

## 1.2 Assumptions

- Floor areas and lot yields as advised by the client are correct.
- Traffic distribution assumptions are suitable for analysis purposes.

### **1.3 Scope and limitations**

*This report has been prepared by GHD for Development WA and may only be used and relied on by Development WA for the purpose agreed between GHD and the Development WA as set out in this report. GHD otherwise disclaims responsibility to any person other than Development WA arising in connection with this report.*

*GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

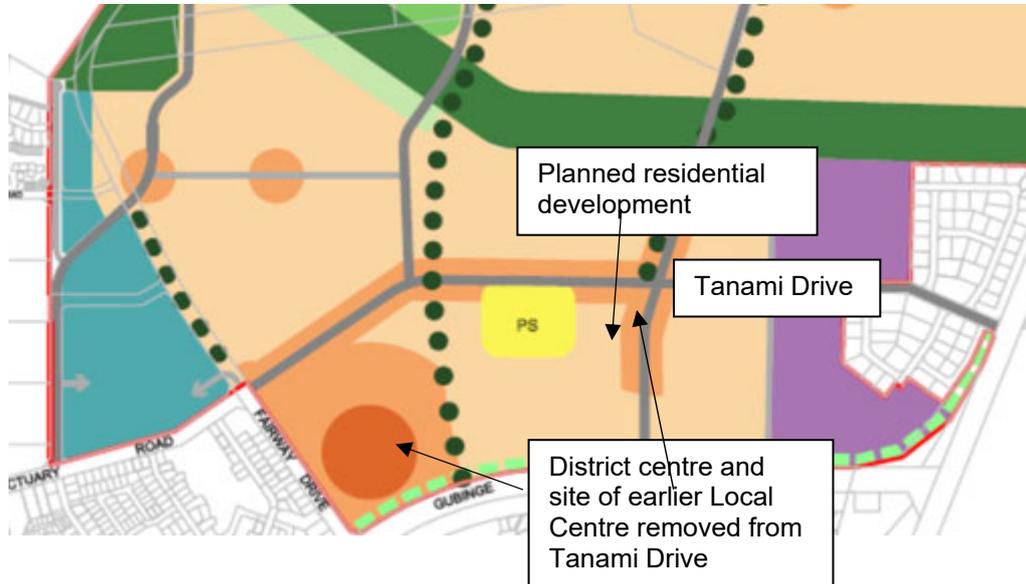
*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.*

*GHD has prepared this report on the basis of information provided by Development WA and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.*

## 2. DSP changes

### 2.1 Relocation of local centre

To ensure consistency with the Shire's Local Commercial Strategy, the local centre in the LDP has been removed and a district centre has been added to LDP3. Figure 3 and Figure 5 refer.



**Figure 3 Removal/relocation of local centre**

The previously approved LDP3 is shown in Figure 4 and the proposed LDP3 (extract) is shown in Figure 5. The only change is south of Tanami Drive and intersections with Tanami Drive.



**Figure 4 Local Development Plan 3 – Approved (Riley Report)**



**Figure 5 Local Development Plan 3 – Proposed (extract)**

## 2.2 Movement network

A previous traffic study was undertaken by Jacobs in 2016 (Broome Traffic Study), which modelled the Broome road network to 2051 for various scenarios. Riley Consulting prepared a Structure Plan Report in 2014 for LDP3 as residential development. The southern part of this area will now become a Centre in accordance with the Local Commercial Strategy. The relocation of the Centre to LDP3 and traffic impacts is considered further. Reference is made to the aforementioned traffic reports.

### 2.2.1 Base traffic on external network

A review of limited available traffic data from Main Roads WA Traffic Map indicates a general decline in traffic volumes since 2016 on select roads as follows:

- Cable Beach Road: -10% per annum
- Gubinge Road: -2% per annum

The Broome Traffic Study adopts a linear growth based on population growth and it is concluded that this report remains valid for use in informing subsequent assessment.

## 2.2.2 Traffic generation

### Relocation of Local Centre

Figure 6 indicates the site of the relocated Centre.



**Figure 6 Local Development Plan 3 – Site of relocated centre**

Table 1 indicates the total lot yields and the reduction due to the proposed Centre. There will be a reduction of 38 dwellings due to the relocated centre.

Note: Figures in Table 1 and 2 are indicative and will be confirmed as part of relevant local subdivision planning processes.

**Table 1 Revised residential lot yields**

LDP3 (Residential Scenario)	Yield
Total Yield	788 dwellings
Southern Cell (area subject to LDP Amendment)	167 dwellings
<b>District Centre Concept</b>	
Residential Yield	Approx. 100 dwellings
<b>Difference in Residential Yield</b>	<b>67 dwellings</b>

A review of the Deep End Retail Review report indicates a Stage 1 District Centre with proposed tenancies and lettable areas as shown in Table 2.

**Table 2 Stage 1 District Centre (Deep End Retail Review)**

Tenant	GLA m <sup>2</sup>
Supermarket	3,700
Liquor	200
Bakery	80
Café	100
Takeaway food/restaurant (#4)	350
Pharmacy	300
News/Lottery/Gifts	100
Hairdresser/other beauty (#2)	180
Total	5,010
<u>Non-Retail</u>	
Medical centre	280
Gym	200
<u>Pad sites</u>	N/A
Childcare	N/A
Fuel/fast food/car wash	N/A

The Deep End Retail Review report adds “*It would seem appropriate to formalise the LCS recommendation by amending LDP3, as proposed. The general layout of the site in the TBB drawing gives enough flexibility to develop a range of options and configurations over time, as demand warrants.*”

Therefore, for analysis purposes an ultimate 11,110 m<sup>2</sup> has been adopted as previously proposed to 2051. As previously indicated in this report, this is indicative and will be confirmed as part of relevant local structure planning processes.

Trip rates used in the Broome Traffic Report are shown in Table 3.

**Table 3 Trip Rates (Broome Traffic Report)**

Land Use	Daily trip rate
Residential	13.81/dwelling
Local Centre	75.88/100 m <sup>2</sup> GFA

For this assessment, a residential daily trip rate of 9.2 (Riley Report) has been adopted in view of the limited public transport opportunities and consistency with the *NSW Guide to Traffic Generating Development* which indicates 9 trips per dwelling per day. The resulting trip generation is shown in Table 4.

### Stage 1

It is acknowledged that development will occur in stages and the **first stage** of the Centre development is 6,000m<sup>2</sup> (10 years). Residential lots are likely to be developed at a rate of 50 per year for the LDP2 and 3 areas.

If it is assumed that 50 lots are developed over 10 years this represents a traffic generation of 4,600vpd (9.2 trips per day x 500) A Centre development of 6,000m<sup>2</sup> is forecast to generate 4,800vpd (6,000/100 x 80).

For the first stage of Centre development only access to Fairway Drive is assumed. A roundabout is proposed at the main access and a secondary access will operate right-in/left-in/left-out.

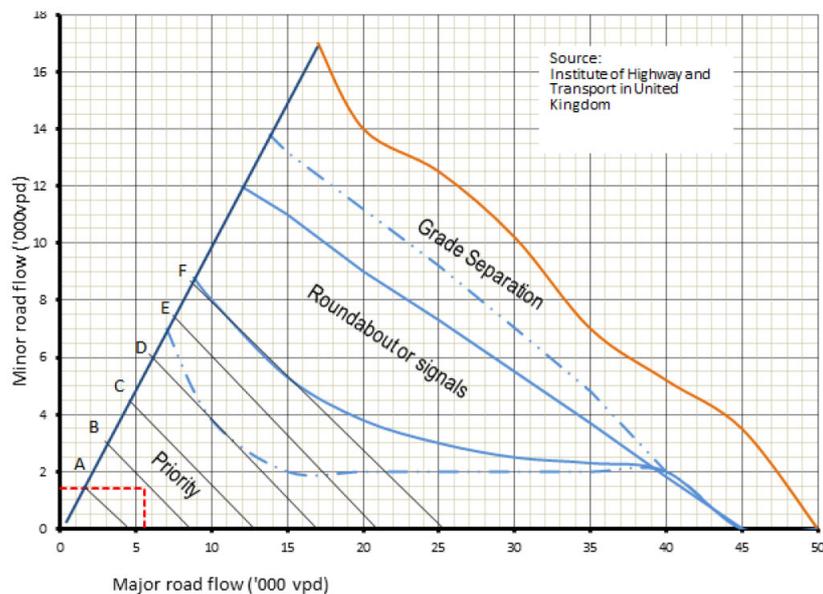
A distribution of 70% to the main roundabout access and 30% at the southern access represents 3,360vpd and 1,440vpd respectively. Assuming 10% access during the peak hour is 336vph and 144vph at each access. The Broome Traffic Study forecast 5,962vpd (477vph) on Fairway Drive by 2031 adding Stage 1 traffic (63% assumed to/from north) at main access indicates around 8,000vpd on Fairway Drive.

The proposed roundabout at the Centre access will accommodate forecast traffic volumes. (Sidra analysis is undertaken at both Fairway Drive accesses for ultimate development).

Liveable Neighbourhoods recommends that on streets with vehicle volumes greater than 5,000 vpd, lot layout must ensure that vehicle egress will not involve reversing into the street. Appropriate egress may be achieved by an embayment as part of a Boulevard cross section as proposed.

The Structure plan proposed a roundabout at the intersection of Fairway Drive and Tanami Drive. A broad assessment of required intersection configuration using the matrix developed by the Institute of Highways and Transport UK indicates a roundabout is required when the

major flow reaches levels of service worse than D/E, i.e. the major flow exceeds around 10,000vpd and minor flow around 4,000vpd. Figure 7 refers.



**Figure 7 Institute of Highways and Transport UK Intersection requirements**

A review of forecast traffic volumes on Fairway Drive and Tanami Drive (Stage 1) indicates around 8,000vpd and 7,000vpd respectively by 2031. The chart indicates that a roundabout is likely to be required at some stage after 2031 as surrounding development including the Centre occurs. There will also be safety benefits if a roundabout is installed at this intersection by reducing traffic speed and controlling traffic movements.

#### Ultimate development

The following sections consider the longer term ultimate development.

**Table 4 Relocated Local Centre Traffic Generation LDP3**

Land use	Trip Rate/Day	Vehicles per day (ultimate)
Previous: 788 dwellings	9.2 (Riley Report)	7,249
Proposed: 750 dwellings (approximately)	9.2 (Riley Report)	6,900
Proposed Local Centre: 11,110 m <sup>2</sup>	80/100 m <sup>2</sup> (a)	8,888
Total		15,788

(a) A rounded trip rate of 80/100 m<sup>2</sup> of GFA (rather than 75.88) has been assumed for the Local Centre for robust assessment.

The traffic generation from the LDP3 precinct (ultimate development) is forecast to increase from 7,249 vehicles per day (vpd) to 15,788 vpd, which represents a nett gain of approximately 8,539 vpd (note: if the residential trip rate in the Jacobs report is used, the nett gain is 8,363 vpd).

Access to the Centre is via Fairway Drive (2 accesses) and two internal accesses. For analysis purposes and assuming worst case, the following traffic distribution is assumed at the main Fairway Drive access:

- 45% to the north = 3,999 vpd.
- 45% to the south = 3,999 vpd.
- 10% to the west = 890 vpd.

The Broome Traffic Study forecasts 7,775 vpd (622/8% in the peak hour) on Fairway Drive by 2051. Based on this assessment, relocation of the Centre could add up to around 4,000 vpd to Fairway Drive, increasing volumes to around 11,800 vpd (it should be noted however that a proportion of Centre traffic will use the internal road to/from the north east corner of the site to/from Tanami Road, therefore reducing overall numbers on Fairway Drive).

A distribution to/from the Centre between the 4 access locations is estimated as follows:

50% Main roundabout access to Fairway Drive - 4,444vpd

25% at the southern access to Fairway Drive - 2,222 vpd

15% at the north eastern access to Tanami Drive - 1,333vpd

10% at the northern access to Tanami Drive - 889vpd

The proposed treatment of Fairway Drive is a boulevard cross section (Neighbourhood Connector) with embayed parking adjacent to the existing residential properties facilitating access to properties. Table 5 indicates levels of service for various types of road based on daily traffic volumes.

**Table 5 Levels of Service by Road Type (Source Riley Report LDP3)**

LOS	Single Carriageway <sup>1</sup>	2-Lane Boulevard <sup>2</sup>	Dual Carriageway (4-Lanes) <sup>3</sup>	Dual Carriageway (4-lane Clearway) <sup>3</sup>
A	2,400vpd	2,600vpd	24,000vpd	27,000vpd
B	4,800vpd	5,300vpd	28,000vpd	31,500vpd
C	7,900vpd	8,700vpd	32,000vpd	36,000vpd
D	13,500vpd	15,000vpd	36,000vpd	40,500vpd
E	22,900vpd	25,200vpd <sup>4</sup>	40,000vpd	45,000vpd
F	>22,900vpd	>25,200vpd <sup>4</sup>	>40,000vpd	>45,000vpd

<sup>1</sup> Based on Table 3.9 Austroads - Guide to Traffic Engineering Practice Part 2

<sup>2</sup> Based on single carriageway +10% (supported by Table 3.1 Austroads - Guide to Traffic Engineering Practice Part 3) – Boulevard or division by medians.

<sup>3</sup> Based on RRR Table 3.5 - mid-block service flow rates (SF.) for urban arterial roads with interrupted flow. Using 60/40 peak split.

<sup>4</sup> Note James Street Guildford passes 28,000vpd.

Table 5 indicates the ultimate level of service of Fairway Drive by 2051 is forecast to be C/D for a daily volume of 11,800 vpd which is considered acceptable.

Traffic on Tanami Drive just east of Fairway Drive was previously forecast to be around 8,500 vpd (Broome Traffic Study). Forecast traffic volumes are not anticipated to change the road cross section requirement due to the relocation of the Centre. A proportion of the northern traffic to/from the Centre will use Tanami Drive, forecast to be + 5,600vpd (8,888vpd x 63%). A Neighbourhood Connector road cross section will accommodate the forecast volumes.

A proportion of external traffic from the east is anticipated to travel along Gubinge Road to access the Centre via Fairway Drive.

## 2.3 Intersection analysis

### 2.3.1 Fairway Drive/Centre access (ultimate)

A roundabout is proposed at the main Fairway Drive/Centre access intersection.

SIDRA analysis (PM peak period) has been undertaken for the operation of the Fairway Drive/Centre access for 2051, assuming a worst case scenario (all traffic uses the roundabout) and 50% use the access. It is acknowledged that three other accesses are available, one further south to Fairway Drive and two leading on to Tanami Drive and results are therefore likely to be better than shown. A good level of service of A/B is forecast for all movements with no significant queueing or delay. Figure 8 refers.

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total	Flows HV	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Fairway Drive south												
1	L2	11	2.0	0.506	4.4	LOS A	4.1	28.9	0.58	0.55	0.58	45.7
2	T1	421	2.0	0.506	4.4	LOS A	4.1	28.9	0.58	0.55	0.58	46.8
3	R2	168	2.0	0.506	8.9	LOS A	4.1	28.9	0.58	0.55	0.58	37.5
Approach		600	2.0	0.506	5.6	LOS A	4.1	28.9	0.58	0.55	0.58	43.7
East: Centre access												
4	L2	168	2.0	0.334	1.7	LOS A	2.2	15.6	0.52	0.46	0.52	35.9
5	T1	37	2.0	0.334	1.5	LOS A	2.2	15.6	0.52	0.46	0.52	36.5
6	R2	168	2.0	0.334	4.4	LOS A	2.2	15.6	0.52	0.46	0.52	36.7
Approach		374	2.0	0.334	2.9	LOS A	2.2	15.6	0.52	0.46	0.52	36.3
North: Fairway Drive north												
7	L2	168	2.0	0.345	4.2	LOS A	2.3	16.3	0.50	0.51	0.50	36.3
8	T1	218	2.0	0.345	4.2	LOS A	2.3	16.3	0.50	0.51	0.50	47.6
9	R2	11	2.0	0.345	8.7	LOS A	2.3	16.3	0.50	0.51	0.50	47.8
Approach		397	2.0	0.345	4.3	LOS A	2.3	16.3	0.50	0.51	0.50	42.1
West: Sirius Way												
10	L2	21	2.0	0.112	7.5	LOS A	0.7	5.0	0.75	0.74	0.75	44.6
11	T1	37	2.0	0.112	8.3	LOS A	0.7	5.0	0.75	0.74	0.75	34.6
12	R2	21	2.0	0.112	12.0	LOS B	0.7	5.0	0.75	0.74	0.75	45.7
Approach		79	2.0	0.112	9.1	LOS A	0.7	5.0	0.75	0.74	0.75	39.5
All Vehicles		1449	2.0	0.506	4.8	LOS A	4.1	28.9	0.55	0.53	0.55	40.9

**Figure 8 Fairway Drive/Centre access 2051 PM peak analysis**

Further analysis assuming 50% of all traffic use the roundabout and 63% travel to/from the north and 27% to/from the south and 10% to/from the west indicates a good level of service of A/B for all movements.

The Broome Traffic Study has analysed the Fairway Drive/Gubinge Road intersection to 2051 and indicates levels of service of A-C and worst degree of saturation as 0.58. The increased traffic due to the relocation of the Centre is not anticipated to significantly impact this intersection.

A proportion of northbound traffic will use the roundabout and residential road from the north east corner of the Centre and the access road to Tanami Drive to the west of the Centre, with forecast daily traffic of around 2-3,000 vpd shared between the northern accesses.

The proposed roundabout at the northeast corner of the Centre site should be designed to restrict large vehicles from accessing the residential streets to the west.

### 2.3.2 Southern access (ultimate)

The southern access with Fairway Drive is located approximately 97 m from the roundabout at Gubinge Road and the start of the turn lane is located approximately 30 m from Gubinge Road. This secondary access will operate right-in/left-in/left-out to distribute traffic along Fairway Drive and enables effective entry/exit for delivery vehicles and service vehicles. Analysis has been undertaken to determine forecast operation and queue lengths assuming access by a semi-trailer to service the Centre.

For analysis purposes, it is assumed that 25% of all traffic generated by the Centre will use the southern access (2,222 vpd), with 8% occurring in the peak hour and 10% being trucks. A level of service of A is forecast. A sensitivity analysis assuming all flows are doubled indicates a level of service of C (right in/left out) and a queue length in Fairway Drive south (within the turn lane) of 11 m.

Analysis indicates the intersection will operate adequately.

A check of the Stopping Sight Distance (SSD) to the start of the turn lane is calculated from the following:

$$SSD = \frac{R_T V}{3.6} + \frac{V^2}{254(d + 0.01a)}$$

where

- $R_T$  = reaction time (sec)
- $V$  = operating speed (km/h)
- $d$  = coefficient of deceleration (longitudinal friction factor)
- $a$  = longitudinal grade (% , + for upgrades and – for downgrades)

$R_t = 2$  seconds

$V = 30$  km/h approaching from the roundabout

$d = 0.36$

$a = 0\%$

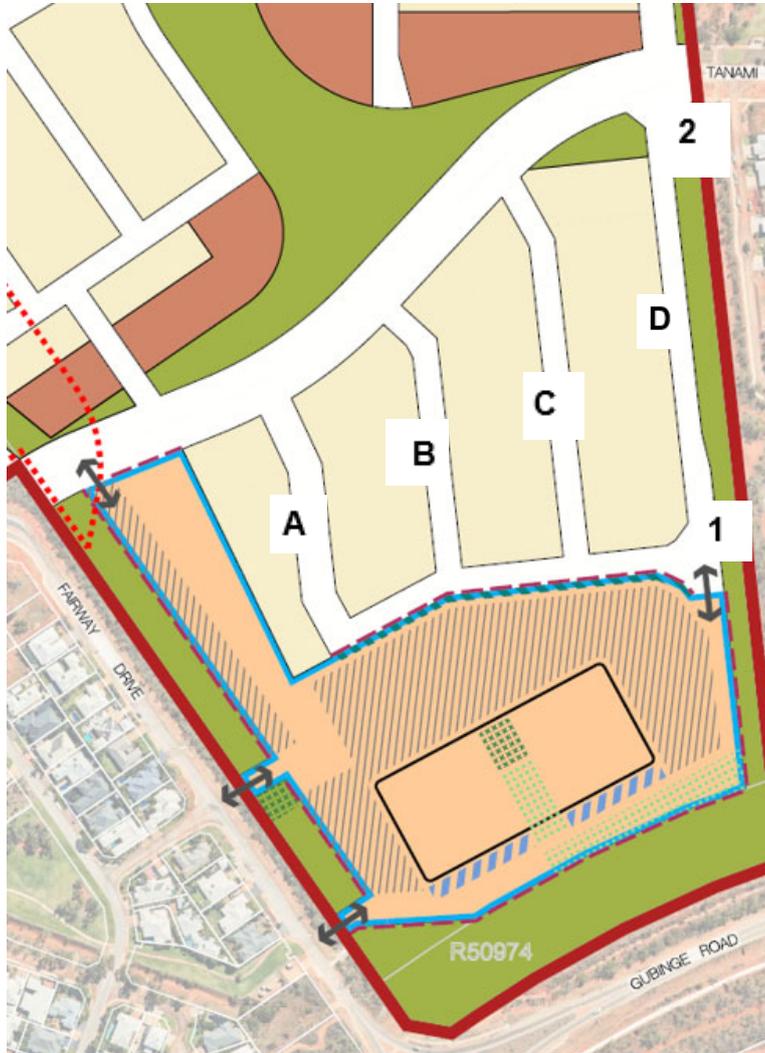
$SSD = 27$  m

A distance of 30 m between the roundabout and the start of the right turn lane is therefore considered acceptable.

## 2.4 Through traffic in residential streets (ultimate)

The Centre will draw traffic from the surrounding northern development. Four accesses are proposed to the Centre as indicated in Figure 9. These will distribute traffic generated by the Centre via Tanami Drive and Fairway Drive. A roundabout is proposed at the north east corner of the Centre site (1) and will be designed with a tight radius/geometry to the west to discourage truck movement. The roundabout at the north-south road/Tanami Drive intersection (2) will facilitate good access to the Centre reducing the need to use other residential streets. The three north-south roads (A,B,C) could have traffic calming measures to further discourage traffic accessing the Centre via these roads, however it is considered unlikely to be necessary as there is no direct access to the Centre from these roads.

The main north-south residential road (D) could also be traffic calmed to reinforce its secondary Centre access status. This road is forecast to carry <3,000vpd on full development including Centre and residential traffic. It is proposed as a 15m reserve incorporating a 7m carriageway, 6m verge on the west side and 2m verge on the eastern side. Table 5 indicates the road will operate at a good level of service, A. Liveable Neighbourhoods indicates a 7m Carriageway with anticipated traffic volumes of 3,000vpd – Access Street C.



**Figure 9 Centre access**

## 2.5 General comments

- The southern access with Fairway Drive is located approximately 97 m from the roundabout at Gubinge Road and the start of the turn lane is located approximately 30 m from Gubinge Road. Intersection spacing is considered suitable.
- Analysis of the roundabout at Fairway Drive/Sirus Way/Centre access indicates it is forecast to operate satisfactorily with full development.
- A northern access to the Centre with Tanami Drive (approximately 50 m east of Fairway Drive roundabout) will operate left in/out.
- A series of speed humps could be used to deter through traffic on the east-west access road to the south of the Shopping Centre.

- As part of the detailed design, the access road should be tracked for two opposing semis to pass each other to ensure adequate width is provided. This will include along the road and at the access with Fairway Drive.
- Truck deterrence from local streets – the proposed roundabout at the north end of the Centre site should have a tight radius to accommodate single unit from south to west but not a semi + threshold treatment in the side road to deter trucks.
- Access to service areas at the Centre should be tracked to ensure a 19 m semi can access.
- A roundabout at the Tanami Drive /North-South residential road will require the Tanami Drive/Said Bend to operate left in/out.

### Fairway Drive

- The Structure Plan continues to support the future upgrade of Fairway Drive as a boulevard-type street.
- Main entry: four-way roundabout intersection created with Sirius Way, to maximise ease of access to and from the District Centre; announce the arrival to the Centre; to support future ease of movement to and from Fairway Drive for Sunset Park residents, particularly when Fairway Drive traffic volumes increase.
- Secondary entry: right-in/left-in/left-out intersection to distribute traffic along Fairway Drive; enables effective entry/exit for delivery vehicles and service vehicles. This will overcome the need for truck access through residential roads to the north.

### Movement and Landscape

- Existing Gubinge Road landscaped corridor (Reserve 50974) provides a dual drainage and landscape function; screens views of the District Centre from Gubinge Road; accommodates an existing east-west shared path, with scope for future path connections between the District Centre and Gubinge Road.
- A landscape buffer (minimum 5 m wide) along the northern boundary of the site could be combined with the adjacent street verge to provide a wide transition between the car park and the adjacent residential development to reduce the visual impact on residential amenity.
- Car park areas should be landscaped in accordance with Council policy – with wide-canopy shade trees, to provide amenity for customers and to reduce the carpark’s visual impact on residential amenity.
- A local access street along the northern boundary provides an appropriate interface to the District Centre, with vehicle access into the site through the northern boundary only provided via the north-eastern corner of the site.
- Access to the site from the north is proposed via a proposed new roundabout at Tanami Drive, to reduce the impact of through traffic movements on the residential streets and Fairway Drive.
- Residential streets are aligned and designed to support good pedestrian/cycle access to the District Centre from Tanami Drive, whilst limiting non-local through-traffic.
- Numerous pedestrian/cycle connections and crossings can be provided to and through the site, linking surrounding residential areas. The locations of the path connections would be confirmed at the subdivision stage.

## 2.6 Recommendations

Following assessment of the Broome North Local Development Plan 3 amendment the following recommendations are made:

## Stage 1.

Two proposed access points to Fairway Drive are suitable to accommodate forecast traffic volumes. A roundabout at the main access and secondary access further south. (Left in/out and right in).

No significant changes are recommended for the transport network as previously approved.

A roundabout at the intersection of Tanami Drive/Fairway Drive is likely to be required as the Centre develops around 2031.

A Boulevard treatment for Fairway Drive on completion of the Centre development is recommended.

## Ultimate

The proposed treatment of Fairway Drive as a Boulevard, together with a roundabout at the access to the Centre, is recommended.

A roundabout at the Fairway Drive/Centre access is forecast to operate satisfactorily on full development and is recommended.

The proposed southern access to Fairway Drive incorporating left in/out and right in, is considered suitable and is forecast to operate adequately. This secondary access is recommended.

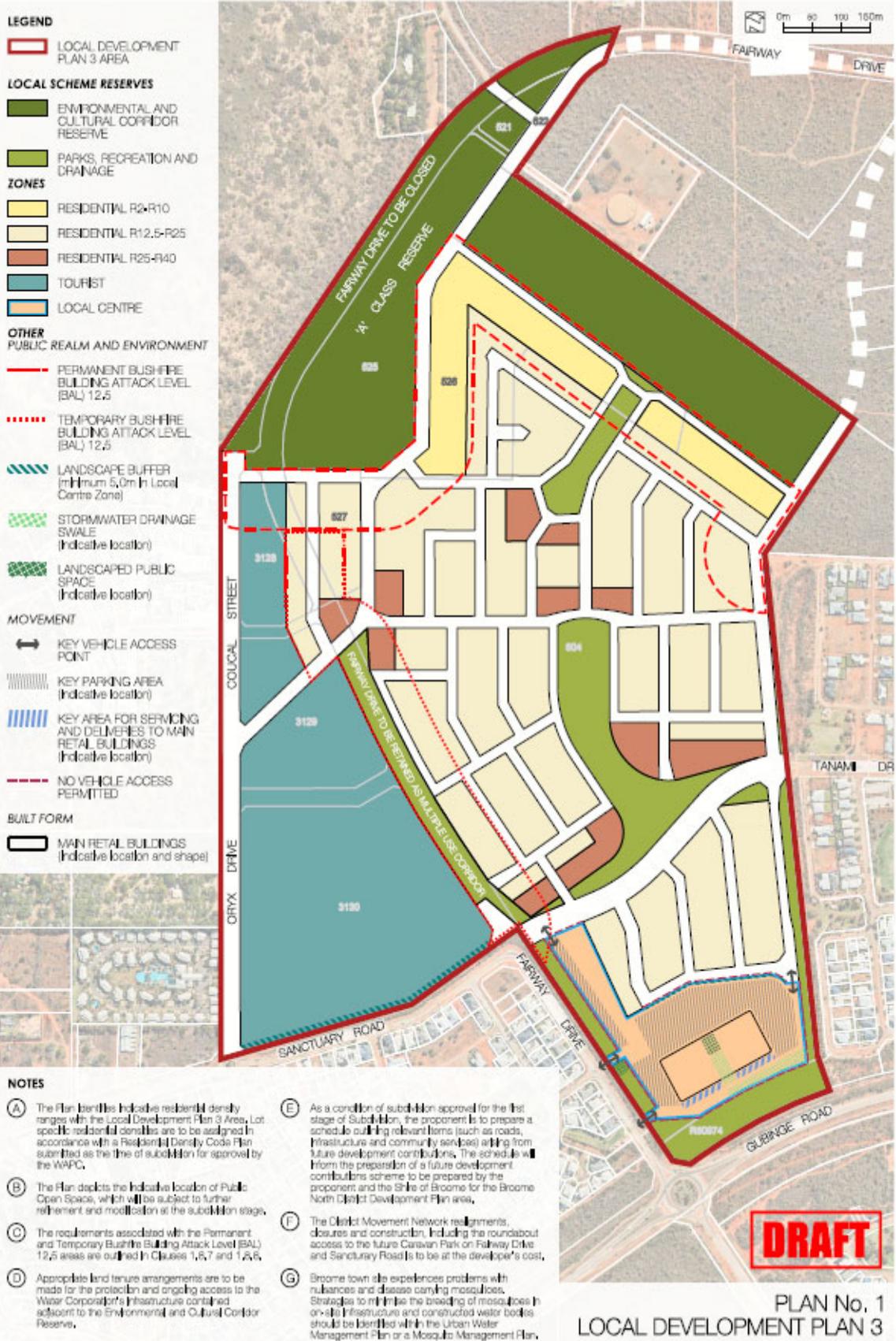
The proposed roundabout at the Tanami Drive/North-South residential road will facilitate access to the Centre. It is recommended the adjacent intersection with Said Bend should operate left in/out.

It is recommended the proposed roundabout at the northeast corner of the Centre site should be designed to restrict large vehicles from accessing the residential streets to the west.

It is recommended the southern access road of the Centre from Fairway Drive should be traffic calmed to restrict through movement and traffic speed.

## **Appendices**

# **Appendix A** - (Broome North LDP3 Amendment)



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G:\61\12515596\Tech\Broom North LDP3 Report Current

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	S. McDermott	S. Barlow		S. Barlow		21/01/2021

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# APPENDIX B

Bushfire Management Plan



# Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit: Yes  No

Date of site visit (if applicable): Day  Month  Year

Report author or reviewer:

WA BPAD accreditation level (please circle):

Not accredited  Level 1 BAL assessor  Level 2 practitioner  Level 3 practitioner

If accredited please provide the following.

BPAD accreditation number:  Accreditation expiry: Month  Year

Bushfire management plan version number:

Bushfire management plan date: Day  Month  Year

Client/business name:

	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?		
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?		

Is the proposal any of the following (see <a href="#">SPP 3.7 for definitions</a> )?	Yes	No
Unavoidable development (in BAL-40 or BAL-FZ)		
Strategic planning proposal (including rezoning applications)		
High risk land-use		
Vulnerable land-use		

None of the above

**Note:** Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author or reviewer



Date



# Bushfire Management Plan

## Broome North Development – Part LDP 3

Portion of Lot 504 on Plan 69436  
Gubinge Road & Fairway Drive, Bilingurr

Shire of Broome

---

<b>Planning Stage:</b>	Strategic Proposal - Local Planning Scheme and Amendment
<b>Planning Development Type:</b>	Amendment to Local Development Plan
<b>Bushfire Policy – Specific Development or Use Type:</b>	N/A

---

---

<b>Job Number:</b>	190520
<b>Assessment Date:</b>	14 July 2020
<b>Report Date:</b>	5 February 2021

---

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Person/Business: Sariska Neale/Development WA Email:	1.0		<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p><b>Limitation of Liability:</b> The measures contained in this Bushfire Management Plan, are considered to be minimum requirements and they do not guarantee that a building will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating. This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required bushfire protection measures will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.</p> <p>All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Prone Planning at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.</p> <p>Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence of their consultants, their servants or agents, arising out of the services provided by their consultants.</p> <p><b>Copyright ©2020 BPP Group Pty Ltd:</b> All intellectual property rights, including copyright, in format and proprietary content contained in documents created by Bushfire Prone Planning, remain the property of BPP Group Pty Ltd. Any use made of such format or content without the prior written approval of Bushfire Prone Planning, will constitute an infringement on the rights of the Company which reserves all legal rights and remedies in respect of any such infringement.</p>				

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## EXECUTIVE SUMMARY

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This Bushfire Management Plan (BMP) is to accompany a proposed amendment to the Broome North Local Development Plan 3. The proposed amendments are located to the south of the future extension of Tanami Drive.

Since the issue of the previous Bushfire Management Plan for this site, SPP 3.7 "Planning in Bushfire Prone Areas" and the "Guidelines for Planning in Bushfire Prone Areas" have been introduced. Additionally, the Australian Standard AS3959-2009 "Construction of buildings in bushfire prone areas" has been revised and updated. This BMP will reflect the introduction of SPP 3.7 and the associated Guidelines, and the new vegetation classification requirements of AS3959-2018.

The assessments and bushfire protection measures detailed in the BMP, assume that environmental approval will be achieved or clearing permit exemptions will apply.

This southern portion of the Local Development Plan 3 (LDP 3) contains the Local Centre zone. This area will provide retail, medical, fast food and other services to the local community. The remainder of the subject site will be residential lots and public open space. It is expected that narrow strips of native vegetation will be retained immediately inside the western, southern and eastern boundaries of the proposed development, providing a buffer from Gubinge Road and screening from nearby existing residential lots to the east and west.

Required Asset Protection Zones (APZs), and areas of vegetation management, will be constrained to within the subject site. Development of this section of LDP 3 will greatly reduce the amount of available bushfire prone vegetation that could affect existing residential lots to the east and west of the development site during a local bushfire event. Development of this site will also essentially close an existing corridor of bushfire prone vegetation which currently links larger areas of bushfire prone vegetation either side of Gubinge Road.

A small triangular area of POS which abuts residential lots near the north-eastern corner of the proposed development is expected to be managed and maintained to a low bushfire threat state.

All residential lots will be managed to a low bushfire threat state as per the Shire of Broome Fire Break & Fuel Hazard Reduction Notice. It is also expected that the Local Centre lot will be managed and maintained to a low bushfire threat state.

The highest BAL rating for any residential lot is BAL-29 which is compliant with the requirements of SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas.

BAL ratings in the Local Centre zone range from BAL-LOW to BAL-FZ. The greater portion of this zone has a BAL-LOW or BAL-12.5 rating. Construction of buildings and associated Asset Protection Zones to attain a BAL-29 or lower rating for future developments is achievable and must be demonstrated throughout the subsequent planning and subdivision processes.

Any future landscape plans should be designed so that the vegetation within the landscaped areas does not increase the indicative BAL rating, as shown in Figure 3.2, on any neighbouring or nearby residential, commercial or industrial lots.

Where the proposed development is staged each stage must comply with the requirements of the Guidelines for Planning in Bushfire Prone Areas and this Bushfire Management Plan. This may require the creation of roads or management of land or installation of water supply lines outside that particular stage to achieve compliance.

Vegetation on the balance lot(s) may adversely affect the indicative BAL ratings of lots being developed. This should be assessed prior to the sale of the lots and the required vegetation on the balance lot managed and maintained until developed, or the indicative BAL ratings for the affected lots amended.

The proposed roads provide safe access and egress in two different directions to two different destinations. As sealed public roads, they will be available to all residents and the public at all times and under all weather conditions.

Where battle-axe lots are proposed, justification must be provided that there is no alternative to the designed layout.

A reticulated water supply is available to the subject site and hydrants will be installed in locations as required by the relevant authorities.

## 1 PROPOSAL DETAILS

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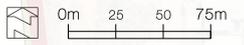
### 1.1 Description and Associated Plans and Maps

Proponent:	Development WA
Bushfire Prone Planning Commissioned to Produce the Bushfire Management Plan (BMP) By:	Development WA
For Submission To:	Shire of Broome
Purpose of the BMP:	To support a strategic planning assessment
'Development' Site Total Area:	Approximately 20 hectares
No. of Existing/Proposed Lots:	N/A
Description of the Proposed Development/Use:	
<p>This Bushfire Management Plan is to accompany a proposed amendment to the Broome North Local Development Plan 3. The proposed amendments are located to the south of the future extension of Tanami Drive.</p>	

**LEGEND**

- LOCAL DEVELOPMENT PLAN 3 AREA
  
- LOCAL SCHEME RESERVES**
- ENVIRONMENTAL AND CULTURAL CORRIDOR RESERVE
- PARKS, RECREATION AND DRAINAGE
  
- ZONES**
- RESIDENTIAL R2-R10
- RESIDENTIAL R12.5-R25
- RESIDENTIAL R25-R40
- TOURIST
- LOCAL CENTRE
  
- OTHER PUBLIC REALM AND ENVIRONMENT**
- PERMANENT BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5
- TEMPORARY BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5
- LANDSCAPE BUFFER (minimum 5.0m in Local Centre Zone)
- STORMWATER DRAINAGE SWALE (indicative location)
- LANDSCAPED PUBLIC SPACE (indicative location)
  
- MOVEMENT**
- KEY VEHICLE ACCESS POINT
- KEY PARKING AREA (indicative location)
- KEY AREA FOR SERVICING AND DELIVERIES TO MAIN RETAIL BUILDINGS (indicative location)
- NO VEHICLE ACCESS PERMITTED
  
- BUILT FORM**
- MAIN RETAIL BUILDINGS (indicative location and shape)

**Figure 1.1**



**NOTES**

- (A) The Plan identifies indicative residential density ranges with the Local Development Plan 3 Area. Lot specific residential densities are to be assigned in accordance with a Residential Density Code Plan submitted as the time of subdivision for approval by the WAPC.
- (B) The Plan depicts the indicative location of Public Open Space, which will be subject to further refinement and modification at the subdivision stage.
- (C) The requirements associated with the Permanent and Temporary Bushfire Building Attack Level (BAL) 12.5 areas are outlined in Clauses 1.8.7 and 1.8.8.
- (D) Appropriate land tenure arrangements are to be made for the protection and ongoing access to the Water Corporation's infrastructure contained adjacent to the Environmental and Cultural Corridor Reserve.
- (E) As a condition of subdivision approval for the first stage of Subdivision, the proponent is to prepare a schedule outlining relevant items (such as roads, infrastructure and community services) arising from future development contributions. The schedule will inform the preparation of a future development contributions scheme to be prepared by the proponent and the Shire of Broome for the Broome North District Development Plan area.
- (F) The District Movement Network realignments, closures and construction, including the roundabout access to the future Caravan Park on Fairway Drive and Sanctuary Road is to be at the developer's cost.
- (G) Broome town site experiences problems with nuisances and disease carrying mosquitoes. Strategies to minimise the breeding of mosquitoes in on-site infrastructure and constructed water bodies should be identified within the Urban Water Management Plan or a Mosquito Management Plan.

DRAFT

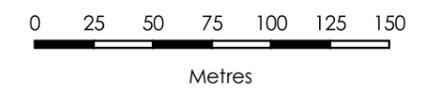
Figure 1.2

# Amendment to LDP 3 Subject Site Map

Pt Lot 504 on Plan 69436  
Gubinge Road & Fairway Drive  
BILINGURR  
SHIRE OF BROOME

----- LEGEND -----

-  Subject Site
-  Locality
-  Cadastre
- Land Use**
  -  Local Centre
  -  Residential
  -  POS-Drainage
  -  Road

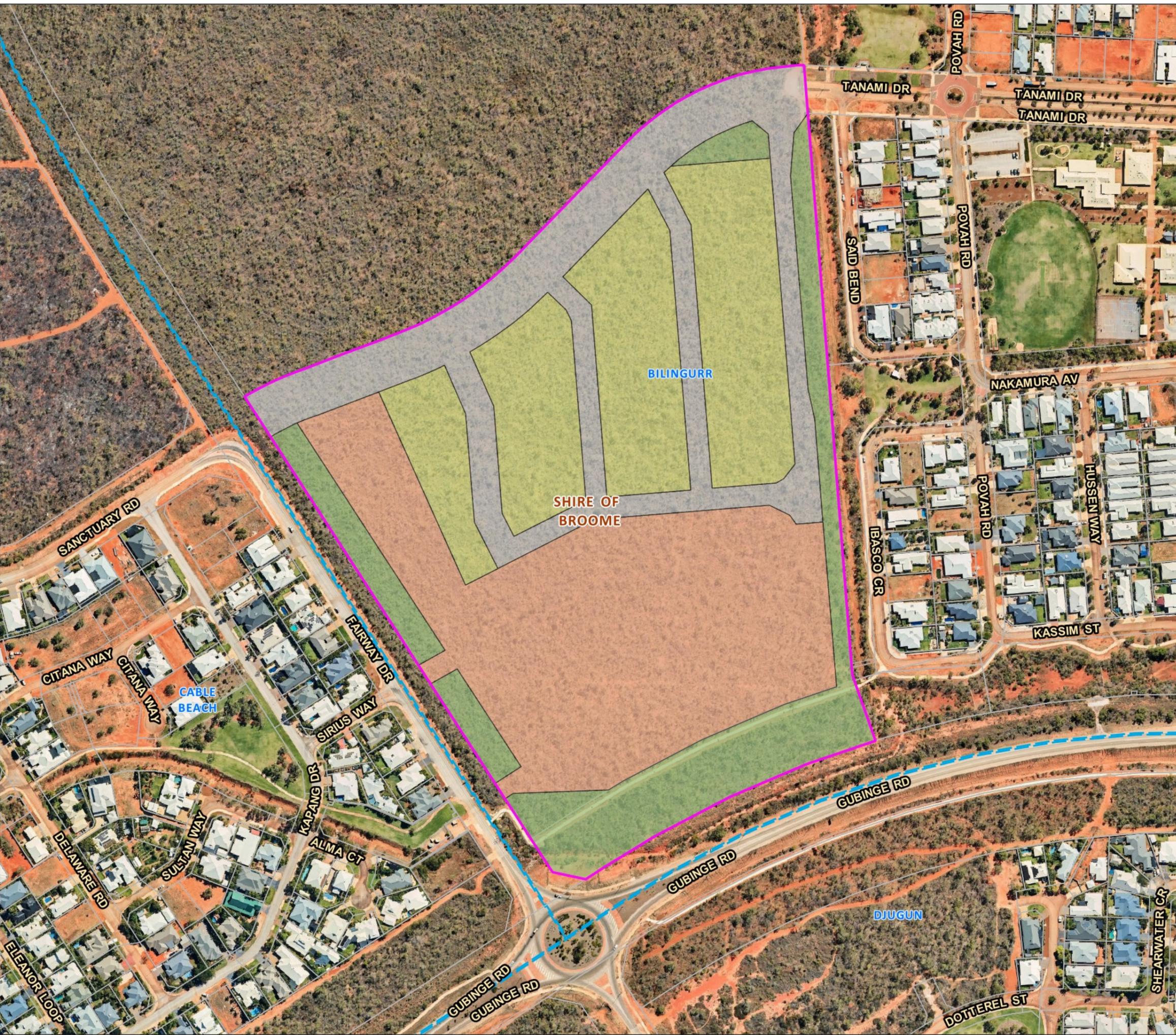


----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50  
Projection: Universal Transverse Mercator Units: Metre  
Map by: Ian Macleod 20-01-2021  
SCALE (A3): 1 : 3000



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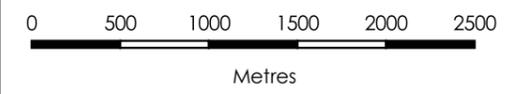
Figure 1.4

# Amendment to LDP 3 Bushfire Prone Areas Map

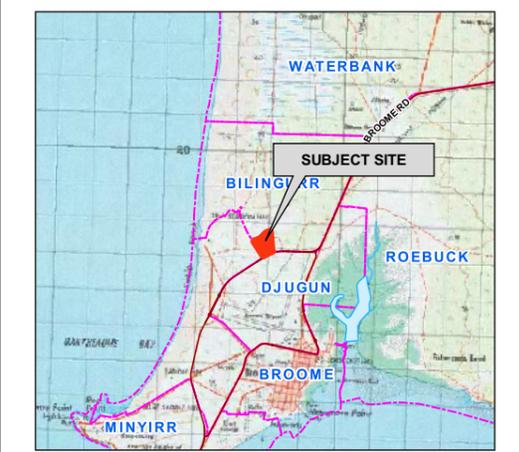
Pt Lot 504 on Plan 69436  
Gubinge Road & Fairway Drive  
BILINGURR  
SHIRE OF BROOME

----- LEGEND -----

-  DFES Stations
-  Subject Site
-  Bush Fire Prone Areas 2019
-  Localities\_Suburb
-  Cadastre



----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP



Coordinate System: GDA 1994 MGA Zone 50  
 Projection: Universal Transverse Mercator Units: Metre  
 Map by: Ian Macleod 20-01-2021  
 SCALE (A3): 1 : 40000



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## 1.2 Existing Documentation Relevant to the Construction of this Plan

This section acknowledges any known reports or plans that have been prepared for previous planning stages, that refer to the subject area and that may or will impact upon the assessment of bushfire risk and/or the implementation of bushfire protection measures and will be referenced in this Bushfire Management Plan.

Table 2.1: Existing relevant documentation.

RELEVANT EXISTING DOCUMENTS		
Existing Document	Copy Provided by Client	Title
Structure Plan	Yes	13_022_061_DEVL_Draft Amended Structure Plan - Extract
Environmental Report	No	
Landscaping (Revegetation) Plan	No	
Bushfire Risk Assessments	Yes	Fire Management Plan Broome North Local Development Plan 3 (FirePlan WA 2014)

The above structure plan has been adopted for the production of this Bushfire Management Plan.

Since the issue of the above Bushfire Management Plan the SPP 3.7 "Planning in Bushfire Prone Areas" and the "Guidelines for Planning in Bushfire Prone Areas" have been introduced. Additionally, the Australian Standard AS3959-2009 "Construction of buildings in bushfire prone areas" has been revised and updated. This BMP will reflect the introduction of SPP 3.7 and the associated Guidelines, and the new vegetation classification requirements of AS3959-2018.

## 2 ENVIRONMENTAL CONSIDERATIONS

### 2.1 Native Vegetation – Restrictions to Modification and/or Clearing

Many bushfire prone areas also have high biodiversity values. SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values (Guidelines s2.3).

There is a requirement to identify the need for onsite modification and/or clearing of native vegetation and whether this might trigger potential environmental impact/referral requirements under State and Federal environmental legislation. Confirmation that any proposed native vegetation modification and/or clearing is acceptable, should be received from the relevant agencies by the proponent and provided to the bushfire consultant for inclusion in the Bushfire Management Plan if it will influence the required bushfire planning assessments and outcomes. The following table details any potential environmental restrictions of which the author of this report is aware.

Table 2.2: Native vegetation and potential environmental considerations and restrictions.

NATIVE VEGETATION MODIFICATION / CLEARING - POTENTIAL ENVIRONMENTAL RESTRICTIONS IDENTIFIED				
Environmental Considerations / Features	Potential Mapping Data Source (SLIP / Local Planning)	Relevant to Proposed Development	Data Applied	Action Required
Onsite clearing of native vegetation is required.		Yes		
Environmental impact/referral requirements under State and Federal environmental legislation may be triggered.		Possible		
National Park / Nature Reserve	DBCA-011	No-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	None
Conservation Covenant	DPIRD-023	Not Known	Data Not Readily Available to Bushfire Consultant	Proponent to Seek Advice
Bush Forever Site	DPLH-019	No-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	None
RAMSAR Wetland	DBCA-010	No-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	None
Geomorphic and Other Wetland	DBCA-011-019, 040, 043, 044	No-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	None
Threatened and Priority Ecological Communities (TECs or PECs)	DBCA-038	Yes-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	Proponent to Seek Advice
Threatened and Priority Flora including Declared Rare Flora (DRFs)	DBCA-036	No-Confirmed by Bushfire Consultant	Relevant Database Reviewed by Bushfire Consultant	None

Land Identified as significant through a Local Biodiversity Strategy	LG - Intramaps	Not Known	Data Not Readily Available to Bushfire Consultant	Proponent to Seek Advice
<p><b>Statement of how the identified environmental feature(s) is dealt with in this Bushfire Management Plan (and the location of relevant information):</b></p> <p>The assessments and bushfire protection measures detailed in the BMP, assume that environmental approval will be achieved or clearing permit exemptions will apply.</p> <p>It is advised that the proponent seek further advice from an Environmental Consultant or the WA Department of Biodiversity Conservation and Attractions for further information on the condition and species contained within the proposed development area and the requirement for referral of the proposal.</p>				

## Development Design Considerations

Establishing development in bushfire prone areas can adversely affect the retention of native vegetation through clearing associated with the creation of lots and/or asset protection zones. Where loss of vegetation is not acceptable or causes conflict with landscape or environmental objectives, it will be necessary to consider available design options to minimise the removal of native vegetation.

Table 2.3: Development design.

MINIMISE THE REMOVAL OF NATIVE VEGETATION	
Design Option	Assessment / Action
Reduction of lot yield	N/A
Cluster development	N/A
Construct building to a standard corresponding to a higher BAL as per BCA (AS 3959:2018 and/or NASH Standard)	N/A
Modify the development location	N/A
This portion of the Local Development Plan 3 (LDP 3) contains the Local Centre area. This will provide retail, medical, fast food and other services to the local community. The remainder of the subject site will be residential lots and public open space. It is expected that narrow strips of native vegetation will be retained immediately inside the western, southern and eastern boundaries of the proposed development, providing a buffer from Gubinge Road and screening from nearby existing residential lots to the east and west.	
IMPACT ON ADJOINING LAND	
Is this planning proposal able to implement the required bushfire protection measures within the boundaries of the land being developed so as not to impact on the bushfire and environmental management of neighbouring reserves, properties or conservation covenants?	Yes
Required Asset Protection Zones (APZs), and areas of vegetation management, will be constrained to within the subject site. Development of this section of LDP 3 will greatly reduce the amount of available bushfire prone vegetation that could affect existing residential lots to the east and west of the development site during a local bushfire event. Development of this site will also essentially close and existing corridor of bushfire prone vegetation which currently links larger areas of bushfire prone vegetation either side of Gubinge Road.	
Compliance with required APZ management for the development will be regulated via the bushfire management plan for the site and the Shire of Broome Fire Break & Fuel Hazard Reduction Notice. Bushfire management measures external to the site are not required as part of this proposal.	

## 2.2 Retained Vegetation / Re-vegetation / Landscape Plans (including POS)

Riparian zones, wetland/foreshore buffers, road verges and public open space may have plans to re-vegetate or retain vegetation as part of the proposed development. Vegetation corridors may be created between offsite and onsite vegetation and provide a route for fire to enter a development area.

All retained/planned vegetation and its management will be considered in the development of this Bushfire Management Plan.

Is re-vegetation of riparian zones and/or wetland or foreshore buffers and/or public open space a part of this Proposal?	Yes
Public Open Space areas along the western, southern and eastern boundaries of the proposed development are expected to be undeveloped and will retain their native vegetation. A small triangular area of POS which abuts residential lots near the north-eastern corner of the proposed development is expected to be managed and maintained to a low bushfire threat state.	

Is the requirement for ongoing maintenance of existing vegetation in riparian zones and/or wetland or foreshore buffers and/or public open space a part of this Proposal?	Yes
As discussed above, the small triangular area of POS to the north-east of the proposed development site is to be managed and maintained to a low bushfire threat state.	
Has a landscape plan been developed for the proposed development?	No
N/A	

### 3 POTENTIAL BUSHFIRE IMPACT ASSESSMENT

#### 3.1 Assessment Input

##### 3.1.1 Fire Danger Index (FDI) Applied

AS 3959:2018 Table 2.1 specifies the fire danger index values to apply for different regions. The values used in the model calculations are for the Forest Fire Danger Index (FFDI) and for which equivalent representative values of the Grassland Fire Danger Index (GFDI) are applied as per Appendix B. The values can be modified if appropriately justified.

Table 3.1: Applied FDI Value

FDI VALUE			
Vegetation Areas	As per AS 3959:2018 Table 2.1	As per DFES for the Location	Value Applied
All Vegetation Areas	80	N/A	80

##### 3.1.2 Vegetation Classification and Effective Slope

**Classification:** Bushfire prone vegetation identification and classification has been conducted in accordance with AS 3959:2018 s2.2.3 and the Visual Guide for Bushfire Risk Assessment in WA (DoP February 2016).

When more than one vegetation type is present, each type is identified separately, and the applied classification considers the potential bushfire intensity and behaviour from the vegetation types present and ensures the worst case scenario is accounted for – this may not be from the predominant vegetation type.

The vegetation structure has been assessed as it will be in its mature state (rather than what might be observed on the day). Areas of modified vegetation are assessed as they will be in their natural unmodified state (unless maintained in a permanently low threat, minimal fuel condition, satisfying AS 3959:2018 s2.2.3.2(f) and asset protection zone standards). Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its revegetated mature state.

**Effective Slope:** Refers to the ground slope under each area of classified vegetation and is described in the direction relative to the view from the building or proposed development site. Effective slope is not the same as 'average slope', rather it is the slope which most significantly influences fire behaviour. This slope has a direct and significant influence on a bushfire's rate of spread and intensity.

Where there is a significant change in effective slope under an area of classified vegetation, that will cause a change in fire behaviour, separate vegetation areas will be identified to enable the correct assessment.

When the effective slope, under a given area of bushfire prone vegetation, will be different relative to multiple proposed development sites, then the effective slopes corresponding to the different locations, are separately identified.

#### Planned Re-vegetation/Landscaping Considerations/Public Open Space Management

Public Open Space areas along the western, southern and eastern boundaries of the proposed development are expected to be undeveloped and will retain their native vegetation. A small triangular area of POS which abuts residential lots near the north-eastern corner of the proposed development is expected to be managed and maintained to a low bushfire threat state.

All residential lots will be managed to a low bushfire threat state as per the Shire of Broome Fire Break & Fuel Hazard Reduction Notice. It is also expected that the Local Centre lot will be managed and maintained to a low bushfire threat state.

Table 3.2: Vegetation classification and effective slope.

ALL VEGETATION WITHIN 150 METRES OF THE PROPOSED DEVELOPMENT				
Vegetation Area	Identified Vegetation Types <sup>1</sup> or Description if 'Excluded'	Applied Vegetation Classification <sup>1</sup>	Effective Slope (degrees) <sup>2</sup> (AS 3959:2018 Method 1)	
			Assessed	Applied Range
1	Open scrub D-14	Class D Scrub	0	upslope or flat
2	Closed scrub D-13 Open Scrub D-14	Class D Scrub	0	upslope or flat
3	Tussock Grassland G-22	Class G Grassland	0	upslope or flat
-	Existing managed residential lots, public open space and street verges	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation	N/A	N/A
Representative photos of each vegetation area, descriptions and classification justification, are presented on the following pages. The areas of classified vegetation are defined, and the photo locations identified on Figure 3.1, the vegetation and topography map.				
Note <sup>1</sup> : Described and classified as per AS 3959:2018 Table 2.3 and Figures 2.3 and 2.4 (A)-(H)				
Note <sup>2</sup> : Effective slope measured as per AS 3959:2018 Section 2.2.5 and Appendix B Part B4				

VEGETATION AREA 1	
<b>AS 3959:2018 Vegetation Classification Applied:</b>	Class D Scrub
<b>Vegetation Types Present:</b>	Open scrub D-14
<b>Description/Justification:</b>	Open drainage channel, scrub to 5 metres tall, shrubs, occasional small tree to 8 metres tall, grass understorey.
	
Photo ID: 1a	Photo ID: 1b
VEGETATION AREA 2	
<b>AS 3959:2018 Vegetation Classification Applied:</b>	Class D Scrub
<b>Vegetation Types Present:</b>	Open scrub D-14
<b>Description/Justification:</b>	Scrub to 5 metres tall, shrubs, occasional small tree to 8 metres tall, grass understorey.
	
Photo ID: 2a	Photo ID: 2b

**VEGETATION AREA 2**

<b>AS 3959:2018 Vegetation Classification Applied:</b>	Class D Scrub
--	---------------

<b>Vegetation Types Present:</b>	Closed scrub D-13	Open scrub D-14
----------------------------------	-------------------	-----------------

<b>Description/Justification:</b>	Scrub to 5 metres tall, shrubs, occasional small tree to 8 metres tall, grass understorey. Large areas within the subject site recently burnt.
-----------------------------------	--



Photo ID: 2c



Photo ID: 2d



Photo ID: 2e



Photo ID: 2f



Photo ID: 2g



Photo ID: 2h



VEGETATION AREA 3	
<b>AS 3959:2018 Vegetation Classification Applied:</b>	Class G Grassland
<b>Vegetation Types Present:</b>	Tussock grassland G-22
<b>Description/Justification:</b>	Photo 3a: Grass in and alongside drainage sump. Photo 3b: Grass regrowth on vacant lots.
	
Photo ID: 3a	Photo ID: 3b
VEGETATION AREA 4	
<b>AS 3959:2018 Vegetation Classification Applied:</b>	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
<b>Vegetation Types Present:</b>	Vegetation managed to a low bushfire threat state.
<b>Description/Justification:</b>	Photo 4a: Managed residential lots and street verges. Photo 4b: Managed public open space.
	
Photo ID: 4a	Photo ID: 4b

VEGETATION AREA 4	
<b>AS 3959:2018 Vegetation Classification Applied:</b>	Excluded as per Section 2.2.3.2 (f) Low Threat Vegetation
<b>Vegetation Types Present:</b>	Vegetation managed to a low bushfire threat state.
<b>Description/Justification:</b>	Photo 4c: Managed vacant residential lots. Photo 4d: Managed public open space.
	
Photo ID: 4c	Photo ID: 4d

Vegetation Area	Vegetation Class	Vegetation Type	Effective Slope
1	D	Scrub	0
2	D	Scrub	0
3	G	Grassland	0

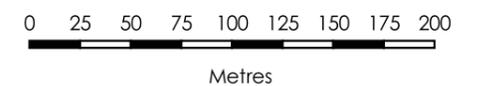
Figure 3.1

# Amendment to LDP 3 Existing Topography & Classified Vegetation Map

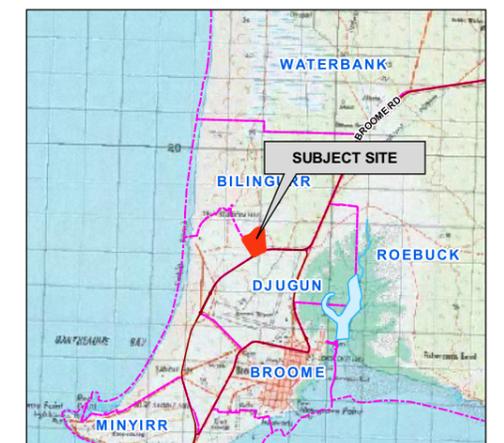
Pt Lot 504 on Plan 69436  
Gubinge Road & Fairway Drive  
BILINGURR  
SHIRE OF BROOME

----- LEGEND -----

- Photos
  - Hydrants
  - Elevation (m)
  - Subject Site
  - 150m Assessment Area
  - Locality
  - Cadastre
- Classified Vegetation**
- Class D - Scrub
  - Class G - Grassland
  - Exclusion 2.2.3.2



----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50  
Projection: Universal Transverse Mercator Units: Metre  
Map by: Ian Macleod 28-01-2021  
SCALE (A3): 1 : 3500

### 3.1.3 Vegetation Separation Distance

The vegetation separation distance is the horizontal distance measured from the relevant parts of an existing building or a future building's planned location (within a lot), to the determined edge of an area of classified vegetation.

This separation distance applied to determining a Bushfire Attack Level (BAL) can be either:

- The measured distance – for which the location of the building relative to the edge of classified vegetation must be known. This will result in single determined BAL that will apply to a building. (The measured distance is a required calculation input); or
- A calculated minimum and maximum distance (range) that will correspond to each individual BAL. The calculated distances provide an indicative (or achievable) BAL for which the determined BAL will be dependent on the known location of the building relative to the edge of classified vegetation.

The calculated range of distances corresponding to each BAL can be presented in different formats (tables or a BAL contour map), dependent on the form of information that is most appropriate for the proposed development/use. These distance ranges corresponding to BAL(s) will be presented in Section 3.2: 'Assessment Output'.

For the proposed development/use, the applicable vegetation separation distances will be presented within the Bushfire Management Plan in this location:

In Section 3.2 'Assessment Output' as a table containing the calculated ranges of distance corresponding to each BAL and illustrated as a BAL Contour Map.

## 3.2 Assessment Output

### UNDERSTANDING THE RESULTS OF THE BUSHFIRE IMPACT ASSESSMENT

#### **Bushfire Attack Levels (BALs) – Their Application in the Building Environment is Different to the Planning Environment**

In the building environment, a **determined BAL** is required for the proposed construction at the building application stage. This is to inform approval considerations and establish the bushfire construction standards that are to apply. An indicative BAL is not acceptable for a building application.

In the planning environment, through the application of SPP 3.7 and associated Guidelines, the deemed to satisfy requirement for a proposed 'development site' or sites (defined by the LPS Amendment Regulations 2015 as "that part of a lot on which a building that is the subject of development stands or is to be constructed"), is that a BAL-29 or lower rating can be achieved once all works associated with the proposal are completed. For planning approval purposes, an **indicative BAL** can provide the required information.

#### **Determined Bushfire Attack Level**

A determined BAL is to apply to an existing building or the 'development site' on which the building is to be constructed and not to a lot or building envelope. Its purpose is to state the potential radiant heat flux to which the building will be exposed, thereby determining the construction standard to be applied.

A determined BAL cannot be given for a future building whose design and position on the lot are unknown or the vegetation separation distance has not been established. It is not until these variables have been fixed that a determined BAL can be stated, and a BAL Certificate can be issued.

The one exception is when a building **of any dimension** can be **positioned anywhere** on a proposed lot (within R-Code building setbacks) or within a defined building envelope, and always remain subject to the same BAL, regardless of the retention of any existing classified vegetation either onsite or offsite.

#### **Indicative Bushfire Attack Level**

If a BAL is not able to achieve 'determined' status it will be an indicative BAL. It indicates the BAL that can be achieved by the proposed development/use. However, it is conditional upon an assessment variable(s) being confirmed at a later stage (e.g. the building location is established/changed, or vegetation is modified/removed to establish the vegetation separation distance).

A BAL certificate cannot be issued for an indicative BAL – unless that BAL cannot vary (refer to 'Determined BAL' above).

In table form, a single or a range of indicative BAL(s) may be presented. If a single indicative BAL is stated for a defined area (i.e. the lot or building envelope), this will be the highest indicative BAL impacting the defined area.

In BAL contour map form (refer to Section 3.2.1), the illustrated BAL contours visually identify areas of land for which if any part of an existing or proposed building is located on that land and within the BAL contours, then the highest BAL affecting that building (or part of the land on which the building will be constructed), will be the indicative BAL that is to apply.

The BAL can only become a determined BAL once the actual location of that building on the land is known and/or the required minimum vegetation separation distance corresponding to the relevant BAL contour is established (refer to Table 3.3).

## 3.2.1 Bushfire Attack Level Results - BAL Contour Map Format

### INTERPRETATION OF THE BUSHFIRE ATTACK LEVEL (BAL) CONTOUR MAP

The contour map will present different coloured contour intervals extending from the areas of classified bushfire prone vegetation. These represent the different bushfire attack levels that will exist at varying distances away from the classified vegetation in the event of a bushfire in that vegetation.

The areas of classified vegetation to be considered in developing the BAL contours, are those that will remain as the intended end state of the subject development once earthworks, clearing and/or landscaping and re-vegetation have been completed.

Each bushfire attack level corresponds to a set range of radiant heat flux that is generated by a bushfire. That range is defined by the AS 3959:2018 BAL determination methodology.

The width of each shaded BAL contour is a diagrammatic representation of the separation distances from the classified vegetation that correspond to each BAL for each separately identified area of classified vegetation. They have been calculated by the application of the unique site variables including vegetation types and structure, ground slope and applied fire weather.

(Refer to Section 3.2 'Understanding the Results of the Bushfire Impact Assessment' for the explanation of how BAL(s) for buildings will be assessed from the BAL Contour Map).

## Construction of the BAL Contours

### VEGETATION AREAS APPLIED TO THE DEVELOPMENT OF THE BAL CONTOUR MAP

All identified areas of classified vegetation have been applied with the following exceptions:

1. For Figure 3.2, all POS areas within the subject site, with the exception of the small triangular area in the north-east corner of the site, are to remain in their current, native state.
2. The remaining residential lots, local centre lots and road reserves are to be managed and maintained to a low bushfire threat state in perpetuity. The existing vegetation in these areas will be excluded from classification for the purpose of creating the BAL Contour Map.

This approach is applied to indicate the achievable bushfire attack levels within the subject site and the resultant area of developable land (i.e. subject to BAL-29 or less).

## VEGETATION SEPARATION DISTANCES APPLIED

The distances that have been applied to illustrating the width of each BAL contour shown in Figures 3.2 and 3.3 are stated in Table 3.3. These correspond to each Bushfire Attack Level and are specific to the proposed development site.

Table 3.3: Vegetation separation distances applied to construct the BAL contours.

<b>BAL CONTOUR MAP – APPLIED VEGETATION SEPARATION DISTANCES</b>								
Derived from the Application of Method 1 BAL Determination Methodology (AS 3959:2018 Section 2, Table 2.5) <sup>1</sup>								
Vegetation Area	Vegetation Classification	Effective Slope (degree range)	BAL and Corresponding Separation Distance (m)					
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL12.5	BAL-LOW
1	Class D Scrub	upslope or flat	<10	10-<13	13-<19	19-<27	27-<100	>100
2	Class D Scrub	upslope or flat	<10	10-<13	13-<19	19-<27	27-<100	>100
3	Class G Grassland	upslope or flat	<6	6-<8	8-<12	12-<17	17-<50	>50

Note<sup>1</sup> All the assessment inputs applied are presented in Section 3.1, including Method 2 inputs if applied (for which calculation input/output summary data is presented for reference in Appendix?)

Vegetation Area	Vegetation Class	Vegetation Type	Effective Slope
1	D	Scrub	0
2	D	Scrub	0
3	G	Grassland	0

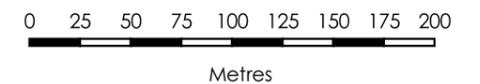
Figure 3.2

## Amendment to LDP 3 BAL Contour Map

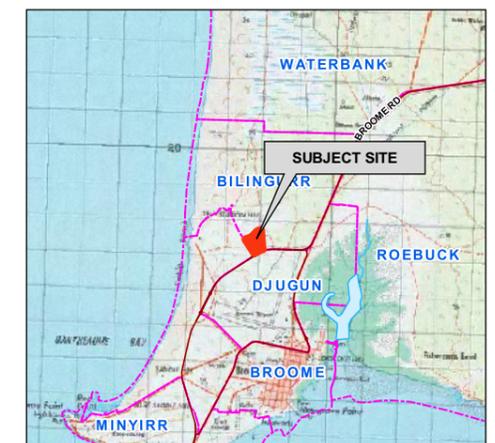
Pt Lot 504 on Plan 69436  
Gubinge Road & Fairway Drive  
BILINGURR  
SHIRE OF BROOME

----- LEGEND -----

-  Hydrants
-  Subject Site
-  100m BAL Buffer
-  150m Assessment Area
-  Cadastre
- LDP3 Zones**
-  Local Centre
-  Residential
-  POS-Drainage
-  Road
-  Vegetation Outline
- Bushfire Attack Levels**
-  BAL-FZ
-  BAL-40
-  BAL-29
-  BAL-19
-  BAL-12.5
-  BAL-LOW



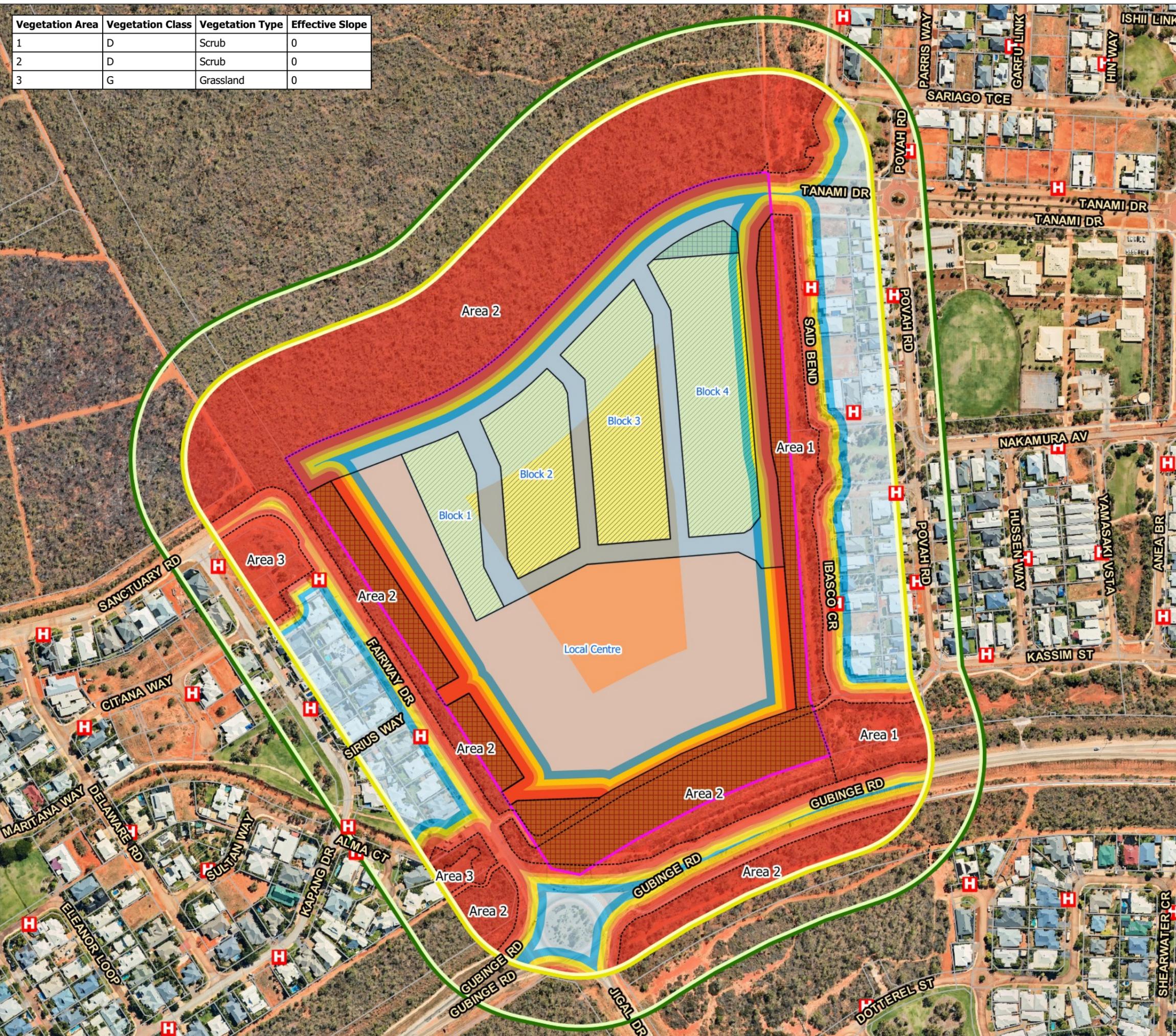
----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP



Coordinate System: GDA 1994 MGA Zone 50  
Projection: Universal Transverse Mercator Units: Metre  
Map by: Ian Macleod 01-02-2021  
SCALE (A3): 1 : 3500



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

### 3.2.2 Bushfire Attack Level Results - Derived from The BAL Contour Map

Table 3.4: Indicative BAL(s) for building works on future lots.

INDICATIVE BUSHFIRE ATTACK LEVEL FOR BUILDING WORKS ON FUTURE LOTS	
BAL Determination Methodology Applied <sup>1</sup>	Method 1 as per AS 3959:2018 s2.2.6 and Table 2.5.
LDP Zone	Indicative BAL ratings (refer to start of s3.2)
Local Centre	BAL-LOW to BAL-FZ
Residential Lots – Block 1	BAL-12.5
Residential Lots – Block 2	To BAL-LOW to BAL-12.5
Residential Lots – Block 3	To BAL-LOW to BAL-12.5
Residential Lots – Block 4	BAL-12.5 to BAL-29
<i>Note<sup>1</sup> Assessment inputs applied are presented in Section 3.1.</i>	

The highest BAL rating for any residential lot is BAL-29 which is compliant with the requirements of SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas.

BAL ratings in the Local Centre zone range from BAL-LOW to BAL-FZ. The greater portion of this zone has a BAL-LOW or BAL-12.5 rating. Construction of buildings and associated Asset Protection Zones to attain a BAL-29 or lower rating for future developments is achievable and must be demonstrated throughout the subsequent planning and subdivision processes.

## 4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

In response to the Bushfire Management Plan requirements established by Appendix 5 of the Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 v1.3), the following statements are made to assist in the understanding of whether the proposal is likely to be able to comply with the bushfire protection criteria now or in subsequent planning stages.

<b>Spatial Context - Broader Landscape Considerations</b>	
Wider road network and access constraints	<p>Tanami Drive will be extended west to meet with Fairway Drive providing access/egress routes in two different directions for future occupiers and visitors to the subject site. This connection will also provide additional access/egress routes for residents in existing lots to the east and west of this proposal.</p> <p>There is no access constraint for the subject site with regard to what is considered acceptable from a planning perspective.</p>
Proximity of settlements and emergency services	<p>The subject site will join with existing residential developments to the east and west and a large residential development is located to the south of Gubinge Road. The main Broome townsite is located south of the Broome International Airport at a distance of approximately 4.5 kilometres by road.</p> <p>The Broome Volunteer Fire and Rescue Service is the closest fire emergency service and is located approximately 4.5 kms by road from the subject site. The Broome Volunteer Bush Fire Brigade and Broome state Emergency Service are also located within the Broome Townsite.</p>
Bushfire prone vegetation types and extent (including conserved vegetation)	A significant extent of bushfire prone vegetation exists to the north of the proposed development site (generally assessed as scrub), with a smaller area located to the south on the opposite side of Gubinge Road.
Topography and fire behaviour interactions.	Topography in and around the proposed development site is generally flat and will not impact on bushfire behaviour.
Potential for extreme fire behaviour and pyro convective events.	Possible in large tracts of bushfire prone vegetation to the north of the subject site. These phenomena can influence the intensity, rate of growth and impact of bushfires. Although there are studies describing such behaviours and processes behind them, the understanding of the drivers of extreme fire behaviours (EFBs) and their occurrence is still limited.
<b>Environmental Considerations</b>	
Constraints to implementing required and/or additional bushfire protection measures	Some existing vegetation within the development site is to be retained as a visual buffer or within drainage swales to prevent scouring.
<b>Provision of Access Within the Subject Site</b>	
Potential constraints	No constraints to establishing the required access will exist.
<b>Potential Bushfire Impacts</b>	
Flame and radiant heat and ability to establish an APZ	<p>The proposed residential lot locations will provide enough separation from classified vegetation to prevent flame contact. All residential lots will be managed to a low bushfire threat state. Application of the assessed bushfire construction standard will mitigate the risks from residual radiant heat impact to what is considered an acceptable level.</p> <p>For the Local Centre Zone, future buildings are to be located in areas where a BAL-29 rating is achievable, as a minimum, and the required APZ is to be established.</p>

Embers/firebrands, smoke and fire-driven wind	These will be the major impacts to most of the subject site. The appropriate protection measures of building construction and strict management of APZs will mitigate the risk to what is considered an acceptable level.
<b>Issues to be Considered at Subsequent Planning Stages (additional assessments/documents)</b>	
Specific land uses to be addressed	Future planning for lots and buildings within the Local Centre Zone should consider availability of suitable areas on each lot for construction with respect to BAL ratings, APZs and application of bushfire construction standards.
Additional assessments	Once lot layout is known, each lot is to be assessed with respect to SPP 3.7 and the Guidelines for Planning in Bushfire Prone Areas.
Additional documents	N/A

## 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA ESTABLISHED BY THE GUIDELINES

For a subdivision application to be considered compliant with SPP 3.7, it must satisfy (achieve) the intent of each of the four elements of the bushfire protection criteria. These criteria are established by the *Guidelines for Planning in Bushfire Prone Areas WAPC 2017 v1.3*). Compliance can be achieved by either:

- Meeting all applicable acceptable solutions corresponding to each element (i.e. the minimum bushfire protection measures that are deemed to satisfy planning requirements); or
- Where an acceptable solution cannot be met, by developing a performance solution that satisfies the established requirements.

### 5.1 Local Government Variations to Apply

Local governments may add to or modify the acceptable solutions of the Bushfire Protection Criteria (BPC) and/or apply technical requirements that vary from those specified in the *Guidelines for Planning in Bushfire Prone Areas (WAPC)*. In such instances, this Proposal will be assessed against these variations and/or any specific local government technical requirements for emergency access and water. Refer to Appendices 2 and 3 for relevant technical requirements.

Will local or regional variations (endorsed by WAPC / DFES) to the applicable acceptable solutions established by the <i>Guidelines</i> or the <i>Position Statement: Tourism land uses in bushfire prone areas WAPC October 2019</i> , apply to this Proposal?	N/A
---	-----

## 5.2 Summary of Assessment Against the Bushfire Protection Criteria

SUMMARISED OUTCOME OF THE ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA					
Element of the Bushfire Protection Criteria	Basis for the Proposal Achieving Full Compliance with SPP 3.7			The Proposal Cannot Achieve Full Compliance with SPP 3.7	
	Acceptable Solutions Met	Achieves the Intent of the Element		Bushfire planning development type that may not require full compliance is applied	An improvement in bushfire performance compared to the existing development is detailed (refer Note 4)
	All applicable solutions are fully met	All applicable solutions are not fully met. A merit based assessment and/or a bushfire performance comparison of the proposals residual risk with that of the residual risk of the acceptable solution is conducted (refer Note 4)	A performance principle-based solution is applied		
1. Location	✓			N/A	
2. Siting and Design of Development	✓				
3. Vehicular Access	✓				
4. Water	✓				
<p>Note: The development proposal has been assessed:</p> <ol style="list-style-type: none"> <li>Against the requirements established in Appendix 4 of the <i>Guidelines for Planning in Bushfire Prone Areas, WAPC 2017 v1.3 (Guidelines)</i>. The Guidelines are found at <a href="https://www.planning.wa.gov.au/8194.aspx">https://www.planning.wa.gov.au/8194.aspx</a>; and</li> <li>Applying the interpretation guidance provided in <i>Position Statement: Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design (WAPC Nov 2019)</i>.</li> <li>Applying any endorsed variations to the Guideline's acceptable solutions and associated technical requirements that have been established by the local government. If known and applicable these have been stated in Section 5.1 with the detail included as an appendix if required by the local government.</li> <li>When non-compliant with SPP 3.7 and when appropriate, by utilising additional compliance pathways that include the application of merit based assessment and comparative bushfire performance. The validity of this approach is derived from relevant decisions made by the responsible authorities (refer Appendix 2).</li> </ol>					

## 5.3 Assessment Detail

Element 1: Location	
<p><b>Intent:</b> To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.</p>	
<p><b>Compliance:</b> How the proposed development achieves the intent of Element 1:</p>	<p>By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.3 WAPC 2017)</p>
<p><b>ASSESSMENT (COMPLIANCE) STATEMENTS</b></p>	
<p>For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the <i>Guidelines (WAPC 2017 v1.3)</i> and apply the interpretation guidance established by the <i>Position Statement: Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design (WAPC Nov 2019)</i>.</p>	
<p><b>Acceptable Solution: A1.1: Development Location</b></p>	
<p><b>ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE GUIDELINES</b></p>	
<p>The proposed development will provide an area of land within each lot that can be considered suitable for development, as BAL-40 or BAL-FZ construction standards will not be required to be applied. This meets the requirements established by Acceptable Solution A1.1 and its associated explanatory note.</p> <p>All proposed residential lots are subject to a BAL rating of Bal-29 or lower.</p> <p>For the Local Centre Zone, where future lots have areas rated as BAL-FZ and/or BAL-40, building will be restricted on the lots by the application of a restrictive covenant (129BA Transfer of Land Act 189) as per the WAPC Model Subdivision Conditions Schedule (April 2020) Code F3.</p>	
<p><b>ASSESSMENT AGAINST THE REQUIREMENTS ESTABLISHED BY THE POSITION STATEMENT</b></p>	
<p>The position statement establishes that:</p> <ul style="list-style-type: none"> <li>• The source of risk (the hazard) to be considered in Element 1 is the “level of bushfire exposure” from the type and extent of bushfire prone vegetation and the topography of the land on which it exists; and</li> <li>• “Consideration should be given to the site context” which includes the land both “within and adjoining the subject site”. The “hazards remaining within the site should not be considered in isolation of the hazards adjoining the site, as the potential impact of a bushfire will be dependent on the wider risk context.”</li> </ul> <p>The position statement also recognises:</p> <ul style="list-style-type: none"> <li>• That the proposed development site and its surrounding land may be part of an area “identified for development or intensification of land use prior to the release of SPP 3.7”; consequently</li> <li>• Consideration by decision-makers “should also be given to improving bushfire management of the site and surrounding area, thereby reducing the vulnerability of people property and infrastructure to bushfire”; and</li> <li>• The application of mitigation measures to lessen the risk to the broader area would include improvements to the local road network (including emergency access ways), improvements/additions to firefighting water supply and increasing separation distance from the hazard.</li> </ul>	

## Element 1: Location

### **The Hazard Within the Subject Site**

The existing lot is entirely vegetated with native vegetation classified as Class D Scrub. However, with the exception of areas along the western, southern and eastern boundaries, onsite vegetation will be managed to a low bushfire threat state. The topography within and around the proposed development site is generally flat and a bushfire travelling through this vegetation will have no increased intensity or rate of spread.

Significantly intense bushfire behaviour is possible in the large area of native vegetation to the north of the site.

However, the ability to establish BAL-29 dimensioned APZs throughout the site removes the threat of greater levels of radiant heat or flame contact upon future dwellings or other buildings. Each residential lot will be managed to a low bushfire threat state in its entirety.

The primary bushfire threat from bushfire prone vegetation remaining within the proposed development site will be embers. This threat will be mitigated by the application of appropriate building design, bushfire construction standards and the ongoing maintenance of the APZs to ensure the buildings will not be impacted by consequential fire within combustible materials used, stored or accumulated within the APZ.

### **The Hazard Adjoining the Subject Site**

- To the east and west the development site adjoins an existing high density built out residential area that presents a minimal bushfire hazard.
- The primary bushfire threat to the development site is from the south and north. To the south is an approximate 1 square kilometre area of scrub connected by a narrow strip of vegetation to a somewhat larger area south of Gantheaume Point Road. To the north of the site is generally undeveloped land able to hold a landscape type fire.

Consequently, there are limited scenarios in which the subject development site is likely to be subject to a significant bushfire event.

### **The Potential to Reduce Bushfire Risk to Existing Land Use**

When considered in the broader context of existing land use within the surrounding area, the proposed development can potentially contribute to reducing the level of risk from bushfire to existing landowners.

Development of this section of LDP 3 will greatly reduce the amount of available bushfire prone vegetation that could affect residential lots to the east and west of the development site during a local bushfire event. Development of this site will also close an existing corridor of bushfire prone vegetation which currently links the areas of bushfire prone vegetation either side of Gubinge Road.

When the potential positive impact on the surrounding area is considered, there is merit in the broader impact of the proposed development that it is appropriate to consider.

## Element 2: Siting and Design of Development

**Intent:** To ensure that the siting and design of development (note: not building/construction design) minimises the level of bushfire impact.

<b>Compliance:</b> How the proposed development achieves the intent of Element 2:	By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.3 WAPC 2017)
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### ASSESSMENT (COMPLIANCE) STATEMENTS

For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC 2017 v1.3)* and apply the interpretation guidance established by the *Position Statement: Planning in bushfire prone areas – Demonstrating Element 1: Location and Element 2: Siting and design (WAPC Nov 2019)*.

#### Acceptable Solution: A2.1: Asset Protection Zone

#### THE APZ - DEVELOPMENT SITING AND DESIGN PLANNING REQUIREMENTS

The necessary outcome of bushfire planning for development siting and design, is to ensure that a building can be located within the developable portion of any lot (i.e. outside those parts of the lot that form the required R-Code building setbacks, or any other excluded area), and be subject to potential radiant heat from a bushfire not exceeding 29 kW/m<sup>2</sup> (i.e. a maximum BAL of BAL-29).

This will be achieved when the size of the "low fuel area immediately surrounding a building", the asset protection zone (APZ), is large enough. This requires a certain separation distance to exist between the building and areas of classified vegetation. These are the BAL-29 APZ dimensions and they will vary dependent on site specific parameters.

The APZ should be contained solely within the boundaries of each lot, except in instances where the neighbouring lot(s) or adjacent public land will be managed in a low-fuel state on an ongoing basis, in perpetuity.

Where possible, planning for siting and design should incorporate elements that include non-vegetated areas (e.g. roads/parking/drainage) and/or formally managed areas of vegetation (public open space/recreation areas/services installed in a common section of land), as either part of the required APZ dimensions or to additionally increase separation distances to provide greater protection. These elements create robust and easier managed asset protection zones.

#### THE ASSESSMENT

Future buildings on the lot(s) of the proposed development can be surrounded by an APZ that will ensure the potential radiant heat impact of a bushfire does not exceed 29 kW/m<sup>2</sup> (BAL-29). The required APZ specifications of width, location and management can be achieved

**APZ Width:** The required APZ dimensions to ensure buildings are subject to a maximum BAL of BAL-29 (measured from any external wall or supporting post or column to the edge of the classified vegetation), has been determined in Section 3.2 of this BMP and are:

BAL-29 APZ Dimensions		
Applicable to all Lots:	Building to Vegetation Area 1	Minimum 13 metres
	Building to Vegetation Area 2	Minimum 13 metres
	Building to Vegetation Area 3	Minimum 8 metres

**APZ Location:** For larger lots the whole of the APZ can be established within the lot boundaries. For smaller and residential lots, the APZs can be partially established within each lots boundaries. The balance of the APZ's required dimensions will be contributed by an area on adjoining land that is either non-vegetated or assessed as being managed in a low-fuel state and which can most reasonably be expected to be managed this way in perpetuity (e.g. managed abutting lots, managed road reserves, managed public open space).

## Element 2: Siting and Design of Development

**APZ Management:** All vegetation that will require modification/removal and future management is onsite and therefore under the control of the landowner.

Retained vegetation that is required to be managed to a low bushfire threat state will be managed in accordance with the technical requirements established by the Schedule 1: 'Standards for Asset Protection Zones (Guidelines)'. The APZ specifications are also detailed in Appendix 1 and the Shire of Broome may have additional requirements established by their Fire Break and Fuel Hazard Reduction Notice.

**Note: For this proposed development it is expected that all residential lots, road reserves, Local Centre Lot(s) and the area of POS abutting residential lots will be managed and maintained to a low bushfire threat state in perpetuity.**

### THE APZ – REQUIRED DIMENSIONS TO SATISFY FUTURE BUILDING (AND ONGOING MANAGEMENT)

It is important for the landowner to be aware that the APZ dimensions that will be required to be physically established and maintained on each lot surrounding relevant future buildings, may be different to those stated above for the BAL-29 APZ - which is the minimum dimension a planning proposal needs to show can be established to comply with SPP 3.7.

The actual APZ dimensions to be physically established and maintained, will be based on which of the following establishes the larger APZ dimension:

- The dimensions corresponding to the determined BAL of a building (refer to Section 3.2 for explanation of the 'planning' versus 'building' requirements and 'indicative' versus 'determined' BAL); or
- The APZ dimensions established by the local government's Firebreak Notice.

If the dimensions of the APZ that are to be established are known at this time, they will be stated below.

Possible BAL ratings for future building range from BAL-LOW to BAL-29. Tables below show the minimum required APZ dimensions to achieve a particular BAL rating (Note: BAL-29 APZ dimensions shown in Table above).

BAL-19 APZ Dimensions		
Applicable to all Lots with determined BAL of BAL-19:	Building to Vegetation Area 1	Minimum 19 metres
	Building to Vegetation Area 2	Minimum 19 metres
	Building to Vegetation Area 3	Minimum 12 metres

BAL-12.5 APZ Dimensions		
Applicable to all Lots with determined BAL of BAL-12.5:	Building to Vegetation Area 1	Minimum 27 metres
	Building to Vegetation Area 2	Minimum 27 metres
	Building to Vegetation Area 3	Minimum 17 metres

BAL-LOW APZ Dimensions		
Applicable to all Lots with determined BAL of BAL-LOW:	Building to Vegetation Area 1	Minimum 100 metres
	Building to Vegetation Area 2	Minimum 100 metres
	Building to Vegetation Area 3	Minimum 50 metres

### Consideration/Implementation of Proposed Landscape Plans

Any future landscape plans should be designed so that the vegetation within the landscaped areas does not increase the indicative BAL rating, as shown in Figure 3.2, on any neighbouring or nearby residential, commercial or industrial lots.

## Element 2: Siting and Design of Development

### **Consideration/Implementation of Staged Development**

Where the proposed development is staged each stage must comply with the requirements of the Guidelines for Planning in Bushfire Prone Areas and this Bushfire Management Plan. This may require the creation of roads or management of land or installation of water supply lines outside that particular stage to achieve compliance.

Vegetation on the balance lot(s) may adversely affect the indicative BAL ratings of lots being developed. This should be assessed prior to the sale of the lots and the required vegetation on the balance lot managed and maintained until developed, or the indicative BAL ratings for the affected lots amended.

### **Future Stage Planning Application – Additional Information Required**

Tourism Land Uses proposed within the development site must demonstrate that they comply with the DPLH Position Statement: Tourism Land Uses in Bushfire Prone Areas.

High Risk or Vulnerable land uses must comply with the requirements of the Guidelines for Planning in Bushfire Prone Areas.

## Element 3: Vehicular Access

**Intent:** To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.

**Compliance:** How the proposed development achieves the intent of Element 3:

By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.3 WAPC 2017)

### ASSESSMENT (COMPLIANCE) STATEMENTS

For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines (WAPC 2017 v1.3)*.

#### **Acceptable Solution: A3.1: Two Access Routes**

The proposed roads provide safe access and egress in two different directions to two different destinations. As sealed public roads, they will be available to all residents and the public at all times and under all weather conditions.

#### **Acceptable Solution: A3.2: Public Road**

The construction technical requirements established by the Guidelines and/or the local government will be complied with.

#### **Acceptable Solution: A3.3: Cul-de-sacs (including a dead-end road)**

N/A

#### **Acceptable Solution: A3.4: Battle-axe**

Where battle-axe lots are proposed, justification must be provided that there is no alternative to the designed layout. The construction technical requirements established by the Guidelines and/or the local government can and will be complied with. These requirements are set out in Appendix 2.

#### **Acceptable Solution: A3.5: Private Driveways**

Where a habitable building is greater than 50 metres from a public road the driveway(s) must comply with the technical requirements established by the Guidelines and/or the local government can and will be complied with. These requirements are set out in Appendix 2.

#### **Acceptable Solution: A3.6: Emergency Access Way**

N/A

#### **Acceptable Solution: A3.7: Fire Service Access Routes**

N/A

#### **Acceptable Solution: A3.8: Firebreak Width**

The future lots will comply with the requirements of the local government annual firebreak notice issued under s33 of the Bush Fires Act 1954. Firebreaks to be installed prior to subdivision clearance.

## Element 4: Water

**Intent:** To ensure water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.

**Compliance:** How the proposed development achieves the intent of Element 4:

By fully meeting all applicable acceptable solutions established by the bushfire protection criteria (Guidelines v1.3 WAPC 2017)

### ASSESSMENT (COMPLIANCE) STATEMENTS

For each applicable acceptable solution, the following statements present the results of the assessment of the proposed development/use against the requirements established by the *Guidelines* (WAPC 2017 v1.3).

#### Acceptable Solution: A4.1: Reticulated Areas

A reticulated water supply is available to the subject site and hydrants will be installed in locations as required by the relevant authorities. (Required hydrant separation distances – 100m commercial, 200m residential)

The construction technical requirements established by the Guidelines and/or the local government can and will be complied with.

#### Acceptable Solution: A4.2: Non-Reticulated Areas

N/A

#### Acceptable Solution: A4.3: Non-Reticulated Areas – Individual Lots

N/A

## 6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE PROTECTION MEASURES

Table 6.1: BMP Implementation responsibilities prior to the issue of titles.

Developer (Landowner) - Prior to Issue of Titles		
No.	Implementation Actions	Subdivision Clearance
<p>Note: Planning approval may be conditioned with the requirements:</p> <ol style="list-style-type: none"> <li>1. To place certain notifications on the certificates of title and the deposited plan, regarding the existence of this bushfire management plan and the obligations it creates; and</li> <li>2. To provide certification of the implementation of certain bushfire protection measures established by this bushfire management plan.</li> </ol>		
1	<p>Condition (as per Code F1 of Model Subdivision Schedule, WAPC April 2020):</p> <p>Information is to be provided to demonstrate that the measures contained in Section 6; Tables 6.1 and 6.2 of this Bushfire Management Plan (version and date referenced in the condition), have been implemented during subdivisional works. This information should include a completed 'Certification by Bushfire Consultant' from the bushfire management plan. (Local Government)</p> <p>Or</p> <p>Information is to be provided to demonstrate that the measures contained in this bushfire management plan that address the following:</p> <ol style="list-style-type: none"> <li>(a)</li> <li>(b)</li> <li>(c)</li> </ol> <p>Have been implemented during subdivisional works. This information should include a notice of 'Certification by Bushfire Consultant'.</p>	<input type="checkbox"/>
2	<p>Condition (as per Code F2 of Model Subdivision Schedule, WAPC April 2020):</p> <p>A notification, pursuant to Section 165 of the <i>Planning and Development Act 2005</i>, is to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor.</p> <p>Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:</p> <p><i>"This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land."</i> (Western Australian Planning Commission).</p>	<input type="checkbox"/>
3	<p>Condition (as per Code F3 of Model Subdivision Schedule, WAPC April 2020):</p> <p>A plan is to be provided to identify areas of the proposed lot(s) that have been assessed as BAL-40 or BAL-FZ.</p> <p>A restrictive covenant to the benefit of the local government pursuant to section 129BA of the <i>Transfer of Land Act 1893</i>, is to be placed on the certificate(s) of title of the proposed lot(s) advising of the existence of a restriction on the use of land within areas that have been assessed a BAL-40 or BAL-FZ.</p> <p>Notice of this restriction is to be included on the diagram or plan of survey (deposited plan). The restrictive covenant is to state as follows:</p>	<input type="checkbox"/>

	<i>"No habitable buildings are to be built within areas identified as BAL-40 or BAL-FZ". (Local Government).</i>	
4	Construct the public roads to the standards stated in the BMP.	<input type="checkbox"/>
5	Construct the private driveways and battle axes to the standards stated in the BMP.	<input type="checkbox"/>
6	Install the reticulated water supply (hydrants) to the standards stated in the BMP.	<input type="checkbox"/>

Table 6.2: BMP Implementation responsibilities prior to lot sale, occupancy or building.

Landowner (Developer) - Prior to Sale of Lot(s)	
No.	Implementation Actions
1	Prior to sale and post planning approval, the entity responsible for having the BMP prepared should ensure that anyone listed as having responsibility under the Plan has endorsed it and is provided with a copy for their information and informed that it contains their responsibilities. This includes the landowners/proponents (including future landowners where the Plan was prepared as part of a subdivision approval), local government and any other authorities or referral agencies ('Guidelines' s4.6.3).
2	<p>Prior to sale of the subject lots, each individual lot is to be compliant with the Shire of Broome Fire Break &amp; Fuel Hazard Reduction Notice issued under s33 of the Bushfires Act 1954.</p> <p>This may include specifications for asset protection zones that differ from the Guideline's APZ Standards, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with. Refer to Appendix 1.</p>
3	Prior to occupancy, install the private driveways and battle axes to the standards stated in the BMP.
4	<p>Prior to any building work, inform the builder of the existence of this Bushfire Management Plan and the responsibilities it contains, regarding the required construction standards. This will be:</p> <ul style="list-style-type: none"> <li>• The standard corresponding to the determined BAL, as per the bushfire provisions of the Building Code of Australia (BCA); and/or</li> <li>• A higher standard because the BMP establishes that the construction standard is to correspond to a higher BAL as an additional bushfire protection measure.</li> </ul>
5	<p>Where the proposed development is staged each stage must comply with the requirements of the Guidelines for Planning in Bushfire Prone Areas and this Bushfire Management Plan. This may require the creation of roads or management of land or installation of water supply lines outside that particular stage to achieve compliance.</p> <p>Vegetation on the balance lot(s) may adversely affect the indicative BAL ratings of lots being developed. This should be assessed prior to the sale of the lots and the required vegetation on the balance lot managed and maintained until developed, or the indicative BAL ratings for the affected lots amended.</p>

Table 6.3: Ongoing management responsibilities for the Landowner/Occupier.

Landowner/Occupier - Ongoing	
No.	Ongoing Management Actions
1	<p>Maintain the Asset Protection Zone (APZ) surrounding buildings within the Local Centre zone to the largest dimension as determined by either:</p> <ul style="list-style-type: none"> <li>• The dimensions corresponding to the determined BAL of a building (refer to Section 3.2 for explanation of the 'planning' versus 'building' requirements and 'indicative' versus 'determined' BAL); or</li> <li>• The dimensions corresponding to the local government's Firebreak Notice.</li> </ul> <p>Maintain the APZ to the above dimensions and to the standards established by the Guidelines (refer to Appendix 1) or as varied by the local government through their Firebreak Notice (refer to the following responsibility).</p>
2	<p>Comply with the Shire of Broome Fire Break &amp; Fuel Hazard Reduction Notice issued under s33 of the Bush Fires Act 1954.</p> <p>This may include specifications for asset protection zones that differ from the Guideline's APZ Standards, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with. Refer to Appendix 1.</p>
3	<p>Maintain vehicular access routes within the lot to the required surface condition and clearances as stated in the BMP.</p>
4	<p>Ensure that any builders (of future structures on the lot) are aware of the existence of this Bushfire Management Plan and the responsibilities it contains regarding the application of construction standards corresponding to a determined BAL.</p>
5	<p>Ensure all future buildings the landowner has responsibility for, are designed and constructed in full compliance with:</p> <ol style="list-style-type: none"> <li>1. the requirements of the WA Building Act 2011 and the bushfire provisions of the Building Code of Australia (BCA); and</li> <li>2. with any identified additional requirements established by this BMP or the local government.</li> </ol>

Table 6.4: Ongoing management responsibilities for the Local Government.

Local Government - Ongoing	
No.	Ongoing Management Actions
1	Monitor landowner compliance with the Bushfire Management Plan and the annual Fire Break and Fuel Hazard Reduction Notice.
2	Where control of an area of vegetated land is vested in the control of the local government and that area of land has influenced the assessed BAL(s) of the subject site(s) – and the BAL has been correctly assessed and considered all reasonable and likely future expectations for changes in vegetation classification - there is an obligation to consider the impact of any changes to future vegetation management and/or revegetation plans with respect to that area.

## APPENDIX 1: TECHNICAL REQUIREMENTS FOR ONSITE VEGETATION MANAGEMENT

### A1.1 Requirements Established by the Guidelines – Standards for Asset Protection Zones

(Source: Guidelines for Planning in Bushfire Prone Areas - WAPC 2017 v1.3 Appendix 4, Element 2, Schedule 1 and Explanatory Note E2.1)

#### DEFINING THE ASSET PROTECTION ZONE (APZ)

**Description:** An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level (by reducing fuel loads). The width of the required APZ varies with slope and vegetation and varies corresponding to the BAL rating determined for a building (lower BAL = greater dimensioned APZ).

For planning applications, the minimum sized acceptable APZ is that which is of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m<sup>2</sup> (BAL-29). It will be site specific.

For subdivision planning, design elements and excluded/low threat vegetation adjacent to the lot(s) can be utilised to achieve the required vegetation separation distances and therefore reduce the required dimensions of the APZ within the lot(s).

**Defendable Space:** The APZ includes a defendable space which is an area adjoining the asset within which firefighting operations can be undertaken to defend the structure. Vegetation within the defendable space should be kept at an absolute minimum and the area should be free from combustible items and obstructions. The width of the defendable space is dependent on the space, which is available on the property, but as a minimum should be 3 metres.

**Establishment:** The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity.

The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

*[Note: Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation that can be involved in a bushfire, is unsafe.]*

#### Schedule 1: Standards for APZ

**Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.

**Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.

**Fine Fuel Load:** combustible dead vegetation matter less than 6 mm in thickness reduced to and maintained at an average of two tonnes per hectare (example below).

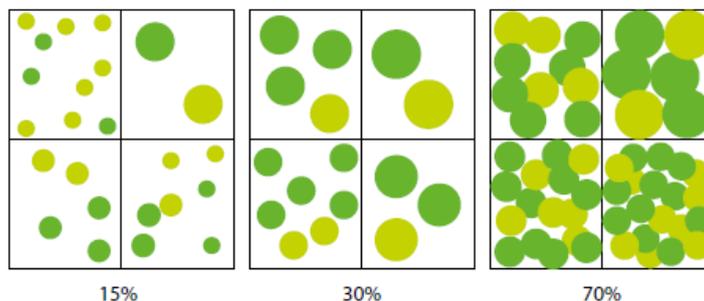


Example: Fine fuel load of 2 t/ha

(Image source: Shire of Augusta Margaret River's Firebreak and Fuel Reduction Hazard Notice)

**Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy. Diagram below represents tree canopy cover at maturity.

*Tree canopy cover – ranging from 15 to 70 per cent at maturity*



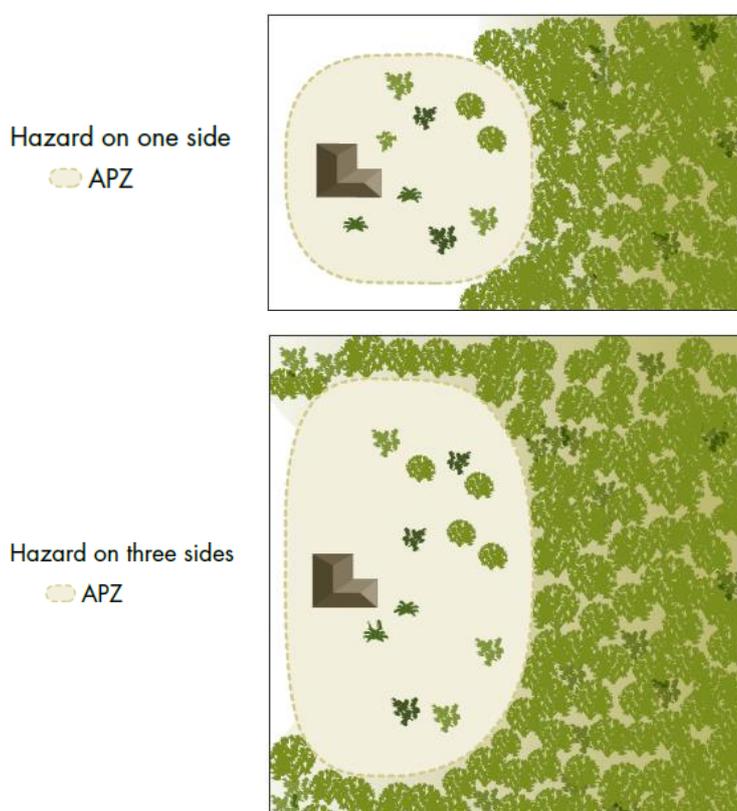
(Source: Guidelines for Planning in Bushfire Prone Areas 2017, Appendix 4)

**Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m<sup>2</sup> in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.

**Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 mm in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.

**Grass:** should be managed to maintain a height of 100 mm or less.

The following example diagrams illustrate how the required dimensions of the APZ will be determined by the type and location of the vegetation.



## A1.2 Requirements Established by the Local Government – the Firebreak Notice

The local government's current Firebreak Notice is available on their website, at their offices and is distributed as ratepayer's information. It must be complied with.

These requirements are established by the local government's Firebreak Notice created under s33 of the Bushfires Act 1954 and issued annually (potentially with revisions). The Firebreak Notice may include additional components directed at managing fuel loads, accessibility and general property management with respect to limiting potential bushfire impact.

If Asset Protection Zone (APZ) specifications are defined in the Firebreak Notice, these may differ from the Standards established by the Guidelines, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with.

The APZ dimensions to be physically established and maintained, will be based on which of the following establishes the larger APZ dimension:

- The dimensions corresponding to the determined BAL of a building (refer to Section 3.2 explanation of the 'planning' versus 'building' requirements and 'indicative' versus 'determined' BAL(s)); or
- The APZ dimensions established by the local government's Firebreak Notice.

## A1.3 Requirements Recommended by DFES – Property Protection Checklists

Further guidance regarding ongoing/lasting property protection (from potential bushfire impact) is presented in the publication 'DFES – Fire Chat – Your Bushfire Protection Toolkit'. It is available from the Department of Fire and Emergency Services (DFES) website.

## A1.4 Requirements Established by AS 3959:2018 – 'Minimal Fuel Condition'

This information is provided for reference purposes. This knowledge will assist the landowner to comply with Management Requirement No. 3 set out in the Guidance Panel at the start of this Appendix. It identifies what is required for an area of land to be excluded from classification as a potential bushfire threat.

*"Australian Standard - AS 3959:2018 Section 2.2.3.2: Exclusions - Low threat vegetation and non-vegetated areas:*

*The Bushfire Attack Level shall be classified BAL-LOW where the vegetation is one or a combination of the following:*

- a) Vegetation of any type that is more than 100m from the site.*
- b) Single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation being classified vegetation.*
- c) Multiple area of vegetation less than 0.25ha in area and not within 20m of the site or each other or other areas of vegetation being classified vegetation.*
- d) Strips of vegetation less than 20m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m of the site or each other, or other areas of vegetation being classified vegetation.*
- e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.*
- f) Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a **minimal fuel condition**, (means insufficient fuel available to significantly increase the severity of a bushfire attack – for example, recognisable as short cropped grass to a nominal height of 100mm), mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks (single row of trees)."*

## APPENDIX 2: TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

Each local government may have their own standard technical requirements for emergency vehicular access, and they may vary from those stated in the Guidelines.

When required, these are stated in Section 5.1 of this bushfire management plan.

### Requirements Established by the Guidelines – The Acceptable Solutions

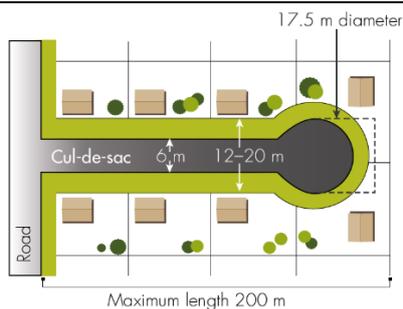
(Source: Guidelines for Planning in Bushfire Prone Areas WAPC 2017 v1.3, Appendix 4)

#### VEHICULAR ACCESS TECHNICAL REQUIREMENTS - PART 1

##### Acceptable Solution 3.3: Cul-de-sacs (including a dead-end road)

Their use in bushfire prone areas should be avoided. Where no alternative exists then the following requirements are to be achieved:

- Maximum length is 200m. If public emergency access is provided between cul-de-sac heads (as a right of way or public access easement in gross), the maximum length can be increased to 600m provided no more than 8 lots are serviced and the emergency access way is less than 600m in length;
- Turnaround area requirements, including a minimum 17.5m diameter head to allow type 3.4 fire appliances to turn around safely;
- The cul-de-sac connects to a public road that allows for travel in two directions; and
- Meet the additional design requirements set out in Part 2 of this appendix.



##### Acceptable Solution 3.4: Battle-axe

Their use in bushfire prone areas should be avoided. Where no alternative exists then the following requirements are to be achieved:

- Maximum length 600m and minimum width 6m; and
- Comply with minimum standards for private driveways.



## VEHICULAR ACCESS TECHNICAL REQUIREMENTS - PART 1

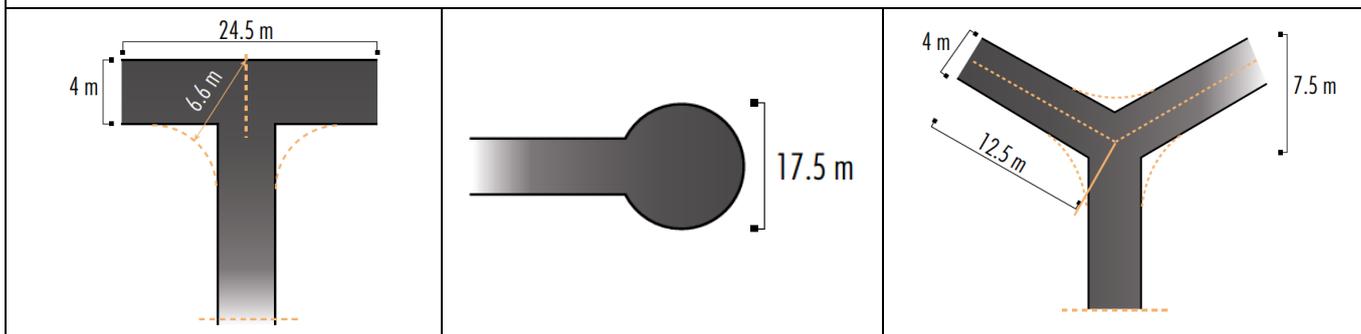
### Acceptable Solution 3.5: Private Driveways

The following requirements are to be achieved:

- The design requirements set out in Part 2 of this appendix; and

Where the house site is more than 50 metres from a public road:

- Passing bays every 200 metres with a minimum length of 20 metres and a minimum width of two metres (ie combined width of the passing bay and constructed private driveway to be a minimum six metres);
- Turn-around areas every 500 metres and within 50 metres of a house, designed to accommodate type 3.4 fire appliances to turn around safely (ie kerb to kerb 17.5 metres);
- Any bridges or culverts are able to support a minimum weight capacity of 15 tonnes; and
- All weather surface (i.e. compacted gravel, limestone or sealed).

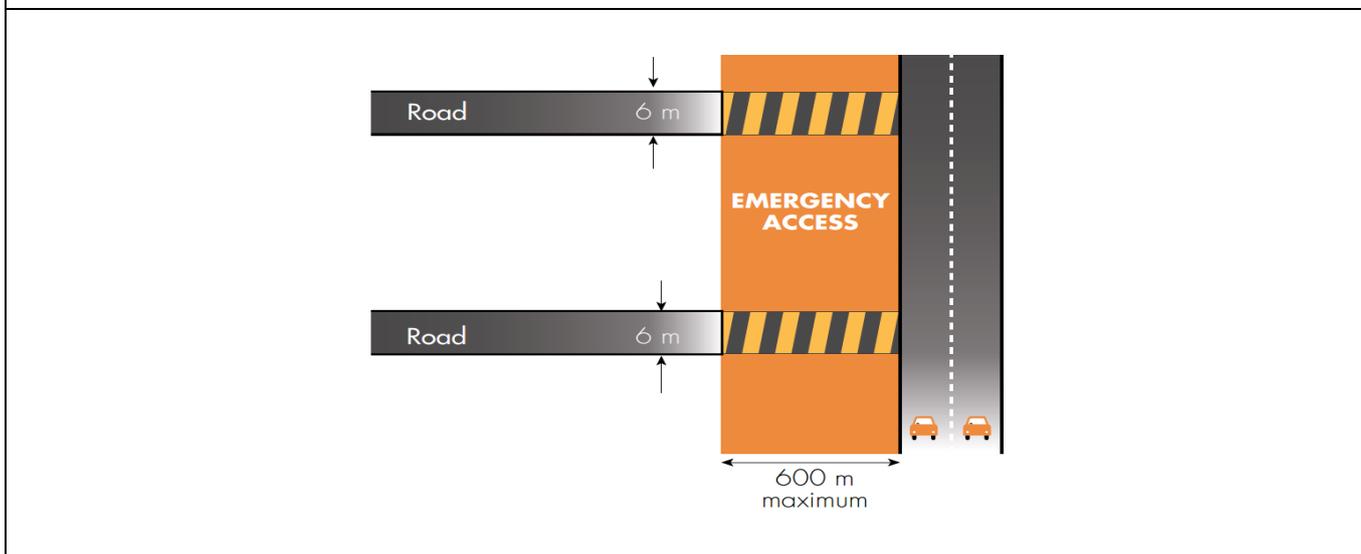


### Acceptable Solution 3.6: Emergency Access Way

An access way that does not provide through access to a public road is to be avoided bushfire prone areas.

Where no alternative exists, an emergency access way is to be provided as an alternative link to a public road during emergencies. The following requirements are to be achieved:

- No further than 600 metres from a public road;
- Must be signposted including where they ajoin public roads;
- Provided as a right of way or public access easement in gross;
- Where gates are used they must not be locked and they must be a minimum width of 3.6 metres with design and construction approved by local government (refer to the example in this appendix); and
- Meet the additional design requirements set out in Part 2 of this appendix.



## VEHICULAR ACCESS TECHNICAL REQUIREMENTS - PART 1

### Acceptable Solution 3.7: Fire Service Access Routes (Perimeter Roads)

Are to be established to provide access within and around the edge of subdivision and related development and to provide direct access to bushfire prone areas for firefighters and link between public road networks for firefighting purposes. Fire service access is used during bushfire suppression activities but can also be used for fire prevention work. The following requirements are to be achieved:

- No further than 600 metres from a public road (driveways may be used as part of the designated fire service access);
- Dead end roads not permitted;
- Allow for two-way traffic (i.e. two 3.4 fire appliances);
- Provide turn-around areas designed to accommodate 3.4 fire appliances and to enable them to turn around safely every 500m (i.e. kerb to kerb 17.5 metres);
- All weather surface (i.e. compacted gravel, limestone or sealed) and have erosion control measures in place;
- Must be adequately sign posted;
- Where gates are used, they must be a minimum width of 3.6 metres with design and construction approved by local government (refer to the example in this appendix) and may be locked (use a common key system);
- Meet the additional design requirements set out in Part 2 of this appendix;
- Provided as right of ways or public access easements in gross; and
- Management and access arrangements to be documented and in place.

### Acceptable Solution 3.8: Firebreak Width

Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three meters or to the level as prescribed in the local firebreak notice issued by the local government.

## VEHICULAR ACCESS TECHNICAL REQUIREMENTS - PART 2

Technical Component	Vehicular Access Types				
	Public Roads	Cul-de-sacs	Private Driveways	Emergency Access Ways	Fire Service Access Routes
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	4.5	4.5	4.5	4.5
Maximum grade <50 metres	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum cross-fall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5

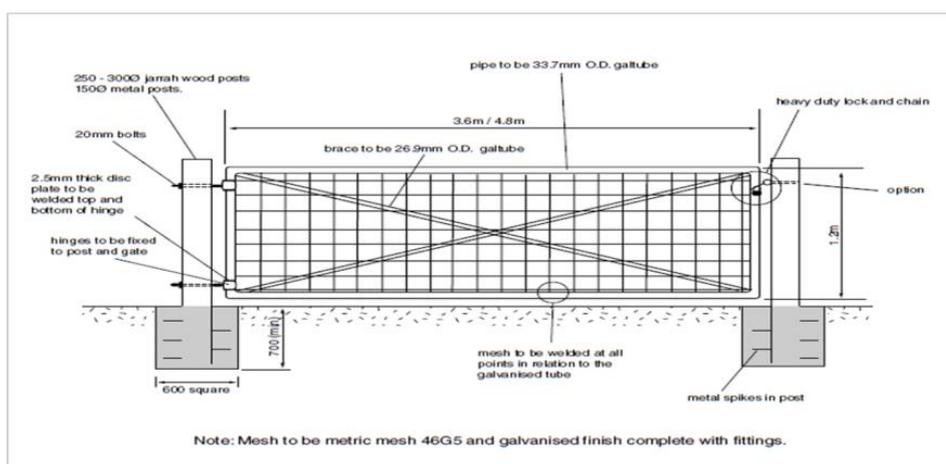
\* A six metre trafficable surface does not necessarily mean paving width. It could, for example, include four metres of paving and one metre of constructed road shoulders. In special circumstances, where 8 lots or less are being serviced, a public road with a minimum trafficable surface of four metres for a maximum distance of ninety metres may be provided subject to the approval of both the local government and DFES.

## VEHICULAR ACCESS TECHNICAL REQUIREMENTS – GATES AND SIGNS EXAMPLES

### Gates

*Design and construction to be approved by local government.*

- Minimum width 3.6m
- Emergency access way gates must not be locked.
- Fire service access route gates may be locked but only with a common key that is available to local fire service personnel.
- Bollards will be to the local government specifications



### Signs

*Design and construction to be approved by the local government.*

- Minimum height above ground of 0.9m.
- Lettering height to be 100mm.
- To display the words (as appropriate) "Emergency Access Only" or "Fire Service Access – No Public Access".
- Size 600mm x 400mm.
- Sign colour red, base (white) area is reflective background.
- Rounded corners, radius 20mm.
- White key-line 3mm wide, 3mm from outside edge.
- Suggested mounting hole 6mm diameter.



## APPENDIX 3: TECHNICAL REQUIREMENTS FOR FIREFIGHTING WATER

### Reticulated Areas

[Source: Guidelines for Planning in Bushfire Prone Areas WAPC 2017 v1.3, Appendix 4, Element 4]

The Water Corporation's 'No 63 Water Reticulation Standard' is deemed to be the baseline criteria for developments and should be applied unless local water supply authority's conditions apply.

The requirement is to supply a reticulated water supply and fire hydrants, in accordance with the technical requirements of the relevant water supply authority and DFES.

Key specifications in the most recent version/revision of the design standard include:

- **Residential Standard** – hydrants are to be located so that the maximum distance between the hydrants shall be no more than 200 metres.
- **Commercial Standard** – hydrants are to be located with a maximum of 100 metre spacing in Industrial and Commercial areas.
- **Rural Residential Standard** – where minimum site areas per dwelling is 10,000 m<sup>2</sup> (1ha), hydrants are to be located with a maximum 400m spacing. If the area is further subdivided to land parcels less than 1ha, then the residential standard (200m) is to be applied.

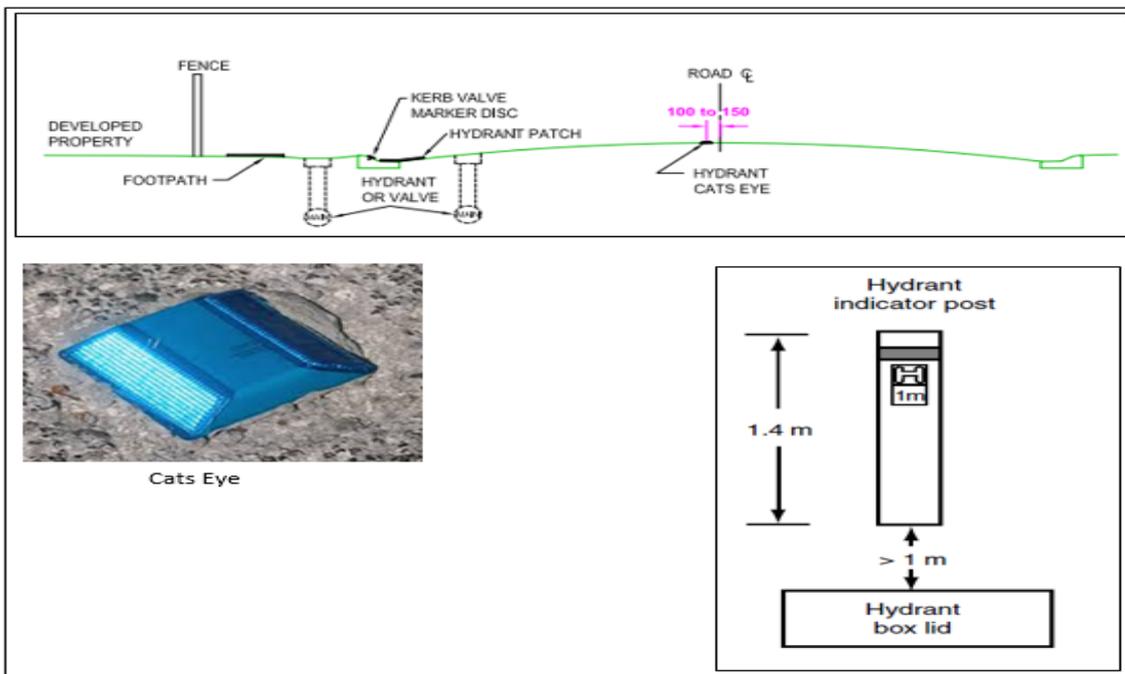


Figure A4.1: Hydrant Location and Identification Specifications

# APPENDIX C

Water Management Strategies Addendum





09 June 2021

Kylie Coman  
Tenure and Property Manager  
DevelopmentWA  
40 The Esplanade  
Perth WA 6000

Our ref: 12516970-15037-9  
Your ref:

Dear Kylie

## **Broome North Water Management Strategies and Plans Broome North Local Water Management Strategy - Local Development Plan 3 Addendum 1**

### **1 Introduction**

The Broome North Local Development Plan 3 (LDP3) area is located within the western portion of the greater Broome North Development area, and comprises a mixed lot ownership of DevelopmentWA, Yawuru and Shire of Broome as well as reserve areas. The Broome North LDP3 Local Water Management Strategy (LWMS) (GHD 2015) was prepared to further develop and refine the findings from the investigations undertaken during the District Structure Planning and District Water Management Strategy, and progressive development of the Broome North Development area. This LWMS received subsequent approval by the (then) Department of Water.

This letter has been prepared to support the submission of the Broome North LDP3 Structure Plan Amendment (Attachment 1). This letter reviews the key changes in the LDP3 amendment and outlines the relevant matters relating to the approved LWMS.

### **2 Proposed LDP3 Structure Plan changes**

The key change proposed to the LDP3 Structure Plan area comprises a change in land use over parts of the southern section of LDP3, with reduction in residential housing to accommodate a District Centre (Attachment 1). The key changes are summarised below:

- The proposed local centre located within LDP1 has been rezoned to residential and a District Centre has been identified within LDP3. This rezoning is consistent with the Shire of Broome Local Commercial Strategy for a District Centre adjacent the existing Cable Beach tourism precinct.
- The location of the District Centre reduces the extent of traditional residential housing in the southern portion of LDP3 area by approximately 60 lots.
- The configuration of the District Centre enables the best staging effectiveness for parking provision and access, site-design efficiency, and the ability for retail floorspace to be created in response to market demand. Further the configuration enables any future development to unfold eastward from Stage 1 without compromising the operation of earlier development, and may incorporate up to

approximately 5,000m<sup>2</sup> to 6,000m<sup>2</sup> of retail and office floorspace. This design includes two new carpark access points from Fairway Drive

- The configuration of the District Centre include, a stormwater drainage link between the Stage 1 and Stage 3 buildings to capture the runoff from Stage 1 into a swale along the southern boundary before it enters the Gubinge Road swale.
- The configuration of the District Centre does not impact upon the district arterial drainage corridors that occur along Gubinge Road, Fairway Drive and the eastern boundary of LDP3.

### **3 LWMS stormwater management**

Stormwater management in the Broome North development was designed based on best practice water sensitive urban design for the Broome climate and geomorphology. Stormwater management considers the specific challenges for management of stormwater in the Kimberley in the wet season (episodic rainfall events resulting in large volumes of water and large sediment loads) and the requirement for specific infrastructure designed to handle it.

Following approval of the Broome North LDP3 LWMS (GHD 2015) various guidelines have been revised which will result in incremental change to those area of changed land use. It is proposed that the updates from *Decision Process for Stormwater Management* (DWER, 2017), *Australian Rainfall and Runoff* (Ball et. al., 2019) and the *Shire of Broome LPP 5.22 Structure Plan and Subdivision Guidelines* (Shire of Broome 2015) be considered in detail during detailed design for the development area, and outlined in subsequent Urban Water Management Plans. Preliminary modelling of the LDP3 amendment area has been completed to identify basin volume requirements to detain the 1:100 year storm event for this portion of LDP3 in accordance with revised Shire of Broome guidance (Shire of Broome 2015). The following sections provide an overview of stormwater management considerations.

#### **3.1 Stormwater quantity management**

The proposed District Centre within the southern portion of LDP3 remains within the designated DWMS catchment 'Area 3' as depicted in the Broome North DWMS stormwater management plan (Attachment 2). The LDP3 Amendment, including changes in road and building layout, alters the location of local drainage connection to the arterial drainage corridors, however maintenance of the earthworks concept design will largely maintain overall flow path routes and connectivity to arterial drainage corridors.

As with stormwater management across the LDP3 area stormwater runoff will follow roads until it reaches POS and/or drainage, then drain south along the eastern and western drainage corridors to the Gubinge Road drainage corridor. Stormwater management for the LDP3 amendment area is based on the following principles:

- The development is to have a detention system so that the peak runoff outflows for 5, 10, 50 and 100 year average recurrence interval events are no greater than that which would occur under pre-development conditions.
- The drainage system and all associated structures including compensating basins are to be designed to collect and convey an Average Recurrence Interval (ARI) storm event of one in 100 year storm event occurrence.

- All basins shall be designed for the 1:100 storm event.
- Finished floor levels for the buildings on all lots are to be at least 0.5 m above the crown of the road to ensure that no flooding of the residences occurs.
- A minimum of 0.4 m freeboard required between the 100 year flood level and the finished floor level of all buildings on site.
- The 50 and 100-year average recurrence interval events are to be contained within the road reserve and the 10-year average recurrence interval event is to be contained within the kerbs.

Detailed design will consider the following based on the change in land use and revised guidelines:

- The change in land use from residential to commercial results in a change in runoff coefficient from 0.7 to 0.9 within the LDP3 amendment area.
- Wider pavements or piped drainage will be considered where road lengths exceed 200 m.
- Piped drainage may need to be considered through the car park area to maintain serviceability of the District Centre.
- Increase in the freeboard between the 100 year flood level and finished floor level of buildings on site from 0.3 m to 0.4 m in accordance with LPP 5.22 (Shire of Broome 2015).
- Requirement for drainage links in the following key locations to connect to arterial drainage swales:
  - Through Stage 2 of the District Centre to connect the drainage to the Fairway Drive swale.
  - Along the boundary of Stage 1 and Stage 3 of the District Centre to connect to the Gubinge Road swale.
  - Along the northern boundary of the District Centre in road reserve to convey runoff to perimeter swales.

### **3.2 Stormwater quality and best management practices**

The principles for managing stormwater quality remain unchanged from the LWMS with a range of best management practices (BMPs) incorporated into the development design at the lot, street and development scale to assist in the management of total suspended solids, gross pollutants and suspended or dissolved pollutants. As the majority of pollutants are transported in frequent, minor events, it is these frequent rainfall events which are targeted using at source, in-transit and end-of-catchment BMPs to improve water quality. Key street and development scale BMPs include:

- Maximising infiltration by adopting a stormwater detention system to detain the 1 yr ARI (1 EY) storm.
- Design of a linear swale detention system to reduce peak flow rates, and assist in achieving water quality objectives and to maximise the deposition of suspended sediment and promote infiltration.
- Planting and regeneration of low-lying native vegetation in swale drains for filtering of particulates and uptake of dissolved nutrients.

The vegetated drainage swales that are a key design feature throughout Broome North were designed based on extensive consultation with key stakeholders comprising the Shire of Broome, (then) Department of Water and Yawuru early in the District Structure Planning for the estate.

The Shire of Broome have raised recent concerns with regard to the bushfire risk and ongoing maintenance requirements of the linear vegetated swale drainage. These concerns will be addressed through ongoing consultation with key stakeholders during the detailed design for the development area, and outlined in subsequent Urban Water Management Plans.

### 3.3 Basin storage requirements

A one-dimensional DRAINS model was used for calculation of runoff. The critical 1% AEP 30 minute peak flow rates are used for the preliminary sizing of the storage requirements. Pre-development and post -development parameters are summarized in Table 1 and Table 2.

**Table 1 LDP3 amendment area - pre-development catchment characteristics**

Area type – Pre dev	Runoff Coefficient (as in Shire of Broome 2015)	Area (ha)
Vegetation	0.3	18.014

**Table 2 LDP3 amendment area - post-development catchment characteristics**

Area type – Post dev	Runoff Coefficient (as in Shire of Broome 2015)	Area (ha)
Residential	0.7	11.32
Commercial and Roads	0.9	6.69
Total		18.014

The basin was sized such that the total post-development flow off the site was equal to or less than the pre-development flow for the critical event. Basin parameters included:

- Nominal depth of 1.2 m
- 1V:6H side slopes
- Nominal basin volume of 8,920 m<sup>3</sup>
- Nominal basin dimensions (top of basin) of 150 x 60 m.

## 4 Water Balance Modelling

The conceptual water balance was revised for the LDP3 addendum to reflect the proposed change in land use composition using the Water Corporation H2Options tool. The results of the revised water balance model are summarised in Table 3 and Attachment 3, based on the following assumptions:

- Decrease in traditional residential lots by 60 due to relocation of District Centre to southern section of LDP3.
- The District Centre comprises 6,000 sqm GFA as mixed retail (Shopping Centre).
- The balance of the District Centre comprises 30,000 sqm of road and parking area, with 500 sqm POS irrigation allowance.

**Table 3 Water balance model results**

Land use type	LDP3 LWMS Rev1 (2015)		LDP3 LWMS Addendum (2021)	
	Demand (kL/year)	Required Drinking water supply (kL/year)	Demand (kL/year)	Required Drinking water supply (kL/year)
Residential indoor	115,265	115,265	106,193	106,193
Residential outdoor	62,059	62,059	56,281	56,281
Residential total	177,324	177,324	162,474	162,474
Commercial and industrial	2,800	2,800	8,800	8,800
Public open space	8,785	8,785	9,000	9,000
<b>Development Total (kL)</b>		<b>188,909</b>		<b>180,274</b>

The results of the water balance model identify that LDP3 Amendment results in a decrease (8,635 kL) in the annual Drinking Water demand across the LDP3 area due to proposed change in land use from traditional residential to District Centre. The potable water and irrigation water efficiency measures proposed within the Broome North LDP3 LWMS (2015) remain unchanged.

## 5 Concluding comments

This addendum letter reviews the proposed changes identified in the Broome North LDP3 Structure Plan Amendment against the total water cycle management proposed in the approved Broome North LDP3 LWMS (GHD 2015). The proposed change in land use in the southern portion of the LDP3 area to accommodate a change in land use from residential to District Centre does not result in substantive changes to the management of stormwater quantity and stormwater quality within the local development area. Key considerations are outlined for stormwater flowpaths, drainage connections and revised stormwater modelling to address change in land use and revised guidelines. These will be considered further during the detailed design for the development area, and outlined in subsequent Urban Water Management Plans.

Review of water balance modelling identifies a minor decrease in Drinking Water demand associated with the change in land use.

Should you have any further questions, please do not hesitate to contact the undersigned.

Sincerely

GHD



**Kelsey Hunt**

Senior Environmental Scientist

+61 8 62228733

- Attachment 1 Broome North LDP3 Structure Plan Amendment
- Attachment 2 Broome North DWMS Development Plan – Drainage Catchment Plan
- Attachment 3 Water Balance Model

**Attachment 1**

**Broome North LDP3 Structure Plan Amendment**

**LEGEND**

LOCAL DEVELOPMENT PLAN 3 AREA

**LOCAL SCHEME RESERVES**

ENVIRONMENTAL AND CULTURAL CORRIDOR RESERVE

PARKS, RECREATION AND DRAINAGE

**ZONES**

RESIDENTIAL R2-R10

RESIDENTIAL R12.5-R25

RESIDENTIAL R25-R40

TOURIST

LOCAL CENTRE

**OTHER**

**PUBLIC REALM AND ENVIRONMENT**

PERMANENT BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5

TEMPORARY BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5

LANDSCAPE BUFFER (minimum 5.0m in Local Centre Zone)

STORMWATER DRAINAGE SWALE (indicative location)

LANDSCAPED PUBLIC SPACE (indicative location)

**MOVEMENT**

KEY VEHICLE ACCESS POINT

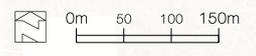
KEY PARKING AREA (indicative location)

KEY AREA FOR SERVICING AND DELIVERIES TO MAIN RETAIL BUILDINGS (indicative location)

NO VEHICLE ACCESS PERMITTED

**BUILT FORM**

MAIN RETAIL BUILDINGS (indicative location and shape)



**NOTES**

- (A) The Plan identifies indicative residential density ranges with the Local Development Plan 3 Area. Lot specific residential densities are to be assigned in accordance with a Residential Density Code Plan submitted as the time of subdivision for approval by the WAPC.
- (B) The Plan depicts the indicative location of Public Open Space, which will be subject to further refinement and modification at the subdivision stage.
- (C) The requirements associated with the Permanent and Temporary Bushfire Building Attack Level (BAL) 12.5 areas are outlined in Clauses 1.8.7 and 1.8.8.
- (D) Appropriate land tenure arrangements are to be made for the protection and ongoing access to the Water Corporation's infrastructure contained adjacent to the Environmental and Cultural Corridor Reserve.

- (E) As a condition of subdivision approval for the first stage of Subdivision, the proponent is to prepare a schedule outlining relevant items (such as roads, infrastructure and community services) arising from future development contributions. The schedule will inform the preparation of a future development contributions scheme to be prepared by the proponent and the Shire of Broome for the Broome North District Development Plan area.
- (F) The District Movement Network realignments, closures and construction, including the roundabout access to the future Caravan Park on Fairway Drive and Sanctuary Road is to be at the developer's cost.
- (G) Broome town site experiences problems with nuisances and disease carrying mosquitoes. Strategies to minimise the breeding of mosquitoes in on-site infrastructure and constructed water bodies should be identified within the Urban Water Management Plan or a Mosquito Management Plan.

**DRAFT**



**LEGEND**

LOCAL DEVELOPMENT PLAN 3 AREA

**LOCAL SCHEME RESERVES**

ENVIRONMENTAL AND CULTURAL CORRIDOR RESERVE

PARKS, RECREATION AND DRAINAGE

**ZONES**

RESIDENTIAL R2-R10

RESIDENTIAL R12.5-R25

RESIDENTIAL R25-R40

TOURIST

LOCAL CENTRE

**OTHER PUBLIC REALM AND ENVIRONMENT**

PERMANENT BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5

TEMPORARY BUSHFIRE BUILDING ATTACK LEVEL (BAL) 12.5

LANDSCAPE BUFFER (minimum 5.0m in Local Centre Zone)

STORMWATER DRAINAGE SWALE (indicative location)

LANDSCAPED PUBLIC SPACE (indicative location)

**MOVEMENT**

KEY VEHICLE ACCESS POINT

KEY PARKING AREA (indicative location)

KEY AREA FOR SERVICING AND DELIVERIES TO MAIN RETAIL BUILDINGS (indicative location)

NO VEHICLE ACCESS PERMITTED

**BUILT FORM**

MAIN RETAIL BUILDINGS (indicative location and shape)

**NOTES**

- (A) The Plan identifies indicative residential density ranges with the Local Development Plan 3 Area. Lot specific residential densities are to be assigned in accordance with a Residential Density Code Plan submitted as the time of subdivision for approval by the WAPC.
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- (G) Broome town site experiences problems with nuisances and disease carrying mosquitoes. Strategies to minimise the breeding of mosquitoes in on-site infrastructure and constructed water bodies should be identified within the Urban Water Management Plan or a Mosquito Management Plan.

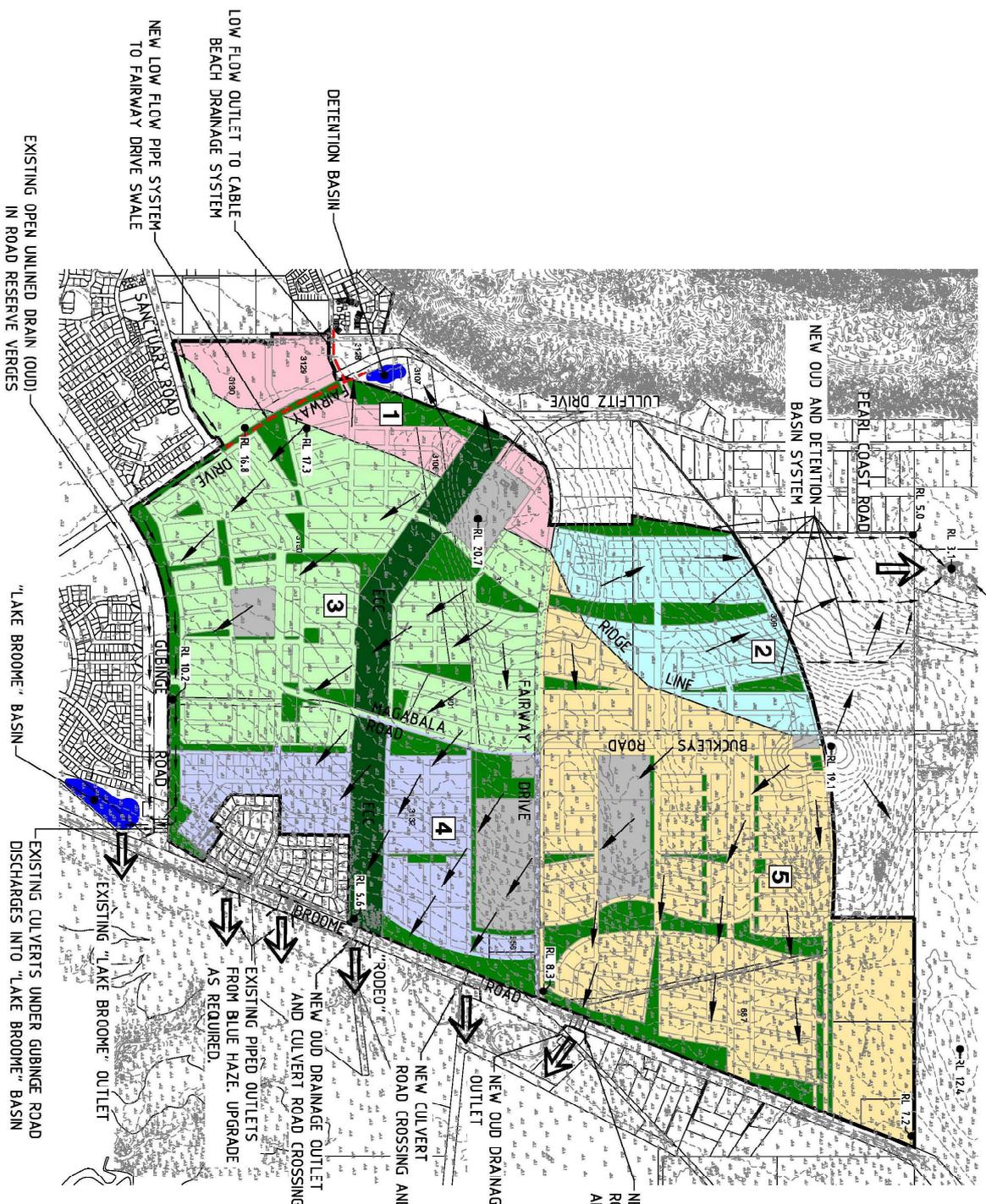
**DRAFT**

**Attachment 2**

**Broome North DWMS Development Plan – Drainage Catchment Plan**



SAND MINING AREA. DISCHARGE INTO POSSIBLE INFILTRATION BASIN



NOTES  
1.0 ALL BASE PLANS PROVIDED BY WELANS SERVICES.  
2.0 010 - OPEN UNLINED DRAIN

**LEGEND**

- EXISTING SURFACE CONTROL
- SITE BOUNDARY
- AREA 1 - 51ha
- AREA 2 - 69ha
- AREA 3 - 214ha
- AREA 4 - 112ha
- AREA 5 - 248ha
- PODS AND DRAINAGE
- LOW ARBORES
- VALVERT OR PIPE ROAD CROSSING
- OPEN UNLINED DRAIN SWALE

**OU D**



NO	DATE	ISSUED FOR	REVISION	BY	APP'D
A	24/7/19	ISSUED FOR INFORMATION			
B	17/8/19	ISSUED FOR INFORMATION			
C	15/9/19	ISSUED FOR INFORMATION			

NO	DATE	ISSUED FOR	REVISION	BY	APP'D
1	24/7/19	ISSUED FOR INFORMATION			
2	17/8/19	ISSUED FOR INFORMATION			
3	15/9/19	ISSUED FOR INFORMATION			

**COMMENTS**  
The conceptual site plan and drainage plan are subject to approval by the relevant authorities. The plan is for information only and should not be used for any other purpose.

**SKM**  
Sinteright Knight Werz Pty Ltd  
1000 Springwood Road  
Springwood QLD 4127  
Tel: (07) 3888 1000  
Fax: (07) 3888 1002



CLIENT	LANDCORP
PROJECT	BROOME NORTH
SUBJECT	DRAINAGE PLAN
DESIGNED BY	DRAINAGE CHECK
DESIGNED	DESIGN REVIEW
PROJECT MANAGER	PROJECT MANAGER
PROJECT DIRECTOR	PROJECT DIRECTOR

**TITLE**  
DEVELOPMENT PLAN -  
DRAINAGE CATCHMENT PLAN

SCALE: 1:10000  
SIN PROJECT NO: P85V19  
DRAWING NO: C011

## **Attachment 3 Water Balance Model**

## Input

Please enter numeric data as numbers only, i.e. for 70% enter 70, for 1,450.5 m<sup>2</sup> enter 1450.5

Name of developer	DevelopmentWA
Name of development	Broome North LDP3
Date of entry	2 February 2021
Location of development	Broome, WA
Total development area (m <sup>2</sup> )	1,305,000

### 1. Residential

Household type	No. of Lots	Households per lot	Average Area per lot (m <sup>2</sup> )	Irrigated area per lot (m <sup>2</sup> )
Traditional	468	1	600	180
Terrace	0	0	0	0
Cottage	284	1	220	22
Apartment	0	0	0	0
Lifestyle/semi-rural	45	1	1,500	250

Percentage of lots with rainwater tanks (%)	0
Percentage of lots with greywater recycling systems (%)	0
Total residential area (m <sup>2</sup> )	410,780
Total irrigated area (m <sup>2</sup> )	101,738

### 2. Schools

	No. of Students	No. of Staff	Total Area (m <sup>2</sup> )	Irrigated area (m <sup>2</sup> )
School 1	0	0	0	0
School 2	0	0	0	0
School 3	0	0	0	0

Total school area (m <sup>2</sup> )	0
Total irrigated area (m <sup>2</sup> )	0

### 3. Commercial and industrial

Industry type	Unit	No. of units	Total Area (m <sup>2</sup> )	Irrigated area (m <sup>2</sup> )
Hotel	Room	0	0	0
Shopping centre	m <sup>2</sup> GLA	6,000	6,000	0
Hospital	Bed	0	0	0
Nursing home	Bed	0	0	0
Light industrial	m <sup>2</sup> GLA	0	0	0
Commercial laundry	Entity	0	0	0
Aquatic centre	Entity	0	0	0
Municipal building	m <sup>2</sup> GLA	0	0	0
Office building	m <sup>2</sup> GLA	0	0	0

Industry type	Unit	No. of units	Total Area (m <sup>2</sup> )	Irrigated area (m <sup>2</sup> )	Total annual demand (kL/year)
Other	Tourist Park (estimate only)	50	209,471	83,788	2,800

Total commercial and industrial area (m <sup>2</sup> )	215,471
Total commercial and industrial irrigated area (m <sup>2</sup> )	83,788

### 4. Public Open Space (POS)

	Area (m <sup>2</sup> )	Amenities (kL/year)
Active POS	0	0
Other Irrigated POS	15,000	
Street scaping	0	
Non-irrigated POS	82,615	
Total POS area (m <sup>2</sup> )	97,615	
Total irrigated POS area (m <sup>2</sup> )	15,000	

### 5. Miscellaneous

Misc. type	Total demand (kL/year)	Comments
Environmental Cultural Corrid	0	
Roads	0	
	0	

Total other area (m <sup>2</sup> )	581,134
------------------------------------	---------

### Area Summary

Residential (m <sup>2</sup> )	410,780
Schools (m <sup>2</sup> )	0
Commercial and industrial (m <sup>2</sup> )	215,471

Public open space (m <sup>2</sup> )	97,615
Miscellaneous (m <sup>2</sup> )	581,134
Total development area (m <sup>2</sup> )	1,305,000
Area Gap - if any (m <sup>2</sup> )	0

**1. Residential**

	Value	Unit	Comments
<b>Water use</b>			
Indoor water use	56	kL/person/year	
Pool, spa and handwatering (outdoor except irrigation)	5	kL/person/year	
Irrigation	0.46	kL/m <sup>2</sup> /year	
<b>Number of residents by household type</b>			
Traditional	2.7	No. of residents	
Terrace	1.7	No. of residents	
Cottage	1.8	No. of residents	
Apartment	1.5	No. of residents	
Lifestyle/semi-rural	2.7	No. of residents	
<b>Demand by water type</b>			
<i>Indoors</i>			
Drinking water indoors	100	%	
Non-drinking water indoors	0	%	Value changed
<i>Outdoors</i>			
Drinking water outdoors	100	%	
Non-drinking water outdoors	0	%	Value changed!
<b>Rainwater supply</b>			
Residential rainwater tank yield (2kL, plumbed)	55	kL/tank/year	
<b>Greywater supply</b>			
Greywater produced	36	kL/person/year	

**2. Schools**

	Value	Unit	Comments
<b>Water consumption</b>			
Water use indoors, drinking, outside taps	5	kL/person/year	
Water use for irrigation	0.83	kL/m <sup>2</sup> /year	
<b>Demand by water type</b>			
Drinking water indoors	70	%	
Non-drinking water indoors	30	%	
Drinking water irrigation	0	%	
Non-drinking water irrigation	100	%	

**3. Commercial and industrial**

	Value	Unit	Comments
<b>Average total water consumption by industry type</b>			
<b>Hotel</b>			
Drinking water demand	150	kL/room/year	
Non-drinking water demand	60	%	
	40	%	
<b>Shopping centre</b>			
Drinking water demand	1	kL/m <sup>2</sup> GLA /year	
Non-drinking water demand	100	%	
	0	%	
<i>Value changed!</i>			
<b>Hospital</b>			
Drinking water demand	220	kL/bed/year	
Non-drinking water demand	90	%	
	10	%	
<b>Nursing home</b>			
Drinking water demand	120	kL/bed/year	
Non-drinking water demand	90	%	
	10	%	
<b>Light industrial</b>			
Drinking water demand	1	kL/m <sup>2</sup> GLA /year	
Non-drinking water demand	60	%	
	40	%	
<b>Commercial laundry</b>			
Drinking water demand	45,000	kL/entity/year	
Non-drinking water demand	5	%	
	95	%	
<b>Aquatic centre</b>			
Drinking water demand	14,600	kL/entity/year	
Non-drinking water demand	80	%	
	20	%	
<b>Municipal building</b>			
Drinking water demand	1	kL/m <sup>2</sup> GLA/year	
Non-drinking water demand	50	%	
	50	%	
<b>Office building</b>			
Drinking water demand	1	kL/m <sup>2</sup> GLA/year	
Non-drinking water demand	60	%	
	40	%	

**Other**

Drinking water demand	100	%
Non-drinking water demand	0	%

Value changed!

**4. Public open space (POS)**

	Value	Unit	Comments
<b>Average water consumption</b>			
Active POS	1.3	kL/m <sup>2</sup> /year	
Other irrigated POS	0.6	kL/m <sup>2</sup> /year	
Verges / street scapes	0.65	kL/m <sup>2</sup> /year	

**Demand by water type**

Drinking water	100	%
Non-drinking water	0	%

Value changed!

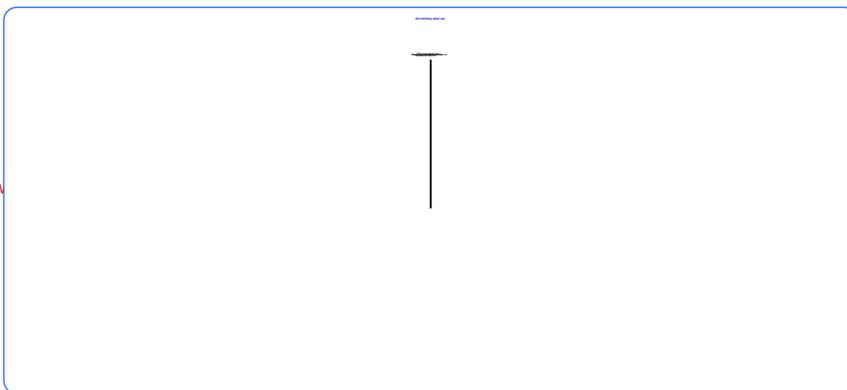
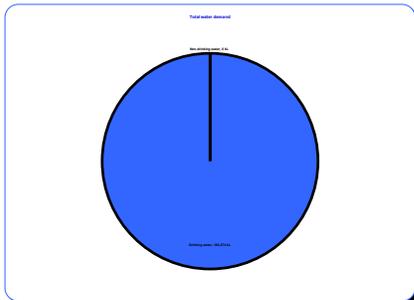
**5. Miscellaneous**

	Value	Unit	Comments
<b>Demand by water type</b>			
Drinking water	60	%	
Non-drinking water	40	%	

## Water Balance Results

Name of developer	DevelopmentWA
Name of development	Broome North LDP3
Date of entry	2 February 2021
Location of development	Broome, WA
Total development area (m <sup>2</sup> )	1,305,000

	DEMAND (kL/year)	REQUIRED SUPPLY (kL/year)		Potential residential non-drinking water sources (kL/year)		
		Drinking water	Non-drinking water	Rainwater	Greywater	Other sources
Residential indoor	106,193	106,193	0	0	0	0
Residential outdoor	56,281	56,281	0			
<b>Residential total</b>	<b>162,474</b>	<b>162,474</b>	<b>0</b>			
School irrigation	0	0	0			
School non-irrigation	0	0	0			
<b>School total</b>	<b>0</b>	<b>0</b>	<b>0</b>			
<b>Commercial and industrial</b>	<b>8,800</b>	<b>8,800</b>	<b>0</b>			
<b>Public open space</b>	<b>9,000</b>	<b>9,000</b>	<b>0</b>			
<b>Miscellaneous</b>	<b>0</b>	<b>0</b>	<b>0</b>			
<b>Development total</b>	<b>180,274 kL</b>	<b>180,274 kL</b>	<b>0 kL</b>			
<b>kL / person / year</b>	<b>95.07</b>					



# APPENDIX D

Engineering Service Addendum



DevelopmentWA  
40 The Esplanade  
Perth WA 6000

8 February 2021  
2287-LDP3-REP-002

**Attention: Ms Sariska Neale**

**RE: BROOME NORTH LDP3 AMENDMENT  
ENGINEERING SERVICING ADDENDA**

The following addenda has been prepared by TABEC Pty Ltd for the proposed Broome North Local Development Plan No. 3 (LDP3) amendment. It summarises the results of a review of the civil engineering aspects which inform and support the delivery of the development plan and the impact of the proposed plan amendment on the civil engineering servicing capability and requirements for the proposed development.

The Broome North LDP3 provides the planning framework to guide the development of the landholding. An amendment to the approved LDP3 is proposed, with the approved structure plan to be modified to include a district commercial centre, and consequently the removal of a local centre in the Broome North Local Development Plan No. 1 (LDP1), in accordance with the Broome Local Commercial Strategy. The Broome North District Structure Plan and LDP1 are also currently being amended to reflect the proposed modification.

The approximately 131.5ha site is bounded by Fairway Drive and the Water Corporation Tank site to the north; the existing Broome North LDP1 area to the east; Fairway Drive, Sanctuary Road, Lulfitz Drive (Oryx Drive) and Coucal Street to the west and Gubinge Road to the south.

The primary road access to LDP3 remains via an extension of Tanami Drive from LDP1 to an intersection with Fairway Drive and Sanctuary Road.

The landholding is relatively flat with a small ridge running northeast - southwest dividing the site and a steeper ridge along the northern portion of LDP3. The western side of the ridge line grades to Fairway Drive, Lulfitz Drive (Oryx Drive) and Coucal Street and the eastern side of the ridge grades towards Gubinge Road and the existing LDP1 swale system. The earthwork and drainage strategies, catchments, and general location of the outfalls from the site are not affected by the proposed LDP3 change.

The majority will still outfall to the existing LDP1 swale system adjacent to Gubinge Road before ultimately discharging via culvert under Gubinge Road to the Gubinge Road Retention Area. Whilst part of the northern and western catchments will still discharge into the existing Cable Beach drainage system. Drainage links may be required through the District Commercial Centre to connect the drainage system to the Fairway Drive and Gubinge Road swales.

The sewerage, water supply, power supply and telecommunications planning, servicing strategies and site requirements are also unaffected by the LDP3 modification.

The Water Corporation wastewater and water planning and servicing strategy for the LDP3 area is not impacted by the proposed amendment.

To facilitate development of the southern wastewater catchment and majority of LDP3, including the proposed District Commercial Centre, an extension of the existing DN225 sewer mains that terminate at the LDP1 western boundary in Tanami Drive and Ibasco Crescent is required. The smaller northern wastewater catchment that is part of the greater Cable Beach wastewater catchment will be served by a DN150 sewer extension of the existing DN225 sewer in Millington Road.

The location of the connections to the existing water networks remains as per the approved LDP3. The one change has been the completion of the DN600 distribution main along Fairway Drive, Sanctuary Road and Coucal Street by the Water Corporation that reinforces the existing water network. The DN600 distribution main was in the scoping phase when the original LDP3 report was prepared.

The Horizon Power Bilingurr zone substation site, at the intersection of the future Magabala Road extension and Fairway Drive, has also been established along with the 33kV feeder cable. Power supply for LDP3 will emanate from this substation. As per the existing LDP3 report, connection to the high voltage underground cables in Tanami Drive and Fairway Drive/Sanctuary Road can initially serve LDP3. Ultimately high voltage interconnection to the existing cables in Fairway Drive north of LDP3 and the aerials in Lulfitz Drive (Oryx Drive) and Coucal Street will be necessary to complete a high voltage ring.

The telecommunication servicing strategy is not affected by the LDP3 amendment. The LDP3 telecommunication network will still be an extension of the existing NBN infrastructure in LDP1 that terminates at the western boundary of Tanami Drive.

The investigation has found that the proposed Local Development Plan 3 modifications do not impact the servicing strategies and site requirements for the proposed Broome North development. Consistent with the TABEC Engineering Report included as part of the approved LDP3, the land is capable of supporting development in accordance with the proposed development plan with a logical progressive extension of infrastructure and base capacity. There are no engineering impediments to the development, though coordination and cooperation with the relevant service authorities will be required as the development progresses.

# APPENDIX E

Market Overview



# Broome North District Centre

## Market review

Prepared for:  
DevelopmentWA

22 September 2020



**Deep End Services**

Deep End Services is an economic research and property consulting firm based in Melbourne. It provides a range of services to local and international retailers, property owners and developers including due diligence and market scoping studies, store benchmarking and network planning, site analysis and sales forecasting, market assessments for a variety of land uses, and highest and best use studies.

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**Document Name**

Broome North District Centre market review - 22 Sept 2020  
22.09.20

**Disclaimer**

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This report should be read in its entirety, as reference to part only may be misleading.

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# 1

## Introduction

### 1.1 Background

The Shire of Broome Local Commercial Strategy (LCS) identifies a District Centre (DC) on the corner of Fairway Drive and Gubinge Road at Broome North. The site falls within Broome North Local Development Plan 3.

To promote consistency with the LCS, DevelopmentWA has engaged planning consultants to prepare an amendment to LDP3 to incorporate the recommended DC and reconfigure the residential product. As part of this amendment process, DevelopmentWA is seeking to engage a consultant to undertake a retail feasibility and market review.

The Broome North District Structure Plan (DSP), provides for 4,800 dwellings or 12,480 people – almost doubling the current population. Broome North provides opportunities for up to 37% of its residential labour force, a figure expected to increase with delivery of the DC.

The LCS reinforces Broome's role as a strategic centre for the Kimberley with a predicted population of 21,000 - 25,000 by 2026. The LCS identifies the inclusion of the Broome North (South) DC inclusive of a full-line supermarket (2,500 – 4,500m<sup>2</sup>) by 2031 and two full-line supermarkets by 2051.

### 1.2 Report brief

The study brief is to consider the size, configuration, market drivers and likely delivery model for the DC. The review is to consider the recommendations included within the LCS and provide justification as to whether alignment or an alternative approach is recommended.

Figure 1—Regional context



# 2

## Regional context

### 2.1 Regional setting

The Kimberley is Western Australia's most northern region, with the Broome coastline closer to South-East Asia than it is to Perth. Bordered by the Pilbara region to the south and Northern Territory to the east, the 424,517 square kilometres has one of the lowest population densities of any area on earth.

The Kimberley is made up of four local government authorities: Broome, Derby-West Kimberley, Halls Creek and Wyndham-East Kimberley.

The Kimberley accounts for all of Western Australia's diamond output and produces approximately 90% of the world's pink diamonds. Its unique natural environment provides a strong basis for a sustainable tourism industry and investment opportunities, with approximately 12.0% of employment and 9.9% (\$563 million) of output generated by the industry.

Broome is a beach resort town located on the Indian Ocean. The white sands of the 22 km Cable Beach offer a dramatic backdrop for sunset camel rides. Broome's historic Chinatown overlooks Roebuck Bay, a launching point for cruises to local pearl farms.

Broome International Airport serves the region's air travellers receiving approximately 200,000 incoming passengers a year. The region can also be accessed by road via the Great Northern Highway and from the sea via cruise ships.

Figure 2—  
Kimberley region



## 2.2 Regional economy

Broome is best known for its tourism industry which generates 11% of all jobs in the city – a rate above the WA average of 7%.

As a service centre for the vast Kimberley region, Broome provides a range of education, health, administration and government functions. The largest employment sectors are health care and social assistance (18%), education and training (12%), tourism (11%), construction (9.8%) and public administration and safety (9.7%). These are all above the state averages.

The most recent REMPLAN report states that the construction sector makes the greatest contribution to economic output in the region. At \$693.9 million it accounts for 12.25% of total output.

## 2.3 Population

### 2.3.1 Broome and the Kimberley

Broome is Western Australia's ninth largest city. The Australian Bureau of Statistics estimate the Broome urban area had a 2019 population of **14,371 people** while the wider Shire of Broome extending 150-300 km along the coast and inland had a population of **16,900**.

Broome is the largest settlement in the vast Kimberley region with about 40% of the wider region’s population of 35,900. It is often compared in size to other north-west cities of Port Hedland (pop. 14,476) and Karratha (17,100).

Broome and other cities in the north-west grew strongly during the 10-year resource and engineering construction boom, from 2004 to 2014. Since the end of the expansion period, when Broome’s peaked at **14,710 people** in 2013, the city’s population has fallen by about 350 people or -2.2% in the following 6 years.

The slowing rate of development is evident in residential building approvals since 2012 (refer Figure 3). From a peak of 335 new residential approvals in Broome in 2013 there were just 20 approvals in 2020.

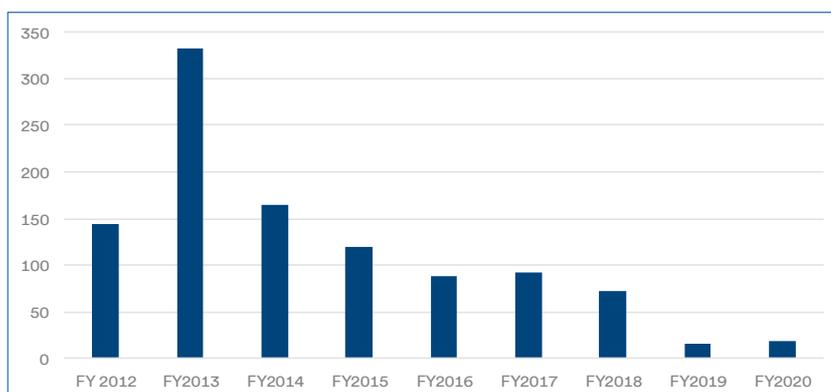
According to the *WA Tomorrow* population projections issued by the State Government in 2018, stronger economic forecasts at both the state and region level will see a resumption of low rates of population growth in Broome out to 2031 (refer Figure 4). On the medium growth projection, Broome’s resident population is projected to grow by an average of 140 people per year to reach:

- 15,300 people in 2026
- 16,028 people in 2031.

These growth rates are well below the previous published forecasts in *WA Tomorrow* (2015) which had Broome urban area reaching 19,738 people in 2026.

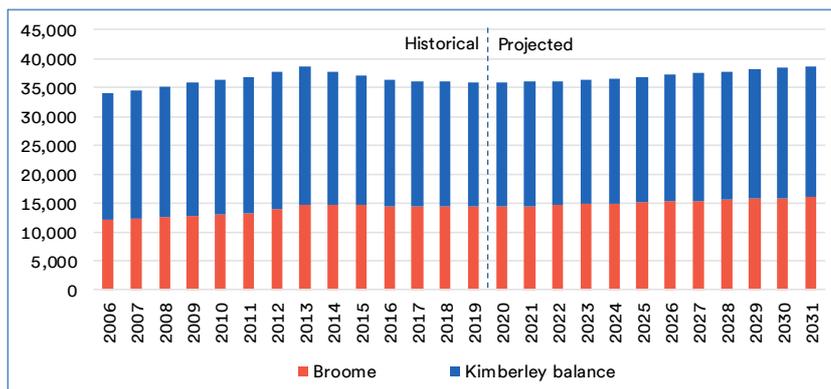
**Figure 3— Broome residential building approvals**

Source: ABS



**Figure 4— Kimberley population projections**

Source: Deep End Services; ABS; WA State Government



### 2.3.2 Population distribution and change in Broome

Broome's recent spatial growth pattern is shown in chart form in Figure 5 and mapped in Figure 6.

Figure 5 shows the city's annual population change from 2006 to 2019 by three sub-areas –south east and south west areas south of Broome Airport and North Broome.

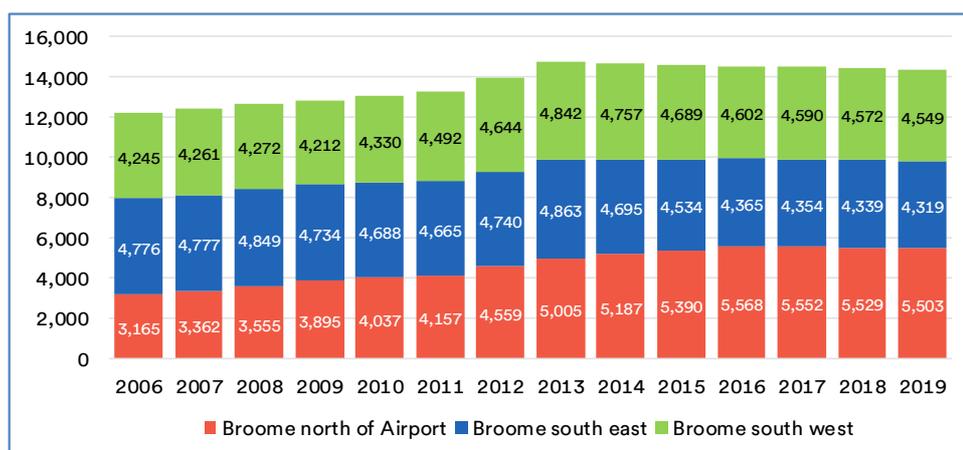
According to the ABS, in 2006 the 3,165 people living in the area north of the airport made up 26% of Broome's population. Between 2006 and 2013, Broome North grew by 1,840 people to make up 34% of the city's population. In the same period, the areas south of the Airport area grew by 684 people.

In the six years to 2019, the area north of the airport grew by a further 498 people to 5,503 in 2019 whereas the southern areas declined by 837 people.

The change in population between 2011 and 2019 by small (SA1) area across Broome is thematically mapped in Figure 6.

**Figure 5— Broome historical population**

Deep End Services;  
ABS



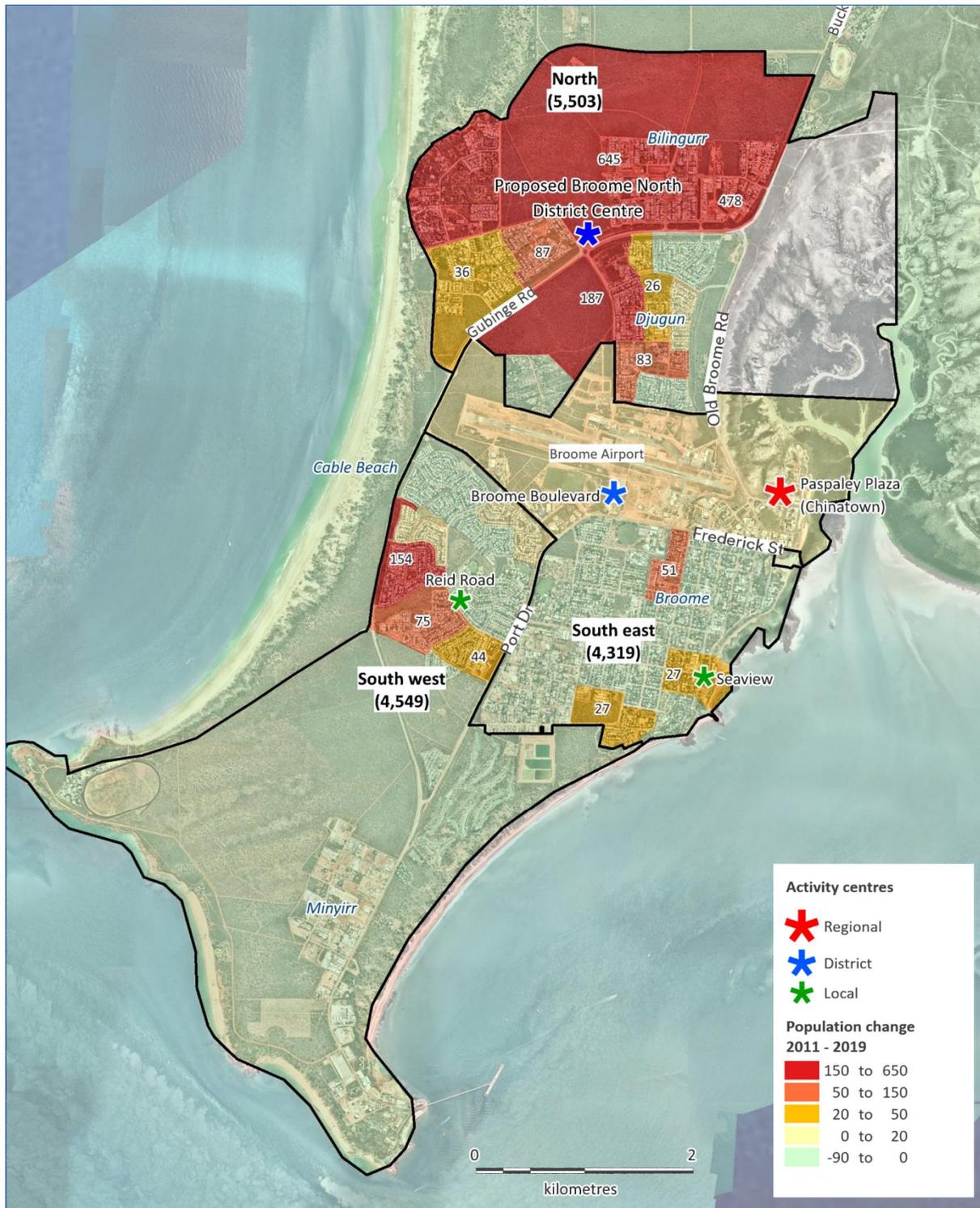
## 2.4 Tourism

Overnight visitor data published by Tourism Research Australia shows that tourists and other visitors to Broome in 2018 stayed 1,768,602 nights. Domestic tourists make up 87% of visitors to Broome and 80% of overnight stays – staying an average of 6 nights per visit. International visitors stay longer (11 nights) but include a high proportion of backpackers with a lower spending capacity.

The annual visitor population is equivalent to an average daily population of 4,845 across the entire year. This has the effect of increasing Broome's permanent population of 14,371 (2019) by approximately 33% across the course of a year.

The Kimberley visitor market is highly seasonal in nature with the peak period occurring in the dry, mid-year months. Some estimates place Broome's permanent and visitor population at 45,000 people during the high season.

Figure 6—Population distribution by sub-area (2019) & population change by SA1 (2011-2019)



Source: ABS; Deep End Services

**2.5 Retail centres** Retailing in Broome is concentrated in two centres, both central to the population but located 1.7 km apart. Elsewhere, there are two local centres.

### 2.5.1 Chinatown

Chinatown is the multi-cultural centre of Broome where shops and tourist establishments along Carnarvon Street reflect the heritage of its pearl industry, Asian influences and today's large visitor population. This is the designated 'Regional Centre' in the LCS.

A revitalisation project is underway, funded by the Shire of Broome and the State Government, delivering aesthetic upgrades including public art, placemaking and activation strategies.

At the north end of Carnarvon Street is Paspaley Plaza, a neighbourhood-style centre of 9,000 sqm comprising Coles (3,353 sqm), Best & Less (900 sqm) and 25 specialty shops. It was built in 1998 and until Broome Boulevard was developed in 2008, was the main supermarket for Broome residents.

Paspaley Plaza (and Coles) is well connected to the central and eastern areas of Broome North via Old Broome Road.

### 2.5.2 Broome Boulevard

Primewest Broome Boulevard is a stand-alone mall-based centre on Frederick Street, a short drive from Chinatown. It was developed in 2008 and has a more central position and better road access for residents of central and south Broome than Paspaley Plaza.

The 11,600 sqm centre contains Target (3,766 sqm), Woolworths (3,226 sqm) and 30 specialty shops. Woolworths has a similar floor area to Coles but is thought to be trading at much higher levels.

### 2.5.3 Local Centres

The **Seaview** local centre is on the Roebuck Bay foreshore where it serves residents in the south-east of the town and nearby accommodation and tourist establishments. It comprises 7 tenancies including Liquorland (260 sqm), The Broome Pantry (former IGA X-press), a pharmacy, dentist, laundromat and two vacancies.

In the south-west residential neighbourhood, the **Reid Road** local centre comprises an IGA X-press of approximately 600 sqm located with a United Fuel station.

Figure 7—Broome centres & major retailers



# 3

## Planning context

### **3.1 Broome North District Development Plan**

The Broome North District Development Plan (Development Plan) was adopted by the Shire of Broome in March 2010. It sets out a future urban structure for approximately 700 hectares of land north of Gubinge Road and west of Broome Road. More detailed Local Development Plans are required prior to approving the subdivision or development of land.

The Final Concept Plan (refer Figure 8) shows a series of residential neighbourhoods served by 2 primary schools, a high school and two Local Centres, each of 3,000 sqm comprising a small supermarket (1,500 sqm) and 10-15 shops.

The estimated population capacity of the Development Plan is 4,800 dwellings or 12,480 people. At the time, this provided enough land and housing to double Broome's permanent population.

The District Development Plan and subsequent Local Development Plans (1 & 2) have facilitated the Warranyjarri housing estate, the main residential growth area in Broome since the first houses appeared in 2011.

Figure 8—Broome North District Development Plan – Final Concept Plan



3.2 Local Development Plan No.3 Broome North

Local Development Plan 3 (LDP3) for Broome North was finalised in November 2015 and endorsed by the WA Planning Commission in February 2016. It sets out the detailed land use pattern, movement networks and neighbourhood design, residential densities, engineering and other statutory and technical planning requirements for subdivision and development of 130 hectares of the south-west corner of the Development Plan area.

The dwelling yield for the LDP areas is 857 dwellings or 2,300 people. The LDP shows the area of the (now) District Centre site on the corner of Gubinge Road and Fairway Drive as a future residential subdivision.

Figure 9— Local Development Plan 3

Source: DPLH



### 3.3 Shire of Broome Local Commercial Strategy.

The Broome Local Commercial Strategy (2017) updated a 2007 strategy of the same name. It sets out to review the retail and commercial floorspace needs and the distribution of that space across the city. Various changed circumstances from 2007 to 2017 included:

- Preparation and adoption of the Broome North District Development Plan.
- *WA Tomorrow* (2015) population forecasts for the Shire of Broome predicting a population of between 21,000-25,000 by 2026 that were significantly higher than those adopted in 2007.

The demand analysis for the 2017 Strategy concluded that the larger Shire-wide and service population generates a total additional demand for 31,000 sqm of retail floorspace by 2031. This translates to:

- 11,000 sqm of additional Specialised Food, Grocery and Liquor floors space and 8,500 sqm of additional Food Catering floorspace by 2031.
- One new full-line supermarket and one half-line supermarket by 2031 when the population reaches a mean estimate of 24,000 residents.
- Sufficient demand for a new district centre, possibly by 2031.

The Local Commercial Strategy recommended the development of a new District Centre at Broome North to address the deficiency in the supply of zoned land for supermarket space. The recommended site on the north-east corner of Gubinge Road and Fairway Drive is shown in Commercial Centres map (refer Figure 10).

**Figure 10— Broome Commercial Centres**

Source: 2017 Local Commercial Strategy



Table 8 of the Strategy sets out the potential elements of a new Broome North District Centre including:

- 1 full-line supermarket (2,500-4,000 sqm)
- Other food, grocery & liquor
- Food catering
- Apparel, homewares & leisure
- Retail services
- Local professional and service businesses.

By 2051, the Strategy sets out the possibility of two full-line supermarkets at Broome North.

The proposed Planning Framework Amendments to implement the Broome North District Centre were:

- Amend the scheme texts and maps to introduce new zones and provisions for 'District Centre'; and
- Amend the Broome North District Development Plan.

### 3.4 Broome North District Centre Concept Plan

Taylor Burrell Barnett (TBB) has been engaged by DevelopmentWA to prepare an amendment to LDP3 which incorporates the recommended District Centre and reconfigures the surrounding residential product.

TBB has prepared a Concept Plan for the District Centre (refer Figure 11) showing a potential long-term layout of a mall-based centre. The main elements are:

- Two anchor stores which are a supermarket (Stage 1) followed by a later second supermarket or discount department store (DDS).
- A simple linear mall sleeving the major stores with internal and external facing shops. This is a traditional internalised centre design providing air conditioned areas and security for shop fronts after hours.
- An external medical centre and other community facility tenancies as part of the centre.
- Access from Fairway Drive.

The centre can be easily staged with a supermarket, small provision of shops and the medical centre in Stage 1 followed by later stages that extend the mall to the east, as demand warrants.

The centre is oriented to the north which presents a better interface for the adjoining residential lots on the north side than the back-of-house and loading areas for the supermarkets. The loading areas face Gubinge Drive where they are set back with a wide landscaping strip.

Parking is convenient and surrounds the centre on three sides. The centre is positioned close to the intersection where it is visible and can have prominent signage to passing traffic and the visitor market, particularly those at Cable Beach.

Figure 11—District Centre Concept Plan

Source: Development WA



# 4

## Market assessment

The catalyst to establishing the first stage of the District Centre is securing a major (or smaller mid-sized) supermarket to underpin and support a range of other shops and services. Without the supermarket, the centre is potentially limited to a Local Centre requiring a much reduced site area and providing a lower level of service to residents and a lower return to DevelopmentWA.

The brand and timing of the supermarket will depend on:

- The rate of population growth in North Broome and the extent to which (and when) a critical population mass is reached to support a viable supermarket.
- The network strategies and new store policies of major chains in establishing additional or new stores in remote (high cost) markets.

### 4.1 Population

As shown earlier, population growth in Broome has slowed significantly in the last five years to the extent that the 2015 (WA Tomorrow) population forecasts adopted in the LCS will not be realised in the short to medium term.

Low levels of growth are still occurring at Broome North although in recent years, gains in North Broome have been partly offset by population losses in central and south Broome.

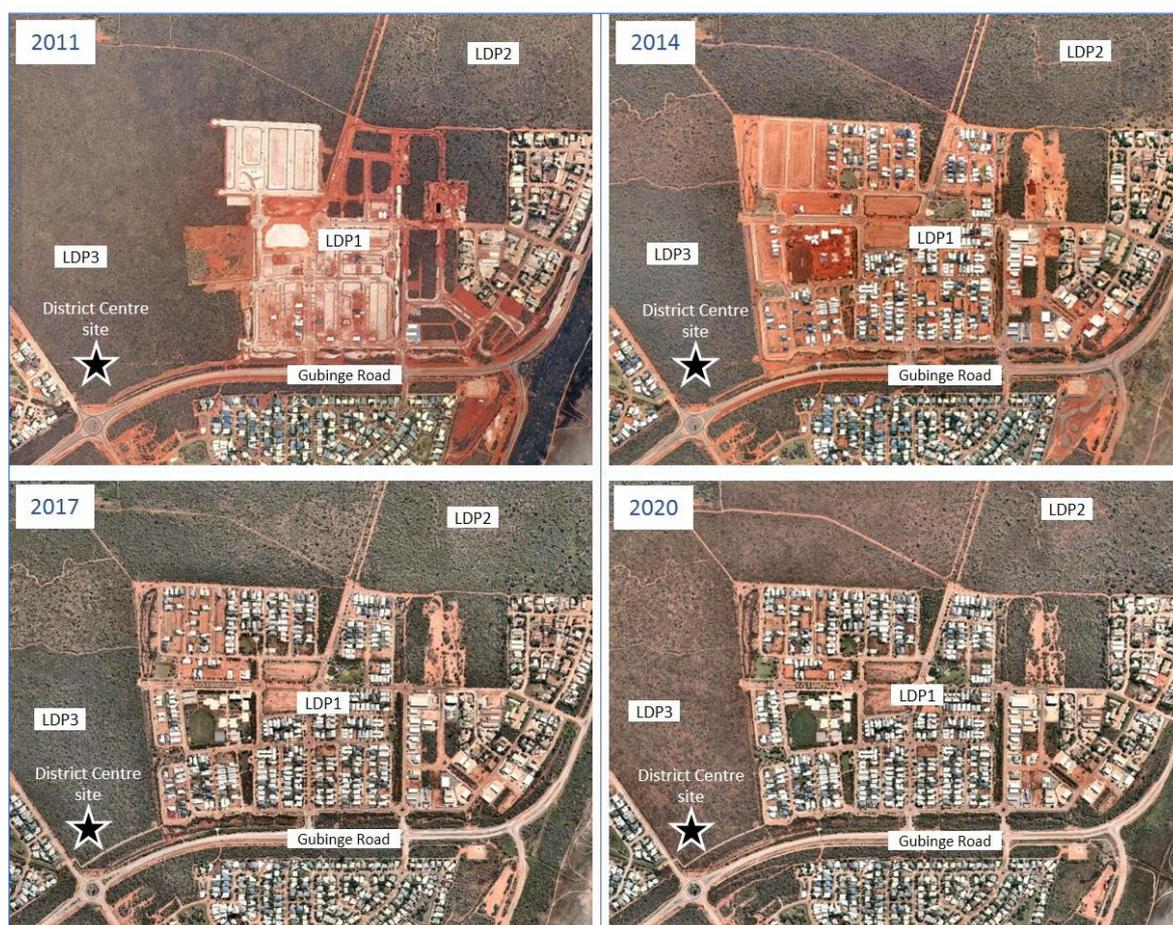
The first subdivisions of the Waranyjarri Estates (LDP1) at Broome North appeared in 2011 (refer Figure 12). Lots sales were strong for the first three years but have fallen since 2014. From 2011 to 2019, 431 lots have been sold with a further 41 remaining.

DevelopmentWA's sales budgets show the following:

- LDP1 will continue lot sales at low levels through to about 2027.
- 30 lots will be released on the Local Centre land from 2023-2025.

- Land sales in LDP2 (situated north of LDP1) will commence from about 2026 averaging 12 per year. LDP2 has a capacity of about 450 lots or 650 dwellings.
- LDP3 (west of LDP1) with a long-term capacity of 859 dwellings will begin lot sales in 2027 averaging about 12 per annum.

Figure 12—Waranyjarri Estate development



Source: Nearmap

Prior to 2011, lots were selling in the Cable Beach estate – as shown in the chart of historic and projected lot sales in Figure 13 – however the Cable Beach area has recently slowed as it reaches full development.

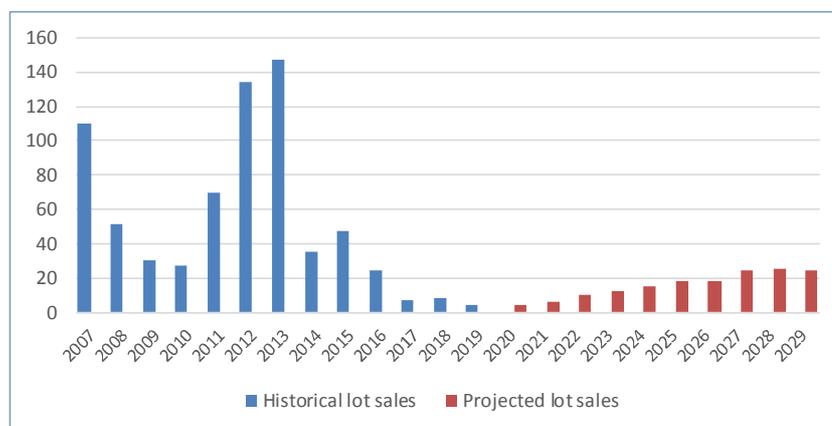
At the height of the resource construction boom in 2012 and 2013, lot sales were running at 130 per annum in LDP1 but fell sharply from 2014.

The chart highlights the low level of lot sales of less than 10 per annum from 2017 to 2019.

The projections from 2020 to 2029 assume a slow but steady recovery with about 156 sales (16 per annum) across the three LDP areas.

**Figure 13—Broome North historic & projected lot sales**

Source:  
DevelopmentWA



## 4.2 Local catchment area

A catchment area is defined for the District Centre site having regard to its isolated northern location, the pattern of urban development and connecting road networks and other supermarkets.

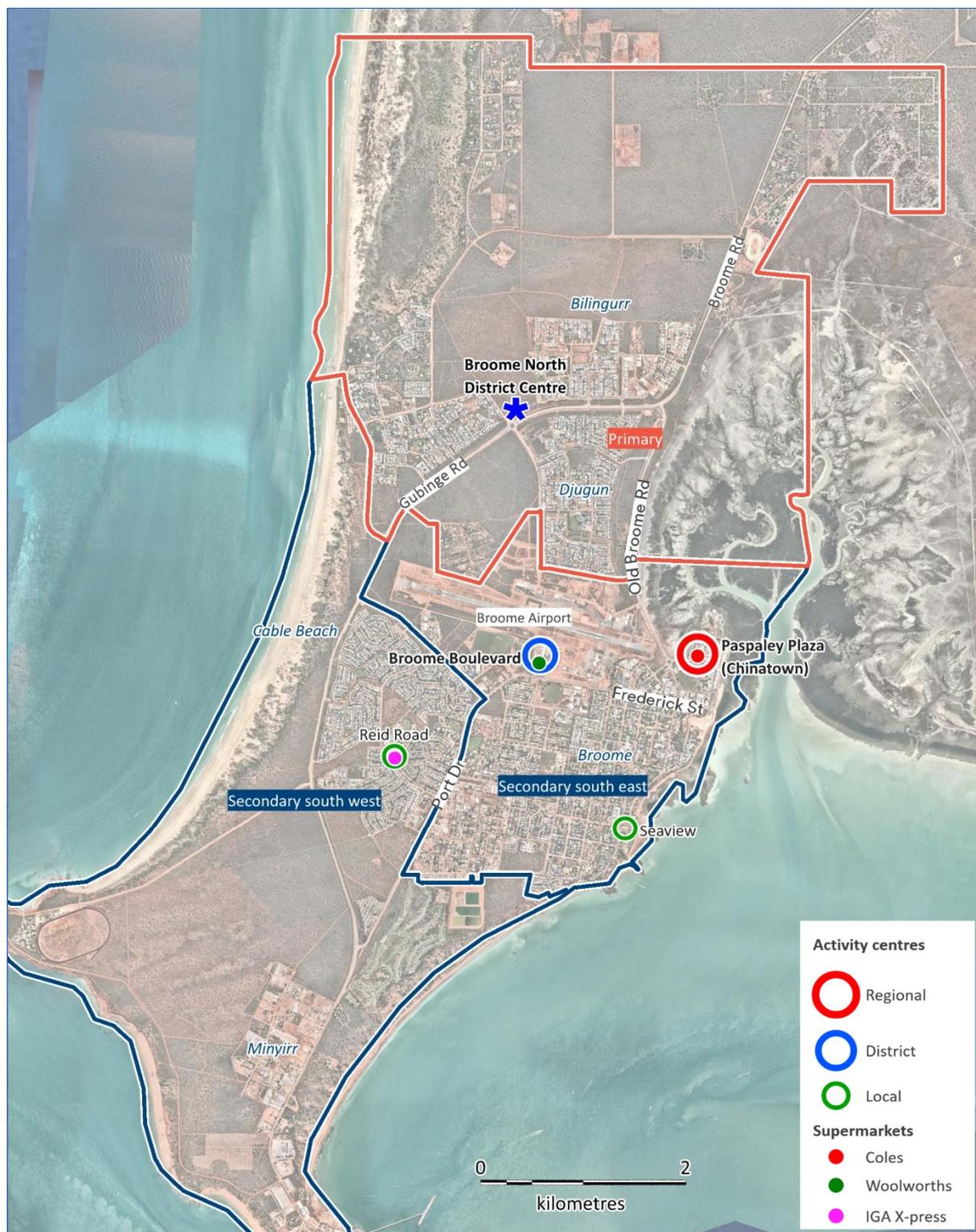
The catchment (refer Figure 14) includes a local Primary sector covering the residential areas north of the airport. The central and southern areas of Broome are divided into two secondary sectors – a secondary south-west which has relatively good access to Broome North via Gubinge Road and a secondary south-east which would be dominated by the existing supermarkets at Broome Boulevard and Chinatown.

### 4.2.1 Demographics

The demographic profile of the trade area sectors is detailed in Table 1 with comparisons to WA averages.

Characteristics that set the key Primary sector apart from the balance of the Broome urban area and Western Australia are a larger household size, much higher workforce participation levels, a younger age and family profile, significantly higher income levels, more homes under mortgage, a housing stock dominated by separate houses and higher levels of motor vehicle ownership.

Figure 14—Local catchment area



Source: ABS; Deep End Services

**Table 1—  
Catchment area  
demographic  
characteristics**

Source: Deep End  
Services; ABS

<b>Demographic characteristic (2016 Census)</b>	<b>Primary</b>	<b>Secondary south east</b>	<b>Secondary south west</b>	<b>Total catchment</b>	<b>WA</b>
<b><u>Persons and dwellings</u></b>					
Usual resident population	5,350	4,197	4,424	13,971	2,474,410
Total private dwellings	2,933	2,242	2,174	7,349	1,071,050
- % unoccupied	7%	13%	9%	9%	12%
Average household size	2.89	2.43	2.73	2.70	2.58
<b><u>Economic indicators</u></b>					
Participation rate	75%	56%	65%	66%	63%
Unemployment rate	4.1%	6.8%	4.2%	4.8%	7.8%
White collar workers	52%	45%	48%	49%	46%
Bachelor degree or higher	21%	14%	18%	18%	21%
<b><u>Age group</u></b>					
0-9	18%	13%	17%	16%	13%
10-19	11%	11%	13%	12%	12%
20-34	23%	23%	22%	23%	22%
35-49	26%	22%	23%	24%	21%
50-64	17%	22%	18%	19%	18%
65+	5%	9%	6%	6%	14%
Average age	32.5	36.4	33.3	33.9	37.7
<b><u>Annual income</u></b>					
Average individual income	\$69,642	\$53,233	\$59,183	\$61,638	\$54,427
Variation from WA average	28%	-2%	9%	13%	-
Average household income	\$133,652	\$92,031	\$107,136	\$112,897	\$101,089
Variation from WA average	32%	-9%	6%	12%	-
<b><u>Country of birth</u></b>					
Australia	84%	82%	83%	83%	65%
England	5%	4%	4%	4%	8%
New Zealand	3%	3%	3%	3%	3%
Philippines	1%	3%	2%	2%	1%
Other	8%	8%	8%	8%	22%
<b><u>Occupied private dwelling tenure</u></b>					
Fully owned	15%	17%	15%	15%	30%
Being purchased	32%	20%	28%	27%	41%
Rented	53%	63%	57%	57%	29%
<b><u>Dwelling type</u></b>					
Separate house	91%	68%	86%	83%	80%
Townhouse/semi-detached	7%	18%	4%	9%	14%
Apartment	2%	14%	9%	8%	6%
<b><u>Household composition</u></b>					
Couples with children	41%	20%	28%	31%	34%
Couples without children	29%	22%	26%	26%	28%
One parent family	8%	15%	15%	12%	10%
Lone person	18%	35%	25%	25%	24%
Group	4%	7%	5%	5%	4%
<b><u>Motor vehicle ownership per dwelling</u></b>					
None	3%	17%	6%	8%	5%
One	26%	37%	36%	33%	33%
Two	45%	31%	38%	38%	40%
Three or more	26%	15%	20%	21%	22%

#### 4.2.2 Population

The primary catchment currently has about **5,500 people**, with 4,500 people or 82% living within 1.5 km of the District Centre site.

The primary catchment area is projected to grow to **6,000 by 2029** which is approaching the population base that a supermarket would look at favourably. This level is clearly boosted by the tourist market.

The secondary sectors contribute about **8,900 people** today with low levels of growth.

**Table 2—  
Catchment area  
population**

Source: ABS; Deep  
End Services; WA  
Government

Year	Primary	Secondary south east	Secondary south west	Total catchment
2011	4,157	4,665	4,492	<b>13,314</b>
2012	4,559	4,740	4,644	<b>13,943</b>
2013	5,005	4,863	4,842	<b>14,710</b>
2014	5,187	4,695	4,757	<b>14,639</b>
2015	5,390	4,534	4,689	<b>14,613</b>
2016	5,568	4,365	4,602	<b>14,535</b>
2017	5,552	4,354	4,590	<b>14,496</b>
2018	5,529	4,339	4,572	<b>14,440</b>
2019	5,503	4,319	4,549	<b>14,371</b>
2020	5,484	4,304	4,533	<b>14,321</b>
2021	5,474	4,297	4,525	<b>14,296</b>
2022	5,474	4,297	4,525	<b>14,296</b>
2023	5,499	4,307	4,540	<b>14,346</b>
2024	5,559	4,322	4,565	<b>14,446</b>
2025	5,664	4,342	4,590	<b>14,596</b>
2026	5,774	4,367	4,620	<b>14,761</b>
2027	5,879	4,387	4,645	<b>14,911</b>
2028	5,979	4,407	4,670	<b>15,056</b>
2029	6,079	4,427	4,695	<b>15,201</b>
2030	6,179	4,447	4,720	<b>15,346</b>
2031	6,279	4,467	4,745	<b>15,491</b>
2032	6,379	4,487	4,770	<b>15,636</b>
2033	6,479	4,507	4,795	<b>15,781</b>
2034	6,579	4,527	4,820	<b>15,926</b>
2035	6,679	4,547	4,845	<b>16,071</b>
2036	6,779	4,567	4,870	<b>16,216</b>

#### 4.2.3 Retail spending

The current and projected food & grocery spending market generated by the resident population is shown in Table 3. All values are expressed in constant \$2020.

By 2029, food and grocery spending in the primary catchment of 6,000 people will be about \$42 million. Until a supermarket is established in North Broome most of this spending will be directed to Coles and Woolworths in central Broome with small proportions directed to specialty food shops and convenience stores.

**Table 3— Food & Grocery spending market (\$m, constant \$2019/20)**

Source: Deep End Services; ABS; Market Data Systems; Deloitte Access Economics

Year	Primary	Secondary south east	Secondary south west	Total catchment
2011	22.3	25.2	24.0	71.5
2012	24.9	26.0	25.3	76.2
2013	29.0	28.2	27.9	85.1
2014	30.4	27.6	27.8	85.7
2015	31.8	26.8	27.6	86.3
2016	33.3	26.2	27.4	86.8
2017	33.3	26.2	27.5	87.0
2018	33.9	26.9	28.0	88.8
2019	34.9	27.7	28.8	91.4
2020	36.9	29.2	30.4	96.5
2021	37.1	29.3	30.6	97.0
2022	36.7	28.9	30.2	95.8
2023	36.4	28.4	29.9	94.7
2024	36.7	28.3	29.9	94.8
2025	37.6	28.6	30.2	96.4
2026	38.8	29.0	30.7	98.5
2027	40.0	29.5	31.3	100.8
2028	41.3	30.0	31.9	103.2
2029	42.4	30.4	32.3	105.1
2030	43.5	30.9	32.8	107.2
2031	44.6	31.1	33.2	108.9
2032	46.3	31.9	34.1	112.3
2033	48.1	32.7	35.0	115.8
2034	50.0	33.7	36.1	119.8
2035	52.1	34.7	37.2	124.0
2036	54.3	35.7	38.4	128.4

### 4.3 Broome supermarket floorspace supply and demand

A general measure of the rate of supermarket floorspace provision in a catchment or other defined area is made by dividing the resident population into the total supply of floorspace (sqm) and expressing this as a rate (sqm) per person. When compared with city or state-wide benchmarks, the current or projected rate for a given area is a simple guide as to whether retail floorspace supply levels are relatively high or low before and after a proposed development.

Figure 15 shows the rates of supermarket floorspace provision for a range of regional cities in WA in 2020 based on their urban area populations. While Broome has a significant tourist and visitor market that would support supermarket floorspace to a larger extent than other cities, this influx of demand is offset by the very low regional population levels. In other regional cities, rural population levels support city supermarkets in the same way that tourists do at Broome. Similarly, other regional cities such as Kalgoorlie, Port Hedland and Karratha have lower tourist inflows but high FIFO workforces.

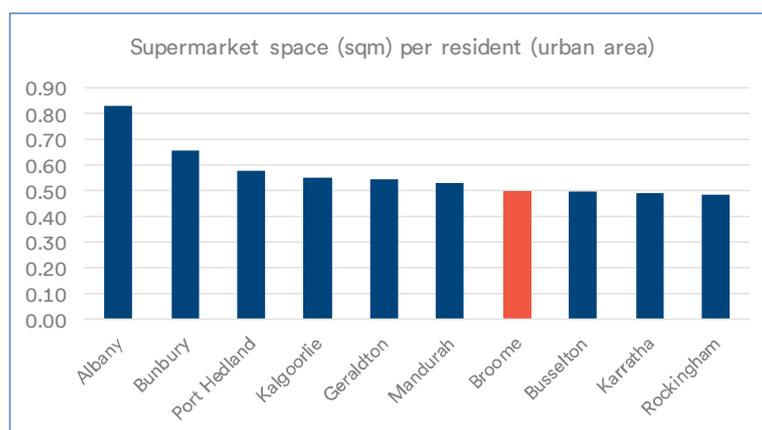
The rates are a useful comparison however local variations need to be considered.

In 2019, the Broome urban area had a population of 14,371 people and 7,371 sqm of supermarket floorspace yielding an average rate of provision of 0.5 sqm per capita. This rate is consistent with seven other regional cities in WA that have a rate between 0.49 sqm and 0.58 sqm per capita. Bunbury has a higher rate of 0.68 sqm

(with a large regional catchment) while Albany is known to be oversupplied at 0.83 sqm per capita.

**Figure 15—  
Supermarket  
floorspace per  
capita (2019)**

Source: Deep End  
Services



At the current rate (0.5 sqm per capita) or a higher level (say 0.6 sqm per capita), a third major supermarket of 3,500 sqm would need approximately 6,000-7,000 new residents to be supported. This is well in excess of the short-medium population forecasts for Broome.

With a 2030 population of approximately 15,340 and applying a rate of 0.6 sqm per capita, an additional 2,000 sqm of supermarket space could be supported in the next 10 years, in addition to the existing supply (7,179 sqm).

The simple analysis shows that:

- Broome appears to have an adequate supply of supermarket floorspace for its residents and the visitor market which boosts the permanent residents by about 33% during the year. The visitor market is important but should not be overstated. Visitors in commercial accommodation use in-house catering and have a higher propensity for restaurant and take away food spending. For this reason, the average visitor has a lower average spend on food & groceries than the average permanent resident.
- A new full-line supermarket before 2030 could trade at low levels and / or have high impacts on the existing supermarkets.
- The similar-sized city of Port Hedland (14,476) and larger city of Karratha (17,100) only have one Coles and one Woolworths store in each market. In both cities there are no IGA supermarkets or other sizeable independents. Where the market is shared (or indeed dominated) by the two major chains, there is little incentive or need to open a second supermarket, unless the existing stores are so busy that they have operational problems.

#### 4.4 Supermarket groups

There are unique challenges in operating supermarkets in the Kimberley – or any remote area of Australia. The particular difficulties are:

- High transport costs from distribution centres in Perth.
- Housing costs for regional and store managers.

- Higher building and maintenance costs.
- Higher security costs.
- Increased power use and short product life in hot and humid climates.

The higher cost base to run remote stores is not always recovered in higher prices meaning that gross selling margins and profitability are often lower. The implications are that supermarket groups will prefer to run higher volume stores to maximise sales (and profitability) per square metre.

The opening of new stores against existing stores in remote areas is more difficult to justify as sales are often cannibalised which marginalises profit and returns on investment.

Calls were placed to Woolworths and ALDI to determine their interest in the District Centre site.

Woolworths are aware of the potential opportunity but indicated they have no short to medium term interest in developing another supermarket in Broome. They indicate that their existing supermarket in Broome Boulevard is well-located and adequately catering to the market.

The Coles state property manager could not be contacted however we understand the Coles store in Chinatown trades at lower volumes than Woolworths at Broome Boulevard. This, together with Coles' more conservative position in opening remote stores would indicate that they, like Woolworths, would have limited interest in a second supermarket in the short to medium term.

The existing Coles is also, arguably, more accessible for the northern areas of Broome than the current Woolworths which would indicate that Coles would impact themselves more heavily (than Woolworths) if they opened at the District Centre site.

ALDI opened a store in Geraldton in 2019 which is currently their most remote store in Western Australia. Their current operating model is based on national pricing for all stores – that is, same prices per product irrespective of location. Given the high transport costs, a store in Broome is not currently viable unless a different pricing model is adopted.

There are no IGA supermarkets in north west WA large enough to anchor a District Centre site. The most northern stores of any size are at Geraldton where two Supa IGA's are operated by a single owner (Richter's). Karratha and Port Hedland have no IGA stores with just a small IGA Express in the Reid Road local centre in South Broome. Further north, there is a small IGA at Derby.

Broome is an unlikely location for an IGA operator to establish a large purpose-built supermarket remote from supply chains and other associated businesses.

#### 4.5 Indicative supermarket sales

Table 4 provides an assessment of indicative supermarket sales at the District Centre site for each opening year through to 2036. All values are at constant \$2020.

Estimated sales are derived by applying the market share assumptions in the table to the F&G spending levels in each year (refer Table 3) plus an additional proportion of sales (30%) from tourists and other shoppers from outside the trade area plus an allowance of 10% for non-food sales.

In our view, a minimum of \$35 million in sales would be needed before a major supermarket would consider the site. The operator would also need to allow for cannibalised sales from either their existing store in Broome.

This analysis confirms the findings of the supermarket floorspace supply and demand analysis and discussions with the supermarket groups that a supermarket is unlikely to be supported at the District Centre site for at least 10 years.

**Table 4—  
Supermarket sales**

Source: Deep End Services

Year	Market share of F&G spending (%)			Sales from beyond trade area	Non Food (% total sales)	Supermarket sales (\$m)
	Primary	Secondary south east	Secondary south west			
2021	40.0%	4.0%	9.0%	30.0%	10.0%	29.8
2022	40.0%	4.0%	9.0%	30.0%	10.0%	29.5
2023	40.0%	4.0%	9.0%	30.0%	10.0%	29.2
2024	40.0%	4.0%	9.0%	30.0%	10.0%	29.3
2025	40.0%	4.0%	9.0%	30.0%	10.0%	30.0
2026	40.0%	4.0%	9.0%	30.0%	10.0%	30.8
2027	40.0%	4.0%	9.0%	30.0%	10.0%	31.7
2028	40.0%	4.0%	9.0%	30.0%	10.0%	32.7
2029	40.0%	4.0%	9.0%	30.0%	10.0%	33.5
2030	40.0%	4.0%	9.0%	30.0%	10.0%	34.3
2031	40.0%	4.0%	9.0%	30.0%	10.0%	35.0
2032	40.0%	4.0%	9.0%	30.0%	10.0%	36.3
2033	40.0%	4.0%	9.0%	30.0%	10.0%	37.6
2034	40.0%	4.0%	9.0%	30.0%	10.0%	39.1
2035	40.0%	4.0%	9.0%	30.0%	10.0%	40.6
2036	40.0%	4.0%	9.0%	30.0%	10.0%	42.2

# 5

## Centre delivery

### 5.1 Timing and composition

The most realistic timing for a major supermarket at the District Centre site is no earlier than 2030.

On the assumption that a major supermarket is secured in the future, an indicative Stage 1 District Centre schedule of uses and areas is set out in Table 5.

**Table 5— Stage 1 District Centre**

Tenant	GLA (sqm)
Supermarket	3,700
Liquor	200
Bakery	80
Cafe	100
Take away food / restaurant (#4)	350
Pharmacy	300
News/lottery/gifts	100
Hairdresser / other beauty (#2)	180
<b>Total</b>	<b>5,010</b>
<u>Non retail</u>	
Medical centre	280
Gym.	200
<u>Pad sites</u>	
Child care	
Fuel / fast food / car wash	

The range of specialty shops and services will be quite narrow based on the local population base and the limited potential to attract residents from central and south Broome who have a closer and larger range of services at Broome Boulevard and Chinatown / Paspaley Plaza.

The shops will be limited to everyday needs and local grocery, liquor and take-away food options for tourists at Cable Beach or others travelling through Broome. The larger centres in central Broome will be preferred locations for visitors looking for restaurant meals, gifts, clothes and the broader cultural experiences of the city.

A stage 1 retail complex of approximately 5,000 sqm retail GLA provides for a full line supermarket and 10-12 specialty shops. This is large enough to provide a good range of services without directly competing with the larger centres on wider services and comparison shopping.

A medical centre and gym should also be planned as part of the centre or developed separately on their own sites.

Pad sites could also be created for a child care and possibly a fuel outlet or franchised fast food restaurant.

The challenges in leasing suburban neighbourhood-style centres in regional towns located outside the central area can be seen in several examples including:

- Hannan's Boulevard shopping centre located in the northern suburbs of Kalgoorlie, about 2km north of the CBD and with a local catchment of about 5,000 people. Today, 10 of the 16 mall-based specialty shops located with Coles are vacant.
- A new Coles at Orana in Albany was developed with no specialty shops despite ample land. This was to mitigate the risk on leasing small shops in outer areas.
- Elsewhere in Albany, Chester Pass Mall on the northern outskirts has 6 vacancies of 16 specialty shops located with Woolworths.
- In the southern suburbs of Geraldton, a new Woolworths was built at Wandina in 2017 with approximately 10 shops. The local catchment was about 7,000 people on opening.

Stage 2 of the District Centre is difficult to predict with any certainty and will depend on further population growth in the long term. Another period of resource and infrastructure development in the North West could see a return of strong housing growth that might bring forward stages of the centre.

At this point however, further stages can only be envisaged in small increments. In our view, a second supermarket or a discount department store (e.g. Kmart) seems many years away.

In all likelihood, if Kmart (Wesfarmers) saw an opportunity in Broome it would probably opt for a central location and in the short term, look to take over the existing Target premises in Broome Boulevard.

If a major supermarket looks to be delayed for many years an alternative and interim step could be the establishment of a local centre with a small range of (say) 5-7 shops. This could provide a basic level of service to residents however it may also present challenges with the establishment of costly infrastructure for a relatively small development, provide only a modest financial return to DevelopmentWA and the development (and ownership) could compromise a larger centre in the future.

One possibility might be a fuel site with franchised food and other convenience retail close and visible to the intersection. This could be packaged, sold and developed in a way that does not compromise the later development of the District Centre. The market demand and viability of a fuel site in this location would need to be tested.

## 5.2 Delivery model

While the case for the District Centre set out in the Local Commercial Strategy by 2030 is perhaps weaker now with the benefit of another three years of low population growth, the ultimate pattern and capacity of development across Broome North will ultimately support a supermarket-based centre.

The site is well-located to serve the northern areas when it can be justified by a major supermarket tenant.

The competitive tension on new sites between Coles and Woolworths is far weaker in remote markets, particularly where they both have a long-term and profitable presence in the town. Unfortunately, there are no substitutes to these operators to underpin a District Centre site.

It would seem appropriate to formalise the LCS recommendation by amending LDP3, as proposed. The general layout of the site in the TBB drawing gives enough flexibility to develop a range of options and configurations over time, as demand warrants.

## 5.3 Disposal

Unless there is a strong prospect that a major supermarket can be secured in the short term (within 3 years), the development industry will heavily discount the value on the District Centre site.

While stage one may be up to 10 years away, the land area set aside for an ultimate 2-stage centre – as shown in the Development Plan – would be vacant for many years beyond this.

The sharp fall in lot sales and Broome's population growth in the last 6 years would be evident in any due diligence process undertaken by purchasers and most would directly contact the major supermarket chains to establish their interest. On what we can see that interest will be low.

In our view, DevelopmentWA would realise a low average value across the site if it was sold in the short term. Any purchaser would need to adopt a long term horizon and be prepared to hold the site for many years.

