



23 November 2020

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

Our ref: 12516970
Your ref:

Dear Kylie

Broome North Water Management Strategies and Plans Broome North District Water Management Strategy - Review of DSP Amendment 2

1 Introduction

A District Water Management Strategy (DWMS) was previously prepared for the proposed Broome North development. GHD Pty Ltd developed the DWMS in conjunction with Sinclair Knight Merz Pty Ltd (SKM) in October 2009, with subsequent approval received by the (then) Department of Water.

This letter has been prepared to support the submission of the Broome North District Structure Plan (DSP) Amendment 2. This letter reviews the key changes to the DSP and outlines the relevant matters relating to the approved DWMS.

This DSP Amendment 2 area covers the area as shown in Attachment 1. The area is bounded by Broome Road to the east and Gubinge Road to the south.

2 Proposed DSP changes

The key changes proposed to the DSP include:

- Relocation of the local centre from the Stage 1 Local Development Plan (LDP) area to the Stage 3 LDP area in alignment with the Shire of Broome Local Commercial Strategy (Geografia and SITE Planning and Design 2017).
- Relocation of the District Open Space (DOS) from LDP2 to future LDP area to the north of Fairway Drive as per previous agreement as part of the Stage 2 LDP process.
- Inclusion of Bush Living area within north-eastern extent of DSP area.

3 DWMS 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.

The proposed changes to the DSP as summarised in Section 2 does not change the stormwater management at the district level. An overview of the proposed DSP changes in relation to district scale stormwater quantity management is provided in Section 3.1.

3.1 Stormwater quantity management

Stormwater management at the district scale is based on the following unchanged 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.
- 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.

Relocation of the local centre from Stage 1 LDP area to Stage 3 LDP area

The relocation of the local centre from LDP 1 to LDP 3 remains within the designated DWMS catchment 'Area 3' as depicted in the Broome North DWMS stormwater management plan (Attachment 2). The Broome North DSP Amendment 2 will retain the drainage corridors and drainage outlets that were designed to manage stormwater throughout the DSP area, and the relocation of the local centre will not change the stormwater quantity within catchment 'Area 3'. Therefore proposed change does not change stormwater management at the district level.

Relocation of the District Open Space from LDP2

The relocation of the DOS from LDP2 to future LDP area to the north of Fairway Drive does not materially impact the proposed district scale stormwater management within catchment 'Area 5. Local scale changes have been addressed within the approved Broome North LDP2 Local Water Management Strategy (GHD 2012), approved by the (then) Department of Water in June 2013.

Inclusion of Bush Living area

The Bush Living area depicted within the Broome North DSP Amendment 2 was included within catchment 'Area 5' of the Broome North DWMS stormwater management plan (Attachment 2). This area has retained its proposed use and is accounted for within district scale stormwater management, including preliminary sizing of drainage corridors and outlets.

3.2 Stormwater quality and best management practices

The principles for managing stormwater quality at the district scale remain unchanged from the DWMS with the stormwater system designed to treat flows in bioretention swales near the source of flows. Key stormwater management methods include:

- Vegetated swales and dry/ephemeral detention basins with weirs and low flow outlets to reduce water velocity and enable settling out of sediment load, and restoration of natural drainage pathways where possible.

- Integrate the swales with linear open space, for water quality improvement and public open space.
- Siting of sediment traps upstream of weirs and detention basins to promote sedimentation.
- Where possible, restoration of natural drainage pathways.
- Planting and regeneration of low-lying native vegetation for filtering of particulates and uptake of dissolved nutrients.
- Maintenance and education programs including street sweeping and removal of silt build up.
- A minimum of 0.3 m freeboard is required between the flood level of a 100 year average recurrence interval design event and the finished floor level of all buildings on the site.

3.3 Concluding comments

We trust this review letter clearly addresses how the proposed changes depicted in the Broome North DSP Amendment 2 do not result in substantive changes to the management of stormwater quantity and stormwater quality within the district development area. As such no changes are proposed to the Broome North DWMS to support submission of the Broome North DSP Amendment 2.

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

Sincerely
GHD



Kelsey Hunt

Senior Environmental Scientist
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Attachment 1 Broome North District Structure Plan (DSP) Amendment 2

Attachment 2 Broome North DWMS (2009) Development Plan – Drainage Catchment Plan (Drawing C011_C)

Attachment 1 – Broome North District Structure Plan (DSP) Amendment 2



LEGEND

STRUCTURE PLAN BOUNDARY

LOCAL SCHEME RESERVES

NATURE (Environmental Cultural Corridor)

NATURE (Open Space)

PUBLIC PURPOSES

ES Electricity Supply

HS High School

PE Private Education

PS Primary School

WS Water Supply

ZONES

CENTRE

URBAN LIVING

NEIGHBOURHOOD LIVING

BUSH LIVING

LIGHT AND SERVICE INDUSTRY

TOURISM

NEIGHBOURHOOD CONNECTOR

LOCAL ROAD CONNECTION

INDICATIVE ACCESS

MULTIPLE-USE OPEN SPACE CORRIDOR

OPEN SPACE BUFFER



PLANNING CONDITIONS

1. This District Structure Plan (Plan) applies to the land contained within the inner edge of the red line.
2. The purpose of this Plan is to describe the broad land uses (expressed as transect zones), the location of major service infrastructure, main movement systems and major conservation and recreation areas to guide the preparation of Structure Plans within the Plan area.
3. Residential density throughout the Plan area is expressed as a range for each of the relevant zones depicted on the Plan. The extent of the zones is indicative and not intended to describe the spatial boundaries of each zone. Specific residential density codes and land use within each of the zones will be applied by a Structure Plan prepared as a requirement of Part One Clause 4 of the Broome North District Structure Plan report.
4. The design of any lots and local streets depicted on the Plan is indicative and will be subject to further refinement and modification at the Structure Plan and subdivision stages respectively.
5. The location and design of Public Open Space (POS) depicted on the Plan is indicative and will be subject to further refinement and modification at the Structure Plan and subdivision stages respectively in accordance with the requirements of Liveable Neighbourhoods.
6. All tourism development on land identified for tourism purposes is to be guided by a Local Development Plan.
7. Appropriate land tenure arrangements are to be made for the protection and ongoing access to the Water Corporation's infrastructure contained within the Nature Reserve.
8. The District Movement Network realignments, closures and construction, including the roundabout access to the future Caravan Park on Fairway Drive and Sanctuary Drive, is to be at the developer's cost.

BASE INFORMATION

SOURCE: TBB
YYMMDD: 140814
DWG REF: ddpfl.pdf
SOURCE: REFLECTS AMENDMENT 1
VARIATION TO DWG NO: UDI 102
REV. N(25.02.10) BY ROBERTSDAY



SIZE A3 1:5000



B	MINOR TEXT MODS	200918	SB	DP
A	MODS TO OS AND PS	200911	SB	DP
REV	DESCRIPTION	YYMMDD	DRAWN	APPR'D

DISTRICT STRUCTURE PLAN AMENDMENT 2 (PLAN NO.1)

Broome North

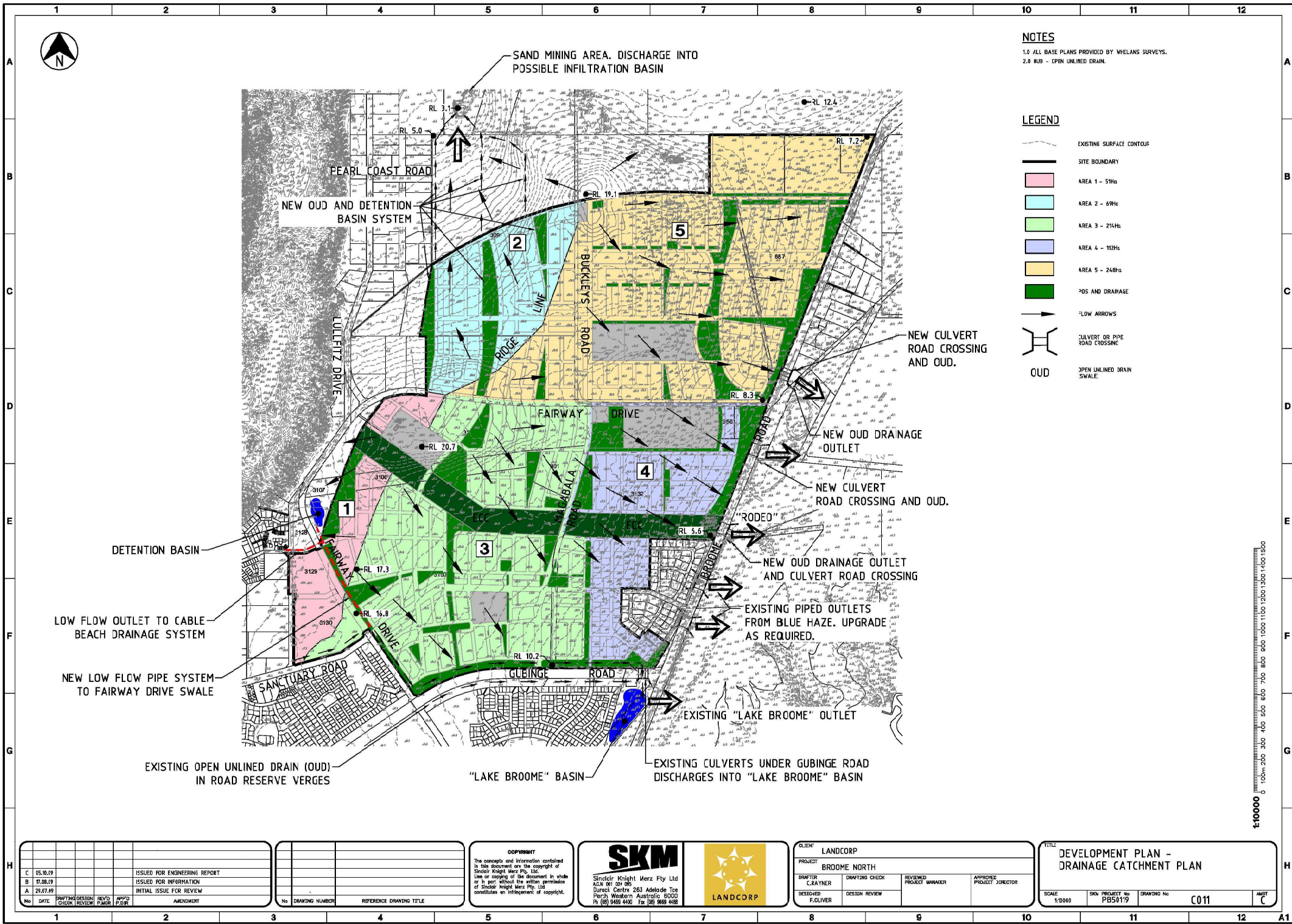
Shire of Broome

JOB CODE
LAN BRO

DRAW NO.
RD3 100

REV.
B

**Attachment 2 – Broome North DWMS (2009) Development Plan – Drainage Catchment Plan
(Drawing C011_C)**



NOTES

1.0 ALL BASE PLANS PROVIDED BY WHELAN SURVEYS.
2.0 RUG - OPEN UNLINED DRAIN.

LEGEND

- EXISTING SURFACE CONTOUR
- SITE BOUNDARY
- AREA 1 - 51Ha
- AREA 2 - 69Ha
- AREA 3 - 214Ha
- AREA 4 - 112Ha
- AREA 5 - 248Ha
- POS AND DRAINAGE
- FLOW ARROWS
- CULVERT OR PIPE ROAD CROSSING
- OU D
- OPEN UNLINED DRAIN SWALE

C	05.10.19					ISSUED FOR ENGINEERING REPORT	
B	17.08.19					ISSUED FOR INFORMATION	
A	29.07.19					INITIAL ISSUE FOR REVIEW	
No	DATE	DRAFTING CHECK	DESIGN REVIEW	REV'D P.M.R	APP'D P.D.R	AMENDMENT	

No	DRAWING NUMBER	REFERENCE DRAWING TITLE
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CLIENT	LANDCORP
PROJECT	BROOME NORTH
DRAWN	CLAYNER
DESIGNED	F.OLIVER
DRAFTING CHECK	
REVIEWED	
PROJECT MANAGER	
APPROVED	
DIRECTOR	

TITLE	DEVELOPMENT PLAN - DRAINAGE CATCHMENT PLAN
SCALE	1:10000
SKM PROJECT No	PB50119
DRAWING No	C011
AMT	C

1:10000
0 100m 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500