

Legend

- Survey Area Boundary
- Cadastral Lines

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2020
- OTHER DATA SOURCED LANDGATE 2020
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2020
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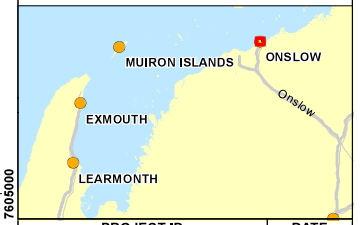
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LOCALITY MAP



PROJECT ID	DATE
4757	16/07/2021

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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LF	PD	PD	0

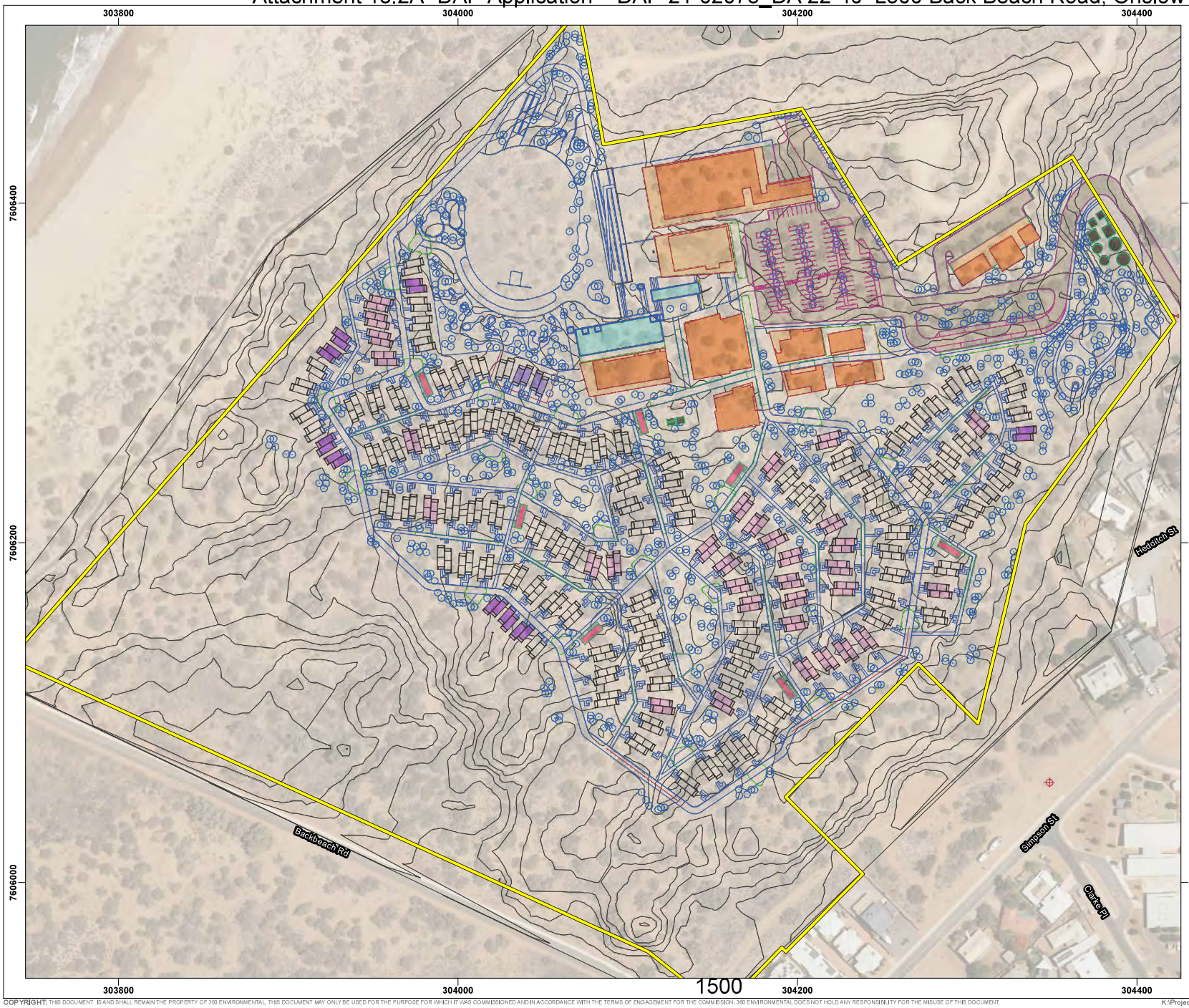
Rowe Group c/o Mineral Resources Limited
Lot 300 Back Beach Road, Onslow

Urban Water Management Plan

Figure 1
Survey Area

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K:\Projects\10_WAM\4757 Lot 300 Back Beach Rd, Onslow\4757 F01 Survey Area.mxd



Legend

- Survey Area
- BUILDING
- COVERED OUTDOOR SPACE
- SERVICES
- WATER BODY
- ROAD/CAR PARK
- FIELD STORE (WITH LAUNDRY)
- ACCOMMODATION PODS (SLEEPS 4)
- ACCOMMODATION PODS (SLEEPS 2)
- ACCESSIBLE ACCOMMODATION PODS (SLEEPS 2)

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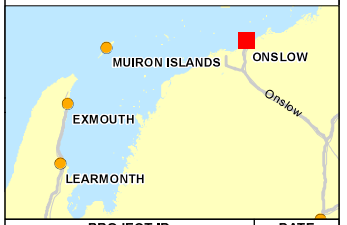
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Figure 2
Conceptual Master Plan

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Legend

- Survey Area Boundary
- Cadastral Lines
- Topographic Contour (mAHD - 2m Interval)

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Urban Water Management Plan

Figure 3
Topography

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Legend

- Survey Area Boundary
- Cadastral Lines

Soil Land System

- 201Du: Dune fields supporting soft spinifex and minor hard spinifex grasslands.

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GDA 1994 MGA Zone 50

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Urban Water Management Plan

Figure 4
Geology

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Legend

- Survey Area
- Cadastral Lines

Acid Sulfate Soils Risk

- High to moderate risk
- Moderate to low risk

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Figure 5
Acid Sulfate Soil

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Legend

- Survey Area Boundary
- Cadastral Lines

WIN Bores

- Groundwater Bore
- Surface Water Bore

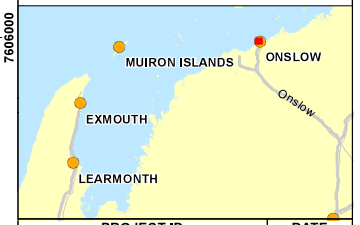
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LOCALITY MAP



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GDA 1994 MGA Zone 50

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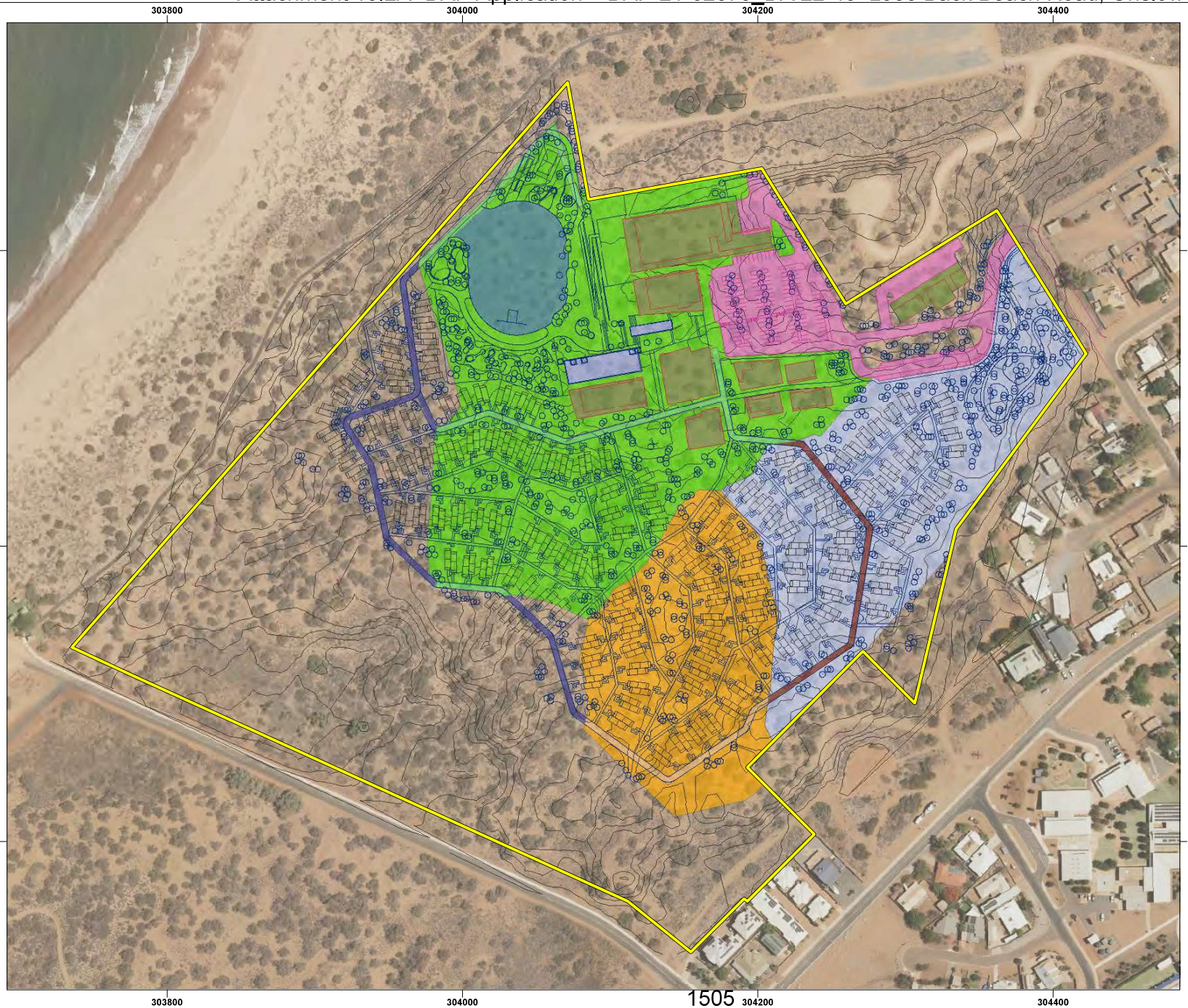
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Urban Water Management Plan

Figure 6
Groundwater

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Legend

- Survey Area Boundary
- Catchment A
- Catchment B
- Catchment C

Sub Catchments

- Access Track
- Building
- Oval
- Road
- Road A
- Road B
- Road C
- Swimming Pool

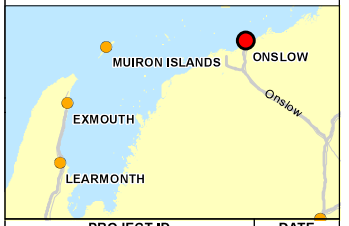
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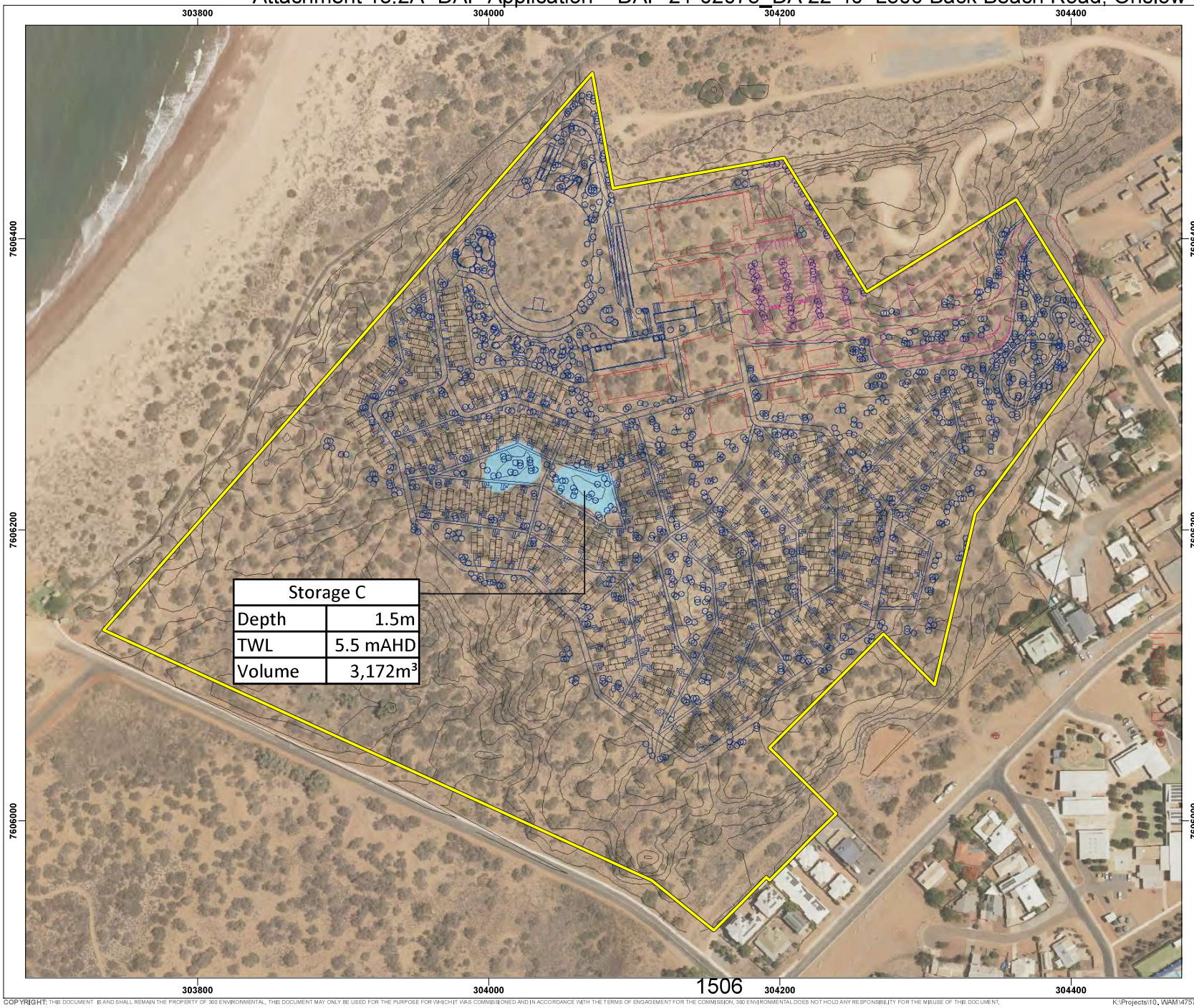
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Urban Water Management Plan

Figure 7
Modelled Catchments

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Legend

- Survey Area Boundary
- Storage C 20%AEP Inundation Extent

Indicative Site Master Plan

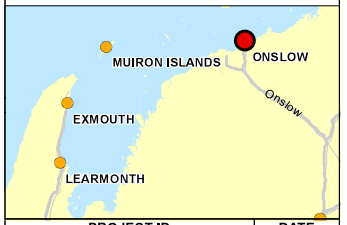
- Access and Parking
- Landscaping
- Accomodation Pods
- Buildings
- Topographic Contour

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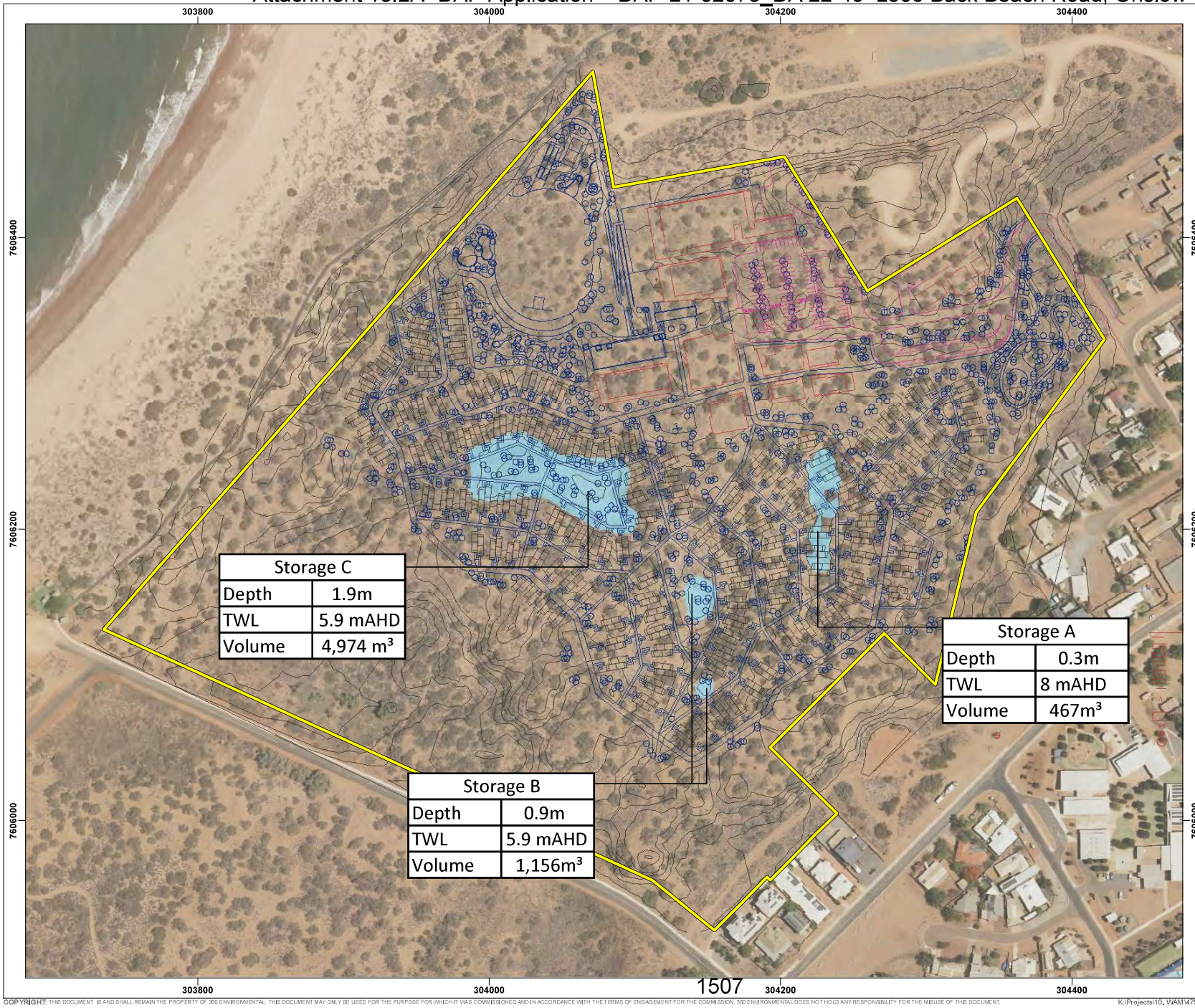
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Urban Water Management Plan

Figure 8
20% AEP Inundation Extent

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Legend

- Survey Area Boundary
- 1%AEP Inundation Extent

Indicative Site Master Plan

- Access and Parking
- Landscaping
- Accomodation Pods
- Buildings
- Major Topographic Contour

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LOCALITY MAP



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GDA 1994 MGA Zone 50

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Urban Water Management Plan

Figure 9
1% AEP Inundaton Extent

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K:\Projects\10. WAM\4757 Lot 300 Back Beach Rd, Onslow\4757 F09 1% AEP Inundation Extent.mxd

Appendices

Appendix A
Landscape Plan

ONSLOW TOWNSHIP VILLAGE LANDSCAPE

Mineral Resources Limited
PER21030.00



ASPECT Studios

ONSLOW TOWNSHIP VILLAGE

Prepared by:
ASPECT Studios
L1 / 191 St Georges Tce
Perth, WA, 6000

Prepared with:
Millieu Creative
L1 / 488 Stirling Highway
Peppermint Grove, WA, 6011

Prepared for:
Mineral Resources Limited
1 Sleat Rd,
Applecross WA 6153

Document Control

Job Number:	PER21030.00
Report Title:	Onslow Iron Ore Project
Revision:	B
Date Issued:	24.08.2021

ASPECT Team

Nicola Marunczyn
Tom Lucey
Jonathon Marshall
Tom Griffiths
Michael Rowlands



Contents

01. Introduction
02. Landscape Plans
03. Landscape Quality - Materials and Finishes
04. Planting Strategy

1.0 Introduction

The landscape design for the Onslow Township Village, has been prepared by ASPECT Studios in collaboration with Milieu Creative. The design responds to the scale, form and function of the architecture and local context in order to create a dynamic and engaging sequence of landscape spaces.

With the striking Pilbara landscape as a backdrop, the landscape design will showcase a mix of natives, exotic, and sensory plant species to support the proposed accommodation, sports fields, play, recreation and amenity spaces.

The landscape concept responds to the site's larger contextual relationship to the coastal landscape situated adjacent to Onslow Township , celebrating the vibrant, textured tones and layered vegetation.

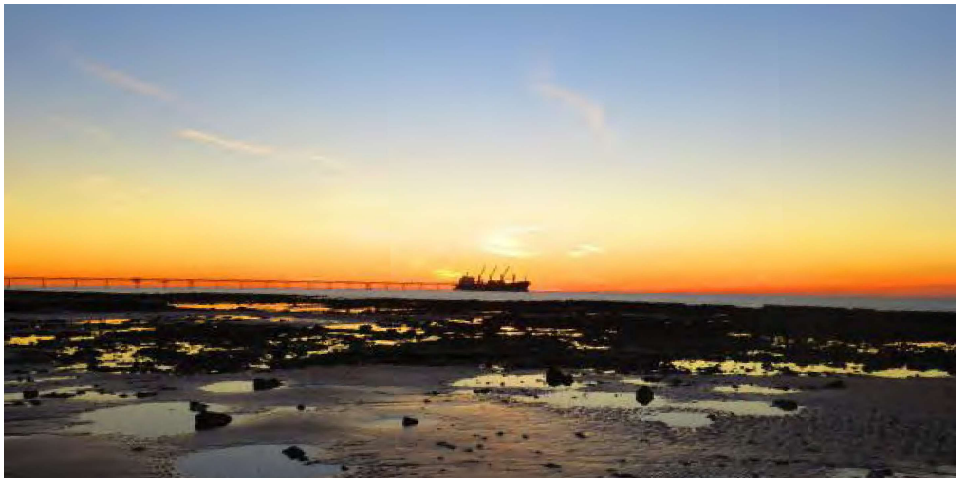
The public landscape spaces have been designed to provide a place where the community can gather for play and recreation catering for the needs of residents, visitors and the broader community.

The following general principles form the landscape approach to the site:

- Use high quality landscape design to integrate the proposed sporting development with broader active and passive recreational offerings;
- Develop a legible network of spaces that fully integrate with and connect to the surrounding context;
- Create spaces with varying characters and identities.
- Design spaces that will become activated and vital.
- Maximise opportunities for social interaction through arrangement of seating and views.
- Create a robust landscape made from proven materials and planting species, integrating bold forms that can be managed and maintained.
- Selection of local and native plant species that benefit surrounding ecologies.
- Ensure structural elements read as an extension of the architectural material palette and are integrated with the planting compositions.

The design of landscape considers the architectural design by Milieu Creative in both concept and materiality, with the intention of creating a cohesive transition from internal to external spaces.





1.1 Vision

Set on the western edge of Australia, Onslow Township Village will be a world class accommodation facility that contributes to the community and economic growth of the region.

The village will be designed as a high quality facility that sets a new benchmark for accommodation that promotes a healthy, active and sustainable lifestyle for workers and the local community.

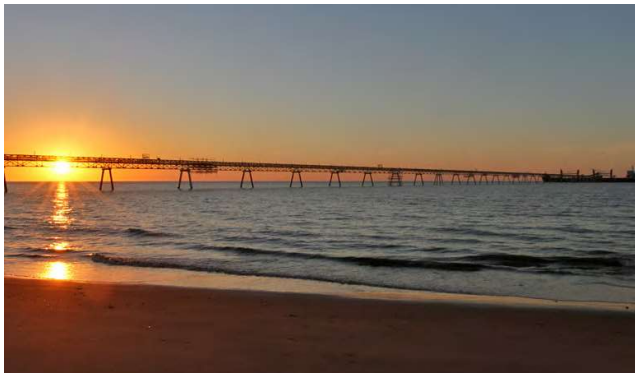
Inspired by the unique coastal landscape and sense of place the village will be designed to respond to the future vision of Onslow Town Centre and leave a lasting legacy for future generations.













1.3 Landscape Principles

The following design principles have been developed to guide the design of the village and surrounding landscape. Throughout the design process these principles will continue to inform and develop the landscape repsonse.

Celebrate the Site

- Celebrate the unique character of the site.
- Maximise visual, physical and symbolic connectivity to the local context.
- Touch the ground lightly

Connecting Community

- Create strong connections to community and the environment.
- Design to support social interaction and relationship building.

Healthy Active by Design

- Design comfortable and safe connections to promote incidental physical activity and access to nature.
- Provide formal or informal, natural and man-made landscape areas to support recreational, sporting and social activities.

Leave a Legacy

- Contribute to the "... Community vision that Onslow be a vibrant, sustainable and prosperous place for work, living and leisure - for both residents and visitors."
- Future proof the site for the next generation of users.

1.4 Landscape Approach

The landscape approach responds to the immediate context of the development area. A series of strategies have been developed that focus the development of the landscape design around key views, local character, the existing topography and integrating the architecture into the landscape.

Celebrate the Views

- Maximise the sites existing topography to retain the best views out to the horizon.
- Develop a strategy to ensure the accommodation and the common-use amenity retain views to significant vistas

Respond to the Local Character

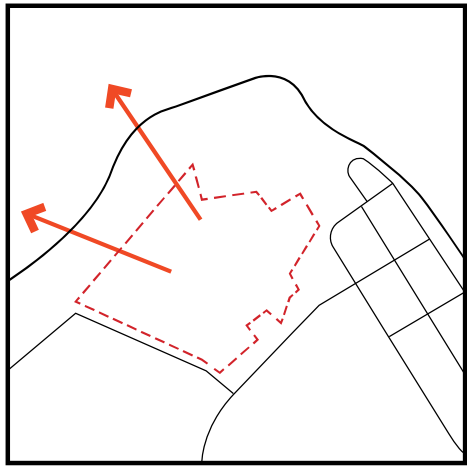
- Respond to the immediate social and environmental influences surrounding the site. Including the beach, Onslow townsite and cultural histories.

Touch the ground lightly

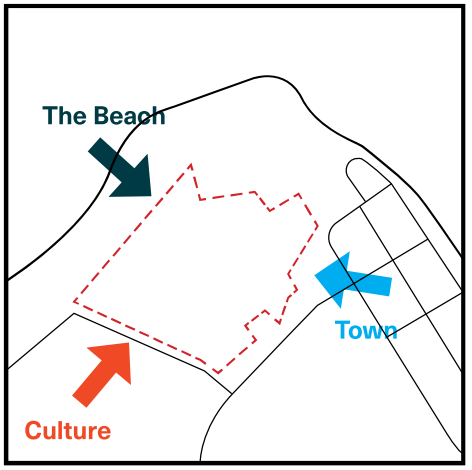
- Develop a strategy for pedestrian networks, accommodation pods and built amenity to minimize disturbance to the existing natural topography and ecologies of the site.

Integrate Landscape and Architecture

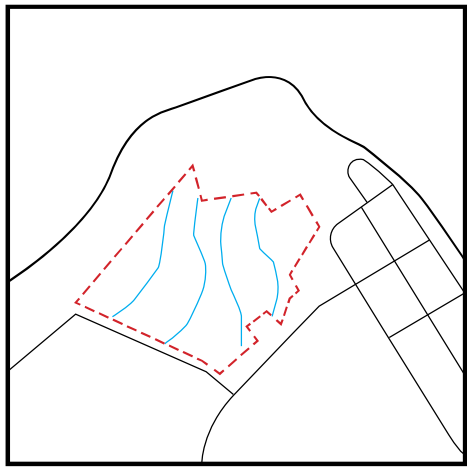
- Create a landscape-driven site response that informs the siting and location of proposed built infrastructure within the site.



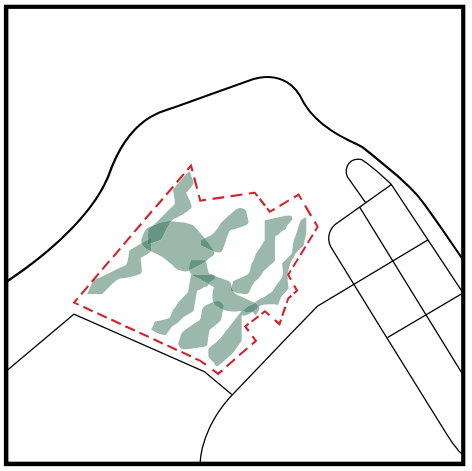
Celebrate the views



Respond to local character



Touch the ground lightly



Integrate landscape and Architecture

2.0 Landscape Plan

PROGRAM

1	Bus Stand (Pickup/Dropoff)
2	Sheltered Community Playground
3	Dedicated Dropoff (Small Vehicle, Short Term)
4	Terraced Entry Plaza
5	Water Feature
6	Recreation Turf
7	Outdoor Gym
8	Cricket Nets & Beach Volley Ball
9	Relax Zone (BBQ, Hammocks, Furniture, Shade Structure)
10	Mini Golf
11	Alfresco Deck With Terraced Embankment
11	Pedestrian / Maintenance Vehicle Access (with shade structures and comfort nodes)
12	Pedestrian Access (Boardwalk with shade structures and comfort nodes)
13	Security Fence
14	Entry Statement Wall

GENERAL

- Site Boundary

SURFACES

- Pedestrian Access Paving
- Plaza Paving
- Asphalt (Carppark)
- Asphalt (Maintenance Access)
- Composite Timber Boardwalk
- Fibre Reinforced Plastic Boardwalk
- Stabilised Gravel
- Pool

PLANTING

- Lawn
- Native Dune Mix Planting - Managed Sparse
- Native Swale Mix - Managed Sparse
- Native Shrub Mix - Managed
- Proposed Native Tree

- Refer to Civil Engineers drawings for grading plan



2.1 Community Playground & Entry

The entry road to the Onslow Township Village provides staff and guests with a high quality landscaped experience as they enter through a tree lined road. Water Sensitive Urban Design (WSUD) principles are incorporated into the design of the entry landscape, capturing water runnoff into the filtration garden beds and surrounding landscape.

South of the entry road and interfacing with the Onslow Townsite is the Community Playground. This space provides a publicly accessible parkland within the Onslow townsite. The park provides shaded recreation and play opportunities for locals and visitors to enjoy.

LEGEND

1	Treed Arrival Plaza With Furniture
2	Universal Access Ramp
3	Footpath
4	Play Area
5	Entry Statement
6	Security fence / Entry Wall











2.2 Amenity and Recreation Areas

The Amenity and Recreation Areas are characterised by a mix of high quality landscape surface treatments and softscape palette that lead guests and staff through the main amenities areas. Key vistas out to the ocean are celebrated through elevated landscape terracing, alfresco areas and the entry plaza. The design of the carpark incorporates WSUD principles to ensure large planted areas with tree planting occurs.

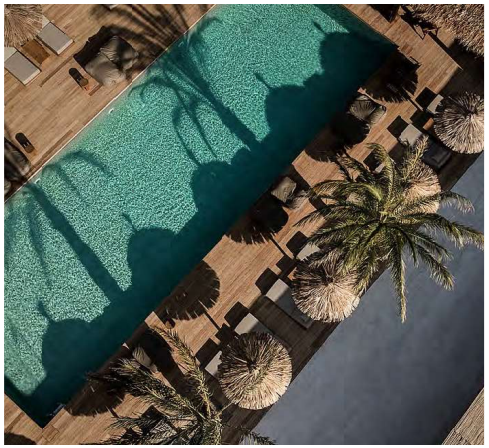
LEGEND

1	Carpark (Designed to Water Sensitive Urban Design principles)
2	Dropoff/Pickup Bays
3	Entry Plaza With Water Feature
4	Pool
5	Terraced Embankment With Universal Access
6	Alfresco Dinning
7	Access To Accommodation











2.3 Outdoor Amenity Areas

The outdoor amenities area provides guests and staff with a range of health and fitness opportunities in an outdoor setting. Universal access is provided through a network of high quality paved surfaces that link to the accommodation and administration areas.

The landscape design provides the following list of outdoor amenity;

LEGEND	
1	Outdoor Gym
2	Beach Volley Ball
3	Relax Zone (including hammocks and furniture in a garden setting)
4	BBQ and Shade Structures
5	Turf Kick-About Area
6	Cricket Nets
7	Mini-Golf
8	Pool











2.4 Accommodation Areas

The accommodation area has been designed to respond to the existing topography and ecology of the site. Minimising disturbance to the existing levels through a considered architectural and landscape response. An elevated boardwalk system extends through the area forming pedestrian circulation route that touches the ground lightly. Along the boardwalk network a series of comfort nodes are included to provide social spaces to experience the raw landscape in comfort. A hierarchy of boardwalks are achieved through primary access routes that provide direct linkages to the key extents of the accommodation, Secondary boardwalks provide more intimate linkages to guests accommodation.

A service and maintenance track doubles as a fitness and well-being loop for guests and staff to exercise by running or walking through the landscape.



LEGEND

1	Pod Accommodation
2	Primary Boardwalk With Shade Structures (3m wide)
3	Secondary Boardwalk With Shade Structures (2.5m wide)
4	Comfort Node with Furniture and Shade Structure
5	Laundry Service dropoff/pickup
6	Maintenance / Exercise Loop









3.1 Landscape Materials

Materials Strategy

A refined palette of robust and low maintenance materials are proposed that are in keeping with the project context and Architecture. The proposed landscape scheme will use a palette of high quality materials, selected to reinforce the identity of the spaces.

Materials have been selected that are sympathetic to the local context and are appropriate to their location and use. The materials detailed here form a structured palette that are coordinated to create visual unity and integrity within the landscape and the surrounding the Onslow neighbourhood.

The Material strategy will:

— Use materials that are sympathetic to the local context and are appropriate to their location and use.
— Create visual unity and integrity within the landscape but allow for variations in texture and colour that can be used to define function and character.
— Give consideration to long-term performance, durability and maintenance requirements.
— Consider impact on the environment and sourcing, cost and project sustainability.


Large format stone paver

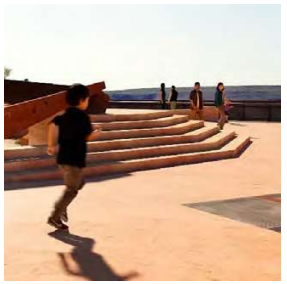

Concrete paving


Turf

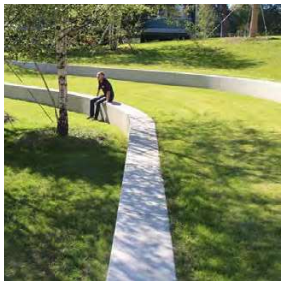

Stabilised pindan gravel


Composite timber


Stone boulders


Concrete steps


Asphalt


Concrete walls


RFP mesh boardwalk


Concrete inlay


Informal Seating

3.2 Planting Strategy

Planting Strategy

The planting scheme for the project is designed to add a strong well-vegetated character to the site and present a response that interfaces with neighbouring frontages and contributes to greater site ecologies. Landscape will be used to create identity through a series of contextually appropriate planting palettes. Guests and Staff will be able to experience the harshness and fragility of the Pilbara Coastal landscape through considered planting design.

Endemic plants will feature throughout the village which will help to restore and improve the health of degraded landscape areas within the development.

Entry and Recreation Areas

As guests enter the village they will be greeted with a tree lined access route that leads them to the arrival point at the administration and recreation area. Water Sensitive Urban Design principles are used throughout the entry and Recreation Areas and will feature low water demanding irrigated landscape areas. Bush fire Asset Protection Zones are strategical placed around the perimeter of the site with densities of trees, shrubs and ground covers in the locations designed to reduces the effect of bush-fires.

Accommodation Areas

The Accommodation areas are characterised by a mix of dunal vegetation that is characteristic of the immediate ecologies of the site. The planting intent is to restore the local vegetation complexes that exist within the dunal systems surrounding Onslow. This area will be irrigated with a mix of drip and spray irrigation. Other incentives within the accommodation areas include sswale planting within the low points of the site to maximise the filtration of overland water-flows

Low to mid-level planting to the perimeter of the site within the bush fire Asset Protection Zone will be designed to reduce the effect of bushfires while also blending the visual appearance between the development and the surrounding vegetation.

Water Efficient Irrigation System

Trees and plants will be irrigated by a water efficient irrigation system. The irrigation water demand volumes will not be excessive, however, a constant and uninterrupted supply must be maintained especially during dry and hot periods.

Where possible, plants will be hydro- zoned according to water requirements. This allows the reticulation to the endemic plantings to be separately controlled and greatly reduced following their establishment period.

The automated irrigation system can be designed to include monitors to detect malfunctions so that rapid response rectification can be programmed before the planting is detrimentally affected by a disruption to water supply.

A holistic irrigation strategy will be prepared for the project that aims to include the following initiatives:

- Aqua monitoring to record and display water usage
- Hydro-zoning of plants
- Waterwise planting and use of local species
- High quality and improved soils with good moisture and nutrient holding capacity







3.3 Planting

Indicative Species List

Endemic		
Key	**Botanical Name**	**Common Name**
TREES		
Taller than 10m		
	Acacia coriacea	Wirewood
	Adansonia gregorii	Boab
	Brachychiton obtusifolia	
	Eucalyptus camaldulensis	River Gum
	Eucalyptus vitrix	Smooth Bark Coolibah
	Eucalyptus xerothermica	
TREES		
Up to 10m		
	Acacia ampliceps	Salt Wattle
	Acacia citrinoviridis	Mulga Tree
	Bauhinia cunninghamii	Jigal Native Bauhinia
	Grevillea wickhamii	Wickham's Holly Grevillea
	Pittosporum phylliraeoides	Native Olive
LARGE SHRUBS		
Up to 4m		
	Acacia ancistrocarpa	Fitzroy Wattle
	Acacia bivenosa	Two Vein Wattle
	Acacia dictyophleba	Sandpaper Wattle
	Acacia trachycarpa	Minni Ritchi
	Capparis lasiantha	Spit Jack
	Capparis spinosa	Caper Bush
	Crotalaria cunninghamii	Green Bird Flower
	Eremophila fraseri	Varnish Bush
	Eremophila maculata	Spotted Emu Bush
SMALL SHRUBS		
Less than 2m		
	Acacia hilliana	Tabletop Wattle
	Acacia gregorii	Gregory's Acacia
	Eremophila cuneifolia	Pinyuru
	Eremophila microtheca	Heath-like Eremophila
	Indigofera monophylla	Indigo Plant
	Ipomoea yardiensis	Yardie Morning Glory
	Ptilotus exaltatus	Tall Mulla Mulla
	Ptilotus obovatus	Cotton Bush
	Scaevola crassifolia	Thick leaved Fan Flower
	Solanum lasiophyllum	Bush Tomato/ Flannel Bush
	Senna notabilis	Cockroach Bush
GROUND COVERS		
Less than 600mm		
	Gomphrena canescens	Bachelors' Buttons
	Ipomoea pes-caprae	Coastal Morning Glory
	Enchylaena tomentosa	Barrier Saltbush
	Ptilotus clementii	Tassel Top
	Solanum horridum	Wild Gooseberry
	Swainsona formosa	Sturt Desert Pea
	Swainsona maccullochiana	Ashburton Pea
Climbers		
	Canavalia rosa	Wild Jack Bean
	Ipomoea costata	Bush Potato
	Ipomoea pes-caprae brasiliensis	Goat's Foot Morning Glory
	Ipomoea muelleri	Poison Morning Glory
Grasses		
	Aristida contorta	Wind Grass
	Panicum decompositum	Native Millet









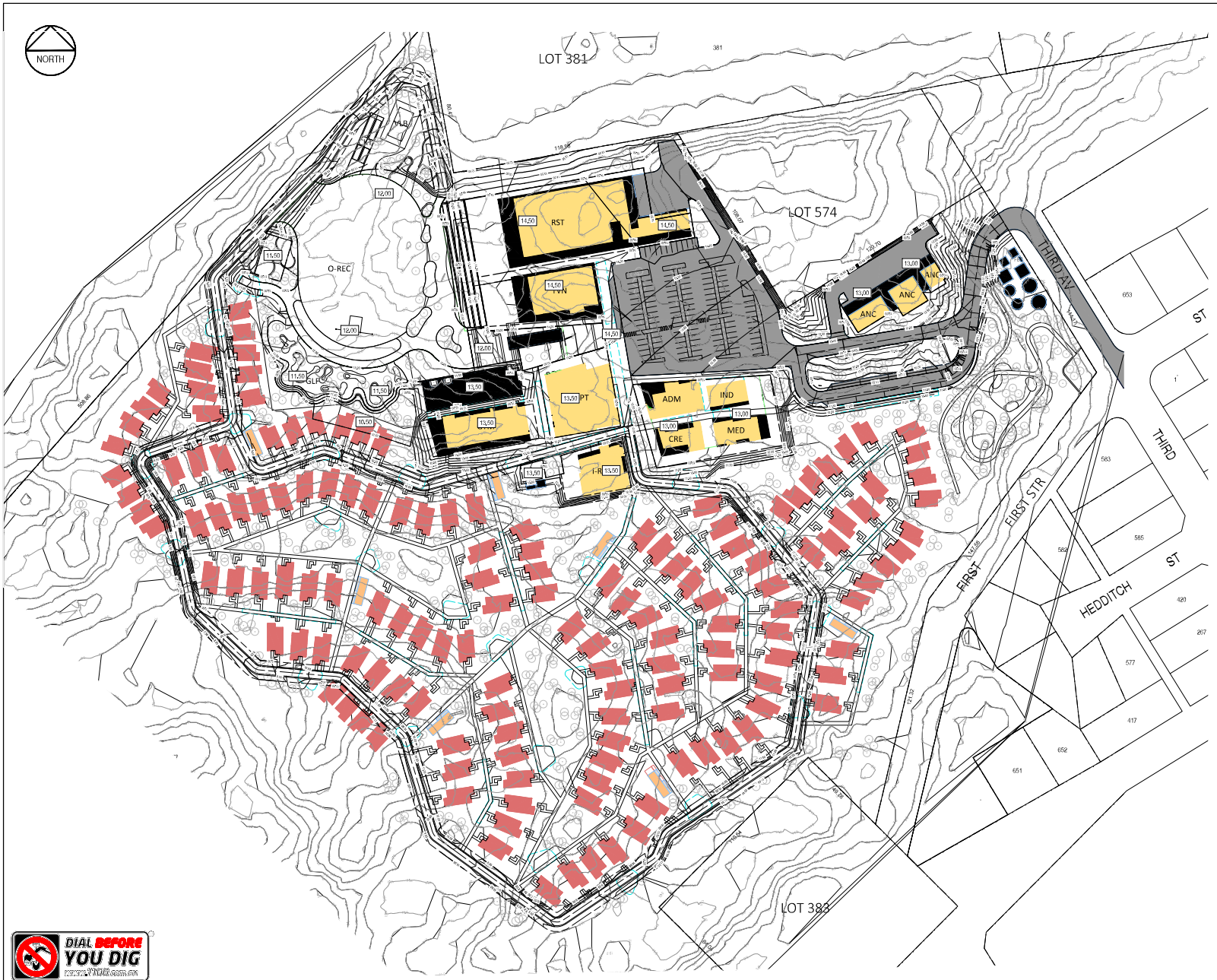









Appendix B
Engineering Design Plan



NOTES

1. ALL DIMENSIONS SHOWN ARE IN METRES U.N.O.
2. ALL CO-ORDINATES AND LEVELS SHOWN ON THIS DRAWING SHALL BE VERIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT WITH IN SEVEN DAYS.
3. SURVEY INFORMATION SUPPLIED BY BENCHMARK SURVEYS W.A..
4. ALL HEIGHTS ARE TO AUSTRALIAN HEIGHT DATUM (AHD) AND ALL LEVELS SHALL BE DERIVED FROM ESTABLISHED BENCHMARKS.
5. ALL BENCHMARKS ARE TO BE PROTECTED AND PRESERVED UNLESS NOTED ON PLANS.
6. FINISHED CONTOURS AND VOLUMES ARE TO ROAD BOXOUT.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND ALSO THE REQUIREMENTS OF THE SHIRE OF ASHBURTON.
8. THE CONTRACTOR SHALL LIAISE WITH ALL RELEVANT AUTHORITIES TO LOCATE ALL EXISTING SERVICES WITHIN THE CONTRACT AREA PRIOR TO THE COMMENCEMENT OF WORK. SERVICES INFORMATION SHOWN ON THE DRAWINGS IS INDICATIVE ONLY AND MAY NOT BE COMPLETE. WHERE EXISTING AND PROPOSED WORKS CONFLICT, LEVELS ARE TO BE TAKEN AND SUPPLIED TO THE SUPERINTENDENT IMMEDIATELY.
9. CONTRACTOR SHALL OBTAIN COUNCIL APPROVAL AND PAY ALL FEES/BONDS PRIOR TO COMMENCEMENT OF WORKS.
10. CONTRACTOR SHALL NOTE THAT NON-TRAFFICABLE SUBTERRANEAN STRUCTURES (SOAKWELLS ETC.) MAY EXIST ON SITE, PRIOR TO EARTHWORKS COMMENCING. CONTRACTOR SHALL LOCATE ANY SOAKWELLS, SEPTIC TANKS, DELETERIOUS MATERIALS AND OTHER SUBTERRANEAN STRUCTURES. THESE MATERIALS AND STRUCTURES ARE TO BE REMOVED AND THE LOCATION BACKFILLED IN ACCORDANCE WITH PROCEDURES SET OUT IN SPECIFICATION (IF APPLICABLE). THE SUPERINTENDENT IS TO BE ADVISED OF ANY UNUSED PIPE WORK ENCOUNTERED.
11. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING TO EXISTING LOTS AS REQUIRED.
12. THE CONTRACTOR SHALL PREPARE A DUST MANAGEMENT PLAN IN ACCORDANCE WITH THE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (D.E.C.) GUIDELINES SITE CLASSIFICATION 3 AND OBTAIN APPROVAL FROM THE LOCAL AUTHORITY FOR THE DUST MANAGEMENT PLAN.
    DUST SUPPRESSION METHODS SHALL BE APPLIED BY THE CONTRACTOR DURING EARTHWORKS OPERATIONS IN ACCORDANCE WITH THE APPROVED MANAGEMENT PLAN.
13. NO CLEARING TO OCCUR UNTIL SUPERINTENDENT HAS IDENTIFIED TREES TO BE RETAINED.
    13.a. ALL TREES TO BE RETAINED SHALL BE FENCED OFF FOR THE DURATION OF THE WORKS.
    13.b. ALL TREES AND VEGETATION NOT FOR RETENTION SHALL BE MULCHED AND STOCKPILED FOR REUSE OR REMOVAL AS NOTED.
14. THE CONTRACTOR SHALL MAINTAIN PROPER SITE DRAINAGE TO ALL AREAS THROUGHOUT THE CONSTRUCTION PERIOD AND SHALL BE RESPONSIBLE FOR MAINTAINING EXCAVATIONS IN A SAFE AND STABLE CONDITION AT ALL TIMES.
15. TOPSOIL IS TO BE STRIPPED AND MANAGED IN ACCORDANCE WITH THE SPECIFICATION OR AS NOTED ON THE DRAWINGS.
16. ALL ROOTS, BOULDERS AND ANY OTHER DELETERIOUS MATERIAL SHALL BE TOTALLY REMOVED TO A DEPTH OF 600mm BELOW THE LOWER OF THE NATURAL/CUT SURFACE.
17. MINOR AMENDMENTS TO THE EXTENT OF EARTHWORKS MAY OCCUR TO PRESERVE IDENTIFIED TREES.
18. ALL BATTERS TO BE NOMINALLY 1 IN 6, OR FLATTER, UNLESS SHOWN OTHERWISE (U.S.O.).
19. ALL FILL SHALL BE CLEAN AND BE FREE FROM DELETERIOUS AND/OR ORGANIC MATERIAL.
20. FILL MATERIAL TO BE TESTED BY A REGISTERED MATERIALS TESTING LAB AND RESULTS PROVIDED TO THE SUPERINTENDENT PRIOR TO THE IMPORTATION AND PLACEMENT OF MATERIAL.
21. PENETROMETERS USED FOR TESTING MUST BE CALIBRATED FOR SITE AND RECALIBRATED FOR IMPORTED FILL AS REQUIRED.
22. ALL FILL SHALL BE PLACED IN UNIFORM LAYER NOT EXCEEDING 300mm THICKNESS AND COMPACTED TO A DENSITY NOT LESS THAN 95% MAD.D.D. REFER TO SPECIFICATION FOR DETAILED INFORMATION.
23. CONTRACTOR TO COMPLETE ALL BACKFILLING AND EARTHWORKS REQUIRED TO ACHIEVE LEVELS SHOWN.
24. THE SITE IS TO BE LEFT CLEAN AND FREE OF RUBBISH/DEBRIS UPON COMPLETION OF WORKS.
25. TIE INTO ADJACENT BOUNDARIES AND FEATURES TO BE SEAMLESS.
26. 'AS CONSTRUCTED' DRAWINGS ARE TO BE PREPARED IN ACCORDANCE WITH THE SPECIFICATION AND PROVIDED TO THE SUPERINTENDENT PRIOR TO PROCEEDING TO THE NEXT STAGE OF WORKS.

LEGEND

- PROPOSED EARTHWORKS CONTOUR (1.0m)
- PROPOSED EARTHWORKS CONTOUR (0.50m)
- EXISTING SURFACE CONTOUR
- FINISHED PAD LEVEL

DIAL BEFORE YOU DIG www.1100.com.au The Essential First Step.

REV	DATE	DESCRIPTION	BY	CHKR
C	24/08/21	MINOR UPDATE	DL	AT
B	09/08/21	CONTOURS REVISED TO SUIT ARCHITECT COMMENTS	JS	AT
A	04/08/21	INITIAL ISSUE	JS	AT

pritchard francis
civil and structural engineering consultants
430 Roberts Road
Subiaco WA 6008
PO Box 2150
Subiaco WA 6904
Telephone: (08) 9382 5111
admin@pfeng.com.au

DRAWING STATUS	NOT FOR CONSTRUCTION
DATE	AUGUST 2021
GRID	MGA
DATUM	AHD
DESIGNED	JS
DRAWN	JS
CHECKED	AT
APPROVED	AT
SCALE (A1)	1:1000 @
JOB & JOB	MINERAL RESOURCES ONSLOW VILLAGE
TITLE	EARTHWORKS CONCEPT OPTION 2
SHEET SIZE	A1
DRG No.	21195-C9-SK-05
REVISION	C

Appendix H
Urban Water Management Plan Technical Note for Lot 300 Back Beach Road, Onslow

Date	2 May2022	**Job Number**	4757
Project	Lot 300 Back Beach Road Onslow UWMP		
To:	Mineral Resources Limited Pty Ltd		
From:	Nick Cahill and Shuchen Li, 360 Environmental		
Subject	Lot 300 Back Beach Road Onslow UWMP – Technical Note: New Master Plan Design Stormwater Criteria Compliance		

This technical note provides a review of the updated master plan layout for the development of Lot 300 Back Beach Road, Onslow. The updated Master Plan is provided in Attachment A. The purpose of this technical note is to demonstrate that the changes to the master plan do not constitute significant changes to the site, that would require an update to the Lot 300 Back Beach Road, Onslow Urban Water Management Plan (UWMP) (360 Environmental, 2021), and to demonstrate further that the updated master plan will comply with the design criteria established within the currently approved Lot 300 Back Beach Road, Onslow UWMP (360 Environmental, 2021).

Background

Mineral Resources Limited (the proponent) commissioned 360 Environmental Pty Ltd (360 Environmental) to produce an Urban Water Management Plan (UWMP) to support the development of Lot 300 Back Beach Road, Onslow (the site) into a transient workforce accommodation and associated uses.

The site covers an area of 20.45 ha and is located in the Shire of Ashburton. Back Beach Road bounds the site to the south and the Indian Ocean coast to the west. Residential development borders the site to the east and the Onslow Memorial Park to the north.

A stormwater management strategy was developed, which demonstrates that the site can effectively manage stormwater generated during the small, minor, and major rainfall events.

The design criteria for the management of stormwater for the site are:

- Maximise the retention of stormwater generated from the site during frequently occurring events
- Establish storage invert levels no lower than seasonal maximum groundwater levels

- Use infiltration systems for frequently occurring events to minimise mosquito breeding opportunities
- Implement non-structural controls
- Design a road drainage system so that roads are passable in the 20% Average Exceedance Probability (AEP) storm event
- Provide safe conveyance during the 1% AEP storm event from the site
- Set the habitable building floor levels at 0.5 m above 1% AEP flood levels.

The stormwater criteria for the site were met through the following management approach:

- First flush from the roads and car park will be treated at source or as close to the source as possible, using Water Sensitive Urban Design (WSUD) throughout the car parks and paved areas
- All other runoff from impervious areas will be directed, via overland flow paths, to natural depression storage throughout the site, as shown in the Lot 300 Back Beach Rd, Onslow UWMP
- On-site depression storage will maintain a minimum 500 mm clearance from the top water level (TWL) in the 1% AEP to the minimum habitable floor level of 6.4 m AHD as shown in the Lot 300 Back Beach Rd, Onslow UWMP (360 Environmental, 2021).

Changes to the Master Plan

The master plan for the site is provided in Attachment A.

The red hatched areas in **Figure 1** identifies the areas of the site that were previously impervious (roofs, hardstand, etc.), which have been replaced with pervious areas of the site.The change to the land use areas of the site and the percentage difference is identified in Table 1.

Table 1: Impervious area comparison

Land use type	Approved plan (ha)	Updated plan (ha)	Difference (%)
Impervious	2.65	2.38	-12%
Pervious	9	9.27	3%

As identified in Table 1, there is a reduction in impervious surfaces across the site of 12% and a 3% increase in the previous areas of the site.

The green hatched areas in **Figure 1** identifies the areas of the accommodation pods amendment, of which 40 units have decreased.

Results of Changes to the Master Plan

The results of the reduction in impervious areas of the site will be to:

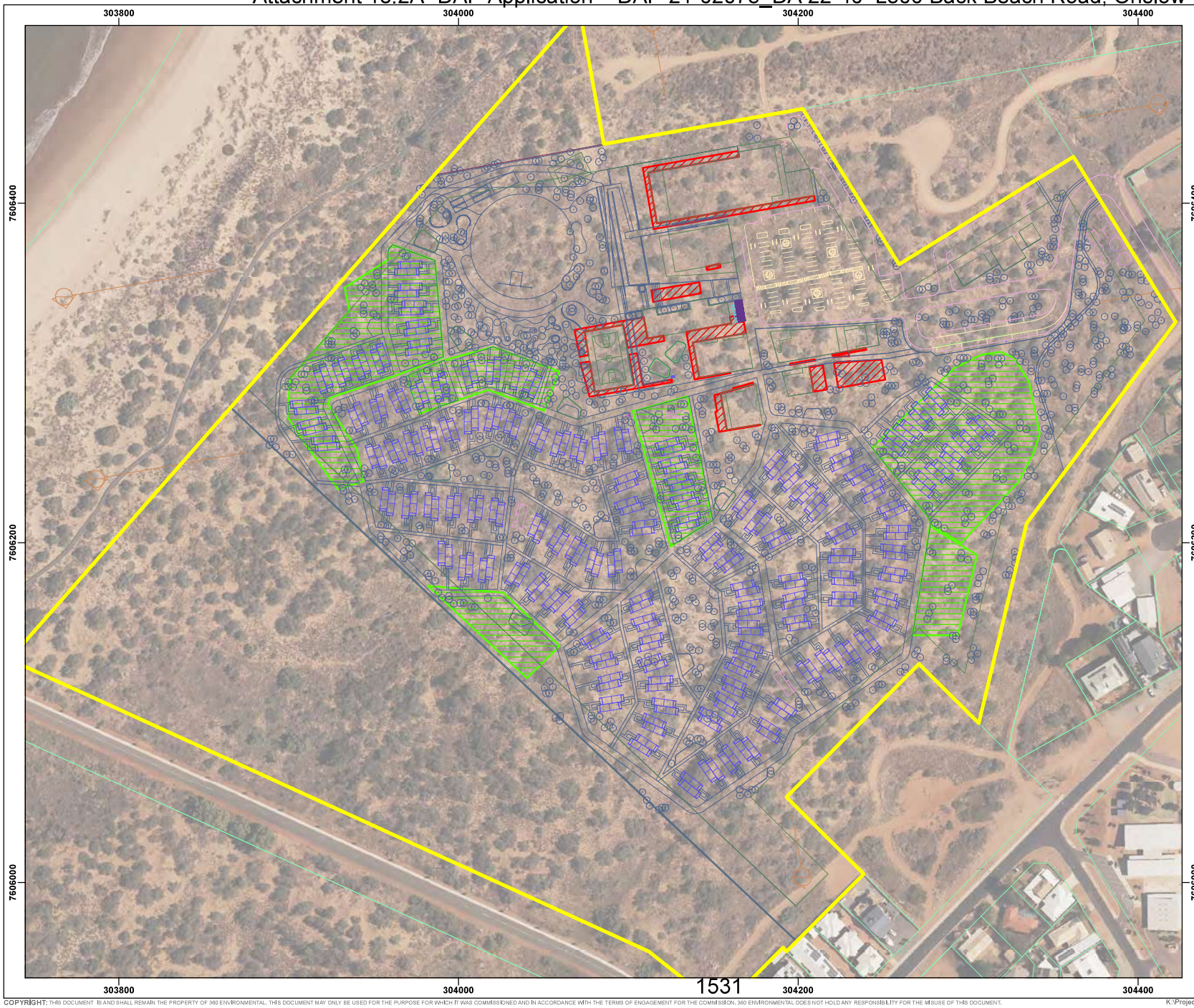
- Reduce runoff
- Increase infiltration at source

- Reduce TWLs in natural depression storage across the site
- Reduce the volume of overflow from natural depression storage to the downstream receiving environment during the major storm event
- Reduce flow rates from the natural depression storage to the downstream receiving environment during the major storm event.

Conclusion

Based on the analysis of the changes to the master plan for the proposed development at Lot 300 Back Beach Road, Onslow, the site will still comply with the stormwater design criteria stipulated in the approved Lot 300 Back Beach Road, Onslow UWMP (360 Environmental, 2021). Therefore, no proposed changes or updates to the existing approved UWMP are recommended.

Attachments
Figure 1 Conceptual Master Plan Comparison
Attachment A Site Master Plan



Legend

- Site Boundary
- Recreation Amendment
- Residential Amendment

New Conceptual Plan

- 210729_Traffic_dwg _2_
- 210809_Lot Boundaries_dwg
- 220304_Landscape_dwg
- A-DETL
- A-DETL-THIN
- A-GENM
- A-GLAZ-CWMG
- A-ROOF
- C-PROP-LINE
- G-ANNO-SYMB
- I-FURN
- L-SITE

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2020
- OTHER DATA SOURCED LANDGATE 2020
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2020 (© Western Australian Land Information Authority 2020)

SLIP ENABLER

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0 12.5 25 50 75 Meters

1:3,000 @ A4

N

LOCALITY MAP



PROJECT ID	DATE
4757	29/04/2022

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
CL	LSC	LSC	0

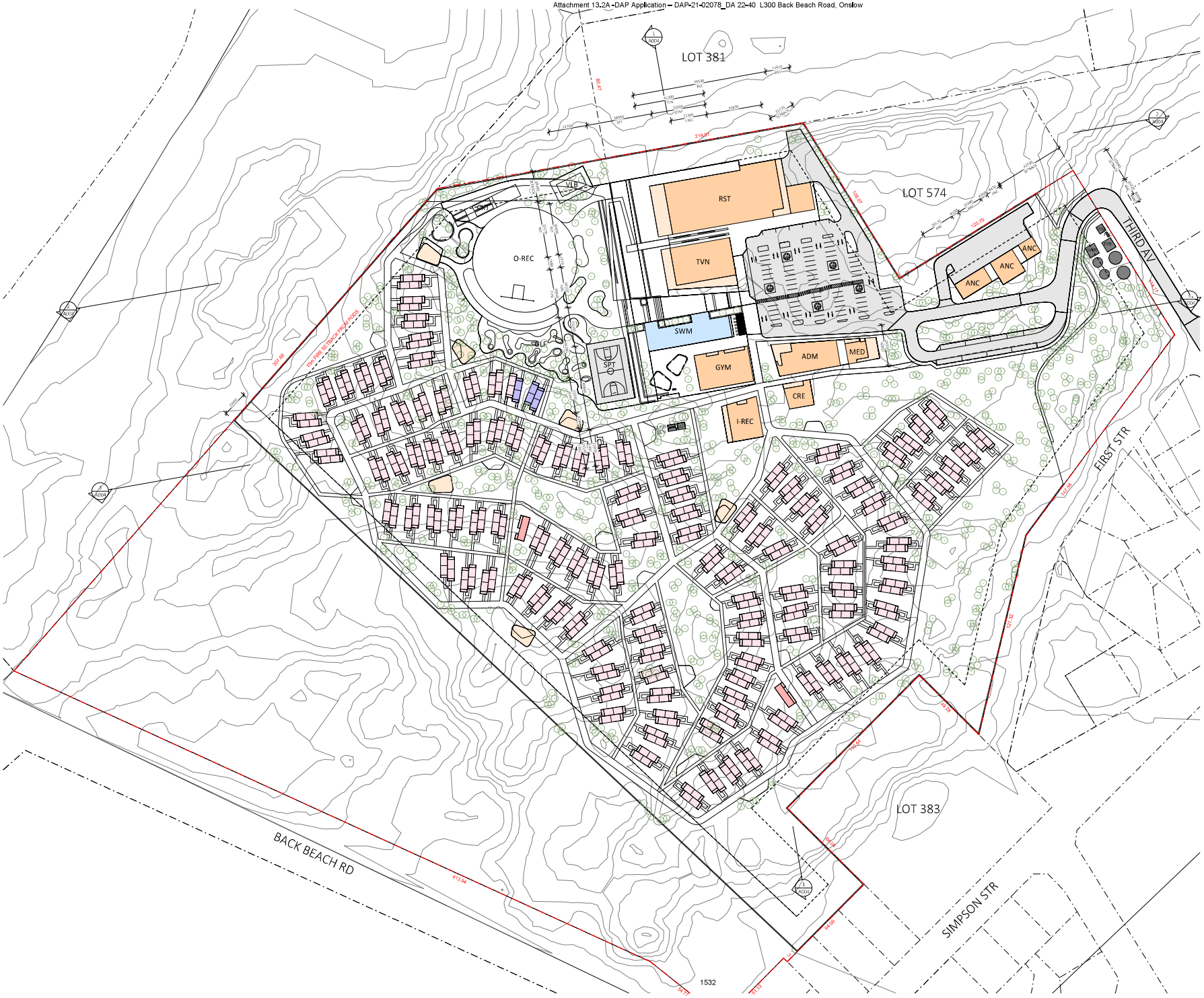
Rowe Group c/o Mineral Resources Limited
Lot 300 Back Beach Road, Onslow

Urban Water Management Plan
Technical Note

Figure 1
Conceptual Master Plan Comparison

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K:\Projects\10_WAM\4757 Lot 300 Back Beach Rd, Onslow\4757 Plan Coparison.mxd



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SYMBOL LEGEND

- SITE BOUNDARY
- BUILDING
- COVERED OUTDOOR SPACE
- UNCOVERED OUTDOOR SPACE
- SERVICES
- WATER BODY
- ROAD/CAR PARK
- FIELD STORE (WITH LAUNDRY)
- ACCOMMODATION PODS (SLEEPS 4)
- ACCESSIBLE ACCOMMODATION PODS (SLEEPS 2)
- EXISTING WATER CONNECTION POINT
- EXISTING SEWER CONNECTION POINT
- PLANTING - REFER LANDSCAPE DRAWINGS FOR DETAILS
- 15m FIRE SETBACK FROM PODS

CODE LEGEND

ADM	ADMINISTRATION
AMN	AMENITIES
ANC	ANCILLARY - GATE HOUSE, SURVEILLANCE HUT & STORES
CET	OUTDOOR CRICKET
CRE	CRECHE & COMMS
FBC	FIRE BOOSTER CABINET
FPR	FIRE PUMP ROOM
GEN	GENERATOR
GLF	MINI GOLF
GYM	GYM/AQUA & SWIMMING FACILITY
IND	TRAINING & INDUCTIONS
IRM	INTAKE RING MAIN
I-REC	INDOOR RECREATION
LDR	LAUNDRY, CLEANING & STORE
MED	MEDICAL & WELLNESS
O-REC	OUTDOOR RECREATION
RST	RESTAURANT
SMSB	SITE MAIN SWITCH BOARD
SPT	MULTI-PURPOSE COURTS
SUT	STEP UP TRANSFORMER
SWM	SWIMMING POOL
TVN	TAVERN
VLB	OUTDOOR VOLLEYBALL
WPR	WATER PUMP ROOM

NO.	DATE	DESCRIPTION
K	08/03/22	REVISED DA ISSUE
J	17/01/22	REVISED FOR VALUE ENGINEERING
I	11/01/22	REVISED FOR VALUE ENGINEERING
H	17/12/21	ISSUE FOR INFORMATION
G	08/12/21	ISSUE FOR STAGING
F	24/11/21	REVISED FOR DEVELOPMENT APPLICATION
E	31/08/21	DA ISSUE
D	26/08/21	ISSUE FOR INFORMATION
C	18/08/21	ISSUE FOR PRICING
B	10/08/21	DRAFT DA ISSUE
A	04/08/21	ISSUE FOR INFORMATION

ISSUE

DEVELOPMENT APPLICATION

miliēu creative
L1, 681 STIRLING HIGHWAY, PEPPERMINT GROVE, WA 6011
milieucreative.com

PROJECT
LOT 301, BACK BEACH ROAD
ONSLOW WA 6710

PROJECT NAME
ONSLOW TOWNSHIP VILLAGE

DRAWING
SITE MASTER PLAN

DRAWN	SCALE	DATE	REVISION
Author	1 : 1000	03/12/21	K
CHECKED	SHEET	PROJECT NO	
Checker	A1	21060	

DA002

360 environmental

10 Bermondsey Street West Leederville WA 6007 **t** (+618) 9388 8360 **f** (+618) 9381 2360
PO BOX 14, West Perth WA 6872
w 360environmental.com.au **e** admin@360environmental.com.au

people • planet • professional



Legend

- Site Boundary
- Development Envelope
- Proposed Clearing Area (14.52 ha)
- No Clearing (5.93 ha)

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED LANDGATE 2022
- OTHER DATA SOURCED LANDGATE 2022
- AERIAL PHOTOGRAPHY SOURCED LANDGATE 2022
(© Western Australian Land Information Authority 2022)

SLIP ENABLER

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w www.360environmental.com.au

0 50 100 150 Meters
1:4,215 @ A4
N

LOCALITY MAP



PROJECT ID	DATE
4755	07/04/2022

HORIZONTAL DATUM AND PROJECTION
GDA2020 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
CL	GA	GA	0

Mineral Resources Limited
Lot 300 Back Beach Road Onslow

Environmental Assessment Report

Figure
Indicative Clearing Area

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K:\Projects\9,0 APP\4755 Lot 300 Back Beach Road Onslow EAR\4755 F01 Indicative Clearing Area.mxd

13.2B -DAP Application 21-02078_DA 22-40 L300 Back Beach Road, Onslow

BACK BEACH ROAD (LOT 300) ONSLOW – TRANSIENT WORKFORCE ACCOMMODATION (500 PERSONS)

Form 2 – Responsible Authority Report
(Regulation 17)

DAP Name:	Regional Joint Development Assessment Panel	
Local Government Area:	Shire of Ashburton	
Proposed Amendments:	Condition Wording Amendments and Minor Building Modifications	
Applicant:	Rowe Group	
Owner:	Buurabalayji Thalanyji Aboriginal Corporation RNTBC	
Value of Amendment:	Not Applicable for this Application	
Responsible Authority:	Shire of Ashburton	
Authorising Officer:	Ty Matson	
LG Reference:	DA 22-40	
DAP File No:	DAP/21/02078	
Date of Original DAP decision:	23 December 2021	
Application Received Date:	3 June 2022	
Application Statutory Process Timeframe:	60 Days	
Attachment(s):	1. Planning application and Covering Letter 2. Certificate of Title 3. Amended Development Application plans and Fencing Plan 4. Environmental Assessment Report and Bushfire Management Plan 5. Landscape Plan 6. Traffic Reporting 7. Electrical, Fire, Hydraulic and Mechanical Reporting 8. Sustainability Memo 9. Waste Management 10. Servicing 11. Coastal Management Plan 12. Schedule of Submissions 13. Correspondence Letter – dated 15 February 2022 14. Amended Conditions Schedule	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	☐ Yes ☒ N/A	Complete Responsible Authority Recommendation section
	☐ No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Regional Development Assessment Panel resolves to:

1. **Accept** that the DAP Application reference DAP/21/02078 as detailed on the DAP Form 2 dated 1/06/2022 is appropriate for consideration in accordance with regulation 17 of the *Planning and Development (Development Assessment Panels) Regulations 2011*;

2. **Approve** DAP Application reference DAP/21/02078 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of the Shire of Ashburton Local Planning Scheme No. 7, for the proposed minor amendment to the approved DA 21-67 | DAP/21/02078 at Lot 300 Back Beach Road, Onslow, subject to the following details:

   DA002 – Site master plan - Rev. K
   DA003 – Site plan – North East_Rev. F
   DA004 – Site Sections. D
   DA005 – Site Fencing Schedule – Rev A
   DA100 – ADM, IND, CRE & MED – Floor plan and elevations. H
   DA101 – ADM, IND, CRE & MED – Roof plan. G
   DA200 – RST & TVN – Floor plan. G
   DA201 – RST & TVN – Elevations. G
   DA202 – RST & TVN – Roof plan. E
   DA300 – GYM & SPT – Floor plan & elevations. G
   DA301 – I-REC – Floor plan & elevations. G
   DA302 – GYM, SPT &I-REC – Roof plan. E
   DA400 – ACCOM & LDRY POD – Floor plan & elevations. F
   DA500 – ANC – Floor plan & elevations. D
   DA600 – Visualisations. C
   DA002 – Fencing Plan 15.03.2022 – Rev K

Amended Conditions

3 Prior to lodging an application for a building permit, a detailed fauna survey (targeted terrestrial vertebrate survey to determine the presence and significance of the *Lerista planiventralis maryani*, a Priority 1 listed reptile) shall be undertaken and a report for the site shall be prepared by a qualified zoologist in accordance with the EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (June 2020) and submitted to and approved by the Shire of Ashburton on advice from the EPA.. If any of these species are found, an environmental management Plan, addressing any impact and mitigation measures shall be submitted and implemented to the satisfaction of the Shire of Ashburton.

4 Prior to lodging an application for a building permit, a targeted survey is to be undertaken to determine the presence and significance of 'Marine' and 'Shorebirds' and a report for the site shall be prepared by a qualified zoologist in accordance with the EPA Technical Guidance – Terrestrial vertebrate fauna

surveys for environmental impact assessment (June 2020) and submitted to and approved by the Shire of Ashburton on advice from the EPA

5 Prior to commencement of construction, a HAZMAT site survey is required to confirm whether asbestos containing materials (ACM), asbestos fines (AF) or fibrous asbestos (FA) are present at the site shall be undertaken for the site shall be pared to the satisfaction of the Shire and submitted to and approved by the Shire of Ashburton.

a) If no evidence of ACM, AF or FA is found, no further action is required.

If evidence of ACM, AF or FA is found, asbestos remediation or asbestos management is to be undertaken in accordance with Department of Health guidelines.

7 An acid sulphate self-assessment form and, if required as a result of the self-assessment, an acid sulphate soils report and an acid sulphate soils management plan, shall be submitted to and approved by the Shire of Ashburton on advice from the Department of Water and Environmental Regulation before any earthworks beyond 3m below the natural ground surface of the Area of Potential Concern 4 described in the 'Desktop Contamination Assessment' (July 2021 (prepared by 360 Environmental) are commenced. Where an acid sulphate soils management plan is required to be submitted, all earthworks shall be carried out in accordance with the approved management plan.

8 Prior to the commencement of construction, a Traffic Impact Assessment shall be prepared in accordance with the Western Australian Planning Commission's Transport Assessment Guidelines and to the satisfaction of the Shire of Ashburton. The TIA shall consider:

a) The full extent of the traffic impacts the development will have on the locality
b) Assess the full potential impact of the development
c) Include the likely post-development traffic volumes
d) The impact is to be assessed for 10 years after full opening of the development
e) The application relies on the assumption that the majority of the 500 occupants will travel to and from the site by bus. The Shire expects that other scenarios are considered within the Traffic Impact Assessment document whereby the use of work and private vehicles is also factored into transport arrangements. This is typical of the operation of other significant sized workforce accommodation facilities in the Shire of Ashburton.

9 Prior to the commencement of the use, any road upgrades or contributions denoted are to be undertaken to the satisfaction of the responsible local government.

All costs shall be the responsibility of the proponent and responsibility for the road upgrades shall be agreed with the Shire of Ashburton, on the advice of the responsible local government.

12 Prior to commencement of construction, the applicant must submit and have approved by the Local Government, and thereafter implement to the satisfaction of the Local Government, a Construction Environmental Management Plan addressing the following matters:

a) How materials and equipment will be delivered and removed from the site;
b) How materials and equipment will be stored on the site;
c) Parking arrangements for contractors;
d) Construction waste disposal strategy;
    i. Recycling of demolition materials including concrete;
    ii. Removal of hazardous materials and disposal at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of any building works;
    iii. Details demonstrating compliance with the relevant legislative requirements, associated with the removal of hazardous waste, particularly the method of containment and control of emission of fibres to the air, are to be submitted to the satisfaction for the Local Government prior to the removal of any hazardous materials.
e) Details of cranes, large trucks or similar equipment which may block public thoroughfares during construction;
f) How risks of wind and/or water borne erosion and sedimentation will be minimised during and after the works; and
g) What noise mitigating provisions will be put in place to address impacts on neighbouring properties.
h) Whether dune stabilisation will be required during the construction.
i) How car parking, delivery vehicles and traffic impacts associated with construction will be managed so as not to jeopardise the safety of the school community, particularly during peak school drop off / pick up times; and

Other matters likely to impact on the surrounding properties.

13 Prior to lodging an application for a building permit, a Waste Management Plan must be submitted to and approved by the Local Government. The plan must include the following details to the satisfaction and specification of the Local Government:

a) The location of bin storage areas and bin collection areas;
b) The number, volume and type of bins, and the type of waste to be placed in the bins;
c) Details on the future ongoing management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and
d) Frequency of bin collections.

The Waste Management Plan must be implemented at all times to the satisfaction of the Local Government.

14 Prior to commencement of development, a detailed Landscaping and Reticulation Plan for the subject site and the abutting road verges must be submitted to~~,~~ and approved by the Local Government, and must include the following to the Local Government's satisfaction:

a) The location, number and type of proposed trees and shrubs including planter and / or tree pit sizes and planting density;
b) Any lawns to be established;
c) Any existing vegetation and/or landscaped areas to be retained;
d) Any verge treatments;
e) Evidence that the proposed landscaping will not, at maturity, negatively impact the development or adjoining properties.
f) A key or legend detailing proposed species type grouped under the subheadings of tree, shrub and groundcover;
g) Mulching or similar treatments of garden beds including edges;
h) Details of reticulation of landscaped areas including the source of the water supply and proposed responsibility for maintenance;
i) Treatment of paved areas (parking and pedestrian area);
j) Screening of car parking areas; and

Fence material, height and treatment.

16 Prior to lodging an application for a building permit, a modified Bushfire Management Plan needs to be submitted to and approved by the Shire of Ashburton, and thereafter implemented by the proponent, addressing the following:

a. Is amended to incorporate the extent of native vegetation clearing.

The private driveway should be upgraded to meet the technical requirements of Column 1 Table 6 of the Guidelines.

17 Prior to lodging an application for a building permit, a modified Bushfire Emergency Evacuation Plan needs to be submitted to and approved by the Shire of Ashburton, and thereafter implemented by the proponent, addressing the following:

Consideration should be given to the Guidelines Section 5.5.2 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.

22 Prior to occupation of the development, an Operational Management Plan is to be submitted to and approved by the Shire of Ashburton and thereafter implemented to the satisfaction of the Shire of Ashburton.

23 No fencing is permitted on the site, unless agreed to and approved by the Shire of Ashburton.

27 In accordance with the Social Impact Statement letter dated 15 September 2021, the following Social Impact Management measures shall be implemented to the satisfaction of the Shire of Ashburton:

(a) inductions ensuring all guests are made aware of local community facilities, liquor restrictions and associated risks;

(b) maintaining relationships with Shire of Ashburton Rangers, local police and the ward councillors to continually improve situational awareness and early detection of any issues;

(c) sourcing workers responsible for maintenance (landscaping, cleaning and general maintenance) from Onslow where practicable;

(d) sourcing an on-site Duty Manager from Onslow where practicable; and

(e) sourcing catering, waste management and security services from Onslow where practicable.

28 In accordance with Shire of Ashburton Local Planning Policy 14 - Percent for Art the application is required to make a public art contribution of $1 million being one percent of the $100 million total cost of development.

In order to comply with the Policy, the owner(s) or applicant, on behalf of the owner(s) shall submit a statutory declaration prior to the lodgement of a Building permit stipulating the choice of:

Option 1: Owner/Applicant chooses to co-ordinate the Public Art project themselves or by engaging an art consultant; or

Option 2: Owner/Applicant chooses to pay cash- in-lieu.

29 A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows:

Vulnerable Coastal Area

'This lot is located in an area likely to be subject to coastal erosion and/or inundation over the next 100 years.'

30 A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows:

Bushfire Management (SPP3.7)

'Registered proprietors and prospective purchasers of the land described above or any part thereof (land) are notified that the land is within a bushfire prone area and buildings shall be designed and constructed in accordance with Australian Standard 3959 - Construction of Buildings in Bushfire-Prone Areas (or superseded Australian Standard) and comply with any approved fire

management plan prepared in respect of the land to minimise the risk of property damage.'

31 A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows:

Onslow Salt Operational Noise

'The land is located within an area identified as a potential noise source being the Onslow Salt operations'

Amended Advice Notes

B. Construction work undertaken on site is confined within the following times:

(i). Monday to Saturday: 7:00am to 7:00pm
(ii). Sunday and Public Holidays: 7:00am to 7:00pm for construction work that does not emit noise beyond the property boundaries. Any construction work that requires the use of machinery that will emit noise beyond the property boundaries is not permitted unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the Environmental Protection (Noise) Regulations 1997 prior to the commencement of construction works.

Construction work shall not be carried out outside of the abovementioned times unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the Environmental Protection (Noise) Regulations 1997 prior to the commencement of construction works.

New Advice Notes

J. This property is on a site where records confirm there is a history of military activities that have resulted in residual UXO. A possibility exists that dangerous items of UXO may still be found on this site. Contact police if a suspicious item that may be UXO if found. Visit www.defence.gov.au for further information.

K. The Shire of Ashburton is prepared to consider an application from the owner of Lot 300 under Regulation 17A of the Planning and Development (Development Assessment Panels) Regulations 2011 to delete or amend Conditions 8 and 9, if it can be demonstrated to the Shire's satisfaction that:

(a) Vehicle access/egress connection will be provided to Back Beach Road; and
(b) To the extent deemed necessary by and where agreed with the Shire, the proponent will contribute towards the upgrading of:

(i). Back Beach Road up to and including the intersection with Simpson Street.

L. The Operational Management Plan required by Condition 22 relates to the operational, day-to-day running of the facility, to address Objective 2.2 of the Shire's Local Planning Policy No. 13 – Transient Workforce Accommodation. The operator of the facility may apply in writing to the Shire for approval to amend this Plan if required for operational purposes

All other conditions and requirements detailed on the previous approval dated 23 December 2021 shall remain unless altered by this application.

Details: outline of development application

Region Scheme	N/A
Region Scheme Zone/Reserve	N/A
Local Planning Scheme	Shire of Ashburton Local Planning Scheme No. 7
Local Planning Scheme Zone/Reserve	**Reserve:** Conservation, Recreation and Nature Landscape
Structure Plan/Precinct Plan	Onslow Townsite Expansion Structure Plan
Structure Plan/Precinct Plan Land Use Designation	Area Subject to Further Investigation
Use Class (proposed) and permissibility:	Transient Workforce Accommodation – 'D' Private Recreation – 'A' Entertainment Venue – 'A' Restaurant. – 'A'
Lot Size:	20.4485ha
Net Lettable Area (NLA):	N/A
Existing Land Use:	Vacant Land
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☒ N/A ☐ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes Refer to SPP3.7 for further information
Swan River Trust Area	No

Proposal:

This application for amendment to a Development Approval, seeks approval from the Regional Joint Development Assessment Panel (JDAP) for the modification to the development of a transient workers accommodation resort, herein referred to as the 'Onslow Village'.

The amendments to the approved development are summarised as follows:

Building Changes

- Amendments to in-situ buildings to generally improve the function, flow and operation of the development – changes include adjustment to orientation, site location, size and access; and
- Change in roofing strategy to storage facility buildings and sports centre.

Accommodation Pods

- Changes to improve and maintain consistent accommodation pods across the Site (consistent pod typology); and

- Reclassification of several accommodation pod typologies to suit building certifier requirements (i.e. universally accessible pods).

Masterplan

- Amendments to outdoor facilities to improve function, flow and operation – changes include adjustment to orientation, site location, size and access; and
- Reorientation of accommodation pods, pathways and circulation routes to suit various site conditions.

Approved DA and DA Amendment Brief Comparison		
	Approved	Proposed Amendments
Transient Workforce Accommodation	Total type A pods (Sleeps 2) = 39 Total type B pods(Sleeps 4) = 104 Total type C pods (Accessible – Sleeps 2) = 3 **Total No. Pods = 146** **Total No. Rooms = 500**	Total type A (Sleeps 2)= 247 Total type C (Accessible - Sleeps 2)= 3 **Total No. Pods = 253** **Total No. Rooms = 500**
Restaurant	Dining area = 786 m^2 Outdoor area = 245.5 m^2	Dining area= 599m^2 Outdoor area = 225m^2
Tavern	Dining area = 331 m2 Outdoor area = 181.5 m2	Dining = 304.5m^2 Outdoor area = 290.5m^2
Recreation Facilities	• Gymnasium with cardio /weight and other fitness equipment; • Swimming Pool; • Multi-purpose sports court; • Indoor / Outdoor Cricket facilities; • Golf putting green and indoor driving range; • Locker and change rooms; and • Other recreation facilities.	Reconfiguration and relocation of recreational facilities Removal of playground area locate on the eastern portion of the site.
Administration Facilities	Administration office to service the day-to-day needs of the facility; • Resort retail facility selling daily goods and services to residents; • Barista coffee shop / juice bar; • Meeting and Training Rooms; • Communications room; • Medical Centre with first aid and emergency response team with suitable access for ambulance / fire truck service; and • Ablution facilities	Reconfiguration and relocation of administrative facilities
Other Minor Structures	• Storage and maintenance sheds; • Cleaners laundry; • Residents laundry; • Wastewater treatment plants; and • Car parking and access roads for light vehicles, coaches / buses.	Reconfiguration and relocation of laundry facilities and removal of gatehouse

Table 1 of the report highlights the amendments to the approved conditions in greater detail.

Background:

Lot 300 Back Beach Road, Onslow (formally known as Lot 300 on Deposited Plan 422325, Certificate of Title Volume 4014 Folio 669) has a site area of 20.45 hectares, with a frontage of 467m to Back Beach Road and 114.17m to Third Avenue.

The site was formerly Unallocated Crown land, owned by the State of Western Australia, but recently converted to freehold land tenure to the Buurabalayji Thalanyji Aboriginal Corporation RNTBC.

Previous Development Application - DA 21-67 | DAP/21/02078

This application for Development Approval, was approved by the Regional Joint Development Assessment Panel (JDAP) on 23 December 2021 for the development of a transient workers accommodation resort (500 bedrooms).

Historical Uses

It is noted that the predominant use of the site is to be 'Transient Workforce Accommodation', with the additional land uses identified as being ancillary.

The site has not historically been utilised for any other uses. The adjoining properties to the north and east of the site are noted to have been utilised for fuel storage.

Surrounding Land Uses

The site is situated approximately 300m due west of the centre of the Onslow townsite and is surrounded by the following land uses:

North

- Lot 3503, 3504, 3506, 3507 and 3509 on DP 408853 (Unallocated Crown Land) reserved for 'Conservation, Recreation and Natural Landscape' (the subject lots form Sunrise and Sunset Beaches); and,
- Lot 381 on DP 205462, designated for tourism purposes; it should be noted that the site has an adopted Local Planning Policy that dictates the provisions and design for future development on the site; and,
- Lot 574 on DP 180574, vested to the Shire of Ashburton under Management Order (R 32702 – Recreation) and is designated Public Purpose – Water and Drainage under Local Planning Scheme 7 (LPS7).

South

- Back Beach Road bounds the site to the south-west; and,
- Several smaller lots designated for residential purposes with R-Codes varying from R 12.5 to R30 (site dependant); and,
- Lot 383 on DP 205462, vested to the Shire of Ashburton under Management Order (R 29117 – Tourist Information Bay') and is designated Public Purpose – Water and Drainage under LPS7.
- First Street along a portion of the southern boundary. The road reserve for First Street extends west beyond the intersection with Third Avenue. No formal infrastructure is in place for the extension of First Street at this current time.
- The site is also within close proximity (approximately 82 metres) to the Onslow Primary School.

East

- Lot 594 on DP 183922, reserved for Public Purposes – Community (the Onslow Police Station); and,
- Several smaller lots designated for residential purposes with an R-Code of R20; and,
- Third Avenue along the eastern cadastral boundary. The road reserve for Third Avenue extends north beyond the intersection with First Street. No formal road infrastructure is in place for the extension of Third Avenue at this current time.

West

- A portion of Lot 3507 on DP 408853 and Unallocated Crown Land to the west of Back Beach Road is designated Other Purposes – Infrastructure (utilised by Onslow Salt).

Legislation and Policy:

Legislation

The legislative framework and policy base providing for the assessment and determination of the subject application is as follows:

Planning and Development Act 2005
Planning and Development (Local Planning Schemes) Regulations 2015
Schedule 2 (Deemed Provisions)
Clause 64 – Advertising Applications
Clause 66 – Consultation with other authorities

The following provisions of 'Clause 67 – Consideration of application by local government:

(a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;
(c) any approved State planning policy;
(d) any environmental protection policy approved under the Environmental Protection Act 1986 section 31(d);
(e) any policy of the Commission;
(f) any policy of the State;
(fa) any local planning strategy for this Scheme endorsed by the Commission;
(h) any structure plan or local development plan that relates to the development;
(j) in the case of land reserved under this Scheme, the objectives for the reserve and the additional and permitted uses identified in this Scheme for the reserve;
(k) the built heritage conservation of any place that is of cultural significance;
(l) the effect of the proposal on the cultural heritage significance of the area in which the development is located;
(m) the compatibility of the development with its setting, including —

(i). *the compatibility of the development with the desired future character of its setting; and*

(ii). *the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;*

(n) the amenity of the locality including the following —

(i). environmental impacts of the development;

(ii). the character of the locality;

(iii). social impacts of the development;

(o) the likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;

(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;

(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;

(r) the suitability of the land for the development taking into account the possible risk to human health or safety;

(s) the adequacy of —

a. the proposed means of access to and egress from the site; and

b. arrangements for the loading, unloading, manoeuvring and parking of vehicles;

(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;

(u) the availability and adequacy for the development of the following —

(ii). public transport services;

(iii). public utility services;

(iv). storage, management and collection of waste;

(v). access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);

(vi). access by older people and people with disability;

(v) the potential loss of any community service or benefit resulting from the development other than potential loss that may result from economic competition between new and existing businesses;

(w) the history of the site where the development is to be located;

(x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals;

(y) any submissions received on the application;

(za) the comments or submissions received from any authority consulted under clause 66;

(zb) any other planning consideration the local government considers appropriate.

Shire of Ashburton Local Planning Scheme No. 7 (The Scheme)
Part 3 – Reserves
Part 4 – Zones

State Government Policies

State Planning Policy 2.6 – Coastal Planning
State Planning Policy 3.7 – Planning in Bushfire Prone Areas
State Planning Policy 7 – Design of the Built Environment (Vol 1.)

Structure Plans/Activity Centre Plans

Onslow Townsite Expansion Structure Plan

Local Policies

Local Planning Policy 13 - Transient Workforce Accommodation
Local Planning Policy 14 – Percent For Public Art Policy
Local Planning Policy 20 - Social Impact Assessment

Strategies

Pilbara Planning and Infrastructure Framework
Shire of Ashburton Local Planning Strategy (The Strategy)

Consultation:

Previous Application - DA 21-67 | DAP/21/02078

The original Development Application (DA 21-67) was advertised in accordance with cl. 64 of the *Planning and Development (Local Planning Schemes) Regulations 2015*, for a 'complex application'. The development application was publicly advertised in the following ways:

- The development application was publicly advertised on the Shire's website from 28 September 2021 to 26 October 2021 (28 days) for public comment and submissions; and,

- A letter drop was undertaken for all 87 properties located within a 200m radius of the site (excluding Shire owned property); and,

- A Public Notice was placed within the local newspaper 'Pilbara News' on the 29 September 2021, advising of the proposed development application; and,

- Three (3) A2 sized signs placed in conspicuous places on the land the subject of the application giving notice of the proposed development; and,

- The development application advertisement was circulated via the Shire's Facebook page.

A total of twenty-eight (28) submissions were received during the advertising period, twenty-three (23) were objections, two (2) were comments and four (4) were in support.

Public Consultation

The development application amendment - DA 22-40 was advertised in accordance with cl. 64 of the *Planning and Development (Local Planning Schemes) Regulations 2015*, for an 'application that is not a complex application'. The development application was publicly advertised in the following ways:

- The development application was publicly advertised on the Shire's website from 30 June 2022 to 14 July 2022 (15 days) for public comment and submissions; and,

- A letter drop was undertaken for all 87 properties located within a 200m radius of the site (excluding Shire owned property); and,

- A Public Notice was placed within the local newspaper 'Pilbara News/ West Australian' on Saturday 2 July 2022, advising of the proposed development application; and,

- Three (3) A3 sized signs placed in conspicuous places on the land the subject of the application giving notice of the proposed development; and

- The development application advertisement was circulated via the Shire's Facebook page.

A total of one (1) submission was received during the advertising period, the one (1) submission was an objection. Attachment 12, provides the full compiled submission list and the Shire's response to the issues raised.

Referrals/consultation with Government/Service Agencies

Given that the application is primarily the same development, it was deemed that the application was not required to be referred to external state agencies.

Design Review Panel Advice

N/A

Swan Valley Planning

N/A

Other Advice

The application was internally referred. No additional comments were received in relation to the amendment of the application.

Planning Assessment:

The proposed amendments to the approved application are identified as being minor in nature and capable of being considered as part of a Form 2 Application.

The proposed amendments primarily relate to:

Building Changes

- Amendments to in-situ buildings to generally improve the function, flow and operation of the development – changes include adjustment to orientation, site location, size and access; and
- Change in roofing strategy to storage facility buildings and sports centre.

Accommodation Pods

- Changes to improve and maintain consistent accommodation pods across the Site (consistent pod typology); and
- Reclassification of several accommodation pod typologies to suit building certifier requirements (i.e. universally accessible pods).

Masterplan

- Amendments to outdoor facilities to improve function, flow and operation – changes include adjustment to orientation, site location, size and access; and
- Reorientation of accommodation pods, pathways and circulation routes to suit various site conditions.

It should be noted that none of the above has been constructed as is primarily modifications to the approved development plans.

A detailed analysis and review of the proposed amendments is provided below in Table 1.

TABLE 1 – Proposed Amendment to conditions of Development Approval - DA 21-67 (DAP/21/02078)– Lot 300 Back Beach Road, Onslow

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
1	This decision constitutes planning approval only and is valid for a period of 4 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.	No Change.	No Change.	-
2	This approval is time limited to a period of not more than 30 years from the date of approval for development within the proposed 30m coastal foreshore reserve, at which point the approval for this portion of the development will lapse and: i. the development within the 30m foreshore reserve shall be removed; and ii. the land shall be rehabilitated to its pre-development conditions, in accordance with the specifications and provisions of a site 'Decommissioning and Rehabilitation Plan' submitted to and approved by the Shire of Ashburton not earlier than 12 months and implemented to the satisfaction of the Shire of Ashburton.	No Change.	No Change.	-
3.	Prior to lodging an application for a building permit, a detailed fauna survey (targeted terrestrial vertebrate survey to determine the presence and significance of the *Lerista planiventralis maryani*, a Priority 1 listed reptile) shall be undertaken and **a** report for the site shall be prepared by a qualified zoologist **in accordance with the EPA Guidelines and submitted to and approved by the Shire of Ashburton on advice from the EPA.** ~~to the satisfaction of the shire and submitted to and approved by the Shire of Ashburton~~. If any of these species are found, an environmental management Plan, addressing any impact and mitigation measures shall be submitted and implemented to the satisfaction of the Shire of Ashburton.	Administrative change – Condition 3 should refer to the relevant reporting being prepared in accordance with the Environmental Protection Agency ('EPA') Guidelines, and to the satisfaction of the EPA.	The proposed change to the wording of the condition is supported, as the change reflects the relevant authority that is required to be satisfied that the condition has been complied with.	Prior to lodging an application for a building permit, a detailed fauna survey (targeted terrestrial vertebrate survey to determine the presence and significance of the *Lerista planiventralis maryani*, a Priority 1 listed reptile) shall be undertaken and a report for the site shall be prepared by a qualified zoologist in accordance with the EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (June 2020) and submitted to and approved by the Shire of Ashburton on advice from the EPA.. If any of these species are found, an environmental management Plan, addressing any impact and mitigation measures shall be submitted and implemented to the satisfaction of the Shire of Ashburton.
4	Prior to lodging an application for a building permit, a targeted survey is to be undertaken to determine the presence and significance of 'Marina' and 'Shorebirds' ~~shall be undertaken~~ and **a** report for the site shall be prepared by a qualified zoologist **in accordance with the EPA Guidelines and submitted to and approved by the Shire of Ashburton on advice from the EPA.** ~~to the satisfaction of the Shire and submitted to and approved by the Shire of Ashburton.~~	Administrative change – Condition 4 should refer to the relevant reporting being prepared in accordance with the Environmental Protection Agency ('EPA') Guidelines, and to the satisfaction of the EPA.	The proposed change to the wording of the condition is supported, as the change reflects the relevant authority that is required to be satisfied that the condition has been complied with.	Prior to lodging an application for a building permit, a targeted survey is to be undertaken to determine the presence and significance of 'Marine' and 'Shorebirds' and a report for the site shall be prepared by a qualified zoologist in accordance with the EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (June 2020) and submitted to and approved by the Shire of Ashburton on advice from the EPA
5.	Prior to **commencement of construction** ~~lodging an application for a building permit,~~ a HAZMAT site survey is required to confirm whether asbestos containing materials (ACM), asbestos fines (AF) or fibrous asbestos (FA) are present at the site shall be	A HAZMAT site survey does not inform the building permit, nor does it have a material impact on or prejudice the Shire's consideration of the Building Permit. The current wording of the Condition impacts the scheduling of works	The proposed changes to the wording of the condition are minor and are supported in this instance.	Prior to commencement of construction~~,~~ a HAZMAT site survey is required to confirm whether asbestos containing materials (ACM), asbestos fines (AF) or fibrous asbestos (FA) are present at the site shall be undertaken for the

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
	undertaken for the site shall be pared to the satisfaction of the Shire and submitted to and approved by the Shire of Ashburton. a) If no evidence of ACM, AF or FA is found, no further action is required. b) If evidence of ACM, AF or FA is found, asbestos remediation or asbestos management is to be undertaken in accordance with Department of Health guidelines. c)	and contractual arrangements of the project. On this basis, we request Condition 5 be reworded as suggested in red text.		site shall be pared to the satisfaction of the Shire and submitted to and approved by the Shire of Ashburton. b) If no evidence of ACM, AF or FA is found, no further action is required. c) If evidence of ACM, AF or FA is found, asbestos remediation or asbestos management is to be undertaken in accordance with Department of Health guidelines.
6.	~~Prior to lodging an application for a building permit an Unexploded Ordinance (UXO) survey of the site shall be undertaken to the whole of the site to determine if a remediation survey is required as this property is on a site where records confirm a history of UXO funds or heavy residential fragmentation to the satisfaction of the Shire and submitted to and approved by the Shire of Ashburton.~~ ~~a) If no evidence of UXO is found, no further action is required.~~ ~~b) If evidence of UXO is found, a remediation survey is to be completed to locate and remove any UXO.~~ ~~d) If a remediation survey is completed, a notification pursuant to Section 70A of the Transfer of Land Act 1893 (WA) is to be placed on the Certificate of Title 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) as it to state as follows:~~ ~~"Anti-aircraft artillery live firing practices using high explosive ammunition during WW (World War) II. Aerial bombing also highly likely. For land use planning advice contact the WA Department of Fire and Emergency Services (advice@dfes.wa.gov.au) and quote location number N26 and page number C-275. Where a Defence report is available, it will be listed below and can be found on the Defence UXO Website at https://defence.gov.au/UXO/Where/Default.asp"~~ ~~.~~	Request removal of Condition 6 for the following reasons: - Condition 6 (as approved) is worded based on the Western Australian Planning Commission's Model Subdivision Condition 'F8'. As outlined within the Model Conditions, this Condition applies where there is a 'substantial' occurrence of UXO. - Within the Department of Defence Unexploded Ordinance Mapping database, Lot 300 is identified as having a 'Slight Potential' occurrence of UXO. - In accordance with the Model Conditions, Advice Note 'Fa5' applies where there is a 'Slight' occurrence of UXO. - Therefore, Condition 6 been removed and replaced with proposed **Advice Note J** to reflect the application of the conditions / advice note as outlined within the Model Conditions.	The inclusion of Condition 6 as an advice note is supported. The inclusion of the matter as an advice note, provides a means of informing the developer of their responsibility, whilst not mandating the imposition of a condition. This is aligned with the enforcement of the condition and advice note as set out within the WAPC's Model Conditions for subdivisions. The potential for UXO's on the site is 'Slight' and as noted by the Applicant, it is reasonable to provide the inclusion of the advice note (Fa5) rather than the condition based on the likelihood of suspicious items occurring within the site.	-
7	An acid sulphate self-assessment form and, if required as a result of the self-assessment, an acid sulphate soils report and an acid sulphate soils management plan, shall be submitted to and approved by the **Shire of Ashburton on advice from the** Department of Water and Environmental Regulation before any earthworks beyond 3m below the natural ground surface of the Area of Potential Concern 4 described in the 'Desktop Contamination Assessment' (July 2021 (prepared by 360 Environmental) are commenced. Where an acid sulphate soils management plan is	Administrative change – Condition 7 should refer to the relevant reporting being approved by the Local Government.	The proposed change to the wording of the condition is supported, as the change reflects the relevant authority that is required to be satisfied that the condition has been complied with.	An acid sulphate self-assessment form and, if required as a result of the self-assessment, an acid sulphate soils report and an acid sulphate soils management plan, shall be submitted to and approved by the Shire of Ashburton on advice from the Department of Water and Environmental Regulation before any earthworks beyond 3m below the natural ground surface of the Area of Potential Concern 4 described in the 'Desktop Contamination Assessment' (July 2021 (prepared by 360 Environmental) are commenced. Where an acid sulphate soils management plan is required to be submitted, all

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	required to be submitted, all earthworks shall be carried out in accordance with the approved management plan.			earthworks shall be carried out in accordance with the approved management plan.
~~8~~	~~Prior to lodging an application for a building permit, a Traffic Impact Assessment shall be prepared in accordance with the Western Australian Planning Commission's Transport Assessment Guidelines and to the satisfaction of the Shire of Ashburton. The TIA shall consider:~~ ~~a) The full extent of the traffic impacts the development will have on the locality~~ ~~b) Assess the full potential impact of the development~~ ~~c) Include the likely post-development traffic volumes~~ ~~d) The impact is to be assessed for 10 years after full opening of the development~~ ~~e) The application relies on the assumption that the majority of the 500 occupants will travel to and from the site by bus. The Shire expects that other scenarios are considered within the Traffic Impact Assessment document whereby the use of work and private vehicles is also factored into transport arrangements. This is typical of the operation of other significant sized workforce accommodation facilities in the Shire of Ashburton.~~	Refer to amended Uloth and Associates Transport Impact Statement ('TIS') within Attachment 6. As outlined within the detailed 'Village Operations and Resulting Traffic Generation' Section in the amended TIS, the total trip generation for the proposed development is 330 vehicle trips per day, with 45 vehicle trips in the critical afternoon peak hour. In accordance with the Western Australian Planning Commissions ('WAPC'), Transport Impact Assessment Guidelines – Volume 4, developments likely to generate between 10 – 100 vehicle trips in the development's peak hour are considered to have a "Moderate impact" and require a 'Transport Impact Statement'. Where developments generate **over** 100 vehicle trips in the peak hour a Transport Impact Assessment is required. Given the Transport Impact Statement prepared by Uloth and Associates (as amended) addresses the full extent of the traffic impacts of the development and as the traffic generated does not trigger the requirement for a Transport Impact Assessment, we request the deletion of Condition 8.	The Shire has reviewed the attached Uloth and Associates Transport Impact Statement ('TIS') submitted with the amendment application. As noted within the initial assessment and reasoning for the inclusion of this condition, the matter still remains regarding the extent and proposed occupancy rate as previously assessed and peer reviewed by Shawmac. Therefore, the condition is to be retained to ensure that the impacts of the proposed traffic for the development are adequately addressed. Notwithstanding the above, the Shire is currently liaising with the Applicant regarding road access and layout and is proposing that an advice note is included to provide sufficient flexibility and scope for negotiation between the proponent and the Shire to dispense with Conditions 8 and 9 if agreement is reached on the above items.	Prior to the commencement of construction, a Traffic Impact Assessment shall be prepared in accordance with the Western Australian Planning Commission's Transport Assessment Guidelines and to the satisfaction of the Shire of Ashburton. The TIA shall consider: a) The full extent of the traffic impacts the development will have on the locality b) Assess the full potential impact of the development c) Include the likely post-development traffic volumes d) The impact is to be assessed for 10 years after full opening of the development e) The application relies on the assumption that the majority of the 500 occupants will travel to and from the site by bus. The Shire expects that other scenarios are considered within the Traffic Impact Assessment document whereby the use of work and private vehicles is also factored into transport arrangements. This is typical of the operation of other significant sized workforce accommodation facilities in the Shire of Ashburton.
~~9~~	~~Prior to the commencement of the use, any road upgrades or contributions denoted in the Traffic Impact Assessment are to be undertaken to the satisfaction of the responsible local government. All costs shall be the responsibility of the proponent and responsibility for the road upgrades shall be agreed with the Shire of Ashburton, on the advice of the responsible local government.~~	As outlined above, the Transport Impact Statement prepared by Uloth and Associates (as amended) addresses the full extent of the traffic impacts of the development and the traffic generated does not trigger the requirement for a Transport Impact Assessment, we also request the removal of Condition 9.	Condition 9 shall be retained to allow for the provision of the required road infrastructure to access the site. The condition shall read as follows: Prior to the commencement of the use, any road upgrades or contributions denoted are to be undertaken to the satisfaction of the responsible local government. All costs shall be the responsibility of the proponent and responsibility for the road upgrades shall be agreed with the Shire of Ashburton, on the advice of the responsible local government. Notwithstanding, as noted above, the Shire is currently liaising with the Applicant regarding road access and layout and is proposing that an advice note is included to provide sufficient flexibility and scope for	Prior to the commencement of the use, any road upgrades or contributions denoted are to be undertaken to the satisfaction of the responsible local government. All costs shall be the responsibility of the proponent and responsibility for the road upgrades shall be agreed with the Shire of Ashburton, on the advice of the responsible local government.

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			negotiation between the proponent and the Shire to dispense with Conditions 8 and 9 if agreement is reached on the above items.	
10	Prior to lodging an application for a building permit, the landowner/applicant is to provide a pre-works geotechnical report certifying that the land is physically capable of development or advising how the land is to be remediated and compacted to ensure it is capable of development; and in the event that remediation works are required, the landowner/applicant is to provide a post geotechnical report certifying that all development works have been carried out in accordance with the pre-works geotechnical report.	No change.	No Change.	-
11	Prior to lodging an application for a building permit, a Stormwater and Drainage Management Plan, prepared in accordance with the Department of Water and Environmental Regulation's Stormwater Management Manual, must be submitted for the approval of the Shire of Ashburton. The Stormwater and Drainage Management Plan will determine the drainage infrastructure required to supporting the development and as a minimum it must address: a) Proposed development; b) Storm events to be managed; c) Onsite-retention for 1:1 year events; d) Onsite-detention for 1:25 year events; e) Overland flow path for larger events, and impact the development will have on the surrounding neighbourhood; f) Use of water sensitive urban principles; g) Water quality; h) Protection of adjacent / nearby waterways; and i) Conclusions / recommendations.	No change.	No Change.	-
12	Prior to lodging **commencement of construction** ~~an application for a building permit~~, the applicant must submit and have approved by the Local Government, and thereafter implement to the satisfaction of the Local Government, a Construction Environmental Management Plan addressing the following matters: a) How materials and equipment will be delivered and removed from the site; b) How materials and equipment will be stored on the site; c) Parking arrangements for contractors; d) Construction waste disposal strategy; i. Recycling of demolition materials including concrete; ii. Removal of hazardous materials and disposal at an approved waste disposal	A Construction Environmental Management Plan does not inform the building permit, nor does it have a material impact on or prejudice the Shire's consideration of the Building Permit. Rather, the Construction Environmental Management Plan addresses how construction will be managed and therefore, the trigger for submission should be prior to the commencement of construction (consistent with other approvals issued by the RJDAP). The current wording of the Condition impacts the scheduling of works and contractual arrangements of the project. On this basis, we request Condition 12 be reworded as suggested in red text.	The proposed changes to the wording of the condition are minor and are supported in this instance.	Prior to commencement of construction, the applicant must submit and have approved by the Local Government, and thereafter implement to the satisfaction of the Local Government, a Construction Environmental Management Plan addressing the following matters: j) How materials and equipment will be delivered and removed from the site; k) How materials and equipment will be stored on the site; l) Parking arrangements for contractors; m) Construction waste disposal strategy; iv. Recycling of demolition materials including concrete; v. Removal of hazardous materials and disposal at an approved waste disposal facility in accordance with the requirements of the

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	facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of any building works; iii. Details demonstrating compliance with the relevant legislative requirements, associated with the removal of hazardous waste, particularly the method of containment and control of emission of fibres to the air, are to be submitted to the satisfaction for the Local Government prior to the removal of any hazardous materials. e) Details of cranes, large trucks or similar equipment which may block public thoroughfares during construction; f) How risks of wind and/or water borne erosion and sedimentation will be minimised during and after the works; and g) What noise mitigating provisions will be put in place to address impacts on neighbouring properties. h) Whether dune stabilisation will be required during the construction. i) How car parking, delivery vehicles and traffic impacts associated with construction will be managed so as not to jeopardise the safety of the school community, particularly during peak school drop off / pick up times; and j) Other matters likely to impact on the surrounding properties.			relevant legislation, codes, standards and guidelines, prior to the commencement of any building works; vi. Details demonstrating compliance with the relevant legislative requirements, associated with the removal of hazardous waste, particularly the method of containment and control of emission of fibres to the air, are to be submitted to the satisfaction for the Local Government prior to the removal of any hazardous materials. n) Details of cranes, large trucks or similar equipment which may block public thoroughfares during construction; o) How risks of wind and/or water borne erosion and sedimentation will be minimised during and after the works; and p) What noise mitigating provisions will be put in place to address impacts on neighbouring properties. q) Whether dune stabilisation will be required during the construction. r) How car parking, delivery vehicles and traffic impacts associated with construction will be managed so as not to jeopardise the safety of the school community, particularly during peak school drop off / pick up times; and Other matters likely to impact on the surrounding properties.
13	Prior to lodging an application for a building permit, a Waste Management Plan must be submitted to and approved by the Local Government. ~~prior to lodging an application for a building permit~~. The plan must include the following details to the satisfaction and specification of the Local Government: a) The location of bin storage areas and bin collection areas; b) The number, volume and type of bins, and the type of waste to be placed in the bins; c) Details on the future ongoing management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and d) Frequency of bin collections. The Waste Management Plan must be implemented at all times to the satisfaction of the Local Government.	Administrative change, duplication of text.	The proposed changes to the wording of the condition are minor and are supported in this instance.	Prior to lodging an application for a building permit, a Waste Management Plan must be submitted to and approved by the Local Government. The plan must include the following details to the satisfaction and specification of the Local Government: e) The location of bin storage areas and bin collection areas; f) The number, volume and type of bins, and the type of waste to be placed in the bins; g) Details on the future ongoing management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and h) Frequency of bin collections. The Waste Management Plan must be implemented at all times to the satisfaction of the Local Government.
14	Prior to **occupation of the development** ~~lodging an application for a building permit~~, a detailed Landscaping and Reticulation Plan for the subject site and/or the road verge(s) must be submitted to, and approved to,	A Landscaping and Reticulation plan does not inform the building permit, nor does it have a material impact on or prejudice the Shire's consideration of the Building Permit. The current wording of the Condition impacts the	It is commonplace, fair, and reasonable for a Landscaping and Reticulation Plan to be submitted for approval prior to the commencement of construction, rather than	Prior to commencement of development, a detailed Landscaping and Reticulation Plan for the subject site and the abutting road verges must be submitted to, and

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	the satisfaction of the Local Government, and must include the following: a) The location, number and type of proposed trees and shrubs including planter and / or tree pit sizes and planting density; b) Any lawns to be established; c) Any existing vegetation and/or landscaped areas to be retained; d) Any verge treatments; e) Evidence that the proposed landscaping will not, at maturity, negatively impact the development or adjoining properties. f) A key or legend detailing proposed species type grouped under the subheadings of tree, shrub and groundcover; g) Mulching or similar treatments of garden beds including edges; h) Details of reticulation of landscaped areas including the source of the water supply and proposed responsibility for maintenance; i) Treatment of paved areas (parking and pedestrian area); j) Screening of car parking areas; and k) Fence material, height and treatment.	scheduling of works and contractual arrangements of the project. On this basis, we request Condition 14 be reworded as suggested in red text, consistent with previous approvals issued by the RJDAP.	prior to occupancy of a development. This still enables the proponent to request and the Shire to approve an amendment to the Plan after construction has commenced. In addition, it is also recommended that the opening paragraph of this condition is modified to clarify and confirm its scope. To address these concerns, it is recommended that condition 14 is reworded as follows: *Prior to commencement of development, a detailed Landscaping and Reticulation Plan for the subject site and~~/or~~ and the abutting road verges must be submitted to~~,~~ and approved by the Local Government, and must include the following to the Local Government's satisfaction:* *a) The location, number and type of proposed trees and shrubs including planter and / or tree pit sizes and planting density;* *b) Any lawns to be established;* *c) Any existing vegetation and/or landscaped areas to be retained;* *d) Any verge treatments;* *e) Evidence that the proposed landscaping will not, at maturity, negatively impact the development or adjoining properties.* *f) A key or legend detailing proposed species type grouped under the subheadings of tree, shrub and groundcover;* *g) Mulching or similar treatments of garden beds including edges;* *h) Details of reticulation of landscaped areas including the source of the water supply and proposed responsibility for maintenance;* *i) Treatment of paved areas (parking and pedestrian area);* *j) Screening of car parking areas; and* *k) Fence material, height and treatment.*	approved by the Local Government, and must include the following to the Local Government's satisfaction: k) The location, number and type of proposed trees and shrubs including planter and / or tree pit sizes and planting density; l) Any lawns to be established; m) Any existing vegetation and/or landscaped areas to be retained; n) Any verge treatments; o) Evidence that the proposed landscaping will not, at maturity, negatively impact the development or adjoining properties. p) A key or legend detailing proposed species type grouped under the subheadings of tree, shrub and groundcover; q) Mulching or similar treatments of garden beds including edges; r) Details of reticulation of landscaped areas including the source of the water supply and proposed responsibility for maintenance; s) Treatment of paved areas (parking and pedestrian area); t) Screening of car parking areas; and *u)* Fence material, height and treatment.
15	Landscaping including verge planting shall be installed, reticulated and/or irrigated in accordance with the/an approved plan and maintained thereafter to the	No change.	No Change.	-

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	satisfaction of the Shire. The landscaping shall be implemented during the first available planting season post completion of development and any species which fail to establish within a period of 12 months from planting shall be replaced to the satisfaction of the Shire.			
16	Prior to lodging an application for a building permit, a modified Bushfire Management Plan needs to be submitted and approved by the Shire of Ashburton, that addresses the following: a) Is amended to incorporate the extent of native vegetation clearing. b) The private driveway should be upgraded to meet the technical requirements of Column 1 Table 6 of the Guidelines.	Confirmed by Shire of Ashburton as being satisfied on 15 February 2022.	This condition was confirmed to be satisfied with correspondence to the Applicant sent on 15 February 2022 (see **Attachment 13**). Although the Shire confirmed this condition has been met, the condition should still remain in place, as it provides the only formal, statutory mechanism for enforcing compliance with the modified Plan. In addition, it is noted that the condition does not expressly require implementation of / compliance with the modified Plan. To address these concerns, it is recommended condition 16 is reworded as follows: *Prior to lodging an application for a building permit, a modified Bushfire Management Plan needs to be submitted to and approved by the Shire of Ashburton, and thereafter implemented by the proponent, addressing the following:* *a. Is amended to incorporate the extent of native vegetation clearing.* *The private driveway should be upgraded to meet the technical requirements of Column 1 Table 6 of the Guidelines.*	Prior to lodging an application for a building permit, a modified Bushfire Management Plan needs to be submitted to and approved by the Shire of Ashburton, and thereafter implemented by the proponent, addressing the following: b. Is amended to incorporate the extent of native vegetation clearing. The private driveway should be upgraded to meet the technical requirements of Column 1 Table 6 of the Guidelines.
17	Prior to lodging an application for a building permit, a modified Bushfire Emergency Evacuation Plan needs to be submitted and approved by the Shire of Ashburton, that addresses the following: a) Consideration should be given to the Guidelines Section 5.5.2 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.	Confirmed by Shire of Ashburton as being satisfied on 15 February 2022.	This condition was confirmed to be satisfied with correspondence to the Applicant sent on 15 February 2022 (see **Attachment 13**). See earlier response to condition 16. For the same reasons, we recommend condition 17 is reworded as follows: *Prior to lodging an application for a building permit, a modified Bushfire Emergency Evacuation Plan needs to be submitted to and approved by the Shire of Ashburton,*	Prior to lodging an application for a building permit, a modified Bushfire Emergency Evacuation Plan needs to be submitted to and approved by the Shire of Ashburton, and thereafter implemented by the proponent, addressing the following: Consideration should be given to the Guidelines Section 5.5.2 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire.

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			and thereafter implemented by the proponent, addressing the following: *Consideration should be given to the Guidelines Section 5.5.2 'Developing a Bushfire Emergency Evacuation Plan'. This contains detail regarding what should be included in a BEEP and will ensure the appropriate content is detailed when finalising the BEEP to the satisfaction of the Shire."*	
18	Prior to the installation of external lighting on the site, an External Lighting Plan is to be submitted to and approved by the Shire of Ashburton and shall incorporate any conditions derived from any of the environmental surveys undertaken and thereafter implemented to the satisfaction of the Shire of Ashburton.	No change.	No Change.	-
19	Prior to the occupation of the development, all vehicle crossover are to be constructed to the specification and satisfaction of the Local Government: a) All crossovers to be constructed with concrete layback, not kerb returns; b) Any path existing or to be constructed in vicinity of crossovers shall be constructed continuous through the crossover.	No change.	No Change.	-
20	Prior to occupation or use of the development, the redundant crossover/s as shown on the approved plans, must be removed and the verge and kerb reinstated to the specification and satisfaction of the Local Government.	No change.	No Change.	-
~~**21**~~	~~Prior to occupation or use of the development, an Operational Environmental Management Plan is to be submitted to and approved by the Shire of Ashburton and thereafter implemented to the satisfaction of the Shire of Ashburton.~~	Request removal of Condition 21 for the following reasons: - The Applicant is required to obtain any necessary environmental approvals under the *Environmental Protection Act 1986* (and any other relevant approvals under separate legislations). Furthermore, the operations at the site are also required to comply with the provisions of the *Environmental Protection (Noise) Regulations 1997*. On this basis, the requirement for an 'Operational Environmental Management Plan', which is required to be submitted to and approved by the Shire, is a duplication of the required operational environmental approvals required under the relevant environmental	Correspondence was sent to the Applicant on 9 May 2022, identifying the following: ***Condition 21*** *This relates to the ongoing environmental impacts of the development and how they are maintained within the required standards. These may include, but are not limited too:* • *Noise emissions (from the services and plant) and tavern;* • *Light;* • *Water quality;* • *Waste management (relates back to Condition 13)*	-

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		legislation and is therefore, superfluous to this Application. - As outlined in *Keysbrook Leucoxene Pty Ltd and Shire of Serpentine Jarrahdale [2012] WASAT 212,* it is not appropriate to impose planning approval conditions that require compliance with conditions and management plans required under (separate) environmental protection legislation. to the condition therefore duplicates existing environmental requirements by way of the planning conditions of approval. - A review of the Shire's Local Planning Framework has identified that the Shire has no requirement for an Operational Environmental Management Plan to be prepared for an Application of this nature, nor is there any guidance with respect to the level (and type) of detailed required. Liaison with the Shire's Planning Team has also confirmed that there is no advice within the existing Local Planning Framework that provides guidance to the type of information required.	• *Spill Management* • *Storage and Handling of Chemicals and Hazardous Materials* No response was received prior to the submission of the amendment application. Notwithstanding, the removal of this condition is supported. The provisions of this condition are adequately included within the Construction Environmental Management Plan, Waste Management Plan and enforceable by virtue of other legislation (i.e. noise is regulated by the *Environmental Protection (Noise) Regulations 1997.)*	
~~22~~	~~Prior to occupation or use of the development, an Operational Management Plan is to be submitted to and approved by the Shire of Ashburton and thereafter implemented to the satisfaction of the Shire of Ashburton.~~	Request removal of Condition 22 for the following reasons: - Consistent with the justification provided above, the operation of the proposed development will be required to comply with the provisions of the *Environmental Protection (Noise) Regulations 1997.* Therefore, the requirement for an 'Operational Management Plan' is considered superfluous to enable the operation of the development. - A review of the Shire's Local Planning Framework has identified that the Shire has no requirement for an Operational Management Plan to be prepared for an Application of this nature, nor is there any guidance with respect to the level (and type) of detailed required. Liaison with the Shire's Planning Team has also confirmed that there is no advice within the existing Local Planning Framework that provides guidance to the type of information required.	Correspondence was sent to the Applicant on 9 May 2022, identifying the following: ***Condition 22*** *This relates to the operational day-day running of the camp (also known as a site management plan). This would generally include the operational procedures of the running of the camp by MRL or a third party.* *An example is the RTIO camps run by Sodexo, they all operate under management policies and procedures implemented by Sodexo.* The condition was included within the original development determination notice, as a means of addressing Objective 2.2 of LPP13 – Transient Workforce Accommodation. The condition is seeking evidence from the Applicant that the appropriate policies and procedures are available to maintain the facilities in a safe and effective manner (i.e. complaints register, conflict resolution).	Prior to occupation of the development, an Operational Management Plan is to be submitted to and approved by the Shire of Ashburton and thereafter implemented to the satisfaction of the Shire of Ashburton.

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			The operational management plan is requested to ensure that the camp operates in a manner that is safe for both internal and external parties. This should include a Traffic Management Plan, identifying how the shuttling of workers to-and-from the site would be undertaken. Given the above it is requested that the condition be reworded and an advice note included as follows: **Condition:** *Prior to occupation of the development, an Operational Management Plan is to be submitted to and approved by the Shire of Ashburton and thereafter implemented to the satisfaction of the Shire of Ashburton.* **Advice Note:** *The Operational Management Plan required by Condition 22 relates to the operational, day-to-day running of the facility, to address Objective 2.2 of the Shire's Local Planning Policy No. 13 – Transient Workforce Accommodation. The operator of the facility may apply in writing to the Shire for approval to amend this Plan if required for operational purposes in purposes.*	
23	No fencing is permitted on the site, unless agreed to and approved by the Shire of Ashburton.	Refer to Fencing Plan provided as part of Amended Development Application Plans.	The proposed changes to fencing as noted within correspondence sent to the Applicant on 9 May 2022 have yet to be provided to the Shire. The correspondence to the Applicant identifying the following: ***Condition 23*** *The proposed fencing plan has been reviewed by the Shire's Development Control Unit (DCU.)* *The following comments relate to the submitted plan (see attached):* • *The Shire in-principle supports the plan, however due to the lack of a Transport Impact Assessment, the Shire cannot provide*	No fencing is permitted on the site, unless agreed to and approved by the Shire of Ashburton.

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			clearance of the condition without clarity around the road layout and design. • *The 2.1m 'Security Fencing' along the current proposed gate area is overly tall for the proposed function and does not correlate with the surrounding lower (1m high) black cyclone fencing at the park area and along the driveway.* The issues identified in the correspondence above are yet to adequately addressed, and the relevant information provided to support the proposed plan. The submitted 'Fencing Plan' will not be supported in its current form.	
24	The development site must be connected to the reticulated sewerage system and reticulated water system of the Water Corporation before commencement of any use.	No change.	No Change.	-
25	Existing trees located within the verge are a Local Government asset and as such must be retained except where otherwise approved for removal by the Local Government. Existing trees identified on the approved site plan must be retained and protected in accordance with AS 4970-2009 and to the satisfaction of the Local Government.	No change.	No Change.	-
26	All vehicle parking, access ways, footpaths and external lighting shall be constructed and maintained in accordance with the Australian Standards AS2890 in the form and layout depicted on the approved plans to the satisfaction of the Shire of Ashburton.	No change.	No Change.	-
27	~~Prior to occupation of the development, a Social Impact Management Plan, is to be submitted to and approved by the Shire of Ashburton.~~	Request removal of Condition 27 for the following reasons: - A review of the Shire's Local Planning Framework has identified that the Shire has no requirement for a Social Impact Management Plan to be prepared for an Application of this nature, nor is there any guidance with respect to the level (and type) of information required.	Correspondence was sent to the Applicant on 9 May 2022, clarifying the following: ***Condition 27*** *This plan relates to the ongoing interaction and maintenance of social impacts of the development that were identified within the social impact assessment.*	In accordance with the Social Impact Statement letter dated 15 September 2021, the following Social Impact Management measures shall be implemented to the satisfaction of the Shire of Ashburton: (f) inductions ensuring all guests are made aware of local community facilities, liquor restrictions and associated risks;

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
		- In accordance with the Shire of Ashburton Local Planning Policy 20 – Social Impact Assessment ('LPP 20') a Social Impact Statement ('SIS') was prepared as part of the Development Application. When applying the assessment criteria of LPP 20 to the proposed development, a broad range of moderate to significant positive impacts can be anticipated, with a few areas creating minor negative social impacts. Notwithstanding, the SIS provides various measures to avoid, reduce and mitigate the potential negative impacts which would otherwise be provided as part of a Social Impact Management Plan. On this basis, the SIS prepared as part of the Development Application addresses the requirements of LPP 20 and Condition 27 is not required.	*The plan should summarise the key findings of the SIA/SIS and outline how they inform the company's decision-making and stipulates the management measures MRL will take to avoid or minimise negative impacts and enhance potential benefits of the project.* No response was received regarding the matter. The removal of the condition is not supported, on the basis that the Applicant/Owner is responsible for ensuring that a several social impact matters are adequately addressed. Removal of the condition would negate the impacts identified and provide no mechanism to ensure compliance of the matters identified. Therefore, it is proposed that the condition be reworded to read as follows: *27. In accordance with the Social Impact Statement letter dated 15 September 2021, the following Social Impact Management measures shall be implemented to the satisfaction of the Shire of Ashburton:* *(a) inductions ensuring all guests are made aware of local community facilities, liquor restrictions and associated risks;* *(b) maintaining relationships with Shire of Ashburton Rangers, local police and the ward councillors to continually improve situational awareness and early detection of any issues;* *(c) sourcing workers responsible for maintenance (landscaping, cleaning and general*	(g) maintaining relationships with Shire of Ashburton Rangers, local police and the ward councillors to continually improve situational awareness and early detection of any issues; (h) sourcing workers responsible for maintenance (landscaping, cleaning and general maintenance) from Onslow where practicable; (i) sourcing an on-site Duty Manager from Onslow where practicable; and (j) sourcing catering, waste management and security services from Onslow where practicable.

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Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
			maintenance) from Onslow where practicable; *(d) sourcing an on-site Duty Manager from Onslow where practicable; and* *(e) sourcing catering, waste management and security services from Onslow where practicable.* The above wording of the condition was approved by SAT in Kelmscott Central v City of Karratha [2020] WASAT 116, and is relatable to the imposition of the social impact mitigation measures of the development.	
28	~~In accordance with Shire of Ashburton Local Planning Policy 14 - Percent for Art the application is required to make a public art contribution of $1 million being one percent of the $100 million total cost of development.~~ ~~In order to comply with the Policy, the owner(s) or applicant, on behalf of the owner(s) shall submit a statutory declaration prior to the lodgement of a Building permit stipulating the choice of:~~ ~~**Option 1:** Owner/Applicant chooses to co-ordinate the Public Art project themselves or by engaging an art consultant; or~~ ~~**Option 2:** Owner/Applicant chooses to pay cash-in-lieu.~~	Request removal of Condition 28 for the following reasons: - The Shire's Local Planning Policy 14 – Percent for Public Art Policy ('LPP 14') is a policy for the purposes of the Shire of Ashburton Local Planning Scheme No. 7 ('LPS 7'). In accordance with Clause 2.2.1 of LPS 7, the provisions of LPS 7 prevail where there is any inconsistency with LPP 14. - Clause 3.2.1 of LPP 14 states that projects eligible for public art contributions are: › *All development proposals for mixed use, commercial, civic, institutional, educational projects or public works of a value greater than $1,000,000 (one million dollars), linked to WA Construction Index, shall be regarded as eligible proposals under this Policy.* - It is noted that the above terms (being "mixed use", "commercial", "institutional" or "educational" projects) are not defined in LPP 14. - Notwithstanding, the Zoning Table in LPS 7 has the various uses or use-classes in groups as "Residential", "Industry", "Commerce", "Health and Welfare & Community Services", and "Entertainment, Recreation & Culture", which roughly corresponds with the descriptors used in Clause 3.2.1 of LPP 14. - Notably, the descriptor "residential" is not included in the descriptors used in Clause 3.2.1 of LPP 14. Therefore, it is clear that	As noted within the original Form 1 and submitted Form 2 of the Development Assessment Application Panel Forms, the development is denoted as a 'Mixed Use' development within an overall value of $100 million. The proposed land use was not denoted as 'Residential' as an option within the required form. In accordance with Clause 2.2.1 of LPS 7, the provisions of LPS 7 prevail where there is any inconsistency with LPP 14. However, the Scheme is silent on the matter of public art contributions and therefore LPP14 is not inconsistent with LPS7 and is a valid consideration, in accordance with cl. 67(g) of the *Planning and Development (Local Planning Schemes) Regulations 2015*. Notwithstanding, there may be reasonable grounds to negotiate a public art contribution with the proponent for (only) those components of the development deemed to be "mixed use" and "commercial" as we anticipate they may meet or exceed the $1 million threshold specified by LPP 14.	In accordance with Shire of Ashburton Local Planning Policy 14 - Percent for Art the application is required to make a public art contribution of $1 million being one percent of the $100 million total cost of development. In order to comply with the Policy, the owner(s) or applicant, on behalf of the owner(s) shall submit a statutory declaration prior to the lodgement of a Building permit stipulating the choice of: **Option 1:** Owner/Applicant chooses to co-ordinate the Public Art project themselves or by engaging an art consultant; or **Option 2:** Owner/Applicant chooses to pay cash-in-lieu.

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
		"residential" development is excluded from LPP 14 and is not considered as an "eligible proposal" under the provisions of LPP 14. - The proposed development, although incorporating various land use elements, was considered, and determined by the Shire and RJDAP as being "transient workforce accommodation" ('TWA') for the purposes of a land use definition under LPS 7. While some elements of the proposal fall under separate land use classes as defined in LPS 7, it is noted that these elements were considered "ancillary" to the predominant use of the site, being a TWA. - For the purposes of LPS 7, TWA is listed as a "**residential"** use. Clause 6.9.1 of LPS 7 also states the following: › *"All transient workforce accommodation, whether intended as permanent or temporary structures, shall be regarded as residential development and is subject to the requirements of the Residential Planning Codes and clause 6.5 of this Scheme.* - Additionally, under the permissibility table of the *Onslow Townsite Expansion Structure Plan,* a TWA is also listed as a residential use. On the basis of the above, the proposed development ought to be excluded from the operation of LPP 14 as it is "residential" development and is not a *"mixed use, commercial, civic, institutional, educational project(s) or public work"* as described in Clause 3.2.1 of LPP 14. Therefore, we request Condition 28 be deleted in its entirety as LPP 14 does not apply to the proposed development.		
29	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The **notification** ~~memorial~~ shall state as follows: *Vulnerable Coastal Area* *'This lot is located in an area likely to be subject to coastal erosion and/or inundation over the next 100 years.'*	Administrative change – Condition 29 relates to the preparation of Notification on Title, not a memorial.	The proposed changes to the wording of the condition are minor and are supported in this instance.	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows: *Vulnerable Coastal Area* *'This lot is located in an area likely to be subject to coastal erosion and/or inundation over the next 100 years.'*

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
30	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The **notification** ~~memorial~~ shall state as follows: *Bushfire Management (SPP3.7)* *'Registered proprietors and prospective purchasers of the land described above or any part thereof (land) are notified that the land is within a bushfire prone area and buildings shall be designed and constructed in accordance with Australian Standard 3959 - Construction of Buildings in Bushfire-Prone Areas (or superseded Australian Standard) and comply with any approved fire management plan prepared in respect of the land to minimise the risk of property damage.'*	Administrative change – Condition 30 relates to the preparation of Notification on Title, not a memorial.	The proposed changes to the wording of the condition are minor and are supported in this instance.	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows: *Bushfire Management (SPP3.7)* *'Registered proprietors and prospective purchasers of the land described above or any part thereof (land) are notified that the land is within a bushfire prone area and buildings shall be designed and constructed in accordance with Australian Standard 3959 - Construction of Buildings in Bushfire-Prone Areas (or superseded Australian Standard) and comply with any approved fire management plan prepared in respect of the land to minimise the risk of property damage.'*
31	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The **notification** ~~memorial~~ shall state as follows: *Onslow Salt Operational Noise* *'The land is located within an area identified as a potential noise source being the Onslow Salt operations'*	Administrative change – Condition 31 relates to the preparation of notification on Title, not memorial.	The proposed changes to the wording of the condition are minor and are supported in this instance.	A Notification under Section 70A of the Transfer of Land Act 1983 shall be prepared and lodged with the Registrar of Titles for endorsement on the Certificate prior to the commencement of development. The notification shall advise of the existence of a hazard or other factor affecting use or enjoyment of the land to the satisfaction of the Shire and at the applicant's cost. The notification shall state as follows: *Onslow Salt Operational Noise* *'The land is located within an area identified as a potential noise source being the Onslow Salt operations'*
~~**32**~~	~~A cyclone emergency shelter of adequate size shall be provided to accommodate all occupants on site at any time.~~	Request the removal of Condition 32 for the following reasons: - All buildings on site will be designed and constructed to Wind Category D (cyclone category applicable to the region); - There is no statutory or compliance requirement under the *National Construction Codes* to provide a dedicated cyclone emergency shelter; and - The benefits of a dedicated cyclone will be further considered during detailed design and if implemented, will exceed any statutory requirements and therefore, should not be listed as a condition of approval.	The removal of this condition is supported. The location of the development along the coast is defined as a 'Wind Region D' within the National Construction Code. All buildings must be adequately engineered and constructed to meet the standards.	-
33	The maximum number of persons to be accommodated on the site at any one time is limited to 500.	No change.	No Change.	-

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
34	No pets are to be kept on site.	No change.	No Change.	-
ADVICE NOTES				
A	This Determination Notice is not a Building Permit or Health Approval, nor authorise such works. All separate applications and approvals must be obtained prior to the commencement of construction on site, whichever occurs first.		No Change	-
B	**Construction work undertaken on site is confined within the following times:** **i. Monday to Saturday: 7:00am to 7:00pm** **ii. Sunday and Public Holidays: 7:00am to 7:00pm for construction work that does not emit noise beyond the property boundaries. Any construction work that requires the use of machinery that will emit noise beyond the property boundaries is not permitted unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the *Environmental Protection (Noise) Regulations* 1997 prior to the commencement of construction works.** **Construction work shall not be carried out outside of the abovementioned times unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the *Environmental Protection (Noise) Regulations 1997* prior to the commencement of construction works.** ~~No building or construction activities shall be carried out before 7.00am or after 4.00pm, Monday to Saturday, and not at all on Sunday or Public Holidays.~~	Request Advice Note B be reworded to allow for extended construction times consistent with the *Environmental Protection (Noise) Regulations 1997* ('Noise Regulations'). In this regard, it is noted that noise from construction sites is permitted between the hours of 7:00am – 7:00pm. We also note that advice notes should not seek to vary legislative requirements under the Noise Regulations. Therefore, we request the construction times be amended to reflect the current industry standard	The rewording of the advice note is supported. The rewording of the advice note includes provisions that advise approval of alternate hours of construction outside of those in accordance with r.13 of the *Environmental Protection (Noise) Regulations 1997* ('Noise Regulations'), require a formal application to be approved by the Shire's Environmental Health Team.	Construction work undertaken on site is confined within the following times: i. Monday to Saturday: 7:00am to 7:00pm ii. Sunday and Public Holidays: 7:00am to 7:00pm for construction work that does not emit noise beyond the property boundaries. Any construction work that requires the use of machinery that will emit noise beyond the property boundaries is not permitted unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the *Environmental Protection (Noise) Regulations* 1997 prior to the commencement of construction works. Construction work shall not be carried out outside of the abovementioned times unless approval is obtained from the Shire of Ashburton in the form of an approved Noise Management Plan under Regulation 13 of the *Environmental Protection (Noise) Regulations 1997* prior to the commencement of construction works.
C	With regard to Condition 11, all stormwater drainage shall be designed in accordance with the document entitled "Australian Rainfall and Runoff" 1987 (where amended) produced by the Institute of Engineers, Australia, and the design is to be certified by a suitably qualified practicing Engineer or the like, to the satisfaction of the Shire of Ashburton, and to be designed on the basis of a 1:100 year storm event. This is to be provided with the associated Building Permit Application.	No change.	A minor amendment is proposed to the advice note to align the information with the new condition number. It is proposed that Condition 11 be change to Condition 9 to reflect the relevant condition that the advice note relates too.	With regard to Condition 9, all stormwater drainage shall be designed in accordance with the document entitled "Australian Rainfall and Runoff" 1987 (where amended) produced by the Institute of Engineers, Australia, and the design is to be certified by a suitably qualified practicing Engineer or the like, to the satisfaction of the Shire of Ashburton, and to be designed on the basis of a 1:100 year storm event. This is to be provided with the associated Building Permit Application.
D	The Shire of Ashburton contains many places of Aboriginal Heritage significance. Proponents are advised to consider Aboriginal heritage issues and their	No change.	No Change	-

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
	obligations under the *Aboriginal Heritage Act 1972* at an early stage of planning. Further information can be obtained from the Department of Planning, Lands and Heritage on (08) 6551 8002 or at the following website www.dplh.wa.gov.au.			
E	Please be advised that under section 51C of the Environmental Protection Act 1986 (EP Act), clearing of native vegetation is an offence unless undertaken under the authority of a clearing permit, or the clearing is subject to an exemption. Exemptions for clearing that are a requirement of written law, or authorised under certain statutory processes, are contained in Schedule 6 of the EP Act. Exemptions for low impact routine land management practices outside of environmentally sensitive areas (ESAs) are contained in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (the Clearing Regulations). Consideration should also be given to the Department of Water and Environmental Regulation Draft Guidelines: Native vegetation referrals	No change.	No Change	-
F	The proposed activities occur within the proclaimed Pilbara groundwater and surface water areas and are subject to licensing requirements under the *Rights in Water and Irrigation Act 1914* (RiWI). If the proponent needs to use groundwater or surface water for any purpose, including construction, onsite fire hydrants or groundwater dewatering, they will need to apply for a 5C licence to take water and a 26D licence to construct any new water supply bores.	No change.	No Change	-
G	The proponent is to be made aware of its obligations, as under section 11 of the Contaminated Sites Act 2003, site owners, occupiers or a person who knows or suspects that they have caused or contributed to contamination must report the site to the Department. If the proponent suspects a site to be contaminated it is to be reported as soon as reasonably practical, however, if the proponent knows a site is contaminated it must be reported within 21 days of the proponent first being aware of the contamination. Failure to do so is considered an offence under the Act.	No change.	No Change	-
H	The installation of outdoor lighting shall be in accordance with the requirements of Australian Standard AS 4282 - 1997 "Control of the Obtrusive Effects of Outdoor Lighting".	No change.	No Change	-
I	The applicant is responsible for securing all necessary approvals and tenure, providing statutory notifications and complying with all relevant laws. Nothing in this	No change.	No Change	-

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
	determination notice alleviates the need for the applicant to comply with all relevant local, State and Commonwealth laws and to ensure appropriate tenure arrangements have been made where the use of/reliance upon land other than that owned by the applicant is involved. Without this obligation, the applicant is responsible for: a) Obtaining all other/further necessary approvals, licences, permits, resource entitlements etc by whatever name called required by law before the development the subject of this development approval can be lawfully commenced and to carry out the activity for its duration; b) Providing any notifications; c) Securing tenure/permission from the relevant owner to use private or public land not owned by the applicant (including for access required by conditions of approval); d) Ensuring the correct siting of structure on the land. An identification survey demonstrating correct siting and setbacks of structures may be requested of the applicant to ensure compliance with this determination notices and applicable provisions. Where an approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) or local government approval under regulation 17A of the Planning and Development (Development Assessment Panels) Regulations 2011.			
J	**This property is on a site where records confirm there is a history of military activities that have resulted in residual UXO. A possibility exists that dangerous items of UXO may still be found on this site. Contact police if a suspicious item that may be UXO if found. Visit www.defence.gov.au for further information.**	Refer to justification provided at Condition 6.	The inclusion of Condition 6 as an advice note is supported. The inclusion of the matter as an advice note, provides a means of informing the developer of their responsibility, whilst not mandating the imposition of a condition. This is aligned with the enforcement of the condition and advice note as set out within the WAPC's Model Conditions for subdivisions. The potential for UXO's on the site is 'Slight' and as noted by the Applicant, it is reasonable to provide the inclusion of the advice note (Fa5) rather than the condition based on the likelihood of suspicious items occurring within the site.	This property is on a site where records confirm there is a history of military activities that have resulted in residual UXO. A possibility exists that dangerous items of UXO may still be found on this site. Contact Police if a suspicious item that may be UXO is found. Visit www.defence.gov.au for further information.

Condition No.	Condition Wording	Applicant Justification	Shire Response	Amended Condition Wording
K	**The Shire of Ashburton is prepared to consider an application from the owner of Lot 300 under Regulation 17A of the Planning and Development (Development Assessment Panels) Regulations 2011 to delete or amend Conditions 8 and 9, if it can be demonstrated to the Shire's satisfaction that:** **a. Vehicle access/egress connection will be provided to Back Beach Road; and** **b. To the extent deemed necessary by and where agreed with the Shire, the proponent will contribute towards the upgrading of:** **(i) Back Beach Road up to and including the intersection with Simpson Street.**	-	Refer to the explanation for Condition 8 and Condition 9 above.	-
L	**The Operational Management Plan required by Condition 22 relates to the operational, day-to-day running of the facility, to address Objective 2.2 of the Shire's Local Planning Policy No. 13 – Transient Workforce Accommodation. The operator of the facility may apply in writing to the Shire for approval to amend this Plan if required for operational purposes.**	-	To support and clarify the provision of Condition 22 as approved by JDAP.	-

A consolidated and updated version of the development Conditions and Advice Notes is provided in **Attachment 14**, to ensure clarity around the deletion and renumbering of the conditions.

Conclusion:

The proposed amendments to the approved development application are predominantly supported, as valid justifications or additional information have been provided. A number of conditions proposed to be removed have been retained and reworded to better reflect the intent of the condition.

The overall extent and typology of the development as proposed within this application is deemed to be substantially the same development as the application originally approved in DA 21-67.

13.2C -DAP Application 21-02078_DA 22-40 L300 Back Beach Road, Onslow

SCHEDULE OF SUBMISSIONS							
	Submission Number (Records No.)	**Submission Name**	**Description of Affected Property (if relevant)**	**Support, Object, Comment**	**Submission Details**	**Applicant (Mineral Resources Limited) Comment**	**Officer Recommendation (No Change, or Modify)**
1	**22103638**	**Yossi Eren and Sharon Eren-Hoffman**	8 CLARKE PLACE, ONSLOW WA 6710	**Object**	*Planning department,* *I would like to express my objection to the proposed plan.* *The main concern is the access rout to the site.* *This road runs along the school boundary and then then via a quiet residential streets.* *The large volume of traffic 24/7 will:* • *significantly increase the risk of fatalities, especially to kids,* • *Will destroy the neighbourhood nature,* • *Will destroy the existing street infrastructure,* *Modifying the plan to have the access via Back Beach Road will address those issues.* *This submission is made as a worried resident of Onslow.* *Owner of a property on Clarke Pl.*	It is noted that this Application proposes amendments to the internal site layout (i.e. accommodation pods and facilities) and conditions of approval. As such, no changes to the access are proposed as part of this Application. Notwithstanding the above, it is noted that the Applicant is currently reviewing the access to the site with the Shire.	The amendment application submitted to the Shire does not propose to change the access points to the site from Third Avenue, nor the mode of transport to and from the development site, from that which was approved by the JDAP on 23 December 2021. Regarding the identified issues in relation to the nearby school, these matters were not objected to by the Department of Education in the original DA. It should also be noted that the proposed peak traffic times (6am and 6pm) for vehicle movements would be before and after school hours. Notwithstanding the above, the Shire is currently liaising with the Applicant and reviewing access to the site.

14.1A - HardeyLite Project - Request to Utilise Hamersley Mt Bruce Road

PRIVATE AND CONFIDENTIAL

HANCOCK PROSPECTING

Date:	15 July 2022
To:	Matt Fanning – Shire of Ashburton
Cc:	Tobias Kane
From:	Anne Do Van
Re:	Shire of Ashburton Briefing on the HardeyLite Project

HardeyLite Haul Road Overview

The project of interest is a proposed open cut iron ore mining operation located at Hardey (approximately 50km WNW from Paraburdoo, Western Australia.) The project involves proposed DSO production of lump and fines products at an initial rate of 1Mtpa with plans to expand to a rate of 10Mtpa from year 3. The project has an existing JORC Mineral Resource and is forecasted to have a mine life of at least 10 years.

Hancock is looking into hauling 1Mtpa of iron ore from the Hardey Mine to Mulga Downs from December 2023. Trucking operations will run along Nanutarra Road, Mt Bruce Road, Karijini Drive and then onto Great Northern Highway before turning into a private road towards Mulga Downs. During operations, Hancock will provide road maintenance services such as grading and dust suppression.

In regards to Mt Bruce Road, Hancock is proposing to run triple road trains on the existing road for 2 years from Dec 2023 – Dec 2025 and provide dust suppression and grading services through this operation. It has been indicated that a gravel overlay will be required on the road prior to trucking operation, which will be completed prior to operation.

By the end of year 2025, iron ore will then be hauled to Mulga Downs via an alternative route. Trucking operations will run along Nanutarra Road and Roebourne-Wittenoom Road before turning into a private road towards Mulga Downs. Hancock has plans to complete road upgrades for this operation. This will increase output from 1mtpa to 10Mtpa, which is expected to operate for approximately 10 years.

The location of Hardey Mine and Mulga Downs is shown below in Figure 1.

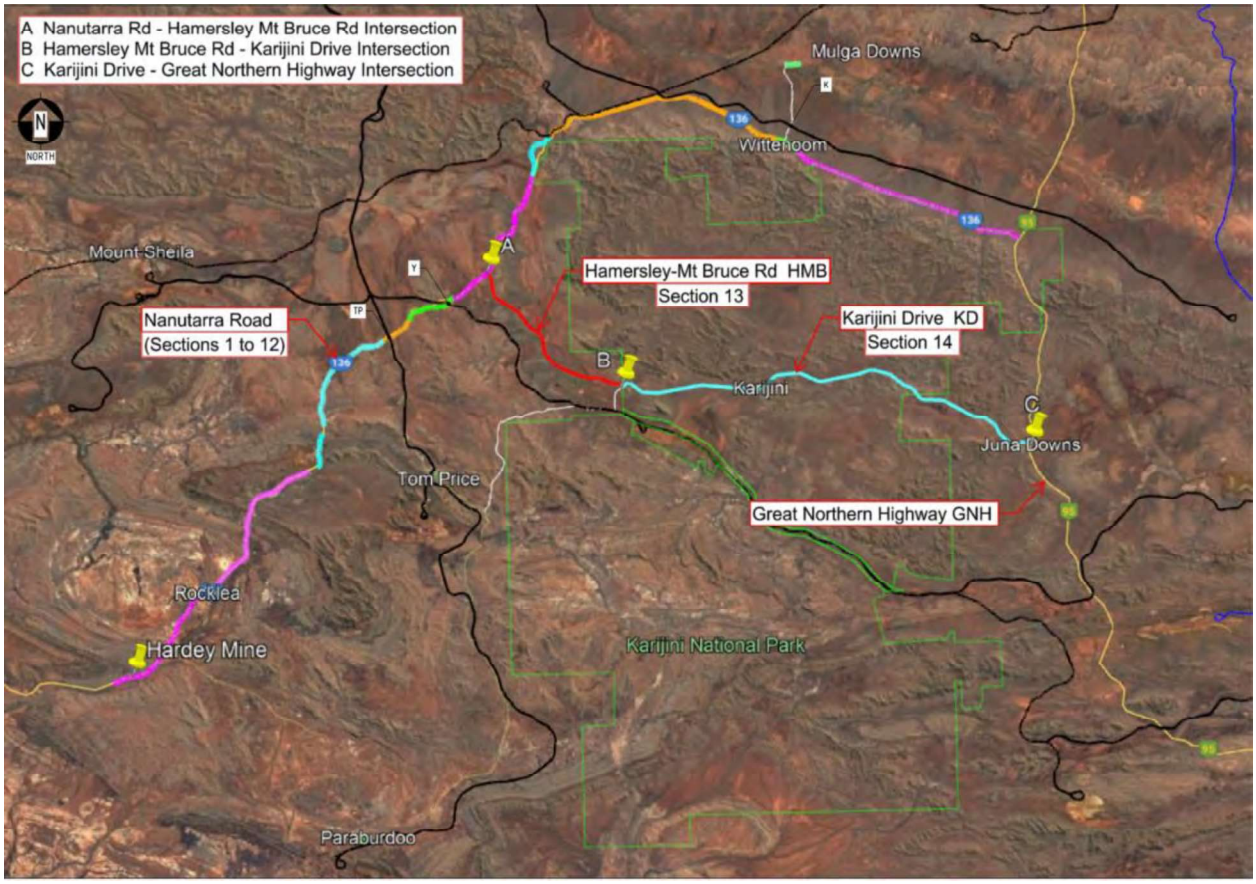


Figure 1. Location Map of Hardey Mine and Mulga Downs.

The detailed design of the road upgrade is being performed by BG&E Resources (BGER) under a joint management team from Main Roads WA and Roy Hill. The 15% design was completed in Q1 2022 and the detailed design commenced in Q2 2022. Detailed design is forecasted to be completed in Q1 2023, which is mainly driven by inputs from future geotechnical works and feedback from Main Roads WA.

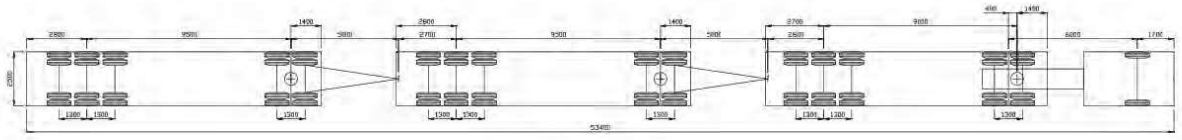
The Nanutarra Road 15% design is divided into the following key sections:

- **Section 1:** Hardey Deposit to Western Turner Syncline (SLK 208.8km to SLK 259.3km)
- **Section 2:** Western Turner Syncline to Rio Tinto's Karratha Tom Price crossing (SLK 260.9km to 287.4km)
- **Section 3:** Rio Tinto's Karratha Tom Price rail overpass (SLK 287.4km to SLK 292.5km)
- **Section 4:** Rio Tinto's Marandoo rail overpass (SLK
- **Section 5:** Rio Tinto's Marandoo Rail Crossing to Rio Tinto Gorge (SLK 301.1km to SLK 326.0km)
- **Section 6:** Rio Tinto Gorge (SLK326.0km to SLK 333.3km)
- **Section 7:** Rio Tinto Gorge to Wittenoom (SLK 333.3km to SLK 372.9km)
- **Section 8:** Wittenoom Bypass (SLK 372.9km to SLK 378.8km)
- **Section 9:** Wittenoom Bypass to Auski (SLK 378.8km to SLK 417.0km)
- **Section 11:** Roebourne Wittenoom Road (SLK 208.9km to SLK 196.2km)
- **Section 12:** Mulga Downs Road (SLK 0.0km to 2.7km)

Key elements of the basis of design are summarised as below.

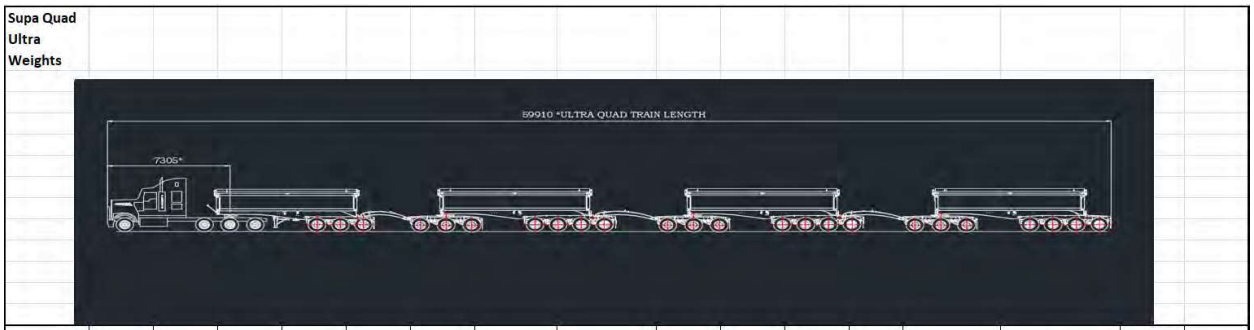
Item		Nanutarra Road
1.	SLK	208.8km to 308.0km
2.	Posted Speed (km/hr)	110
3.	Design Vehicle	Super quad
4.	Serviceability for Road	<15 days closure per year

The road haulage activity for 1Mtpa involves a fleet of 20 x 80T triple road trains which would be loaded at the loading facility at the Hardey mine and then unloaded to ground at Mulga Downs. The plan is to run these triple road trains over day shifts and night shifts. The current configuration of this road train is shown below.



A-triple (Type II) (53.4 m)

The road haulage activity for 10Mtpa involves an approximately 60m long super quad ultra-road train which would be loaded at the loading facility at the Hardey mine and then unloaded to ground at Mulga Downs. The payload of these trucks is 150T as per the below figure:



	Steer	Drive		Tri		Dolly		Quad	Dolly		Quad		Dolly	Quad	Measure	Totals
GCM Tonnes	7	23.5		23.5		23.5		28.5	23.5		28.5		23.5	28.5	GCM tonnes	**210**
Tare Tonnes	7	11		5.6		5.6		6.4	5.6		6.7		5.6	6.5	Tare Tonnes	**60**
Nett payload															Nett Tonnes	**150**

Fig. 1: Super quad ultra-road train specification

The haulage trucks will operate under the Performance-Based Standards (PBS) as the dimensions are outside the standard operating configurations. The trucking operation is expected to run on a 24 hours – 7 days a week basis.

The minimum following activities are recommended to advance the Project:

- Complete road upgrade detailed design for Nanutarra Road.
- Complete geotechnical works including borrow investigations, cutting investigations and bridge investigations. This will allow an understanding on where suitable embankment, subbase and basecourse fill can be sourced from, the amount and locations of where rock is expected and foundation suitability for the bridges.
- Complete hydrogeology works to ensure adequate water is available to meet water demands during road upgrade construction. This will be inclusive of test pumping and bore drilling.
- Ongoing stakeholder engagement with Main Roads WA and the creation of a DEED.
- Ongoing stakeholder engagement with Rio Tinto to allow rail surveys, bridge investigations and bridge construction to occur.
- Ongoing stakeholder engagement with the Shire of Ashburton and the creation of a road user agreement.
- Ongoing environmental and heritage approvals.

14.1B - HardeyLite Project - Request to Utilise Hamersley Mt Bruce Road

mainroads WESTERN AUSTRALIA

Standard Restricted Access Vehicle (RAV) Route Assessment Guidelines

November 2019

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Amendments

Revision Number	Revision Date	Description of Key Changes	Clause / Page No.
1	May 2016	Removed Appendix G 'Turning Radii' Removed Appendix K 'Assessment Form Template' Updated Appendix H 'Low Volume Condition 7' Updated Appendix D to include the wording 'with dedicated cycle lane' Updated contact details	Appendices & 1.5
2	July 2016	Updated to include revised minimum road widths for RAV Categories 2-7 and 9-10 & moved Type B traffic volume / road length table Added Type B traffic volume / road length table	Appendix C and 2.4.4
3	October 2016	Amended list of standard turning templates Updated web location for turning templates Amended low volume condition 1	Appendix G & H, 2.92
4	March 2017	Remove section	2.9.5
5	April 2017	Updated Main Roads website details	1.4
6	May 2017	Amended low volume condition 6	Appendix H
7	July 2017	Note added relating to private driveways	1.2
8	December 2017	Amended stopping sight distances Amended entering sight distances Amended wording relating to road parking Amended wording to include load/vehicle height being 4.6m	Appendix E, F, D, 2.3
9	August 2018	Amended wording relating to provision for overtaking Amended wording relating to turning at intersections Amended wording and requirements for railway level crossing Amended wording relating to off-road parking Amended appendices Appendix E, G (Templates) & I removed Added Figure 1 to 8 Incorporated concessional assessment requirements Amended section 2.4.1 Signage, 2.8.1 Acceleration Lanes, 2.9.1 Signage & 2.9.4 Rail Crossings	2.6, 2.9, 2.10, 2.11, Appendix A, B, C, D, E 1.1, 2.21

10	September 2018	Amended wording relating to turning at intersections Amended wording relating to provision of overtaking and removed Figure 1. Amended wording relating to Approach Sight Distance and Entering Sight Distance	2.6, 2.8, 2.84, 2.85
11	November 2019	Amended introduction to clarify the intent of the guidelines.	Page 6.

DEFINITIONS

The following are definitions for terms used in these Guidelines. Refer to the definitions in the Road Traffic (Vehicles) Act 2012 and any subsidiary legislation to this Act for the meanings of any terms not defined in this section.

Term	Definition
AADT	Annual Average Daily Traffic (AADT) the daily number of vehicles travelling on a road, averaged over one year. It is determined by the total yearly two-way traffic volume divided by 365, expressed as vehicles per day.
Approach Sight Distance (ASD)	The distance required for a driver of a RAV, travelling at a given speed, to observe the approaching intersection, and react or stop if necessary.
Bridge	A structure (with the exception of gantries) having a clear opening in any span of greater than 3 metres measured between the faces of piers and/or abutments or structures of a lesser span with a deck supported on timber stringers.
Carriageway Width	That portion of a road or structure devoted particularly to the use of vehicles that is between guide posts, kerbs or barriers where these are provided, inclusive of shoulders and auxiliary lanes.
Culvert	A structure under a road having only clear openings of less than or equal to 3 metres measured between the faces of piers and/or abutments or a pipe shaped structure of any diameter.
Entering Sight Distance (ESD)	The required sight distance for a RAV driver to see a sufficient gap in oncoming traffic that will allow a RAV, with greater length and lower acceleration capacity, to clear the intersection safely.
HVS	Main Roads Heavy Vehicle Services.
Main Roads website	www.mainroads.wa.gov.au
Passenger Car Equivalence	Passenger Car Equivalence (PCE) factors are a relative measure of the traffic flow impedance effects of different vehicle types. The PCE factor for a particular vehicle type is the equivalent number of passenger cars (AUSTROADS Vehicle Class 1) that would have the same impedance effect as a single vehicle of that type.
Order	An Order issued under the Road Traffic (Vehicles) Act 2012.
RAV	Restricted Access Vehicles (RAV) consists of all combinations of vehicles exceeding 19 metres in length or 42.5 tonnes gross mass including B-Doubles, road trains and truck-and-trailer combinations.
Remote Road	A general term for a main arterial road carrying mostly long distance traffic.

Term	Definition
Rural Road	All roads that provide a secondary network of National, State and local government roads connecting cities and towns.
Seal Width	Width between edges of sealed surface or between edge lines (where installed on undivided carriageways), whichever is less.
Structure	A bridge or culvert.
TPA	Tonnes per annum.
Urban and Town Site Road	All roads within a populated area of established dwellings, a central place of trade and recognised as a distinct place. Generally the area will act as a central hub of activity for the community.
VPD	Vehicles Per Day (VPD) is the number of vehicles observed passing a point on a road in both directions for 24 hours. It is a measure of daily traffic volume, often more relevant to low volume, local government roads, typically rural roads in these guidelines. VPD can differ from AADT in being a better measure of traffic volume during periods of more intensive RAV usage or seasonal tourist traffic.
Vehicle Regulations	The *Road Traffic (Vehicles) Regulations 2014*.

Related Documents

Document #	Title
D16#198414	Guidelines for Approving RAV Access
D16#374056	Tri Drive Route Assessment Guidelines
NA	RAV Route Assessment Form

1 INTRODUCTION

1.1 Purpose

These guidelines have been prepared to provide guidance to a person conducting an onsite assessment, on an existing road, for the purpose of assisting Main Roads Heavy Vehicle Services (HVS) in making an informed decision as to whether or not a road is suitable for use by a particular category of Restricted Access Vehicle (RAV).

These guidelines are to be read in conjunction with the following documents, available on the Road Access page on the Main Roads website:

- Framework for Adding Roads on the RAV Networks;
- Framework for Downgrading Local Roads on the RAV Networks;
- Framework for Using Consultants to Assess Local Government Roads for Inclusion on the RAV Network; and
- Guidelines for Approving RAV Access.

The RAV Route Assessment Form is also available on the Main Roads website to further assist in ensuring the required information is captured during the onsite assessment.

These RAV Route Assessment Guidelines form part of the overall RAV access assessment process, as outlined in Appendix F, to enable HVS to make an informed decision on behalf of the Commissioner of Main Roads, in accordance with the Commissioner's authority to approve RAV access under provisions of the *Road Traffic (Vehicles) Act 2012*.

These guidelines are not road design standards. However, if a road is constructed to the appropriate road design standards and approved by Main Roads, the road will pass the RAV access assessment process.

1.2 Application

For the purpose of these guidelines, "standard" RAVs are those vehicle combinations specified as Category 1 to 10 vehicle combinations under the *Prime Mover, Trailers Combinations Order 2017 and Truck, Trailer Combinations Order 2017.*

The standard RAV Categories have been grouped into four (4) assessment levels, as follows:

- Level 1 - RAVs Categories 2-4 (e.g. pocket road train, B-Double, and other RAVs with a maximum length of either 25.0 m or 27.5 m);
- Level 2 - RAVs Categories 5-6 (e.g. RAVs with a maximum length of 36.5 m and a maximum mass of 87.5T);
- Level 3 - RAVs Categories 7-8 (e.g. RAVs with a maximum length of 36.5 m and a maximum mass of 107.5T); and
- Level 4 - RAVs Categories 9-10 (e.g. RAVs with a maximum length of 53.5 m).

Note 1: A road approved for one of the base RAV networks listed above, means the road is also approved and added to AMMS level one (1) for the equivalent network.

Note 2: Where a RAV assessment is for operations under a concessional loading scheme such as the Accredited Mass Management Scheme (AMMS), the assessor must take into account the additional mass when requesting a structures assessment as per Section 2.2.

Where quantitative limits are recommended, they are intended as a guide only and are no substitute for common sense and judgement based on experience. In certain cases, routes which do not meet the requirements outlined in this document can be accepted as RAV routes by imposing additional conditions, such as speed restrictions, curfew etc. Refer to the *Guidelines for Approving RAV Access*.

1.3 Assessment Requirements

Route assessments will only be accepted from a suitably qualified person, approved by Main Roads. The assessor should have experience and knowledge of the following:

- The principles of heavy vehicle operation, including vehicle configurations, maximum dimensions and axle load limits;
- Heavy vehicle dynamic performance characteristics, including limitations on the ability of heavy vehicles to accelerate, brake, ascend grades and negotiate corners;
- Heavy transport issues, legal requirements and permit systems; and
- Road safety concepts and principles.

When considering a potential route, the assessor is advised to initially perform a desktop assessment using all available information. In some cases this initial assessment will identify particular physical constraints, such as posted bridge load limits and road width deficiencies, which may render the route unacceptable without the need for further assessment.

If the applicant is willing to pursue upgrades to the road, then a full assessment is required to identify all deficiencies. This is to alleviate any problems with some upgrades being carried out and then the full assessment conducted only to identify additional deficiencies. The assessment will only identify the deficiencies and will not provide upgrade design requirements.

Heavy vehicle use on a particular route may have some negative impacts on the environment, community and traffic. Assessors must first determine if the proposed route is the most appropriate route for the particular operations and recommend variations to the initially proposed route to reduce such impacts.

As part of any route assessment for a Restricted Access Vehicle (RAV), HVS does not assess any access for driveways adjoining a RAV network road. It remains the responsibility of the property owner to ensure safe ingress and egress to the property.

Before making a decision on an application for route access, Main Roads may deem it necessary to do any or all of the following:

- Perform a further assessment of the route;
- Assess the suitability of the road pavement;
- Assess the suitability of all structures on the proposed route to accommodate the specific vehicle;
- Specify conditions of access such as speed limits, hours of operation or accreditation requirements;
- Obtain local government agreement for the proposed route (for all operators);
- Recommend a number of road improvements as conditions of approval; and
- PBS assessment to assess vehicle performance.

To ensure network continuity, when assessing a road, all connection points to existing RAV networks must be assessed for suitability and a holistic approach should be taken to ensure overall network connectivity in the area.

1.4 Planning Evaluation

Assessment of a proposed route should be checked against any future planning proposals to evaluate the potential impact of RAVs. The relevant Local Government and Regions should be consulted as part of the process.

1.5 Further Assistance

Additional information and guidance is available from HVS via telephone 138 486 or hvsrouteassessments@mainroads.wa.gov.au

2 ASSESSMENT CRITERIA

2.1 Traffic Data

2.1.1 Traffic Counts

In order to determine the suitability of a road for RAV access, it is essential to obtain current traffic counts for the particular road. The traffic counts must be considered when determining appropriate road widths, potential congestion issues and relevant operating conditions.

2.1.2 Accident Statistics

Appropriate research must be conducted prior to progressing with a route assessment to establish if there is an accident history on the particular road that may be exacerbated by the introduction of RAVs on the road.

Safety is the primary factor for consideration. If crash history data is available, it may be useful to investigate whether certain times of the day cause particular risks, while at other times the risk is significantly lower. In these cases, it may be warranted to recommend that the RAV only use the route during low-risk hours.

2.2 Structures

2.2.1 Load Capacity

All bridges and load restrictive culverts on the requested route will be assessed for the relevant level of RAV Network access by Main Roads Structures Engineering Branch, via HVS. When carrying out an assessment for Network 2, ensure a separate Structures Engineering assessment is carried out for the Short B Triple combination.

Any bridge restrictions for the Short B triple combination must be listed in the Operating Conditions in the relevant vehicle category section and a notation included in the conditions for the relevant road.

Consultation with local governments is required to ensure all culverts on local government roads have been appropriately considered.

2.2.2 Structure Width Requirements

Table 1: Minimum Width between Kerbs/Carriageway on a Structure

AADT	Minimum Width Between Kerbs/carriageway (m)	Quality of Approaches
Less than 75	3.5*	Structures with adequate Approach Sight Distance (ASD)**.
75 to 150	5.3	Structures with adequate ASD, clearly signed and road clearly marked.
	7.0	Structures that have inadequate ASD, inadequate signage or no road markings.
150 to 500	5.8	Structures with adequate ASD, clearly signed and road clearly marked.
	7.2	Structures that have inadequate ASD, inadequate signage or no road markings.
More than 500	7.2	All structures at this traffic volume

*Conditions apply; refer to 2.4.2 and Appendix B;
**RAV ASD should be measured from a truck driver's eye height of 2.4 m. Minimum requirements for ASD refer to Appendix D.

2.3 Overhead Clearance

Although applicable for all vehicles, RAVs with high loads are particularly vulnerable to striking low overhead obstructions. Route assessments must confirm that adequate overhead clearances are available to safely accommodate a load/vehicle height of 4.6m, as follows:

- Overhead obstructions (except power lines) - 300 mm clearance; and
- Power lines - at least the minimum clearance required by telecommunications and electrical transmission cable providers.

Where telecommunications and/or electrical transmission cables cross the route, approval for a load/vehicle height of 4.6m must be obtained from the relevant controller/s listed in the "*Contact Details for Other Agency Approvals*" located on the Oversize Over-mass Permits page of the Main Roads website.

Where the required load/vehicle height of 4.6m is not approved by the cable provider, the cable provider must specify the maximum approved load/vehicle height and the location of the restricting power line. RAV access may still be considered with appropriate height conditions.

2.4 Rural Road Widths

When the hauling unit of a RAV travels along a straight path over an uneven surface, the trailing units do not necessarily follow along the same path as the lead unit. This is defined as "off-tracking" and depends on several factors, including:

- The steering actions of the driver;
- Vehicle configuration and coupling arrangements between units;
- Misalignment of the axles;
- Suspension (geometry, bump and roll steer effects) and tyre characteristics;
- Vehicle length;
- External disturbances that include road roughness, cross-slope and side loading from wind-gusts; and
- Speed of travel.

The maximum deviation in tracking over a straight section of road, when added to the width of the RAV, is termed the 'swept width'. To safely accommodate the swept width of RAVs, adequate road width must be provided.

To assess the widths of rural roads, tables of minimum carriageway widths and sealed widths to accommodate the swept width are listed at Appendix A.

To be suitable for RAV access, a road should be sealed if AADT is over 150 and annual freight tonnage is over 300,000 tonnes per annum. The requirement for the road to be sealed is partly for safety reasons, but more so for road sustainability.

In the absence of any traffic data, the following parameters may enable a judgement as to whether a road needs to be sealed:

- If the road is unlikely to be used by more than 10 RAVs per day; or
- If the road is unlikely to be used by more than 60 RAVs per day over a seasonal two month period.

When considering whether a road has adequate width, an assessment should also be made in relation to any potential risks posed by:

- Crests;
- Pronounced cambers;
- Poor shoulder condition;
- Surface roughness; and
- Reduced sight distances.

Despite a road's width being above the specified minimum in Appendix A, these factors may require additional width, application of additional RAV operating conditions, or in extreme cases, mean the route is unsuitable for RAV access.

Minor width deficiencies are acceptable, particularly if it is only for a small portion of the road. If width requirements are relaxed, a risk assessment should be undertaken to consider other factors to ensure safe operation.

Off-tracking of a vehicle combination is more severe at high speeds; therefore minimum seal width may be reduced where speeds are controlled to 60 or 70 km/h.

Minimum seal widths may also be reduced on roads where all other users are familiar with the operator of multi combination vehicles, e.g. farm access roads and mine access roads.

2.4.1 Sight Distance Considerations at Curves and Tight Bends

When the hauling unit of a RAV travels around a curve or tight bend, the trailing units may take up considerable additional road with. This is defined as "swept width" and depends on several factors, including:

- Radius of the curve or tight bend;
- Length of vehicle combination;
- Number and type of articulation points; and
- Road surface and geometry.

In instances where it is identified the RAV would be required to utilise additional road width and potentially encroach onto the opposite side of the road, the assessor must ensure on approach to the curve or tight bend, there is sufficient visibility to observe oncoming vehicles, and react or stop if necessary. The table in Appendix D shows the required sight distance for RAVs, given the speed and the gradient of the road.

It will be necessary for the assessor to conduct swept path assessments on curves to determine if the RAV is likes to encroach onto the opposite side of the road.

Note: Access should be declined if the RAV crosses a solid white line.

2.4.2 Low Volume Road Width

When assessing road width for Network 2 to 7 or 9 to 10 RAV access, where traffic volume is less than 75 vehicles per day, the width of the road may be assessed in accordance with the width requirement in Appendix B. Appendix E conditions must be applied. If the road width meets the requirements in Appendix A, the conditions as per Appendix E are not necessary.

2.4.3 Traffic Volume Consideration

It is important to use the most appropriate measure of traffic volume when applying Appendix A and Appendix B.

For medium to high traffic roads, where AADT is more than 500, AADT will usually be a suitable measure of traffic volume. For low to medium traffic roads, where AADT is from 150 to 500, higher seasonal traffic volume may be a more appropriate measure of traffic volume. For these roads, the widths in Appendix A are the relevant guidelines.
For low traffic volume roads, where AADT is less than 75, with higher seasonal variations, obtaining a best estimate of such higher daily volumes (VPD) is recommended. Appendix B only applies if AADT and any higher seasonal traffic volumes (VPD) are both less than 75. Otherwise, road width must be assessed using Appendix A.

2.4.4 Assessing a Road in Sections

The road may be composed of a number of sections that vary in their standard and that would fall into different categories of RAV suitability, or require different operating conditions (e.g. for low volume roads). Width variation is a typical example of this principle. Where differing sections are reasonably long, it can be beneficial to separately assess each section as to its category of RAV access and any applicable operating conditions. Assessors should only consider applying this method of assessment where there is a likely benefit and a practical start and finish point.

2.4.5 Short Sections of Reduced Width

There may be short narrow sections along the road due to narrow structures, roadside vegetation or short narrow sections of pavement. Provided narrow sections meet certain criteria, the minimum road width does not need to be considered the actual width of the entire road for assessment purposes. In the absence of any clearly identified other risk factors, clauses (a) and (b) below can be applied to assess the width deficiencies of narrow sections.

(a) Traffic Volume Less than 75 Vehicles per Day

This clause only applies to low volume rural roads that do not meet the width requirement in Appendix A, and for which the operating conditions in Appendix E will apply to RAVs.

Where all narrow sections of the low volume rural road meet the following criteria, the minimum width of the road can be considered to be the width of the road, excluding the narrow sections, when assessing suitability in accordance with Appendix B:

- Narrow sections must not be less than 3.5 m wide;
- Each narrow section must not be more than 100 m long;
- A combination of narrow points that are all within a single 100 m length of road can be considered to be one single narrow section;
- Two adjacent narrow sections must not be within 150 m of each other;
- Continuous unbroken sight distance must extend from a point at least 150 m from each end of any narrow section through the narrow section to a point at least 150 m beyond the section, in both directions; and
- Combined length of narrow sections is no more than 10% of total road length. All narrow sections shorter than 50 m shall be considered to have an effective length of 50 m.

If any narrow section fails to meet the 3.5 m minimum width criteria, the route shall be considered unsuitable for RAV access.

Where all narrow sections meet the 3.5 m minimum width criteria, but do not meet all the remaining criteria, the route shall be considered unsuitable for RAV access on a two-way RAV traffic basis. However, the route may still be suitable for one-way RAV traffic only, provided

operating conditions as per Appendix B for a Type B road are applied. Type B roads suitability is also subject to traffic volume and road length requirements outlined in Table 2.

Table 2: Maximum allowable road length for Type B suitability

Daily Traffic Volume	0 to15 VPD	16 to 30 VPD	31 to 50 VPD	51 to 75 VPD
Max Road Length	5.0 km	2.0 km	1.5 km	1.0 km

(b) Traffic Volume from 75 to 500 Vehicles per Day

This clause only applies to medium volume roads that generally meet the width requirements in Appendix A.

Where all narrow sections of a medium volume road meet the following criteria, the minimum width of the road can be considered to be the width of the road, excluding the narrow sections, when assessing suitability in accordance with Appendix A:

- Narrow sections should not have carriageway width more than 1.3 m below Appendix A values;
- For sealed road, narrow sections should not have sealed width more than 0.2 m below Appendix A values;
- Each narrow section should not be more than 2 km long; and
- The combined length of narrow sections should not be more than 15% of total road length.

Similar principles may logically carry over to assessment of higher traffic volume roads; however the width deficiencies will need to be assessed on a case-by-case basis.

2.5 Urban and Town Site Road Widths

There are a number of width requirements to be considered for RAVs travelling in urban and town site areas. As well as accommodating the additional swept width of RAVs, the width requirements for activities such as cycling and kerbside parking also need to be taken into account. The minimum road width requirements in town site areas are listed in Appendix C.

2.6 Provision for Overtaking

RAVs tend to operate at lower average speeds than light vehicles. If the road does not have sufficient overtaking opportunities, drivers of light vehicles may experience delays behind slower moving RAVs and in some cases may form “queues” of vehicles waiting to overtake. This may cause driver frustration and thereby increase the risk of drivers attempting to overtake when it is not safe. Therefore it is essential, from a road safety perspective, to have adequate overtaking opportunities on a RAV route.

It is recommended that AADT figures are used to assess overtaking opportunities, however the assessor should consider the impact of seasonal traffic during the assessment, as the AADT could be less than seasonal peak traffic volume.

The volume of traffic and percentage of RAVs on the route affects the requirement for overtaking opportunities. To assess suitability of overtaking, an AADT derived using the Passenger Car Equivalence (PCE) factors (Table 3) shall be used. The derived AADT is calculated by multiplying the AADT for each of the Austroads vehicle Class by the PCE factor based on the road’s terrain as per Table 3. This derived ADDT is the AADT figure to use in Table 4 below.

An example of calculating the derived AADT is listed below:

	Sum of AVG AADT	PCE Flat Terrain	AADT Flat Terrain
Austroads 1 & 2	3,180	1	3,180
Austroads 3, 4 & 5	1,893	2	3,786
Austroads 6, 7 8 & 9	285	2.5	713
Austroads 10 (RAV 2 - 4)	120	4	480
Austroads 11 (RAV 5 - 8)	117	4	468
Austroads 12 (RAV 9 -10)	2	9	14
		AADT derived	**8,640**

PCE factors represent the equivalent number of light vehicles for a particular type of RAV or general access heavy vehicle. The use of PCE factors provides a derived AADT value that can then be used to better assess overtaking opportunities.

Table 3: Passenger Car Equivalence Factors for RAVs

Vehicle Types		PCE Factors on Flat Terrain	PCE Factors on Rolling Terrain
Austroads Class 1		1	1.3
Austroads Class 2		1	1.3
Austroads Class 3 to 5		2	3.5
Austroads Class 6 to 9		2.5	5
Austroads Class 10	RAVs Categories 2-4	4	10
Austroads Class 11	RAVs Categories 5-8	4	10
Austroads Class 12	RAVs Categories 9-10	9	22

The maximum distances between overtaking opportunities are shown in Table 4. In all cases, the assessment of steep ascending grades in Section 2.7.1 must be performed separately.

Table 4: Maximum Distances between Overtaking Opportunities

AADT (Derived using PCE Factors)	**Maximum AVERAGE distance between overtaking opportunities**	**Maximum distance between any two overtaking opportunities**	**Notes**
500 or below	N/A	N/A	Provision of additional opportunities is usually not justified.
501 to 1000	15 km	30 km	
1001 to 1800	8 km	15 km	
1801 and above	5 km	10 km	At AADT > 2700, additional opportunities that exceed the criteria may be necessary.

For each overtaking opportunity, the portion of road available to complete the overtaking opportunity should meet the minimum length shown in Table 5.

Table 5: Minimum Length for Overtaking Opportunities

Road Section Operating Speed (km/h)	Assumed Truck Speed (km/h)	Length (m)		
		RAVs Categories 2-4	RAVs Categories 5-8	RAVs Categories 9-10
70	60	600	640	690
80	69	740	790	860
90	77	890	950	1040
100	86	1070	1130	1240
110	94	1290	1310	1440

Note: The above lengths are generally determined by measuring the length of the divided line where overtaking is permitted for the particular lane.

2.7 Steep Ascending Grades

2.7.1 RAVs Losing Speed on Grades

The speed of RAVs ascending long and steep grades can be reduced to the extent that the speed differential is hazardous for vehicles approaching from behind. If possible, steep ascending grades should have overtaking lanes.

In some cases where an overtaking lane is not provided, the drivers of faster following vehicles may become frustrated and attempt an overtaking manoeuvre when unsafe to do so. A RAV speed reduction to 40 km/h is considered the threshold point at which drivers will seek to overtake a slower vehicle, regardless of whether or not adequate sight distance is available.

Table 6 outlines the maximum distance required for a laden RAV travelling up a grade to slow down to 40 km/h. For grades or consecutive combinations of varying grades exceeding these distances, it is recommended that the grade should have an additional climbing lane for RAVs to mitigate the risk of other road users overtaking without appropriate sight distances.

Table 6: Maximum distances (m) of uphill travel before RAV speeds are reduced to 40 km/h

Grade %	RAVs Categories 2-6		RAVs Categories 7-8		RAVs Categories 9-10	
	80 km/h Approach Speed	100 km/h Approach Speed	80 km/h Approach Speed	100 km/h Approach Speed	80 km/h Approach Speed	100 km/h Approach Speed
3	*	*	*	*	1080	1650
4	950	1410	900	1350	690	1110
5	640	980	610	960	520	840
6	480	760	470	750	410	680
7	390	630	380	620	340	570
8	330	530	320	530	290	490

* RAV can maintain a higher speed than 40 km/h on these grades.

2.7.2 Maximum Grades Requirements for RAVs

For a route to be suitable for RAV access there must be no steep grades that are in excess of the limits in Table 7.

Table 7: Grades Limits for RAVs

	Sealed Roads	Gravel Roads
RAVs Categories 2-6	8%	5%
RAVs Categories 7-8	6%	4%
RAVs Categories 9-10	5%	3%

2.8 Turning at Intersections

It is essential that intersections can be safely negotiated, with minimal or no interference to other traffic.

2.8.1 Vehicle Speed While Negotiating the Turn

The vehicle turning radius is directly related to the maximum turning speed of the vehicle:

- For intersections where the vehicle must always stop before turning (e.g.: at a Stop sign), a turning speed of 5-15 km/h is generally sufficient;
- For intersections where the vehicle rarely or never needs to stop before turning, a speed of 20 km/h or 30 km/h could be assumed; and
- Where following traffic is likely to be slowed as a result of the RAV turning off a high traffic road, a high turning speed (30 km/h or greater) is desirable, to minimise disturbance to traffic.

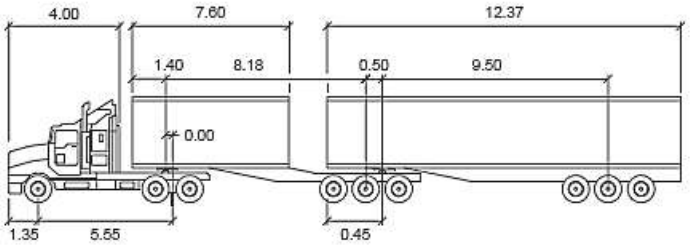
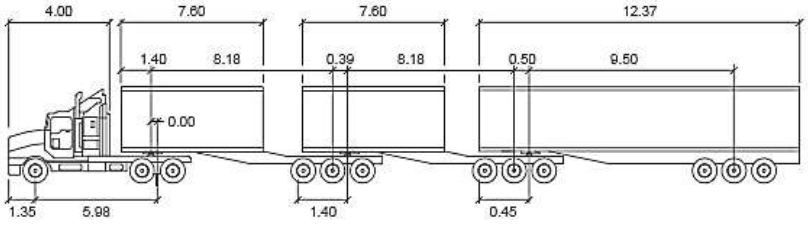
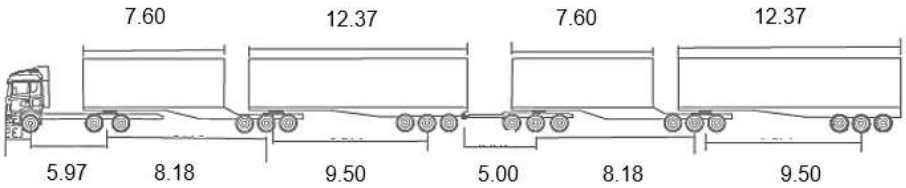
2.8.2 Turning Clearances

Where there is any possibility that the RAV may have insufficient clearance from kerbs or other nearby objects, standard turning templates shall be used to accurately check the swept path of the RAV.

Using AutoTurn, the appropriate vehicle combination must be used to check all turning movements at all required intersections and any clearance problems should be noted on the *RAV Route Assessment Form*. As a rule:

- The wheel paths of the rear trailer of the RAV must not come any closer than 200 mm from the face of any kerb, unless the kerb is designed to be mounted, in which case the 200 mm clearance is not applied.
- If there is no kerb (such as a gravel road), the edge of the road formation can be taken as the kerb.
- The overhang path must not come any closer than 200 mm to a nearby object.
- For a left or right turn, the wheel paths must not cross over the centreline of the road, unless the sight distances in all directions of the intersection are adequate according to Appendix D.

Table 8: Vehicle combinations for completing swept path assessments

RAV Categories	Assessment Vehicle	Maximum Length (m)
2-4	**B-double**  B-Double HVS meters Tractor Width : 2.50 Trailer Width : 2.50 Tractor Track : 2.50 Trailer Track : 2.50 Lock to Lock Time : 6.0 Steering Angle : 35.0 Articulating Angle : 70.0	27.5
5-7	**B-triple**  B-Triple HVS meters Tractor Width : 2.50 Trailer Width : 2.50 Tractor Track : 2.50 Trailer Track : 2.50 Lock to Lock Time : 6.0 Steering Angle : 35.0 Articulating Angle : 70.0	36.5
9-10	**Double B Double**  Double B-Double HVS Track Width 2.50m Trailer Width 2.50m Tractor Width 2.50m Trailer Track 2.50m Lock to Lock Time 6.0 Steering Angle 35.0 Articulating Angle 70.0	53.5

2.8.3 Intersection Layout

To assist in ensuring network performance levels are maintained, the assessor needs to identify if acceleration lanes and turn pockets are present at intersections and the length of these treatments.

Capturing this information in the assessment will assist in determining if network improvements are necessary, in consultation with the road manager.

2.8.4 Approach Sight Distance (ASD)

The route shall be rejected if the driver of a RAV, approaching the intersection has insufficient visibility to observe the intersection, or advance intersection warning, and react or stop if necessary. The table in Appendix D shows the required sight distances for RAVs, given the vehicle type, speed and the gradient of the road. When measuring the available approach sight distance, the measurement must be taken from a truck driver's eye height of 2.4 m.

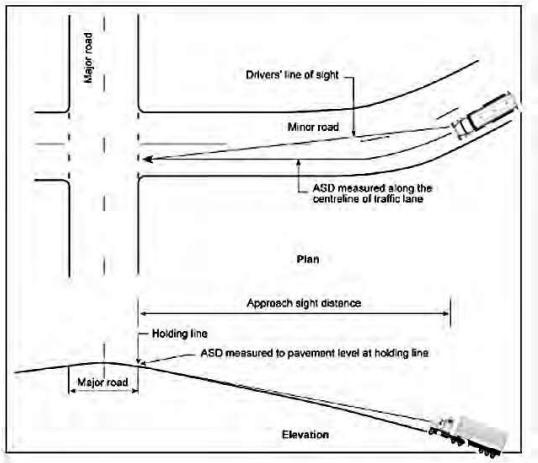


Figure 1: Example of Approach Sight Distance

2.8.5 Entering Sight Distance

The route shall be rejected if the driver of a RAV, entering a through road, does not have appropriate sight distance to see a sufficient gap in oncoming traffic that will allow a RAV, with greater length and lower acceleration capacity, to clear the intersection safely. The table in Appendix D shows the required sight distances for RAVs, given the vehicle type, speed and the gradient of the road. When measuring the available entering sight distance, the measurement must be taken from a truck driver's eye height of 2.4 m to a height that considers all traffic.

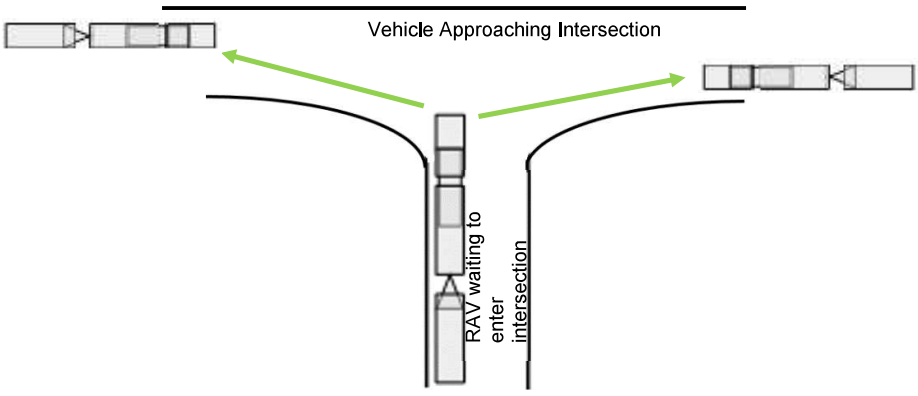


Figure 2: Example of Entering Sight Distance

The angle and gradient of the intersection should also be considered to determine if additional time is required for a RAV to manoeuvre the intersection, for instance a steep upgrade in the direction of travel will adversely affect the RAV's start up and acceleration when entering the through road.

Note: The entering sight distance requirement is only required for intersections that are not controlled by traffic signals, with the exception of a right turning movement with no right turn arrow.

2.9 Railway Level Crossings

The various operational requirements at railway crossings are described in Main Roads *'Railway Crossing Control in Western Australia Policy and Guidelines'* found on the Railway Crossing page of the Main Roads website.

The following points highlight the main considerations for RAVs at railway crossings for the various levels of protection.

2.9.1 Inadequate Approach Stacking Distance

Inadequate approach stacking distance occurs where the distance between the railway and a nearby intersection is insufficient to enable a vehicle to stop at the crossing without impeding the traffic flow at the intersection.

Approach stacking distance is measured from the vehicle stopping line at the railway crossing to the nearest shoulder edge of the crossroad. The vehicle stopping line at a railway crossing is normally indicated by a painted line or, in the absence of a marked line, assumed to be 3.5 m back from the nearest rail.

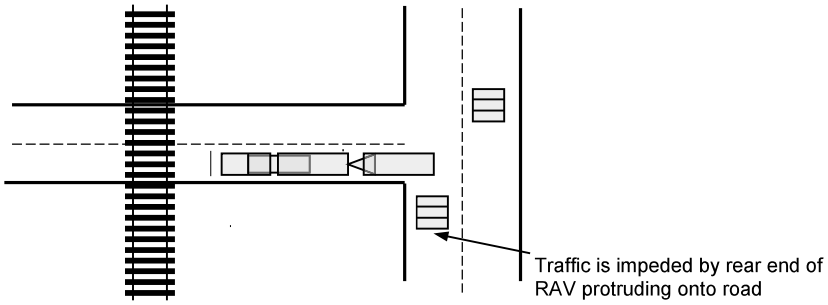


Figure 3: Examples of Inadequate Approach Stacking Distance

2.9.2 Inadequate Departure Stacking Distance

Inadequate departure stacking distance occurs when part of a vehicle would encroach within 3.5 m of the railway track while stopped to give way to traffic on the priority road of an intersection located beyond the crossing. A possible exception is in cases where the intersection is controlled by traffic signals that are coordinated with the operation of the railway crossing signals.

Departure Stacking Distance is measured from the vehicle stopping line at the intersection to within 3.5 m of the nearest railway track. In the absence of marked lines, the measurement is to be taken from the edge of the through lane (if there are edge lines) or the edge of the seal.

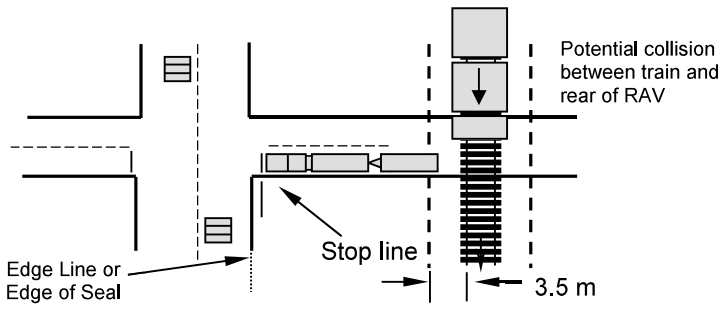


Figure 4: Examples of Inadequate Departure Stacking Distance

2.9.3 Criterion for Assessing Whether Stacking Distance is Adequate

Figure 5 shows the methodology for measuring approach (2.9.1) and departure (2.9.2) stacking distance. Ideally, a clearance of 3.5 m should be applied when assessing the available approach stacking distance. However, if the approach stacking distance is at least the length of the RAV and there is sufficient ESD for other vehicles departing the intersection while there is a RAV stopped at the rail, a lesser clearance is acceptable.

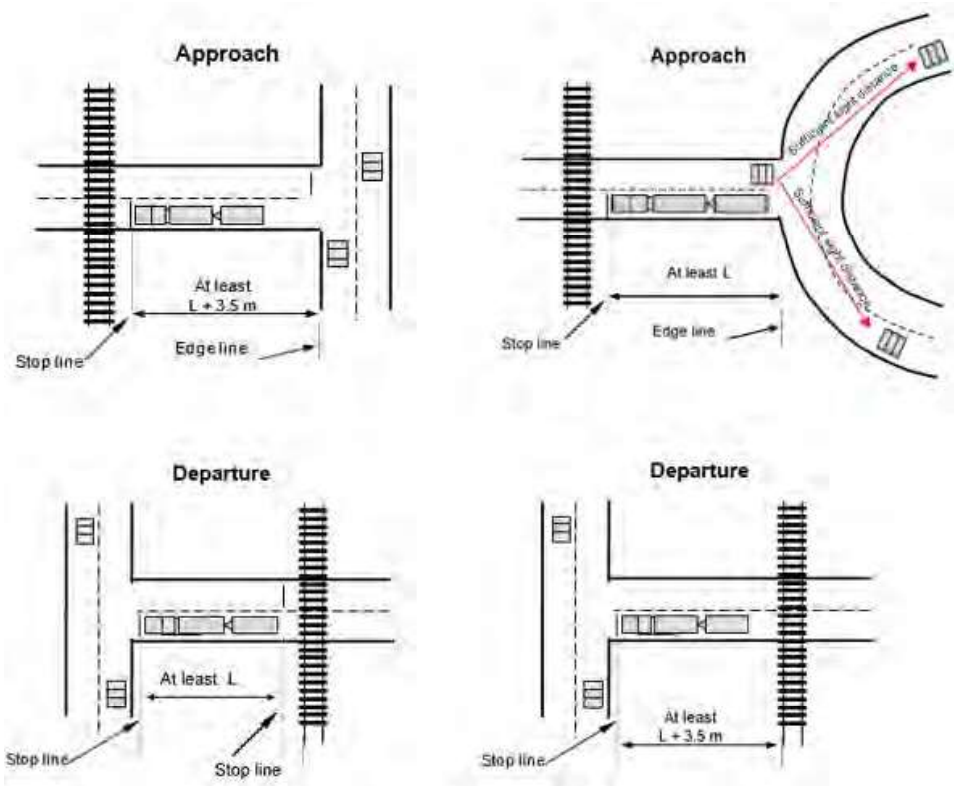


Figure 5: Examples of Adequate Stacking Distances

2.9.4 RAVs at Crossings Protected by Give Way or Stop Signs

The driver of a RAV approaching a railway crossing protected by a GIVE WAY or a STOP sign needs to be able to see the crossing from a sufficient distance to allow enough time to stop the RAV if required. The ASD to a railway crossing must meet Appendix D.

There also needs to be sufficient sight distance for the driver of a RAV, after having stopped at a railway crossing with a GIVE WAY or STOP sign, to see an oncoming train and allow adequate time to safely cross. The required sight distances for RAVs at railway crossings must meet:

- The S3 formula for STOP signs of the Australian Standards AS1742.7-2016 – Manual of Uniform Traffic Control Devices – part 7: Railway Crossings.

The S3 formula determines the minimum distance required for the driver of a vehicle stopped at the railway crossing to be able to see an oncoming train in order to safely cross.

When measuring the available sight distance to all directions at rail crossings, a truck driver's eye height of 2.4 m is recommended.

Where railway crossings with STOP signs are located along the proposed route, the assessor must record the information shown below in Figure 6 on the *RAV Route Assessment Form*. This information is then used to calculate the S3 formula.

Note: A Track Access Permit must be obtained from the relevant rail provider to access the rail corridor (outside the 3 metre zone).

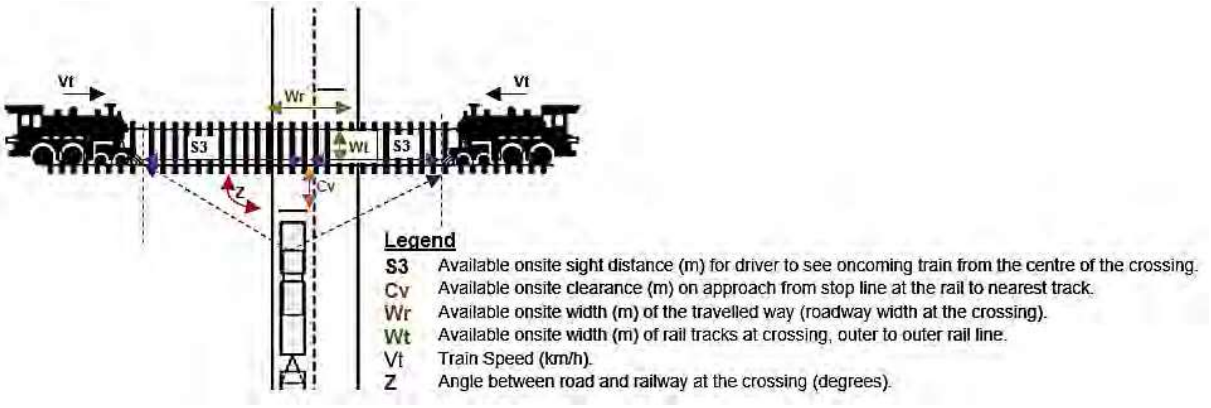


Figure 6: Required Information from Onsite Assessment for S3 Calculation

2.9.5 RAVs at Railway Crossings Protected by Flashing Lights

The visibility of the primary flashing lights and advance flashing yellow warning signs displays on the approach to crossings must be assessed so that the driver can safely stop if required. The sight distance to the flashing lights, or alternatively the advance flashing yellow warning signs must meet the minimum requirements in Appendix D.

When measuring the available sight distance to all directions at rail crossings, a truck driver's eye height of 2.4 m is recommended.

2.10 Off-road Parking

In rural and remote areas, the route should have adequate off-road truck parking facilities at sufficient spacing along the route.

In any one direction of travel, the maximum spacing for off-road parking facilities is:

- Rural Area roads 80 km
- Remote Area roads 120 km

Adequate off-road parking facility is defined as any:

- Service station or roadhouse, (or other commercial establishment), with provision for public truck parking;
- Signed parking bay, truck bay, rest area; or
- Designated road train assembly area;

Which meets the following criteria:

- Minimum approach sight distance (measured from a truck driver's eye height of 2.4 m) to the entry/exit point for traffic travelling on the through road are in accordance with Appendix D; and
- Minimum entering sight distance (measure from a truck driver's eye height of 2.4 m to a height that considers all traffic.) from the entry/exit point in accordance with Appendix D; and
- The full length of the RAV can be parked without encroachment onto the carriageway. Minimum safe clearance distance of the RAV parked parallel to the road are shown in Table 9.

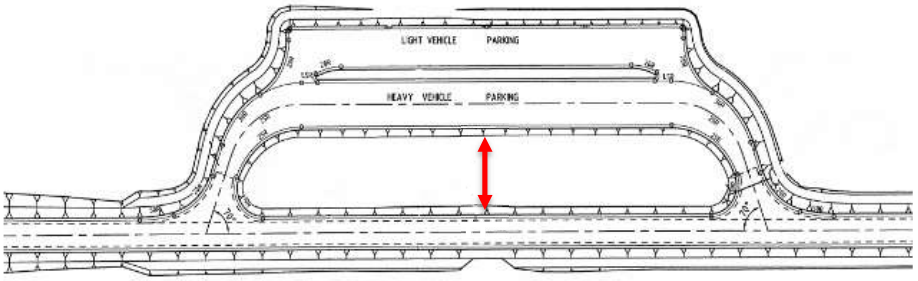


Figure 7: Minimum clearance between road pavement and parking bay

Table 9: Minimum safe clearance distance of parked RAV from road

Speed Limit (km/h)	Minimum Clearance from edge of pavement * (m)
60	5
70	5.7
80	6.2
90	7.6
100	8.8
110	11

* For parking facilities located on the outside of a curve, add a further 1.6 m to the normal minimum clearance.

Depending on the frequency of trucks using the truck parking bays or road train assembly areas, the requirement of other facilities such as rubbish bins, tables and chairs and toilets needs to be considered. The assessor should also consider the likelihood of more than one RAV using the parking facility at any given time. This will depend on the volume of heavy vehicles on the proposed route. More information about off-road parking facilities can be obtained from Rest Areas page on the Main Roads website.

2.11 Other Road Users

The key issues here are whether RAV operation will be highly incompatible with, or pose new risks to other road users that may not be familiar with or could be more vulnerable to RAVs. Road users that should be considered when assessing suitability include:

- Pedestrians (especially where there are school crossings);
- Cyclists;
- Tourists and recreational users (who may be unfamiliar with the conditions);
- School buses (where the frequent stopping and turning by buses and the presence of children on or adjacent to the road can pose potential hazards); and
- Farmers moving farm machinery and implements.

Safety is the primary factor for consideration. If crash history data is available, it may be useful to investigate whether certain times of the day engender particular risks, while at other times the risk is significantly lower. In these cases, it may be warranted to recommend that the RAV only use the route during the low-risk hours.

RAVs can affect the flow of other traffic and contribute to congestion issues. Numbers of RAVs can reduce the speed of other traffic and in worst cases frustrate other motorists. Assessors should examine the traffic flow on the route and recommend solutions to reduce risks resulting from traffic disruption.

Vehicles towing caravans or trailers are a significant issue in that they can find it difficult to pass RAVs. This situation is more prevalent during school holidays. Therefore the assessor should consider the impact of seasonal traffic changes during the assessment.

If safety issues for other road users, which would result from RAV operation, are identified as major and cannot be suitably addressed, the route should be considered unsuitable for RAV access.

2.12 Slowing and Stopping

The ability of vehicles to safely pull off the carriageway, e.g. to allow following vehicles to pass or to make repairs, should be examined. Continuous sections of the route with narrow shoulders and/or deep drains should be noted and comments made on any safety implications.

3 COMMUNITY CONSIDERATIONS

Assessors need to consider potential community impacts as part of assessing route suitability.

3.1 Noise

The assessor shall consider whether the introduction of the RAVs onto the route has potential to cause a significant noise impact by considering the following:

- Areas sensitive to road traffic noise, including residences, schools and hospitals;
- The likely number of RAVs in comparison to existing number of large trucks (3 or more axles);
- Factors contributing to noise generated by RAVs such as gradients (higher speeds or use of engine braking systems), acceleration/deceleration areas (higher engine speeds, gear changing or use of engine braking systems), and road pavement irregularities (body rattle); and
- Factors mitigating the impact of noise from RAVs such as distance to residences and any screening of residences by hills, cuttings or walls.

The main criterion for noise impact assessment is the change in the numbers of large trucks (3 or more axles) on the route. Doubling RAV numbers can be considered as the start of a significant noise change while quadrupling can be considered as very significant change.

On very low volume roads, introducing RAVs may significantly increase numbers of large trucks, but overall truck numbers may still remain low enough so as not to cause a significant noise impact.

Conversely, if the road is an existing heavy vehicle route, introducing RAVs or larger RAVs may reduce the number of trips required for a given freight task and improve noise issues.

Consideration should also be given to potential noise impacts near a truck parking area. In particular, the noise generated by refrigerated trailers should be taken into account as these trucks are required to keep their cooling compressors running all night.

Where noise impacts are expected to be significant the assessor shall consider options for mitigating noise impact, such as:

- Approved noise reduction request signs;
- A curfew for RAVs during night time hours;
- Consideration of alternative routes;
- Noise certification of RAVs as a condition of access; and

- Speed restrictions.

Where noise impacts are expected to remain significant and mitigation actions have been implemented, Main Roads will consult with the relevant Local Government and may undertake a noise impact study of the route.

3.2 Vibration

Where the RAV route passes close to abutting development there may be adverse impacts upon people and property due to vibration. The assessor shall consider whether the introduction of the RAVs onto the route has potential to cause significant vibration impact by considering:

- Distance to buildings and their use and condition;
- Road roughness; and
- Uneven drainage gullies and manhole covers.

Where vibration impacts are expected to be significant the assessor shall consider options to mitigate the impacts, such as road surface improvements and alternative routes.

3.3 Dust and dirt

Where the RAV route passes close to abutting development there may be adverse impacts upon people and property due to dust, especially where a route is unsealed. The assessor shall consider whether the introduction of the RAVs onto the route has potential to cause significant dust impact by considering:

- Distance to buildings and their use;
- Likely numbers of RAVs using the route; and
- Likelihood of significant amounts of dust being produced by RAVs.

RAVs entering onto a seal road from a dirt road will potentially carry the dirt onto the sealed road, particularly in wetter conditions. This results in dirt building up and spreading on the road, which impacts on other motorists.
Where dust and dirt impacts are expected to be significant the assessor shall consider options to mitigate the impacts, such as alternative routes, speed restrictions and possibly sealing road sections, particularly on the approach to a sealed road.

3.4 Community Consultation

In line with Government policy, Main Roads may require a route that has been given a favourable assessment using these guidelines to undergo a community consultation phase. Main Roads, with input from the relevant local government, will determine the need for community consultation on a case-by-case basis.

3.5 Alternative Transport Modes

Alternative transport modes need to be considered to ensure RAV road transport is the most effective form of transport available for the particular operation.

4 APPENDICES

Appendix	Title
A	Rural Road Minimum Widths
B	Low Volume Rural Road Minimum Widths
C	Townsite Road Minimum Widths
D	Required Sight Distance
E	Operating Conditions
F	RAV Access Assessment Process

Appendix A: Rural Road Minimum Width

	60 to 70 km/h		80 to 100 km/h	
	Carriageway Width* (m)	Sealed Width** (m)	Carriageway Width* (m)	Sealed Width** (m)
0 to 150 AADT / VPD*				
RAVs Categories 2-4	7.6	3.3	7.9	3.4
RAVs Categories 5-7	7.7	3.4	8.0	3.5
RAVs Categories 8-10	8.2	3.8	8.6	3.9
150 to 500 AADT / VPD				
RAVs Categories 2-4	7.6	5.6	7.9	5.9
RAVs Categories 5-7	7.7	5.7	8.0	6.0
RAVs Categories 8-10	8.2	6.1	8.6	6.4
500 to 1 000 AADT				
RAVs Categories 2-4	7.9	6.1	8.2	6.4
RAVs Categories 5-7	8.0	6.2	8.3	6.5
RAVs Categories 8-10	8.6	6.6	9.0	6.9
More than 1 000 AADT				
RAVs Categories 2-4	9.6	6.8	9.9	7.1
RAVs Categories 5-7	9.7	6.9	10.0	7.2
RAVs Categories 8-10	10.6	7.6	11.0	8.0

* The carriageway widths given in the above table should be used for assessing usable width on gravel roads.

** A road should be sealed if AADT over 150 and annual freight tonnage over 300,000 TPA.
In the absence of any data, the following parameters may be a guide:

- uniform annual loaded RAV traffic volume more than 10 vehicles per day; or
- loaded RAV traffic volume more than 60 vehicles per day over a seasonal two month period.

*** When the road width is below the above values and traffic volume is no more than 75 VPD, the route may be suitable for RAVs Categories 2-10 (excluding 8) access as a low volume road. Refer to Appendix B on the following page.

Appendix B: Low Volume Rural Road Minimum Widths

NB: This section is not to be used for assessing routes for RAV Category 8.

Type A Road (suitable for two-way RAV traffic)

	40 km/h	60 km/h
	Carriageway Width (m)	**Carriageway Width (m)**
RAVs Categories 2-7	5.8	6.1*
RAVs Categories 9-10	5.9	6.3*

For Type A low volume roads, Appendix E operating conditions 1, 2, 3, 4, 5, 7 and 8 may be applied as a condition;

*If a road is at least 1.0 m wider than these widths, an 80km/h speed restriction should be considered. A speed restriction above 80km/h should only be considered if the road is sealed, has good sight distance and presents no significant safety concern.

Type B Road (unsuitable for two-way RAV traffic)

	40 km/h
	Carriageway Width (m)
RAVs Categories 2-7	3.5*
RAVs Categories 9-10	3.5*

For type B low volume roads, Appendix E operating conditions 1, 2, 3, 4, 5, 6, 7 and 8 may be applied as a condition.

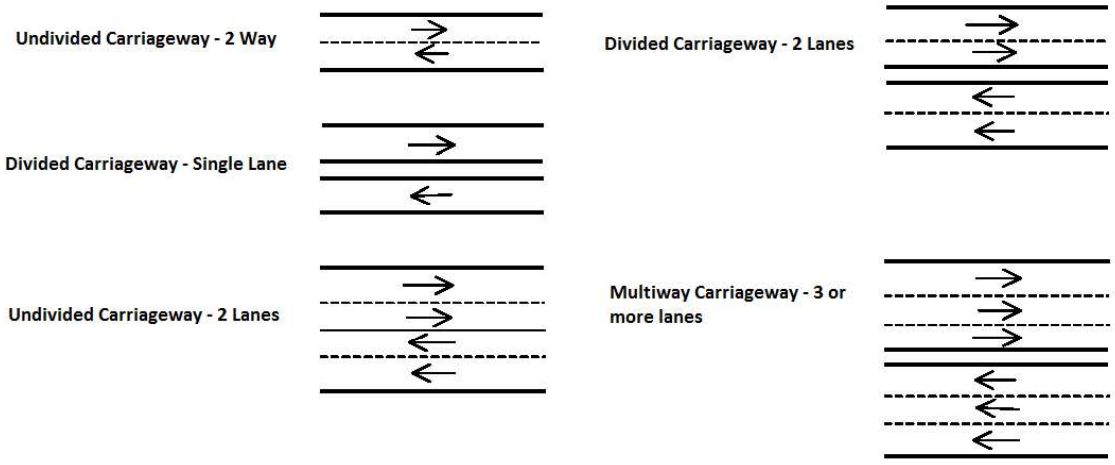
*Maximum road length limits apply, refer to Table 2 in Section 2.4.

Appendix C: Town Site Road Minimum Widths

Feature	RAVs Categories 2-4		RAVs Categories 5-8		RAVs Categories 9-10	
	60 - 70 km/h	80-100 km/h	60 - 70 km/h	80-100 km/h	60 - 70 km/h	80-100 km/h
(Undivided carriageway – 2 Way) Width between sealed edge and road centre (m)						
Basic / unmarked	3.2	3.5	3.3	3.7	3.6	4.1
with marked separation line	3.5	3.8	3.6	4.0	3.9	4.4
with dedicated cycle lane	4.7	5.5	4.8	5.7	5.1	6.1
with dedicated or regular parallel parking	5.7	NA	5.8	NA	6.1	NA
with dedicated angle (45º) parking	9.2	NA	9.3	NA	9.6	NA
(Divided carriageway – single lane) Width between sealed edge and edge of median or traffic island (m)						
Basic / unmarked	3.5	3.8	3.6	4.0	3.9	4.4
with dedicated cycle lane	5.0	5.8	5.1	6.0	5.4	6.4
with dedicated or regular parallel parking	6.0	NA	6.1	NA	6.4	NA
with dedicated angle (45º) parking	9.5	NA	9.6	NA	9.9	NA
(Undivided carriageway – 2 lanes) Width between sealed edge and road centre (m)						
Basic / unmarked	6.6	7.0	6.7	7.1	7.0	7.5
with dedicated cycle lane	8.1	9.0	8.2	9.1	8.5	9.5
with dedicated or regular parallel parking	9.1	NA	9.2	NA	9.5	NA
(Divided carriageway – 2 lanes) Width between sealed edge and edge of median or traffic island (m)						
Basic / unmarked	6.6	7.0	6.7	7.1	7.0	7.5
with dedicated cycle lane	8.1	9.0	8.2	9.1	8.5	9.5
with dedicated or regular parallel parking	9.1	NA	9.2	NA	9.5	NA
(Multiple Lane Carriageways – 3 or more lanes) Width of additional through lane (m)						
basic	3.2	3.4	3.3	3.5	3.4	3.6

Notes:

1) Speed refers to the prevailing speed limit for the road
2) An explanation of road type descriptors follows:



Appendix D: Required Sight Distances

Posted Speed km/h	Downhill				Level	Uphill			
	-8%	*-6%*	*-4%*	*-2%*		*2%*	*4%*	*6%*	*8%*
40	74	72	70	68	66	65	64	62	61
50	102	98	95	92	89	87	85	84	82
60	134	128	123	119	116	112	110	107	105
70	170	162	155	149	144	140	136	133	130
80	209	198	190	182	176	170	165	161	157
90	252	239	228	218	210	203	197	191	186
100	308	290	275	263	252	242	234	227	220

The above values have been derived using the formula given in Austroads Guidelines with following factors:

Reaction Time	4.0 s

(Deceleration rate of 0.29g up to 90 km/h, 0.28g at 100 km/h.)

Appendix E: Operating Conditions

Main Roads will apply the operating conditions below, as a condition of permit, to very low traffic volume roads when the road's width does not meet the minimum requirements in Appendix A.

These and other similar operating conditions may be applied to the assessment of other roads.

1. When travelling at night, the RAV must travel at a maximum speed of 40km/h and display an amber flashing warning light on the prime mover.
2. No operation on unsealed road segment when visibly wet, without road owner's approval.
3. Headlights must be switched on at all times.
4. Speed restrictions. *
5. Direct radio contact must be maintained with other RAVs to establish their position on or near the road (suggested UHF Ch 40).
6. For a single lane road, the road must not be entered until the driver has established via radio contact that there is no other RAV on the road travelling in the oncoming direction.
7. Operation is not permitted while the school bus is operating on the road. Operators must contact the relevant schools directly and obtain school bus timetables; or where direct contact can be made with the school bus driver, operation is permitted once the school bus driver confirms all school drop-offs/ pick-ups have been completed on the road.
8. Current written support from the road asset owner, endorsing use of the road, must be obtained, carried in the vehicle and produced upon request.

These conditions are applied in the Prime Mover, Trailer Combinations and Truck, Trailer Combinations Operating Conditions. The applicable roads must be clearly identified as either a "Type A" Low Volume Road or a "Type B" Low Volume Road or appropriate conditions listed separately as a road condition.

*40 km/h or 60 km/h as determined from Appendix B.

Appendix F: RAV Access Assessment Process

