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SURVEYING & PLANNING SOLUTIONS

21 November 2024

Our Ref: 6660
Your Ref 4755312 MCU2022/0020

The Chief Executive Officer
Charters Towers Regional Council
PO Box 104
Proserpine QLD 4800

Attention: Development Assessment

Dear Sir/Madam,

RE: Development Application for Material Change of Use
Non-Resident Work Force Accommodation (732 rooms)
Lot 1 on SP103591, 13 Melaleuca Court, Greenvale

With regards to Council's Information request issued 27 February 2023 we offer the following responses regarding the items, believing that all items are addressed in full.

Item 1. Development Works Code
Please refer to the attached water and sewer assessment by RMA Engineers. In summary:

Council confirmation is required regarding the existing water & sewer network capacity. This will be determined during detailed design. Based on the mapped infrastructure we don't anticipate capacity issues. If capacity issues exist it is anticipated the following options could be investigated during detailed design:

- Water – on site water supply storage filled during off-peak periods to supply demand balance during peak periods
- Sewer – short term storage of sewage in tanks to be pumped into the sewer network during off-peak periods

Item 2. Traffic Management
Please refer to the attached Traffic Impact Assessment prepared by RMA Engineers.

Item 3. Strategic Framework Assessment
Refer to the attached strategic framework assessment.

We will now be progressing to the Public Notification phase of the application.

If you have any queries with regards to the above, please do not hesitate to call this office.

Yours Sincerely,

Madison Day

Workers Accommodation Camp | Greenvale

Water and Sewer Assessment Report

Date 13 Sept 2024

Project Number 24E-0242

REPORT CONTROL SHEET

RMA ref. no:	24E-0242-C-REP01
Project name:	Commercial Development - Workers Camp | Greenvale
Report title:	Water and Sewer Assessment Report
Report author:	Aaron Neubauer

Document control						
Revision	**Author**	**Reviewer**	**Approved for issue**			
			Name	**RPEQ no.**	**Signature**	**Date**
0	Aaron N.	Aleacia O.	Aleacia O.	18246		13/09/2024

Disclaimer:

This report is a professional opinion based on the information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects.
This report will comment on the Civil infrastructure to the project and may outline probable costs but the extent of the commission of RMA does not extend to detailed cost feasibility, as such the costs should not be relied on for financing arrangements.
The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

Table of Contents

1. Introduction

RMA Engineers Pty Ltd has been commissioned by Paul Czislowski C/- Capricorn Survey Group Pty Ltd (the client) to prepare a Water and Sewer Assessment Report in support of a development application for a proposed non-residential workforce accommodation on land at 13 Melaleuca Court, Greenvale described as Lot 1 on SP103591.

The scope of the report is to address the following:

- Calculate the demand load generated by the development for water supply and identify proposed connection point into the existing system
- Calculate the demand load generated by the development for sewage disposal and identify the proposed connection point to the existing network

1.1 Basis of report.

The report has been compiled based on:

- Information provided by the client
- Discussions with the client
- Charters Towers Regional Council Planning Scheme (2020)
- Charters Towers Regional Council Information Request dated 27 February 2023 (CTRC Ref. 4755312 MCU2022/0020)

This report has been prepared specifically for the Client, site and project. It has been written solely for the purpose of providing engineering advice on the above issues for the Council and the Client for this development site. Please note that this report has been compiled based on the information that is current at the time of report printing, and that the recommendations supplied within this report are based solely on the above.

1.2 Location and description

The site is located on land described as Lot 1 on SP103591, Greenvale and is generally highlighted in the locality plan below (**Figure 1**).

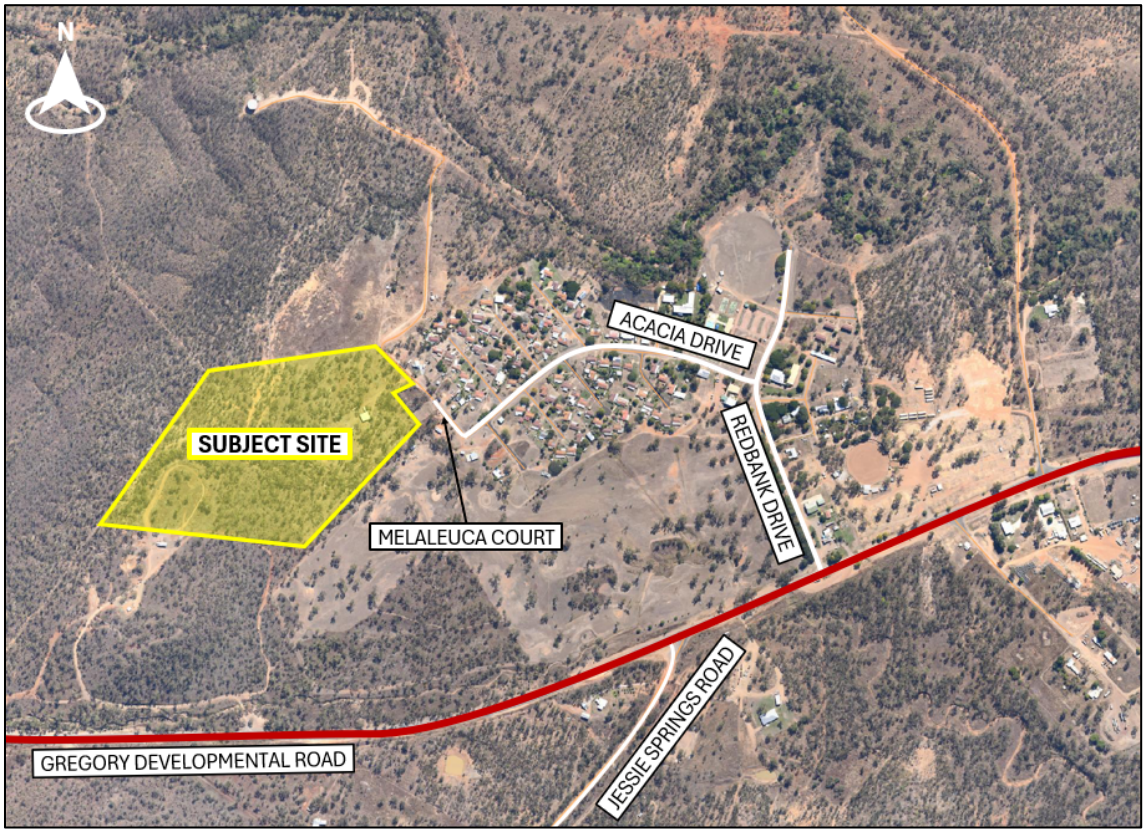


Figure 1 – Locality plan

The site comprises of an area approximately 14.32ha in size. The site is currently undeveloped, sparsely covered with trees and is poorly grassed. Several structures are also on the site towards the east of the site. The site has varied terrain and generally falls to the east.

The site is within the Charters Towers Regional Council authority area and the Town Plan Zone Map indicates the land is mapped as Rural Zone. The site is surrounded by Rural Zoned land to the north, south and west with Township Zoned land to the east of the development site.

2. Proposed Development

The Site is proposed to be developed as a non-residential workforce accommodation. The development proposes demountable buildings and associated carparking. **Figure 2** illustrates the proposed development.

The site comprises:

- 171 demountable buildings
- Four berths (bedrooms) per demountable building
- Each room will provide for one worker and contain a bed and ensuite
- Separate kitchen, amenities and laundry buildings
- 265 on-site car parking spaces

Refer **Appendix A** for the development layout plan.

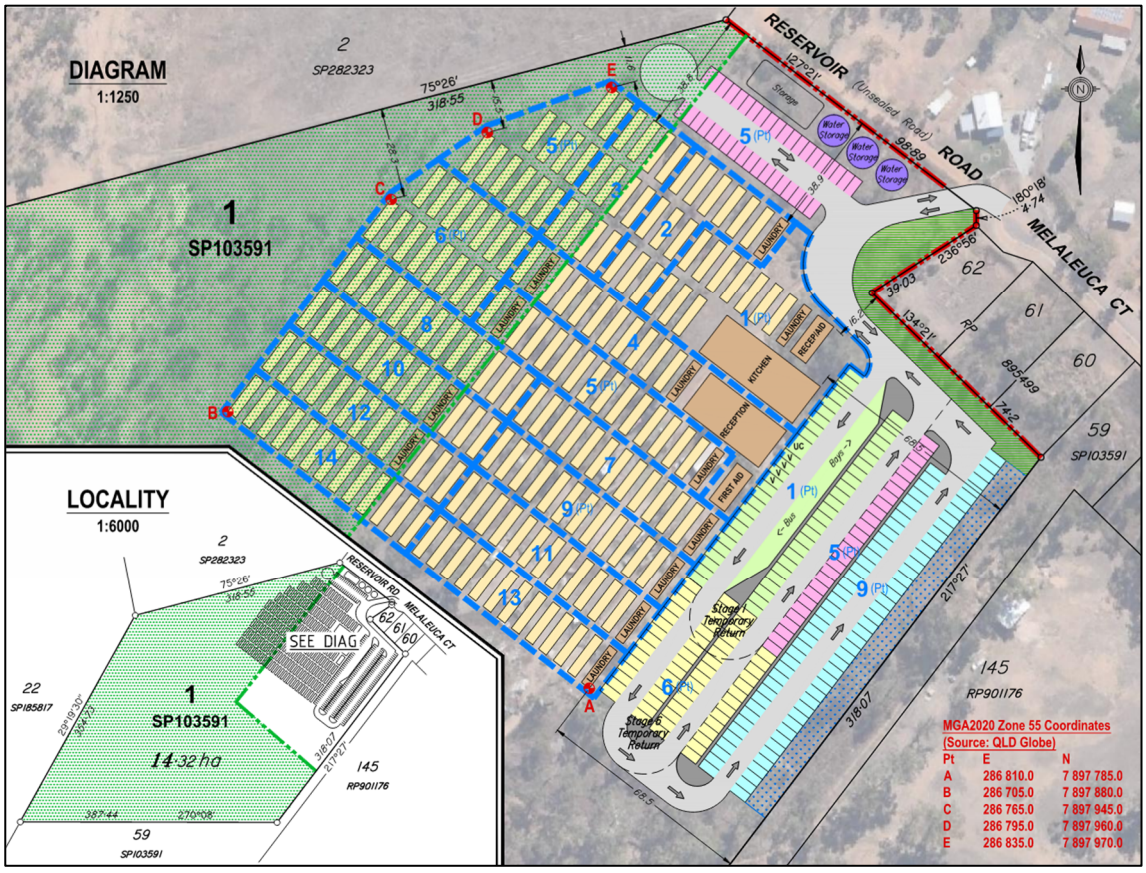


Figure 2 – Development layout

2.1 Operation

The operation of the site has been informed by the client and is proposed as follows:

- Workers are given a designated room for the term of their employment, and no other individuals utilise this room (including on rostered days/weeks off)
- The employment arrangements comprise a three weeks on, one week off roster
- Employee rosters are staggered and therefore the accommodation camp is expected to be at a maximum of 75% utilised at any one time
- Shift lengths are 12 hours (5am to 5pm)

2.2 Staging

The development is expected to be completed by 2028 and will be staged as follows in **Table 1.** It is noted that this is an estimate and staging will ultimately be determined by demand.

Stage	Rooms	Other works/structures	Estimated completion year
1	40 rooms (10 demountables)	1x laundry facility, kitchen/mess hall, first aid/temporary reception office, water storage, stormwater treatment areas, vegetation buffer (to adjoining residential properties) and open space.	2025
2	48 rooms (12 demountables)	1x laundry facility	
3	48 rooms (12 demountables)		
4	40 rooms (10 demountables)	2x laundry facilities, main reception/office, additional first aid	
5	56 rooms (14 demountables)	2x laundry facilities,	2026/2027
6	60 rooms (15 demountables)		
7	48 rooms (12 demountables)	1x laundry facility	
8	52 rooms (13 demountables)		
9	48 rooms (12 demountables)	1x laundry facility	2028
10	48 rooms (12 demountables)	1x laundry facility	
11	48 rooms (12 demountables)	1x laundry facility	
12	48 rooms (12 demountables)	1x laundry facility	
13	48 rooms (12 demountables)	1x laundry facility	
14	52 rooms (13 demountables)		
Total	**684 rooms (171 demountables)**	**12 x laundry facilities kitchen/mess hall, first aid/temporary reception office**	

Table 1: Development staging

3. Water supply and sewerage disposal

3.1 General

The site is not located within the Priority Infrastructure area.

The peak occupancy rate described in Section 2.1 has been the adopted for all water and wastewater general calculations.

3.2 Water reticulation

3.2.1 Water supply

Water supply for the development will be obtained from a direct connection to Charters Towers Regional Council water reticulation network.

Based upon council's infrastructure mapping there appears to be an existing 100DIA water main located within the road verge of Melaleuca Court. The watermain terminates in front of the site.

The proposed water supply connection will be taken off the 100DIA water main as shown in **Figure 3**.

During the detailed design phase of the project a pressure and flow test will be undertaken for the watermain within Melaleuca Court. This will assist in determining capacity for the proposed development.

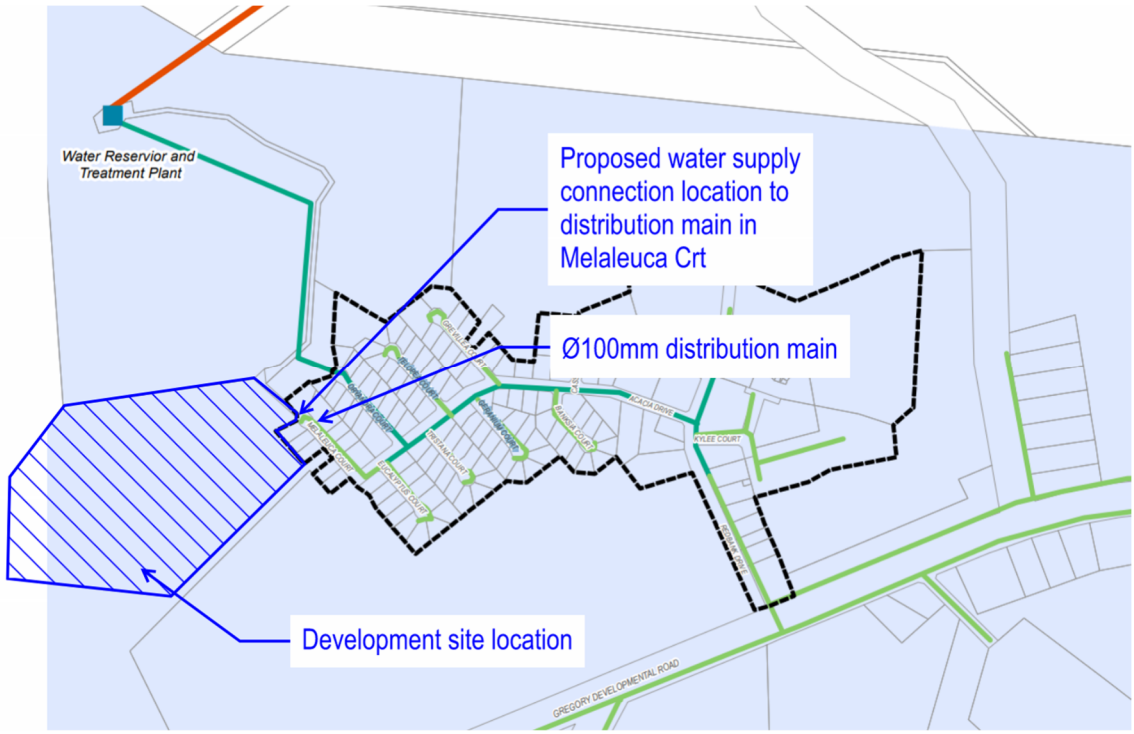


Figure 3 – existing water infrastructure and proposed water service connection

3.2.2 Indicative water demands

The water demand parameters and calculation for the proposed development have been considered in accordance with the Far North Queensland Regional Organisation of Councils Development Manual D6 Water Reticulation.

The guideline nominates the Average Daily Consumption (AD) as 500 L/EP/day. There is no direct

consideration for the equivalent persons per connection associated with non-residential workforce accommodation. Multi-unit accommodation is nominated as 0.6 EP/bedroom which equates to 300 L/EP/day.

It is considered that this rate is too high based on:

- Operational efficiencies in commercial scale for water associated with laundry services, cooking and cleaning
- Extremely low external water usage as garden and lawn watering is significantly lower than residential accommodation
- Shift duration of the occupants spending a significant amount of their day away from camp at work
- Workers are only at the camp for the duration of their work roster (ie. Three weeks on, one week off)

In the absence of a suitably appropriate demand values, water demand has been appraised based on values for a Typical Household (2-4 persons) found in Table 5.3 of the Department of Energy and Water Supply Planning Guidelines for Water Supply and Sewerage April 2010 Chapter 6 amended March 2014.

As a result, we estimate demand to be 220L/person/day based on:

- Toilet = 55 L/day
- Shower = 85L/day
- Kitchen = 22.5L/day
- Laundry = 50L/day
- Other = 7.5L/day

Both 220L/person/day and a 75% peak occupancy rate will be adopted in water demand calculations for the development. Refer **Tables 2 and 3** for summaries of calculations.

3.2.3 Fire fighting

Requirements for firefighting storage will be assessed as part of each stage by the building certifier.

If the pressure and flow are not available as direct feed from the Charters Towers Regional Council water network, permanent on-site storage may be required for firefighting.

Design parameter	Design value	Total	Source/comment
Unit (bedroom)	513		Workers Accommodation 1 bedroom = 1 EP, 684 bedrooms at 75% occupancy (based on roster)
Average Daily Demand (AD) (L/EP/Day)	220	112,860	As discussed in section 3.2.2 above
Mean Day Maximum Month (MDMM) = AD x	1.5	169,290	FNQROC Development Manual Section D6.07
Peak Day Demand (PD) (L/Day) = AD x	2.25	253,935	FNQROC Development Manual Section D6.07
Peak Hour Demand (PH) (L/hr) = PD x	1/12	21,161.25	FNQROC Development Manual Section D6.07
Peak Hour Demand (PH) (L/s) = PD / 3600 x	1/12	5.88	FNQROC Development Manual Section D6.07

Table 2 – Indicative ultimate work accommodation water demands

Design parameter	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14
Units constructed (bedrooms)	40	88	136	176	232	292	340	392	440	488	536	584	632	684
Units occupied (bedrooms) (75% occupancy)	30	66	102	132	174	219	255	294	330	366	402	438	474	513
Average Daily Demand (AD) (L/Day)	6,600	14,520	22,440	29,040	38,280	48,180	56,100	64,680	72,600	80,520	88,440	96,360	104,280	112,860
Mean Day Maximum Month (MDMM) (L/Day)	9,900	21,780	33,660	43,560	57,420	72,270	84,150	97,020	108,900	120,780	132,660	144,540	156,420	169,290
Peak Day Demand (PD) (L/Day)	14,850	32,670	50,490	65,340	86,130	108,405	126,225	145,530	163,350	181,170	198,990	216,810	234,630	253,935
Peak Hour Demand (PH) (L/hr)	1,237.50	2,722.50	4,207.50	5,445.00	7,177.50	9,033.75	10,518.75	12,127.50	13,612.50	15,097.50	16,582.50	18,067.50	19,552.50	21,161.25
Peak Hour Demand (PH) (L/s)	0.34	0.76	1.17	1.51	1.99	2.51	2.92	3.37	3.78	4.19	4.61	5.02	5.43	5.88

Table 3 – Indicative worker accommodation water demand by stage

3.3 Sewerage disposal

There is currently no sewer connection to the site. The nearest sewer infrastructure to site is a Ø150mm gravity main located inside the adjacent residential lots to the east offset from the common boundary.

The depth of this gravity main is unknown and the site falls eastward toward the existing gravity main. It is unclear if there is sufficient fall on the site and depth at the connection to utilise gravity sewer for the development.

The site may require a private onsite sewer pump station and private sewer pressure main internal to the lot to collect and discharge to the existing sewer infrastructure however this is subject to future investigation and design.

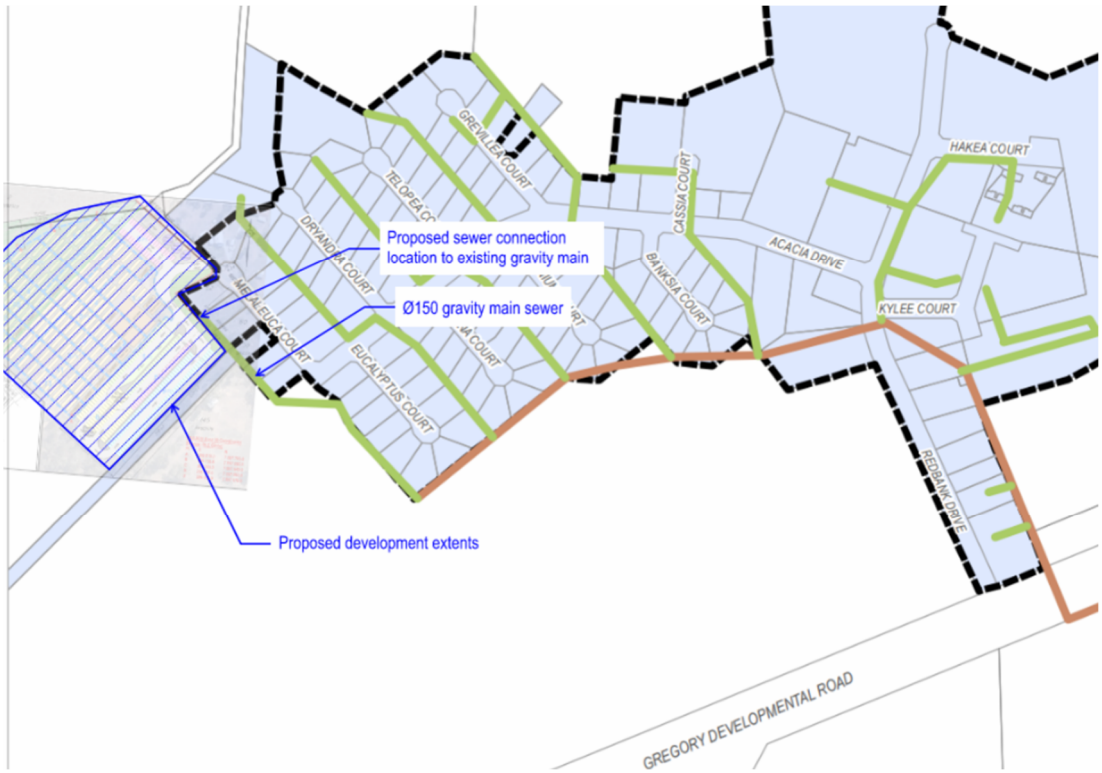


Figure 4 – existing sewer infrastructure and proposed sewer connection

3.3.1 Indicative sewer demand

The sewage load calculations for the proposed development have been considered in accordance with the Far North Queensland Regional Organisation of Councils Development Manual D7 Sewerage Systems.

The guideline nominates the Average Dry Weather Flow (ADWF) as 270 L/EP/day. Regarding the equivalent persons/connection, a non-resident workforce accommodation is not directly considered.

Multi-unit accommodation is listed as 0.6 EP/bedroom which appears reasonable to adopt for non-resident workforce accommodation. However this equates to approximately 160 L/person/day which is likely too low based on the water demand discussion presented in section 3.2.2.

The sewer load for this development is estimated to be 200L/person/day on the following basis:

- 100% of all toilet and shower water is discharged to sewer
- 80% of all kitchen and laundry water is discharged to sewer
- None of the 'other' water is discharged to sewer

Both 200L/person/day and a 75% peak occupancy rate will be adopted in the sewage generation calculations for the development. Refer **Tables 4 and 5** for summaries of calculations.

3.3.2 Emergency storage volume requirements

The Far North Queensland Regional Organisation of Councils Development Manual required four hours of emergency storage calculated at the rate of Average Dry Weather Flow (ADWF) unless a standby a standby generator is part of the sewer scheme.

The required emergency storage volume has been calculated as 17,136L minimum.

This storage could be provided in sewer gravity lines, within a sewer pump station wet well or as an additional storage vessel.

Exact details of the emergency storage configuration will be determined during the detailed design.

Design parameter	Value	Source/comment
Unit (bedroom)	513	Workers Accommodation 1 bedroom = 1 EP, 684 bedrooms at 75% occupancy (based on roster)
Loading rate (L/EP/Day)	200	As discussed in section 3.3.2 above
ADWF (L/day)	102,600	FNQROC Development Manual Section D7.08
ADWF (L/s)	1.19	FNQROC Development Manual Section D7.08
C2	2.44	FNQROC Development Manual Section D7.08
C1	5.57	FNQROC Development Manual Section D7.08
PDWF (L/s)	2.90	FNQROC Development Manual Section D7.08
PWWF (L/s)	6.62	FNQROC Development Manual Section D7.08

Table 4 – Indicative ultimate worker accommodation sewage generation

Design parameter	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14
Units constructed (bedrooms)	40	88	136	176	232	292	340	392	440	488	536	584	632	684
Units occupied (bedrooms) (75% occupancy)	30	66	102	132	174	219	255	294	330	366	402	438	474	513
ADWF (L/day)	6,000	13,200	20,400	26,400	34,800	43,800	51,000	58,800	66,000	73,200	80,400	87,600	94,800	102,600
ADWF (L/s)	0.07	0.15	0.24	0.31	0.40	0.51	0.59	0.68	0.76	0.85	0.93	1.01	1.10	1.19
C2	3.29	3.03	2.89	2.81	2.73	2.67	2.63	2.59	2.56	2.53	2.50	2.48	2.46	2.44
C1	8.74	7.71	7.20	6.91	6.61	6.38	6.23	6.09	5.98	5.88	5.79	5.71	5.64	5.57
PDWF (L/s)	0.23	0.46	0.68	0.86	1.10	1.35	1.55	1.76	1.95	2.14	2.33	2.52	2.70	2.90
PWWF (L/s)	0.61	1.18	1.70	2.11	2.66	3.23	3.67	4.14	4.56	4.98	5.39	5.79	6.19	6.62

Table 5 – Indicative worker accommodation sewage generation by stage

4. Conclusion

This report is based on the development plan contained in Appendix A. Changes to the layout may require this report to be revised.

Water and Sewer connection points have been identified for the proposed development.

The calculated Mean Day Maximum Month water demand is 169,290L and resulting in a peak hour water demand of 5.88L/s.

The calculated sewage loading for the development for the Average Dry weather flow and peak wet weather flow are 2.90L/s and 6.62L/s respectively.

Council confirmation is required regarding the existing water & sewer network capacity. This will be determined during detailed design. Based on the mapped infrastructure we don't anticipate capacity issues.

If capacity issues exist it is anticipated the following options could be investigated during detailed design:

- Water – on site water supply storage filled during off-peak periods to supply demand balance during peak periods
- Sewer – short term storage of sewage in tanks to be pumped into the sewer network during off-peak peroids

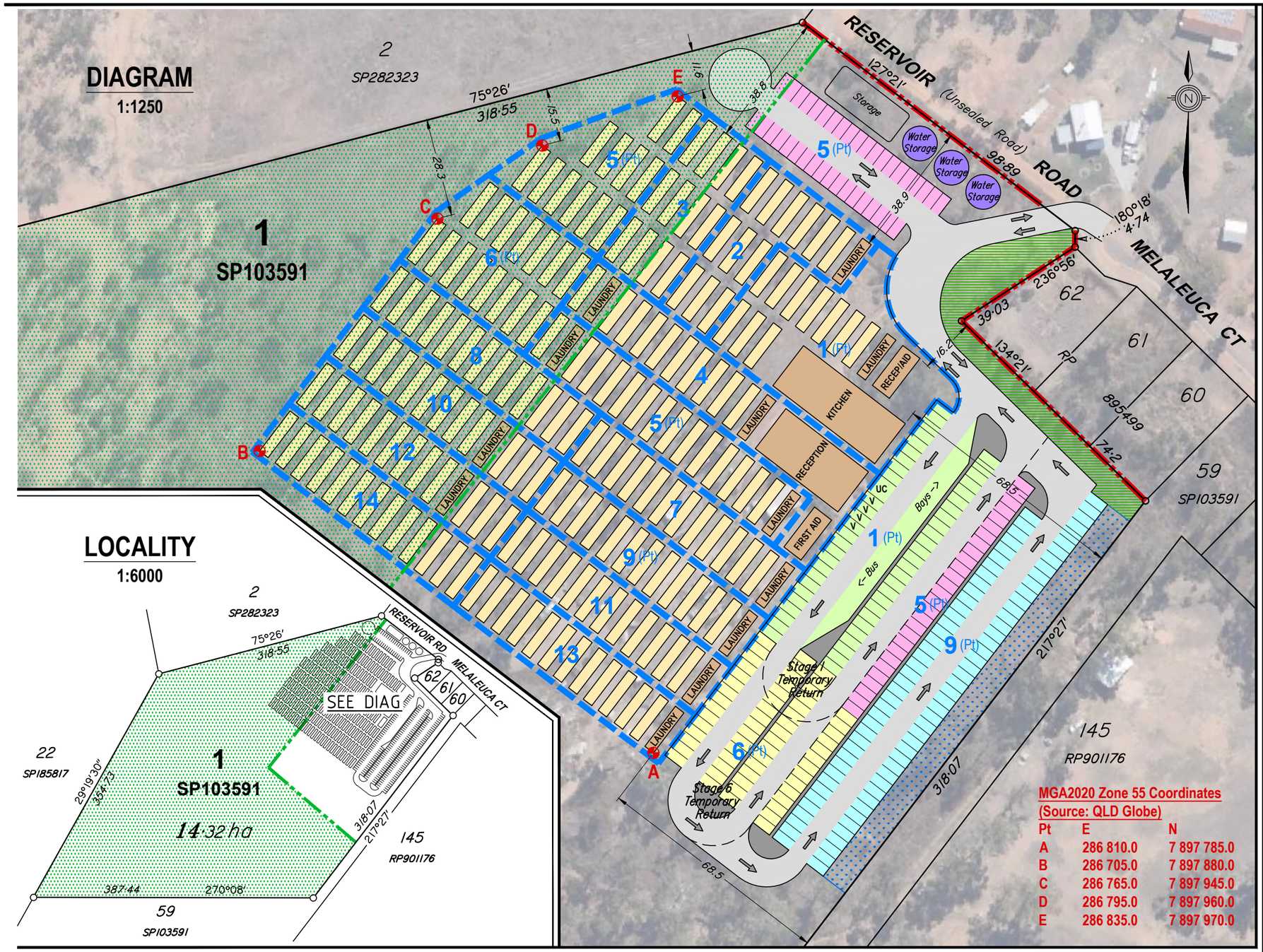
RMA Engineers provided the above assessment and information contained in the appendices based on the information outlined in section 1 of this report.

5. References

- Charters Towers Regional Council Zone Map ZM1.9 (Greenvale) dated 29/12/2019
- Charters Towers Regional Council Local LGIP for priority infrastructure 1.2 (Greenvale) dated 29/12/2019
- Charters Towers Regional Council Local LGIP for trunk sewer 3.2 (Greenvale) dated 29/12/2019
- Charters Towers Regional Council Local LGIP for trunk water 2.2 (Greenvale) dated 29/12/2019
- Far North Queensland Regional Organisation of Councils Design Manual parts D6 and D7 Version 11/19
- Department of Energy and Water Supply, Planning Guidelines for Water Supply and Sewerage, April 2010

Appendix A

DIAGRAM
1:1250



LOCALITY
1:6000

MGA2020 Zone 55 Coordinates (Source: QLD Globe)

Pt	E	N
A	286 810.0	7 897 785.0
B	286 705.0	7 897 880.0
C	286 765.0	7 897 945.0
D	286 795.0	7 897 960.0
E	286 835.0	7 897 970.0

PROGRESSIVE CARPARK TOTAL

Stage	Carparks Available
1 - 4	53 incl 4 x Visitor + 1 x UC
5	119
6 - 8	180
9 - 14	265

Proposed 4 Berth Demountable Building 14.5m x 3.1m (Typical)

Proposed Amenities Building

Car Parks 6m x 3m (Typ) Built with Stage 1 incl Temp Return

Car Parks 6m x 3m (Typ) Built with Stage 5

Car Parks 6m x 3m (Typ) Built with Stage 6 incl Temp Return

Car Parks 6m x 3m (Typ) Built with Stage 9

Bitumen Access Road & Driveway

Concrete Infill

Stormwater Treatment Area

Landscaping

Category A or B of Least Concern Regional Ecosystems Mapping

1.8m Timber Fence

Stage Boundary

Photo 1
Typical Arrangement

Photo 2
Typical Arrangement

Photo 3
Typical Boardwalk

Photo 4
Typical Decking

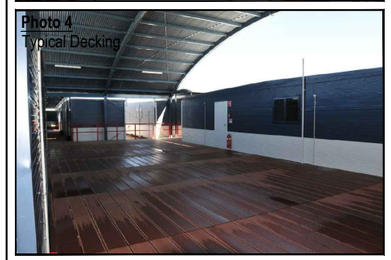
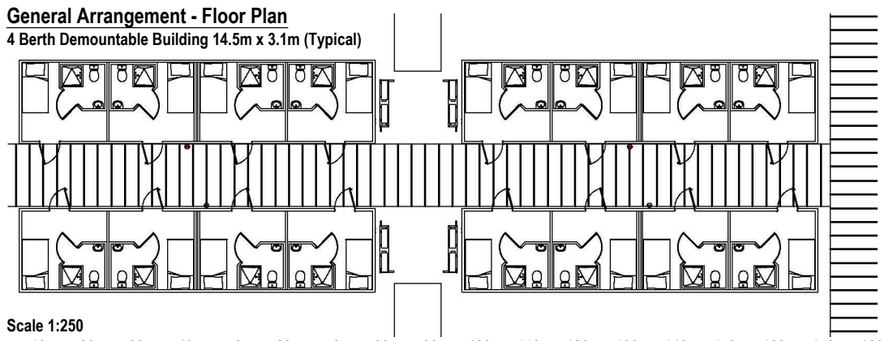


Photo 5
Typical Recreation - Games

Photo 6
Typical Recreation - Bar

General Arrangement - Floor Plan
4 Berth Demountable Building 14.5m x 3.1m (Typical)

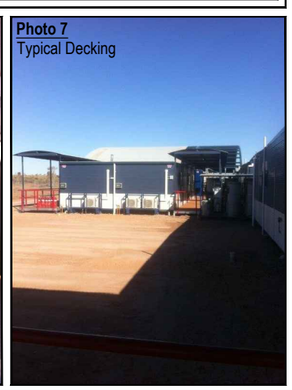


Scale 1:250

0m 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200m

Photo 8
Typical Recreation - Theatre

Photo 7
Typical Decking



IMPORTANT NOTE

This plan was prepared to accompany an application to Charters Towers Regional Council and should not be used for any other purpose.

The dimensions and areas shown hereon are subject to field survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation.

In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land.

This note is an integral part of this plan.

client

Cooper Parks Property Pty Ltd ATF

project

13 Melaleuca Court, Greenvale

plan of

Proposed Workers Accommodation Stages 1-14
732 Berth Demountable Buildings
+ 265 Car Parking Spaces

rpd

Lot 1 on SP103591

lga

Charters Towers Regional Council

issue	date	details	authorised
A	28-04-2022	Initial Issue	RJKF
B	26-10-2022	Veg Mapping, Bldg O/S's & MGA Pts added	RJKF

created

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scale: 1:1250 @ A3
datum: QLD Globe
sheet no.: 1 of 1
cad file: 6660-61-MCU-B
plan no.: 6660-61-MCU
issue: B

Workers Camp – Melaleuca Court | Greenvale

Traffic Impact Statement

Client Paul Czislowski C/- Capricorn Survey Group (CQ) Pty Ltd

Project Number 24E-0242

REPORT CONTROL SHEET

Report Details	
Report Title:	Traffic Impact Statement
Project No.:	24E-0242
Site:	Melaleuca Court, Greenvale
Author/s:	C Tedman / D Delac

Document Control					
Revision	**Author/s**	**Reviewer**	**Approved for Issue**		
			Name	**Signature**	**Date**
1	C Tedman	D Delac	D Delac	RPEQ: 24296	12/09/24

Disclaimer:

RMA Engineers has undertaken this report based on accepted traffic engineering practices, standards, and information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects. RMA Engineers do not accept any responsibility for the authentication of accuracy of supplied information or validation of data that is outside the scope of works. RMA Engineers are not accountable for any changes to the standards, physical infrastructure conditions or planning impacts that occur after the completion date of the assessment.

The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

The document is produced by RMA Engineers for the sole benefit and use by the client in accordance with the contracted terms. RMA Engineers does not assume responsibility or liability to any third party arising from any use or reliance on the content of this document.

Contents

1.0 Introduction

RMA Engineers has been engaged by Paul Czislowski C/- Capricorn Survey Group Pty Ltd to undertake a Traffic Impact Statement (TIS) in support of a proposed workers' accommodation village in Greenvale. The site is within the Charters Towers Regional Council (CTRC or Council) local government area.

The assessment has been undertaken generally in accordance with the road transport related requirements identified in the Department of Transport and Main Roads (DTMR) *Guide to Traffic Impact Assessment* (GTIA) (2018) and the CTRC Planning Scheme.

1.1 Report objectives and scope

The purpose of this report is to document an investigation of traffic and transport impacts of the proposed development. This report has been prepared following an Information Request from Council dated 27 February 2023 (CTRC Ref. 4755312 MCU2022/0020), which is included in **Appendix A**.

This report considers:

- The existing transport operation and environment of the surrounding road network.
- Estimated development traffic generation and distribution.
- Safety considerations including crash data review, risk assessment, sight distance review and turn warrant assessment.
- Commentary on required mitigation measures (if any).

This report does not consider any internal layout reviews. Where required, this report makes recommendations for the mitigation of development impacts.

1.2 Reference material

In preparing this report, reference has been made to the following:

- Austroads Guide to Road Design, Part 4A: *Unsignalised and Signalised Intersections* (2023)
- Austroads Guide to Traffic Management Part 12: *Traffic Impacts of Developments* (2009)
- DTMR *Guidelines for Traffic Impact Assessments* (GTIA) (2018)
- Charters Towers Regional Council Planning Scheme (2020)
- Charters Towers Regional Council Information Request dated 27 February 2023 (CTRC Ref. 4755312 MCU2022/0020)

2.0 Proposed development

2.1 Location and descriptions

The proposed development comprises a non-resident workers camp with associated community facilities. The development is located in Greenvale, which is approximately 195km northwest of Townsville, Queensland. The subject site is formally referred to as Lot 1 on SP103591 and is located within the CTRC local government area.

The location of the subject site and its environs are shown below in **Figure 2-1**.

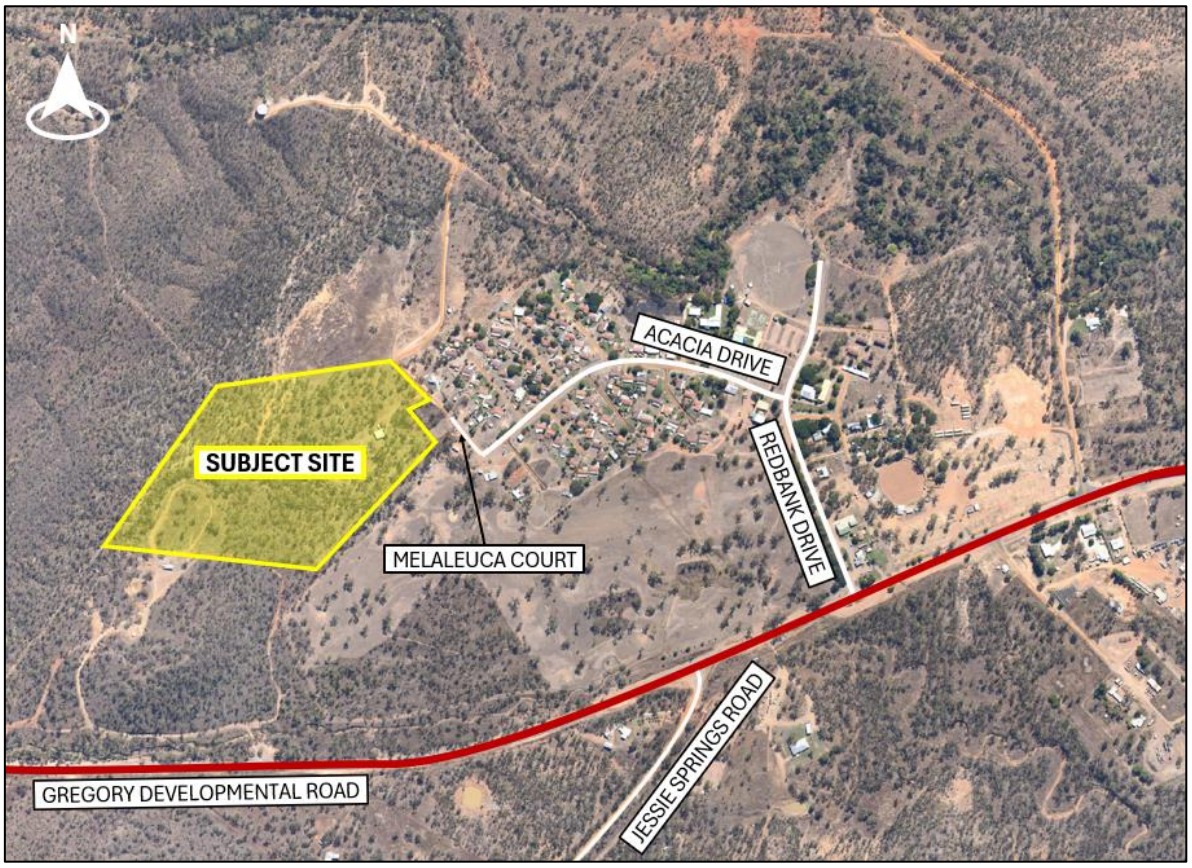


Figure 2-1: Locality plan

2.2 Proposed development details

The proposed accommodation will be the closest available large scale accommodation with potential to host workers associated with the North Queensland Australia – Singapore Military Training Initiative (ASMTI). This will involve development of a 310,000 hectare area just outside of Greenvale, as shown below in **Figure 2-2**, to be completed in 2028. The project's construction workforce is expected to peak at 350 workers.

Numerous other current and upcoming projects have been identified in the Greenvale area.

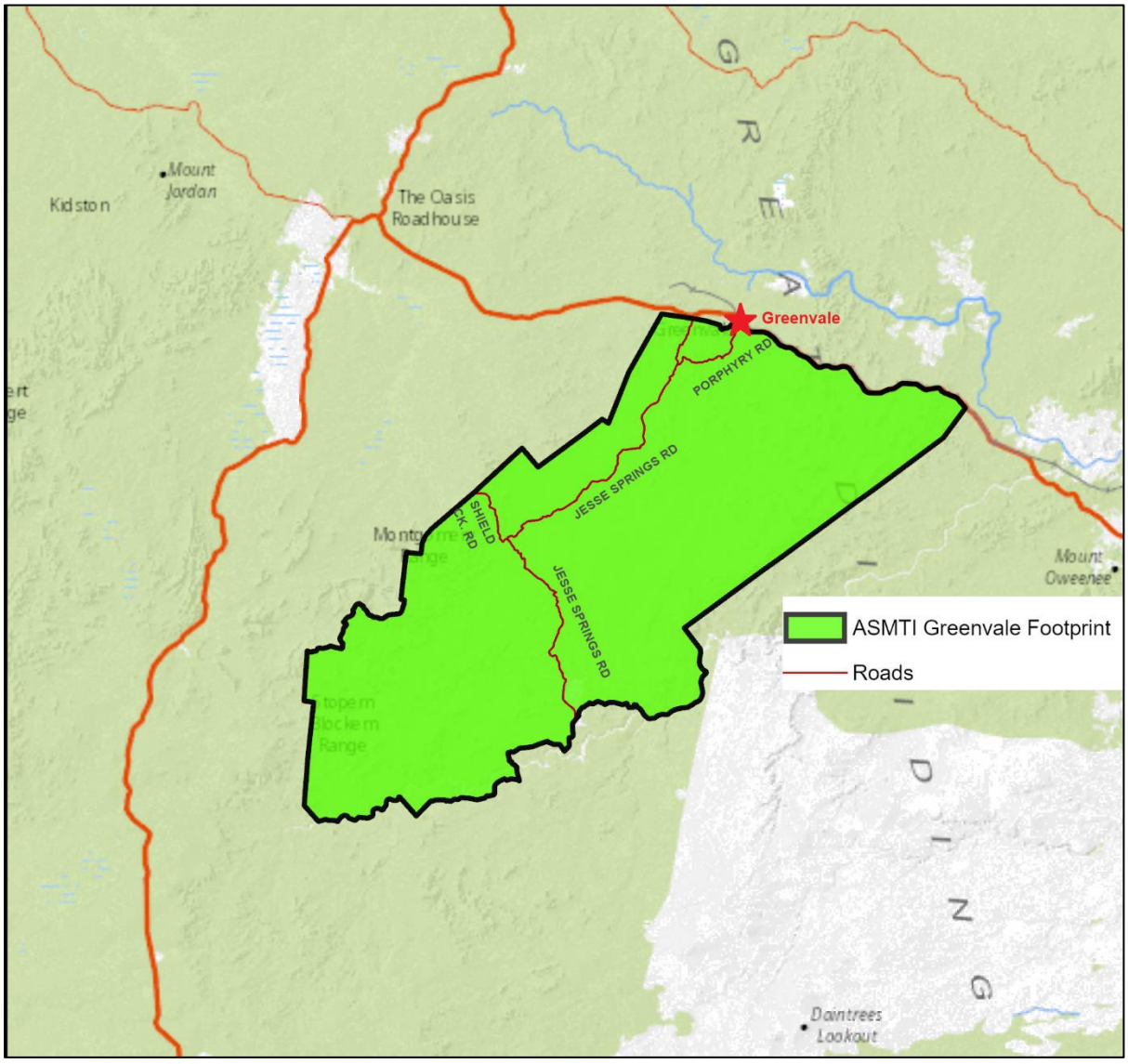


Figure 2-2: ASMTI footprint

The proposed development layout is shown in **Figure 2-3** and in more detail in **Appendix B**. The site comprises:

- 171 demountable buildings
- Four berths (bedrooms) per demountable building
- Each room will provide for one worker and contain a bed and ensuite
- Separate kitchen, amenities and laundry buildings
- 265 on-site car parking spaces

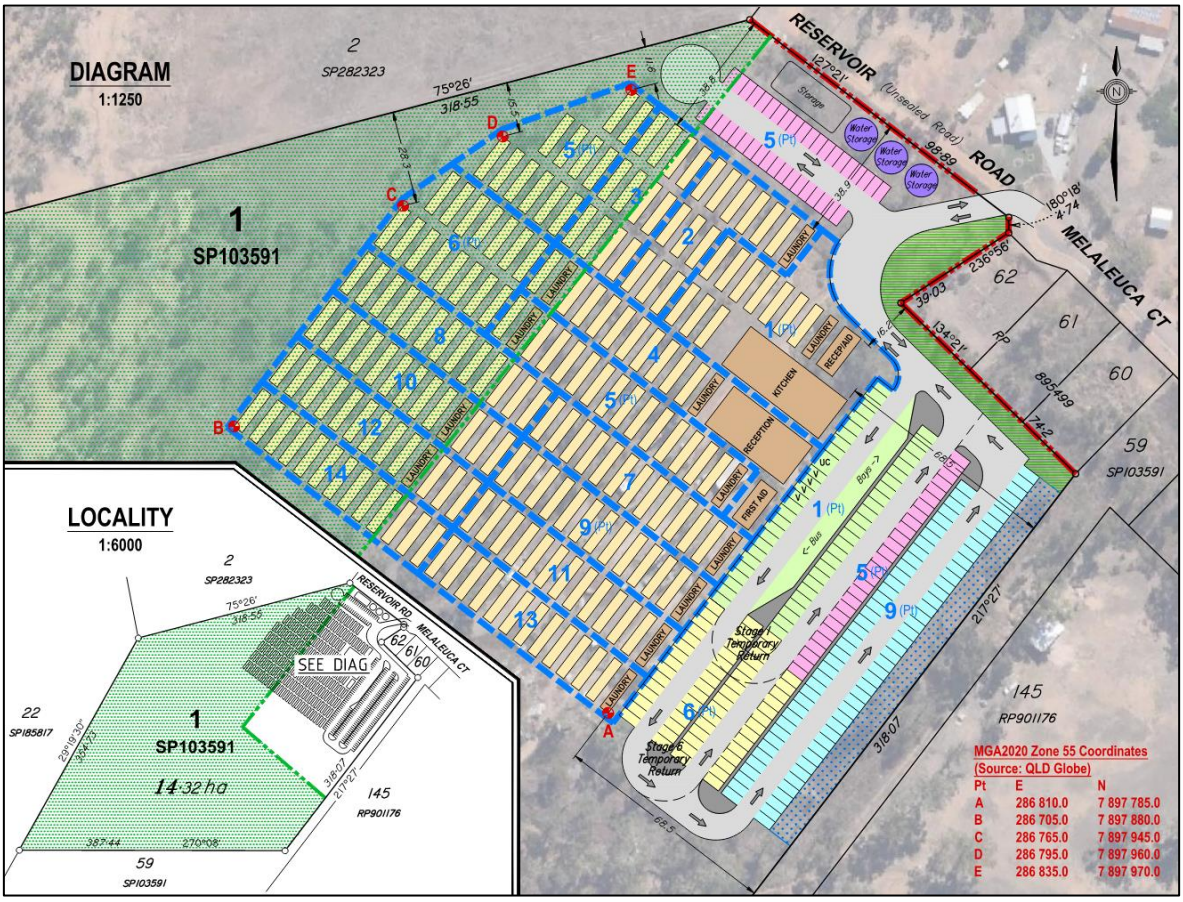


Figure 2-3: Development layout

2.2.1 Operation

The operation of the site has been informed by the client and is proposed as follows:

- Workers are given a designated room for the term of their employment, and no other individuals utilise this room (including on rostered days/weeks off).
- The employment arrangements comprise a three weeks on, one week off roster.
- Employee rosters are staggered and therefore the accommodation camp is expected to be at a maximum of 75% utilised at any one time, equating to 513 workers.
- Workers are assumed to comprise 50% fly in/fly out (FIFO) and 50% drive in/drive out (DIDO). The FIFO workers will be transported to/from the site via 16-seater shuttle buses.
- Considering 75% accommodation utilisation, this equates to 257 FIFO and 257 DIDO workers on-site at any one time.
- Shift lengths are 12 hours (5am to 5pm).
- Workers are transported to/from work sites via 58-seater coaches.
- It is expected that there will be minimal visitors travelling to and from the site.

2.2.2 Staging

The development is expected to be completed by 2028 and will be staged as follows in **Table 2-1.** It is noted that this is an estimate and staging will ultimately be determined by demand.

Table 2-1: Development staging

Stage	Rooms	Car parks	Other works/structures	Estimated completion year
1	40 rooms (10 demountables)	53 carparks, including 4 visitor spaces and 1 universal space), bus bays, temporary turning area	1x laundry facility, kitchen/mess hall, first aid/temporary reception office, water storage, stormwater treatment areas, vegetation buffer (to adjoining residential properties) and open space.	2025
2	48 rooms (12 demountables)		1x laundry facility	
3	48 rooms (12 demountables)			
4	40 rooms (10 demountables)		2x laundry facilities, main reception/office, additional first aid	
5	56 rooms (14 demountables)	66 carparks	2x laundry facilities,	2026/2027
6	60 rooms (15 demountables)	61 carparks and temporary turning area		
7	48 rooms (12 demountables)		1x laundry facility	
8	52 rooms (13 demountables)			
9	48 rooms (12 demountables)	85 carparks	1x laundry facility	2028
10	48 rooms (12 demountables)		1x laundry facility	
11	48 rooms (12 demountables)		1x laundry facility	
12	48 rooms (12 demountables)		1x laundry facility	
13	48 rooms (12 demountables)		1x laundry facility	
14	52 rooms (13 demountables)			
Total	**684 rooms (171 demountables)**	**265 car parking spaces incl. 4 visitor spaces, bus bays and turn around areas**	**12 x laundry facilities kitchen/mess hall, first aid/temporary reception office**	

2.3 Access

Vehicular access to the subject site is proposed via Melaleuca Court, as indicated previously in **Figure 2-3**.

The access is located at the cul-de-sac end of Melaleuca Court as shown in the following figure, and is proposed as a two-way access to/from the subject site.

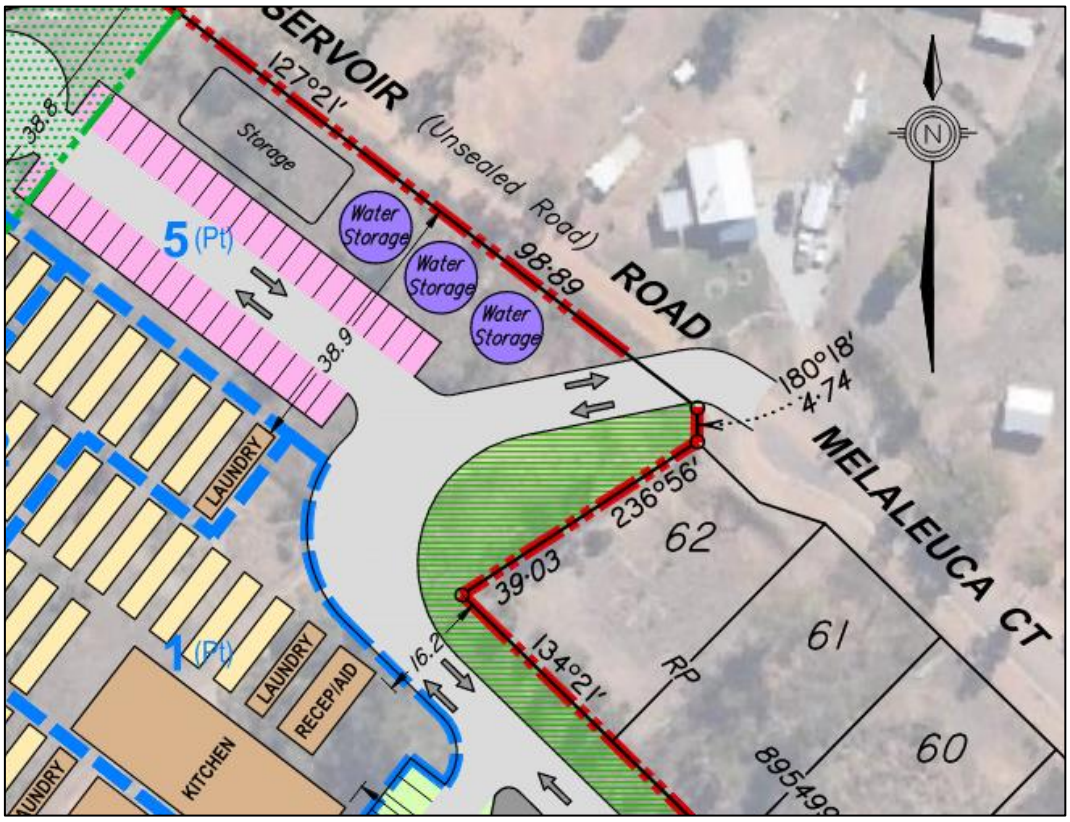


Figure 2-4: Site Access

3.0 Existing transport environment

3.1 Surrounding road network

The primary traffic routes associated with the subject site are shown below in **Figure 3-1** and comprise:

- Townsville via Gregory Developmental Road, Redbank Drive, Acacia Drive and Melaleuca Court (blue line)
- Southern work site area via Jessie Springs Road, Gregory Developmental Road, Redbank Drive, Acacia Drive and Melaleuca Court (green line)

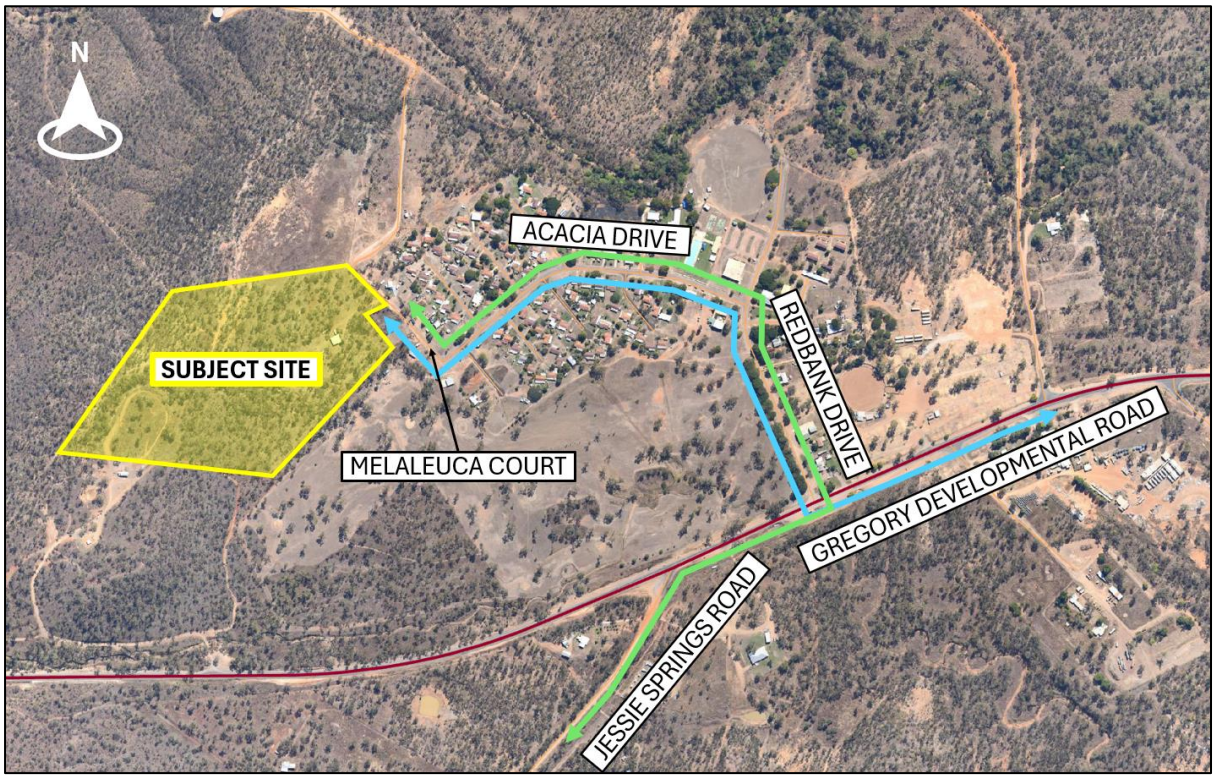


Figure 3-1: Primary traffic routes

The key roads and intersections are discussed further in the following sections.

3.2 Road hierarchy

The road hierarchy in the Greenvale township is shown in the following figure, as extracted from CTRC mapping.

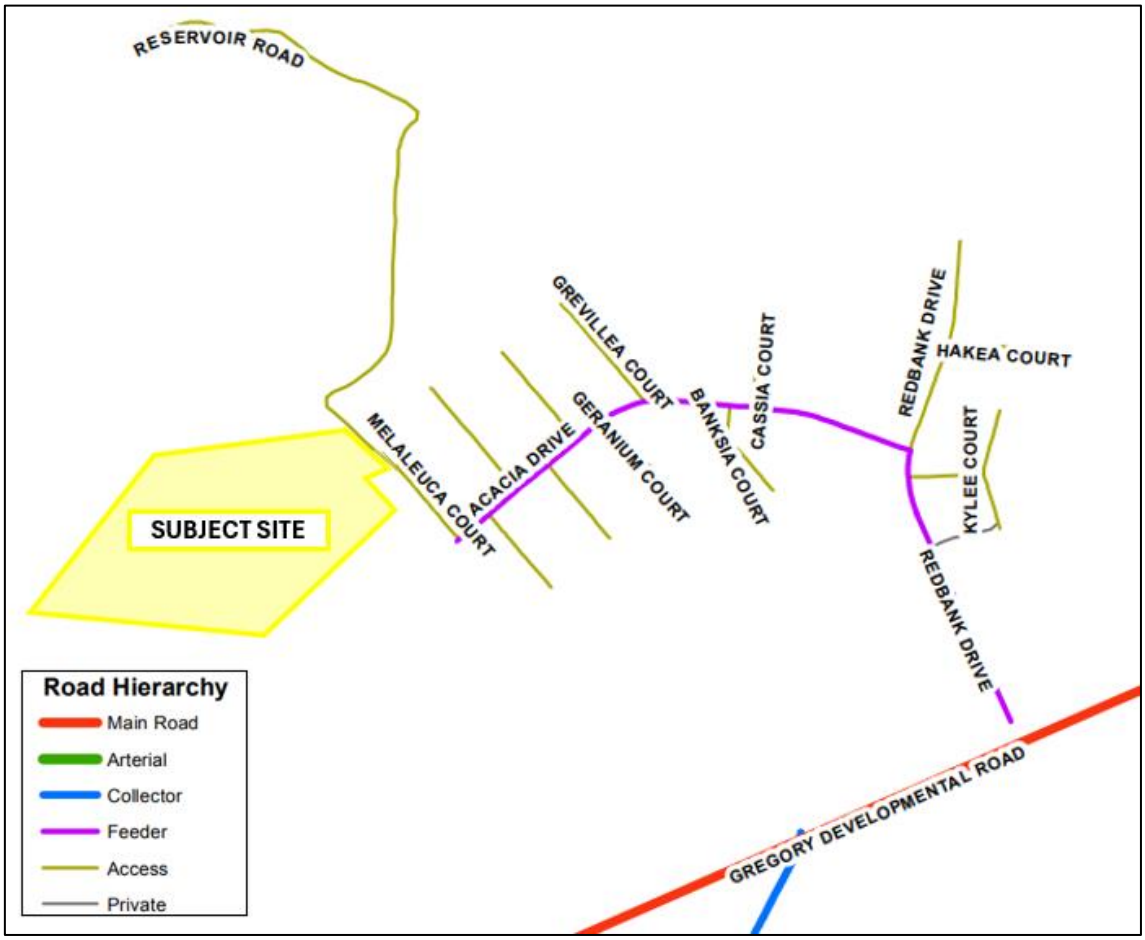


Figure 3-2: Council road hierarchy

3.3 Key roads

3.3.1 Gregory Developmental Road

Gregory Developmental Road (98C) is a state-controlled road under the jurisdiction of DMTR, extending from Kennedy Developmental Road 52km to the west of the subject site, to Charters Towers 205km to the south-east. Gregory Developmental Road has the following characteristics in the vicinity of the site:

- Two-way, two-lane road with centre line marking
- Approximate 3.5m wide traffic lanes
- Approximate 0.5-1m wide shoulders
- 60m wide road reserve
- Posted speed limit of 80km/hr
- Rural road environment

Gregory Developmental Road in the vicinity of Greenvale township is shown in the following figure.

Figure 3-3: Gregory Developmental Road looking west from Redbank Drive

3.3.2 Redbank Drive

Redbank Drive is under the jurisdiction of CTRC and is classified as a feeder road in the Planning Scheme. Redbank Drive has the following characteristics:

- Two-way, two-lane road with no line marking
- Varying road pavement width between 5.5m (from Gregory Developmental Road to 250m to the north) to 11.5m (remainder of road)
- Approximately 5m wide gravel shoulders for the 250m road section from Gregory Developmental Road
- 20m wide road reserve
- Footpaths on both sides of the road within the vicinity of the Acacia Drive intersection
- No posted speed limit, assume rural neighbourhood default of 50km/hr

Redbank Drive in the vicinity of Gregory Developmental Road is shown in the following figure.

Figure 3-4: Redbank Drive looking north from Gregory Developmental Road

3.3.3 Acacia Drive

Acacia Drive is under the jurisdiction of CTRC and is classified as a feeder road in the Planning Scheme. Acacia Drive has the following characteristics:

- Two-way, two-lane road with no line marking
- Pavement width of approximately 11.5m
- 20m wide road reserve
- Footpaths on both sides of the road within the vicinity of the Redbank Drive intersection
- No posted speed limit, assume rural neighbourhood default of 50km/hr

3.3.4 Melaleuca Court

Melaleuca Court is under the jurisdiction of CTRC is classified as an access road in the Planning Scheme. The road ends as a local cul-de-sac and has the following characteristics:

- Two-way, two-lane road with no line marking
- Pavement width of approximately 6.5m
- 15m wide road reserve
- No posted speed limit, assume rural neighbourhood default of 50km/hr

3.3.5 Jessie Springs Road

Jessie Springs Road is under the jurisdiction of CTRC is classified as a collector road in the Planning Scheme, and has the following characteristics:

- Two-way, two-lane unsealed road with no line marking
- Unsealed width of approximately 5.5m
- 60m wide road reserve

- No posted speed limit, assume rural default of 100km/hr

3.4 Key intersections

3.4.1 Gregory Developmental Road / Redbank Drive

The intersection of Gregory Developmental Road and Redbank Drive is a priority-controlled T-intersection as shown below in **Figure 3-5**, controlled by 'Give-Way' line marking and signage on the Redbank Drive minor leg. Each leg consists of one approach and one departure lane. The intersection allows all turning movements and does not have any dedicated turning lanes.

Figure 3-5: Gregory Developmental Road / Redbank Drive intersection

3.4.2 Redbank Drive / Acacia Drive

The intersection of Redbank Drive and Acacia Drive is a priority-controlled T-intersection as shown in **Figure 3-5**. Each leg consists of one approach and one departure lane. The intersection allows all turning movements and does not have any dedicated turning lanes. There are pedestrian footpaths on both Redbank Drive and Acacia Drive.

Figure 3-6: Redbank Drive / Acacia Drive intersection

3.4.3 Gregory Developmental Road / Jessie Springs Road

The intersection of Gregory Developmental Road and Jessie Springs Road is a priority-controlled T-intersection as shown in **Figure 3-7**, controlled by 'Give-Way' line marking and signage on the Jessie Springs Road minor leg. Each leg consists of one approach and one departure lane. The intersection allows all turning movements and does not have any dedicated turning lanes.

Figure 3-7: Gregory Developmental Road / Jessie Springs Road intersection

3.5 Future road network planning

DTMR *Queensland Transport and Roads Investment Program* (QTRIP) and CTRC LGIP mapping does not include any planned upgrades in the vicinity of the subject site.

3.6 Crash data

Queensland Government crash data was examined for the most recent available five-year period (30 November 2018 to 30 November 2023). Data was obtained from *Queensland Globe (transportation – road crash locations).*

No crashes have been recorded on the subject local roads or Gregory Developmental Road 1km either side of Redbank Drive.

Given the lack of recorded crashes, no safety issues, crash patterns or mitigation measures could be determined from the available crash data.

3.7 Public and active transport

There are currently no public transport provisions surrounding the site due to the rural nature of Greenvale.

As stated previously, pedestrian footpaths are located on Redbank Drive and Acacia Drive, within the Greenvale township.

4.0 Traffic operation

4.1 Existing traffic volumes

4.1.1 Gregory Developmental Road

Existing traffic volumes for Gregory Developmental Road are summarised below in **Table 4-1**. The traffic volumes have been obtained from DTMR open-source traffic data, located on Gregory Developmental Road approximately 37km west of Greenvale (Site ID 111505).

The traffic data indicates the following:

- AADT of 152 vehicles in 2022
- Heavy vehicle average percentage of 52%
- 10 year compound annual growth rate of 2.6%

Table 4-1: DTMR AADT data (Site ID. 111505)

Year	AADT	Light vehicles	Heavy vehicles	Growth (%)
2022	219	152	67	-2%
2021	224	150	74	26%
2020	178	118	60	-28%
2019	246	157	89	27%
2018	193	107	86	2%
2017	189	127	62	6%
2016	178	122	56	9%
2015	164	105	59	-11%
2014	185	131	54	3%
2013	179	127	52	6%
2012	169	106	63	-
			10 year compound annual growth	2.6%

Hourly traffic data, provided by DTMR, was also examined to identify the general road peak hour/s and is shown in **Table 4-2**.

There are no distinctive peak periods, with data showing low traffic volumes (less than 25 vehicles per hour) throughout the day.

Table 4-2: DTMR hourly traffic data (Site ID. 111505) – 2022 data

Hour	Weekday average AADT	
	Gazettal (Westbound)	Against Gazettal (Eastbound)
0 to 1	0	0
1 to 2	0	0
2 to 3	0	0
3 to 4	0	0
4 to 5	1	1
5 to 6	1	1
6 to 7	3	4
7 to 8	6	5
8 to 9	8	8
9 to 10	12	14
10 to 11	13	16
11 to 12	14	22
12 to 13	14	19
13 to 14	11	14
14 to 15	12	11
15 to 16	9	12
16 to 17	8	10
17 to 18	5	6
18 to 19	5	6
19 to 20	3	2
20 to 21	2	2
21 to 22	2	1
22 to 23	1	1
23 to 24	0	0
Total	**155**	**130**

As indicated above, there are no distinctive AM and PM peak hour periods with traffic volumes reaching the peak at midday, between 11:00am and 12:00pm.

Furthermore, there are minimal background traffic movements between the hours of 4:00am – 5:00am and 5:00pm – 6:00pm, which is when workers are expected to travel to/from work sites.

4.2 Development traffic generation

Given the unique use and operation of the site, no published traffic generation rates are applicable to the use. Therefore, the traffic generation has been undertaken using first principles based on the intended operation of the site.

At full capacity (Stage 14) the site will consist of 684 individual rooms. Assuming 75% utilisation of the site and 50% DIDO and 50% FIFO workers (as summarised in **Section 2.2.1**):

- A maximum of 257 DIDO workers will be on site at one time (ultimate scenario).
- A maximum of 257 FIFO workers will on site at one time (ultimate scenario).

The following potential daily development trips have been estimated.

Table 4-3: Development traffic

Type	Development vehicles	Maximum trips per day
DIDO	257 private vehicles (assuming no carpooling – i.e. one person per vehicle)	257 (at the start/end of rostered on period)
FIFO	16 Shuttle Buses (16-seat)	32 (at the start/end of rostered on period)
Visitors (deliveries/ maintenance/servicing)	Minimal – 1 service vehicle per week	2
Worker trips to/from work sites	10 buses (58-seater)	40 (including empty bus arrivals and departures)

4.2.1 Maximum potential traffic generation

The maximum potential daily traffic generation assumes that all workers arrive or depart the site on the same day, resulting in:

- 289 worker trips (including 32 shuttle bus trips)
- 2 visitor trips to / from the accommodation camp

From the above, the total maximum number of daily trips is expected to be 391 vehicles per day (vpd). It is noted that this conservative maximum would occur only at the start/end of a three-week roster and would be spread throughout the day due to the staggered arrivals of workers. Therefore, this is considered to be minimal in terms of impact to the external road network and intersection performance.

4.2.2 Typical traffic generation

A typical working day includes:

- 40 worker trips (58-seater coaches) to / from the accommodation camp and work sites
- 2 visitor trips to / from the accommodation camp

This equates to a total of 42 daily vehicle trips. Assuming buses arrive to pick up workers and depart between 4:00am – 5:00am, and visitors would likely not be arriving or departing at this time, the morning peak hour is estimated as 20 trips. The two visitor trips are assumed to occur throughout the day, while the remaining 20 trips are then assumed to occur at 5:00pm – 6:00pm.

This peak hour traffic generation estimate is used for assessment of development impact (**Section 5.0**) and turn warrant treatments (**Section 7.3**).

4.3 Development traffic distribution

The typical distribution of development traffic is expected to follow the same route to/from worksites each day. Based on the ASMTI footprint previously illustrated in **Figure 2-2**, the anticipated travel route is shown below in **Figure 4-1**.

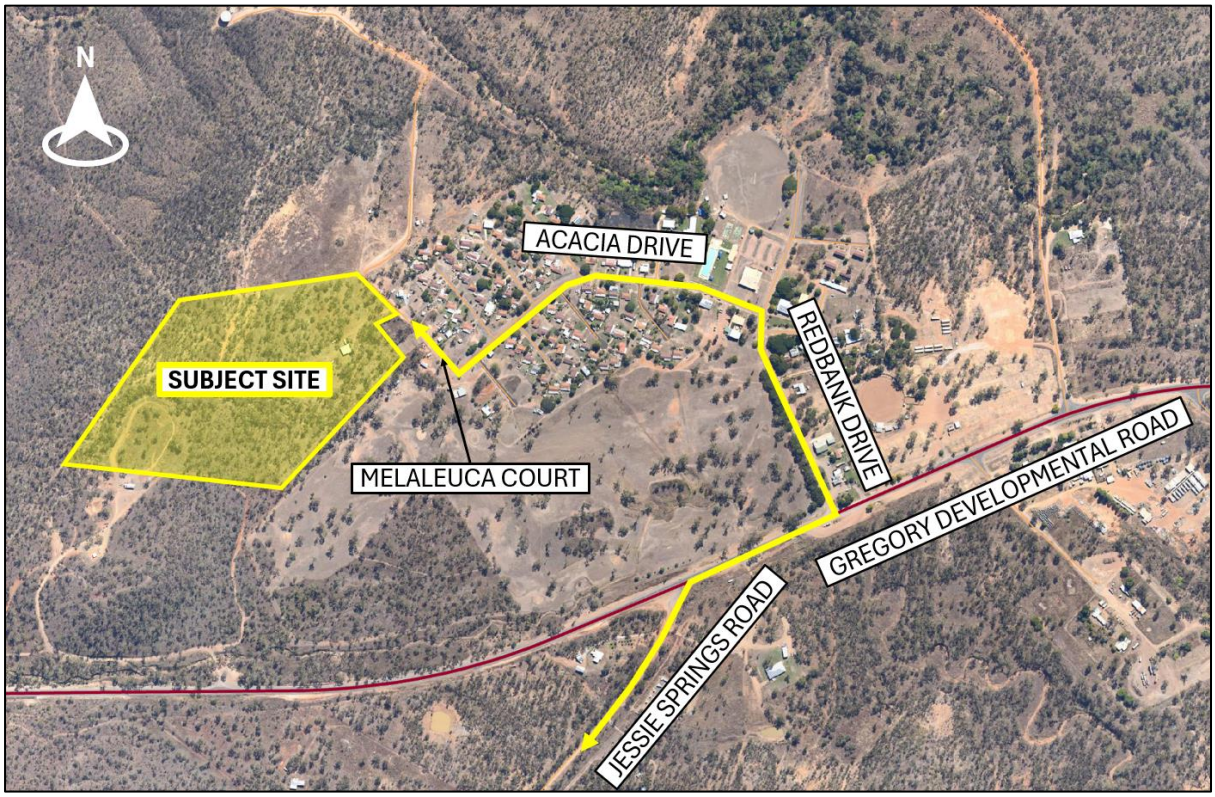


Figure 4-1: Development traffic route

Applying the above route to the expected typical traffic generation results in the traffic volumes illustrated below in **Figure 4-2**.

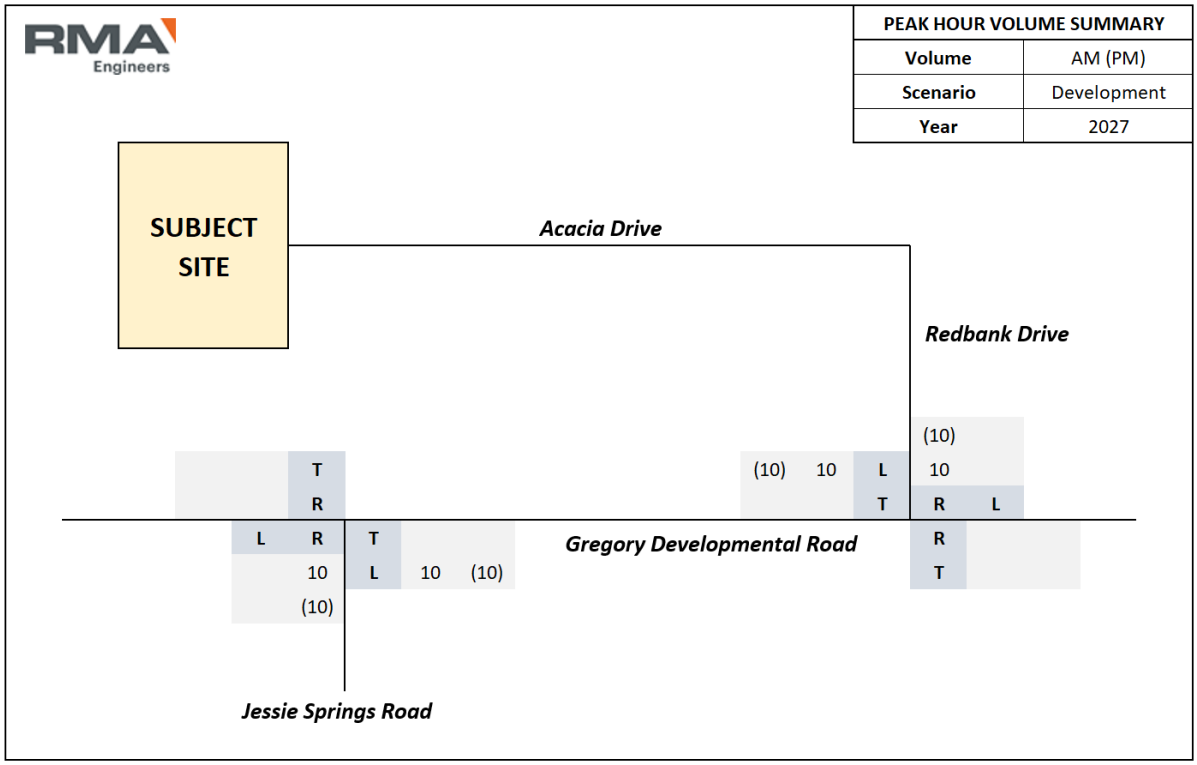


Figure 4-2: Development traffic volumes

4.4 Assessment scenario

The traffic volumes for the assessment scenario (background + development) for 2028 are shown below in **Figure 4-3**. Nominal background turning volumes have been included.

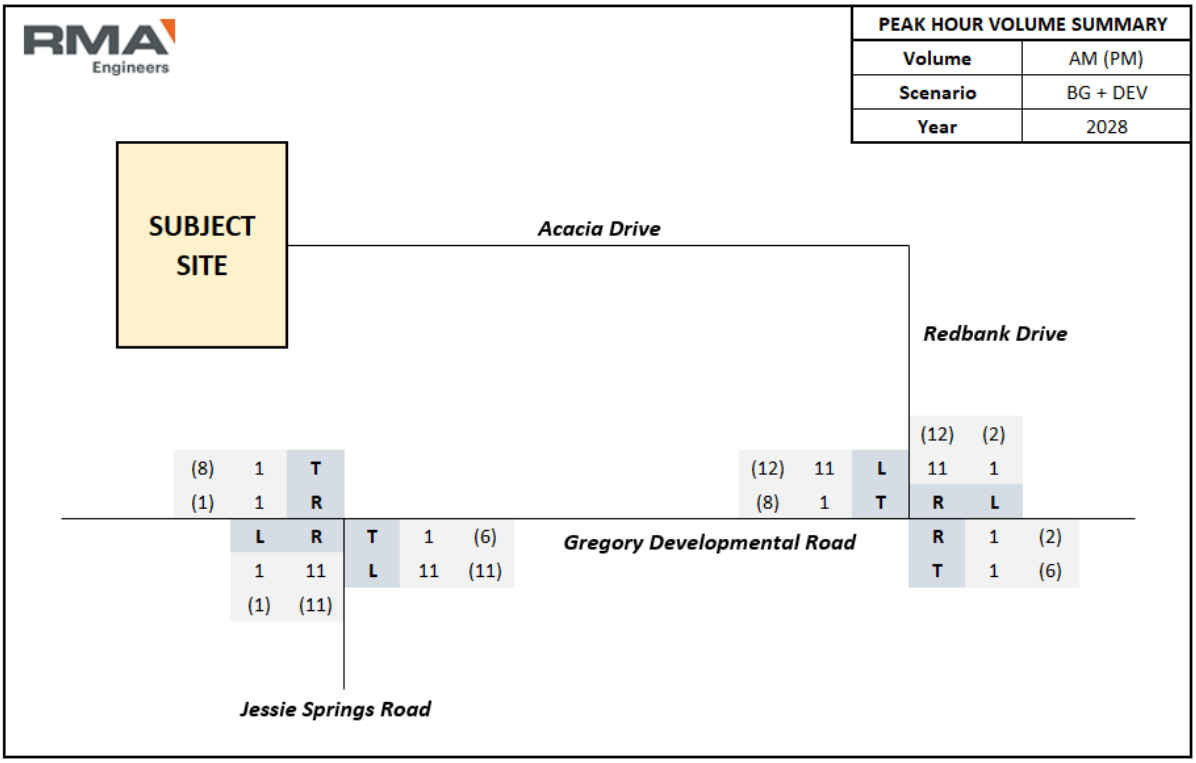


Figure 4-3: 2028 background + development traffic volumes

5.0 Development traffic impact

The DTMR *Road Planning and Design Manual* Chapter 13.5.4 provides information relating to the maximum traffic volume combinations for uninterrupted traffic flow conditions. These combinations are shown in **Table 5-1** below and provide guidance for unsignalised intersections carrying light crossing and turning volumes. Where the volumes are less than that illustrated in **Table 5-1**, it is considered unnecessary to flare intersection approaches or carry out an intersection analysis.

Table 5-1: Intersection capacity – uninterrupted flow conditions

Major road type[1]	Major road flow (vehicles per hour)[2]	Minor road flow (vehicles per hour)[2]
Two-lane	400	250
	500	200
	650	100

1. *Major road is through i.e. has priority*
2. *Major road design volumes include through and turning movements*
3. *Minor road design volumes include through and turning volumes*

The anticipated background with development traffic volumes shown previously in **Figure 4-3** do not exceed the hourly volume combinations shown in **Table 5-1**. Therefore, intersection analysis is not deemed warranted for the site access, or key intersections.

It is expected that the site access and key intersections will operate under practical capacity with the proposed development volumes.

Due to the minimal traffic in this rural area, the GTIA aggregate intersection delay assessment has not been undertaken.

6.0 Public and active transport

Due to the rural locality of the proposed development, the lack of existing public and active transport provisions along the surrounding external road network, no public or active transport provisions are recommended for the development.

Furthermore, due to the nature of work, it is anticipated that workers will not venture out of the camp outside of work hours on a regular basis.

7.0 Safety review

Road safety was considered as part of this traffic assessment in accordance with the GTIA. No high risk or adverse safety deficiencies were identified on the external road network. Identified risk items are summarised in **Section 7.1**. The addition of development traffic is not considered to increase risk scores and therefore mitigation is not deemed required.

7.1 Crash data

No adverse safety issues could be identified from the available crash data as summarised in **Section 3.5**. It is recommended that ongoing monitoring of crashes in the area be conducted by the relevant road authority (CTRC and DTMR) to determine any crash patterns and relevant mitigation measures.

7.2 Sight distance assessment

7.2.1 Gregory Developmental Road / Redbank Drive

A desktop sight distance assessment has been undertaken for the Gregory Developmental Road / Redbank Drive intersection in accordance with Austroads *Guide to Road Design - Part 4a: Signalised and Unsignalised Intersections* for safe intersection sight distance (SISD) requirements for minor roads intersecting a major road.

The sight distance requirements are derived from the formulae specified in the *Guide to Road Design - Part 4a*). The required sight distances relative to the intersection have been measured in accordance with **Figure 7-1**.

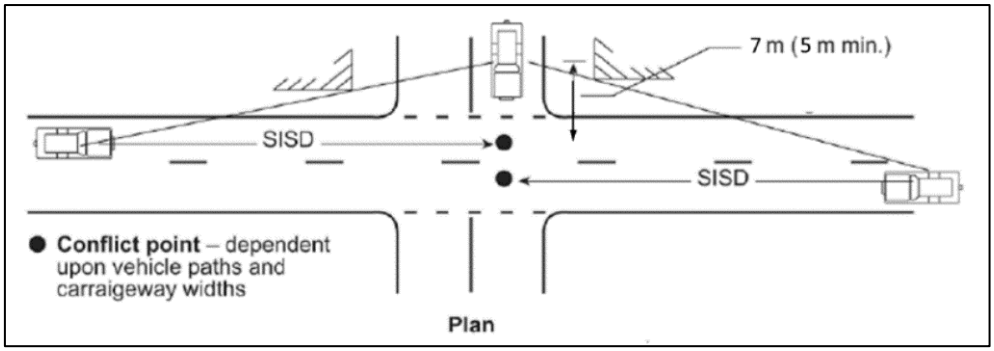


Figure 7-1: Application of safe intersection sight distance measurements (extract from Austroads)

Table 7-1 summarises the formula used for this calculation.

Table 7-1: Safe intersection sight distance formula

Distance	Equation
SISD	$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$ *(Equation 2 Guide to Road Design - Part 4a)*

The variable used for this assessment are summarised in **Table 7-2**.

Table 7-2: Safe intersection sight distance variables

Variable symbol	Description	Value adopted for assessment	
D_T	Decision time (s) = observation time (3s) + reaction time (s)	5s	
V	Operating (85th percentile) speed	Gregory Developmental Road	90km/h
d	Coefficient of deceleration for cars *(Guide to Road Design – Part 3 (Austroads 2021a))*	0.36	
a	Longitudinal grade in % (in direction of travel: positive for uphill grade, negative for downhill grade)	Gregory Developmental Road[1]	Both approaches: 0%
R_T	Perception/reaction time *(Guide to Road Design – Part 3: Geometric Design (Austroads 2021a))*	2s	

[1] *Based on Google Earth imagery.*

Table 7-3 summarises the available sight distance and the SISD requirements at the Gregory Developmental Road/Redbank Drive intersection.

Table 7-3: Safe intersection sight distance assessment

Intersection	Approach	Available SISD[1]	Required SISD	Compliance
Gregory Developmental Rd/ Redbank Dr	East	>300m	214m	Compliant
	West	>300m	214m	Compliant

[1] *Based on desktop review i.e. aerial mapping and google street view.*

As summarised, the available sight distance exceeds the required SISD specified in Austroads guidelines.

7.2.2 Site access

The site access location is proposed at the cul-de-sac end of Melaleuca Court and therefore no vehicles, other than development traffic, are expected to travel through/past the site access (opposing vehicles). Therefore, an SISD assessment has not been undertaken for the site access.

7.3 Turn warrant assessment

Turn warrants are used to identify the need to provide separate turning provisions from a functionality and safety perspective. The warrants are essentially the relationship between the turning volumes versus the major road traffic volumes.

In accordance with Austroads, turn warrants are based on the construction of new roads (i.e. greenfield sites) and is also used as a reference for intervention levels for updating existing intersection turn treatments. Turn warrant assessment is usually undertaken at these intersections to determine if protected turning lanes (i.e. channelisation) are required from a safety perspective.

The following intersections have been examined:

- Gregory Development Road / Redbank Drive intersection
- Gregory Development Road / Jessie Springs Road intersection

Given the intersections are considered brownfield sites with low volumes and existing constraints, turn warrant assessment has been undertaken using the extended design domain (EDD) criteria.

The EDD warrants for turn treatments are detailed in the Supplement to Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (RPDM) published by DTMR.

Table 7-4 summarises the turn warrant treatments required. Detailed turn warrant graphs are provided in **Appendix C**.

Table 7-4: Turn warrant summary

Intersection	Scenario	Right turn treatment triggered*	Left turn treatment triggered*
Gregory Developmental Road / Redbank Drive	2028 Background traffic	SR	SL
	2028 Background with development traffic	SR	SL
Gregory Developmental Road / Jessie Springs Road	2028 Background traffic	SR	SL
	2028 Background with development traffic	SR	SL

** SR – Simple right turn (no treatment), SL – Simple left turn (no treatment)*

From the assessment, the turning movements at both intersections fall within simple left and simple right turn thresholds and therefore no channelisation is required.

7.1 Suitability of surrounding road network

7.1.1 Redbank Drive

Redbank Drive is classified as a feeder road in the CTRC Planning Scheme, with features as described in Section 3.3.2.

The Council urban feeder cross section is shown below.

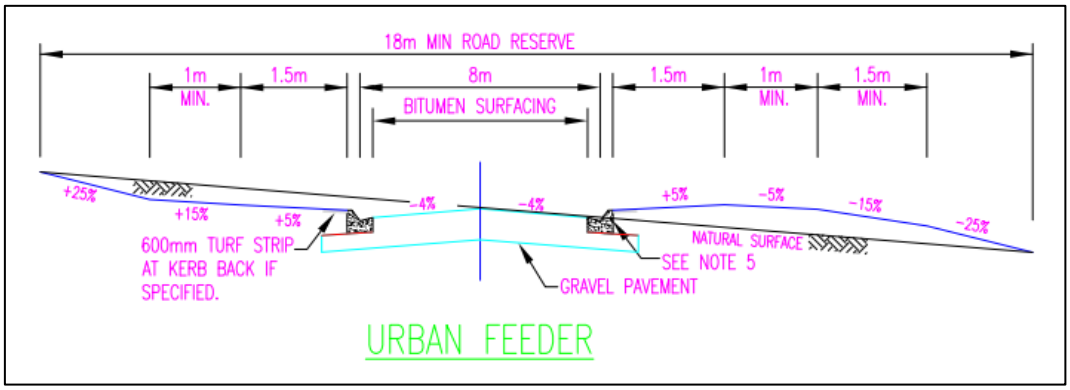


Figure 7-2: CTRC urban feeder cross section

The Redbank Drive pavement width is approximately 5.5m between Gregory Developmental Road and 100m south of Acacia Drive. This does not meet urban feeder width requirements.

However, as this is an existing deficiency, traffic volumes are minor, mutual sight distance appears to be sufficient and Redbank Drive provides adequate shoulder width for vehicles passing, this is considered to be suitable for development operation.

The pavement width is also considered in the risk assessment in Section 7.2.

7.1.2 Acacia Drive

Acacia Drive is classified as a feeder road in the CTRC Planning Scheme, with features as described in Section 3.3.3. The Council urban feeder cross section is shown in Figure 7-2.

The Acacia Drive existing pavement width is approximately 11.5m, exceeding Council requirements and considered suitable for development operations.

7.1.3 Melaleuca Court

Melaleuca Court is classified as an access road in the CTRC Planning Scheme, with features as described in Section 3.3.4. The Council urban access cross section is shown in Figure 7-3.

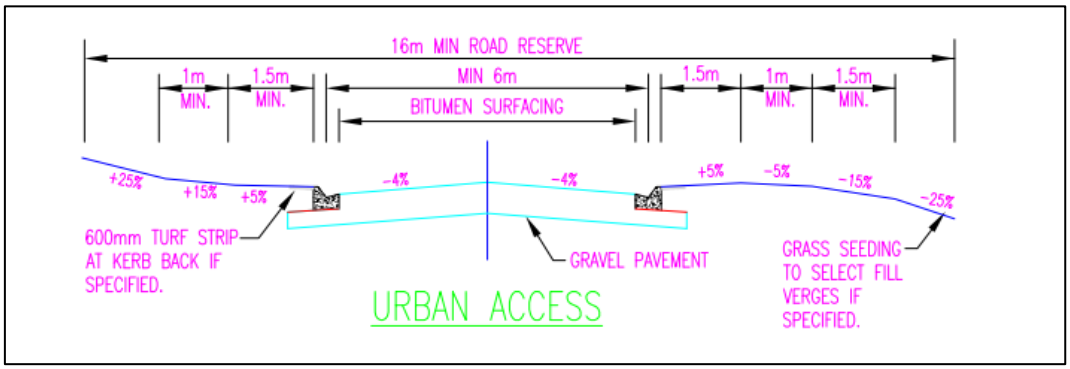


Figure 7-3: CTRC urban access cross section

The Melaleuca Court pavement width is approximately 6.5m, exceeding Council requirements and considered suitable for development operations.

7.2 Risk assessment

A risk assessment has been undertaken as per the GTIA process. The assessment examines the risks associated with the addition of development traffic and any noted safety impacts or existing deficiencies. The assessment is based on available online imagery and an on-site inspection. The safety risk score matrix as extracted from the GTIA is shown in **Figure 7-4**.

		Potential consequence				
		Property only (1)	Minor injury (2)	Medical treatment (3)	Hospitalisation (4)	Fatality (5)
Potential likelihood	Almost certain (5)	M	M	H	H	H
	Likely (4)	M	M	M	H	H
	Moderate (3)	L	M	M	M	H
	Unlikely (2)	L	L	M	M	M
	Rare (1)	L	L	L	M	M

Figure 7-4: Safety risk score matrix (GTIA)

The identified risk items are summarised in **Table 7-5**.

Table 7-5: Risk assessment

Risk item	Development						With development and mitigation			
	Without			With						
	Likelihood	Consequence	Risk score	Likelihood	Consequence	Risk score	Mitigation measures	Likelihood	Consequence	Risk score
Risk of angle or rear end crashes at the key intersections due to additional traffic movements.	0.5	3	L	1	3	L	No mitigation measures are required. The proposed development is expected to add 20 movements to the key intersections during the AM and PM peak hours. It is noted that these hours are between 4:00am – 5:00am and 5:00pm – 6:00pm and background traffic at this time is minimal. Turn warrant assessment results indicate that channelisation is not required and sight distance is considered adequate.	1	3	L
The Redbank Dr pavement width is approximately 5.5m between Gregory Developmental Rd and 100m south of Acacia Dr, less than urban feeder width requirements.	1	4	M	1.5	4	M	No mitigation measures are required. Redbank Dr appears to provide adequate shoulder width to assist in vehicles passing, and sufficient mutual stopping sight distance. The Redbank Dr width is an existing deficiency, and background and development traffic volumes are minor.	1.5	4	M

As shown, there are no changes in the risk scores due to the addition of development traffic and no high risks are identified. No mitigation measures are considered to be required.

8.0 Summary and recommendations

RMA Engineers has been engaged by Paul Czislowski C/- Capricorn Survey Group Pty Ltd to undertake a Traffic Impact Statement (TIS) in support of a proposed workers' accommodation village in Greenvale. The site is within the Charters Towers Regional Council local government area.

The assessment has been undertaken generally in accordance with the road transport related requirements identified in the Department of Transport and Main Roads (DTMR) *Guide to Traffic Impact Assessment* (GTIA) (2018) and the CTRC Planning Scheme.

The purpose of this report is to document an investigation of traffic and transport impacts of the proposed development. This report has been prepared following an Information Request from Council dated 27 February 2023 (CTRC Ref. 4755312 MCU2022/0020).

The outcomes of the assessment are as follows:

Traffic operation

- Background traffic is minimal, with AADT less than 300 vehicles. There are no distinctive AM and PM peak hour periods with traffic volumes reaching the peak at midday, between 11:00am and 12:00pm.
- The typical development traffic generation is estimated as 42 daily vehicle trips.
- The external road network is considered to have sufficient capacity to cater for operational traffic and no mitigation is considered to be required.

Safety review

- No adverse safety issues could be identified from the available crash data. It is recommended that ongoing monitoring of crashes in the area be conducted by the relevant road authority (CTRC and DTMR) to determine any crash patterns and relevant mitigation measures.
- The safe intersection sight distance (SISD) assessment found that available sight distance is adequate for the existing Gregory Developmental Road / Redbank Drive intersection.
- The Gregory Developmental Road / Redbank Drive and Gregory Developmental Road / Jessie Springs Road intersections do not require any turn treatments with background and development traffic, with volumes falling within simple left (SL) and simple right (SR) turning provision.
- Redbank Drive, Acacia Drive and Melaleuca Court are considered to be generally suitable for development operation.
- There are no changes in the risk scores due to the addition of development traffic and no high risks are identified. No mitigation measures are considered to be required.

With consideration of the above findings, no adverse traffic and transport engineering matters have been identified that should preclude approval of the proposed development at this location.

Appendix A CTRC Information Request

CHARTERS TOWERS
REGIONAL COUNCIL

27 February 2023

Our Ref: 4755312
File Ref: MCU2022/0020
Enquiries: Jorja Feldt

Cooper Parks Property Pty Ltd
C/- Capricorn Survey Group (CQ) Pty Ltd
PO Box 1391
Address
ROCKHAMPTON QLD 4700

Sent via email: *reception@cscgcq.com.au*

Dear Sir/Madam

Information Request
(Given under Section 12 of the Development Assessment Rules)

The assessment manager has carried out a further review of your development application and has concluded that further information is required in order to decide the application.

Applicant details

Applicant name:	Cooper Parks Property Pty Ltd

Location details

Street address:	13 Melaleuca Court, Greenvale QLD 4816
Real property description:	Lot 1 on SP103591

Application details

Application number:	MCU2022/0020
Approval sought:	Development Permit
Development type:	Material Change of Use
Description of development:	Non-resident Workforce Accommodation (732 rooms) in 14 Stages
Categorising instrument:	Charters Towers Regional Town Plan Version 2

Information requested

Development Works Code

Whist the application contains responses against relevant Codes, the application does not contain supporting information demonstrating the veracity of the responses provided. An example of this is the response to PO1/AO1 in the Development works code:

> *The development will be connected to the Council water supply. Additional water tanks will be provided at the northern end of the site as indicated on the proposal plan. The water will be connected to each accommodation room for shower/tap/toilet water, with pipes expected to be run under the timber decking/boardwalks. Each of the amenities buildings will also be connected to the water supply.*

CHARTERS TOWERS
REGIONAL COUNCIL

Date: 23 February 2023
Our Ref: 4755312

The township of Greenvale has a limited water supply and wastewater treatment capacity. Further information is required regarding the proposed wastewater disposal and water supply.

Information Required:

1) Please provide supporting information demonstrating that development can be serviced by an adequate, safe and reliable supply of potable and general use water and appropriate wastewater disposal infrastructure in accordance with the Development works code.

Traffic Management

The application states that "The development is located on an appropriately ordered road which can support the traffic generated." The common material has not addressed the traffic impacts associated with the proposed use and Council is unable to determine compliance with Development Works Code.

Information Required:

2) Please provide Council with a Traffic Impact Study undertaken by a suitably qualified person that demonstrates the suitability of the road network for the additional usage from the proposed development. The assessment should address both width and pavement aspects as well as identifying trip generating sources and destinations.

Supporting Documentation

The application is Impact Assessable and is to be assessed against the entire Charters Towers Regional Town Plan and the application does not contain a response against the Strategic Framework.

Information Required:

3) Please provide a response to Part 3 – Strategic Framework of the Charters Towers Regional Town Plan.

Applicant's response

The due date for providing a response is three months from the date of this information request being 27 May 2023 or a further period agreed between you the applicant, and the assessment manager.

As the assessment of your application will be based on the information provided, it is recommended that you provide all the information requested. You may however respond by providing:

a) all of the information requested, or
b) part of the information requested, or
c) a notice that none of the information will be provided.

For your assistance, you may wish to use the State Assessment Referral Agencies '*applicant response to an information request*' template found at: https://planning.dsdmip.qld.gov.au/.

Failure to respond

In accordance with Section 14.2 of the Development Assessment Rules, if you do not provide a response before the due date (or a further agreed period), it will be taken as if you, the applicant, have decided not to respond to the information request and the assessment manager will continue with the assessment of your application without the information requested.

CHARTERS TOWERS
REGIONAL COUNCIL

Date: 23 February 2023
Our Ref: 4755312

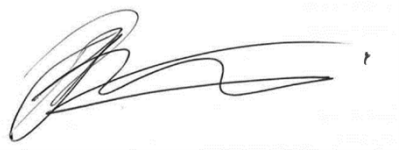
Please note that the assessment manager may give further advice to the applicant about the development application before the development application is decided.

Infrastructure charges notice

In accordance with the Infrastructure Charges Resolution (No. 3) 2020, an Infrastructure Charges Notice will be issued by Council should the proposal be approved. It is recommended that you contact Council prior to a Decision Notice being issued to understand the likely cost of this Notice.

Should you wish to discuss this matter, please contact Jorja Feldt, Planner on (07) 4761 5300 or email development@charterstowers.qld.gov.au.

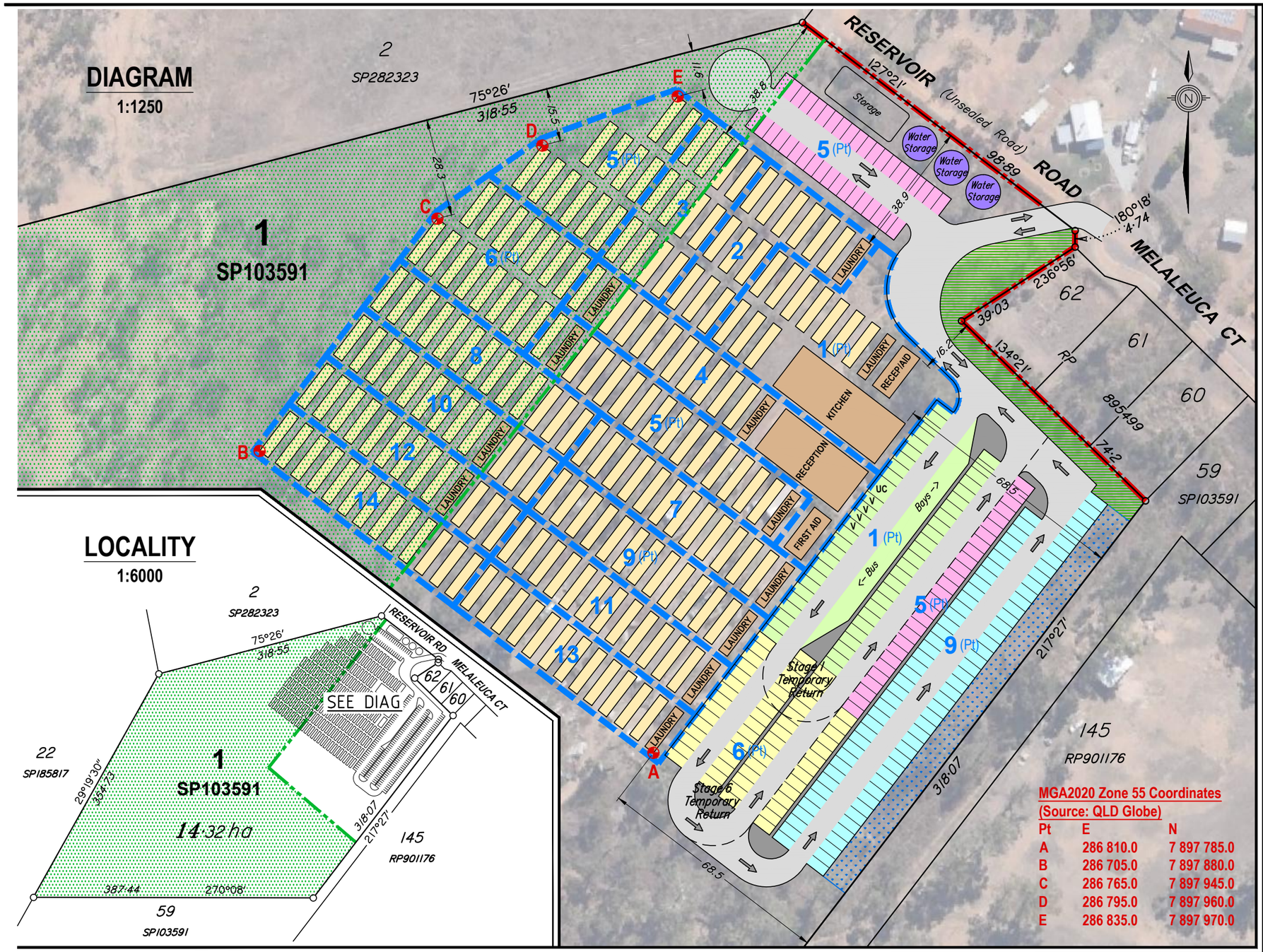
Yours faithfully



Paul Want
Manager Planning & Development

Appendix B Development layout

DIAGRAM
1:1250



LOCALITY
1:6000

MGA2020 Zone 55 Coordinates (Source: QLD Globe)

Pt	E	N
A	286 810.0	7 897 785.0
B	286 705.0	7 897 880.0
C	286 765.0	7 897 945.0
D	286 795.0	7 897 960.0
E	286 835.0	7 897 970.0

PROGRESSIVE CARPARK TOTAL

Stage	Carparks Available
1 - 4	53 incl 4 x Visitor + 1 x UC
5	119
6 - 8	180
9 - 14	265

Proposed 4 Berth Demountable Building 14.5m x 3.1m (Typical)

Proposed Amenities Building

Car Parks 6m x 3m (Typ) Built with Stage 1 incl Temp Return

Car Parks 6m x 3m (Typ) Built with Stage 5

Car Parks 6m x 3m (Typ) Built with Stage 6 incl Temp Return

Car Parks 6m x 3m (Typ) Built with Stage 9

Bitumen Access Road & Driveway

Concrete Infill

Stormwater Treatment Area

Landscaping

Category A or B of Least Concern Regional Ecosystems Mapping

1.8m Timber Fence

Stage Boundary

Photo 1
Typical Arrangement

Photo 2
Typical Arrangement

Photo 3
Typical Boardwalk

Photo 4
Typical Decking

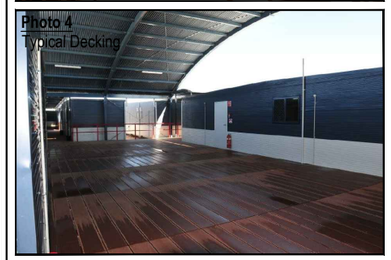
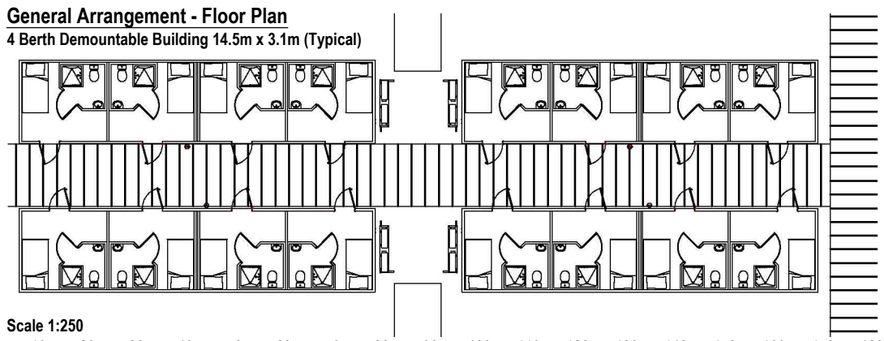


Photo 5
Typical Recreation - Games

Photo 6
Typical Recreation - Bar

General Arrangement - Floor Plan
4 Berth Demountable Building 14.5m x 3.1m (Typical)

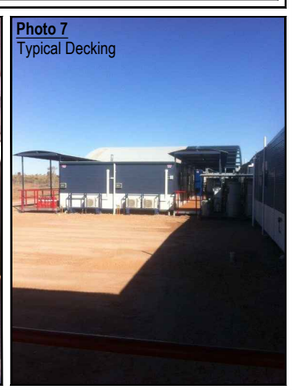


Scale 1:250

0m 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200m

Photo 8
Typical Recreation - Theatre

Photo 7
Typical Decking



IMPORTANT NOTE

This plan was prepared to accompany an application to Charters Towers Regional Council and should not be used for any other purpose.

The dimensions and areas shown hereon are subject to field survey and also to the requirements of council and any other authority which may have requirements under any relevant legislation.

In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land.

This note is an integral part of this plan.

client

Cooper Parks Property Pty Ltd ATF

project

13 Melaleuca Court, Greenvale

plan of

Proposed Workers Accommodation Stages 1-14
732 Berth Demountable Buildings
+ 265 Car Parking Spaces

rpd

Lot 1 on SP103591

lga

Charters Towers Regional Council

issue	date	details	authorised
A	28-04-2022	Initial Issue	RJKF
B	26-10-2022	Veg Mapping, Bldg O/S's & MGA Pts added	RJKF

created

capricornsurveygroupcq
SURVEYING & PLANNING SOLUTIONS
07 4927 5199 | reception@csgcq.com.au | 132 Victoria Parade, Rockhampton QLD 4700

scale: 1:1250 @ A3
datum: QLD Globe
sheet no.: 1 of 1
cad file: 6660-61-MCU-B
plan no.: 6660-61-MCU
issue: B

Appendix C Turn warrant assessment

WARRANTS FOR TURN TREATMENTS
PROJECT: 24E-0242 Greenvale Workers Camp
TITLE: 2028 PEAK HOUR TRAFFIC VOLUMES

RMA Engineers

INTERSECTION DETAILS

Major Road		Gregory Developmental Road
Side Road		Redbank Drive
Splitter Island on Major Road	Yes or No	No
Design Domain	NDD or EDD	EDD
Major Road Design Speed	(km/h)	71-99

TRAFFIC VOLUMES (Vehicles/Hour)		BG+DEV			
		AM	PM		
Major Road approaching through traffic flow	Q_{T1}	1	6		
Major Road opposing through traffic flow	Q_{T2}	1	8		
Right turn traffic flow	Q_R	1	2		
Left turn traffic flow	Q_L	11	12		
Major Road traffic volume for right turn	Q_M	13	26		
Major Road traffic volume for left turn	Q_M	1	8		

Turn Warrant Graph (as adapated from Section A.10 TMR RPDM Supplement to AGRD Part 4A 2021)

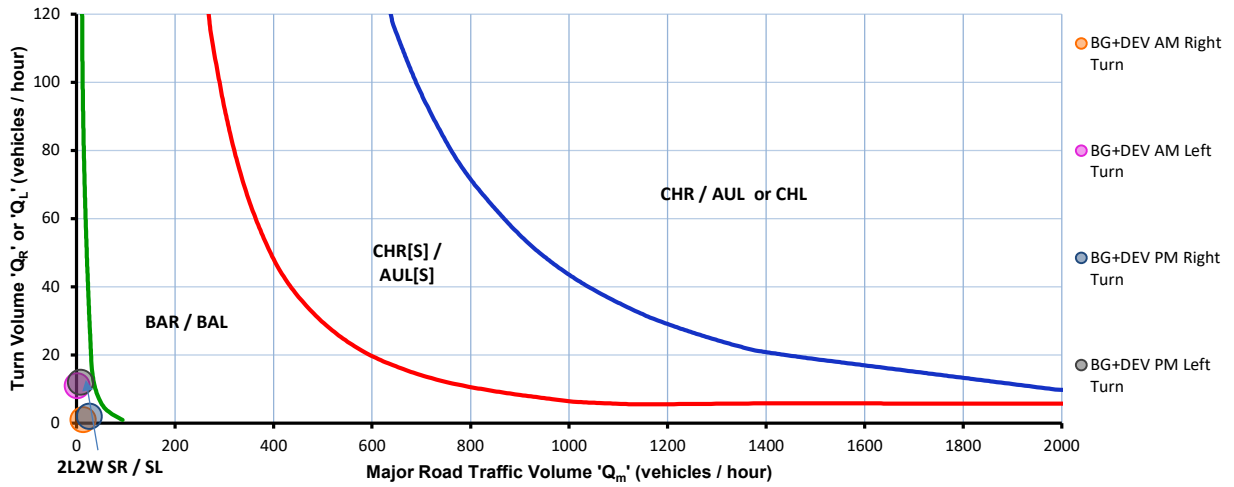
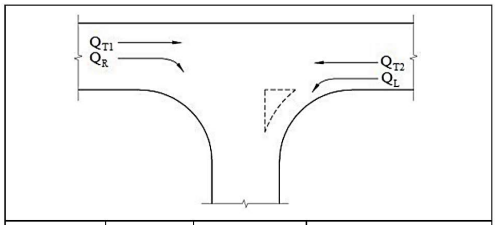


Figure 4A-A 4 - Calculation of the major road traffic volume parameter 'Q_M'



Road Type	Turn Type	Splitter Island	Q_M (veh/h)
2 Lane 2 Way	Right	No	= $Q_{T1} + Q_{T2} + Q_L$
		Yes	= $Q_{T1} + Q_{T2}$
	Left	Yes/No	= Q_{T2}

RESULTS:

BG+DEV

	Right turn treatment	Left turn treatment
AM	SR	SL
PM	SR	SL

NOTES:

WARRANTS FOR TURN TREATMENTS
PROJECT: 24E-0242 Greenvale Workers Camp
TITLE: 2028 PEAK HOUR TRAFFIC VOLUMES

RMA Engineers

INTERSECTION DETAILS

Major Road		Gregory Developmental Road
Side Road		Jessie Springs Road
Splitter Island on Major Road	Yes or No	No
Design Domain	NDD or EDD	EDD
Major Road Design Speed	(km/h)	71-99

TRAFFIC VOLUMES (Vehicles/Hour)		BG+DEV			
		AM	PM		
Major Road approaching through traffic flow	Q_{T1}	1	8		
Major Road opposing through traffic flow	Q_{T2}	1	6		
Right turn traffic flow	Q_R	1	1		
Left turn traffic flow	Q_L	11	11		
Major Road traffic volume for right turn	Q_M	13	25		
Major Road traffic volume for left turn	Q_M	1	6		

Turn Warrant Graph (as adapated from Section A.10 TMR RPDM Supplement to AGRD Part 4A 2021)

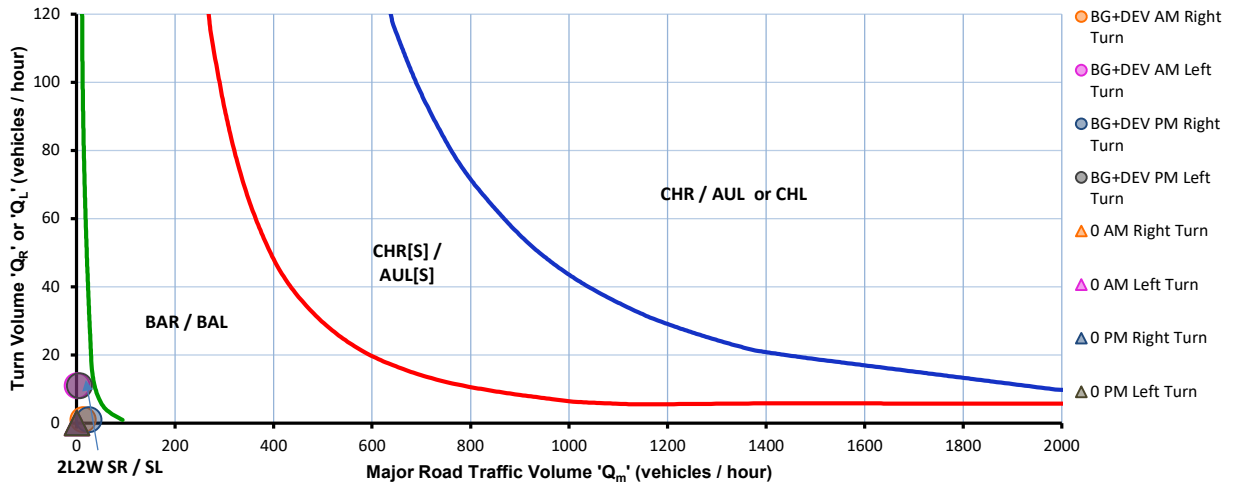
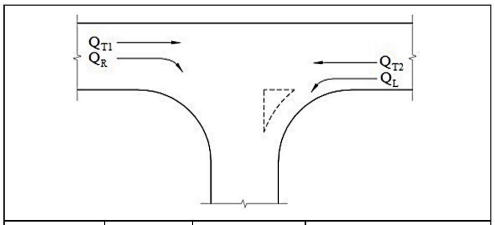


Figure 4A-A 4 - Calculation of the major road traffic volume parameter 'Q_M'



Road Type	Turn Type	Splitter Island	Q_M (veh/h)
2 Lane 2 Way	Right	No	= $Q_{T1} + Q_{T2} + Q_L$
		Yes	= $Q_{T1} + Q_{T2}$
	Left	Yes/No	= Q_{T2}

RESULTS:

BG+DEV

	Right turn treatment	Left turn treatment
AM	SR	SL
PM	SR	SL

NOTES:

The State Government have developed a multi-faceted and multi-layered planning framework with the Planning Act 2016 which is supported by several other Acts and Regulations. It regulates the operation for local plan making and sets a new landscape for development assessment to exercise a broader planning discretion than what has traditionally been seen in past Acts. The Charters Towers Regional Town Plan 2020, herein referred to as the town plan, was developed in accordance with the framework under the Planning Act 2016.

The town plan includes strategic framework which establishes the intent, vision and policy direction for the Charters Towers region into the future up to 2038, a vision which is referred to in the Town Plan as 'The New World'. The key goals and strategic intent for the region are represented by several themes within the strategic framework which align closely with the State interests set out in the State Planning Policy (SPP) 2017.

The State Government have also developed a regional planning framework to consider and address economic, social and environmental factors similarly to a local government planning instrument but at a broader more collaborative level. To achieve this, The State have created several broader planning instruments for each of the key regions within Queensland with consideration to the broader scale sought outcomes (economic, social and environmental priorities). These too align with the State interests in the SPP and therefore also the key themes of the Strategic Framework. Despite not having direct statutory weight, the regional plans can be considered a higher order instrument and a relevant matter in assessment of more complex planning applications where an inconsistency with the local governing instrument arises. The Charters Towers Local Government Area (LGA) falls within the North Queensland Region; with an aptly named regional plan North Queensland Regional Plan 2020 (NQRP). The Charters Towers LGA accounts for 4% of the total land area in the State of Queensland and almost 86% of the North Queensland Region, making it a chief economic contributor and landing it a major role in shaping the region's identity.

In addition to the regional plans which are based on a physical location grouping, the State have created regional priority interest areas (PIA). These areas are determined more strategically based on existing and future planned land use and social patterning, natural feature values and productivity land capacities and their potential to contribute to the State's prosperity. PIAs are distributed throughout Queensland. and are managed under their own Act; the Regional Planning Interests Act 2014 (RPI Act) which aligns and supports the Planning Act 2016 and the SPP. The RPI Act was created to further manage, regulate and protect areas of identified interest from incompatible resource activity and to facilitate achievement of the State interests. There are four groupings of regional interest:

- Priority agricultural areas
- Priority living areas
- Strategic environmental areas
- Strategic cropping areas

Greenvale and its surrounds, inclusive of the subject site, is located within a Priority Living Area under the RPI Act. A priority living area as defined under the RPI Act is an area:

(a) shown on a map in a regional plan as a priority living area; and
(b) that includes the existing settled area of a city, town or other community and other areas necessary or desirable
    (i) for the future growth of the existing settled area; and
    (ii) as a buffer between the existing or a future settled area and resource activities.

The outcome sought for a priority living area is to ensure that the location, nature and conduct of the planned activity is compatible with the planned future of the interest area stated in the local planning instrument which is to be achieved through ensuring the activity is likely to result in community benefits and opportunities, including but not limited to financial and social enrichments.

The town plan does not identify the priority interest area of Greenvale, and only provides projected population growths for each locality in The New World. This is presumably because the town plan preceded the inception of the ASMTI plans for Greenvale. The NQP does however identify the priority living area over Greenvale. It is identified as an urban consideration; a counterbalancing action to support increases in mining and extractive resource production in the region. We consider that this may also be supportive of the increased defence investment in the Greenvale area.

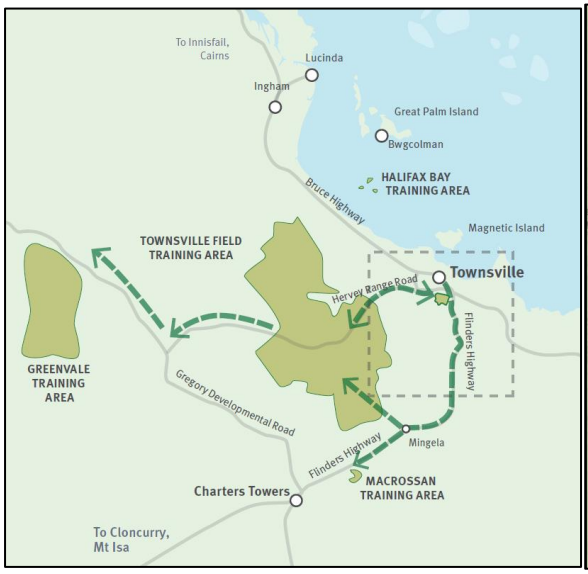
It can be demonstrated that the proposed development is consistent with the outcomes sought by the Strategic Framework and the NQRP and therefore does not compromise achievement of the regional and State interests under the RPI Act and SPP. The commonality between each goal and theme across these instruments have been linked and summarised in point form and then each addressed to demonstrate how the proposal sets out to further and achieve these relevant matters.

Furthering economic development and tourism for The New World and creating a leading economy in regional Australia

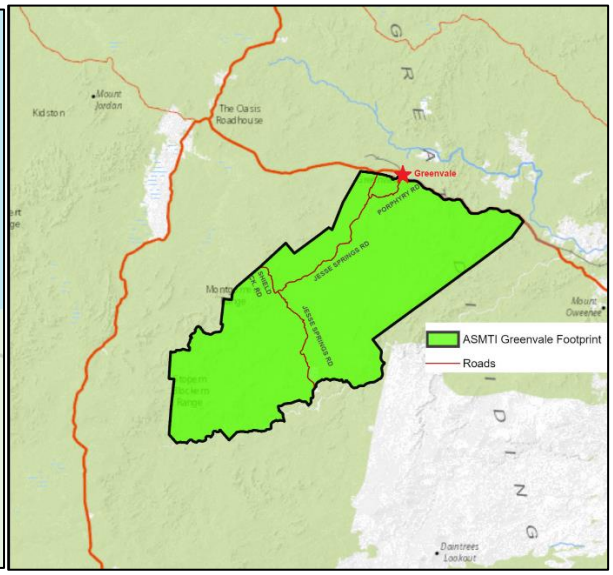
- The proposal aims to facilitate accommodation for a broader market with an end goal to predominantly service contractors and the workforce involved in the construction phase of the planned Greenvale Military Training Area (ASMTI) and associated network upgrades. The ASMTI training area project will provide enduring economic benefits to the Charters Towers and North Queensland Region with Greenvale itself set to reap considerable benefits as the closest node. Defence is an alternate industry to the resource-based industries traditionally dominating this region. The sector advances and diversifies employment opportunities and knowledge bases which both contribute to economic enhancement for the region. The strategic branch into the defence industry must be appropriately supported by well-planned development simultaneously to grow and secure the industry for the region. This is identified as a regional outcome in the NQRP.
- We do expect several other industries may demand accommodation from time to time, including existing and future mineral and extractive resource operations, transport (road and rail) infrastructure upgrade projects and other established key industries such as rural aviation (mustering) servicing the agricultural sector. The ASMTI project alone initiates a planning need for non-resident workforce accommodation. Whilst it is acknowledged that non-resident worker's accommodation is only to be utilised when associated with the construction phase of a project, the proposal seeks to service a wider market demand (including established operational industry) whilst ensuring the impacts remain suitably mitigated.
- It is Greenvale's location proximal to a major arterial transport regional connection (Gregory Developmental Road), within the MITEZ (Mount Isa to Townsville Economic Development Zone) and the impending defence training area that lends it toward being the prime location for workforce accommodation facilities. The proposal will facilitate continual improvement and upgrade to the transport and infrastructure network by supporting existing and new resource-based and value-adding industries, create direct monetary injection into a local township and positively influence the economic viability and sustainability of the North Queensland region
- The Gregory Developmental Road is identified in the NQRP as a tourism route not

only leading to the heart of the NQ region but linking to other regions such as the Gulf and Far North Queensland. The proposal is seen to directly and indirectly benefit the tourism industry through its siting. It enables direct investment and support to local businesses that have traditionally supplied to a transient population (workforce travellers and tourists), facilitating their financial security to remain open and continue/enhance their own services to their customer and client bases.

- distributing the accommodation nodes through smaller districts adjacent to existing settlements where there is industry demand, in turn encourages workforce residents to stay and use their leisure time to travel and explore the communities and prominent places within the region and beyond.



ASMTI Defence Training Area relative to other nodes



Township of Greenvale proximal

Protecting the heritage values and natural resources for The New World and creating a rich and healthy environment

- The proposal seeks to establish a land use on premises that has historically remained vacant with minimal rural activity. The use also demands a larger tract of land which is often unavailable within the central zone of a city or township due to settlement pattern behaviours and development demand accelerating higher land use densities. The site's limited agricultural carrying capacity, larger land area and nexus to the township lend it toward an "urbanised" land use such as non-resident worker's accommodation.
- A large portion of the site will remain undeveloped and kept in its naturally vegetated state. Rural activities such as light cattle grazing could be conducted on the undeveloped portion of the land as a supplementary venture for the landowner simultaneously with the proposed use. Upon cessation of the use, the land can be returned to its pre-development state and used in a rural capacity. The proposed land use does not result in the net loss of important agricultural land and natural resources.
- The development seeks to protect important biodiversity values and maintain ecological processes on the land by limiting vegetation clearing to the development footprint and its necessary firebreaks. The clearing footprint was resolved in consultation with the State and the impacts resulting not seen to have a residual adverse impact.

Catering for living, growing and aging communities that have a great level of resilience to natural hazards in The New World and creating liveable, sustainable and resilient communities

- Greenvale is suitably located on a high order transport route for a transient population, with the community historically relying on the resource sector and "stop-over" visitors to support the local businesses. A boost in the local economy as a result of the proposed use can action a flow on effect; it creates a more self-sustainable community, which then encourages an orderly upgrade to infrastructure and local places, shaping an enjoyable and active living environment for permanent residents and visitors which then encourages increased visitation and growth in the permanent local population.
- Bushfire mitigation has been incorporated into the design and clearing footprint with firebreaks, and further measures would be implemented on site when constructed. It introduces good land management practices on an historically vacant parcel that lies directly adjacent to the existing settlement footprint, increasing the level of resilience for the community.

Ensuring sustainable infrastructure and services for the communities in The New World and maintaining a safe, connected and efficient North Queensland

- Approval of the Greenvale defence training area will likely demand significant transport and infrastructure network upgrades along the Townsville to Greenvale route (Gregory Developmental Road and Flinders Highway). The proposal directly supports this theme and can accommodate contractors associated with these works.
- The provision of additional workers accommodation at this location reduces the travel from other accommodation nodes and provides a central point of lodging whilst also distributing population into smaller townships whose local economy rely upon a transient population to thrive.

To provide further justification, the Strategic Framework also sets out the preferred land use strategies to achieve the specific and overall outcomes for each of the key themes. Several land use strategies for enhancing liveable communities and housing directly address the land use type subject of this application.

Any non-resident workers accommodation is strictly limited to the construction phases of any mining or major economic projects. These temporary uses are construction camps which exist only during the construction phase of such developments and are decommissioned once construction is finished.

The housing of operational employees of mining or major economic projects must be accommodated within the region's urban or township communities where the necessary services, facilities and infrastructure are already provided or can be augmented. Non-resident workforce accommodation servicing operational employees is not supported anywhere throughout region.

To ensure the continued development of liveable communities for all age demographics within the region and the overall outcomes of these themes can be met by the proposal through design, siting and operational management terms, our client proposes the following:

- It is accepted that Council may apply a specific sunset date or lifespan to any development approval conditions, subject to the completion of the ASMTI project. Given we expect construction of the workforce accommodation would commence shortly after approval (if granted) and the ASMTI Greenvale project has not released a construction timeline, the proposal would at first cater to the broader market of industries and it may result in a combination of workforces accommodated at any one time. Despite branching past construction phase only workforces, the staging of this proposal will ensure demand is met on a case-by-case basis with the intent that at full completion of the workforce accommodation, it is predominantly servicing the

construction phase of the ASMTI project.

- The construction style of the proposed development will be temporary in nature. All buildings will be of modular/demountable construction and earthworks associated with sewer and water reticulation will be kept minimal (i.e. maintain reticulation above ground where practicably possible) so works could be easily decommissioned and removed upon cessation of the use.
- The proposed use is located directly adjacent to a township settlement on a large tract of unutilised land. The land does not hold significant agricultural value thus is not taken to compromise its productive capacity or result in a net loss off agricultural land. Only a portion of the land is being utilised by the proposal with the balance to remain in its natural state. The vegetation within the balance will be protected from development however the area could still be used for light livestock grazing or other rural activity as an auxiliary venture. Both the presence of natural vegetation and livestock are considered important elements of what constitutes rural character and amenity.

Despite the deviation from the preferred land use strategies with the proposal's intent to not exclusively service construction phase workforces it does not compromise the overarching Strategic Intent of the Planning Scheme and achieves the regional outcomes, key themes and goals sought under this framework and the regional plan.

We implore Council to investigate new avenues for vacant and disused workforce lodgings to be used as a part solution to the lived-in housing shortage crisis experienced across the State and Nationally as an alternative option to decommissioning the accommodation nodes at the conclusion/cessation of their 'supply chain'.