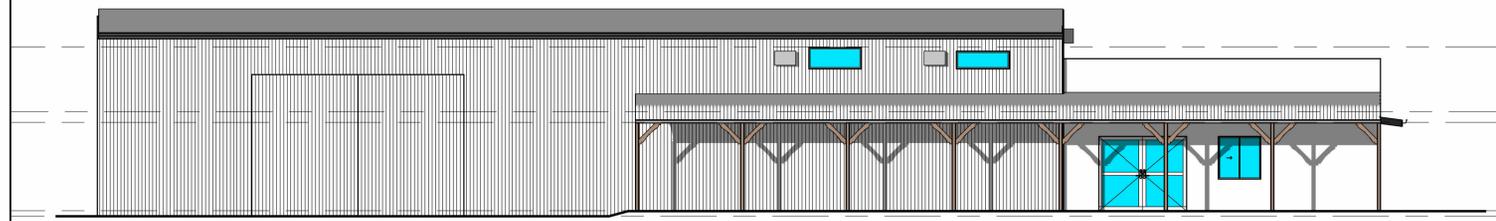
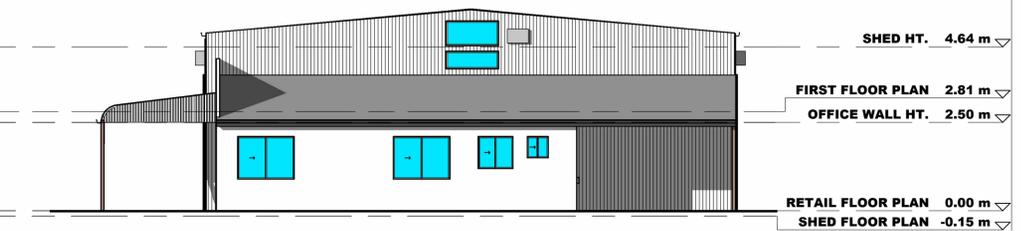


**1** EXISTING ELEVATION 1  
1 : 100 AT A3 SHEET SIZE

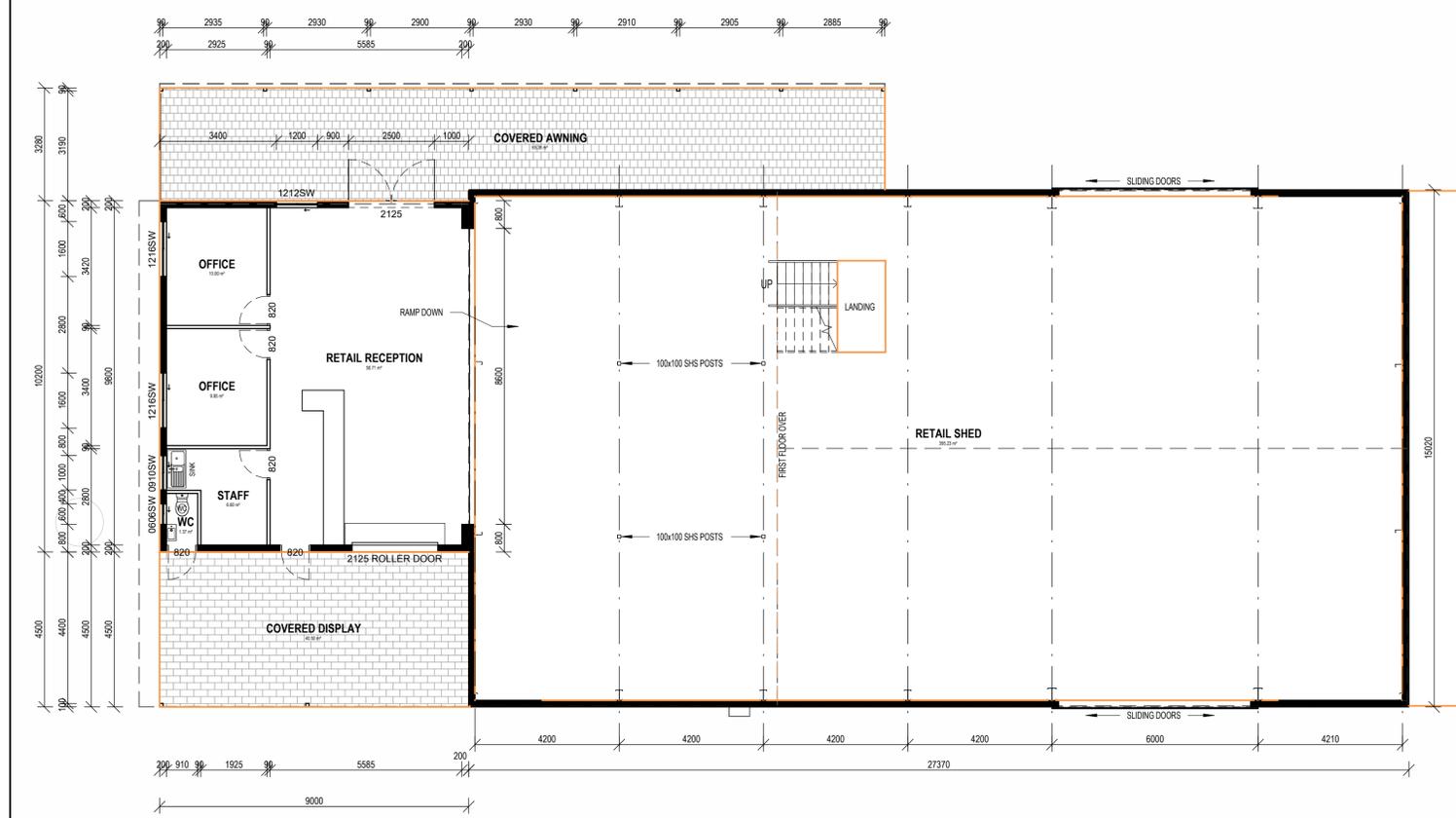
**2** EXISTING ELEVATION 2  
1 : 100 AT A3 SHEET SIZE



**3** EXISTING ELEVATION 3  
1 : 100 AT A3 SHEET SIZE



**4** EXISTING ELEVATION 4  
1 : 100 AT A3 SHEET SIZE



**EXISTING FLOOR PLAN - RETAIL/SHED**  
1 : 100



**EXISTING FIRST FLOOR PLAN**  
1 : 100

EXISTING AREAS	
GROUND FLOOR	
RETAIL OFFICE	91.80 m <sup>2</sup>
RETAIL SHED	411.10 m <sup>2</sup>
COVERED AWNING	65.38 m <sup>2</sup>
COVERED DISPLAY	40.50 m <sup>2</sup>
<b>G.F. TOTAL</b>	<b>608.78 m<sup>2</sup></b>
FIRST FLOOR	
OFFICE	124.79 m <sup>2</sup>
LANDING	9.87 m <sup>2</sup>
<b>F.F. TOTAL</b>	<b>134.66 m<sup>2</sup></b>
<b>TOTAL BUILDING</b>	<b>743.44 m<sup>2</sup></b>

PROJECT ISSUE & DESCRIPTION  
P6 - PRELIMINARY ISSUE - 16-03-2026

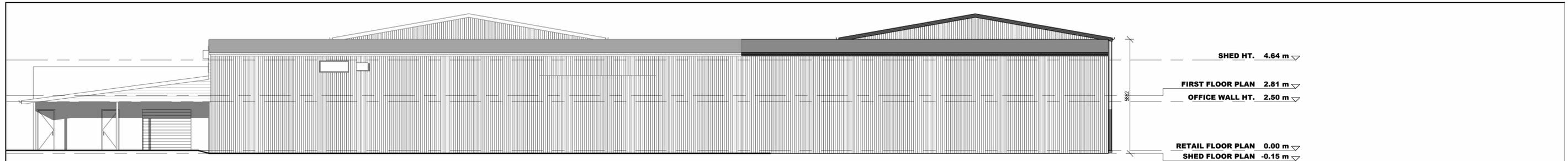
**PRELIMINARY**

NOTES:  
THIS DRAWING IS ONLY INTENDED TO OBTAIN A LEGAL AUTHORITY BUILDING PERMIT. COMPANIES WITH ALL RELEVANT AUTHORITY REG. & B.S.A. FIGURED MEASUREMENTS TO TAKE PRECEDENCE OVER SCALED MEASUREMENTS. VERIFY ALL ON-SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

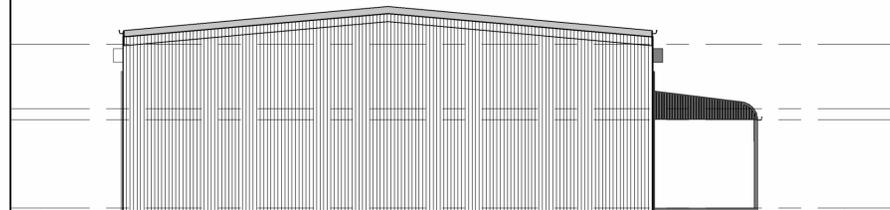
**CB**  
**DESIGNS**  
BUILDING DESIGN & DRAFTING  
ABN: 112 837 297  
Licence No. 932298  
66 Baywater Road, Hyde Park, QLD 4812  
PO Box 4527, Townsville QLD 4814  
Tel: (07) 4778 4199

PROJECT:  
EXTENSION/RENOVATION  
CLIENT:  
P. FORTINI  
SITE:  
13 LYNAM ROAD  
BOHLE PLAINS  
TOWNSVILLE

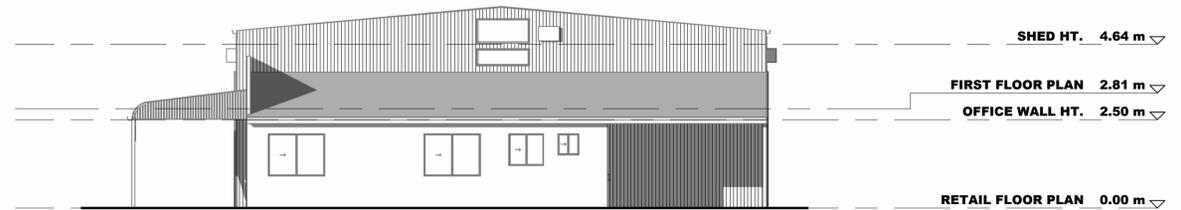
BUILDER:	
DATE:	16/03/2026 11:38:41 AM
DRAWN:	B.W.
SCALE:	1 : 100
SHEET NO.:	8
JOB NO.:	24-450
CLIENT JOB NO.:	



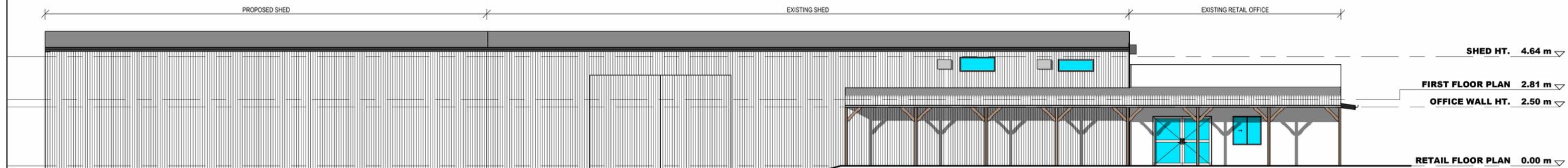
**1** PROPOSED ELEVATION 1  
1 : 100 AT A3 SHEET SIZE



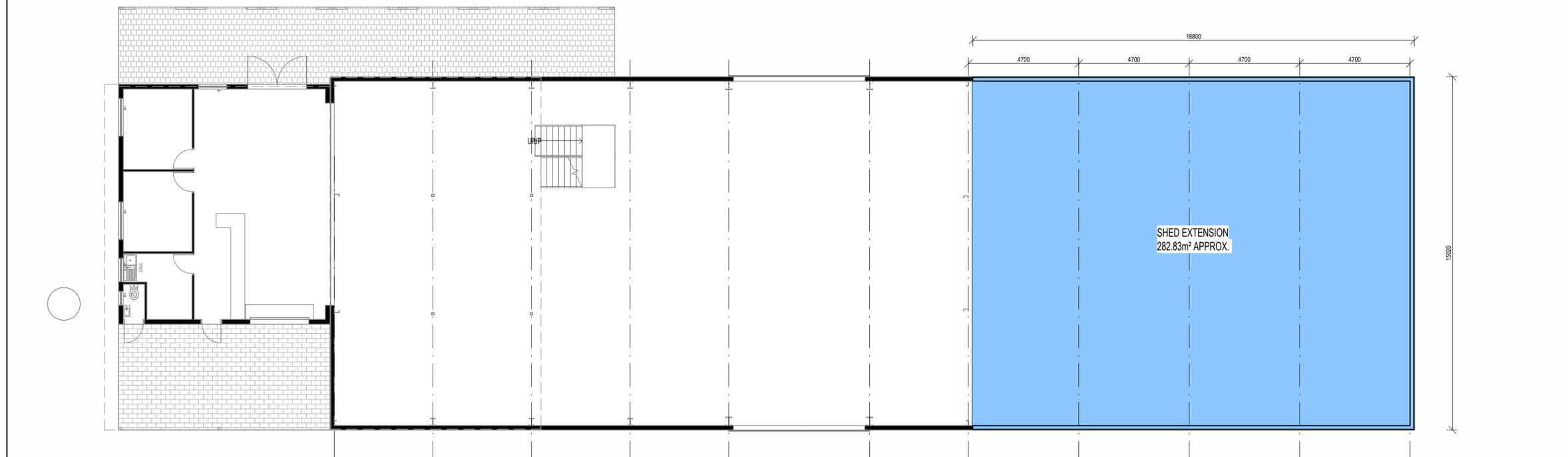
**2** PROPOSED ELEVATION 2  
1 : 100 AT A3 SHEET SIZE



**4** PROPOSED ELEVATION 4  
1 : 100 AT A3 SHEET SIZE

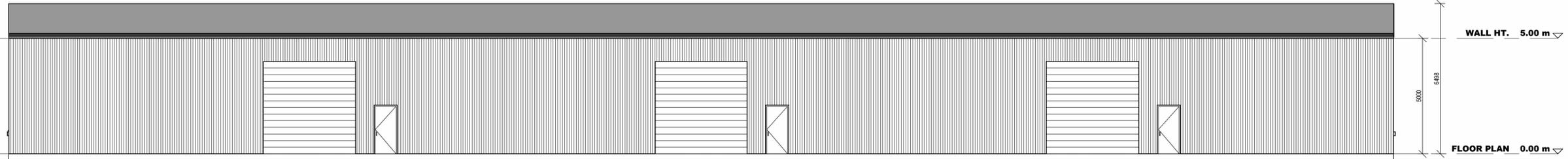


**3** PROPOSED ELEVATION 3  
1 : 100 AT A3 SHEET SIZE

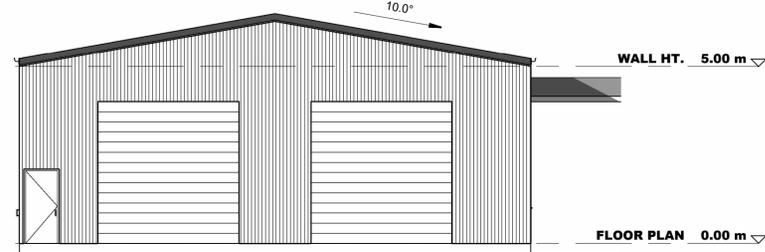


PROPOSED FLOOR PLAN - RETAIL/SHED  
1 : 100

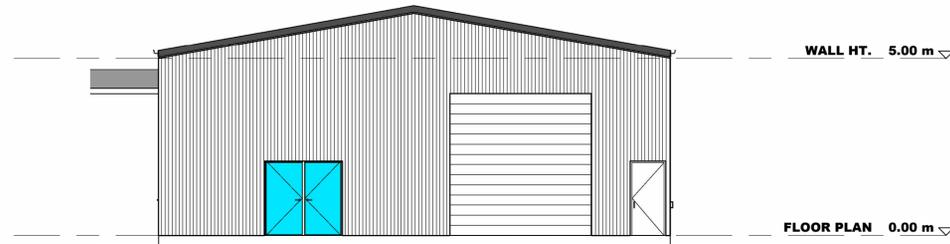
PROJECT ISSUE & DESCRIPTION P6 - PRELIMINARY ISSUE - 16-03-2026		<b>PRELIMINARY</b>	<p><b>CB DESIGNS</b> BUILDING DESIGN &amp; DRAFTING ABN: 112 837 297 Licence No. 5722288 66 Baywater Road, Hyde Park QLD 4812 PO Box 4527, Inverloch QLD 4914 Tel: (07) 4778 4199</p>	PROJECT: EXTENSION/RENOVATION  CLIENT: P. FORTINI  SITE: 13 LYNAM ROAD BOHLE PLAINS TOWNSVILLE	BUILDER:   <table border="1"> <tr> <td>DATE:</td> <td>16/03/2026 11:38:43 AM</td> <td>JOB NO.:</td> <td>24-450</td> </tr> <tr> <td>DRAWN:</td> <td>B.W.</td> <td></td> <td></td> </tr> <tr> <td>SCALE:</td> <td>1 : 100</td> <td></td> <td></td> </tr> <tr> <td>SHEET No.:</td> <td>9</td> <td>CLIENT JOB NO.:</td> <td></td> </tr> </table>	DATE:	16/03/2026 11:38:43 AM	JOB NO.:	24-450	DRAWN:	B.W.			SCALE:	1 : 100			SHEET No.:	9	CLIENT JOB NO.:	
DATE:	16/03/2026 11:38:43 AM	JOB NO.:		24-450																	
DRAWN:	B.W.																				
SCALE:	1 : 100																				
SHEET No.:	9	CLIENT JOB NO.:																			
NOTES: THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT. COMPY WITH ALL RELEVANT AUTHORITY REG. & B.S.A. CODES. DIMENSIONS TO TAKE PRECEDENCE OVER SCALED MEASUREMENTS. VERIFY ALL ON-SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.																					



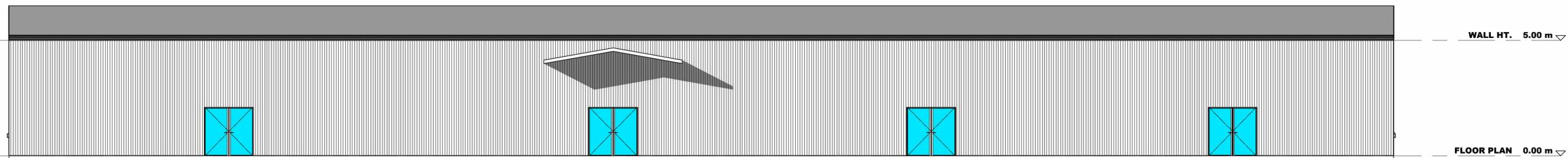
1 ELEVATION 1  
1 : 100 AT A3 SHEET SIZE



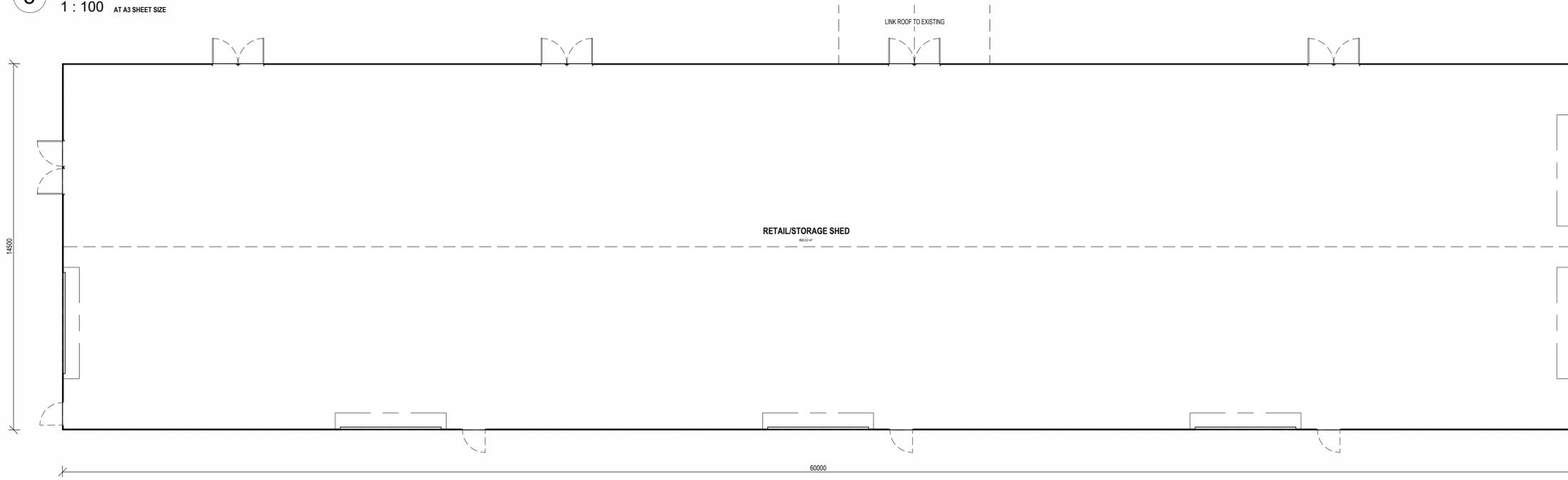
2 ELEVATION 2  
1 : 100 AT A3 SHEET SIZE



4 ELEVATION 4  
1 : 100 AT A3 SHEET SIZE



3 ELEVATION 3  
1 : 100 AT A3 SHEET SIZE



FLOOR PLAN  
1 : 100

AREAS	
RETAIL/STORAGE SHED	870.00 m <sup>2</sup>
TOTAL	870.00 m <sup>2</sup>

PROJECT ISSUE & DESCRIPTION  
P6 - PRELIMINARY ISSUE - 16-03-2026

**PRELIMINARY**

NOTES:  
THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT. COMPY WITH ALL RELEVANT AUTHORITY REG. & B.S.A. CODES. DIMENSIONS TO TAKE PRECEDENCE OVER SCALED MEASUREMENTS. VERIFY ALL ON-SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

**CB DESIGNS**  
BUILDING DESIGN & DRAFTING  
ABN: 112 827 297  
Licence No. 4722268  
66 Baywater Road, Hyde Park QLD 4812  
PO Box 4327, Vincent QLD 4814  
Tel: (07) 4778 4199

PROJECT:  
NEW RETAIL/STORAGE SHED  
CLIENT:  
P. FORTINI  
SITE:  
13 LYNAM ROAD  
BOHLE PLAINS  
TOWNSVILLE

BUILDER:

DATE:	16/03/2026 11:30:12 AM	JOB NO.	25-051
DRAWN:	B.V.		
SCALE:	1 : 100		
SHEET No.	10	CLIENT JOB NO.	



# Attachment 3

# Need & Impact Assessment Report

13 LYNAM RD, BOHLE PLAINS

FEBRUARY 2026

**ue** urban  
economics

**Prepared on behalf of:**

Bedrock Landscaping Supplies  
c/- Northpoint Planning

**Prepared by:**

Kerriane Meulman  
*Managing Director*

Joshua Binkley  
*Associate Director*

Nicholas Hiller  
*Consultant*

**Warranty**

This report has been based upon the most up to date readily available information at this point in time, as documented in this report. Urban Economics has applied due professional care and diligence in accordance with generally accepted standards of professional practice in undertaking the analysis contained in this report from these information sources. Urban Economics shall not be liable for damages arising from any errors or omissions which may be contained within these information sources.

As this report involves future market projections which can be affected by a number of unforeseen variables, they represent our best possible estimates at this point in time and no warranty is given that this particular set of projections will in fact eventuate.

**CommBank iQ Disclaimer**

This Data Insights Extract (Insights) is provided by CommBank iQ, a joint venture between Commonwealth Bank of Australia ABN 48 123 123 124 (Commonwealth Bank) and The Quantum Group Pty Limited ABN 45 102 444 253 and is based on information available at the time of publishing.

The Insights are confidential and are provided to you on the condition that you will not disclose its contents to any third parties other than your directors or employees, without the prior written consent of CommBank iQ. This obligation will not apply if the information is available to the public generally (except as a result of a breach of a confidentiality obligation) or you are required to disclose it by law. The Insights are provided subject to the terms and conditions contained in the Engagement letter and Standard Terms and Conditions.

The Insights are not investment research and nor does it purport to make any recommendations. Rather, it is for informational purposes only and is not to be relied upon for any investment purposes.

Version No	Date of Issue	Prepared By	Approved By
Draft	09/01/2026	Nicholas Hiller	Joshua Binkley
Draft	14/01/2026	Joshua Binkley	Joshua Binkley
Final	10/02/2026	Nicholas Hiller	Joshua Binkley

CommBank iQ has taken reasonable steps to ensure that the information in the Insights are correct and any opinions or conclusions are reasonably held or made as at the time of its compilation but no warranty is made as to accuracy, reliability or completeness.

Any data provided, or referred to, in the Insights only takes into account the Bank's data and as such may not reflect all trends in the market. Insights are based on a number of assumptions and estimates that are subject to contingencies and uncertainties. The inclusion of any valuations, projections and/or forecasts should not be regarded as a representation or warranty that such valuations, projections and forecasts, or their underlying assumptions and estimates, will be met or realised. Past performance is not a reliable indicator of future performance.

To the extent permitted by law, neither Commonwealth Bank and its subsidiaries (Commonwealth Bank Group) nor The Quantum Group Pty Limited and its affiliates (Quantum) accept liability to you or any person for loss or damage arising from the use of the Insights. The contents of the Insights should not be relied upon by you or any third party in making business or other decisions. The Insights are not a substitute for professional advice.

Any opinions, conclusions or recommendations in the Insights are subject to change without notice and CommBank iQ is under no obligation to, and does not, update or keep current the information contained in the Insights.

The Insights have been prepared for informational purposes only and do not take into account the objectives, financial situation or needs of any particular person. For this reason, any person should, before acting on the information in the Insights, consider the appropriateness of the information, having regard to their objectives, financial situation and needs and, if necessary, seek appropriate professional advice.

The Insights are not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject the Commonwealth Bank Group to any registration or licensing requirement within such jurisdiction.

The Insights may contain proprietary data of Commonwealth Bank that is sourced from Commonwealth Bank's internal systems and may include, but is not limited to, customer demographic profile information, transaction information, loan and repayment information (including security information), loan application information and savings information. The Insights may also include the data from third parties which have been matched to Commonwealth Bank data. Whilst Commonwealth Bank takes reasonable steps to ensure that its proprietary data is accurate as at the time of compilation of the Insights, Commonwealth Bank makes no representation or warranty as to the completeness of the data, as it may not reflect all trends in the market. Any reliance on this information is at your own risk.

Any Commonwealth Bank customer data used or represented in the Insights are de-identified before analysis and is used and disclosed in accordance with disclosures made in the Commonwealth Bank Group's Privacy Policy Statement. By receiving a copy of the Insights, you acknowledge and agree that you will not use, manipulate or interpret the information to re-identify any individual or entity.

All material presented in the Insights, unless specifically indicated otherwise, are under copyright to the Commonwealth Bank Group. None of the Insights, its content, nor any copy of it, may be altered in any way, transmitted to, copied or distributed to any other party, without the prior written permission of the Commonwealth Bank.

Version No	Date of Issue	Prepared By	Approved By
Draft	09/01/2026	Nicholas Hiller	Joshua Binkley
Draft	14/01/2026	Joshua Binkley	Joshua Binkley
Final	10/02/2026	Nicholas Hiller	Joshua Binkley

Commonwealth Bank maintains policies and procedures designed to minimise the risk that officers and employees are influenced by conflicts of interest and improper disclosure of confidential information.

---

Version No	Date of Issue	Prepared By	Approved By
Draft	09/01/2026	Nicholas Hiller	Joshua Binkley
Draft	14/01/2026	Joshua Binkley	Joshua Binkley
Final	10/02/2026	Nicholas Hiller	Joshua Binkley

# Contents

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
1.1	Background	1
1.2	Study Objectives and Methodology	2
<b>2.0</b>	<b>The Subject Site</b>	<b>3</b>
2.1	The Subject Site (13 Lynam Rd, Bohle Plains)	3
2.2	The Proposed Development	4
2.3	Planning Framework	5
<b>3.0</b>	<b>Supply</b>	<b>7</b>
3.1	Trends	7
3.2	Existing Centres and Facilities	9
3.3	Proposed and Approved Facilities	12
3.4	Implications	13
<b>4.0</b>	<b>Study Area Community</b>	<b>14</b>
4.1	Study Area Definition	14
4.2	Population and Household Growth	15
4.3	Demographic and Socio-Economic Profile	17
4.4	Working Population	20
4.5	Implications	21
<b>5.0</b>	<b>Demand Analysis</b>	<b>22</b>
5.1	Retail Expenditure	22
5.2	Traffic Demand	23
<b>6.0</b>	<b>Assessment of Need</b>	<b>25</b>
	<i>Economic Need</i>	25
	<i>Community Need</i>	26
	<i>Planning Need</i>	26
<b>7.0</b>	<b>Impacts &amp; Benefits</b>	<b>27</b>
7.1	Market Share Analysis	27
7.2	Impact on Rural Lands	28
<b>8.0</b>	<b>Conclusions</b>	<b>29</b>

# 1.0 Introduction

## 1.1 Background

Urban Economics has been commissioned to prepare and Economic Need and Impact Assessment for a proposed food and drink outlet within the rural zone at 13 Lynam Rd, Bohle Plains. The site currently hosts a landscape supplies and garden centre which has operated for the past 30 years.

In response to the initial development application, Townsville City Council issued an information request seeking:

- *a comprehensive needs analysis which demonstrates why a Food and Drink Outlet (which is not ancillary to the proposed Bulk Landscape Supplies and Garden Centre is needed at this location. This analysis should be prepared by a suitably qualified person. Guidance for the preparation of this document can be found in SC6.5 Economic impact assessment planning scheme policy.*
- *Further justification as to the suitability of a Coffee Shop within the Rural zone having particular regard for the purpose of the Rural zone code and the Strategic Framework of the Townsville City Plan.*

Urban Economics is a boutique economic and market research consultancy based in South East Queensland. With more than 50 years' experience of senior personnel and employing a multi-disciplined team with skills in economics, market research, geography, property development and real estate, Urban Economics is uniquely positioned to arm our clients with the insights and advice they need to add value to their development related decisions. We have a passion for understanding how and why we live, work, play and learn within our urban environments.

We have worked extensively with private, not for profit and public sector clients throughout Queensland and New South Wales, tailoring our economic and market research consulting services to the needs of individual projects and large integrated consultancies. Our commitment to research excellence and prudent advice ensures that our clients are well informed at all stages of the consultancy, and are provided with analysis that is astute, thorough and perceptive.

The Urban Economics team has extensive experience in the preparation of strategic advice and need assessments for a range of retail, health, education, tourism, residential, industrial, commercial and community sectors including demographic analyses, market share analyses, qualitative and quantitative research.

## 1.2 Study Objectives and Methodology

The key objective of this report is to examine the economic, community and planning need for the proposed Food and Drink Outlet at 13 Lynam Rd and the impacts if any for Townsville's centres network.

In preparing the Need Assessment, Urban Economics has undertaken the following tasks:

- Reviewed the concept plans for the proposed development;
- Identified the relevant network of existing and proposed food and drink outlets within Bohle Plains and the provision of drive-through food and drink outlets across Greater Townsville;
- Investigated the existing performance vacancies and non-residential floorspace within the surrounding centres network;
- Defined a local Study Area community for exploration;
- Critiqued Population and Household Growth within the Study Area, including a review of residential development activity and growth in the broader locality;
- Examined the demographic and socio-economic profile of the Study Area community utilising Commbank iQ data, having particular regard for eating out and takeaway food expenditure;
- Measured vehicle movements and commuter activity within the locality such as along the major Hervey Range Road and Townsville Ring Road corridors;
- Explored the demand/supply gap for food and drink outlets in Bohle Plains;
- Assessed the economic, community and planning need for the proposed development; and
- Explored the impacts and benefits of the proposed development at the subject site, including a critique of the capacity of other suitably zoned site that could viably accommodate the proposed development.

## 2.0 The Subject Site

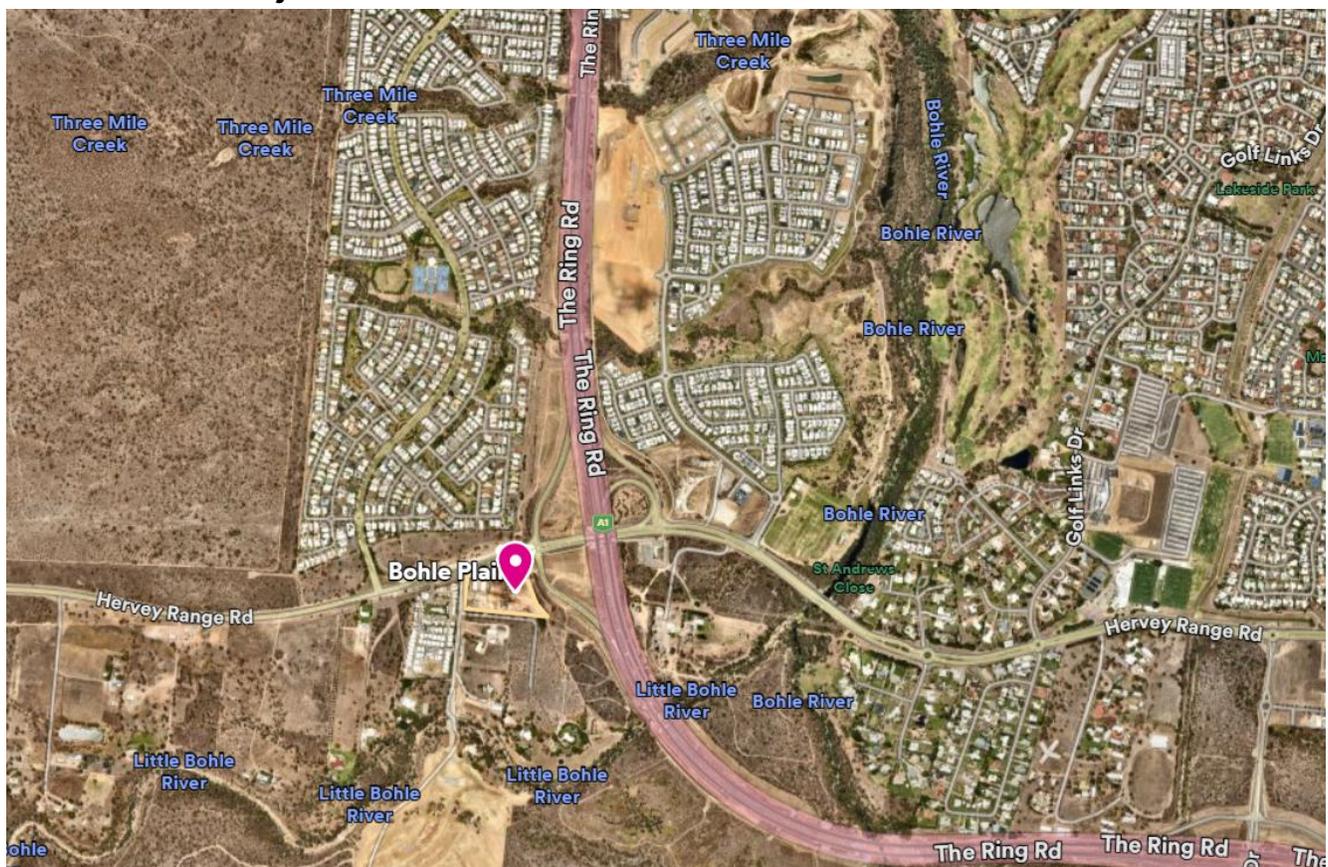
### 2.1 The Subject Site (13 Lynam Rd, Bohle Plains)

The subject site is located at 13 Lynam Rd, Bohle Plains, directly adjacent to Hervey Range Rd westbound and close to the off ramp from the Townsville Ring Rd (Bruce Highway). There are a number of detached housing estates developing around the subject site, most notably the Mackinnons Reach estate directly to the south at the end of Lynam Rd and Harris Crossing to the east of the Ring Road.

Currently, the major use on the subject site is Bedrock Landscape Supplies, which has operated as a landscape supplies business since the mid-1990s. The business serves approximately 100 customers per day and employs 23 staff, with a mix of tradesmen, landscapers and homeowners as the primary customer base.

The site is opposite the Townsville Tourist and Lifestyle Park, which has a mix of accommodation options including cabins and powered caravan sites as well as 23 permanent Manufactured Home Park sites.

**FIGURE 2.1: The Subject Site**



Source: Nearmap 22<sup>nd</sup> October, 2025

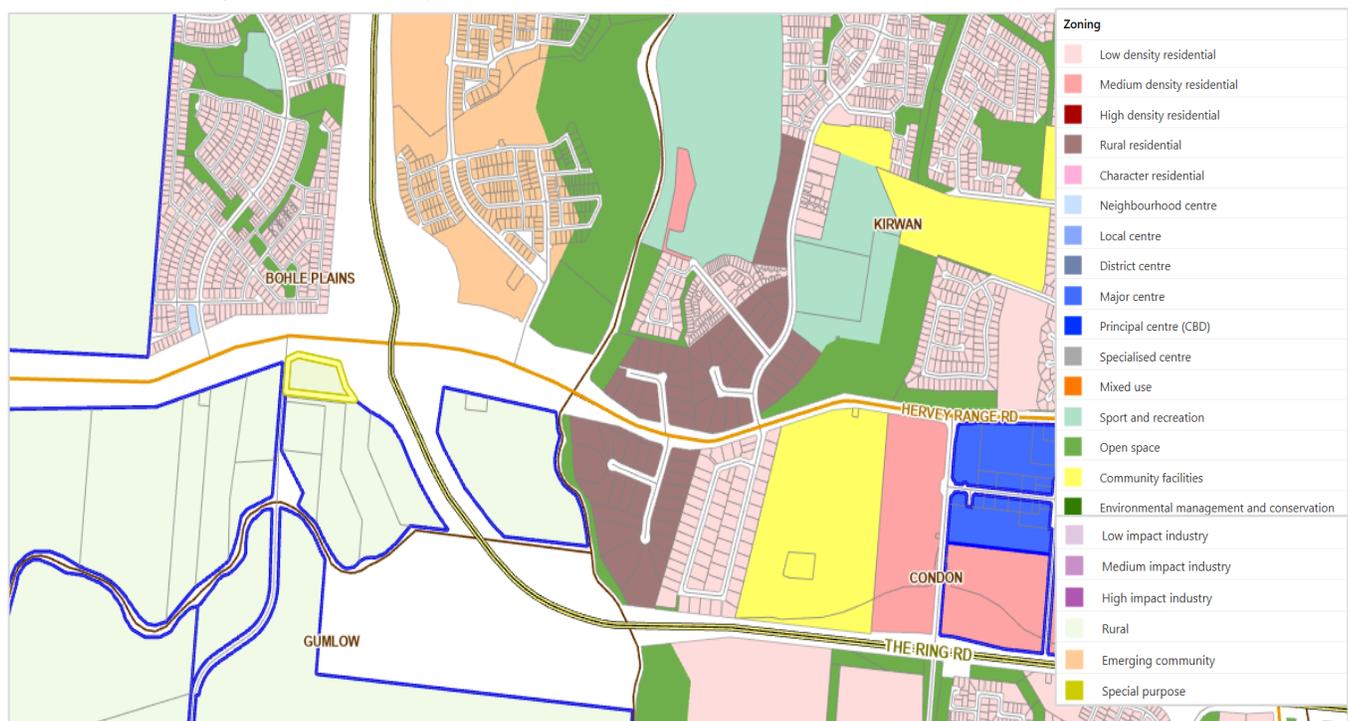


## 2.3 Planning Framework

The subject site is zoned as rural land and is surrounded by other parcels also zoned for rural uses. Across Hervey Range Rd, there are ongoing suburban estates being developed, zoned for either low density residential or emerging community uses.

It is notable that there is only one small neighbourhood centre zoned precinct proximate to the subject site, at the entrance to the Kalynda Chase estate, though the large site at the entrance to the Harris Crossing estate is designated for commercial uses and the suburb of Shaw is identified for a future District Centre in the planning scheme's Strategic Framework.

**FIGURE 2.3: Subject Site Zoning**



Source: Townsville City Council Planning Scheme

Due to its location within the rural zone, any development on the subject site is required to align with the purpose of the Rural Zone Code, the desired outcomes that are of relevance to the subject proposal are outlined below:

1. *The purpose of the code will be achieved through the following overall outcomes:*
  - d) *Other new enterprises, including rural industries and tourism activities, are accommodated where:*
    - i) *They are directly associated with rural production, a natural resource or the natural environment of need to be remote from urban uses as a result of their impacts;*
    - ii) *The productive capacity of the land is not diminished and conflicts with the existing and intended activities in the surrounding area are avoided;*
    - iii) *The existing landscape and natural resource values of the land are maintained; and*
    - iv) *The development is not more appropriately located in another zone.*

According to the Planning Scheme’s Strategic Framework 3.6.1 (5) – *“within rural areas, new enterprises are encouraged that are associated with rural production or the natural environment, and which are not more appropriately located in urban areas.”*

This is further expanded upon in element 3.6.4 Natural economic resources, where there are a number of specific outcomes desired for rural lands in the Townsville LGA.

- 4) *Further fragmentation of rural land is avoided. A lack of viability for existing farms and small holdings does not justify their further subdivision or use for non-agricultural purposes.*
- 5) *Development complies with the nominated minimum lot size for each precinct which will generally range from 10ha for rural lifestyle precincts, to 40ha for horticultural-based precincts to 400ha for grazing-based precincts.*
- 6) *Opportunities for diversification of activities within the rural areas is encouraged, provided that:*
  - a) *the productive capacity of the land is maintained;*
  - b) *conflicts with existing and intended rural activities in the surrounding area are avoided;*
  - c) *the existing landscape and natural resource values of the land are maintained; and*
  - d) *the development is not more appropriately located in another zone.*

Relevantly, the Economic impact assessment planning scheme policy (PSP) outlines the standard information requirements expected to be incorporated within an economic impact assessment report, particularly for out-of-centre development of a commercial nature such as is proposed at the subject site. The Economic impact assessment PSP seeks to *“protect the economic viability and the intended role and successful functioning of centres”*; an intent that this Report seeks to address.

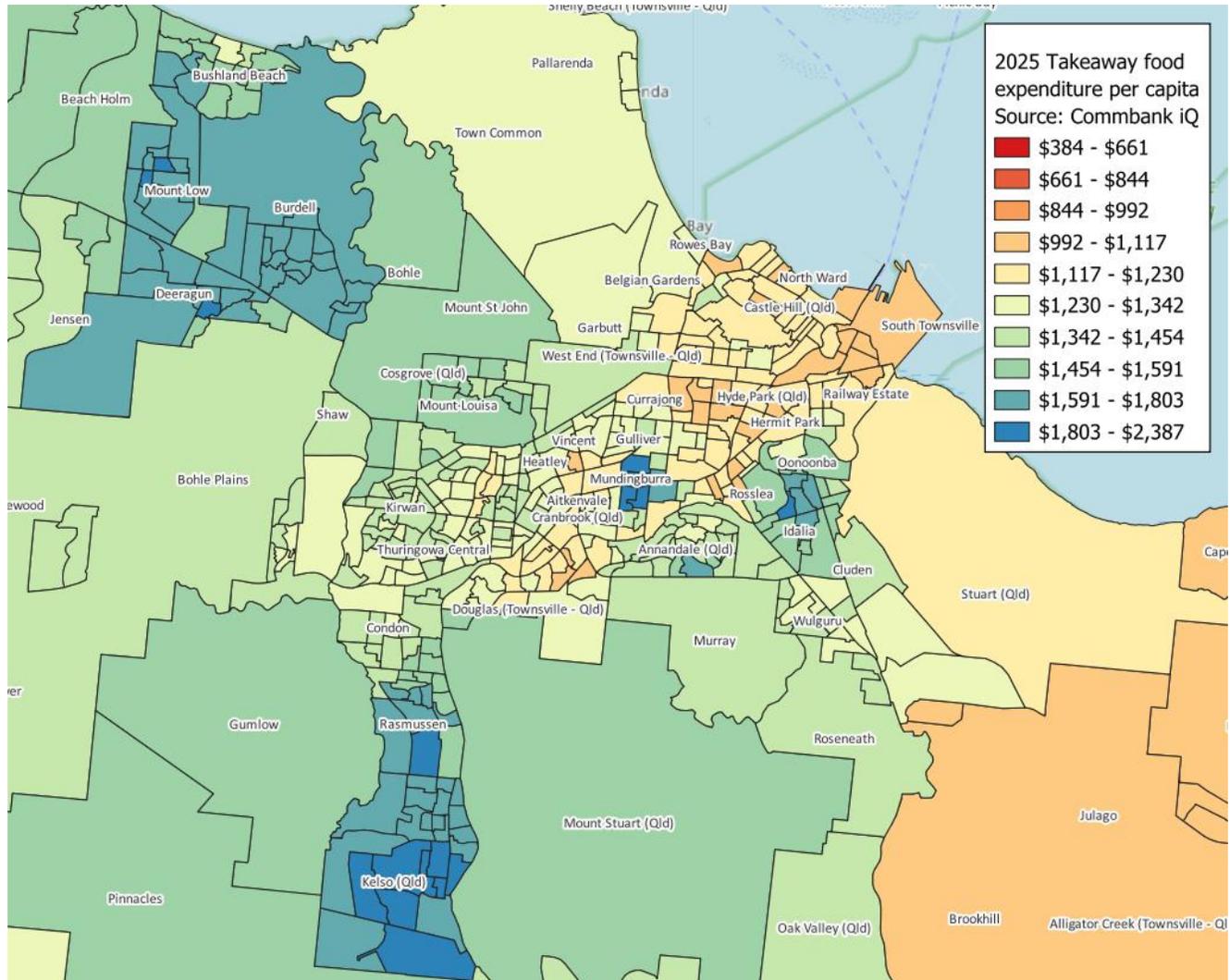
## 3.0 Supply

### 3.1 Trends

The drive-thru food and drink market has grown substantially over the past decade, with a growing diversity of brands establishing themselves and new store formats emerging, as online ordering becomes a more popular method of generating customers.

- As household incomes have generally increased over time, food expenditure has made up a smaller proportion of household budgets compared to takeaway and casual dining as families can afford to eat out more frequently. However, since the COVID-19 pandemic, the increased cost of living has slowed this growth in spending.
- In contrast to previous growth in the use of delivery services such as UberEats and Doordash, the high fees charged by these providers have reduced their attractiveness, with many fast food outlets now offering online ordering and pickup services which are proving more popular and affordable to consumers.
- While food and drink outlets, especially drive-thrus, in Australia have traditionally been associated with large chains such as McDonald's and KFC serving cheap and quick "fast food", in the last decade these large brands have faced competition from other brands promoting a healthier alternative such as Grill'd, Guzman Y Gomez (GYG) and Zambrero. These alternative brands have begun to expand into setting up drive-thru outlets, with GYG in particular expanding aggressively in recent years.
- There are also a number of new entrants to the drive through food and drink format with significant growth and expansion plans including Zarraffa's, Starbucks, Banjo's, and other operators such as Grill'd exploring drive through formats, as well as the anticipated arrival and expansion of US giant Wendy's.
- Other notable format changes include the emergence of "service centres" including the co-location of complementary service and vehicle-oriented activities which have presented opportunities for both fuel retailing and other outlets such as fast food, drive through coffee and service industries to enjoy the benefits of co-location with access to motorists and for motorists to enjoy improved accessibility and convenience.
- Zarraffa's is the largest major drive-thru coffee chain in South East Queensland. With annual sales revenues ~\$160 million and some 80 stores, the average Zarraffa's has sales revenues in order of \$2 million per annum.
- FIGURE 3.1 illustrates takeaway food and drink expenditure per capita across Townsville through 2024/25, based on data from Commbank iQ. This data highlights the heightened level of expenditure by residents of growth and commuting communities of the region which include time-poor working families.

**FIGURE 3.1: Takeaway Food Expenditure Per Capita 2025 – Townsville**



Source: Commbank iQ, Urban Economics

## 3.2 Existing Centres and Facilities

### Centres

Currently in the suburb of Bohle Plains, the only land explicitly zoned for centre uses is **1 Kalynda Pde** at the entrance to the Kalynda Chase estate, which currently hosts a convenience/takeaway, dental clinic, hairdresser and building certifiers, with the remainder of the site taken up by the carpark. There is no vacant developable land within this centre with a total leasable space of ~450sqm.

Instead due to proximity, residents currently are likely to travel to Thuringowa Central to access higher level centre services such as supermarkets, retail as well as food and drink and recreation. Given the size of this centre as well as its mix of light industrial and large format uses, it is also likely to be a major area of employment for local residents. In future, council's Strategic Framework identifies land in the Greater Ascot estate for a District Centre, and initial approvals for retail facilities have been given.

Further afield, there is neighbourhood centre zoned land at Ridge Dr, Alice River, 10km to the west along Hervey Range Rd at the entrance to rural residential estates. Currently, the only use on this land is the Rupertswood General Store, which is co-located with an Ampol service station and there is an approval for a medical centre on the opposite block.

### Drive-Thru Food and Drink Outlets

There are a significant number of drive-thru food and drink outlets across the Townsville urban area, across a variety of different chains. However, there is a limited number of outlets close to the subject site, with residents having to travel north along Shaw Rd to the independent Chuck Wagon Coffee and Pies, or to the Willows Shopping Centre in Thuringowa, which hosts Hungry Jack's, McDonald's and a drive thru Guzman y Gomez. There is also a recently opened Coffee Cartel outlet connected to a Puma service station across Hervey Range Rd in Thuringowa Central.

More specifically, the drive thru coffee network in Townsville is well developed, with four outlets of the national chain Zarraffa's and six other drive thrus where coffee is the major offering, most notably the local chain Good Morning Coffee Trader which has three stores in Townsville's inner suburbs. For locals of the Bohle Plains area, the closest drive thru coffee outlet is Coffee Cartel NQ in Thuringowa, ~10 minutes drive away.

FIGURE 3.2: Coffee Drive Thru Facilities

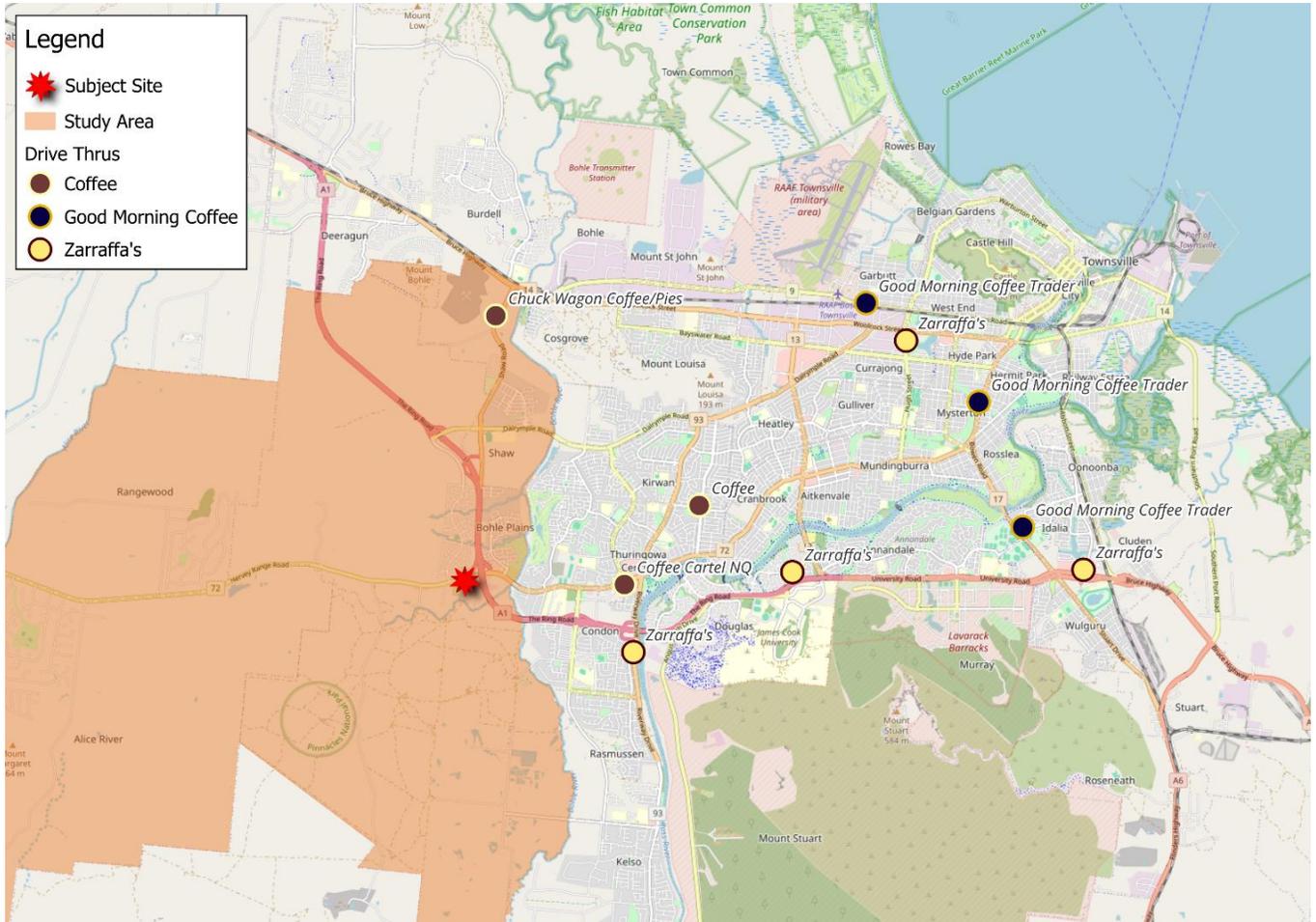
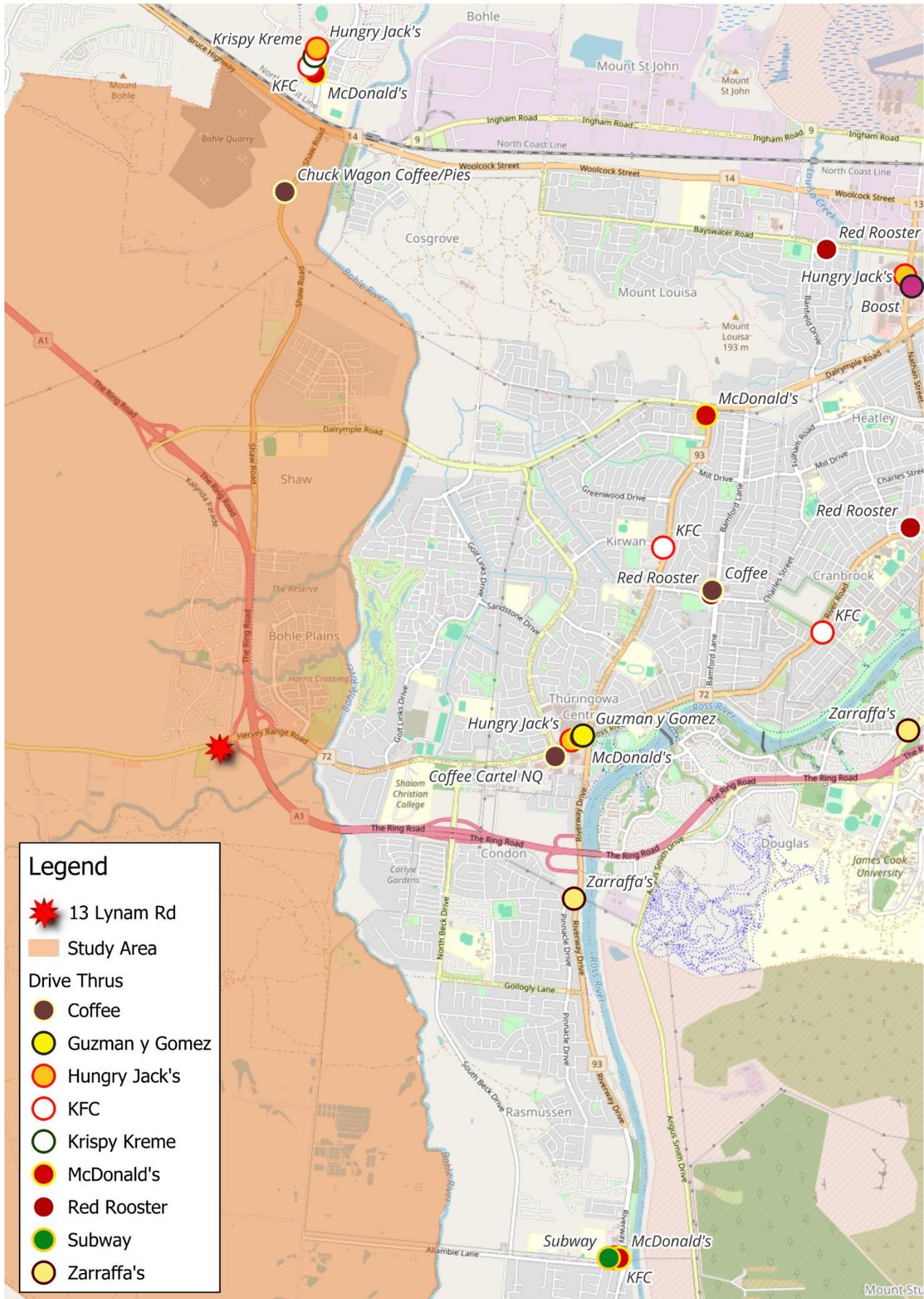


FIGURE 3.3: Study Area



### 3.3 Proposed and Approved Facilities

#### Greater Ascot Town Centre

As a part of the broader masterplanned community of Greater Ascot, there is a recently approved component of the Greater Ascot town centre that includes three drive thru food and drink outlets. Anticipated to form part of a future district centre connected to the Ascot housing development in Shaw, this approval includes two standalone food and drink outlets as well as a service station with an ancillary outlet.

While the development application does not directly confirm the brands, early plans identify one of the drive-thrus as being a KFC and the service station to be a Viva Energy/On the Run convenience outlet, with the third unidentified.

**FIGURE 3.4: 26 Lockton St Approval**



Source: Townsville Planning and Development

## 3.4 Implications

While the Townsville urban area has a strong and developing network of drive-thru food and drink outlets, growing suburbs such as Bohle Plains and Shaw, home to the growing housing estates of Harris Crossing and Mackinnon's Reach have relatively limited food and drink as well as retail and centre-type facilities. The proposed drive-thru coffee development would assist in giving locals additional food and drink options as well as a place to congregate and socialise.

While there are future approved drive thru outlets within the local area in the masterplanned Greater Ascot Centre, this centre is in the early stages of its development and would only go some of the way to reducing the gap between the services demanded by a rapidly growing suburban population and the corresponding supply. Furthermore, the subject site is highly accessible via Hervey Range Rd and the Townsville Ring Rd, increasing the potential convenience for motorists.

# 4.0 Study Area Community

## 4.1 Study Area Definition

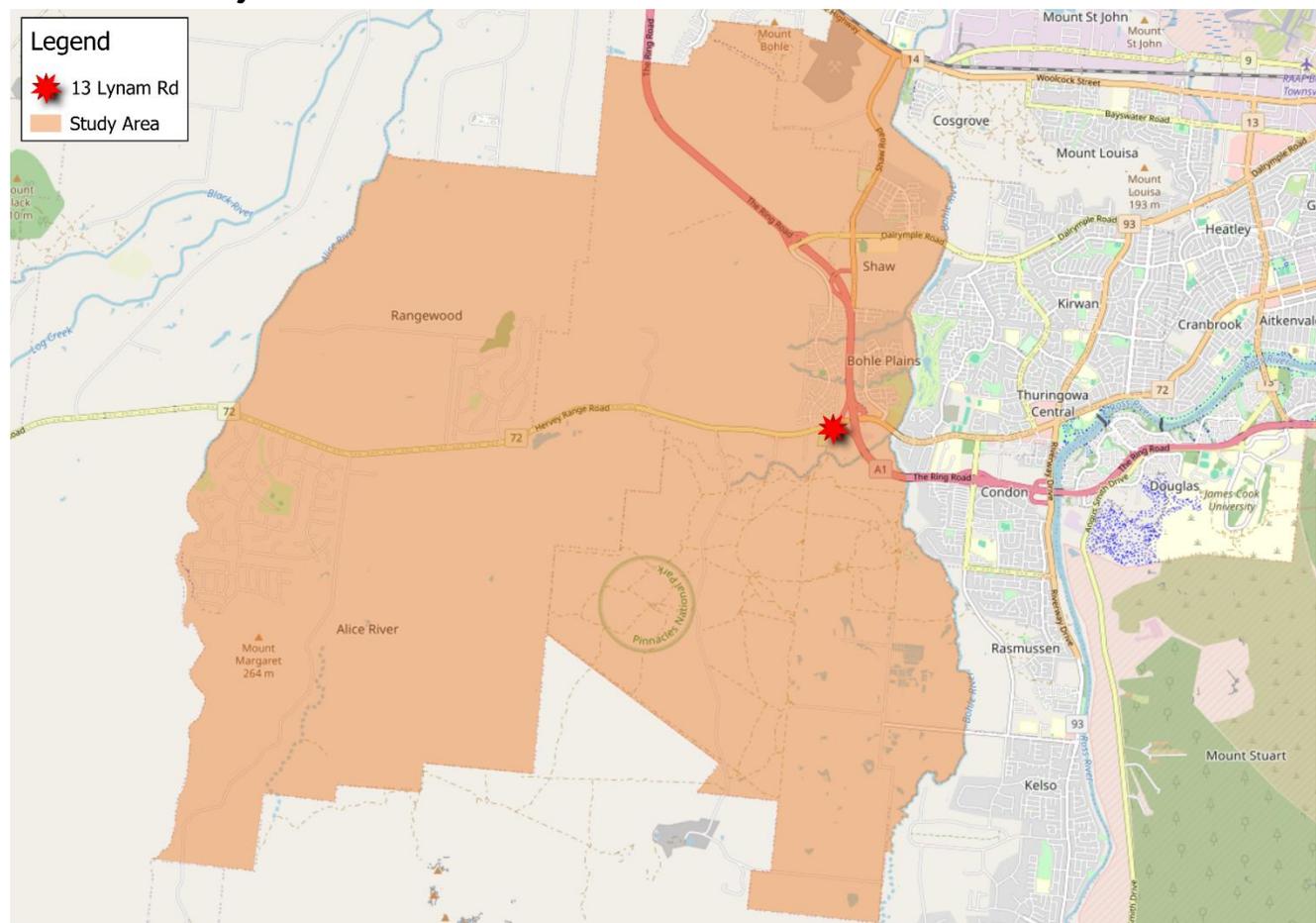
This chapter examines population and household growth projections and the key demographic and socio-economic features that are likely to characterise the defined Study Area, utilising data from the Australian Bureau of Statistics (ABS) Population and Household Censuses.

With respect to council’s information request, Urban Economics has defined a Study Area that includes the Bohle Plains SA2 in addition to a single large SA1 south of the Little Bohle River – included as it covers the MacKinnon’s Reach development, which will have its only road connection via Lynam Rd, residents needing to travel past the subject site to commute.

Other considerations when defining the Study Area were as follows:

- Statistical Area 1 and 2 (SA1/SA2) level boundaries;
- The surrounding road network, especially the role of Hervey Range Rd and the Townsville Ring Rd; and
- Natural boundaries such as environmental areas and creeks, especially the Bohle River, which create a boundary between newly developing estates and established suburbs such as Kirwan and Thuringowa Central.

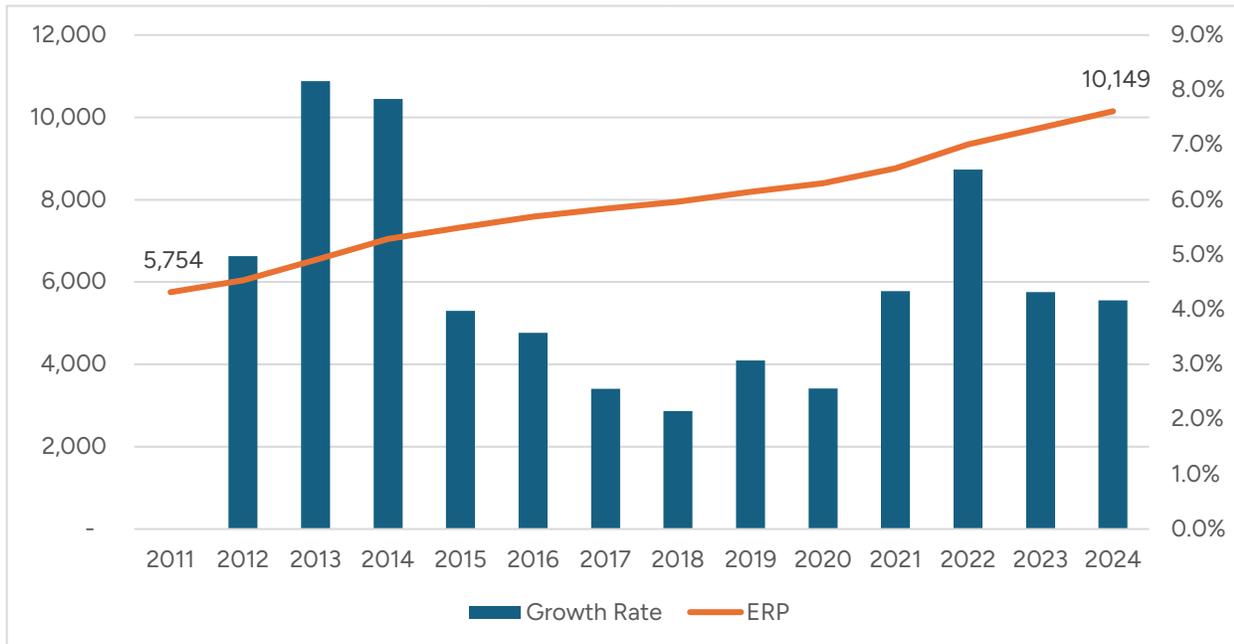
**FIGURE 4.1: Study Area**



## 4.2 Population and Household Growth

The Estimated Resident Population of the identified Study Area has exhibited strong growth over the past 15 years, growing from a total of 5,754 persons in 2011 to 10,149 in 2024 – an average annual growth rate of 4.5%. This growth rate was even faster in the most recent years, as since 2021 the population grew by 4.8% per annum.

**FIGURE 4.2: Estimated Resident Population, Study Area 2011-2024**



Source: ABS

It is Urban Economics' view that QGSO population projections for the Bohle Plains SA2 do not reflect the numbers of approved dwellings and planned future growth for the area, with the projected 2041 population of ~12,200 – an annual growth of 40 persons.

Based on available, published information from planning approval documents and development websites, Urban Economics estimates that there are ~3,000 lots that could be developed within existing and future estates in the Study Area, primarily in the Greater Ascot, Mackinnon's Reach and Harris Crossing estates. Most notable is the Mackinnon's Reach estate which has 345 planned lots as shown in FIGURE 4.2 together with an approved 328 dwelling land lease community by Living Gems, located to the south in Gumlow and to be connected to Lynam Rd.

**FIGURE 4.3: Mackinnon’s Reach**



Source: Maidment

Assuming that these estates develop gradually over the next 15 years, Urban Economics projects a population of 17,540 by 2041, an increase of ~6,950 persons at an average growth of 3.2% per annum. Strongest growth is anticipated in the next decade, as numerous housing estates begin to increase production and delivery of lots, with growth expected to taper off toward 2041.

**TABLE 4.1: Projected Population & Household Growth 2016-2041**

AREA	JUNE 2021 (ACT)	Δ P.A.	JUNE 2025 (EST)	Δ P.A.	JUNE 2026 (PROJ)	Δ P.A.	JUNE 2031 (PROJ)	Δ P.A.	JUNE 2036 (PROJ)	Δ P.A.	JUNE 2041 (PROJ)
<b>Study Area</b>											
<b>Population</b>	8,766	4.8%	10,592	5.4%	11,160	4.2%	13,730	2.9%	15,840	2.1%	17,540
<b>Dwellings</b>	3,068	155	3,688	200	3,888	200	4,888	150	5,638	125	6,263
<b>Persons per Household</b>	2.86		2.87		2.87		2.81		2.81		2.80

Source: ABS, QGSO, Urban Economics

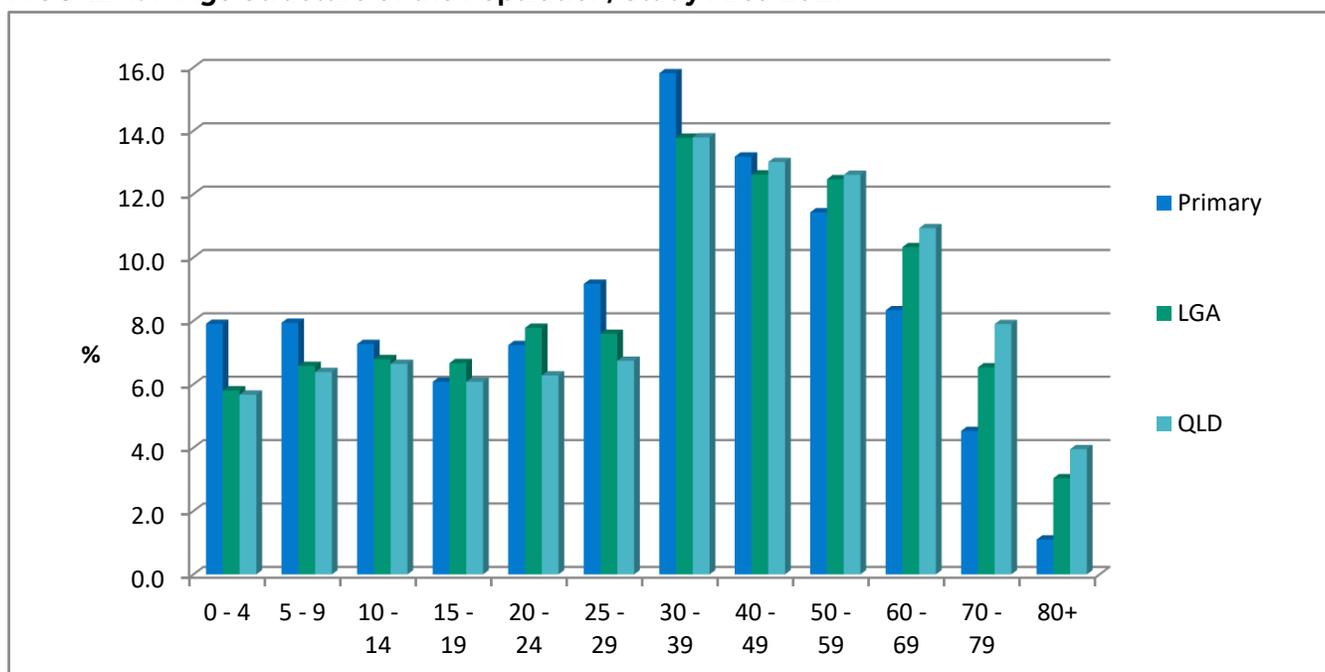
### 4.3 Demographic and Socio-Economic Profile

In exploring the demographic profile of the identified catchment area, Urban Economic has examined census data from the 2021 ABS Census, compared to data from the previous 2011 and 2016 censuses and the Ipswich and Queensland profiles, to highlight the current and emerging socio-economic and demographic composition of the community.

#### Key Observations

- There is a strong family demographic in the Study Area, with a high predominance of young children aged 0-14 and those aged 30-39. This is a reflection of the area’s relative affordability and attractiveness to young families. In comparison with the broader Townsville LGA, 16% of the Study Area population are under 10, compared to 12.4%.
- While the proportion of the population made up of children under the age of 14 declined slightly in the decade to 2021, it still makes up 23.1% of the total population, compared to 19.2% in Townsville LGA and 18.7% across Queensland, showing that the area retains ongoing attractiveness to families in a variety of life stages.

**FIGURE 4.4: Age Structure of the Population, Study Area 2021**



Source: ABS

- The local workforce participation rate of 78.2% was approximately 10 percentage points higher than the corresponding participation rate amongst the Townsville LGA, indicative of a community that has a high proportion of dual-income households. Given Bohle Plains’ suburban location away from major employment centres such as Garbutt and the Townsville CBD, a high workforce participation also implies a large number of daily commuters.

- As a suburban community, nearly all households (98.6%) have access to a vehicle, and a large proportion of households compared to the Townsville LGA have more than one vehicle (77.8% c.f. 58.8%), making vehicle-based retail an accessible and convenient option for local residents.
- The local resident workforce has a significant proportion of the population employed in the Construction industry – 10.3% compared to 8.5% in Townsville LGA. In terms of occupation, Technicians & Trade Workers also make up 17.2% of the workforce, the second highest proportion of any group behind Professionals.

**TABLE 4.2: Demographic Profile – Study Area, 2011, 2016 and 2021**

Demographic	Study Area			LGA	Queensland
	2011	2016	2021		
<b>Age Profile (%)</b>					
<i>0-14yrs</i>	27.3	24.9	23.1	19.2	18.7
<i>15-29yrs</i>	21.0	23.0	22.5	22.0	19.1
<i>30-59yrs</i>	41.8	40.8	40.4	38.9	39.4
<i>60+yrs</i>	9.9	11.3	14.0	19.9	22.8
<b>Average Annual Household Income (\$)</b>	100,510	108,220	130,040	102,980	104,470
<b>Labour Force (%)</b>					
<i>Unemployment Rate</i>	3.3	5.2	2.5	5.1	5.4
<i>Workforce Participation Rate</i>	77.7	77.2	78.2	68.9	65.8
<b>Occupation Profile (%)</b>					
<i>Managers/Administrators</i>	10.9	10.4	10.0	10.1	12.5
<i>Professionals</i>	14.7	24.8	19.2	19.7	21.4
<i>Technicians &amp; Trade Workers</i>	18.6	24.0	17.2	14.6	13.7
<i>Community &amp; Personal Service Workers</i>	12.2	15.2	16.1	16.1	12.3
<i>Clerical &amp; Administrative Workers</i>		10.9	13.3	12.3	12.7
<i>Sales Workers</i>	26.1	5.1	8.7	8.6	8.7
<i>Machine Operators &amp; Drivers</i>	8.7	5.5	7.6	7.5	6.8
<i>Labourers</i>	6.0	3.5	6.4	9.3	10.1
<i>Inadequately Described/Not Stated</i>	2.8	0.5	1.4	1.7	1.9
<b>Industry Profile (%)</b>					
<i>Agriculture, forestry &amp; fishing</i>	0.8	0.7	0.4	0.7	2.6
<i>Mining</i>	3.8	3.2	3.6	2.8	2.3
<i>Manufacturing</i>	8.6	3.3	3.7	4.5	5.7
<i>Electricity, gas, water &amp; waste services</i>	1.6	1.4	1.3	1.4	1.2
<i>Construction</i>	12.3	9.7	10.3	8.5	9.1
<i>Wholesale trade</i>	3.1	1.9	1.9	1.9	2.4
<i>Retail trade</i>	10.6	10.6	9.3	9.2	9.3
<i>Accommodation &amp; food services</i>	4.3	5.1	5.0	7.4	7.2
<i>Transport, postal &amp; warehousing</i>	4.1	4.3	3.5	4.3	4.7
<i>Information media &amp; telecommunications</i>	0.9	1.0	0.5	0.8	1.0
<i>Financial &amp; insurance services</i>	1.8	0.9	0.9	1.4	2.6
<i>Rental, hiring &amp; real estate services</i>	1.3	1.6	1.1	1.4	1.8
<i>Professional, scientific &amp; technical services</i>	4.1	3.9	4.2	4.5	6.7
<i>Administrative &amp; support services</i>	2.6	2.5	1.7	2.7	3.4
<i>Public administration &amp; safety</i>	15.8	17.5	17.5	12.6	6.2
<i>Education &amp; training</i>	6.9	9.1	9.5	9.4	8.8
<i>Health care &amp; social assistance</i>	11.0	14.4	17.2	17.5	15.4
<i>Arts &amp; recreation services</i>	1.2	1.7	1.4	1.3	1.5
<i>Other services</i>	3.4	4.1	3.7	3.9	3.9
<i>Inadequately described/Not stated</i>	2.2	3.0	3.3	3.6	4.5
<b>Highest Level of Education (%)</b>					

<i>Post Graduate Degree</i>	1.3	2.4	2.8	3.5	4.7
<i>Graduate Diploma &amp; Graduate Certificate</i>	0.9	1.6	2.2	2.0	2.2
<i>Bachelor Degree</i>	6.7	10.9	13.4	12.7	15.0
<i>Advanced Diploma</i>	4.8	9.0	9.6	8.2	9.4
<i>Certificate</i>	20.0	29.2	28.9	24.0	22.1
<i>Not Stated/Inadequately Described</i>	5.5	6.7	5.2	9.9	9.0
<i>Not Applicable</i>	60.9	40.2	38.1	39.8	37.5
<b>Home Ownership (%)</b>					
<i>Owned Outright</i>	23.3	19.0	20.5	24.7	29.1
<i>Mortgage</i>	49.7	47.1	50.5	35.7	34.4
<i>Rent</i>	25.8	31.9	28.1	36.6	33.1
<i>Other/Not Stated</i>	1.1	2.0	0.9	2.9	3.4
<b>Structure of Dwellings (%)</b>					
<i>Separate House</i>	96.5	96.1	96.9	81.1	74.8
<i>Semi-detached/Row/Terrace/Townhouse</i>	0.5	1.4	0.9	11.0	11.7
<i>Flat/Unit</i>	0.3	0.1	0.0	7.0	12.5
<i>Other/Not Stated</i>	2.6	2.4	2.3	0.9	1.0
<b>Number of Vehicles Per Dwelling (%)</b>					
<i>0</i>	0.8	0.5	0.7	5.3	5.7
<i>1</i>	18.1	19.5	20.8	34.4	35.2
<i>2</i>	51.2	49.0	49.1	39.4	37.5
<i>3</i>	17.0	17.8	18.4	13.0	12.8
<i>4+</i>	10.8	10.8	10.3	6.4	7.2
<i>Not Stated</i>	2.1	2.4	0.7	1.5	1.5
<b>Relationship in Household (%)</b>					
<i>Couple in Registered Marriage/De Facto Relationship</i>	51.8	51.4	52.4	44.5	46.1
<i>Lone Parent</i>	3.3	3.1	3.8	5.4	4.9
<i>Child Under 15yr</i>	28.0	25.5	23.5	19.8	19.0
<i>Dependent Student (15-24yr)</i>	5.1	5.3	5.2	4.4	4.7
<i>Non-dependent Child</i>	4.7	5.0	4.8	5.5	5.8
<i>Other in Family Household</i>	1.8	2.6	2.8	3.7	4.0
<i>Group Household Member</i>	1.2	2.0	1.7	4.0	3.8
<i>Lone Person</i>	3.3	3.3	4.2	10.6	9.8
<i>Visitor in Household (from within Australia)</i>	1.6	1.7	1.6	2.0	1.9
<b>Religious Affiliation (%)</b>					
<i>Buddhism</i>	0.5	0.6	0.3	0.8	1.4
<i>Christianity</i>	70.3	64.3	53.3	47.4	45.7
<i>Hinduism</i>	0.2	0.3	0.6	0.7	1.3
<i>Islam</i>	0.1	0.0	0.2	0.5	1.2
<i>Judaism</i>	0.0	0.0	0.0	0.0	0.1
<i>Other Religions</i>	0.1	0.2	0.4	0.6	1.0
<i>Secular Beliefs, Other Spiritual Beliefs and No Religious Affiliation</i>	21.2	27.4	40.8	40.4	41.2
<i>Religious affiliation not stated</i>	7.5	7.1	4.4	9.5	8.0

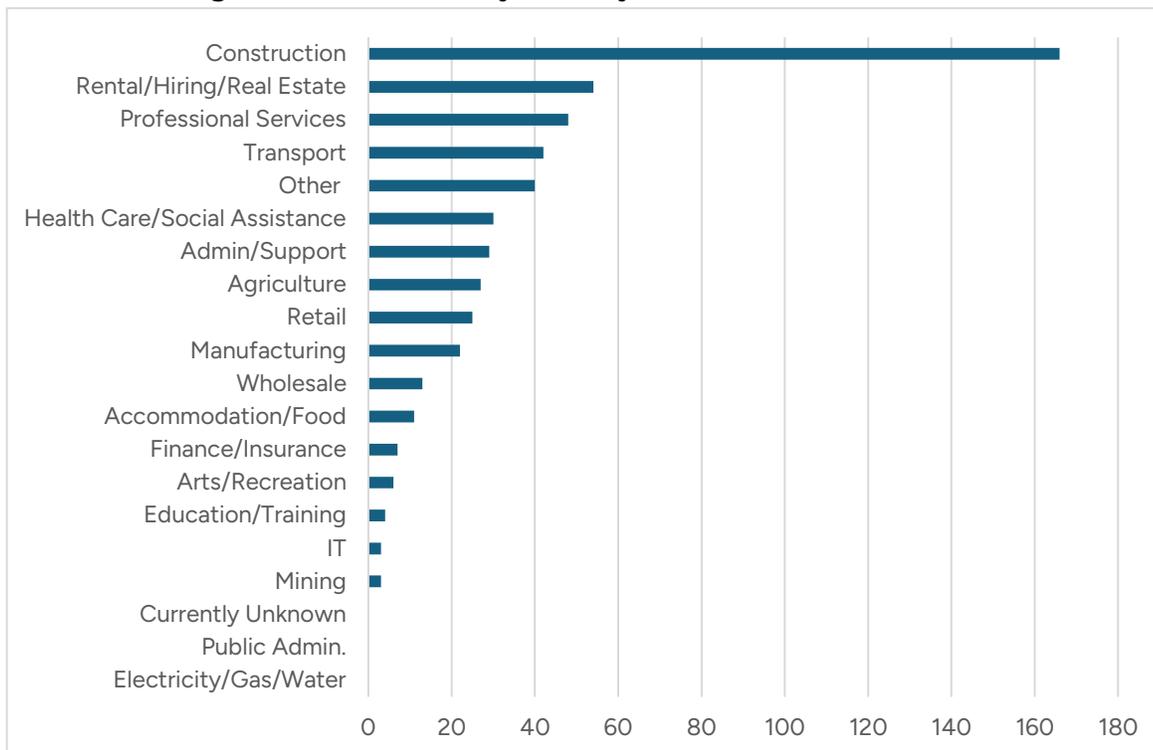
Source: ABS

## 4.4 Working Population

According to the 2021 Census, within the Study Area there is a working population of 1,097, largely within the suburbs of Bohle Plains and Shaw, reflecting the density of population and presence of industrial zoned land. ~25% of the workforce are employed in the construction industry, indicating that there is a lack of centre and retail spaces and that the ongoing construction of housing estates is the main economic activity. Indeed, since 2021, the number of construction jobs is only likely to have increased as the Harris Crossing and Greater Ascot estates have ramped up works.

A similar distribution is found in the registered business numbers for the Bohle Plains SA2, with 166 construction businesses reporting being based there in 2024.

**FIGURE 4.5: Registered Businesses by Industry, Bohle Plains SA2, 2024**



Source: ABS

## 4.5 Implications

The Study Area consisting of Bohle Plains and the MacKinnon's Reach estate is characterised by a high degree of workforce participation and a strong family demographic, with many new and establishing households populating the area in recent years, a trend that is forecast to continue with the growth of new housing estates such as Greater Ascot and MacKinnon's Reach. Forecast population growth of ~7,000 residents within the next 15 years makes the Study Area one of Townsville's main growth corridors – allowing the city to support its future growth.

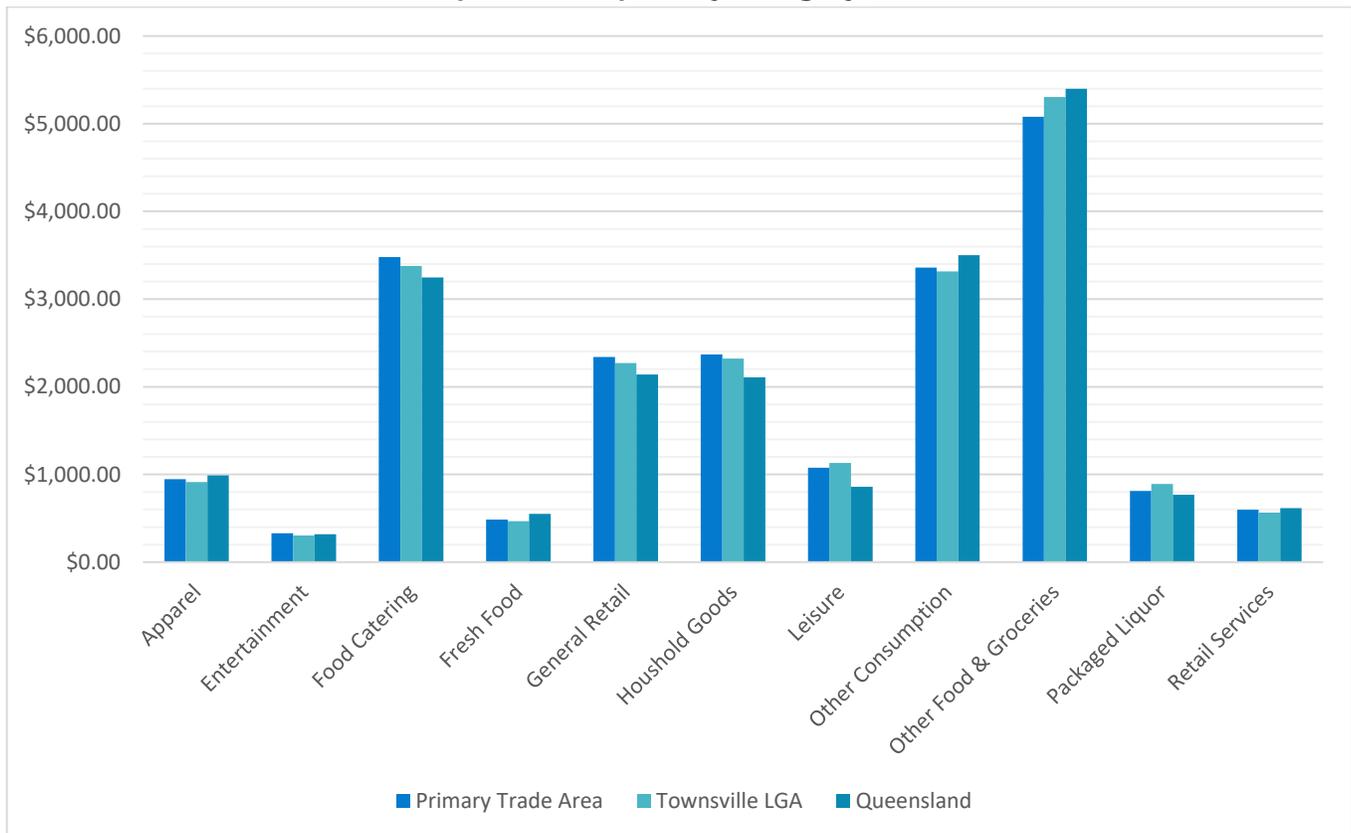
This time-poor but relatively high earning demographic are likely to be commuting to work and education in one of Townsville's larger employment centres or local job sites, with this group, possessing the level of disposable income whereby convenience may be valued higher than affordability, creating a strong demand for a convenient food and drink options that are accessible via private vehicle, in the absence of dedicated local cafes. So too, the ongoing construction workforce in the surrounding area would prove to be a potential future customer base as surrounding suburbs are gradually built.

# 5.0 Demand Analysis

## 5.1 Retail Expenditure

According to data from CommBank iQ Retail Insights, average retail expenditure (excluding online spending) in the Study Area is estimated to be \$15,887 per person per annum as of 2025, compared to the Queensland average (\$15,748) and Townsville (\$16,076). This reflects the higher income levels of the Study area (average household income of ~\$130,000 c.f. QLD \$105,000) balancing out the generally lower spending levels in regional areas compared with South East Queensland and larger household sizes within the Study Area.

**FIGURE 5.1: CommBank iQ Per Capita Retail Spend by Category, June 2025**



Source: CommBank iQ

Per capita spending within the food catering segment of the Study Area was \$3,477 per annum in 2025, compared to the Queensland average of \$3,247, and more specifically, the average spend on *cafes & restaurants* was \$1,251 per annum in the Study Area community compared to \$1,479 per annum across the State whilst Townsville and the Study Area supported higher expenditure on takeaway food than the Queensland average, as outlined in TABLE 5.1.

**TABLE 5.1: Food Catering Expenditure by Detailed Item - 2025**

	Study Area	Townsville LGA	Queensland
Breweries, Wineries & Wine Subscriptions	10.8	14.1	19.3
Cafes & Restaurants	1,250.9	1,278.7	1,479.3
Pubs, Taverns and Bars	1,026.6	893.9	680.3
Takeaway Food	1,188.9	1,190.5	1,067.7
<b>TOTAL FOOD CATERING*</b>	<b>3,477.1</b>	<b>3,377.2</b>	<b>3,246.6</b>

Source: Commbank iQ

\*excludes online and food delivery services

Based on population projections above, TABLE 5.2 estimates the level of food catering expenditure toward 2041. Population growth within the Study Area is projected to increase the total pool of expenditure within relevant categories of cafes & restaurants and takeaway food by some \$14.7 million between 2026 and 2041.

**TABLE 5.2: Projected Food Catering Expenditure by Detailed Item, Study Area**

	2026 (\$M)	2031 (\$M)	2036 (\$M)	2041 (\$M)
Breweries, Wineries & Wine Subscriptions	0.1	0.1	0.2	0.2
Cafes & Restaurants	14.0	16.7	19.8	21.9
Pubs, Taverns and Bars	11.5	13.7	16.3	18.0
Takeaway Food	13.3	15.9	18.8	20.9
<b>TOTAL FOOD CATERING</b>	<b>38.8</b>	<b>46.5</b>	<b>55.1</b>	<b>61.0</b>

Source: Commbank iQ, Urban Economics

Assuming an average rate of retail productivity of \$10,000 per square metre for café, restaurant and takeaway floorspace, this level of demand in 2026 would support ~2,730sqm of floorspace, increasing to 4,200sqm by 2041; well in excess of what is currently provided, though it is important to note that this demand is not exclusively local, as residents spend on meals out while at work or whilst travelling etc.

## 5.2 Traffic Demand

In order to forecast the demand for drive-thru outlets more specifically, Urban Economics has used published traffic data from the Queensland Government as well as projections made by the Townsville City Council to estimate the current and future number of vehicles passing the site, representing potential customers.

The Queensland Government's traffic census found that a traffic collection point ~20m east of the Lynam Rd turn off on Hervey Range Rd had an average annual daily traffic (AADT) of 11,800 vehicles per day travelling in both directions on average between 2014 and 2024, whilst Townsville City Council's Traffic Calibration Model 2025 suggests some 14,000 to 15,000 vehicles per day through this corridor.

This dataset also provides projections for traffic along Hervey Range Rd past the subject site, which is projected to grow at a rate of 2.1% between 2026 and 2031, before growing at 0.7% per year to 2036 and 0.1% per year to 2041.

The below TABLE aims to estimate the potential demand for the proposed drive-thru coffee at the subject site, with the following assumptions made:

- 12,000 vehicles per day utilising Hervey Range Road past the subject site in 2026;
- A 3% turn in rate of vehicles utilising the Hervey Range Road corridor to the subject facility;
- Traffic growth as anticipated by TCC’s Traffic Forecast Model;
- According to Westpac, the average spend per transaction at cafés in Australia of \$17.70; and
- 80% of trade at the subject site being through the drive-thru windows.

Using these assumptions, the projected turnover for the proposed drive-thru coffee facility on the subject site is ~\$2.4 million in 2028, equivalent to <6% of the Study Area’s food catering expenditure potential; increasing to almost \$2.7 million by 2041 (\$2025).

**TABLE 5.3: Potential Site Turnover, 2026**

	AADT	Turning Vehicles	Annual Patrons	Proj. Turnover
2026	12,000	360	131,400	\$2,325,800
2028*	12,500	375	136,875	\$2,422,700
2031	13,300	399	145,635	\$2,577,700
2036	13,800	414	151,110	\$2,674,600
2041	13,900	417	152,205	\$2,694,000

*\*Estimated first full year of trade*

## 6.0 Assessment of Need

It is Urban Economics' view that there is strong economic, community and planning need for the proposed development and that the subject site poses a strategic and logical location to locate a drive-thru coffee outlet that would provide locals with a convenient and accessible food and drink option in an area where the current supply of convenient food and drink outlets are limited.

In assessing the need for this development, we have considered the economic need – the projected demand based on growth in population and traffic as well as retail spending levels, community need – the benefits and amenity provided to the local community by the proposed development as well as planning need – the suitability of the proposed development to the subject site.

### Economic Need

- The Study Area population is forecast to grow by ~7,000 people in the next 15 years to ~17,500. This will naturally increase the need for all kinds of retail facilities, including drive-thru food and drink options.
- This growth in population is largely to be driven by the development of detached suburban housing estates, bringing a large number of construction workers to the area and fuelling demand for accessible food and drink options. 2021 estimates are that ~1,100 people are employed in the area, only likely to have increased in the years since owing to progress on the Harris Crossing and Greater Ascot estates.
- Currently within the Study Area there are extremely limited options for both drive-thru and typical food and drink outlets. Many residents need to travel a minimum of 10 minutes outside the suburb to access these services.
- As a time-poor community with a high number of dual-income families, there is likely to be a significant number of commuters in the Study Area travelling past the subject site to larger employment centres. Townsville City Council traffic forecasts predict a growth in traffic towards 2041.
- Estimates are that the level of café, restaurant and takeaway spending is estimated in 2026 to be \$27.3 million, potentially supporting up to ~2,730sqm of food and drink outlet floorspace. By 2041, this spending is forecast to rise to \$42 million, potentially supporting up to ~4,200sqm of space.
- Based on traffic projections, in 2028 the proposed development could anticipate an annual patronage of more than ~135,000 customers, which by 2041 is forecast to increase to more than ~150,000. The estimated turnover is forecast at \$2.4 million in 2028, in line with expected levels for a drive-thru coffee site.

## Community Need

- Currently the supply of convenient food and drink outlet facilities in the Study Area is limited to a small restaurant and convenience store in the local neighbourhood centre and the drive-thru bakery along Shaw Rd. The proposed development would reduce the need to travel outside Bohle Plains to access these facilities.
- The addition of a local coffee shop, which provides for seating and dining space, creates a local meeting place for an establishing community, giving residents a place to meet and form social connections.
- As a major supplier of materials and landscape supplies, the site is currently an important location for the local construction workforce and DIY sector, and the addition of a drive-thru coffee shop will be a convenient option for local workers and homeowners, potentially reducing the number of vehicle trips taken.

## Planning Need

- The subject proposal is located within an existing rural land use and does not encroach on any nearby vacant and usable rural lands, so does not represent a reduction of productive rural land – instead enhancing the existing function of the landscape supplies business.
- The subject site is located off Hervey Range Rd, a major arterial in the local area and is accessible to all nearby housing estates. The location along Lynam Rd also concentrates non-rural uses together, reflecting the presence of the Townsville Tourist and Lifestyle Park across the road.
- Ongoing upgrades to Hervey Range Road including a future signalised intersection with Lynam Road suggests the potential of the proposed development to capitalise on local infrastructure investment and a shift in the rural intent and suitability for the subject site and immediate surroundings.
- It is Urban Economics' view that the subject site is the best available site within the Study Area, as emerging community lands are designated for residential uses in the Greater Ascot Neighbourhood and a drive-thru food and drink outlet within the medium impact industry lands would represent an underutilisation of important employment land that can support more intense industries.

## 7.0 Impacts & Benefits

The proposed development would be delivered in a strong growth environment with residential, business, workforce and traffic volume growth generating ongoing demand for access to facilities including, ameliorating impacts of the proposed development. This Chapter examines the impacts and implications of the proposed development on the surrounding centres network.

### 7.1 Market Share Analysis

In estimating the current and future performance of the proposed drive-thru coffee outlet, Urban Economics has made the following assumptions:

- That currently, due to the absence of significant options, most of the food catering expenditure (cafés, restaurants and takeaway food) is flowing outside the Study Area. Urban Economics estimates that less than 10% of this expenditure is currently retained within the area such as within local outlets such as The Chuck Wagon and Kalynda Chase Fish+Chips.
- That by the time the proposed development would be open (2028), the approved food and drink outlets at Greater Ascot are also established and include some 650sqm of food and drink outlet floorspace.

It is Urban Economics' view that the primary impact of the proposed drive-thru outlet will be to retain an enhanced share of food and drink outlet expenditure within the local area, together with the planned expansion of these facilities within the Greater Ascot community.

Together with ongoing population growth and traffic growth through this corridor, existing food and drink outlets of the Study Area are anticipated to increase their sales over time, despite the inclusion of new competitive supply as outlined in TABLE 7.1.

**TABLE 7.1: Estimated Food and Drink Outlet Market Shares**

(\$2025)	Est. Sales 2026	Est. Sales 2028
Proposed Development	-	\$2,420,000
Greater Ascot food and drink development	-	\$6,500,000
KC Fish + Chips	\$650,000	\$683,000
The Chuck Wagon	\$1,500,000	\$1,576,000
Other convenience	\$200,000	\$210,000
<b>Total Study Area Food and Drink Outlet Trade</b>	<b>\$2,350,000</b>	<b>\$11,389,000</b>
<b>Total Study Area café, restaurant and takeaway expenditure</b>	<b>\$27,300,000</b>	<b>\$29,600,000</b>
<b>Equivalent retained local expenditure %</b>	<b>8.6%</b>	<b>38.5%</b>

## 7.2 Impact on Rural Lands

Urban Economics considers that the proposed development is suitably located on the subject site, within the rural zone and that it supports the desired outcomes of the strategic framework for non-rural uses.

As covered in section 3.6.4 (6), *“Opportunities for diversification of activities within the rural areas is encouraged, provided that:*

- a) the productive capacity of the land is maintained;*

The existing landscape supplies business is to continue operating, even expanding its operations in conjunction with the proposed development.

- b) conflicts with existing and intended rural activities in the surrounding area are avoided;*

The proposed land use does not represent an expansion beyond an existing footprint, therefore not removing any future potential land from rural development.

- c) the existing landscape and natural resource values of the land are maintained; and*

As mentioned, the current use is to continue on the subject site, with the wide, vacant land to be used for the storage of landscape supplies and garden items.

- d) the development is not more appropriately located in another zone.*

There are not any alternative sites that are suitable to host the proposed development, given the only centre zoned land is already used or a-central to the majority of the population (in the case of the neighbourhood centre in Alice River). Emerging community land is already earmarked in structure plans for the development of the Greater Ascot community, while it is Urban Economics’ opinion that the location of a drive thru food and drink outlet within the Medium Impact Industry land along Shaw Rd represents an underutilisation, and that this land should be reserved for larger industrial uses that require significant space.

## 8.0 Conclusions

In conclusion, it is Urban Economics' view that there is a strong community, economic and planning need for the proposed drive-thru coffee outlet at 13 Lynam Rd, as it will provide a convenient food and drink option for both residents and workers on an optimal site to meet this need.

Population growth in the area is forecast to be ~7,000 in the next 15 years, driven by the ongoing construction of numerous housing estates in Bohle Plains. However, there is currently not a commensurate supply of facilities – especially in regard to retail and centre type uses, with many residents forced to travel at least 10 minutes outside the Study Area to visit cafes and restaurants. The subject development would introduce a much needed café to the Study Area, also creating a community space for local residents to socialise.

Also, due to the current situation where the majority of café and restaurant spending is likely to occur outside the Study Area, the proposed addition of the new drive-thru food and drink outlet is unlikely to impact on the small number of existing facilities, instead enticing commuters and workers to pick up coffee on the way to their place of employment, retaining local expenditure and improving convenience.

Despite being in the rural zone, the proposed development does not expand into neighbouring rural land lots and does not impact on the existing landscaping business on the site, which is in fact expanding its operations. Furthermore, potential alternative sites are unsuitable for the proposed development due to their distance from the Study Area population, designation as part of a larger structure plan or zoning for medium impact industry, which is required for intense industrial uses instead of food and drink outlets.

Therefore, the location of the proposed development on the subject site is a logical and in line with the purpose of the rural zone code, providing a diversification of uses while not taking up rural land that had not already been developed.



# Attachment 4

STRUCTURAL  
CIVIL  
ELECTRICAL  
MECHANICAL  
HYDRAULIC  
FIRE  
VERTICAL  
TRANSPORT  
SEISMIC



CONSULTANTS

## **Food and drink outlet, Bulk landscape supplies and Garden centre**

13 LYNAM ROAD, BOHLE PLAINS QLD 4817

**CIVIL ENGINEERING SERVICES AND SITE BASED  
STORMWATER MANAGEMENT PLAN REPORT**



STP25-2120

## DOCUMENT STATUS

Rev.	Issue	Author	Approved for Issue		
			Approved by	Signature	Date
A	Preliminary Issue	Davood Khalili	Sam Ong RPEQ 33933		30 January 2026
B	For Approval	Davood Khalili	Sam Ong RPEQ 33933		10 February 2026

## CONTENTS

<b>1. Introduction</b>	<b>1</b>
1.1 Limitations	1
<b>2. Site Description</b>	<b>1</b>
2.1 Easements	2
2.2 Proposed Development	3
<b>3. Earthworks</b>	<b>3</b>
3.1 Existing Earthworks	3
3.2 Proposed Site Earthworks	3
3.3 Minimum Floor Levels	3
<b>4. Stormwater Management Plan</b>	<b>4</b>
4.1 Flood Hazard Overlay	4
4.2 Coastal Hazard Overlay	5
4.3 Existing Stormwater Infrastructure	5
4.4 Site Stormwater Drainage	6
4.5 Stormwater Runoff and Detention	6
<b>5. Stormwater Quality Management</b>	<b>10</b>
5.1 Pollutants of Concern	11
5.2 Design Objectives for Water Management	11
5.3 Proposed Stormwater Treatment Train analysis	12
5.4 Music Model Parameters	12
5.4.1 Model Parameters	12
5.4.2 Rainfall & Runoff Parameters	12
5.4.3 Pollution Generation	13
5.4.4 Results	13
<b>6. Water and Sewerage</b>	<b>15</b>
6.1 Water Connection	15
6.2 Sewer Connection	15
6.3 Infrastructure Capacity	16
<b>7. Discussion / Conclusion</b>	<b>16</b>
<b>8. APPENDIX A – Architects - Proposed Development Layout and Site Survey Plan</b>	<b>.....</b>
<b>9. APPENDIX B – Preliminary Engineering Services Drawing</b>	<b>.....</b>
<b>10. APPENDIX C – Water Supply &amp; Sewerage Planning Report</b>	<b>.....</b>

## 1. Introduction

Northpoint Planning, on behalf of Bedrock Landscape Supplies, has engaged STP Consultants to produce a Civil Engineering Services and a Site Based Stormwater Management Plan Report in support of a combined Material Change of Use and Reconfiguring a Lot Development Application over the subject site. This Civil Engineering Services Report focuses on the impact of the development in the following areas:

- Stormwater Management
- Stormwater Quality
- Roadworks
- Water supply
- Sewerage connection

### 1.1 Limitations

This report provides a desktop assessment of services and stormwater investigation from the information obtained from the following sources.

- Architectural Plans
- Survey of site provided by Atkinson Surveys
- Townsville City Council Infrastructure Mapping Information
- Townsville City Council Flood Map Overlays
- QUDM 4<sup>th</sup> Edition 2017
- MUSIC Modelling Guidelines November 2018 (Water by Design)
- Rainfall and Meteorological Data by the Australia Bureau of Meteorology
- Queensland Globe

## 2. Site Description

The site is located at 13 Lynam Road, Bohle Plains which is located adjacent to key state-controlled transport corridors, with Hervey Range Road positioned to the North and the ring road to the east. Lynam Road forms the western boundary of the site, while a single allotment adjoins the site to the South. The southern adjoining land is Lot 6 on SP191768, which includes an access handle burdened by Easement B on SP111995, providing shared access to Lot 1 on SP111995. The allotment is in 2.4 hectares area.

The land has historically been utilised for a landscaping supplies operation, established circa the mid-1990s. The site generally maintains even topography, with ground levels approximately 17.75 m AHD in the western portion, gently grading down to approximately 17.25 m AHD at the eastern boundary. The site is connected to Council's reticulated water network. Wastewater services are currently provided via an on-site wastewater treatment system.

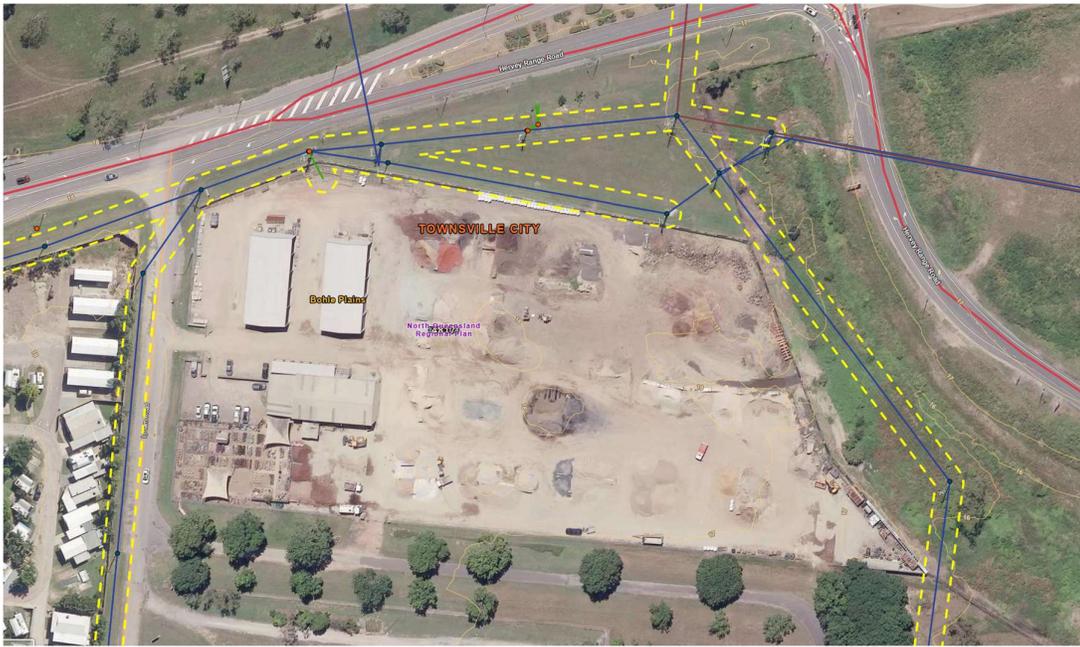


Figure 2.1 – Locality Plan, cadastral boundaries and easement (Queensland Globe)



Figure 2.2 – Planning Zones (Townsville Maps – City Plan)

## 2.1 Easements

There are currently no easements that encumber the subject allotment.  
 There are currently no proposed road resumptions over the subject allotment.

## 2.2 Proposed Development

A copy of the Architectural drawings for the proposed development is provided in Appendix A.

The proposed development involves a three-stage redevelopment of an existing bulk landscape supplies store, including the construction of a new drive-through coffee shop and subdivision of the site to provide separate titles for each function. The development includes the following civil works:

- The redevelopment and formalisation of the existing landscaping supplies and garden centre.
- The construction of a new drive-through coffee shop.
- The subdivision of the site to provide separate titles for each operation.

## 3. Earthworks

### 3.1 Existing Earthworks

A detailed survey has been undertaken by Atkinson Surveys for the extent of the proposed development area, and a copy is provided in Appendix A.

Accordingly, the land maintains generally even topography, mapped as 17.75m AHD to the western part of the lot with a slight gradation down to approximately 17.25 to the eastern boundary.

### 3.2 Proposed Site Earthworks

A copy of the Preliminary Engineering Services drawing for the proposed development is provided in Appendix C.

A Geotechnical Report was not available at the time of preparing this document.

Preliminary earthworks are based on the existing levels surveyed and the preliminary finished surface levels shown on the Preliminary Engineering Services drawing. The proposed levels shown on the drawing, when compared to the surveyed levels, indicate that generally there will be no more than 300mm cut or fill on site for the proposed development, driveway, car parks and landscaping, thereby negating the need for significant site earthworks.

The subject allotment is proposed to be developed with a concrete pavement (car parks and aisles) that will generally be provided with 2% crossfalls and longitudinal grading at 0.5% to stormwater drainage pits.

The landscaping buffer zones adjacent to the car parking will need to grade at a minimum of 1% back onto the driveway or kerbing to be collected by the proposed drainage system.

Geotechnical testing for CBR values for pavement design can be undertaken prior to construction commencing to confirm the pavement design.

### 3.3 Minimum Floor Levels

As indicated on the Townsville City Council flooding maps, the site is not subject to inundation from flooding in the defined flood event of 1% AEP. The Defined Flood Event Levels adjacent to the subject site are as follows: -

Stage 1 -

- Coffee Shop - AEP 1% Flood – RL17.83m AHD
- Existing Storage Shed and Shed Extension - AEP 1% Flood – RL18.10m AHD
- New Shed – AEP 1% Flood – RL17.60m AHD

## 4. Stormwater Management Plan

### 4.1 Flood Hazard Overlay

In accordance with the Townsville City Plan – Flood Hazard Overlay (OM-06.1) The Flood Hazard Overlay Code aims to guide development in flood-prone areas to minimize risks to life, property, the community, economic activity, and the environment, while preventing development from increasing flood damage on-site or elsewhere.

The site is mapped as low to medium flood hazard under the planning scheme. Updated Townsville City Council flood risk mapping now identifies very low, low, and medium flood risk across the site. The updated mapping shows an increase in medium flood hazard, mainly within the Bulk Landscape Supplies area.

The proposed Food and Drink Outlet is located entirely outside the medium flood risk area, ensuring it can be safely designed without increasing flood impacts. High-traffic areas for Bulk Landscape Supplies and the Garden Centre are also positioned outside medium flood risk zones. Built structures within the medium flood risk area are limited to a small portion of warehouse storage, with no habitable spaces proposed.

Overall, the development aligns with the objectives of the Flood Hazard Overlay Code and does not worsen flood risks.

The subject site is not subject to flooding in the 1% AEP event as the surveyed levels of the land confirm.

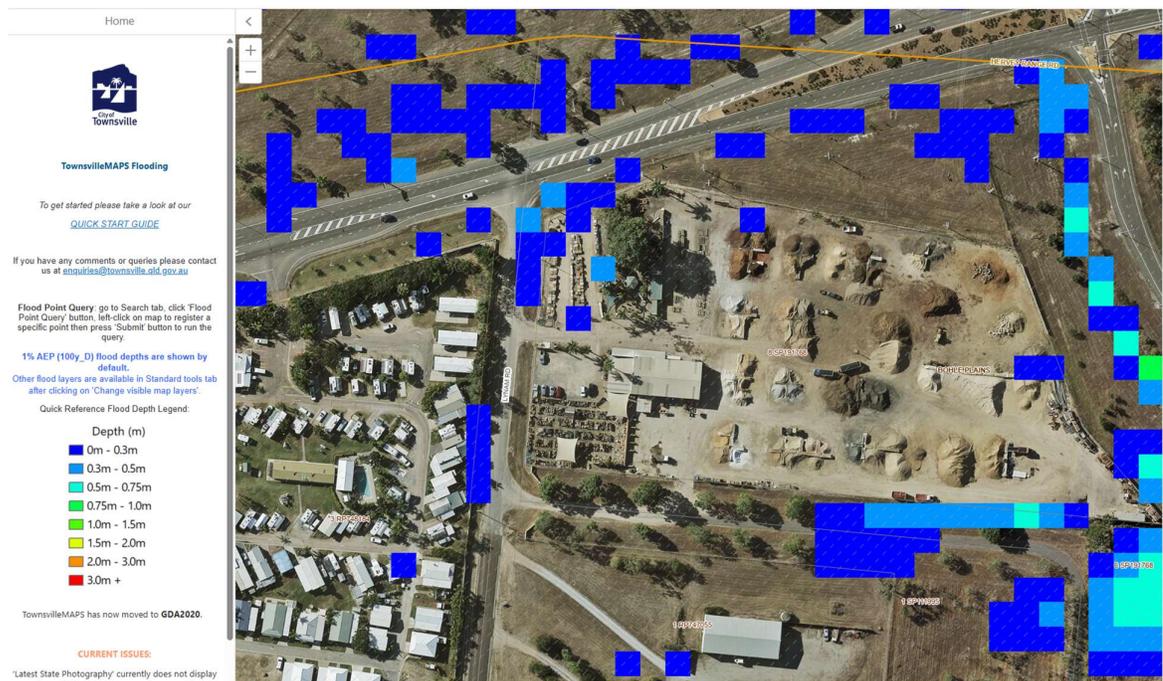


Figure 5.1 – AEP 1% Flood Hazard Overlay (OM-06.1) (TownsvilleMAPS – Townsville City Plan)

### 4.2 Coastal Hazard Overlay

In accordance with the Coastal Environment Overlay Code of the Townsville City Council Planning Scheme, the Defined Storm Tide Event (DSTE) level is RL4.5m AHD, within 100m of the coastline or RL3.9m AHD in other areas. Therefore, the subject allotment is not affected by DSTE as the minimum ground level on the site is RL17.3m AHD.



Figure 5.2 – Environment Coastal hazard areas – Storm Tide inundation (OM-03.1) (TownsvilleMAPS – Townsville City Plan)

### 4.3 Existing Stormwater Infrastructure

At current, there is an existing DN375 RCP within Lynam Road and gully pit near the intersection, and a grassed swale on the eastern property boundary external to the site. The site currently drains as surface runoff generally toward the existing swale on the eastern property boundary. Refer Appendix B for Preliminary Civil Engineering Sketches.



Figure 5.3 – Existing Stormwater Infrastructure (TownsvilleMAPS - Community)

#### 4.4 Site Stormwater Drainage

The preliminary stormwater drainage layout is illustrated on the Preliminary Engineering Services drawing provided in Appendix B.

The roofs, car parks, driveway and landscaped areas in the Coffee Shop (Lot 1) of the development are to be collected by grated stormwater inlet pits and conveyed via stormwater pipes to discharging into the 15m<sup>3</sup> underground detention tank and then discharging into existing council drain at the front of Lynam Rd. The roofs, asphalt internal road, driveway and landscaped areas in the Lot 2 of the development are to be collected and conveyed via stormwater pipes to discharging into the 94m<sup>3</sup> underground detention tank and discharge to the existing swale drain in Hervey Range Road.

It is proposed that Lot 1 utilise the existing gully pit as the lawful point of discharge, while Lot 2 outlets to the existing swale.



Figure 5.4 – Stormwater Drainage

#### 4.5 Stormwater Runoff and Detention

The Townsville City Plan, *Schedule 6.4 Development Manual Planning Scheme Policy, SC6.4.9.3 Major and Minor system design*, prescribes the design parameters of a commercial development to be 5-year ARI event for a Minor system and to be 100-year ARI for the Major system.

The 1-hour rainfall intensity for the 10-year ARI at the subject location in Townsville is 73.1mm/h.

Appropriate hydraulic and hydrological analysis to arrive at peak flood discharges from the site for both pre and post development scenarios. This should include flood and stormwater events of 63%, 50%, 20%, 10%, 5%, 2% and 1% AEP (equivalent to 1, 2, 5, 10, 20, 50 and 100 year ARI events);

Demonstrating that the management of stormwater (quantity and quality) in post development can achieve a no worsening of impacts on the state-controlled road corridors for all the above flood and stormwater events.

This report confirms that the proposed development will not cause any worsening or actionable nuisance to state-controlled road corridors, neighbouring properties, local roads, or other state transport infrastructure, including impacts from peak discharges, flood levels, flood frequency and duration, flow velocities, water quality, sedimentation, or scour.

The pre-development Coefficient of Discharge ( $C_{10}$ ) for the subject site is 0.72.

The post development stormwater catchment of 24,000m<sup>2</sup> will discharge via pits and pipes. During major events the excess runoff will discharge onto Little Bohle River via overland flow.

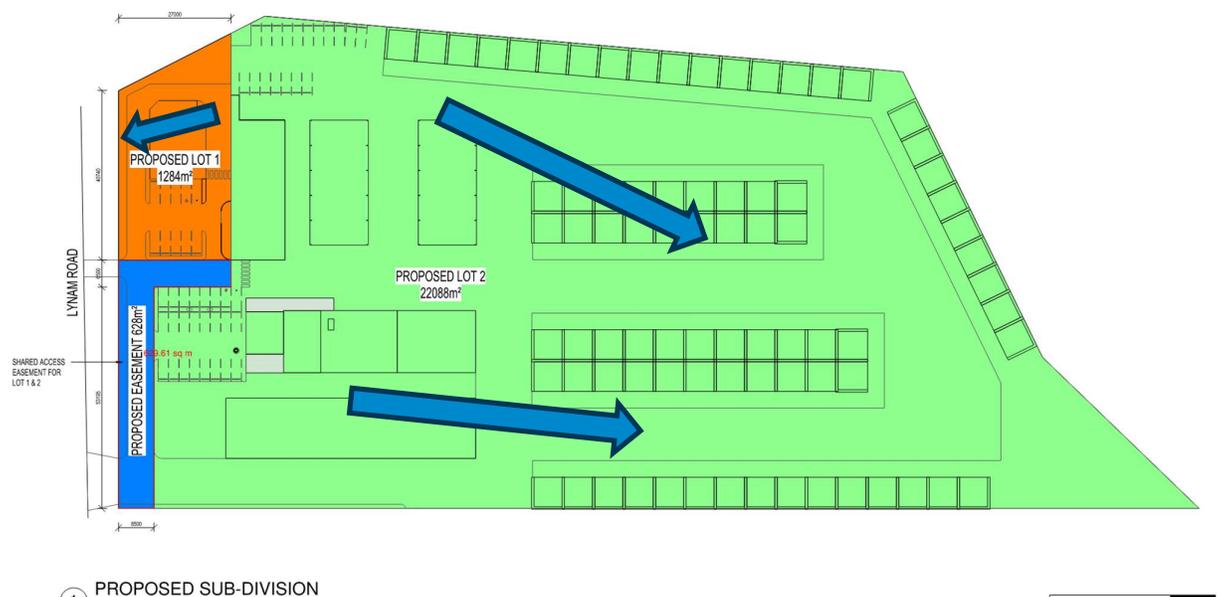


Figure 5.5 – Post Development - Stormwater Catchments

Calculation of detention storage volume using the Mass-Flow Equation in QUDM indicates that 15m<sup>3</sup> will be required for Lot 1 and 94m<sup>3</sup> for Lot 2 in order to limit discharge from the site to pre-development volumes.

**CATCHMENT HYDROLOGY AT  
13 Lynam Rd - Lot 1**

CATCHMENT - Pre							
Area (m <sup>2</sup> )	(ha)	Impervious Area (%)			C <sub>10</sub>	Time of Concentration (min)	
1284	0.128	0			0.72	16	
C <sub>1</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>20</sub>	C <sub>50</sub>	C <sub>100</sub>	
0.576	0.612	0.684	0.72	0.756	0.828	0.864	
I <sub>1</sub>	I <sub>2</sub>	I <sub>5</sub>	I <sub>10</sub>	I <sub>20</sub>	I <sub>50</sub>	I <sub>100</sub>	
74.9	85.3	116	136	155	178	195	
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>20</sub>	Q <sub>50</sub>	Q <sub>100</sub>	
0.015	0.019	0.028	0.035	0.042	0.053	0.060	

CATCHMENT - Post							
Area (m <sup>2</sup> )	(ha)	Impervious Area (%)			C <sub>10</sub>	Time of Concentration (min)	
1284	0.128	78			0.75	5	
C <sub>1</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>20</sub>	C <sub>50</sub>	C <sub>100</sub>	
0.6	0.6375	0.7125	0.75	0.7875	0.8625	0.9	
I <sub>1</sub>	I <sub>2</sub>	I <sub>5</sub>	I <sub>10</sub>	I <sub>20</sub>	I <sub>50</sub>	I <sub>100</sub>	
109	124	170	200	229	265	292	
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>20</sub>	Q <sub>50</sub>	Q <sub>100</sub>	
0.023	0.028	0.043	0.054	0.064	0.082	0.094	

**CATCHMENT HYDROLOGY AT  
13 Lynam Rd - Lot 2**

CATCHMENT - Pre							
Area (m <sup>2</sup> )	(ha)	Impervious Area (%)			C <sub>10</sub>	Time of Concentration (min)	
22716	2.272	7			0.72	14	
C <sub>1</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>20</sub>	C <sub>50</sub>	C <sub>100</sub>	
0.576	0.612	0.684	0.72	0.756	0.828	0.864	
I <sub>1</sub>	I <sub>2</sub>	I <sub>5</sub>	I <sub>10</sub>	I <sub>20</sub>	I <sub>50</sub>	I <sub>100</sub>	
78.9	89.8	123	144	163	188	206	
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>20</sub>	Q <sub>50</sub>	Q <sub>100</sub>	
0.287	0.347	0.531	0.654	0.778	0.982	1.123	

CATCHMENT - Post							
Area (m <sup>2</sup> )	(ha)	Impervious Area (%)			C <sub>10</sub>	Time of Concentration (min)	
22716	2.272	65			0.67	5	
C <sub>1</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>20</sub>	C <sub>50</sub>	C <sub>100</sub>	
0.536	0.5695	0.6365	0.67	0.7035	0.7705	0.804	
I <sub>1</sub>	I <sub>2</sub>	I <sub>5</sub>	I <sub>10</sub>	I <sub>20</sub>	I <sub>50</sub>	I <sub>100</sub>	
109	124	170	200	229	265	292	
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>20</sub>	Q <sub>50</sub>	Q <sub>100</sub>	
0.369	0.446	0.683	0.846	1.017	1.288	1.481	

Based on the above information the pre-development and post-development peak out flows from the subject site are provided in table:

Catchment Pre-Development and Post-Development

<b>Lot 1 - Pre and Post Total Peak Outflow Comparisons</b>							
<b>AEP</b>	<b>63.20%</b>	<b>50%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>	<b>2%</b>	<b>1%</b>
<b>Pre-Developed (m<sup>3</sup>/s)</b>	0.015	0.019	0.028	0.035	0.042	0.053	0.060
<b>Post-Developed (m<sup>3</sup>/s)</b>	0.023	0.028	0.043	0.054	0.064	0.082	0.094
<b>Difference (m<sup>3</sup>/s)</b>	0.008	0.010	0.015	0.019	0.023	0.029	0.034

<b>Lot 2 - Pre and Post Total Peak Outflow Comparisons</b>							
<b>AEP</b>	<b>63.20%</b>	<b>50%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>	<b>2%</b>	<b>1%</b>
<b>Pre-Developed (m<sup>3</sup>/s)</b>	0.287	0.347	0.531	0.654	0.778	0.982	1.123
<b>Post-Developed (m<sup>3</sup>/s)</b>	0.369	0.446	0.683	0.846	1.017	1.288	1.481
<b>Difference (m<sup>3</sup>/s)</b>	0.082	0.099	0.152	0.191	0.239	0.306	0.358

In the major event (100-year ARI) it is noted that there is an increase in the post development runoff:

- Lot 1: 34l/s from the site
- Lot 2: 358l/s from the site

As there is an increase in runoff from the proposed development in the catchment, stormwater detention measures are required by 15m<sup>3</sup> underground storage for Lot 1 and 94m<sup>3</sup> underground for Lot 2, as the peak discharges from the site are more than that of pre-development.

## 5. Stormwater Quality Management

In accordance with the requirements of the State Planning Policy – July 2017, the Assessment Benchmarks for Water Quality, the proposed development site is greater than 2,500m<sup>2</sup> in size. Therefore, the proposed development site exceeds the criteria for requiring permanent methods of stormwater quality control.

**Assessment benchmarks – water quality**

**These performance outcomes apply to the following development applications, to the extent the SPP has not been identified in a local planning instrument as being appropriately integrated.**

For receiving waters, a development application for:	For water supply buffer areas, a development application:	The following requirements are assessment benchmarks for the development:
<ul style="list-style-type: none"> <li>(1) a material change of use for an urban purpose that involves premises 2500 metres<sup>2</sup> or greater in size and;               <ul style="list-style-type: none"> <li>(a) will result in six or more dwellings; or</li> <li>(b) will result in an impervious area greater than 25 per cent of the net developable area; or</li> </ul> </li> <li>(2) reconfiguring a lot for an urban purpose that involves premises 2500 metres<sup>2</sup> or greater in size and will result in six or more lots; or</li> <li>(3) operational works for an urban purpose that involves disturbing a land area 2500 metres<sup>2</sup> or greater in size.</li> </ul>	<ul style="list-style-type: none"> <li>(4) located wholly outside an urban area and relating to premises that is within, or partly within, a water supply buffer area, that involves:               <ul style="list-style-type: none"> <li>(a) a material change of use for the intensive animal industry, medium and high-impact industry, noxious and hazardous industry, extractive industry, utility installation that involves sewerage services, drainage or stormwater services, waste management facilities, or motor sport facility; or</li> <li>(b) reconfiguring a lot to create five or more additional lots if any resultant lot is less than 16 hectares in size, and any of the lots created will rely on on-site wastewater treatment.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>(1) Development is located, designed, constructed and operated to avoid or minimise adverse impacts on environmental values arising from:               <ul style="list-style-type: none"> <li>(a) altered stormwater quality and hydrology</li> <li>(b) waste water</li> <li>(c) the creation or expansion of non-tidal artificial waterways</li> <li>(d) the release and mobilisation of nutrients and sediments.</li> </ul> </li> <li>(2) Development achieves the applicable stormwater management design objectives outlined in tables A and B (appendix 2)</li> <li>(3) Development in a water supply buffer area avoids adverse impacts on drinking water supply environmental values.</li> </ul> <p>Further information in relation to these requirements is detailed in the water quality guidance material.</p>

Figure 6.1 – State Planning Policy – Assessment Benchmarks

An Erosion and Sediment Control Plan (ESCP) for the site will be required during construction to minimise the risk of soil leaving the site. The ESCP and associated devices will be required to be implemented/installed prior to commencement of the new building and associated infrastructure until the landscaping is completed.

## 5.1 Pollutants of Concern

The Townsville City Council Development Manual, SC6.4.10 Stormwater Quality, provides guidance on the types of pollutants likely to be generated from different developments. The pollutants most likely to be of concern for Commercial/Industrial developments are identified in the table below.

Pollutant	Development Phase	
	Construction	Operation
Litter	✓	✓
Sediment	✓	unlikely
Hydrocarbons (including oil and grease)	✓	✓
Toxic materials (e.g. cement slurry, asphalt primer, solvents)	✓	unlikely
pH altering substances (e.g. cement slurry and wash waters)	✓	unlikely
Oxygen demanding substances (organic and chemical matter)	possibly	unlikely
Nutrients (nitrogen and phosphorus)	✓	✓
Pathogens / Faecal coliforms (bacteria and viruses)	unlikely	unlikely
Heavy metals (often associated with fine sediment)	unlikely	unlikely
Surfactants (e.g. detergents from car washing)	unlikely	possibly
Thermal pollution (heat)	unlikely	unlikely

Table 6.1 Pollutants likely to be of most concern

## 5.2 Design Objectives for Water Management

The Water Quality Objectives for the proposed development in Townsville are listed in the table below.

Parameter	Statistic	Load Based Reduction	Water Quality Objectives
Total Suspended Solids (TSS)	Mean Range	80%	Less than 5mg/L
Total Phosphorous (TP)	Mean Range	65%	Less than 0.01 to 0.05mg/L
Total Nitrogen (TN)	Mean Range	40%	Less than 0.2 to 0.5mg/L
Gross Pollutants	-	90%	Retention of litter greater than 50mm for flows up to the 3-month ARI peak flow
PH	Mean Range	-	Between 7 and 8

Table 6.2 Water Quality Objectives for Townsville City Council – Dry Tropics (TCC Development Manual SC6.4.10.2(3))

### 5.3 Proposed Stormwater Treatment Train analysis

The proposed development site has sufficient area available to dedicate to stormwater quality improvement devices.

#### Entire Catchment

The roofs, car parks, driveway and landscaped areas in the Coffee Shop (Lot 1) of the development are to be collected by stormwater inlet pits fitted with OceanProtect OceanGuard baskets and conveyed via stormwater pipes to discharging into the 15m<sup>3</sup> underground detention tank and then discharging into existing council drain at the front of Lynam Rd. The roofs, asphalt internal road, driveway and landscaped areas in the Lot 2 of the development are to be collected in stormwater inlet pits fitted with OceanProtect OceanGuard baskets and 94m<sup>3</sup> underground detention tank with 11 x Atlan filters and discharge to the existing swale drain in Hervey Range Road.

The proprietary stormwater treatment devices included above in the design solutions, have been independently verified by Stormwater Australia SQIDEP (Verification Certificate) and the certified performance metrics are reflected in the MUSIC modelling.

### 5.4 Music Model Parameters

#### 5.4.1 Model Parameters

Input	Data Used
Rainfall Station	32040 TOWNSVILLE
Rainfall Period	01/01/1995 – 31/12/2005
Mean Annual Rainfall (mm)	976mm
Evapotranspiration	1201mm
Model Timestep	6 minutes

Table 6.3 - Basic MUSIC Model Parameters

#### 5.4.2 Rainfall & Runoff Parameters

Parameter	Roof/ Road/Ground Level
Rainfall Threshold (mm/day)	1
Soil Storage Capacity (mm)	400
Soil Initial Storage (% of Capacity)	10
Field Capacity (mm)	200
Infiltration Capacity coefficient - a	211
Infiltration Capacity exponent - b	5.0
Initial Depth (mm)	50
Daily Recharge Rate (%)	28
Daily Baseflow Rate (%)	27
Daily Deep Seepage Rate (%)	0

Table 6.4 - Water by Design recommended MUSIC Rainfall – Runoff Parameters – adopted for Townsville

### 5.4.3 Pollution Generation

In MUSIC, stormwater quality is characterised by event mean concentrations (EMC) for storm flows and base flows. In this study, the EMC's were adopted from Water by Design MUSIC Modelling Guidelines. The pollutants of concern that were assessed include total suspended solids (TSS), total phosphorous (TP) and total nitrogen (TN). The quality of stormwater runoff is characterised by inputting event mean concentrations (EMC) for storm flow and base flow conditions as well as the standard deviation of each EMC.

### 5.4.4 Results

#### Site Catchments

In accordance with the State Planning Policy, Table B, Condition (1), as the site area is less than 2,500m<sup>2</sup>, no stormwater treatment is required for Lot 1.

As a best practice measure, all pits within Lot 1 will be fitted with OceanProtect OceanGuard baskets to remove gross pollutants and some sediment prior to outlet.

For Lot 2; the indicative layout of the MUSIC model, treatment train parameters and results for the Lot 2 catchment are shown below.

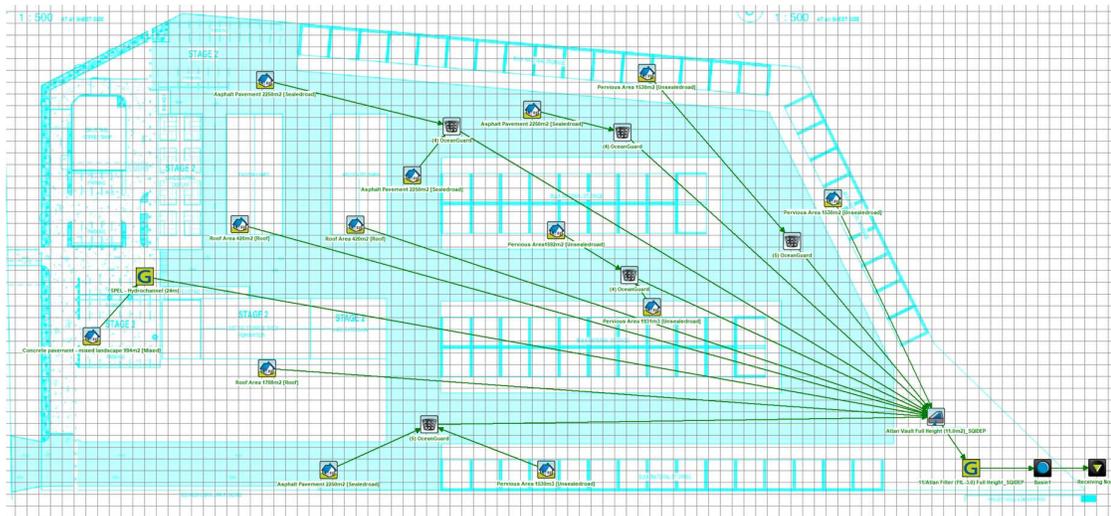


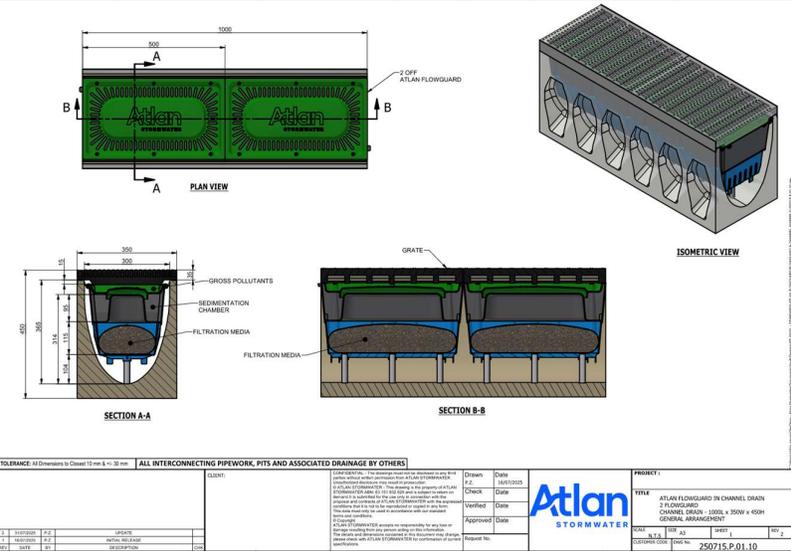
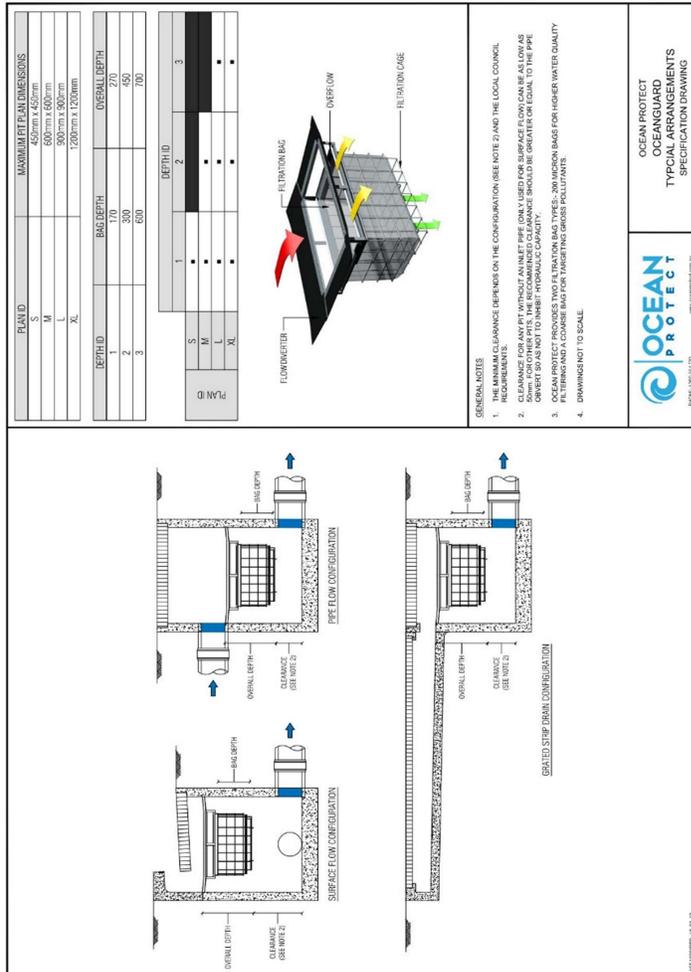
Figure 6.2.1 MUSIC Model (Lot 2 Catchment)

	Sources	Residual Load	% Reduction
<b>Flow (ML/yr)</b>	15.6	15.6	0
<b>Total Suspended Solids (kg/yr)</b>	7020	1030	85.3
<b>Total Phosphorus (kg/yr)</b>	7.25	2.86	60.5
<b>Total Nitrogen (kg/yr)</b>	35.7	18.1	49.2
<b>Gross Pollutants (kg/yr)</b>	251	0	100

Figure 6.3.1 MUSIC Modelling – Treatment Train Effectiveness (Lot 2 catchment)

24m of SPEL hydro channel, OceanProtect OceanGuard baskets plus 11/Atlan Filter (FIL-3.0) Full Height \_ SQIDEP inside the 94m<sup>3</sup> OSD tank, have been used for modelling and calculations but may be substituted with another proprietary product with similar performance characteristics.

The treatment will reduce pollutant loading to the extent specified by Townsville city council.



ATLANFILTER	STANDARD HEIGHT FIL-3.0	STANDARD HEIGHT - SHORT LEGS FIL-3.0.SF	HALF HEIGHT FIL-1.5	HALF HEIGHT - SHORT LEGS FIL-1.5.SF
Overall height	850mm	750mm	615mm	515mm
Diameter	726mm	726mm	726mm	726mm
Minimum head required	850mm	750mm	550mm	450mm
Treatment flow rate	3.0L/s	3.0L/s	1.5 L/s	1.5 L/s
Filter outlet diameter	50mm	50mm	50mm	50mm



## 6. Water and Sewerage

### 6.1 Water Connection

The proposed development will be serviced as follows:

- Lot 1 is to have a new DN20 metered potable service connected to the existing DN100 water main within Lynam Road, and,
- Lot 2 is to have a new DN100 connection on the existing DN375 AC trunk water main that includes 1 x DN40 metered potable water service and 1 x DN100 metered dedicated fire service.

Using online mapping and survey information provided at time of writing, no fire hydrants are present within Lynam Road. A new in-ground hydrant is recommended on Lynam Road adjacent to Lot 1 if one is not within acceptable range.

Water pressures in the DN375 AC trunk main are high and variable, reaching up to approximately 130 mHGL when the Mt Margaret pumps are operating and reducing to approximately 88 mHGL when the pumps are not operating. These pressures reflect supply conditions from the Mt Margaret pumping system and the Mt Louisa reservoir backflow.

Water network modelling was undertaken using Council's WaterGEMS model to assess peak hour demand and 30 L/s commercial fire flow conditions. The minimum modelled pressure at the coffee shop offtake was 677 kPa under peak demand, reducing to 496 kPa under the 30 L/s fire flow scenario, both exceeding the minimum required pressures of 220 kPa and 120 kPa, respectively.

The modelling also confirms that velocities and headloss gradients within the DN100 PVC water main remain within Council standards, with velocities up to 0.09 m/s under peak demand and 3.9 m/s under fire flow, and headloss gradients below 0.001 m/m (compared to limits of 2.5 m/s, 4.0 m/s, and 0.005 m/m).

The assessment confirms the existing network has sufficient capacity to service the development with no infrastructure upgrades required, noting that a pressure limiting device will be installed to reduce pressures below 500 kPa in accordance with the Plumbing and Drainage Code.

Refer Appendix C for water & sewer planning report by DPM Water (Dated 6<sup>th</sup> Jan 2026)

### 6.2 Sewer Connection

The existing Bedrock Landscape Supplies site is not connected to the Townsville City Council (TCC) reticulated sewer network and is serviced by a private on-site sewage system, which is understood to remain unchanged. For the proposed coffee shop development, TCC has requested that sewage demands and disposal requirements be identified; however, any on-site treatment and disposal system would be designed by others and is not included in this report.

An alternative option considered is a private package sewage pump station to service the coffee shop. This option includes a package pump station (Aquatec or similar) with two duty/standby submersible grinder pumps, discharging via a DN40 PE100 SDR11 (PN16) sewer pressure main to connect to the existing DN200 PVC sewer pressure main on the eastern boundary of the Bedrock site / Ring Road. The pressure main length is approximately 170 m, with an internal diameter of 32 mm, and alignment to be confirmed at detailed design.

Pump station design flows were calculated in accordance with TCC pump station design criteria, based on an Equivalent Population (EP) of 10.3. The calculated ADFW is 2,369 L/day (0.027 L/s), with a C1 peaking factor of 10.4, resulting in a required single pump capacity of 0.28 L/s. To satisfy the minimum required pressure main velocity of 0.75 m/s, a pump rate of 0.61 L/s is required, which governs the preliminary pump sizing.

SewerGEMS modelling using the Bohle Plains sewer model (developed for the McKinnon Reach development) shows the additional 0.61 L/s discharge from the coffee shop represents only a 2% increase in flow within the DN200 PVC common pressure main. The modelled hydraulic grade line increases marginally from 50.58 mHGL to 50.83 mHGL, an increase of 0.25 m, which is within modelling tolerance and does not adversely impact system performance. The assessment confirms the private package pump station option is viable, with final sizing and approvals to be completed at detailed design subject to TCC approval.

An easement will be required for the proposed pumped outlet pipe in favour of new Lot 1.

Refer Appendix C for water & sewer planning report by DPM Water (Dated 6<sup>th</sup> Jan 2026)

### 6.3 Infrastructure Capacity

As the water and sewerage demands for the proposed development of the subject site will be within the design parameters allowed for this land, the existing adjoining water and sewerage infrastructure will have sufficient capacity to service the proposed development.

Refer Appendix C for water & sewer planning report by DPM Water (Dated 6<sup>th</sup> Jan 2026)

## 7. Discussion / Conclusion

As demonstrated within the Report, the proposed commercial development can be undertaken, and a summary of the requirements are as follows: -

- The subject site is not affected by the Defined Flood Event.
- The subject allotment is not affected by the Defined Storm Tide Event (DSTE) – RL3.9m.
- The development minimum finished floor levels (FFL) are: -
  - Coffee Shop - AEP 1% Flood – RL18.00m AHD
  - Existing Storage Shed and Shed Extension - AEP 1% Flood – RL18.10m AHD
  - New Shed – AEP 1% Flood – RL17.60m AHD
- The Minor Design Event is ARI 10 year.
- The Major Design Event is ARI 100 year.
- On-site detention is required, with a storage volume of:
  - 15m<sup>3</sup> for Lot 1
  - 94m<sup>3</sup> for Lot 2
- The site does require Stormwater Quality Treatment as per the State Planning Policy.
- Stormwater legal points of discharge are:
  - Lot 1 > Lynam Rd gully pit
  - Lot 2 > Existing swale

## 8. APPENDIX A – Architects - Proposed Development Layout and Site Survey Plan

# COFFEE SHOP

FOR:  
**P. FORTINI**

AT:  
**13 LYNAM ROAD  
BOHLE PLAINS  
TOWNSVILLE**

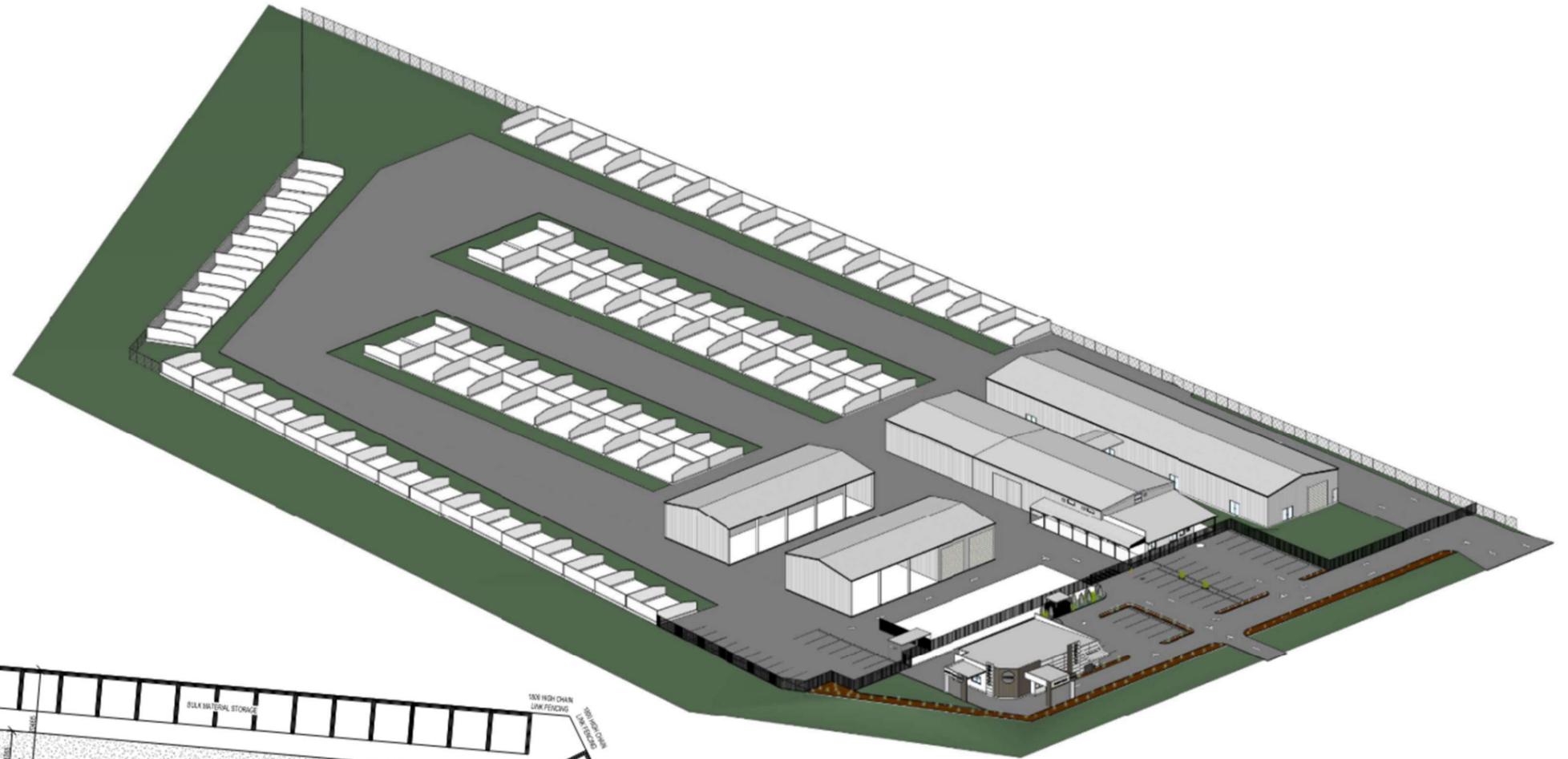


1 EXISTING SITE PLAN - LOCALITY  
1 : 500 AT A1 SHEET SIZE

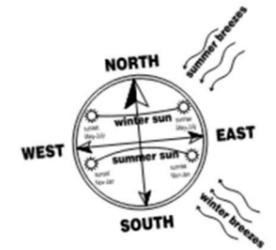
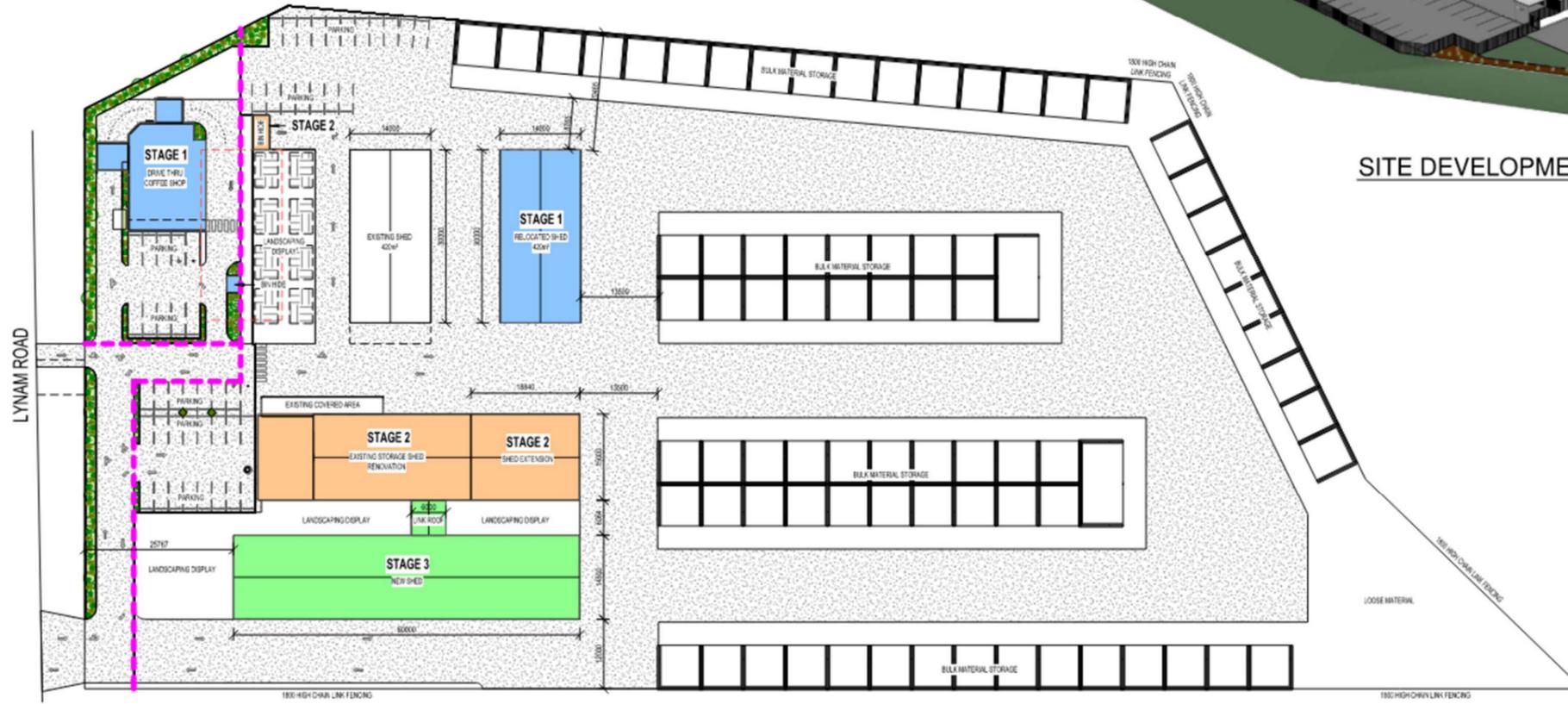




1 EXISTING SITE SURVEY PLAN  
1 : 250 AT A1 SHEET SIZE



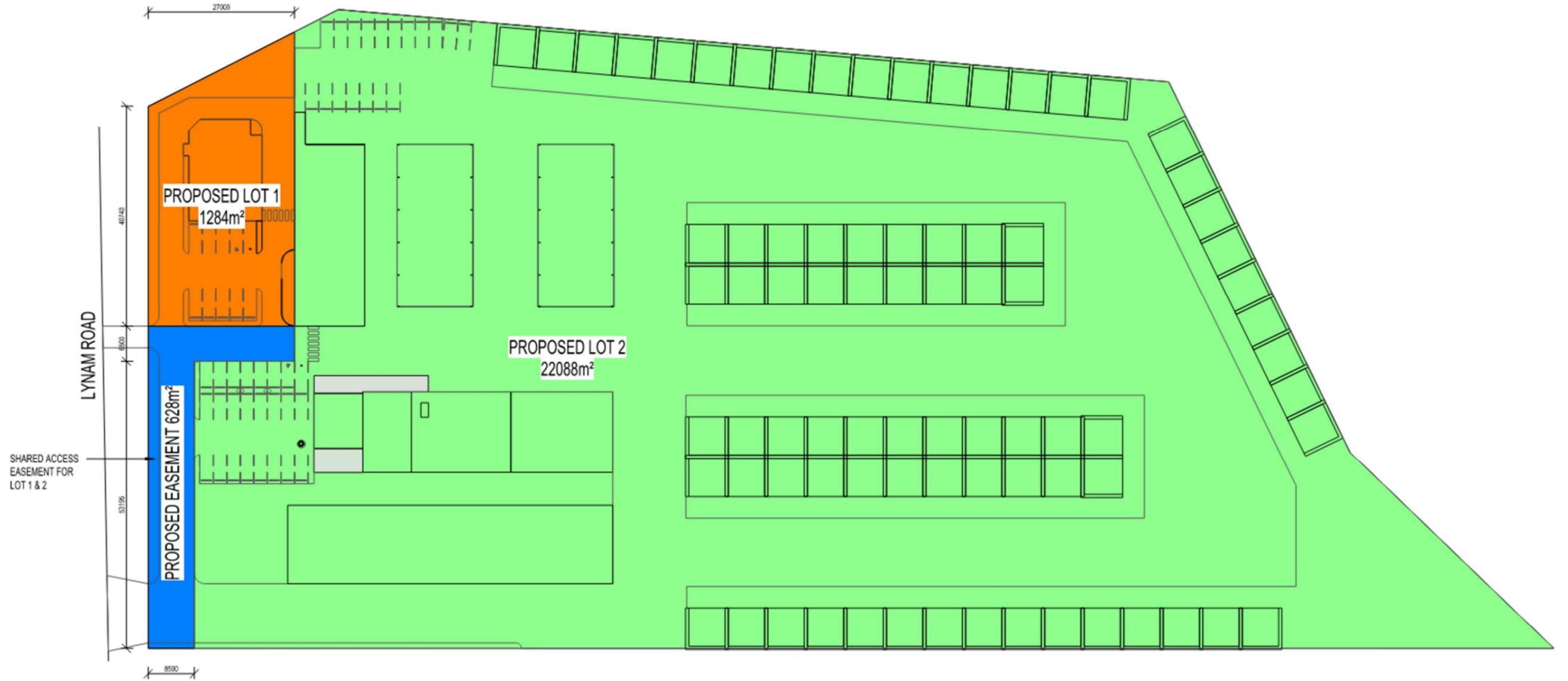
SITE DEVELOPMENT 3D





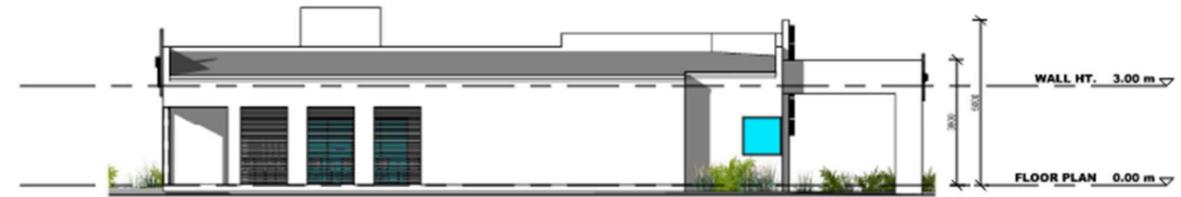
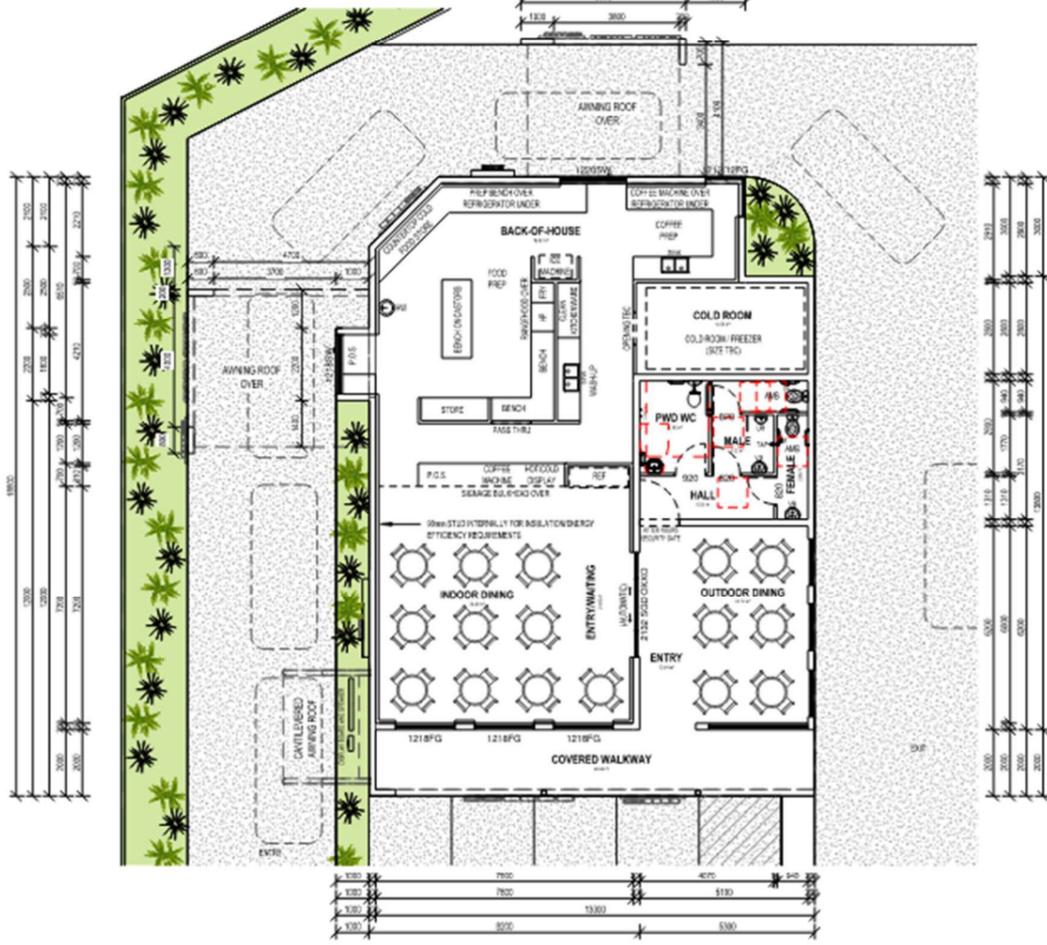
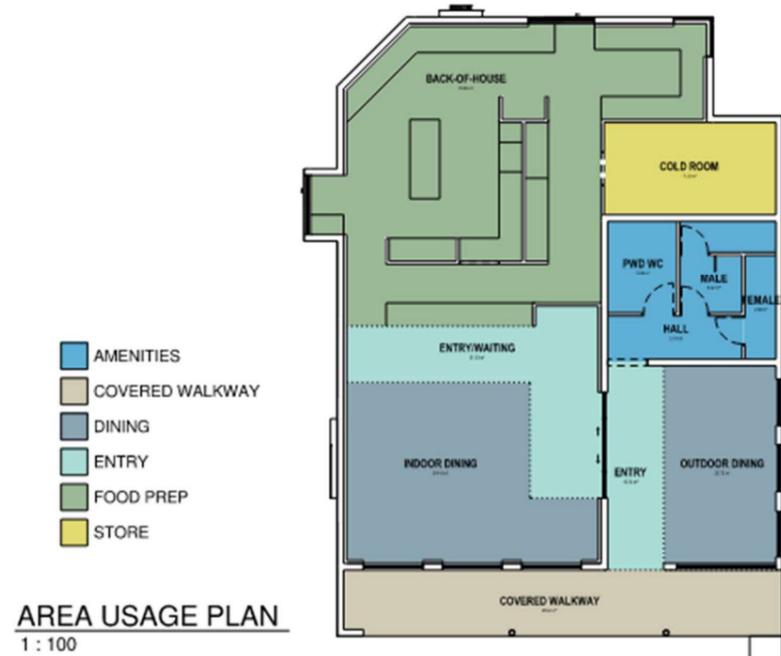
1 PROPOSED SITE PLAN - PART  
1 : 250 AT A1 SHEET SIZE





**1** PROPOSED SUB-DIVISION  
1 : 500 AT A1 SHEET SIZE

PROJECT ISSUE & DESCRIPTION
PS - PRELIMINARY ISSUE - 30-04-2025



AREAS	AREA (m <sup>2</sup> )
BACK OF HOUSE	87.01
INDOOR DINING	86.62
OUTDOOR DINING	32.74
COVERED WALKWAY	27.07
AMENITIES	24.32
COLD STORE	15.53
TOTAL	247.27

**PRELIMINARY**

NOTES:  
 1. THIS DRAWING IS ONLY A PRELIMINARY DESIGN AND IS SUBJECT TO CHANGE WITHOUT NOTICE.  
 2. VERIFY ALL DIMENSIONS AND MATERIALS WITH THE SUPPLIER.  
 3. VERIFY ALL DIMENSIONS AND MATERIALS WITH THE SUPPLIER.  
 4. VERIFY ALL DIMENSIONS AND MATERIALS WITH THE SUPPLIER.



**PROJECT:** COFFEE SHOP  
**CLIENT:** P. FORTINI  
**SITE:** 13 LYNAM ROAD, BOHLE PLAINS, TOWNSVILLE

**BUILDER:**

DATE: 2024/03/14 11:20 PM  
 DRAWN: [Name]  
 CHECKED: [Name]  
 SCALE: 1 : 100  
 JOB NO: 24-389

