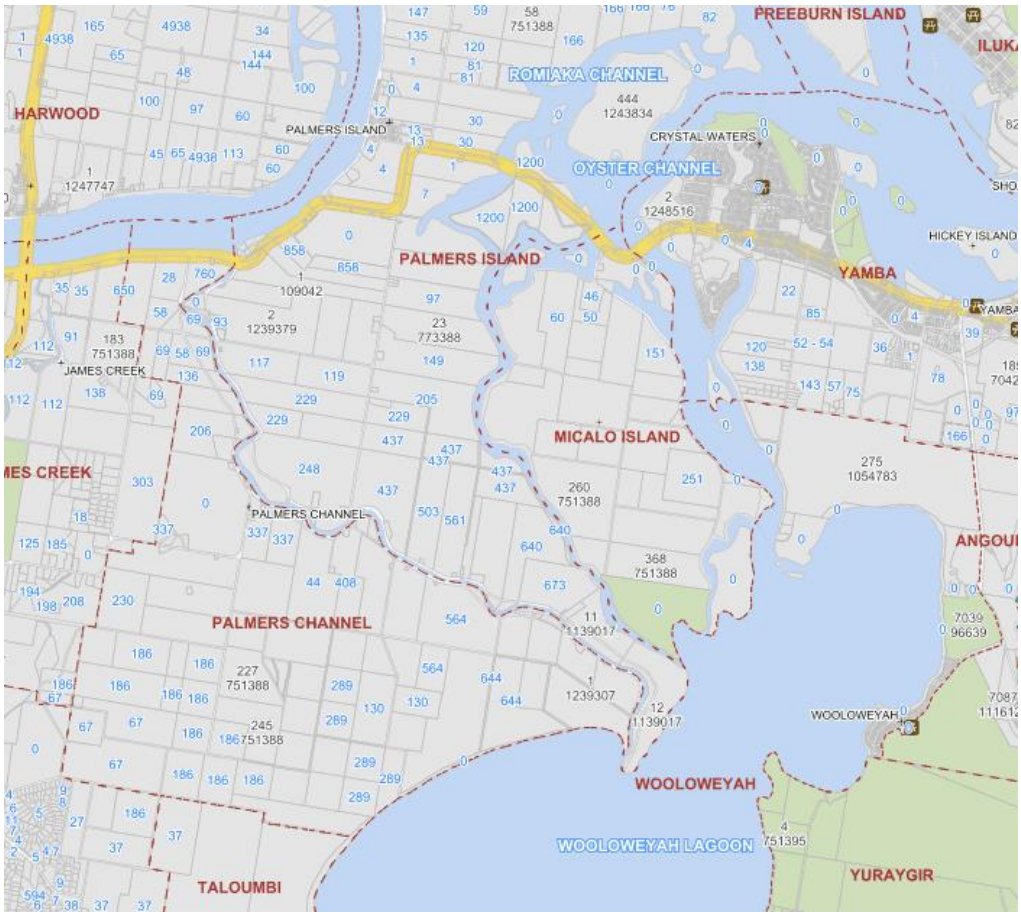
PLANNING PROPOSAL

TO AMEND CLARENCE VALLEY LOCAL ENVIRONMENTAL PLAN 2011 TO PERMIT AN ADDITIONAL USE (RURAL SUPPLIES) ON PART OF LOT 11 DP 1259162 NO. 4 RIVER STREET, PALMERS ISLAND



Prepared by A.Fletcher & Associates Pty Ltd

Ref No.: 9561-1

Date: May, 2022

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Declaration: Amend Schedule 1 of Clarence Valley LEP 2011 to add an Additional Use (Rural Supplies) on part of Lot 11 DP 1259162 (No. 4) River Street, Palmers Island.

Document Author: Rob Donges

Position of document author: Planning Consultant

Qualifications of document author: B.A. Master Town & Country Planning
I, Rob Donges, declare that this Planning Proposal constitutes a planning proposal for the purposes of section 3.33 of the Environmental Planning and Assessment Act 1979 (the Act) and further declare that the document complies with the relevant provisions of the Act and the Department of Planning and Environment's *Local Environmental Plan Making Guideline (December, 2021)*

Date: 29/3/2021

Note: Clarence Valley Council at its meeting on 22nd June, 2021 considered a report on this proposal and resolved:

> *"That Council supports the planning proposal REZ2021/0003 to amend Schedule 1 Additional Permitted Uses of the CV LEP 2011 to permit a "rural supplies" business on the specific proposal site on Lot 11 DP 1259162 coupled with an amendment to the CV LEP 2011 Additional Permitted Use Map."*
>
> This Planning Proposal has now been amended and updated to reflect this resolution and the updated Plan Making format.
> The following additional Annexures have been included.
>
> Annexure I: Preliminary Site Investigation (ENV Solutions, Feb, 2022) and Contamination Report
> Annexure J: Summary Table
> Annexure K: Flood Impact Assessment Report (Structerre, January 2022)
> Annexure L: DPI Advice.
> Annexure M: Transport for NSW Response
> Annexure N: Clause 5.21 Assessment
> Annexure O: Traffic Impact Assessment (Bitzios, March 2022).
> Annexure P: LSPS Assessment
> Annexure Q: SEPP (Resilience & Hazards) 2021 Assessment

1. Preliminary

1.1 Introduction

Pridel Pty Ltd, owners of Lot 11 DP 1259162 (No.4) River Street Palmers Island, are seeking to allow a rural supplies business to be established on the property through amendment to the Clarence Valley LEP 2011 Schedule 1 Additional Permitted Uses.

A farm shed and flood mound have previously been approved on the property (DA2020/0216 & CC2020/0187) and the intention of the amendment is to allow a further development application to be submitted for an additional shed to be occupied by a rural supplies business immediately adjacent to the existing shed. The property is zoned RU1 Primary Production and rural supplies operations are prohibited.

1.2 Property Description

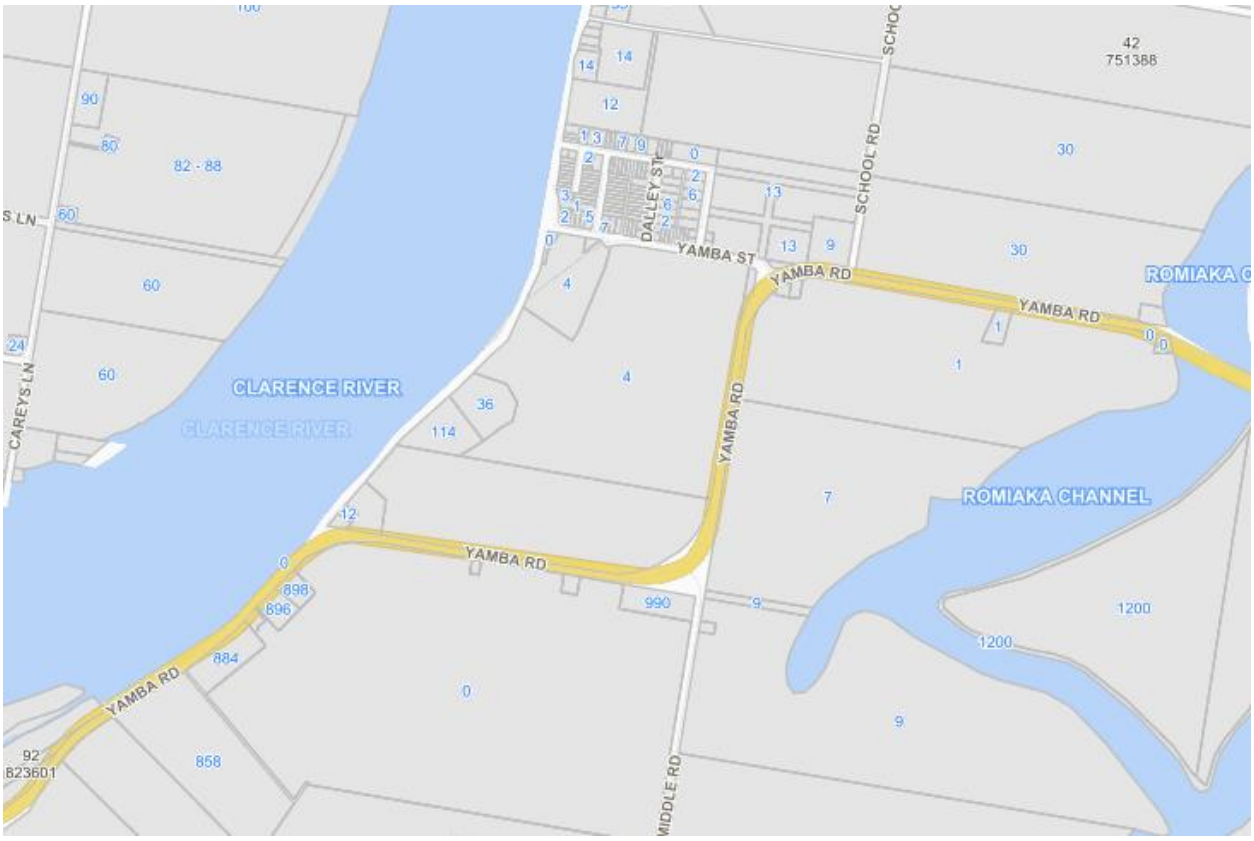


Figure 1: Locality Map

Lot 11 consists of 2 non-contiguous sections, 1 south of Palmers Island Village and 1 north. The entire holding (No.4 River Road) also includes another 2 separate lots either side of the Village.

1.3 Subject Land

Figure 2: Aerial Site Plan

The property has a total area of 41.53ha, of which approximately 27.18ha is located in the southern portion. The entire property is developed as a macadamia plantation containing around 23,000 trees. There is a rural shed associated with the plantation located on the southern portion, and it is proposed to construct a similar shed immediately adjacent to its south for the rural supplies business.

1.4 Background

DA2020/0216 for the construction of a farm building with sanitary facilities and flood mound was approved in August, 2020. The shed is located on an existing cane pad and has an area of 720m^2 (36m x 20m) set back 22m from Yamba Road. The approved flood mound provides protection against nuisance flooding, with Condition 9 of the development consent requiring all construction below 3.42m AHD to be flood compatible. The consent also required the provision of a unisex accessible toilet and an on-site wastewater management facility.

It is proposed to construct the additional shed on the existing mound, which needs to be extended approximately 20m to the south, immediately adjacent to the approved shed with parking (6 spaces) plus loading bay and manoeuvring space.

2. Part 1 – Objectives and Intended Outcome

The objective of the planning proposal is to permit a rural supplies business to be established on the identified section of the property via the addition of this property and the proposed land use onto the Additional Permitted Use Schedule of Clarence Valley LEP 2011.

The intended outcome is a rural supplies business servicing the agricultural sector in the area.

3. Part 2 – Explanation of Provisions

The objective and intended outcome of the Proposal will be achieved by the addition of the following to the Clarence Valley LEP 2011 Schedule 1 Additional Permitted Uses:-

"Use of certain land at No.4 River Street, Palmers Island"

1) *This clause applies to No. 4 River Street, Palmers Island being Lot 11 DP 1259162, identified as xx on the Additional Permitted Uses Map.*
2) *Development for the purpose of a rural supplies business is permitted with development consent.*

4. Part 3 – Justification

4.1 Is the Proposal a result of and endorsed Local Strategic Planning Statement,(LSPS), strategic study or report?

Not directly.

Priority 13 of the Clarence Valley Local Strategic Planning Statement 2020 is *"protect agricultural land and increase opportunities for access to locally produced fresh food and economic growth".* Although none of the 8 Actions are directly relevant to the proposal, the theme of the priority is that the agricultural sector is critical to the valley and needs to be protected, strengthened and enhanced. The proposal will permit an agricultural related land use servicing the local agricultural sector to be established within a large and diverse local agricultural sector on Palmers Island. A LSPS Assessment is at Annexure P.

The key driver behind the proposal is economic. An existing rural supplies business in the Clarence Valley has identified Palmers Island and surrounds as having the potential to support a business of this nature, and the subject site as having the location and exposure to ensure its viability.

The alternative would be to identify a RU2 zoned property in the vicinity upon which the business would be permissible. An investigation of the location of RU2 land south of the river in this general locality indicates that it is invariably located at the periphery away from prime agricultural land along the river. Establishing a business of this nature in "outlying" areas has the potential to create traffic and land use conflicts which would not arise for this site on Yamba Road.

4.2 Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes.

The alternative would be to rezone the portion of the property where the shed is located to RU2 Rural Landscape which permits rural supplies. The Department of Primary Industries by letter, dated 6th May, 2021 have stated that they would not support this rezoning approach but would support an amendment to the CVLEP Schedule 1 Additional Permitted Uses to include the subject property and use.

Section B – Relationship to Strategic planning framework

4.3 Will the Planning Proposal give the effect to the objectives and actions of the applicable regional or district plan or strategy (including any exhibited draft plans or strategies)?

The *North Coast Regional Plan 2036 (NCRP 2036)* released in March 2017 is the applicable regional plan. It is the NSW Governments strategy for guiding land use planning decisions for the North Coast region.

The Regional Plan comprises 4 goals, 25 directions and 80 actions. The goals articulate the intended outcome; the directions identify the broad issues or policy areas that need to be focused on; and the actions represent the steps needed to be taken or initiatives that need to be implemented to achieve the goals. Actions are either implemented as strategies or as initiatives.

An assessment of the goals, actions and directions of NCRP 2036 is at Annexure B. It indicates that the majority are not directly relevant to the proposal.

The proposal is inconsistent with **Goal 2 Direction 6 – Develop successful centres of employment Action 6.4** as it will permit a commercial activity outside an existing centre but the activity (rural supplies store) is permissible on all RU2 land which is always located outside of centres.

Goal 2 Direction 11 – Protect and enhance productive agricultural land is also directly relevant and the proposal is inconsistent with Action 11.1 but justified on the basis that the rural supplies business is an agriculturally related land use and will service the local agricultural sector. It is consistent with Action 11.4 as it permits a niche commercial activity which compliments the local agricultural sector. The proposal will result in the removal of 15 macadamia trees but these will be replanted to replace macadamia trees damaged in the recent wind storm.

4.4 Is the Planning Proposal consistent with a Council Local Strategic Planning Statement that has been endorsed by the planning Secretary or GSC, or another endorsed local strategy or strategic plan?

An assessment of the proposal against relevant strategies is at Annexure C and a LSPS Assessment is at Annexure P.

4.5 Is the Planning Proposal consistent with any other applicable State or regional studies or strategies?

No other state or regional studies or strategies are directly applicable to the proposal.

4.6 Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

An assessment of the proposal against the Policies is at Annexure D, with only SEPP (Resilience and Hazards) 2021 being relevant in respect of coastal management and remediation of land. A Preliminary Site Investigation addressing site contamination is attached at Annexure I and coastal management is addressed in Annexure Q. Both conclude that the proposal is consistent and will have no impact.

4.7 Is the Planning Proposal consistent with applicable Ministerial Directions (Section 9.1 Directions).

Assessment against the 9.1 Directions is at Annexure F. The proposal is inconsistent with Directions 1.1 Implementation of Regional Plans, 4.5 Acid Sulphate Soils and 9.2 Rural Lands but justified in each instance due to the relationship of the proposed rural supplies business with the surrounding agricultural activity and the minor scale of the proposal and inconsistencies.

Section C – Environmental, Social & Economic impacts.

4.8 Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

No.

The minor extension of the existing mound onto the surrounding plantation will have no ecological impacts.

4.9 Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

No.

The additional shed will require a unisex accessible toilet and associated on-site wastewater management system similar to that provided for the existing shed. Disposal areas will be on land adjacent to the mound within the macadamia plantation.

4.10 Has the Planning Proposal adequately addressed any social & economic effects

The lower Clarence Valley has significant agricultural production, particularly cane cultivation and macadamia plantations, but also cattle grazing and tea tree cultivation. It is currently serviced by 2 rural supplies businesses- Maclean Rural Supplies at Townsend (11km away) and Harwood Farm Store (6.3km away). The proposed business will provide a further option for the agricultural sector and the wider community who source goods and equipment sold by these businesses.

4.11 Is there adequate public infrastructure for the planning proposal?

Yes.

Water and power are immediately available, and effluent will be managed on-site in accordance with future conditions of consent.

Vehicle access will be directly from Yamba Road and a Traffic Impact Assessment is attached at Annexure O. It concludes that the volume of traffic generated is 8 vehicles (2-way) in peak periods which is deemed low and with negligible impact on the external road network. Access is in the form of an auxiliary left-turn lane from the south from where all supply vehicles will emanate and return.

4.12 What are the views of State & Commonwealth public authorities consulted in accordance with the gateway determination?

Responses from Department of Primary Industries and Transport NSW are attached at Annexure L and M respectively. DPI did not support the initial approach of rezoning the site to RU2 Rural Landscape but does support rural supplies being added as an Additional Use as

it is an agricultural related land use. Transport for NSW did not oppose the proposal but requested that Council consider the impact of allowing commercial use in this rural location and the transport infrastructure needed to support it. As a result, the Traffic Impact Assessment (Annexure O) was prepared and concluded that traffic generation is low and will have negligible impact on the external road network.

5. Part 4 – Mapping

Annexure A contains the current zoning map of the property.

6. Part 5 – Community Consultation

The proposal is "Standard" under the 2021 Guidelines, requiring exhibition for 20 working days.

7. Part 6 – Project Timeline

MILESTONE	DATE/S	COMMENT
1. Gateway Determination		
2. Agency Consultation		.
3. Public Exhibition		.
4. Public Hearing		
5. Consideration of submissions		
6. Post-exhibition consideration of PP		
7. RPA intends to make the Plan		
8. RPA intends to forward Plan to Dept for notification		

ANNEXURES

A. Additional Permitted Uses Map

B. North Coast Regional Plan 2036 Consistency Checklist

C. Clarence Valley Council Strategy & Strategic Plan Consistency Checklist

D. State Environmental Planning Policy Consistency Checklist

E. Section 9.1 Direction Consistency Checklist

F. Direction 9.2 Rural Lands Assessment

G. Concept Plan

H. AHIMS Search

I. Preliminary Site Investigation (ENV Solutions, Feb, 2022) & Contamination Report

J. Summary Table

K. Flood Impact Assessment Report (Structerre, January, 2022)

L. DPI Advice

M. Transport for NSW Response

N. Clause 5.21 Assessment

O. Annexure O: Traffic Impact Assessment (Bitzios, March 2022)

P. LSPS Assessment

Q. SEPP (Resilience & Hazards) 2021 Assessment

ANNEXURE A

ADDITIONAL PERMITTED USES MAP


CLARENCE RIVER
CLARENCE RIVER
ROMIAKA CHANNEL
YAMBA RD
YAMBA ST
DALLEY ST
SCHOOL RD
MIDDLE RD
CAREYS LN
82 - 88
751388
823601

ANNEXURE B

North Coast Regional Plan 2036 Consistency Checklist

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
Goal 1 - The most stunning environment in NSW **Direction 1 - Deliver environmentally sustainable growth**		
Action 1.1 - Focus future urban development to mapped urban growth areas.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal.*
Action 1.2 - Review areas identified as 'under investigation' within urban growth areas to identify and map sites of potentially high environmental value.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 1.3 - Identify residential, commercial or industrial uses in urban growth areas by developing local growth management strategies endorsed by the Department of Planning and Environment.	*Yes*	*The proposal will permit a rural supplies business to operate from the proposed additional shed (subject to Council approval) but this is already permissible on any land zoned RU2 and so is not limited to urban growth areas.*
Action 1.4 - Prepare land release criteria to assess appropriate locations for future residential, commercial and industrial uses.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 1 - The most stunning environment in NSW **Direction 2 - Enhance biodiversity, coastal and aquatic habitats, and water catchments**		
Action 2.1 - Focus development to areas of least biodiversity sensitivity in the region and implement the 'avoid, minimise, offset' hierarchy to biodiversity, including areas of high environmental value.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 2.2 - Ensure local plans manage marine environments, water catchment areas and groundwater sources to avoid potential development impacts.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 1 - The most stunning environment in NSW **Direction 3 - Manage natural hazards and climate change**		
Action 3.1 - Reduce the risk from natural hazards, including the projected effects of climate change, by identifying, avoiding and managing vulnerable areas and hazards.	*Yes*	*The approval for the first shed incorporates flood protection requirement which are likely to be replicated on any approval for the additional shed..*
Action 3.2 - Review and update floodplain risk, bushfire and coastal management mapping to manage risk, particularly where urban growth is being investigated.	*Yes*	*This matter is the responsibility of Council.*
Action 3.3 - Incorporate new knowledge on regional climate projections and related cumulative impacts in local plans for new urban development.	*Yes*	*This matter is the responsibility of Council.*
Goal 1 - The most stunning environment in NSW **Direction 4 - Promote renewable energy opportunities**		

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
Action 4.1 - Diversify the energy sector by identifying renewable energy resource precincts and infrastructure corridors with access to the electricity network.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 4.2 - Enable appropriate smaller-scale renewable energy projects using bio-waste, solar, wind, small-scale hydro, geothermal or other innovative storage technologies.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 4.3 - Promote appropriate smaller and community-scale renewable energy projects.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 5 - Strengthen communities of interest and cross-regional relationships**		
Action 5.1 - Collaborate on regional and intra-regional housing and employment land delivery, and industry development.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 5.2 - Integrate cross-border land use planning between NSW and South East Queensland, and remove barriers to economic, housing and jobs growth.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 5.3 - Encourage ongoing cooperation and land use planning between the City of Gold Coast and Tweed Shire Council.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 5.4 - Prepare a regional economic development strategy that drives economic growth opportunities by identifying key enabling infrastructure and other policy interventions to unlock growth.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 6 - Develop successful centres of employment**		
Action 6.1 - Facilitate economic activity around industry anchors such as health, education and airport facilities by considering new infrastructure needs and introducing planning controls that encourage clusters of related activity.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 6.3 - Promote knowledge industries by applying flexible planning controls, providing business park development opportunities and identifying opportunities for start-up industries.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 6.3 - Reinforce centres through local growth management strategies and local environmental plans as primary mixed-use locations for commerce, housing, tourism, social activity and regional services.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 6.4 - Focus retail and commercial activities in existing centres and develop place–making focused planning strategies for centres.	*Inconsistent but justified*	*The proposal will permit a retail activity outside existing centres, but it is*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
		permissible on all RU2 land which in all instances is located outside of centres.
Action 6.5 - Promote and enable an appropriate mix of land uses and prevent the encroachment of sensitive uses on employment land through local planning controls.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 6.6 - Deliver an adequate supply of employment land through local growth management strategies and local environmental plans to support jobs growth.	*Yes*	*Will permit eimplyment generating activity on appropriately zoned land without any negative impact on surrounding employment generating activities.*
Action 6.7 - Ensure employment land delivery is maintained through an annual North Coast Housing and Land Monitor.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 7 - Coordinate the growth of regional cities**		
Action 7.1 - Prepare action plans for regional cities that: ▪ ensure planning provisions promote employment growth and greater housing diversity; ▪ promote new job opportunities that complement existing employment nodes around existing education, health and airport precincts; ▪ identify infrastructure constraints and public domain improvements that can make areas more attractive for investment; and ▪ deliver infrastructure and coordinate the most appropriate staging and sequencing of development.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 8 - Promote the growth of tourism**		
Action 8.1 - Facilitate appropriate large-scale tourism developments in prime tourism development areas such as Tweed Heads, Tweed Coast, Ballina, Byron Bay, Coffs Harbour and Port Macquarie.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 8.2 - Facilitate tourism and visitor accommodation and supporting land uses in coastal and rural hinterland locations through local growth management strategies and local environmental plans.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 8.3 - Prepare destination management plans or other tourism focused strategies that: ▪ identify culturally appropriate Aboriginal tourism opportunities; ▪ encourage tourism development in natural areas that support conservation outcomes; and ▪ strategically plan for a growing international tourism market.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 8.4 - Promote opportunities to expand visitation to regionally	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
significant nature-based tourism places, such as Ellenborough Falls, Dorrigo National Park, Wollumbin–Mount Warning National Park, Iluka Nature Reserve and Yuraygir Coastal Walk.		*directly relevant to the planning proposal*
Action 8.5 - Preserve the region's existing tourist and visitor accommodation by directing permanent residential accommodation away from tourism developments, except where it is ancillary to existing tourism developments or part of an area otherwise identified for urban expansion in an endorsed local growth management strategy.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 9: Strengthen regionally significant transport corridors**		
Action 9.1 - Enhance the competitive value of the region by encouraging business and employment activities that leverage major inter-regional transport connections, such as the Pacific Highway, to South East Queensland and the Hunter.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 9.2 - Identify buffer and mitigation measures to minimise the impact of development on regionally significant transport infrastructure including regional and state road network and rail corridors.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 9.3 - Ensure the effective management of the State and regional road network by: ▪ preventing development directly adjoining the Pacific Highway; ▪ preventing additional direct 'at grade' access to motorway-class sections of the Pacific Highway; ▪ locating highway service centres on the Pacific Highway at Chinderah, Ballina, Maclean, Woolgoolga, Nambucca Heads, Kempsey and Port Macquarie, approved by the Department of Planning and Environment and Roads and Maritime Services; and ▪ identifying strategic sites for major road freight transport facilities.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 10 - Facilitate air, rail and public transport infrastructure**		
Action 10.1 - Deliver airport precinct plans for Ballina–Byron, Lismore, Coffs Harbour and Port Macquarie that capitalise on opportunities to diversify and maximise the potential of value-adding industries close to airports.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 10.2 - Consider airport-related employment opportunities and precincts that can capitalise on the expansion proposed around Gold Coast Airport.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 10.3 - Protect the North Coast Rail Line and high-speed rail corridor	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
to ensure network opportunities are not sterilised by incompatible land uses or land fragmentation.		*directly relevant to the planning proposal*
Action 10.4 - Provide public transport where the size of the urban area has the potential to generate sufficient demand.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 10.5 - Deliver a safe and efficient transport network to serve future release areas.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 11: Protect and enhance productive agricultural lands**		
Action 11.1 - Enable the growth of the agricultural sector by directing urban and rural residential development away from important farmland and identifying locations to support existing and small-lot primary production, such as horticulture in Coffs Harbour.	*Yes*	*The proposal will permit a development application to be submitted on the subject property for a rural supplies business. The location is mapped as important farmland supporting a diversie range of agricultural production including cane, macadamias, ti tree and cattle grazing. As stated by the DPI in their correspondence of 6th May, 2021* "it is recognised that 'rural supplies' is an agricultural related land use…." *This is the basis for their support for an Additional Permitted Use amendment.* *The subject property contains approximately 23,000 macadmaia trees of which 15 will require relocation in the plantation as the majority of the proposed site is covered by a flood mound constructed on a disused cane pad.*
Action 11.2 - Deliver a consistent management approach to important farmland across the region by updating the Northern Rivers Farmland Protection Project (2005) and Mid North Coast Farmland Mapping Project (2008).	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 11.3 - Identify and protect intensive agriculture clusters in local plans to avoid land use conflicts, particularly with residential and rural residential expansion.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 11.4 - Encourage niche commercial, tourist and recreation activities that complement and promote a stronger agricultural sector, and build the sector's capacity to adapt to changing circumstances.	*Yes*	*The proposed rural supplies business will service the local agricultural sector.*
Action 11.5 - Address sector-specific considerations for agricultural	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
industries through local plans.		*directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 12 - Grow agribusiness across the region**		
Action 12.1 - Promote the expansion of food and fibre production, agrichemicals, farm machinery, wholesale and distribution, freight and logistics, and processing through flexible planning provisions in local growth management strategies and local environmental plans.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 12.2 - Encourage the co-location of intensive primary industries, such as feedlots and compatible processing activities.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 12.3 - Examine options for agribusiness to leverage proximity from the Gold Coast and Brisbane West Wellcamp airports.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 12.4 - Facilitate investment in the agricultural supply chain by protecting assets, including freight and logistics facilities, from land use conflicts arising from the encroachment of incompatible land uses.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 2 - A thriving, interconnected economy **Direction 13 - Sustainably manage natural resources**		
Action 13.1 - Enable the development of the region's natural, mineral and forestry resources by directing to suitable locations land uses such as residential development that are sensitive to impacts from noise, dust and light interference.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 13.2 - Plan for the ongoing productive use of lands with regionally significant construction material resources in locations with established infrastructure and resource accessibility.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 14 - Provide great places to live and work**		
Action 14.1 - Prepare precinct plans in growth areas, such as Kingscliff, or centres bypassed by the Pacific Highway, such as Woodburn and Grafton, to guide development and establish appropriate land use zoning, development standards and developer contributions.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 14.2 - Deliver precinct plans that are consistent with the Precinct Plan Guidelines (Appendix C).	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 15 - Develop healthy, safe, socially engaged and well-connected communities**		
Action 15.1 - Deliver best-practice guidelines for planning, designing and developing healthy built environments that respond to the ageing demographic and subtropical climate.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 15.2 - Facilitate more recreational walking and cycling paths and	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
expand inter-regional and intra-regional walking and cycling links, including the NSW Coastline Cycleway.		*directly relevant to the planning proposal*
Action 15.3 - Implement actions and invest in boating infrastructure priorities identified in regional boating plans to improve boating safety, boat storage and waterway access.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 15.4 - Create socially inclusive communities by establishing social infrastructure benchmarks, minimum standards and social impact assessment frameworks within local planning.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 15.5 - Deliver crime prevention through environmental design outcomes through urban design processes.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 16 - Collaborate and partner with Aboriginal communities**		
Action 16.1 - Develop partnerships with Aboriginal communities to facilitate engagement during the planning process, including the development of engagement protocols.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 16.2 - Ensure Aboriginal communities are engaged throughout the preparation of local growth management strategies and local environmental plans.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 17: Increase the economic self-determination of Aboriginal communities**		
Action 17.1 - Deliver opportunities to increase the economic independence of Aboriginal communities through training, employment and tourism.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 17.2 - Foster closer cooperation with Local Aboriginal Land Councils to identify the unique potential and assets of the North Coast communities.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 17.3 - Identify priority sites with economic development potential that Local Aboriginal Land Councils may wish to consider for further investigation.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 18 - Respect and protect the North Coast's Aboriginal heritage**		
Action 18.1 - Ensure Aboriginal objects and places are protected, managed and respected in accordance with legislative requirements and the wishes of local Aboriginal communities.	*Yes*	*AHIMS search shows no Aboriginal sites or objects in the vicinity which reflects its long agricultural use.*
Action 18.2 - Undertake Aboriginal cultural heritage assessments to inform the design of planning and development proposals so that impacts to Aboriginal cultural heritage are minimised and appropriate heritage management mechanisms are identified.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
Action 18.3 - Develop local heritage studies in consultation with the local Aboriginal community, and adopt appropriate measures in planning strategies and local plans to protect Aboriginal heritage.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 18.4 - Prepare maps to identify sites of Aboriginal heritage in 'investigation' areas, where culturally appropriate, to inform planning strategies and local plans to protect Aboriginal heritage.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 19 - Protect historic heritage**		
Action 19.1 - Ensure best-practice guidelines are considered such as the Australia International Council on Monuments and Sites (ICOMOS) Charter for Places of Cultural Significance and the NSW Heritage Manual when assessing heritage significance.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 19.2 - Prepare, review and update heritage studies in consultation with the wider community to identify and protect historic heritage items, and include appropriate local planning controls.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 19.3 - Deliver the adaptive or sympathetic use of heritage items and assets.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 20 - Maintain the region's distinctive built character**		
Action 20.1 - Deliver new high-quality development that protects the distinct character of the North Coast, consistent with the North Coast Urban Design Guidelines (2009)	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 20.2 - Review the North Coast Urban Design Guidelines (2009).	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 3 - Vibrant and engaged communities **Direction 21 - Coordinate local infrastructure delivery**		
Action 21.1 - Undertake detailed infrastructure service planning to support proposals for new major release areas.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 21.2 - Maximise the cost-effective and efficient use of infrastructure by directing development towards existing infrastructure or promoting the co-location of new infrastructure.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 4 - Great housing choice and lifestyle options **Direction 22 - Deliver greater housing supply**		
Action 22.1 - Deliver an appropriate supply of residential land within local growth management strategies and local plans to meet the region's projected housing needs.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 22.2 - Facilitate housing and accommodation options for temporary	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
residents by: ▪ preparing planning guidelines for seasonal and itinerant workers accommodation to inform the location and design of future facilities; and ▪ working with councils to consider opportunities to permit such facilities through local environmental plans.		*directly relevant to the planning proposal*
Action 22.3 - Monitor the supply of residential land and housing through the North Coast Housing and Land Monitor.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 4 - Great housing choice and lifestyle options **Direction 23 - Increase housing diversity and choice**		
Action 23.1 - Encourage housing diversity by delivering 40 per cent of new housing in the form of dual occupancies, apartments, townhouses, villas or dwellings on lots less than 400 square metres, by 2036.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 23.1 - Develop local growth management strategies to respond to changing housing needs, including household and demographic changes, and support initiatives to increase ageing in place.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 4 - Great housing choice and lifestyle options **Direction 24: Deliver well-planned rural residential housing areas**		
Action 24.1 - Facilitate the delivery of well-planned rural residential housing areas by: ▪ identifying new rural residential areas in a local growth management strategy or rural residential land release strategy endorsed by the Department of Planning and Environment; and ▪ ensure that such proposals are consistent with the Settlement Planning Guidelines: Mid and Far North Coast Regional Strategies (2007) or land release criteria (once finalised).	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Action 24.2 - Enable sustainable use of the region's sensitive coastal strip by ensuring new rural residential areas are located outside the coastal strip, unless already identified in a local growth management strategy or rural residential land release strategy endorsed by the Department of Planning and Environment.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*
Goal 4 - Great housing choice and lifestyle options **Direction 25 - Deliver more opportunities for affordable housing**		
Action 25.1 - Deliver more opportunities for affordable housing by	*Yes*	*Consistent although this action is not*

NORTH COAST REGIONAL PLAN 2036 GOALS, DIRECTIONS & ACTIONS	CONSISTENCY	COMMENTS
incorporating policies and tools into local growth management strategies and local planning controls that will enable a greater variety of housing types and incentivize private investment in affordable housing.		*directly relevant to the planning proposal*
Action 25.2 - Prepare guidelines for local housing strategies that will provide guidance on planning for local affordable housing needs.	*Yes*	*Consistent although this action is not directly relevant to the planning proposal*

ANNEXURE C

Council Local Strategy & Strategic Plans Consistency Checklist

APPENDIX 2: COUNCILS LOCAL STRATEGY AND STRATEGIC PLAN/S CONSISTENCY CHECKLIST

(Note - refer to section 4.4 of this template document)

Strategy/Strategic Plan	Relevant component/statement of consistency
The Clarence 2027	The only relevant objective is 3.1 – To have an attractive and diverse environment for business, tourism and industry. The proposal will enable a small business servicing the surrounding agricultural sector to be established.
Council's Delivery Program and Operational Plan	There are not strategies or actions directly relevant to the proposal.
Maclean Urban Catchment Local Growth Management Strategy 2011	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
South Grafton Heights Precinct Strategy	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence Valley Settlement Strategy	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Lower Clarence Retail Strategy (May 2007)	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Yamba Retail/Commercial Strategy (May 2002)	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence Valley Economic Development Strategic Plan	The Plan facilitates economic growth across the Clarence Valley, to which this proposal will make a minor contribution.
Clarence Valley Industrial Lands Strategy	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence Valley Affordable Housing Strategy	Not relevant. The planning proposal has no direct relevance to this strategy and vica versa.
Clarence Valley Council Biodiversity Management Strategy 2010	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence River Way Masterplan 2009	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence Valley Open Spaces Strategic Plan 2012	Not relevant. The planning proposal has no direct relevance to this strategy and vice versa.
Clarence Valley Local Strataegic Planning Statement 2020	Priority 13 of the Statement addresses the protection and enhancement of the local agricultural sector and the proposal will enable a business directly related to the surrounding agricultural sector to be established.

ANNEXURE D

State Environmental Planning Policy Consistency Checklist

Name of SEPP	Relevant/applicable?	Comment/statement of consistency
The following State Environmental Planning Policies (SEPPs) are current and whilst not all may be applicable to the Clarence Valley LGA they are all being acknowledged and some are considered in more detail where relevant.		
State Environmental Planning Policy (Primary Production) 2021	Yes	Part 2.1 of the SEPP lists its aims which "aim to facilitate the orderly economic use and development of lands for primary production." It is proposed to relocate 15 macadmaia trees within the plantation of 23,000 and establish a rural supplies business servicing, and so enhancing the local agriculatural sector.
State Environmental Planning Policy Resources and Energy 2021	No	N/a
State Environmental Planning Policy (Resilience and Hazards) 2021	Yes	Clause 4.6 of the Policy states *"a consent authority must not consent to the carrying out of any development on lands unless –* *a) It has considred whether the land is contaminated"* The clause further states:- "*Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subsection (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contamined land planning guidelines."* As the site has a long history of agricultural use including cane cultivation and the proposal involves a change of use, a Preliminary Site Investigation has been prepared and is at Annexure I. The investigation included a desktop study and soil sampling and testing and concluded: *"On the basis of the PSI findings, the investigation area is considered suitable for the proposed commercial use, from a contamination perspective."* The property is mapped as Coastal Use Area & Coastal Environmental Area, though the actual proposed shed site is only mapped as the latter. An assessment under Clause 2.10 & 2.11 of the Policy are attached at Annexure Q and concludes the proposal will have no impact on any of their issues therein.
State Environmental Planning Policy (Industry and Employment) 2021	No	N/A
State Environmental Planning Policy (Transport and Infrastructure) 2021	No	N/A
State Environmental Planning Policy (Biodiversity and Conservation) 2021	No	N/A
State Environmental Planning Policy (Planning Systems) 2021	No	N/A

Name of SEPP	Relevant/applicable?	Comment/statement of consistency
State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021	No	N/A
State Environmental Planning Policy (Precincts – Central River City) 2021	No	N/A – no longer applicable as Clause 6 Contamination and remediation to be considered in zoning or rezoning proposal was repealed on 17 April, 2020. Refer to section 9.1 Direction 2.6 Remediation of Contaminated Land in Annexure F below.
State Environmental Planning Policy (Precincts Western Parkland City)	No	N/A
State Environmental Planning Policy (Precincts – Regional) 2021	No	N/A
State Environmental Planning Policy (Housing)	No	N/A
State Environmental Planning Policy (Design Quality of Residential Apartment Development)	No	N/A
State Environmental Planning Policy (Building Sustainability Index BASIX) 2004	No	N/A
State Environmental Planning Policy (Exempt Compying Development Codes) 2008	No	N/A.

ANNEXURE E

SECTION 9.1 DIRECTIONS CONSISTENCY CHECKLIST

SECTION 9.1 DIRECTION	CONSISTENCY	COMMENTS
FOCUS AREA 1. PLANNING SYSTEMS		
1.1 Implementation of Regional Plans	Inconsistent but Justified	Consistency with the NCRP2036 is assessed at Annexure B and concludes the proposal is consistent with all actions except Action 6.4 where the inconsistency is justified as rural supplies are permissible outside of centres in the RU2 zone, and 11.1 where the inconsistency is justified as the proposed use is an agricultural related use which will benefit the local agricultural sector and both inconsistences are minor significance.
1.2 Development of Aboriginal Land Council land	N/A	Does not include aboriginal land Council land.
1.3 Approval and Referral Requirements	Consistent	Proposal does not require concurrence, consultation or referral to the Minister or public authority, or identify the development as designated..
1.4 Site Specific Provisions	Consistent	Does not include restrictive site specific planning controls.
FOCUS AREA 1: PLANNING SYSTEMS – PLACE BASED		
1.5 Parramatta Road Corridor Urban Transformation Strategy	N/A	This Direction does not apply to the Clarence Valley Council area.
1.6 Implementation of North West Priority Growth Area Land Use and Infrastructure Implementation Plan	N/A	This Direction does not apply to the Clarence Valley Council area.
1.7 Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A	This Direction does not apply to the Clarence Valley Council area.
1.8 Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A	This Direction does not apply to the Clarence Valley Council area..
1.9 Implementation of Glenfield to Macarthur Urban Renewal Corridor	N/A	This direction does not apply to the Clarence Valley Council area.
1.10 Implementation of Western Sydney Aerotropolis Plan	N/A	This Direction does not apply to the Clarence Valley Council area.
1.11 Implementation of Bayside West Precincts 2036 Plan	N/A	This Direction does not apply to the Clarence Valley Council area.
1.12 Implementation of Planning Principals for the Cooks Cove Precinct	N/A	This Direction does not apply to the Clarence Valley Council area.
1.13 Implementation of St Leonards and Crows Nest 2036 Plan	N/A	This Direction does not apply to the Clarence Valley Council area.

SECTION 9.1 DIRECTION	CONSISTENCY	COMMENTS
1.14 Implementation of Greater Macarthur 2040	N/A	This Direction does not apply to the Clarence Valley Council area.
1.15 Implementation of the Pyrmont Peninsula Plan Strategy	N/A	This Direction does not apply to the Clarence Valley Council area.
1.16 North West Rail Link Corridor Strategy	N/A	This Direction does not apply to the Clarence Valley Council area.
1.17 Implementation of the Bays West Place Strategy	N/A	This Direction does not apply to the Clarence Valley Council area.
FOCUS AREA 2: DESIGN AND PLACE		
FOCUS AREA 3: BIODIVERSITY AND CONSERVATION		
3.1 Conservation Zones	N/A	Does not involve conservation zones.
3.2 Heritage Zones	N/A	Does not involve heritage.
3.3 Sydney Drinking Water Catchment	N/A	This Direction does not apply to the Clarence Valley Council area.
3.4 Application of C2 and C3 Zones and Environmental Overlays in Far North Coast LEPs 26	N/A	Does not involve C2 & C3 zones.
3.5 Recreation Vehicle Areas	N/A	Does not involve recreation vehicle area.
FOCUS AREA 4: RESILIENCE AND HAZARDS		
4.1 Flooding	Consistent	A Flood Report has been prepared and is attached at Annexure K. It concludes that the shed is not likely to have any significant adverse effect or flood affection on other development or properties, and recommend 4 actions to ensure compliance with Councils flood prone land policy. An assessment under Clause 5.21 of CV LEP 2011 is attached at Annexure N. Based on analysis contained in the Flood Report; the proposal complies with Cl.5.21 and so is compliant with the relevant flood document referenced in Clause (1) of the Direction. The proposal does not contain provisions which permit any of the matters contained in Clause (3) (a)-(f) of the Direction, will not increase requirements for government spending on the matters listed in Clause (3)(g) as the building is non-habitable and won't be occupied by staff and customers as floods approach, or permit hazardous industries. Any materials stored in the shed (i.e. items for sale) which may be considered hazardous can be stored above the 1 in 100 plus 500mm freeboard level or removed prior to the arrival of the flood.
4.2 Coastal Management	Consistent	The proposal is not inconsistent with the matters listed in Clause (1) of the Direction; is not inconsistent with Clause (2) of the Direction as the site is not within a coastal vulnerability area or affected by coastal hazards; is not inconsistent with Clause (3) of the Direction as the land is not within coastal wetland or littoral rainforest area; and does not propose to alter the maps listed in Clause (4) of the Direction. An assessment of the proposal under Chapter 2 of the SEPP (Resilience & Hazards) 2021 is at Annexure E.

SECTION 9.1 DIRECTION	CONSISTENCY	COMMENTS
4.3 Planning for Bushfire Protection	N/A	Not on bushfire prone land.
4.4 Remediation of Contaminated Land	Consistent	The land has long-term agricultural use, particularly cane cultivation and soil subject to this Direction. The Preliminary Site Investigation at Annexure I concludes that in respect to contamination the site is suitable for the proposed use. As such, the proposal is consistent with the provisions of Clause (1) of the Direction and complies with Clause (2) through the Preliminary Site Investigation.
4.5 Acid Sulphate Soil	Inconsistent but Justified	The site is mapped as Class 3 ASS and Clause 7.1 of CV LEP 2011 requires an ASS Management Plan to be prepared if more than 1 tonne of soil is disturbed by works 1m below natural ground level or which will lower the watertable unless a preliminary assessment determines that a plan is not required. In this instance more than 1 tonne is likely to be disturbed by the removal of top soil from under the mound extensions and by the provision of underground services. None of these works will be more than 1m below natural ground level or impact on the watertable. Fill for the mound will be sourced from an approved quarry (as was fill for the existing mound) and will be certified and so contain no ASS. As a result, it is considered that an ASS Management Plan is not required. The proposal is inconsistent with the Direction as the site is mapped as ASS, will intensify the use of the site, and an ASS study has not been prepared other than the preliminary assessment under Clause 7.1 of CV LEP 2011. The inconsistency is justified by the Clause 7.1 assessment and under (b) of the Direction as it is of minor significance.
4.6 Mine Subsidence and Unstable Land	N/A	Does not involve subsidence unstable land.
FOCUS AREA 5: TRANSPORT AND INFRASTRUCTURE		
5.1 Integrating Land Use and Transport	N/A	Does not require integrating transport and land use.
5.2 Reserving Land for Public Purposes	N/A.	Does not involve reserving public land..
5.3 Development Near Regulated Airports and Defence Airfields	N/A	Does not involve land near regulated airports and defense airfields..
5.4 Shooting Ranges	N/A	Does not involve shooting ranges.
FOCUS AREA 6: HOUSING		
6.1 Residential Zones	Consistent	Does not involve the provision of housing.
6.2 Caravan Parks and Manufactured Home Estates	N/A	Does not involve caravan parks or MHE's.
FOCUS AREA 7: INDUSTRY AND EMPLOYMENT		
7.1 Business and Industrial Zones	N/A.	Will result in increased employment outside of an identified centre buy justified as rural supply businesses are permissible in some rural areas.
7.2 Reduction in non-hosted short-term rental	N/A	This Direction does not apply to the Clarence Valley Council area.

SECTION 9.1 DIRECTION	CONSISTENCY	COMMENTS
accommodation period		
7.3 Commercial and Retail Development along the Pacific Highway, North Coast	N/A.	Does not involve the Pacific Highway.
FOCUS AREA 8: RESOURCES AND ENERGY		
8.1 Mining, Petroleum Production and Extractive Industries	N/A	Does not involve these industries.
FOCUS AREA 9: PRIMARY PRODUCTION		
9.1 Rural Zones	Consistent	The proposal does not rezone the land to a residential, business, industrial or tourist zone and so is consistent.
9.2 Rural Lands	Inconsistent but Justified	The proposal involves the relocation of 15 trees to elsewhere in the plantation of 23,000 trees. An assessment of the Direction is at Annexure F.
9.3 Oyster Aquaculture	N/A	Does not impact on oyster aquaculture.
9.4 Farmland of State and Regional Significance on the NSW Far North Coast	N/A	The proposal does not rezone land for urban or rural residential use but does permit a business to be established on important farm land supporting the local agriculture sector.

ANNEXURE F

DIRECTION 9.2 RURAL LANDS ASSESSMENT

DIRECTION 9.2 RURAL LANDS ASSESSMENT

1. *A planning proposal must:-*
   a) *be consistent with any applicable strategic plan, including regional and district plans endorsed by the Planning Secretary, and any local strategic planning statement.*

      Comment: Inconsistencies with NCRP 2036 are minor and addressed in Section B (3) of this report. The inconsistences are locating a commercial business outside of a centre which is justified as rural supplies are a permissible use in some rural areas and protecting and enhancing the agricultural sector which the proposal does by locating a rural supplies business servicing that sector within an agricultural area albeit with insignificant loss of agricultural land.

   b) *consider the significance of agriculture and primary production to the State and rural communities*

      Comment: The rural supplies business will serve the local agricultural sector at a cost of the loss of an insignificant amount of agricultural land. Farms in the vicinity will benefit from reduced travel times and fuel use to source supplies.

   c) *identify and protect environmental values, including but not limited to, maintaining biodiversity, the protection of native vegetation, cultural heritage, and the importance of water resources*

      Comment: No impact, as only plantation trees require relocation.

   d) *consider the natural and physical constraints of the land, including but not limited to, topography, size, location, water availability and ground and soil conditions*

      Comment: No impact, existing mound approved by Council will be extended on a level site.

   e) *promote opportunities for investment in productive, diversified, innovative and sustainable rural economic activities*

      Comment: The proposal will permit the establishment of an economically viable business.

   f) *support farmers in exercising tier right to farm*

      Comment: The proposal will permit a business supporting the local agricultural sector.

g) *prioritise effort and consider measures to minimise the fragmentation of rural land and reduce the risk of land use conflict; particularly between residential and land uses and other rural land use.*

Comment: The proposed rural supplies business compliments, rather than conflicts with, the local agricultural sector.

h) *consider State significant agricultural land identified in chapter 2 of the State Environmental Planning Policy (Primary Production) 2021 for the purpose of ensuring the ongoing viability of this land*

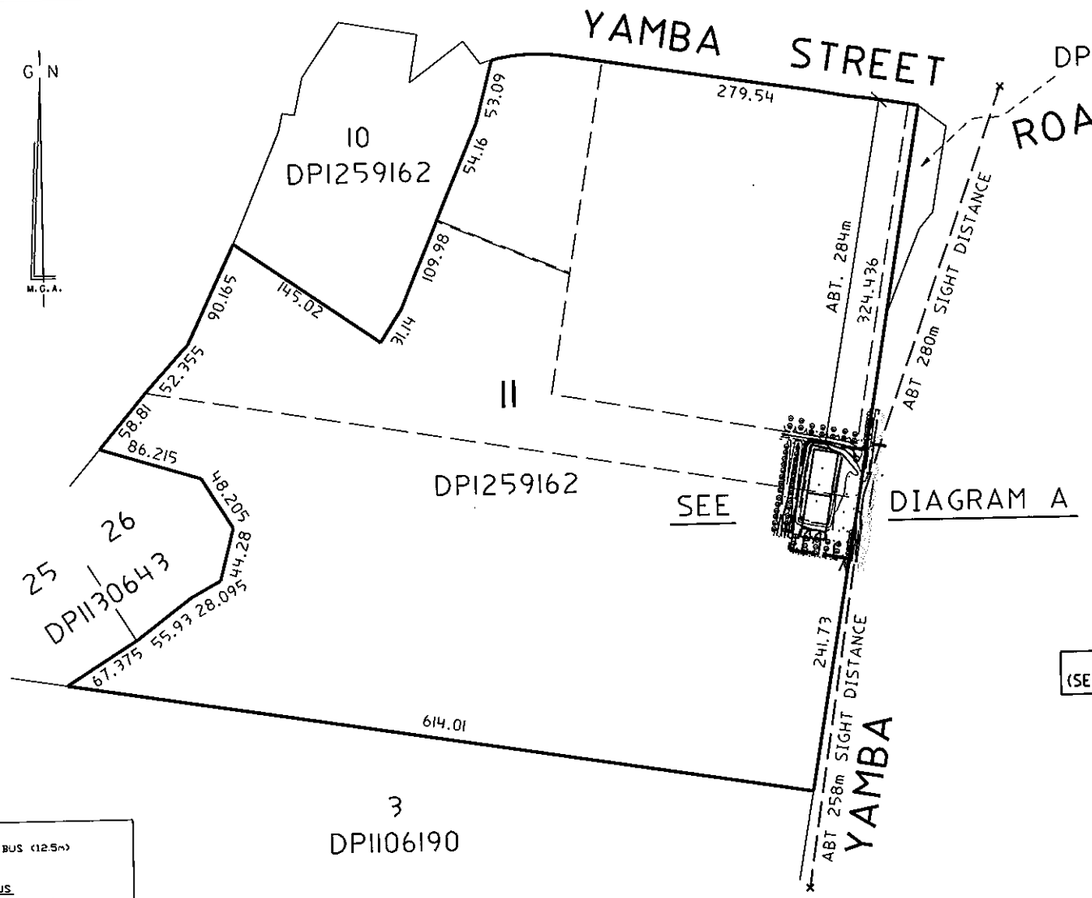
Comment: Located on important farm land but the relocating of 15 trees to elsewhere in the plantation is outweighed by the benefits of having an agricultural focussed business in this location.

i) *consider the social, economic and environmental interest of the community.*

Comment: Will have economic benefits for the local agricultural sector with no social or environmental impacts.

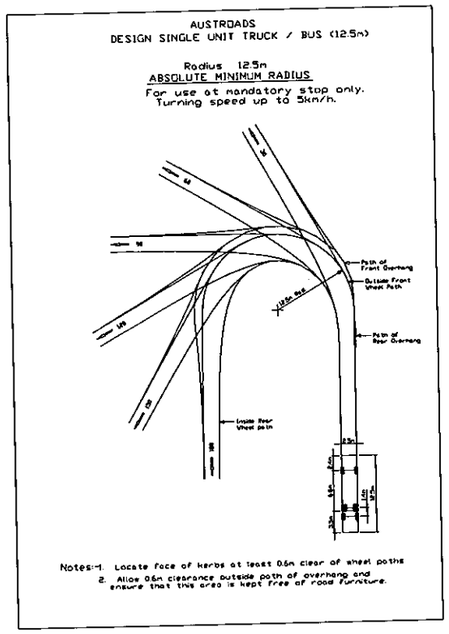
ANNEXURE G

CONCEPT PLAN



LOCALITY SKETCH

NOT TO SCALE



NOTES:

1. THIS PLAN WAS PREPARED FOR PRIDEL PTY LTD AS A DETAIL SURVEY FOR THE PURPOSE OF DESIGNING NEW STRUCTURES ON THE LAND & SHOULD NOT BE USED FOR ANY OTHER PURPOSES.
2. THE TITLE BOUNDARIES SHOWN HEREON WERE NOT MARKED BY A. FLETCHER & ASSOCIATES PTY. LTD. AT THE TIME OF THE SURVEY AND HAVE BEEN DETERMINED BY THE PLAN DIMENSIONS ONLY AND NOT BY FIELD MEASUREMENT. IN PARTICULAR, NO RELIANCE SHOULD BE PLACED ON THE INFORMATION ON THIS PLAN FOR ANY FINANCIAL DEALINGS ON THE LAND.
3. SERVICES HAVE NOT BEEN LOCATED.
4. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
5. SPOT HEIGHTS HAVE BEEN DETERMINED BY GNSS CORS METHODS.
6. THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.

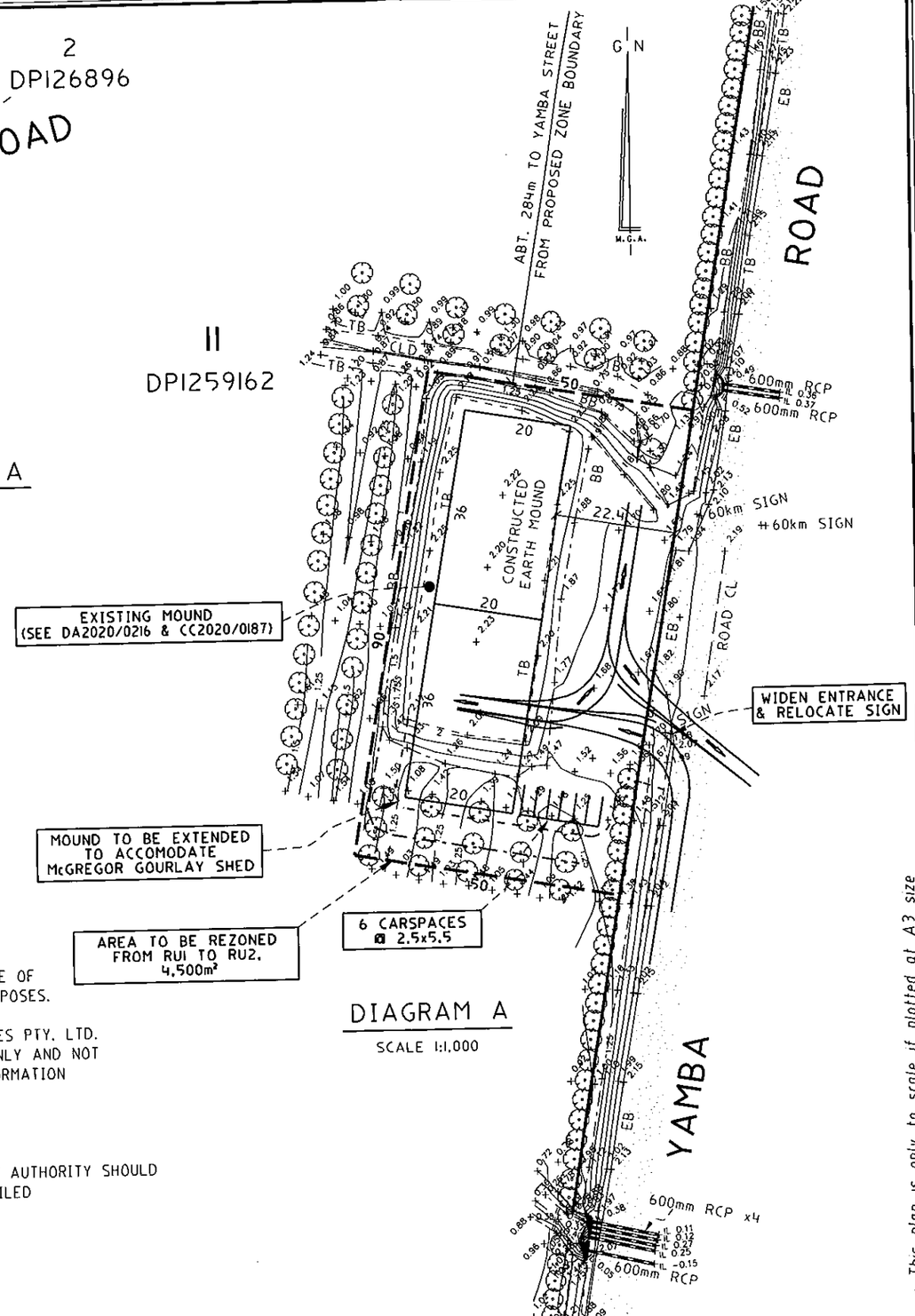


DIAGRAM A

SCALE 1:1,000

x This plan is only to scale if plotted at A3 size

KEY OF COMMON SERVICES

(O/H) E — OVERHEAD POWER POLE	ELECTRICITY
ELEVATED JOINT T PIT	TELSTRA
JUNCTION S MANHOLE	SEWER
HYDRANT H WATER METER W S/V STOP VALVE	WATER
	DRAINAGE
D PIT	INTERALLOTMENT DRAINAGE

A. FLETCHER & ASSOCIATES Pty. Ltd.

Land and Engineering Surveyors
Development Consultants

86 Victoria Street, P.O. Box 1213, Grafton. 2460
Ph.(02) 6642 3300, Fax (02) 6642 5990
Email: afletch@hotkey.net.au

PLAN OF DETAIL SURVEY OVER PART OF LOT II DP1259162
4 RIVER ROAD, PALMERS ISLAND

CLIENT: PRIDEL PTY LTD

SURVEY: BF	DRAWING No. 9561 SHED DA
DESIGN:	ORIGIN: PM67075 RL 1.528m (AHD) C.I. 0.25m
DRAWN: BF	Sheet No. of Sheets
DATE: 11.02.21	
SCALE: x 1:1,000	Revision: A
CAD REFERENCE Z:\9561\DGN\9561DASHED.dgn	

ANNEXURE H

AHIMS SEARCH

Office of Environment & Heritage
NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : river rd

Client Service ID : 568812

Date: 17 February 2021

Rob Donges

2/67 wooli st
yamba New South Wales 2464

Attention: Rob Donges

Email: rdongesyamba@icloud.com

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 11, DP:DP1259162 with a Buffer of 200 meters, conducted by Rob Donges on 17 February 2021.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

ANNEXURE I

PRELIMINARY SITE INVESTIGATION (ENV SOLUTIONS, Feb 2022)
& CONTAMINATION REPORT

ENV Solutions

ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

PRELIMINARY SITE INVESTIGATION

Yamba Road, Palmers Island, NSW 2464

ENV216557

For:

Pridel Pty Ltd

By:

ENV Solutions

Date:

18 February 2022

ENV Solutions

313 River Street, Ballina NSW 2478

T: 1300 861 325

E: admin@envsolutions.com.au

www.envsolutions.com.au

DOCUMENT CONTROL

Job No:	ENV216557
Client:	Pridel Pty Ltd
Filename:	216557_1822_Palmers Island SEPP55_20220218

	Name:	**Date:**	**Signature:**
Prepared By:	Robert Todhunter	18/02/2022	
Reviewed By:	Ben Pieterse	21/02/2022	
Approved By:			

Revision:	**Date:**	**Details:**

SCOPE OF ENGAGEMENT AND LIMITATIONS

This report has been prepared by ENV Solutions at the request of Pridel Pty Ltd for the purpose of a SEPP55 – Preliminary Site Investigation. No other parties may rely on the contents of this report for any purposes except those stated.

This report has been prepared based on the information provided to us and from other information obtained as a result of enquiries made by us. ENV accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this document for a purpose other than that described above.

No part of this report may be reproduced, stored, or transmitted in any form without the prior consent of ENV.

ENV declares that it does not have, nor expects to have, a beneficial interest in the subject project.

To avoid this advice being used inappropriately, it is recommended that you consult with ENV before conveying the information to another who may not fully understand the objectives of the report. This report is meant only for the subject site/project and should not be applied to any other.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

Below is a list of commonly used acronyms in this report:

COC	Chain of Custody
COPC	Chemical of Potential Concern
EILs	Ecological Investigation Levels
ENV	ENV Solutions
HILs	Health Investigation Levels
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
NSW EPA	New South Wales Environment Protection Authority
OCPs	Organochlorine Pesticides
PCBs	Polychlorinated Biphenyls
QA/QC	Quality Assurance and Quality Control

EXECUTIVE SUMMARY

ENV Solutions has undertaken a preliminary site investigation (PSI) for LOT 11 DP1259162, Yamba Road, Palmers Island, NSW, 2464 (hereafter referred to as the 'site'). ENV understands that the PSI has been requested to support a development application for construction of a commercial premises at the site, in accordance with the requirements under the State Environmental Planning Policy (SEPP) No 55.

The PSI included the following components:

- A desktop review of the site conditions, history and surrounding environment;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- An inspection of the site and adjacent areas of land;
- Development of a preliminary conceptual site model (CSM);
- Collection of soil samples from eight discrete sampling locations within the proposed commercial premises curtilage covering a total area of 4,500m^2 (the Investigation Area);
- Assessment of the soil analytical results against relevant Tier 1 investigation levels detailed in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013); and
- Assessment of the environmental suitability of the site for the proposed commercial land use.

From the desktop review, a preliminary CSM was developed. The preliminary CSM identifies potential contamination sources associated with the historic and current land uses; COPC which may be attributable to these sources; potential receptors of contamination on and near the site; and potential exposure pathways linking the contamination sources with the receptors.

The investigation area has historically been utilised as a farm 'pad'. The desktop study found the investigation area currently features a shed in the northern portion of the site, with the proposed construction of a similar sized shed adjacent to the south. Considering that the site has been used for agricultural purposes, potential sources of contamination primarily include the use of pesticides and fertilisers, along with petroleum products and hydraulic fluids from machinery. As such, identified COPC included organochlorine pesticides, polychlorinated biphenyl, petroleum compounds and metals (e.g. arsenic, lead), and potentially affected environmental media were deemed to primarily comprise surface soils.

A site inspection and soil sampling program were undertaken on 15 February 2022, with no olfactory or visible signs of contamination observed with exception of minor bitumen inclusions (location of sample S-8). Soil samples were collected from the upper soil stratum (0 to 0.2 mBGL) at eight (8) discrete locations, including from the batter, allowing access to 'deeper' soils below the recent fill level.

Laboratory analysis results reported COPC concentrations at all sample locations were less than the adopted assessment criteria which incorporated human and ecological health criteria for industrial/commercial landuse as presented in the *NEPM* (NEPC, 2013).

On the basis of the PSI findings, the investigation area is considered suitable for the proposed commercial use, from a contamination perspective.

1 INTRODUCTION

ENV Solutions was engaged by Pridel Pty Ltd (the Client) to complete a preliminary site investigation (PSI) for LOT 11 DP1259162, Yamba Road, NSW (hereafter referred to as the 'site'). ENV understands that the PSI has been requested to support a commercial business development application at the site in accordance with the requirements under the State Environmental Planning Policy (SEPP) No 55.

This PSI has been prepared in general accordance with the requirements of the NSW EPA (2020) document entitled *Consultants Reporting on Contaminated Land (Contaminated Land Guidelines)*, and the *Northern Rivers Regional Policy for the Management of Contaminated Land* (Northern Rivers Regional Councils, 2007). The completed 'Contamination Report Summary Table' has been provided as a separate document to this report.

1.1 Objective

The objective of the PSI was to assess the potential for contamination to exist at the site as a result of historical or current land uses; and if further investigation and/or remediation is required for the site to be considered suitable for proposed commercial land use, from a chemical perspective.

1.2 Scope of Works

The PSI included the following components:

- A desktop review of the site conditions, history and surrounding environment;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- An inspection of the site and adjacent areas of land;
- Development of a preliminary conceptual site model (CSM);
- Collection of soil samples from eight discrete sampling locations within the proposed commercial premises curtilage covering a total area of 4,500 m^2 (the Investigation Area);
- Assessment of the soil analytical results against relevant Tier 1 investigation levels detailed in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013); and
- Assessment of the environmental (chemical) suitability of the site for the proposed residential land use.

1.3 Technical and Regulatory Framework

The following technical and regulatory framework has been considered in preparing this PSI:

- Contaminated Land Management Act 1997 (CLM Act);
- Environmental Planning and Assessment Act 1979;
- *Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning & NSW Environment Protection Authority [EPA], 1998);
- *Sampling Design Guidelines* (NSW EPA, 1995);

- *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013);
- *Consultants Reporting on Contaminated Land (Contaminated Land Guidelines)* (NSW EPA, 2020);
- *AS 4482.1-2005 Guide to the sampling and investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds* (Australian Standard, 2005); and
- *Regional Policy for the Management of Contaminated Land* (Northern Rivers Regional Councils, 2007).

2 SITE DESCRIPTION AND CHARACTERISTICS

2.1 Site Identification Details

Table 1 provides an overview of relevant identification details for the site. The site location is depicted in Figure 1 and Figure 2, Appendix A.

Table 1: Site Details

Site Address	Yamba Road, Palmers Island, NSW 2464
Real Property Description	Lot 11, DP1259162
Site Area	4,500m^2
Investigation Area	4,500m^2 (proposed commercial premises curtilage)
Local Government Area	Clarence Valley Council
Existing Land Use	Agriculture
Proposed Land Use	Commercial

2.2 Zoning and Land Use

The site is zoned RU1 – Primary Production under the Clarence Valley Local Environment Plan (LEP) (2011). The following land uses are permitted without consent within an RU1 zone: environmental protection works; extensive agriculture; forestry; home-based childcare; home businesses; home industries; home occupations; horticulture; and viticulture. An excerpt of Clarence Valley Council's land-use zoning map is provided as Figure 3, Appendix A.

The site is currently used for agricultural activities. At the time of this investigation, the site features one large shed situated on a farm 'pad'.

2.3 Topography and Drainage

The investigation area comprises a filled area and has an elevation of approximately 4m Australian Height Datum (AHD) and is relatively flat. Surface water drains either to the west towards the Clarence River, or to the east into an ephemeral drainage line which feeds the Romiaka Channel. The Romiaka Channel is a tributary of the Clarence River.

2.4 Geology and Soils

The NSW Department of Planning, Industry and Environment's eSPADE v2.1 webapp maps the site to be situated within the Palmers Island soil landscape (9539pa). The Palmers Island soil landscape can is summarised as follows:

- Soils – deep (>200 cm), poorly drained Melacic Sulfidic/Sulfuric Redoxic Hydrosols (affinity with Prairie Soils) that consist of moderately well-drained Black Kandosols overlying wet Sulfidic/Sulfuric D horizons.

- Geology - Quaternary (Holocene) marine sediments of undetermined depth overlain by 1-2 m of alluvium derived from inland sediments. The marine sediments are generally potential acid sulfate soil materials.

Site observations during the sampling program noted medium grain, pale brown sandy clays, consistent with the fill reported to have been used on the site (refer Section 2.12).

2.5 Surface Water Bodies and Flooding

An unnamed ephemeral drainage line runs from the eastern side of Yamba Road, adjacent to the site flowing to the south, feeding into the Romiaka Channel, approximately 700m to the south-east of the site. The Romiaka Channel is a tributary of the Clarence River, and both the Romiaka Channel and Clarence River support freshwater ecosystems. The site is raised off the surrounding land, and surface water may also drain west over a flat field into the Clarence River.

The site has been raised from the surrounding landscape, but still sits at a low AHD, with poorly draining areas around it. The site may be prone to flooding in extreme weather events.

2.6 Groundwater Resources

A search of the WaterNSW Realtime groundwater database was completed on 10 February 2022. The search did not identify any licensed bores within a 500 m radius of the site of the site.

2.7 Surrounding Environment

The site is located south of the Palmers Island Village. Land use immediately surrounding the site can be summarised as:

- North: Agriculture (crop)
- South: Agriculture/ agriculture (crop)
- East: Agricultural (crop)
- West: Agricultural (crop)

2.8 Contaminated Land Record and Record of Notices

The NSW EPA Contaminated Land Record (EPA Notifications) contains a list of sites which have been notified to the NSW EPA under the Contaminated Land Management Act 1997 (CLM Act). Upon receiving the notification, the EPA then assesses the contamination status of the site and decides whether the contamination is significant enough to warrant formal regulation by the EPA in accordance with the provisions of the CLM Act. The NSW EPA Record of Notices contains selected information about sites which have been issued with a Regulatory Notice by the NSW EPA under the CLM Act.

The NSW EPA Contaminated Land Record and Record of Notices were searched on 10 February 2022. No records for the area of Palmers Island, were listed in the databases (NSW EPA, 2021).

2.9 POEO Act Public Register Search

The Protection of the Environment Operations Act 1997 (POEO Act) Public Register contains information about environment protection licences, licence applications, notices issued under the POEO Act, and pollution studies and reduction programs. The POEO Act Public Register was searched on 10 February 2022 for the area of Palmers Island, with no records identified on Yamba Road.

2.10 Cattle Dip Sites

The NSW DPI's cattle dip site locator was searched on 10 February 2022. One dip site was listed within a 1km radius of the site, at an unknown point on Middle Road. Middle road is located 400 m away from the site at its nearest point. Considering the minimum distance this cattle dip could be located from the site, the risk of any potential contamination from the dip site impacting the subject site is negligible.

2.11 Historical Aerial Photographs

A review of four (4) aerial photographs (dated 1966, 1971, 1989 and 1998) was undertaken to assess changes in land use at the site and immediate surrounds. Aerial photographs were accessed through the NSW Historical Imagery Viewer.

The review of historical aerial photographs indicates that the site has been used for agricultural activities (cropping) since at least 1966. Sometime between 1971 and 1989, a farm 'pad' was constructed at the site.

The review did not identify any historical structures in the investigation area. Historical land use of nearby properties include agriculture and rural residential. Copies of the historical aerial photographs are provided as Figure 4 to Figure 7, Appendix A.

2.12 Anecdotal Evidence

Information provided to ENV by the client indicates that additional fill material has recently been imported to the site to further raise the pad for future use. It is understood that some historically imported soil may comprise 'uncontrolled fill'. More recently, an earthworks contractor has imported Virgin Excavated Natural Material (VENM) from Newman Quarry, Jackybulbin NSW. A letter from the earthworks contractor stating that imported soil comprises VENM is provided as Appendix E.

Surrounding the site to the south, west and north are juvenile macadamia trees, roundup is used to control grass and weed growth between and under the trees. Biological control is largely used to control pests on the trees.

2.13 Site Inspection

A site inspection was undertaken by ENV on 15 February 2022, concurrent with the soil sampling program.

When the inspection was conducted, the investigation area featured a raised fill pad with a shed in the northern portion of the fill pad.

At the time of inspection there were no signs that would indicate that it had been contaminated (i.e. unnatural odours, soil discolouration or vegetation stress).

3 CONCEPTUAL SITE MODEL

The information presented in the previous sections pertaining to the site characteristics, history and surrounding environment, has been used to identify potential contamination sources from historic and current activities on the subject site; COPC associated with these sources, plausible receptors of contamination at the site and in off-site areas, and exposure pathways linking the contamination sources and receptors. This information is brought together in what is known as a conceptual site model, which is presented in the following sub-sections.

3.1 Contamination Sources

Historical and current land use of the site includes agricultural crop production. The area under investigation is currently largely cleared with a large industrial shed on the northern section of the site, with the proposed construction of an adjacent similar sized shed to its south. The desktop study and site history review found that there had been no previous structures present on the site. The site was though (prior to at least 1989) used for agricultural crop production, before being filled for use as a farm 'pad'. At least some fill materials imported to the pad are suspected to comprise uncontrolled fill.

Considering that the immediate surrounds of the site have previously and are currently being used for agricultural purpose and likely for parking of heavy machinery while used as a farm pad, potential sources of contamination include the use of pesticides and fertilisers on crops and leaks and spills of petroleum compounds and hydraulic fluids and import of contaminated soils (uncontrolled fill).

No other off-site sources of contamination, likely to have affected the environmental condition of the subject site, have been identified.

3.2 Chemicals of Potential Concern

The COPC associated with identified contamination sources are summarised in Table 3.

Table 3: Summary of Chemical of Potential Concern

Chemical	Comments
Metals and metalloids: ▪ Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.	Associated with the use of paint, mechanical equipment, and importation of uncontrolled fill material.
Organochlorine pesticides (OCPs), organophosphorus pesticides (OPPs), , and phenols	Associated with the importation of uncontrolled fill material, and application of pesticides beneath and around structures and hardstand.
Polychlorinated Biphenyls (PCB)	Associated with leaks and spills of hydraulic fluids
Petroleum Compounds: ▪ Total recoverable hydrocarbons (TRH): F1: C6-C10 minus BTEX; F2: >C10-C16 minus Naphthalene; F3: >C16-C34; and F4: >C34-C40 ▪ Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene (BTEXN) ▪ Polycyclic Aromatic Hydrocarbons (PAH)	Associated with leaks and spills of petroleum products.

It is noted that organophosphate pesticides (OPPs) and other pesticides may have historically been applied to areas used for agricultural activities, however, OPPs are known to rapidly degrade in soil over a period of several days to weeks.

3.3 Potentially Affected Environmental Media

Potentially affected environmental media include surface soils and fill horizons. While other environmental media may be affected by the contamination sources described above, surface and fill soils are considered the most likely media to be directly impacted by the presence of potential contamination sources. If the surface soils at the site are contaminated, it is possible that also other environmental media have been impacted, which will then require further investigation.

3.4 Potential Migration and Exposure Pathways

Potential migration pathways depend on a number of factors including the chemical properties of the contaminant, soil texture, topography, and hydraulic gradient of shallow groundwater etc.

The significance of different exposure pathways depends on the chemical properties of the contaminant.

Potential migration pathways for identified COPC include:

- Volatilisation;
- Generation of dust;
- Infiltration, percolation and groundwater flow;
- Stormwater run-off; and
- Plant uptake and bioaccumulation.

Subsequently, potential exposure pathways include:

- Direct contact (ingestion or dermal) with contaminated environmental media;
- Inhalation of dust and vapours;
- Ingestion of food grown in contaminated soils; and
- Direct toxicity for plants and terrestrial/aquatic ecosystems.

3.5 Potential Receptors of Contamination

Potential receptors of contamination have been identified as:

- Future staff and visitors (customers) on-site;
- Future construction workers on-site; and
- Terrestrial ecosystems on-site.

It is noted that the potential for off-site receptors to be exposed to contamination originating from the site depends on the nature and extent of the contamination, soil properties, local surface water and groundwater hydrology, and distance to the receptors. If contamination is identified on-site, additional investigations may be required to identify and assess the risk to potential off-site receptors.

4 DATA QUALITY OBJECTIVES

4.1 Step 1: State the Problem

The purpose of the preliminary site investigation is to assess the potential for contamination to exist as a result of current or previous land use within the 4,500m^2 investigation area.

4.2 Step 2: Identify the Decision(s)

The principal decisions (questions) for this investigation are:

- What are the current and previous land uses at the site and is there a potential for contamination to exist as a result of associated land use activities?
- What are the COPC associated with current and historical land uses?
- Do the concentrations of COPC exceed relevant assessment criteria for the protection of potential receptors?
- Is the investigation area suitable for proposed commercial land use from a contamination perspective, or is further investigation and/or remediation required?

4.3 Step 3: Inputs into the Decision(s)

To address the decisions in Step 2, the following activities were completed:

- A desktop review of relevant and available information, to gain an understanding of site characteristics, history and potential receptors, as well as to identify gaps in the existing data;
- An inspection of the site and surrounding areas; and
- Soil sampling and laboratory analysis of COPC.

4.4 Step 4: Define the Study Boundaries

The study boundaries covered the area of the proposed building envelope, with a total area of 4,500m^2 The extent of the soil sampling program is referred to as the 'investigation area', and is depicted in Figure 2, Appendix A.

In terms of temporal boundaries, the site inspection and soil sampling program were undertaken over the course of one day, and therefore provides a snapshot only of the current soil conditions.

4.5 Step 5: Develop the Analytical Approach (Decision Rule)

The number of discrete soil sampling locations required for site characterisation was determined in accordance with NSW EPA (1995) and with reference to the size of the investigation area. Samples were collected using a systematic sampling pattern and involved the collection of soil samples from eight (8) discrete locations, including from the fill pad batter, allowing for horizontal access to 'deeper' soils beneath the recent filling level. Soil samples were collected from the upper soil stratum (0-0.15 m below ground level [BGL]) and laboratory analysis results compared to generic (Tier 1) investigation levels presented in the *NEPM* (NEPC, 2013).

To characterise the site, the following statistical measures were adopted, with the results compared to the adopted assessment criteria:

- Maximum observed contaminant concentration of each COPC

The precision (reproducibility), accuracy, representativeness and overall reliability of the data sets were assessed using the indicators presented in Table 2. This included the collection of appropriate quality assurance (QA) samples during soil sampling activities, and internal QA testing conducted by the analytical laboratories. The QA sampling regime was adopted in accordance with the *NEPM* (NEPC, 2013) and Australian Standard (1999 and 2005).

Table 2: Summary of QA Sample Parameters for Assessing Data Reliability

QA Sample Type	Media	Frequency	Acceptable Range of Results
Field Samples			
Intra-laboratory duplicate	Soil	1 per 20 primary samples	Relative percent difference (RPD) ≤50%
Inter-laboratory duplicate	Soil	1 per 20 primary samples	RPD ≤50%
Laboratory Samples			
Internal duplicate	Soil	1 per 10 primary samples	Laboratory specified
Matrix Spike	Soil	1 per sampling batch (20 samples)	Laboratory specified
Surrogate Spike	Soil	1 per sampling batch (20 samples)	Laboratory specified
Control Sample	Soil	1 per sampling batch (20 samples)	Laboratory specified
Laboratory Blank	Soil	1 per sampling batch (20 samples)	Results <LOR

4.6 Step 6: Specify the Performance or Acceptance Criteria

Assessment criteria were adopted from the Tier 1 investigation levels outlined in *Schedule B(1) Guideline on Investigation Levels For Soil and Groundwater* (NEPC, 2013) and included:

- Health investigation levels (HILs): exposure setting D – commercial/industrial. The HIL-D levels were selected based on the proposed commercial business land use.
- Health screening levels (HSLs): exposure setting D – commercial/industrial, consistent with current and proposed land use. HSLs for a sand soil texture and a sample depth of 0-1 mBGL were adopted.
- Ecological investigation levels (EILs) for commercial and industrial land-use. This land-use setting is broadly equivalent to the HIL-D land use scenario. Site-specific EILs were calculated for selected metals (considered to be 'aged' contamination (≥2 years)) using the NEPM toolbox/EIL calculator. For these calculations, reasonably expected default values were adopted for pH, cation exchange capacity (CEC), clay content and total organic carbon (TOC), based on modelled soil properties in eSPADE[1] (Environment, Energy and Science, 2021). Generic EILs presented in the NEPM (2013) were also adopted for selected chemicals.

[1] Soil properties used for EIL calculations: CEC of 15 cmolc/kg dwt, pH of 5, clay content of 25%, and organic carbon content (OC) of 2%.

- Ecological screening levels (ESLs): exposure setting – commercial/industrial, consistent with current and proposed land use. ESLs also considered a coarse soil texture and a sample depth of 0-2 mBGL.

4.7 Step 7: Optimise the Design for Obtaining Data

The sampling regime was designed to collect soil data from both fill used within the investigation area and historic surface material with reference to the proposed land use and environmental setting of the site. The design incorporated guidance and requirements presented in NEPC (2013) and Australian Standard (2005), as well as other current industry standards relating to the objectives of the assessment. To optimise the design of the investigation, the sampling and analytical program was devised to specifically target information required to meet the PSI objectives.

5 SITE INVESTIGATION METHODOLOGY

5.1 Overview

A site inspection and soil sampling program were undertaken on 15 February 2022. The aim of the site inspection was to assess the current condition of the site; and record any visible signs of contamination and potential contamination sources not identified by the desktop review.

With exception of minor bitumen inclusions at the location of sample S-8, no observable discolouration, vegetation stress or anthropogenic refuse was observed, and no noticeable unnatural odours encountered.

5.2 Soil Sampling and Analysis Plan

The soil sampling program comprised the collection of soil samples from the upper soil stratum (0-0.2 mBGL) at eight discrete locations within the investigation area. Samples collected from the batter allowed for access to soils below the fill layer.

Sampling locations are depicted in Figure 2, Appendix A. The soil sampling methodology is summarised in Table 3.

Table 3: Soil Sampling Methodology

Activity	Details
Sampling	▪ Soil samples were collected from eight (8) discrete locations established based on a systematic sampling pattern across the investigation area. ▪ At each discrete sampling location, soil was loosened with a shovel and samples collected using a fresh pair of disposable nitrile gloves. Organic matter such as leaves and twigs were removed from the sample as much as practically possible prior to collection. ▪ Samples were collected by an appropriately qualified Environmental Scientist from ENV Solutions.
Field QA Samples	▪ Field duplicates were collected and analysed in accordance with NEPC (2013) and Australian Standard (2005). ▪ One set of QA duplicates was collected.
Laboratory Analysis	▪ All primary and duplicate samples were analysed for identified COPC.
Sample Preservation and Transport	▪ Samples were placed in laboratory-supplied sample jars, with no headspace. ▪ Each sample was labelled with the project number, sampling date and unique sample identifier, and immediately placed into a chilled esky with ice, pending dispatch to the laboratory. ▪ Samples were transported to a laboratory accredited by the National Association of Testing Authorities (NATA) for the required analysis, and with accompanying chain of custody (COC) documentation.
Decontamination Procedure	▪ Any reusable equipment was cleaned between sampling locations using a triple wash procedure. This involved washing with phosphate-free detergent (Decon 90), and final rinsing in potable water.

5.3 Justification of Sampling Design and Analysis Plan

Justification for the sampling design and analysis plan is as follows:

- The number of discrete sampling locations was established in accordance with the *Sampling Design Guidelines* (NSW EPA, 1995) and based upon the proposed building envelope of 2,000 m^2.
- The design plans provided by the client indicate that an area of up to 4,500m^2 will be rezoned from RU1 (primary production and rural) to RU2 (rural landscape) under this DA.
- The sampling density was considered appropriate in consideration of the adopted COPC, the likely diffuse application of these chemicals to soils (if at all) (i.e. no hotspots of contamination likely) and the results reported for the site areas where no development or cropping has occurred.
- Field-based sampling locations, including stratum and depth, were based on the results of the site history review and identified COPC.
- COPC include contaminants that are persistent in the environment; and are recognised as having been used historically in the Northern Rivers region for the following purposes:
    - Broadscale application of pesticides and fertilisers for agricultural production (i.e., OCPs, metals)
    - Usage of mechanical equipment and hydraulic fluids (i.e. petroleum compounds and PCBs).

6 RESULTS

6.1 Field Results

Observed surface soils consisted of well drained medium grain, pale brown Krasnozems (sandy clays), with some gravels mixed into the fill in the northern section of the site. With exception of minor bitumen inclusions at the location of sample S-8, no observable discolouration, vegetation stress or anthropogenic refuse was observed and no noticeable unnatural odours encountered.

Photos taken during site inspection and soil sampling procedures provided in Appendix B.

6.2 Laboratory Analysis Results

Laboratory analysis results for soil samples are tabulated and provided in Appendix D, along with the laboratory issued reports and certificates.

A review of the analytical results indicates that all reported COPC concentrations are less than the adopted assessment criteria for all samples, with the majority of analytes occurring at concentrations below the limit of reporting or consistent with background levels. No statistical analysis of the dataset was required.

6.3 QA/QC Results

Quality assurance and quality control (QA/QC) involved an assessment of the completeness, comparability, representativeness, precision and accuracy of the investigation and collected data. QA/QC indicators and results are presented in Table 4.

Table 4: Summary of QA/QC Indicators and Results

QA/QC Indicator	Compliance	Details
Details of Sampling Team	Yes	▪ Field sampling was undertaken by an ENV appropriately qualified Environmental Scientist, Craig Helbig.
Sampling Plan Adhered To	Yes	▪ All planned samples were collected and hence a complete dataset obtained.
Decontamination of Equipment	Yes	▪ Reusable equipment was cleaned between sampling locations using a triple wash procedure. This involved preliminary washing with potable water, further washing with phosphate-free detergent (Decon 90), and final rinsing in clean, de-ionised water.
Sample Collection	Yes	▪ Laboratory supplied jars used (no headspace). ▪ Collected samples placed in cooler box with ice. ▪ Each sample labelled with a unique sample ID. ▪ Samples collected in accordance with the methodology detailed in Section 5.2.
Chain of Custody	Yes	▪ COC was completed with full and demonstrable delivery of samples. COC documentation is presented in Appendix C.
Holding Times	Yes	▪ Samples analysed within the laboratory specified holding times.

QA/QC Indicator	Compliance	Details
Sufficient Duplicates Analysed	Yes	▪ Field duplicate (intra-laboratory) collected in accordance with NEPC (2013) and Australian Standard (2005), with a ratio exceeding 2 duplicates per 20 primary samples. ▪ Field duplicates were collected at sampling location S4.
Field Duplicate Results – Relative Percentage Difference (RPD)	Yes	▪ RPD calculated between the primary sample and each of the corresponding duplicates. The calculated RPDs are tabulated and presented in Appendix D. ▪ The calculated RPDs QA1A and sample S4 exceeded 50% (>50%) for the analytes of arsenic, chromium, copper, lead and zinc.
Analyses NATA accredited	Yes	▪ Samples analysed by Envirolab in Sydney, which is NATA accredited for the analyses required.
Laboratory Internal QC	Yes	▪ Satisfactory internal quality control data reported. ▪ Analytical methods used are presented in the Laboratory Reports, Appendix C.

6.4 Summary of Data Usability

The calculated RPDs for sample pair S4 and QA1A exceeded the acceptable threshold of ≤ 50% for the analytes of arsenic, chromium, copper, lead and zinc. On the basis that the measured concentrations of these analytes in both samples were either near to the limit of reporting or substantially lower than the guideline values in accordance with *NEPM* (NEPC, 2013), the reproducibility, accuracy and representativeness of the analytical results is considered suitable to meet the objectives of this assessment and there remains sufficient confidence in the primary dataset. All other calculated RPDs were less than the threshold of ≤ 50% providing further confidence in the dataset and in turn the finding of this report.

7 DISCUSSION AND CONCLUSION

Historical and current land use of the site includes agricultural crop farmland. The investigation area comprises a raised fill pad with a newly constructed shed in the northern portion.

The desktop study and site history review did not identify any previous or current on-site structures excluding the existing shed. Considering that the site has been used for agricultural purposes, potential sources of contamination primarily include the use of pesticides and fertilisers and use of heavy machinery and import of uncontrolled fill. As such, identified COPC included organochlorine pesticides, metals (e.g. arsenic, lead), petroleum compounds and PCBs and potentially affected environmental media were deemed to primarily comprise surface and fill soils.

A site inspection and soil sampling program were undertaken on 15 February 2022, with no olfactory or visible signs of contamination observed. Soil samples were collected from the upper soil stratum (0 to 0.2 mBGL) at eight (8) discrete locations, including from the batter to access 'deeper' soils.

Considering that soils showed no exceedances of relevant criteria and with reference to the homogeneity of soils at the site (imported fill) along with site observations, the samples taken within the building footprint are deemed to appropriately represent the larger area to be rezoned within this DA.

Laboratory analysis results reported that the maximum COPC concentrations at all sample locations were less than the adopted assessment criteria presented in the *NEPM* (NEPC, 2013) and selected based on the proposed land use (commercial)

On the basis of the PSI findings, the investigation area is considered suitable for the proposed commercial use, from a contamination perspective.

8 REFERENCES

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APPENDIX A

Figures

LEGEND

Site Location

0 100m 200m

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Figure 1 – Site Location
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

LEGEND

- Investigation Area (approximate)
- Sample Locations (approximate)
- Current Shed Location (approximate)
- Proposed Shed Location (approximate)

0 30m 60 m

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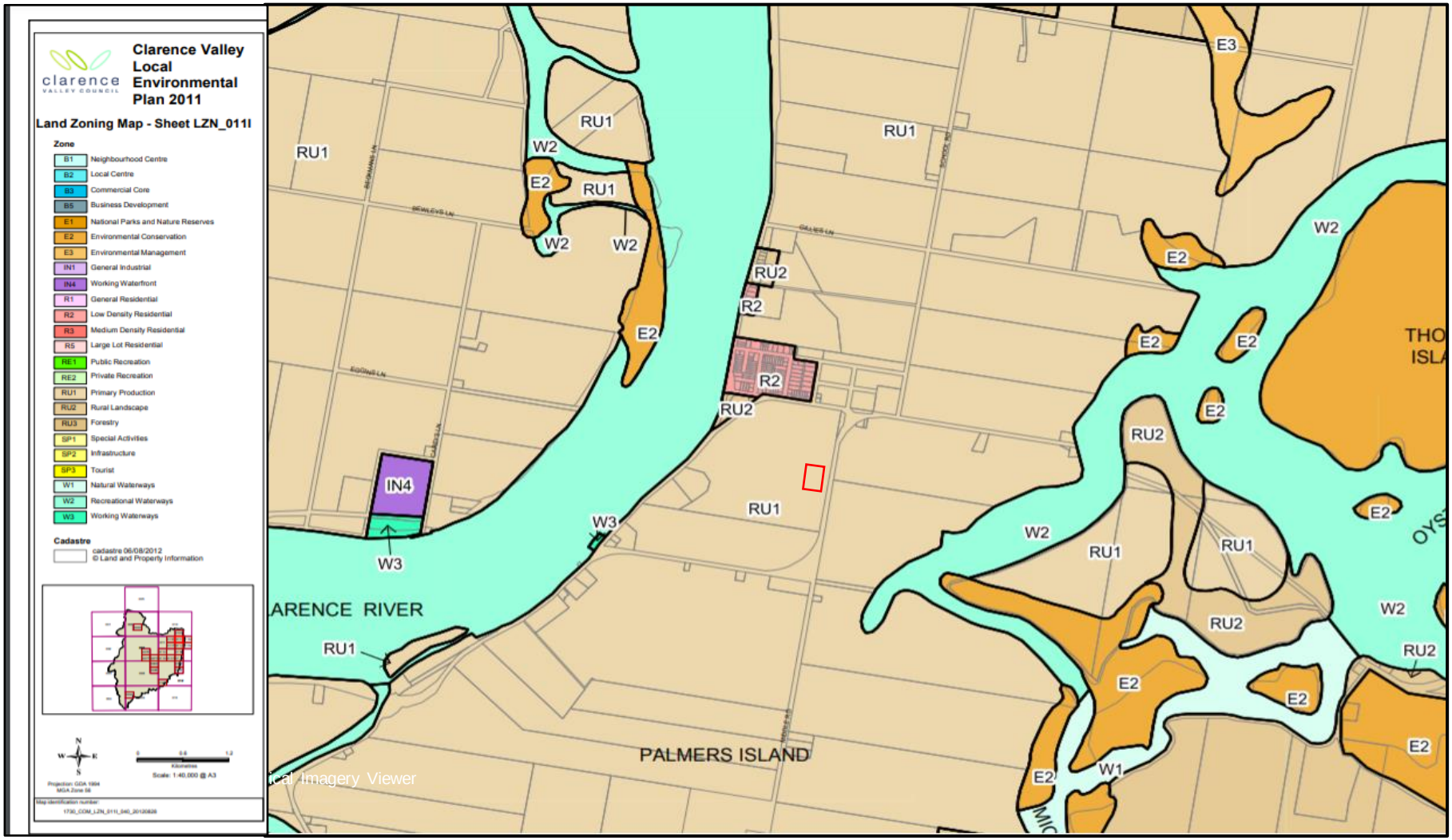
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 2 – Sample Locations
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557



LEGEND

Investigation area (approximate)

Figure 3 – Land Use Zoning Map
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

LEGEND

Investigation area
(approximate)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 4 – Historical Aerial Photograph from 1966
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

LEGEND

Investigation area (approximate)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 5 – Historical Aerial Photograph from 1971
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

LEGEND

Investigation area
(approximate)

ENV Solutions
ENVIRONMENTAL | ASBESTOS | REMEDIATION | RESOURCE RECOVERY

Figure 6: Historical Aerial Photograph from 1989
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

LEGEND

Investigation area (approximate)

Figure 7: Historical Aerial Photograph from 1998
Lot 11 Yamba Road, Palmers Island, NSW 2464

Project: Preliminary Site Investigation
Client: Pridel Pty Ltd
ENV Project Number: 216557

APPENDIX B

Photolog

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PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Pridel Pty Ltd	Lot 11 Yamba Road, Palmers Island, NSW 2464	Preliminary Site Investigation

Photo No.	Date
1	18/02/2022

Description

Image looking north parallel to Yamba Road, showing the existing shed and farmland adjacent to the site.

Photo No.	Date
2	18/02/2022

Description

Image showing surface soils

ENV Solutions
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PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Pridel Pty Ltd	Lot 11 Yamba Road, Palmers Island, NSW 2464	Preliminary Site Investigation

Photo No.	Date
3	1/02/2022

Description
Image showing surface soils

Photo No.	Date
4	1/02/2022

Description
Image showing drainage location to the north of the site, adjacent to the northern end of the existing shed.

PHOTOGRAPHIC LOG

Client Name	Site Location	Project
Pridel Pty Ltd	Lot 11 Yamba Road, Palmers Island, NSW 2464	Preliminary Site Investigation

Photo No.	Date
5	1/02/2022

Description

Image looking south parallel to Yamba Road, showing the site for the proposed new shed and adjacent farmland.

Photo No.	Date
6	1/02/2022

Description

Image looking south along the boundary of the site and the back of the existing shed.

APPENDIX C

Laboratory Results and Documentation

	Metals							
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	4	0.4	1	1	1	0.1	1	1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand								
NEPM 2013 calculated site specific EIL - Comm/Ind	160		1300	350	1800		730	1000
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil								
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	3,000	900		240,000	1,500	730	6,000	400,000
Field ID **Date**								
S1 **1/02/2022**	5	<0.4	14	10	11	<0.1	7	34
S2 **1/02/2022**	<4	<0.4	3	2	4	<0.1	<1	7
S3 **1/02/2022**	4	<0.4	11	11	10	<0.1	7	41
S4 **1/02/2022**	4	<0.4	11	9	9	<0.1	8	24
S5 **1/02/2022**	<4	<0.4	5	<1	6	<0.1	1	7
S6 **1/02/2022**	<4	<0.4	8	4	7	<0.1	4	22
S7 **1/02/2022**	<4	<0.4	7	<1	6	<0.1	1	4
S8 **1/02/2022**	<4	<0.4	4	5	5	<0.1	3	15

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

	BTEX							TPH			
	Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C9	C10-C14	C15-C28	C29-C36
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1	0.2	0.5	1	2	1	3	25	50	100	100
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand		3 | 3 | 3 | 3					230				
NEPM 2013 calculated site specific EIL - Comm/Ind	370										
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil		75	135	165			180				
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil											
Field ID	**Date**										
S1	**1/02/2022**										
S2	**1/02/2022**										
S3	**1/02/2022**										
S4	**1/02/2022**										
S5	**1/02/2022**										
S6	**1/02/2022**										
S7	**1/02/2022**										
S8	**1/02/2022**	<1	<0.2	<0.5	<1	<2	<1	<3	<25	<50	<100	280

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

	TPH							
	C6-C10	C10-C16	C16-C34	C10-C36 (Sum of total)	C10-C40 (Sum of total)	C34-C40	F1 (C6-C9 minus BTEX)	F2 (>C10-C16 minus Naphthalene)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	25	50	100	50	50	100	25	50
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand							260 | 370 | 630	
NEPM 2013 calculated site specific EIL - Comm/Ind								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil		170	1,700			3,300	215	170
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								
Field ID **Date**								
S1 **1/02/2022**								
S2 **1/02/2022**								
S3 **1/02/2022**								
S4 **1/02/2022**								
S5 **1/02/2022**								
S6 **1/02/2022**								
S7 **1/02/2022**								
S8 **1/02/2022**	<25	<50	280	280	580	300	<25	<50

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

		PAH										
		Benzo(b+j+k)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.2	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand												
NEPM 2013 calculated site specific EIL - Comm/Ind												
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil							1.4					
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil												
Field ID	**Date**											
S1	**1/02/2022**											
S2	**1/02/2022**											
S3	**1/02/2022**											
S4	**1/02/2022**											
S5	**1/02/2022**											
S6	**1/02/2022**											
S7	**1/02/2022**											
S8	**1/02/2022**	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

	PAH					Asbestos	NA	Halogenated Benzenes
	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of positives)	Asbestos fibres	Moisture Content	Hexachlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Detect	%	mg/kg
EQL	0.1	0.1	0.1	0.1	0.05		0.1	0.1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand								
NEPM 2013 calculated site specific EIL - Comm/Ind		370						
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil								
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								80
Field ID **Date**								
S1 **1/02/2022**							22	<0.1
S2 **1/02/2022**							11	<0.1
S3 **1/02/2022**							20	<0.1
S4 **1/02/2022**							22	<0.1
S5 **1/02/2022**							12	<0.1
S6 **1/02/2022**							10	<0.1
S7 **1/02/2022**							9.1	<0.1
S8 **1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.05	0	2.6	<0.1

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

		Organochlorine Pesticides									
		4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand											
NEPM 2013 calculated site specific EIL - Comm/Ind										640	
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil											
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil											3,600
Field ID	**Date**										
S1	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S2	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S3	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S4	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S5	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S6	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S7	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S8	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

		Organochlorine Pesticides									
		Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand											
NEPM 2013 calculated site specific EIL - Comm/Ind											
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil											
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil						100			50		2,500
Field ID	**Date**										
S1	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S2	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S3	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S4	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S5	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S6	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S7	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S8	**1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

	PCBs							
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand								
NEPM 2013 calculated site specific EIL - Comm/Ind								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil								
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								7
Field ID **Date**								
S1 **1/02/2022**								
S2 **1/02/2022**								
S3 **1/02/2022**								
S4 **1/02/2022**								
S5 **1/02/2022**								
S6 **1/02/2022**								
S7 **1/02/2022**								
S8 **1/02/2022**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Environmental Standards

2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 calculated site specific EIL - Comm/Ind

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

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Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: ENV Solutions	**Client Project Name / Number / Site etc (ie report title):** 216557
Contact Person: Craig Helbig (CAH)	
Project Mgr: CAH	**PO No.:**
Sampler: CAH	**Envirolab Quote No. :**
Address: 313 River St, Ballina, NSW	**Date results required:** Or choose: **standard** *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: **Mob: 0455151426**	**Report format: esdat**
Email: craig@envsolutions.com.au	**Lab Comments:**

Sample information					Tests Required														Comments
Envirolab Sample ID	**Client Sample ID or information**	**Depth (m)**	**Date sampled**	**Type of sample**	**OCPs/8 metals**	**Combo 5a**													**Provide as much information about the sample as you can**
1	S1	0-0.2	1/02/2022	Soil	x														
2	S2	0-0.2	1/02/2022	Soil	x														
3	S3	0-0.2	1/02/2022	Soil	x														
4	S4	0-0.2	1/02/2022	Soil	x														
5	S5	0-0.2	1/02/2022	Soil	x														
6	S6	0-0.2	1/02/2022	Soil	x														
7	S7	0-0.2	1/02/2022	Soil	x														
8	S8	0-0.2	1/02/2022	Soil		x													
9	QA1	0-0.2	1/02/2022	Soil	x														
—	QA1A	0-0.2	1/02/2022	Soil	Please forward to Eurofins SYD for analysis of OCPs/8 metals														

ENVIROLAB 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200
Job: 287983
Date Received: 3/2/22
Time Received: 1030
By: AB
Cool/Ambient
Cooling:
Security:

Relinquished by (Company): ENV Solutions	**Received by (Company):** ENV SYD
Print Name: Craig Helbig	**Print Name:** ABM
Date & Time: 2/2/2022 - 4 pm	**Date & Time:** 3/2/22 1030
Signature:	**Signature:** AB

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: 7 (if applicable)
Transported by: Hand delivered / courier

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	ENV Solutions Pty Ltd
Attention	Craig helbig

Sample Login Details

Your reference	216557
Envirolab Reference	287933
Date Sample Received	03/02/2022
Date Instructions Received	03/02/2022
Date Results Expected to be Reported	10/02/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	9 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	7
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils
S1-0-0.2				✓		✓	
S2-0-0.2				✓		✓	
S3-0-0.2				✓		✓	
S4-0-0.2				✓		✓	
S5-0-0.2				✓		✓	
S6-0-0.2				✓		✓	
S7-0-0.2				✓		✓	
S8-0-0.2	✓	✓	✓	✓	✓	✓	✓
QA1-0-0.2				✓		✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 287933

Client Details

Client	ENV Solutions Pty Ltd
Attention	Craig helbig
Address	313 River St, Ballina, NSW, 2478

Sample Details

Your Reference	**216557**
Number of Samples	9 Soil
Date samples received	03/02/2022
Date completed instructions received	03/02/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	10/02/2022
Date of Issue	10/02/2022

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Steven Luong, Organics Supervisor
Thomas Beenie, Lab Technician
Thomas Lovatt, Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		287933-8
Your Reference	UNITS	S8
Depth		0-0.2
Date Sampled		1/02/2022
Type of sample		Soil
Date extracted	-	04/02/2022
Date analysed	-	04/02/2022
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	102

svTRH (C10-C40) in Soil		
Our Reference		287933-8
Your Reference	UNITS	S8
Depth		0-0.2
Date Sampled		1/02/2022
Type of sample		Soil
Date extracted	-	04/02/2022
Date analysed	-	10/02/2022
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	280
Total +ve TRH (C10-C36)	mg/kg	280
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	280
TRH >C_{34} -C_{40}	mg/kg	300
Total +ve TRH (>C10-C40)	mg/kg	580
Surrogate o-Terphenyl	%	76

PAHs in Soil		
Our Reference		287933-8
Your Reference	UNITS	S8
Depth		0-0.2
Date Sampled		1/02/2022
Type of sample		Soil
Date extracted	-	04/02/2022
Date analysed	-	04/02/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	97

Organochlorine Pesticides in soil						
Our Reference		287933-1	287933-2	287933-3	287933-4	287933-5
Your Reference	UNITS	S1	S2	S3	S4	S5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022	04/02/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	82	79	84	84	83

Organochlorine Pesticides in soil					
Our Reference		287933-6	287933-7	287933-8	287933-9
Your Reference	UNITS	S6	S7	S8	QA1
Depth		0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	79	85	86

PCBs in Soil		
Our Reference		287933-8
Your Reference	UNITS	S8
Depth		0-0.2
Date Sampled		1/02/2022
Type of sample		Soil
Date extracted	-	04/02/2022
Date analysed	-	04/02/2022
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	85

Acid Extractable metals in soil						
Our Reference		287933-1	287933-2	287933-3	287933-4	287933-5
Your Reference	UNITS	S1	S2	S3	S4	S5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Arsenic	mg/kg	5	<4	4	4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	3	11	11	5
Copper	mg/kg	10	2	11	9	<1
Lead	mg/kg	11	4	10	9	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	<1	7	8	1
Zinc	mg/kg	34	7	41	24	7

Acid Extractable metals in soil					
Our Reference		287933-6	287933-7	287933-8	287933-9
Your Reference	UNITS	S6	S7	S8	QA1
Depth		0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Arsenic	mg/kg	<4	<4	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	7	4	12
Copper	mg/kg	4	<1	5	8
Lead	mg/kg	7	6	5	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	1	3	7
Zinc	mg/kg	22	4	15	25

Moisture						
Our Reference		287933-1	287933-2	287933-3	287933-4	287933-5
Your Reference	UNITS	S1	S2	S3	S4	S5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	05/02/2022	05/02/2022	05/02/2022	05/02/2022	05/02/2022
Moisture	%	22	11	20	22	12

Moisture					
Our Reference		287933-6	287933-7	287933-8	287933-9
Your Reference	UNITS	S6	S7	S8	QA1
Depth		0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		1/02/2022	1/02/2022	1/02/2022	1/02/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/02/2022	04/02/2022	04/02/2022	04/02/2022
Date analysed	-	05/02/2022	05/02/2022	05/02/2022	05/02/2022
Moisture	%	10	9.1	2.6	18

Asbestos ID - soils		
Our Reference		287933-8
Your Reference	UNITS	S8
Depth		0-0.2
Date Sampled		1/02/2022
Type of sample		Soil
Date analysed	-	07/02/2022
Sample mass tested	g	Approx. 60g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date extracted	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	[NT]
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	86	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	79	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	92	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	87	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date extracted	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	[NT]
Date analysed	-			10/02/2022	[NT]	[NT]	[NT]	[NT]	10/02/2022	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate o-Terphenyl	%		Org-020	85	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	287933-8
Date extracted	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	97	99
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	95
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	93
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	118
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	125
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	133
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	83	81
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	122	108
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	86	[NT]	[NT]	[NT]	[NT]	102	115

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	287933-8
Date extracted	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	78
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	93
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	87
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	87
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	96
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	115
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	126
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	98
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	114
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	102
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	84	[NT]	[NT]	[NT]	[NT]	84	84

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	287933-8
Date extracted	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	91	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	84	[NT]	[NT]	[NT]	[NT]	84	84

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	287933-8
Date prepared	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Date analysed	-			04/02/2022	[NT]	[NT]	[NT]	[NT]	04/02/2022	04/02/2022
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	95	93
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	97	83
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	89
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	105
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	88
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	100	110
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	87
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	93

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Sample 287933-8 was sub-sampled from a jar provided by the client.

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Company Name: ENV Solutions Pty Ltd
Address: 1/35 North Creek Road
Ballina
NSW 2478

Project Name: 216557
Project ID: 216557

Order No.:
Report #: 860708
Phone: 0421 519 354
Fax:

Received: Feb 3, 2022 2:23 PM
Due: Feb 10, 2022
Priority: 5 Day
Contact Name: Craig Helbig

Eurofins Analytical Services Manager : John Nguyen

Sample Detail						Organochlorine Pesticides	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254								
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QA1A	Feb 01, 2022		Soil	S22-Fe08179	X	X	X
Test Counts						1	1	1

ENV Solutions Pty Ltd
1/35 North Creek Road
Ballina
NSW 2478

Attention: **Craig Helbig**

Report **860708-S**
Project name 216557
Project ID 216557
Received Date Feb 03, 2022

Client Sample ID			**QA1A**
Sample Matrix			**Soil**
Eurofins Sample No.			**S22-Fe08179**
Date Sampled			**Feb 01, 2022**
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	102
Tetrachloro-m-xylene (surr.)	1	%	122
Heavy Metals			
Arsenic	2	mg/kg	3.5
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	11
Copper	5	mg/kg	7.7
Lead	5	mg/kg	8.5
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	7.6
Zinc	5	mg/kg	32

Client Sample ID			QA1A
Sample Matrix			Soil
Eurofins Sample No.			S22-Fe08179
Date Sampled			Feb 01, 2022
Test/Reference	LOR	Unit	
% Moisture	1	%	17

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Feb 07, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Feb 07, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: ENV Solutions Pty Ltd
Address: 1/35 North Creek Road
Ballina
NSW 2478

Project Name: 216557
Project ID: 216557

Order No.:
Report #: 860708
Phone: 0421 519 354
Fax:

Received: Feb 3, 2022 2:23 PM
Due: Feb 10, 2022
Priority: 5 Day
Contact Name: Craig Helbig

Eurofins Analytical Services Manager : John Nguyen

Sample Detail						Organochlorine Pesticides	Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254								
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QA1A	Feb 01, 2022		Soil	S22-Fe08179	X	X	X
Test Counts						1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	76			70-130	Pass	
4.4'-DDE	%	90			70-130	Pass	
4.4'-DDT	%	87			70-130	Pass	
a-HCH	%	82			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	87			70-130	Pass	
d-HCH	%	93			70-130	Pass	
Dieldrin	%	94			70-130	Pass	
Endosulfan I	%	90			70-130	Pass	
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	94			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	88			70-130	Pass	
g-HCH (Lindane)	%	90			70-130	Pass	
Heptachlor	%	101			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide			%	82			70-130	Pass	
Hexachlorobenzene			%	90			70-130	Pass	
Methoxychlor			%	78			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	93			80-120	Pass	
Cadmium			%	100			80-120	Pass	
Chromium			%	98			80-120	Pass	
Copper			%	100			80-120	Pass	
Lead			%	95			80-120	Pass	
Mercury			%	80			80-120	Pass	
Nickel			%	101			80-120	Pass	
Zinc			%	102			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Fe09099	NCP	%	92			70-130	Pass	
4.4'-DDD	S22-Fe09099	NCP	%	79			70-130	Pass	
4.4'-DDE	S22-Fe09099	NCP	%	95			70-130	Pass	
4.4'-DDT	S22-Fe09099	NCP	%	95			70-130	Pass	
a-HCH	S22-Fe09099	NCP	%	92			70-130	Pass	
Aldrin	S22-Fe09099	NCP	%	92			70-130	Pass	
b-HCH	S22-Fe09099	NCP	%	92			70-130	Pass	
d-HCH	S22-Fe09099	NCP	%	93			70-130	Pass	
Dieldrin	S22-Fe09099	NCP	%	107			70-130	Pass	
Endosulfan I	S22-Fe09099	NCP	%	95			70-130	Pass	
Endosulfan II	S22-Fe09099	NCP	%	87			70-130	Pass	
Endosulfan sulphate	S22-Fe09099	NCP	%	92			70-130	Pass	
Endrin	S22-Fe09099	NCP	%	104			70-130	Pass	
Endrin ketone	S22-Fe09099	NCP	%	102			70-130	Pass	
g-HCH (Lindane)	S22-Fe09099	NCP	%	92			70-130	Pass	
Heptachlor	S22-Fe09099	NCP	%	97			70-130	Pass	
Heptachlor epoxide	S22-Fe09099	NCP	%	86			70-130	Pass	
Hexachlorobenzene	S22-Fe09099	NCP	%	98			70-130	Pass	
Methoxychlor	S22-Fe09099	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe08215	NCP	%	76			75-125	Pass	
Cadmium	S22-Fe08215	NCP	%	81			75-125	Pass	
Chromium	S22-Fe08215	NCP	%	91			75-125	Pass	
Copper	S22-Fe08215	NCP	%	80			75-125	Pass	
Lead	S22-Fe08215	NCP	%	80			75-125	Pass	
Mercury	S22-Fe09378	NCP	%	101			75-125	Pass	
Nickel	S22-Fe08215	NCP	%	79			75-125	Pass	
Zinc	S22-Fe08215	NCP	%	83			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Fe09401	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Aldrin	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Fe09401	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Fe09401	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Fe08214	NCP	mg/kg	4.2	6.4	40	30%	Fail	Q15
Cadmium	S22-Fe08214	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Fe08214	NCP	mg/kg	16	26	47	30%	Fail	Q15
Copper	S22-Fe08214	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S22-Fe08214	NCP	mg/kg	6.5	8.9	31	30%	Fail	Q15
Mercury	S22-Fe08214	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Fe08214	NCP	mg/kg	5.1	7.8	42	30%	Fail	Q15
Zinc	S22-Fe08214	NCP	mg/kg	18	30	50	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe08175	NCP	%	7.2	7.2	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

John Nguyen	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

APPENDIX D

Field QA Results - RPD Calculations

				Metals							
				Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				4	0.4	1	1	1	0.1	1	1
Lab Report Number	**Field ID**	**Date**	**Matrix Type**								
287933	**S4**	**1/02/2022**	**Soil**	4	<0.4	11	9	9	<0.1	8	24
287933	**QA1**	**1/02/2022**	**Soil**	4	<0.4	12	8	10	<0.1	7	25
RPD				0	N/A	9	12	11	N/A	13	4
287933	**S4**	**1/02/2022**	**Soil**	4	<0.4	11	9	9	<0.1	8	24
860708	**QA1A**	**1/02/2022**	**Soil**	2	0.4	5	5	5	0.1	5	5
RPD				67	N/A	75	57	57	N/A	46	131

Notes:
RPD: Relative Percent Difference (50% Variance Threshold)
EQL: Estimate Quantaition Limit
N/A: RPD Could Not Be Calculated

				NA	OCPs									
				Moisture Content	Hexachlorobenzene	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT
				%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lab Report Number	**Field ID**	**Date**	**Matrix Type**											
287933	**S4**	**1/02/2022**	**Soil**	22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
287933	**QA1**	**1/02/2022**	**Soil**	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD				20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
287933	**S4**	**1/02/2022**	**Soil**	22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
860708	**QA1A**	**1/02/2022**	**Soil**	17	<0.05	<0.05								
RPD				26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
RPD: Relative Percent Difference (50% Variance Threshold)
EQL: Estimate Quantaition Limit
N/A: RPD Could Not Be Calculated

				OCPs											
				DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lab Report Number	**Field ID**	**Date**	**Matrix Type**											
287933	**S4**	**1/02/2022**	**Soil**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
287933	**QA1**	**1/02/2022**	**Soil**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
287933	**S4**	**1/02/2022**	**Soil**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
860708	**QA1A**	**1/02/2022**	**Soil**											
RPD				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
RPD: Relative Percent Difference (50% Variance Threshold)
EQL: Estimate Quantaition Limit
N/A: RPD Could Not Be Calculated

APPENDIX E

VENM Letter

SA & JL ANDERSON PTY LTD

ABN: 75122698524
17 Citrus Close
JAMES CREEK NSW 2463

01/10/2020

To whom it may concern,

SA & JL Anderson Pty Ltd (Anderson Tipper Hire) have supplied VENM Fill Sand (virgin excavated natural material) to Lot 11 DP 1259162 Yamba Road, Palmers Island NSW 2463. The product was supplied from Newman Quarry, Jackybulbin NSW.

DA Approval Number: DA 2020/0216
Name: PRIDEL P/L

Yours sincerely

Scott Anderson

SA & JL Anderson Pty Ltd
Anderson Tipper Hire
17 Citrus Close
JAMES CREEK NSW 2463
0408452230

ANNEXURE J

SUMMARY TABLE

Northern Rivers Contaminated Land Program - Contamination Report Summary Table

Property description and address	**Page no.**
e.g. Lot and DP, map of entire site as well as the investigation area(s)	**3, Appendix A**
Conceptual Site Model	
e.g. Contamination sources, receptors and exposure pathways between sources and receptors	7-9
Sampling and Analysis Quality Plan (SAQP)	
Justification for the sampling design (how will the data be representative and relevant)	13
Frequency and pattern of sampling	12
Justification for analytical plan (especially if the project uses composite samples)	12
Data quality objectives	12
Sampling Methodology	
Description of sample methodology	12
Description of media sampled and sample depth interval (e.g. borehole logs, or soil description)	14
Notable contaminant concentrations e.g. maximum specific concentrations and validation results	
Soil and groundwater concentrations and comparison against appropriate EIL, HIL, HSL and GILs etc.	Appendix C
Discussion on QA/QC	15
Statistical analysis	Appendix C, D
Nature of works carried out	
e.g. soil investigation, ground water investigation, excavation, on-site remediation, removal of soil, validation sampling, backfilled with imported soil with ENM classification	1
Nature and extent of residual contamination	
Contamination identified in investigation, contamination unable to be remediated within the scope of the work, or areas not assessed	14
Waste removed	
During remediation (details of classification and disposal)	N/A
Remediation Summary	
What was removed or treated? Was it successful, is residual contamination remaining? Is there a need for an ongoing Environmental Management Plan?	N/A
Appropriately experienced and qualified practitioners	
Practitioner is appropriately experienced and qualified with adequate professional indemnity (PI) insurance for the work undertaken	YES
Statement of suitability	
The land is considered suitable for [residential, residential with limited soil access, open space, industrial/commercial] land use, other (describe).	YES
Report details	
Report title: SEPP 55 PSI Report Palmers Island	
Produced by: Declan Campey	**ABN: 98 640 278 977**
Provided to Client: **22 / 02 / 2022**	
I Declan Campey of ENV Solutions state that I have undertaken this assessment in accordance with the guidelines made and approved by the NSW Environment Protection Authority.	
Name: Declan Campey	**Signature: DC**
Contact details: Declan.campey@envsolutions.com.au	0431055009

This project has been funded by the New South Wales Government through the EPA's Contaminated Land Management Program

ANNEXURE K

FLOOD IMPACT ASSESSMENT REPORT (STRUCTERRE, JANUARY 2022)

NORTHERN RIVERS STRUCterre consulting engineers

Residential Geotechnical Commercial & Infrastructure

Inspect & Investigate Energy Assessment Environmental

Flood Impact Assessment Report

4 River Road

Palmers Island, NSW

Lot 11 in DP 1259162

28th January 2022

Bruce Hammond

BEng. Civil. MIE (Aust) NER

Garth Cook

BEng. Civil. (Hons)

NORTHERN RIVERS STRUCterre consulting engineers

TABLE OF CONTENTS

NORTHERN RIVERS STRUCterre consulting engineers

1. Introduction

Structerre Consulting Engineers being competent to practice in the field of stormwater design & flood mitigation has been engaged to prepare a Flood Impact Assessment to accompany a Development Application submitted to Clarence Valley Council for the proposed filling within Lot 11 in DP1259162.

The subject site has been identified by Council as flood affected according to and shown on council's online mapping system "Intramaps".

The following documentation has been used in the preparation of this Report;

- Detailed Survey, A. Fletcher & Associates Pty Ltd, 11.02.2021. Rev A.
- Flood Information available on Clarence Valley Council's "Intramaps".
- Google Earth Aerial Imagery

This report provides flooding assessment specific to the subject site.

2. Site Specific Flood Information

The flood information for the site is provided by Clarence Valley Council's "Intramaps"& Detailed Survey by, A. Fletcher & Associates Pty Ltd. Due to the size of the lot the 100 year flood level varies, the figures shown below are for the area immediately adjacent to the location of the proposal.

- 20 Year Flood Level (min) RL.2.18m
- 20 Year Flood Level (max) RL.2.29m

Note that the 20 Year Flood Level of RL2.18m has been adopted for this Assessment.

- 100 Year Flood Level (min) RL.2.51m
- 100 Year Flood Level (max) RL.2.61m

Note that the 100 Year Flood Level of RL2.51m has been adopted for this Assessment.

- 100 Year Flood Velocity 0.18m/s (rear of mound)
- 100 Year Flood Velocity 0.26m/s (front of mound)

Note that the since no data is available for 20 year flood velocities the 100 year data will be used.

- Natural Ground Level RL.0.92 m - RL.1.08m, average taken as RL.1.0m (rear of mound)
- Natural Ground Level RL.1.38 - RL.1.82 average taken as RL.1.6m (front of mound)
- Ground Level RL.2.25m on existing mound/ pad.
- Percentage of existing site inundated by the 100 year flood, 100% by councils Intramaps.

Figure 1.
20 Year Flood Levels
https://maps.clarence.nsw.gov.au/intramaps97/

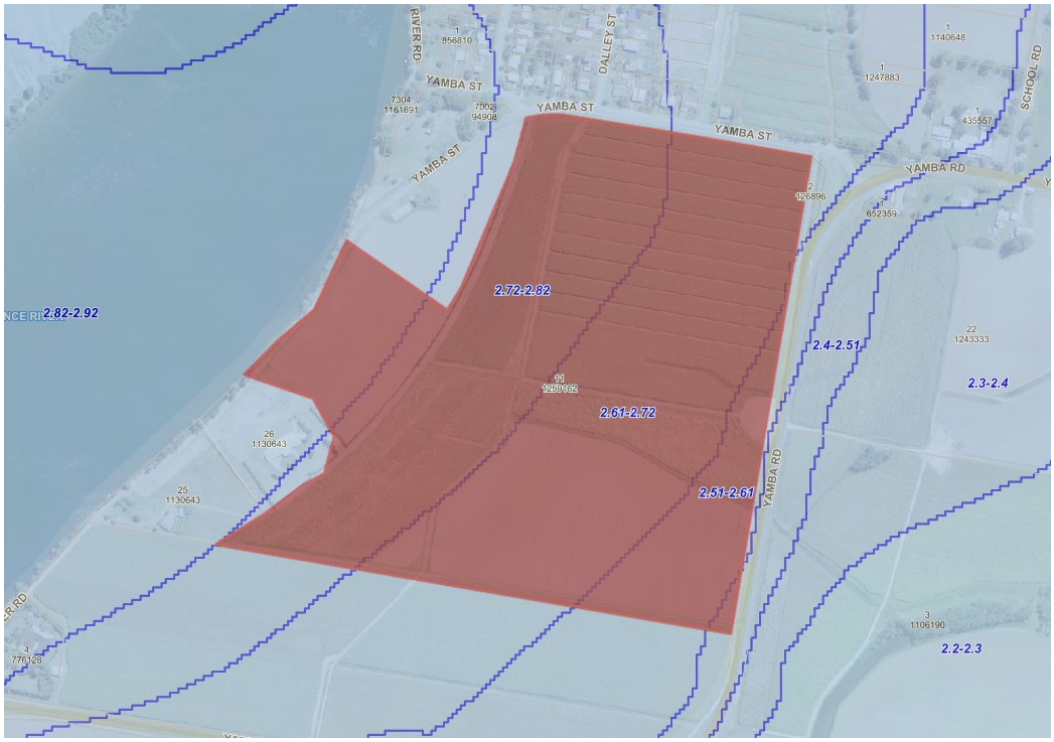

Figure 2.
100 Year Flood Levels
https://maps.clarence.nsw.gov.au/intramaps97/

3. Council Requirements

Council requires that clause 7.3(3) from the CVC LEP is addressed prior to giving consent;

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development—

(a) is compatible with the flood hazard of the land, and

(b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

(c) incorporates appropriate measures to manage risk to life from flood, and

(d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

4. Existing Site

The existing site consists of recently built farm shed constructed on an existing flood mound/pad (DA 2020/0216 & CC2020/0187). The pad is at a level of about RL2.25 The location is immediately adjacent to the 60km/hr speed on Yamba Road as you enter the Palmers Island school zone. See attached Concept Dwg. No. 9561 SHED DA showing details. The site area is some 4,500m2. The entire lot is 41.53ha.

The site generally falls toward the west, away from Yamba Road. Open drains exist on the western and northern sides of the existing mound, there is partial open drainage on the north east and south east corners which forms part of the road drainage, this drains under the road to the east.

Figure 3. Site Plan.
Google Earth, viewed 28.01.2022.

5. Proposed Development

A proposed rural supplies business is to be constructed adjacent to a recently built farm shed. The proposed rural supplies shed will be the same size (36m x 20m) as the existing shed.
The proposed development involves the filling to provide earthworks pads/ flood mounds at a level above the 20 year flood.

The pad will be filled to an average of RL2.25m, RL2.18 min, which is the 20 year flood level. The carpark will be filled to RL1.75m, which is above the 5 year flood event.

6. Flood Impact Assessment

Each of council's requirements set out in chapter three will addressed below.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development—

(a) is compatible with the flood hazard of the land.

The Velocity of the Floodwaters is relativity slow, the following shows the Velocity x Depth Product for the site for the 20 and 100 year flood. Note that it is unlikely for any personnel to be at the rear of the mound in any flood event.

20 Year

Rear of Mound (bottom)
20 Year Flood Velocity, 0.18m/s, Average Overland Flood Depth 1.18m.
Velocity x Depth product of 0.21m²/s

Front of Mound (bottom)
20 Year Flood Velocity, 0.26m/s, Average Overland Flood Depth 0.58m
Velocity x Depth product of 0.15m²/s.

Carpark
20 Year Flood Velocity, 0.26m/s, Average Overland Flood Depth 0.43m.
Velocity x Depth product of 0.11m²/s

All Velocity x Depth products are below 0.4 m²/s at bottom of the mound making it a low hazard situation for adults for the 20 year flood, however the flood level would present a danger to children and the elderly. The carpark presents a low hazard in the 20 year flood event. (See Figure 4).

100 Year

Rear of Mound (bottom)
100 Year Flood Velocity, 0.18m/s, Average Overland Flood Depth 1.51m.
Velocity x Depth product of 0.27m²/s

Front of Mound (bottom)
100 Year Flood Velocity, 0.26m/s, Average Overland Flood Depth 0.91m
Velocity x Depth product of 0.24m²/s.

Top of the mound
100 Year Flood Velocity, 0.26m/s, Average Overland Flood Depth 0.26m
Velocity x Depth product of 0.07m²/s.

Carpark
100 Year Flood Velocity, 0.26m/s, Average Overland Flood Depth 0.76m.
Velocity x Depth product of 0.2m²/s

All Velocity x Depth products are below 0.4 m²/s at bottom of the mound making it a low hazard situation at the front of the mound for adults and extreme hazard for adults at the rear of the mound for the 100 year flood, the flood level would present a danger to children and the elderly. The carpark presents a low hazard for adults and extreme for children and the elderly in the 100 year flood event (See Figure 4).

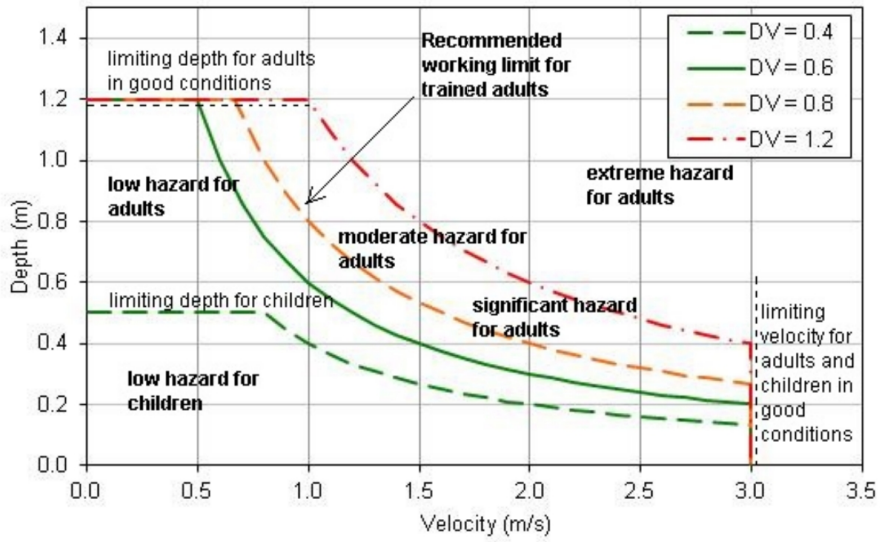

Figure 4
Safety Criteria for People in Variable Flow Conditions
The Australian Rainfall and Runoff: A guide to flood estimation (ARR), Book 6 - Flood Hydraulics
Figure 6.7.4. Safety Criteria for People in Variable Flow Conditions Cox et al. (2010)

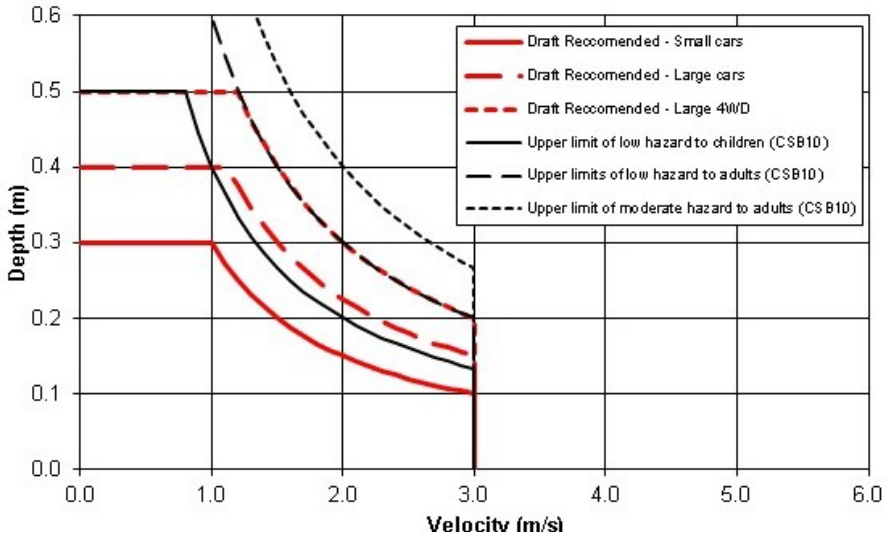

Figure 5
Criteria for Vehicles in Variable Flow Conditions
The Australian Rainfall and Runoff: A guide to flood estimation (ARR), Book 6 - Flood Hydraulics
Figure 6.7.6. Interim Safety Criteria for Vehicles in Variable Flow Conditions (Shand et al.,2011)

With the pad level at a minimum of RL.2.25m this puts the flood depth at 0.26m in a 100 year flood. Filling to these levels will reduce the risk and allow the top of the mound/pad to be compatible with the flood hazard of the land in the 20 year flood event and low hazard in the 100 year event.

(b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties.

Due to the immense size of the floodplain the filling of the site will have no noticeable effect on flood levels, even if we just considered the size of Lot 11 (41.53ha) there would only be a rise of 1.7mm, when the whole floodplain size is taken into account this measurement would be insignificant. It is expected that the fill material will be sourced within the same floodplain, therefore there will be no net loss in volume storage. The fill shall be certified VENM.

The existing open drains shall remain as is.

Due to no net loss in volume storage, maintaining of the existing boundary drains and relatively low 100 year flood velocities the proposed development is not likely to have any significantly adverse affect or potential flood affectation of other development or properties.

(c) incorporates appropriate measures to manage risk to life from flood.

Evacuation

The sites position does present difficulties as the front and rear of the property is impacted by the 20 and 100 year flood overland flow paths, however the site will only be used as a commercial property and therefore will only be inhabitable during normal working hours. Workers are unlikely to be at the premises if a flood event is forecast. The 20 and 100 year flow depth at the road is expected to be approximately 0.58m and 0.91m deep respectively, which is considered unsafe for vehicles, (see Figure 5), however adequate flood warning is available to allow safe and orderly evacuation prior to flooding without increased reliance upon the SES or other authorised emergency services personnel.

Flood Risk Management Plan

For any building where personnel may be located it is recommended that a Flood Risk Management Plan be implemented.

1. At the first signs that there may be a rainfall event, check reliable weather reports (eg Bureau of Meteorology) for any possible forecast warnings issued. If any storm warnings have been forecast, a Flood Risk Management Plan must be actioned.

2. During flood events many local streets and roads may be cut off by floodwaters that may make the escape by vehicle extremely difficult. Travelling through floodwaters on foot should be avoided at all times. Travelling by vehicles through floodwaters is dangerous as obstructions can be hidden under the floodwaters.

3. It is recommended that during any flood event, staying within the building as much as practical is always the safest option and do no evacuate the building unless instructed by the State Emergency Services (SES) or police.

4. Develop your own ‘Flood Plan’ generally in accordance with this Flood Risk management Plan.

5. If flood levels appear to approach the building:

- Move important documents, personal items, photographs and vital medical supplies to a safe and easily accessible place with a pre-prepared ‘Emergency Flood Kit’
- Gather medicines, mobile phones, first aid kit, special papers, battery operated torch and radio, fresh water, canned food, water proof or easy dry clothing all packed in one location
- Put on strong shoes, raise any items within the home that may be damaged by water to as high a level as possible, with electrical items on top. Turn off any large electrical items at the power point such as a TV that cannot be raised.

6. In the event that flood waters appear that they may enter the building:

- Turn off electricity at the switchboard
- Turn off gas and water at the meter
- Block toilet bowls with a strong plastic bag filled with earth or sand
- Cover drains in showers, baths, and laundry with a string plastic bag filled with earth or sand.

7. In the case of a medical or life-threatening emergency ring 000 as normal.

8. A laminated copy of the Flood Risk Management Plan should be permanently attached to an inside cupboard door in the main area and to the inside of the electrical meter box

(d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

During the filling of the site, sediment & erosion control devices shall be put in place, i.e. silt fences, until sufficient vegetation coverage is obtained. No works will be occurring near a riparian area or the river bank to cause any significant adverse affect.

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

As stated previously due to no net loss in volume storage there will be no significant change in flood levels and therefore no unsustainable social and economic costs to the community as a consequence.

7. Conclusion

This Flood Impact Assessment Report has been undertaken by Structerre Consulting Engineers based on information provided by Clarence Valley Council and available survey & design plans by A. Fletcher & Associates Pty Ltd.

It should be noted that the lower river will generally have a 2-3 day warning for any flood event and flash flooding of the premises is unlikely.

Due to no net loss in volume storage, maintaining of the existing boundary drains and relatively low flood velocities the proposed development is not likely to have any significantly adverse affect or potential flood affectation of other development or properties.

To ensure compliance with Council's flood prone land policy, the following is recommended:

- A Flood Risk Management Plan should be implemented by the owner.
- Minimum mound/pad level shall be above the 20 year flood level.
- The site will only be used as a commercial property and therefore will only be inhabitable during normal working hours. Workers are unlikely to be at the premises if a flood event is forecast.
- All construction below RL.3.11m (500mm above the 100 year event) shall be flood compatible building components.

Given the nature of the development and the proposal, the risks associated with building within a flood zone have been reduced significantly by having the mound/ pad above the 1:20 year flood level and accordingly I submit to Council that this Flood Impact Assessment Report be accepted in support of the Development Application.

ANNEXURE L

DPI ADVICE

Attachment 2

NSW GOVERNMENT | Department of Primary Industries

OUT21/5571

Terry Dwyer
Strategic Planning Coordinator
Clarence Valley Council
Locked Bag 23 GRAFTON NSW 2460

Terry.Dwyer@clarence.nsw.gov.au

Dear Terry

Planning Proposal - Lot 11 DP 1259162, 4 River Road, Palmers Island (REZ2021/0003)

Thank you for the opportunity to comment on the above planning proposal as per your email dated 14 April 2021. The NSW Department of Primary Industries (NSW DPI) Agriculture provides advice to consent authorities about the protection and growth of agricultural industries and the resources upon which these industries depend to provide economic growth.

NSW DPI Agriculture understands that the proposal is for Pridel Pty Ltd, owners of Lot 11 DP 1259162 (No.4) River Street Palmers Island, to rezone a 4,500m^2 portion of the property from RU1 Primary Production to RU2 Rural Landscape to enable 'rural supplies' to be permissible with consent on the subject land. A farm shed and flood mound have previously been approved on the property and the intention of the rezoning is to allow a further development application to be submitted for an additional shed to be occupied by a rural supplies business.

As identified within the proposal, the subject land is mapped as important farmland within the North Coast Regional Plan. NSW DPI Agriculture does not support the rezoning of the subject land from RU1 to RU2 as this may allow other types of development not associated with agriculture to exist in the future.

It is recognised that 'rural supplies' is an agricultural related land use and as such we would support the alternative proposal to amend the LEP Schedule 1 Additional Permitted Uses to include "rural supplies" as an additional use permitted with consent on part of Lot 11 DP 1259162. This is subject to due consideration of any potential land use conflict risks between the proposed development and the surrounding agricultural activities.

Should you wish to discuss this matter further please contact our Agricultural Land Use Planning Officer, Selina Stillman, on 0412 424397.

Yours sincerely

T Prentice. 6/5/21

Tamara Prentice
Manager Agricultural Land Use Planning

NSW Department of Primary Industries - Agriculture
Locked Bag 21, Orange NSW 2800 | 161 Kite St, Orange NSW 2800
Tel: 02 6391 3369 | Email: landuse.ag@dpi.nsw.gov.au | www.dpi.nsw.gov.au | ABN: 19 948 325 463

ANNEXURE M

TRANSPORT FOR NSW RESPONSE

NSW GOVERNMENT | Transport for NSW

5 March 2021

TfNSW Ref: NTH21/00098/01
Your Ref: REZ2021/0003

The General Manager
Clarence Valley Council
Locked Bag 23
GRAFTON NSW 2460

Attention: Terry Dwyer

Dear Sir,

RE: Planning Proposal – Rezoning from RU1 to RU2.
Lot 11 DP 1259162, River Road, Palmers Island (REZ2021/0003)

I refer to your letter dated 14 April 2021 requesting comment from Transport for NSW (TfNSW) in relation to the abovementioned Planning Proposal.

Roles and Responsibilities

The key interests of TfNSW are the safety and efficiency of the transport network, the needs of our customers and the integration of land use and transport in accordance with Future Transport Strategy 2056.

Yamba Road is a classified (Regional) road (MR 152). Clarence Valley Council is the Roads Authority for all public roads (other than freeways or Crown roads) in the local government area pursuant to Section 7 of the *Roads Act 1993*. TfNSW is the roads authority for freeways and can exercise roads authority functions for classified roads in accordance with the Roads Act.

Council is responsible for setting standards, determining priorities and carrying out works on Local and Regional roads. However TfNSW concurrence is required prior to Council's approval of works on classified (Regional) roads under Section 138 of the *Roads Act 1993*.

In accordance with Clause 101 of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) the Consent Authority is to have consideration for the safety, efficiency and ongoing operation of the classified road as the development has frontage to a classified road. TfNSW is given the opportunity under Clause 104 to comment on traffic generating developments listed under Schedule 3.

It is emphasised that the following comments are based on the information provided to TfNSW at this time. They are not to be interpreted as binding upon TfNSW and further comment may be provided following formal review of any development application referred by the appropriate Consent Authority.

Transport for NSW
76 Victoria Street, Grafton, NSW 2460 | PO Box 576, Grafton NSW 2460
W transport.nsw.gov.au

Transport for NSW Response

TfNSW understands that the application is part of a preliminary review of a privately lodged Planning Proposal, intended to make '*rural supplies*' permissible under the CVC LEP. We have reviewed the information provided and make the following comments to assist Council in assessment of the proposal.

1. We note that your letter advises that if a use such as '*rural supplies*' were to be approved through the development consent process, access would be to and from Yamba Road which is a major traffic link in the regional road network. Access for any new development onto Yamba Road must not compromise the functionality of the road or the safety of road-users.

2. Approval of access would be through section 138 of the Roads Act and the concurrence of TfNSW will be required. Council and the proponent should be aware at this stage in the planning process that, as the location proposed is in a high-speed environment, significant roadworks may be required to provide a safe and efficient access to any future development. Any new intersection works will need to be designed to the current speed limit.

3. TfNSW recognises that the change in zoning is a matter for Council to decide, particularly the removal of land from the RU1 Zone and the suitability of introducing new permissible uses through the RU2 landuse table. However, there are a number of those additional uses that may place inappropriate pressure on the regional road network, and Council will need to be satisfied that the safety and efficiency of the network can be maintained.

4. In respect to considering a Schedule 1 amendment for *rural supplies* on the subject land, the comments above relating to access are relevant and need not be repeated.

In summary, it is requested that Council give strong consideration to the impact of allowing commercial uses to establish in this rural location, and the transport infrastructure needed to support such uses.

Any roadwork on classified road/s is to be designed and constructed in accordance with the current Austroads Guidelines, Australian Standards and TfNSW Supplements.

TfNSW highlights that in determining the application under the *Environmental Planning and Assessment Act 1979*, it is the Consent Authority's responsibility to consider the environmental impacts of any roadworks which are ancillary to the development. This includes any works which form part of the proposal and/or any works which are deemed necessary to include as requirements in the conditions of project approval.

If you have any further enquiries regarding the above comments please do not hesitate to contact Cheryl Sisson, Development Services Case Officer or the undersigned on (02) 6640 1362 or via email at: development.northern@transport.nsw.gov.au

Yours faithfully,

for Matt Adams
Team Leader, Development Services
Community and Place | Region North
Regional & Outer Metropolitan
Transport for NSW

Transport for NSW
76 Victoria Street, Grafton, NSW 2460 | PO Box 576, Grafton NSW 2460
W transport.nsw.gov.au

ANNEXURE N

CLAUSE 5.21 ASSESSMENT

CV LEP 2011 CLAUSE 5.21 ASSESSMENT

(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development:-

a) is compatible with the flood function and behaviour on the land, and

Comment: The flood mound will increase by approximately 600m^2 to a finished level of 2.25m AHD for the shed area and 1.75m AHD for the car park. The Flood Impact Assessment (FIA) states that the shed level will have 0.26m of water over it in a 100 year event with low velocities and so is low hazard.

b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and

Comment: The FIA states that filling will have no noticeable effect on flood levels due to the immense size of the floodplain.

c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and

Comment: The shed is non-habitable and will not be occupied as floods approach.

d) incorporates appropriate measures to manage risk to life in the event of a flood, and

Comment: No risk to life as business will not operate during floods.

e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

Comment: No impact.

(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters:-

a) the impact of the development on projected changes to flood behaviour as a result of climate change,

Comment: Climate change is incorporated into the model.

b) the intended design and scale of buildings resulting from the development,

Comment: The building will be constructed of flood compatible material below the 100 year plus 500mm freeboard level.

c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,.

Comment: No evacuation required.

d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.

Comment: Shed can be dismantled but this will not be required as it will be flood resistant.

ANNEXURE O

TRAFFIC IMPACT ASSESSMENT (BITZIOS, MARCH 2022)

Rural Supplies Lot 11 Yamba Road

Traffic Impact Assessment

Pridel Pty Ltd

29 March 2022

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Brisbane
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Document Issue History

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P5547.001R Rural Supplies Lot 11 Yamba Road TIA	R. Tuputala	L. Darragh	L. Darragh	28/03/2022	Andrew Fletcher afletcher@surveyorsnorthcoast.com.au
P5547.002R Rural Supplies Lot 11 Yamba Road TIA	R. Tuputala	L. Darragh	L. Darragh	29/03/2022	Andrew Fletcher afletcher@surveyorsnorthcoast.com.au

CONTENTS

Tables

Figures

Appendices

1. INTRODUCTION

1.1 Background

Bitzios Consulting has been engaged by *Pridel Pty Ltd* (client) to prepare a Traffic Impact Assessment (TIA) for a proposed rural supplies shed located on-site at 4 River Road, Palmers Island (formally described as Lot 11 on DP1259162). The location of the subject site is illustrated in Figure 1.1.

SOURCE: Nearmap

Figure 1.1: Site Location

1.2 Proposed Development

The proposal is to rezone a component of land in Lot 11 on DP1259162 from RU1 (Primary Industry) to RU2 (Rural Landscape). The development is to include a rural supplies shed comprised of:

- Development area: 4,500m^2
- Supplies shed: 720m^2
- Six (6) car parking spaces provided on-site
- Access maintained via existing Yamba Road frontage.

The rural supplies component will operate out of the southern shed, while the existing northern shed is used for farming purposes associated with the macadamia tree farm. Additional information for site operations of the proposed rural supplies component are as follows:

- Working hours:
  - Weekdays: 8am – 5pm
  - Saturdays: 8am – 12pm
- A total of 2 staff on-site during work hours
- Largest vehicle on-site will be a heavy rigid vehicle (HRV)
  - Maximum of 2 HRV's will arrive each day
  - HRV's will arrive and depart to/from the south.

A copy of the proposal plans has been provided at **Appendix A**

1.3 Scope

The scope for this assessment included:

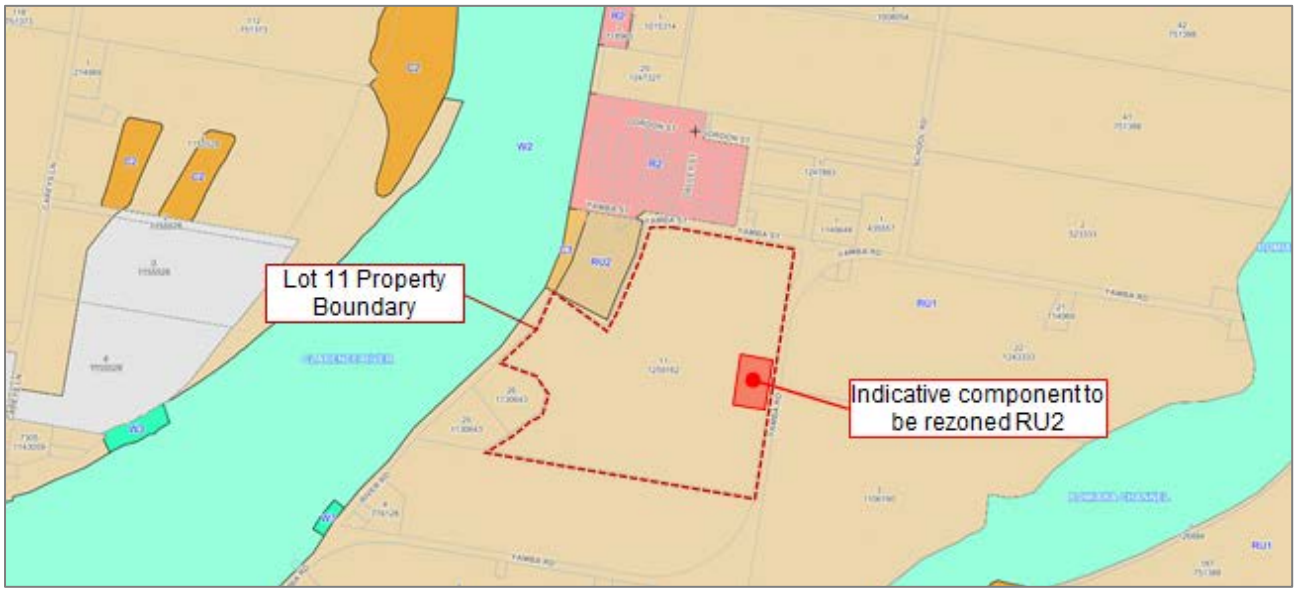
- A review of the key surrounding road networks
- A review of surrounding development applications (DA) and key aspects of future transport planning in and around the urban release area
- Estimation of the development's traffic generation and distribution onto the external road network
- Assessment of the car parking provisions against the requirements of Council's *Development Control Plans* (DCP) (2011) and *Australian Standards* (AS2890)
- Assessment of the parking geometric layout against the relevant requirements of AS2890
- Assessment of the proposed access location and form with consideration to Council's requirements and AS2890
- A review of the development facilities for servicing and refuse collection.

2. EXISTING CONDITIONS

2.1 Existing Site

The existing site is essentially vacant land with its only frontage to Yamba Road. It is currently zoned RU1 (Primary Production) and surrounded predominantly by other RU1 zoned land, while abutting RU2 (Rural Landscape) land to its north-west.

The land use zoning is shown in Figure 2.1 extracted from Council's Interactive Mapping. This also shows the overall site boundary (Lot 11 on DP1259162) and indicative boundary of the component of land proposed to be rezoned to RU2.



SOURCE: Clarence Valley Council Interactive Mapping

Figure 2.1: Land Use Zoning and Site Location

The indicative boundary for the component of the site to be rezoned to RU2 is shown in Figure 2.2.

SOURCE: Nearmap

Figure 2.2: Indicative Boundary for Subject Site Rezoning

The site plan is provided in **Appendix A**.

2.2 Surrounding Road Network

Details of the road network surrounding the subject site is shown in Table 2.1.

Table 2.1: Surrounding Road Network

Road Name	Jurisdiction	No. of Lanes	Hierarchy	Divided	Speed Zone
Yamba Road	Council	2	Sub-Arterial	No	60km/h to 100km/h
Yamba Street	Council	2	Local Access	No	60km/h
River Road	Council	2	Local Access	No	50km/h

The site is located with its only frontage to Yamba Road for gaining access. It is located adjacent to a change in speed zone (60km/h to 100km/h) and within proximity of the Palmers Island Public School zone.

Adjacent the site, Yamba Road is flat and straight with significant sight distance available in both directions. It is noted there are no existing intersections or key decision point in the vicinity of the subject site.

2.3 Alternative Transport

There is currently limited alternative transport infrastructure and/or services considering the surrounding road environment, surrounding rural land uses and large sized lots.

As such, the proposed development does not trigger the need for any updated or new alternative transport infrastructure or services.

2.4 Background Traffic Volumes

Traffic volume data was collected via automatic (tube) counts collected over a 7-day period from 2 February 2022 to 8 February 2022 by Traffic Data & Control (TDC).

Key findings from the data showed:

- Average Daily Traffic Volumes (weekday):
  - Northbound : 9,777 veh/day (50% split)
  - Southbound : 9,703 veh/day (50% split)
  - Combined (two-way) : 19,480 veh/day
- Average Daily Traffic Volumes (weekend):
  - Northbound : 7,032 veh/day (49% split)
  - Southbound : 7,310 veh/day (51% split)
  - Combined (two-way) : 14,342 veh/day
- 85th Percentile Speeds:
  - Northbound : 79km/h
  - Southbound : 81km/h

A copy of the traffic data is attached at **Appendix B**.

3. TRAFFIC ASSESSMENT

3.1 Overview

The purpose of this assessment is to determine the quantum of traffic generated by the proposed use in the context of the background traffic volumes, to ascertain whether any impacts are generated resulting from the proposed development on the external road network.

A combination of industry standard trip generation rates and 'first principles' trip generation was adopted for the assessment given the nature and scale of the use. The existing background traffic volumes were utilised as detailed in Section 2.4 and provided in **Appendix B**.

3.2 Development Traffic Generation

The traffic generation has been based on a 'first principles' approach using proposed development details and adopting an industry standard rate for the proposed rural supplies shed component.

Traffic generation rates were reviewed from the TfNSW (formerly RMS) *Guide to Traffic Generating Developments* (GTGD2002). Given the development is a rural supplies shed and no specific rates exist for the land use within the GTGD2002, traffic generation rates for a warehouse land use were adopted.

The estimated traffic generation is shown in Table 3.1.

Table 3.1: Development Traffic Generation

Land Use	Quantity	Peak Rate	Peak Trips (veh/h)
Rural Supplies Shed (Warehouse)	720m^2	0.5 trips per 100m^2 GFA	**4**
Staff	2	1 per staff in each peak	**2**
Heavy Vehicles	2	1 per vehicle in each peak	**2**
		TOTAL	**8**

The expected development directionality is determined as shown in Table 3.2 and considering development specific information regarding staff and heavy vehicle trips and directionality.

Table 3.2: Development Traffic Directionality

Land Use	AM Trip Split		PM Trip Split		AM Trips (veh/h)		PM Trips (veh/h)	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Rural Supplies Shed	50%	50%	50%	50%	2	2	2	2
Staff	100%	-	-	100%	2	-	-	2
Heavy Vehicles	50%	50%	50%	50%	1	1	1	1
				TOTAL	**5**	**3**	**3**	**5**

3.3 Development Traffic Distribution

Due to the rural nature of the site and location of large, primary production (RU1) and rural/agricultural land to the south and west, the majority of development trips were distributed to the south. This is consistent with advice from the applicant. As such, 90% of development trips were distributed to/from the south with the remaining 10% to/from the north.

3.4 Traffic Impact

The volume of traffic generated by the development was calculated at a total of 8 veh/h (two-way) in the peak periods. This level of traffic generation is considered low and deemed to result in negligible impacts to the external road network given the distributions and directionality identified above.

For context, this quantum of traffic is equivalent to approximately 1 vehicle trip every 7.5 minutes to/from the site (assuming uniform traffic flow).

Given this level of traffic and nature of the use and surrounding land, no further external traffic assessment is considered warranted and any impacts considered negligible.

4. PARKING ASSESSMENT

4.1 Car Parking

The car parking requirements for the development were sourced from Council's DCP with car parking rates, requirements and proposed provisions outlined in Table 4.1.

Table 4.1: Car Parking Requirements and Provision

Land Use	Type	Quantity	Parking Rate	Parking Required	Provision
Rural Supplies	Visitor	4,500m^2	1 per 200m^2 of site area	23 spaces	6 spaces
	Staff	2	1 per staff	2 spaces	
			Total	**25 spaces**	**6 spaces**

Whilst the car parking provisions do not comply with Council's standards, practicalities of the development need to be considered as the true operations of the rural supplies shed will not represent a common rural supplies business, as outlined in the traffic generation calculations. Business operations are outlined in Section 1.2 for which the following assumptions have been made:

- All staff travel to work via personal vehicles
- Visitors arrive by car only
- Northern shed (used for macadamia farm storage) is a non-trip generating storage area for the commercial operations of the rural supplies business
- All operations for the proposed use will be contained within the southern shed (720m^2).

As shown above, the DCP rate uses the entire site area which is 4,500m^2, however the proposed use will operate out of the southern shed only which is 720m^2 and hence it is not considered practical to use the entire site area for calculating parking. This is consistent with the approach for traffic generation and given the site will generate in the order of 8 veh/h in a peak hour (inclusive of staff).

Considering the operations of the site, a first principles approach to car parking provision is also considered appropriate.

First principles car parking calculations are outlined in Table 4.2.

Table 4.2: First Principles Car Parking Requirements and Provision

Land Use	Type	Quantity	Parking Rate	Parking Required	Provision
Rural Supplies	Visitor	720m^2	1 per 200m^2 of site area	4 spaces	6 spaces
	Staff	2	1 per staff	2 spaces	
			Total	**6 spaces**	**6 spaces**

Adopting a first principles approach aligns the car parking needs with the operations of the business. As such, the proposed car parking supply is considered to meet the car parking demand.

4.2 Parking Geometric Layout Assessment

The on-site parking geometric layout has been assessed against the relevant requirements of AS2890 as outlined in Table 4.3.

Table 4.3: Parking Geometric Layout Assessment

Design Element	Requirement	Provided	Compliant
Visitor Car Parking Bays	2.5m x 5.4m	2.5m x 5.5m	**Yes**
Staff Car Parking Bays	2.4m x 5.4m	2.5m x 5.5m	**Yes**
Parking Aisle Width	5.8m (+0.3m for single sided aisle)	5.8m (min.) (+0.3m for single sided aisle)	**Yes**
Clearance to Vertical Obstructions	0.3m	0.3m (min.)	**Yes**
Blind Aisle Extension	1m	1m (min.)	**Yes**

As demonstrated in Table 4.3, the on-site parking geometric layout complies (or shall comply) with the relevant requirements of AS2890.

5. ACCESS ASSESSMENT

5.1 Vehicular Access

A two-way all movements vehicular access is proposed on the Yamba Road frontage as illustrated in Figure 5.1. This is the site's only frontage and hence only location for access to be achieved.

SOURCE: Nearmap

Figure 5.1: Proposed Access

The location of the access avoids existing infrastructure (e.g. culvert(s)) and allows for clear sight lines and visibility to the frontage road considering the straight, flat nature of Yamba Road in this location.

5.2 Driveway Access Analysis

5.2.1 Overview

The site access is via an all-movements crossover to be located on Yamba Road. The access is to be in the form of an auxiliary left-turn lane (AUL) into the site considering the predominant distribution of traffic to/from the south, and the existing road environment and speeds.

The access has been assessed applying the Austroads *Guide to Road Design: Part 4a* (AGRD4a) and *Guide to Traffic Management: Part 6* (2020) (AGTM6). Specifically, a turn warrant assessment has been undertaken using Figure 3.25 from the AGTM6 to determine the appropriateness of the auxiliary left-turn lane.

5.2.2 Access Turn Warrants

A turn warrants assessment was undertaken for the proposed driveway access in accordance with the requirements of AGTM6. The AM and PM peak hourly volumes were adopted from the traffic survey data found at **Appendix B** and the trip generation calculated in Section 3.

The assessment adopts the turn warrants chart for a major road with the design speed of 'less than 100km/h' as the posted limit for Yamba Road is 100km/h and the 85th percentile speed is ~80km/h (refer Section 2.4 and **Appendix B**).

Trip generation values from Table 3.2 and operational data received from the client have been used for the design traffic volumes shown in Table 5.1.

Table 5.1: Traffic Volumes for Assessment

Access	Movement	Major Road Volume Q_m (veh/h)		Turning Volume Q_T (veh/h)	
		AM	PM	AM	PM
Yamba Road	Left Turn	853	810	5	3
	Right Turn	1,731	1,652	1	1

NOTE: The turning volume was adopted from Table 3.2 and has included rounding for a conservative assessment.

The resulting turn warrants assessment is shown in Figure 5.2.

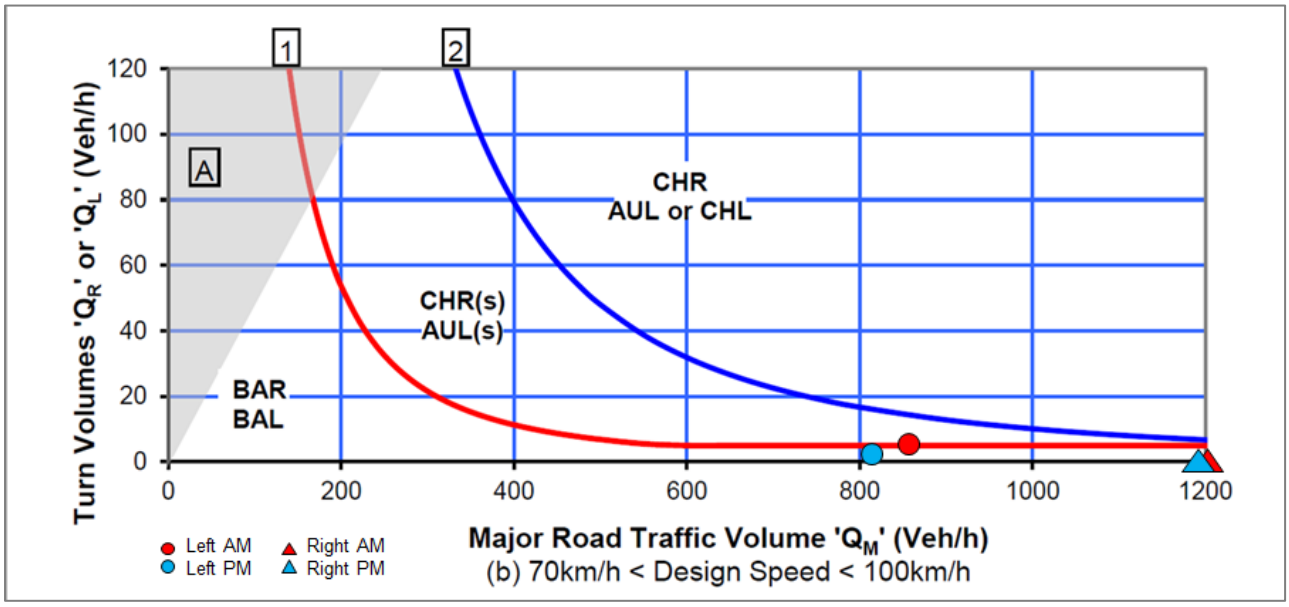


Figure 5.2: Turn Warrants Assessment – Development Access / Yamba Road

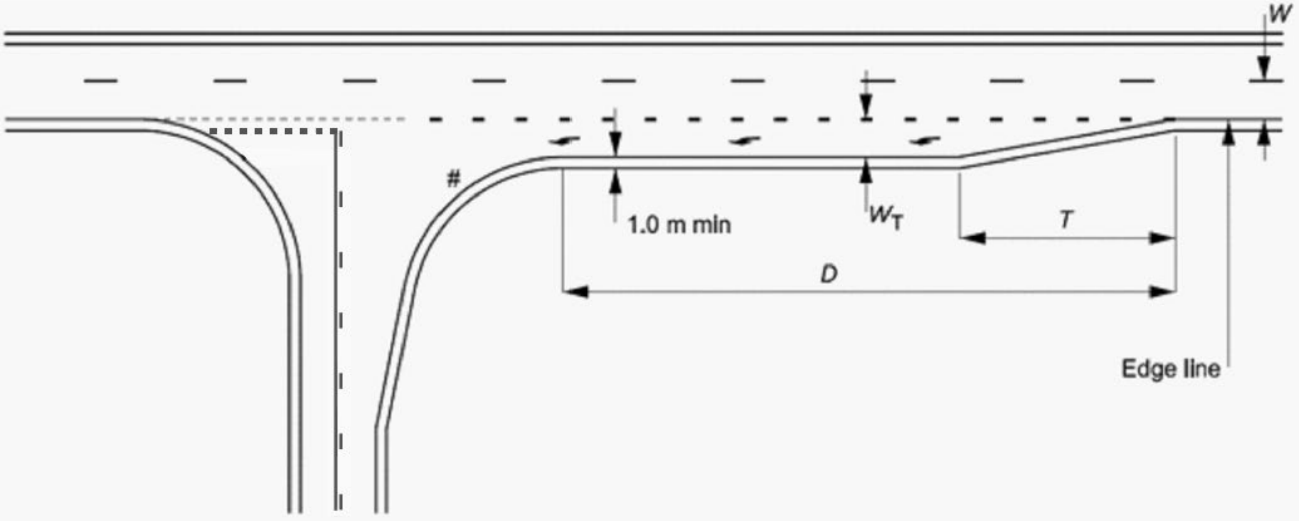
As shown in Figure 5.2, the left turn in movement is sitting on the threshold between a Basic left turn (BAL) treatment and the higher order short Auxiliary left turn (AUL(S)) treatment. Although the use of a BAL could be justified, it is important to factor in the rural site location, the through traffic volumes and vehicle types and speed environment.

Therefore, it is considered appropriate and beneficial for the site to provide the higher order AUL treatment for ease of vehicle manoeuvring and achieving a safer outcome for through traffic (i.e. turning traffic can decelerate away from through traffic).

5.2.3 Proposed Access Treatments

The design of the AUL treatment was based on AGRD4a and adopting the average 85th percentile speed of 80km/h from the traffic survey data and a rate of deceleration of 3.5m/s^2, and increased provisions for taper length overall.

Figure 5.3 illustrates the geometry requirements for an AUL in accordance with AGRD4a.



SOURCE: Austroads Guide to Road Design Part 4a

Figure 5.3: Rural Auxiliary Left-Turn Lane Treatment (AUL)

Dimensions for the AUL treatment are shown in Table 5.2. The deceleration length "D" was adopted from Table 5.2 of AGRD4a with a 30m taper adopted considering the change in speed environment.

Table 5.2: Dimensions for AUL(S) Treatment

Design Speed	Turning Lane Width (W_T)	Diverge / Deceleration Length (D)	Taper Length (T)
80km/h	3m	70m	30m

Based on the traffic volumes and nature of the rural supplies shed (and that left turns are unopposed), detailed SIDRA analysis is not considered warranted. See **Appendix C** for the AUL concept plan.

5.3 Sight Distance

A sight distance assessment of the development's vehicular access was undertaken in accordance with the relevant requirements of AS2890 as outlined in Table 5.3.

Table 5.3: Access Sight Distance Review

Access	Direction	85th Percentile Speed	Sight Distance		Compliant
			Available	Required	
Yamba Road	Northbound	79km/h	210m	110m	Yes
	Southbound	81km/h	250m	113m	Yes

As demonstrated in Table 5.3 the proposed vehicular access exceeds the minimum sight distance provision and is considered appropriate.

6. SERVICING ASSESSMENT

6.1 Servicing

Servicing will take on-site with no dedicated loading / servicing bay. Servicing will occur within the shed or within the car park (entirely within the site). Service vehicles will all enter and exit the site in a forward gear.

Given the site area and nature of use, this is considered appropriate.

6.2 Refuse Collection

Refuse collection is to occur on-site, consistent with the servicing conditions outlined above and remain entirely within the site. A dedicated collection location will be nominated for collection days and all refuse vehicles will enter and exit the site in a forward gear. This is not expected to result in any adverse traffic conditions.

The above arrangements are consistent for developments of this nature and occur on-site, entirely clear from external traffic. As such, the servicing and refuse arrangements are considered appropriate.

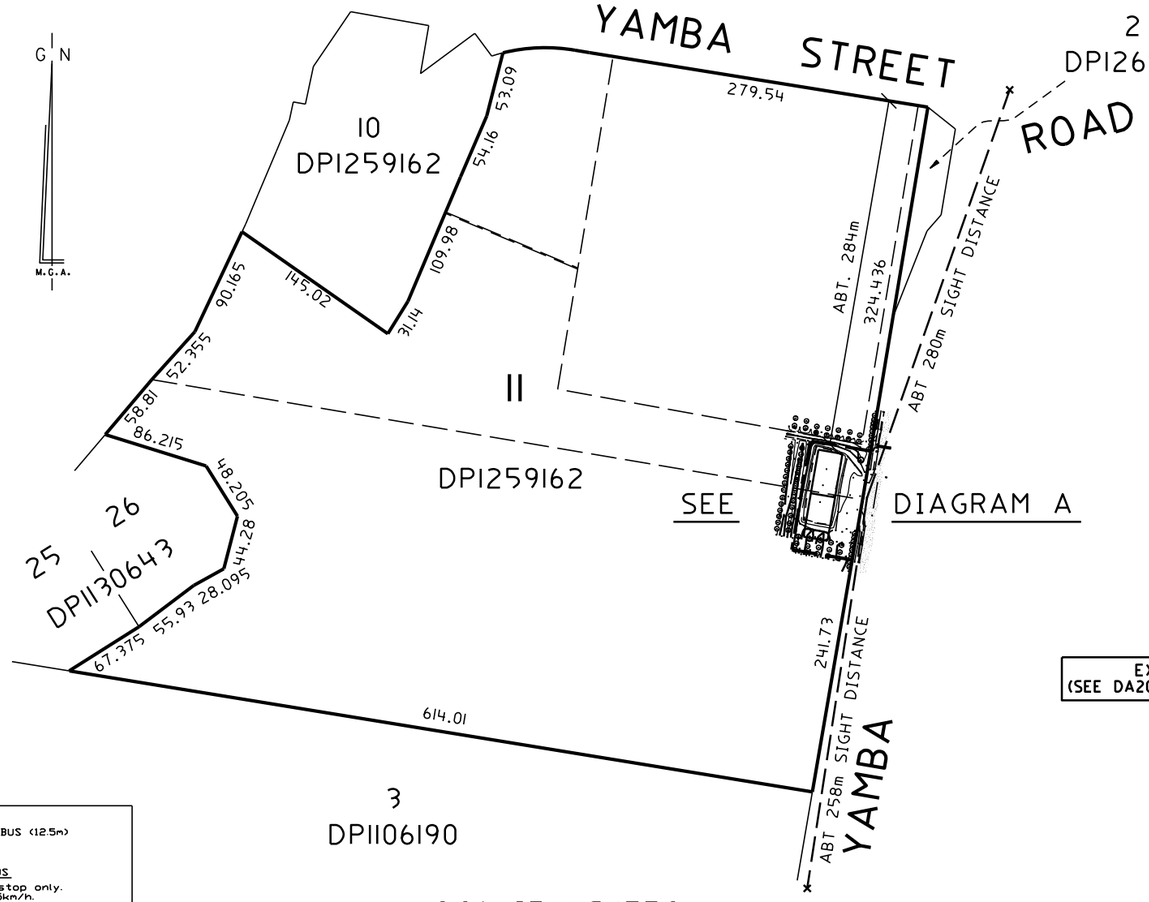
7. SUMMARY AND CONCLUSIONS

A summary of the key findings of the TIA for the proposed rural supplies shed development off Yamba Road were as follows:

- The proposal is for a 720m^2 rural supplies shed on a development area of 4,500m^2
- The proposed development is estimated to generate in the order of 8 additional vehicles trips in both the AM and PM peak periods, equating to approximately 1 vehicle trip every 7.5 minutes
- The access is proposed to be delivered in a higher order treatment than is warranted including the provision of an auxiliary left-turn lane (AUL) into the site complying with the requirements of Austroads Guide to Road Design Part 4a
- A total of 6 car parking spaces have been proposed as part of the development which is considered suitable to meet the demands of the site based on a first principles approach for the site considering nature and scale of use, and the estimated trip generation
- The parking geometric layout generally complies with the relevant requirements of AS2890 based on the plans provided
- A single, two-way all movements crossover has been proposed with AS2890 and Northern Rivers Local Government Standard Drawing R-16
- The sight distance for the proposed crossover exceeds the minimum required sight distance requirements of AS2890 for an access given the straight, flat nature of Yamba Road
- Servicing and refuse collection are proposed to occur entirely within the site boundaries without the need for dedicated loading / servicing bays, yet allowing all vehicles to enter/exit the site in a forward gear.

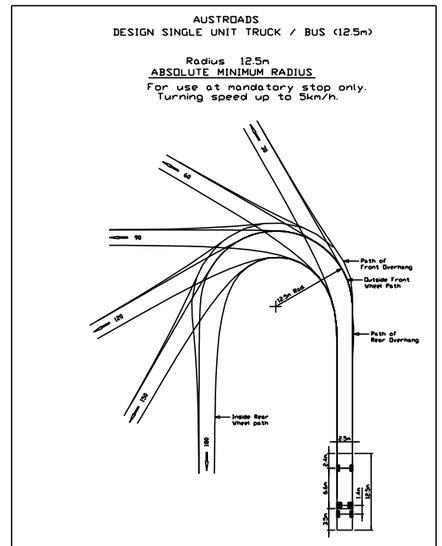
Based on the above assessment, it is concluded that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds.

Appendix A: Development Plans



LOCALITY SKETCH

NOT TO SCALE



NOTES:

1. THIS PLAN WAS PREPARED FOR PRIDEL PTY LTD AS A DETAIL SURVEY FOR THE PURPOSE OF DESIGNING NEW STRUCTURES ON THE LAND & SHOULD NOT BE USED FOR ANY OTHER PURPOSES.
2. THE TITLE BOUNDARIES SHOWN HEREON WERE NOT MARKED BY A. FLETCHER & ASSOCIATES PTY. LTD. AT THE TIME OF THE SURVEY AND HAVE BEEN DETERMINED BY THE PLAN DIMENSIONS ONLY AND NOT BY FIELD MEASUREMENT. IN PARTICULAR, NO RELIANCE SHOULD BE PLACED ON THE INFORMATION ON THIS PLAN FOR ANY FINANCIAL DEALINGS ON THE LAND.
3. SERVICES HAVE NOT BEEN LOCATED.
4. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
5. SPOT HEIGHTS HAVE BEEN DETERMINED BY GNSS CORS METHODS.
6. THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN.

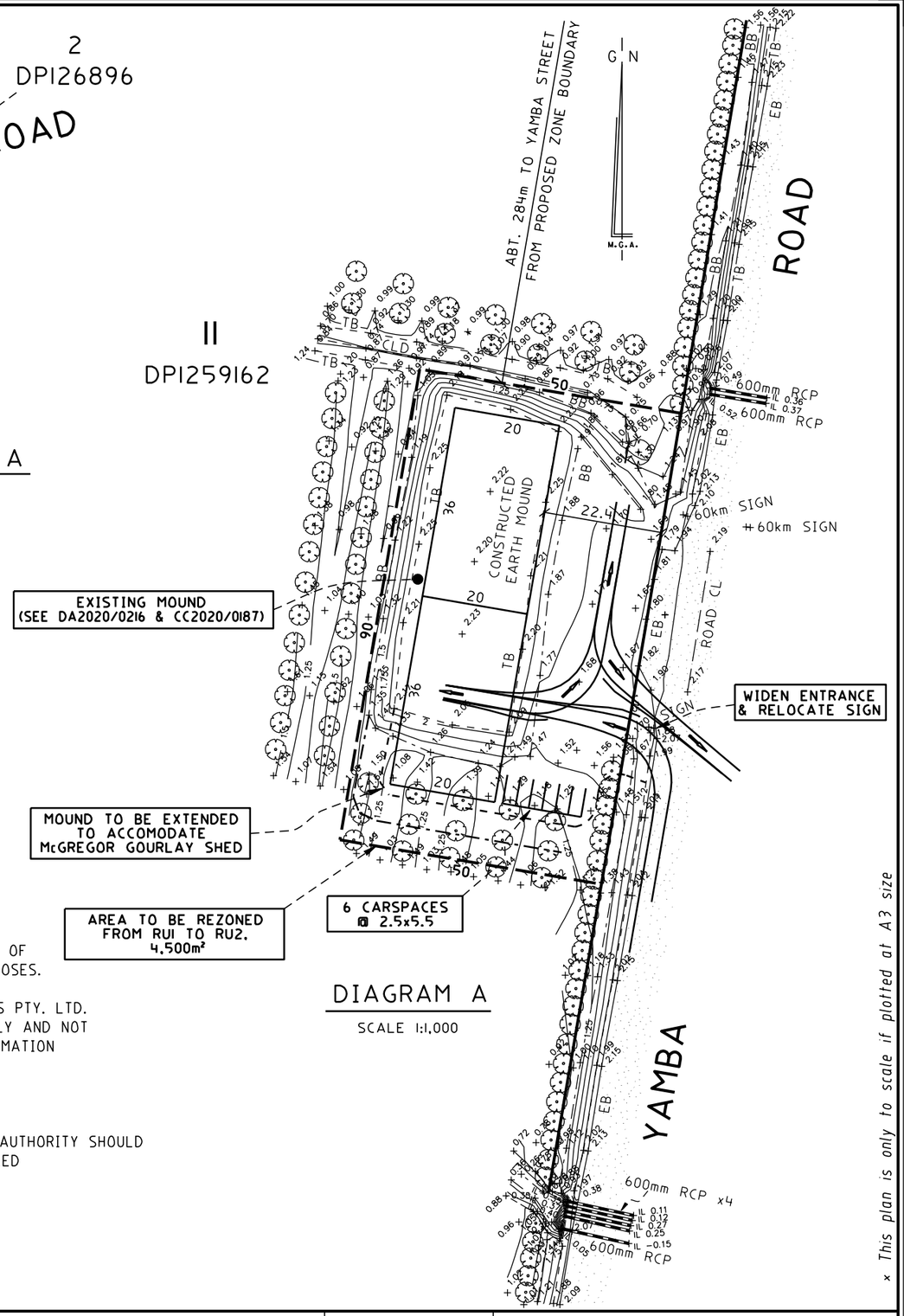
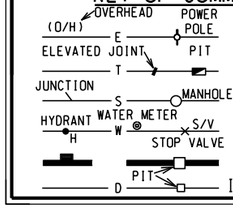


DIAGRAM A

SCALE 1:1,000

× This plan is only to scale if plotted at A3 size

KEY OF COMMON SERVICES



A. FLETCHER & ASSOCIATES Pty. Ltd.
Land and Engineering Surveyors
Development Consultants
86 Victoria Street, P.O. Box 1213, Grafton. 2460
Ph.(02) 6642 3300, Fax (02) 6642 5990
Email: afletch@hotkey.net.au

PLAN OF DETAIL SURVEY OVER PART OF LOT II DP1259162
4 RIVER ROAD, PALMERS ISLAND

CLIENT: PRIDEL PTY LTD

SURVEY: BF
DESIGN:
DRAWN: BF
DATE: 11.02.21
SCALE: × 1:1,000

DRAWING No. 9561 SHED DA

ORIGIN:
PM67075
RL 1.528m (AHD)
C.I. 0.25m

Sheet No. of Sheets

CAD REFERENCE
Z:\9561\DGN\9561DASHED.dgn

Revision: A

Appendix B: Traffic Survey Data

Yamba Rd, Palmers Island

Co-ordinates NB -29.423125 153.28579 SB -29.422362 153.28597

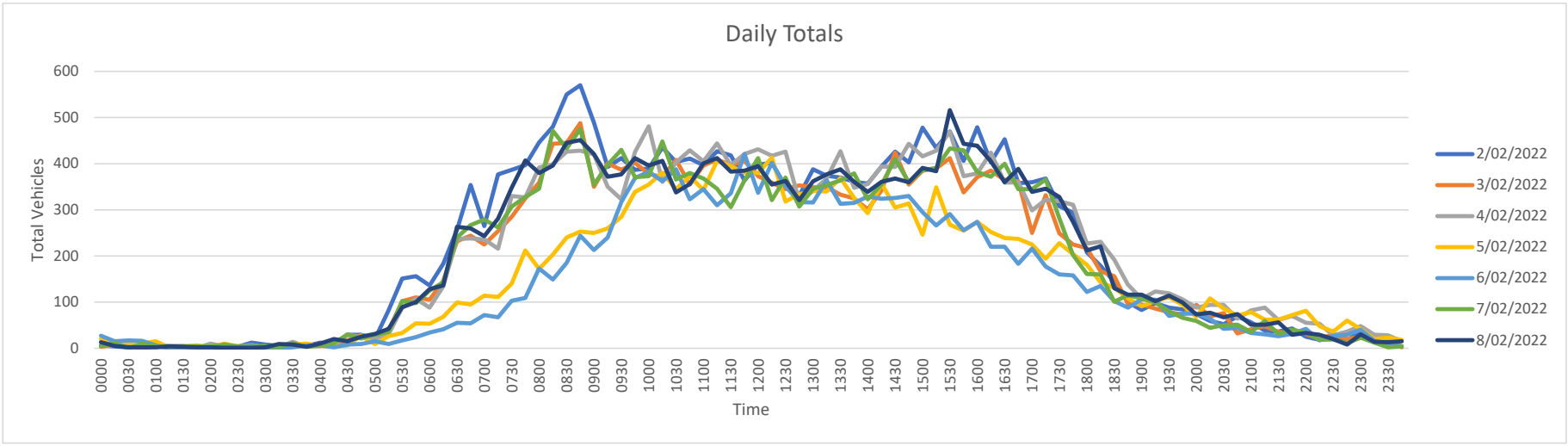
TDC Traffic Data & Control

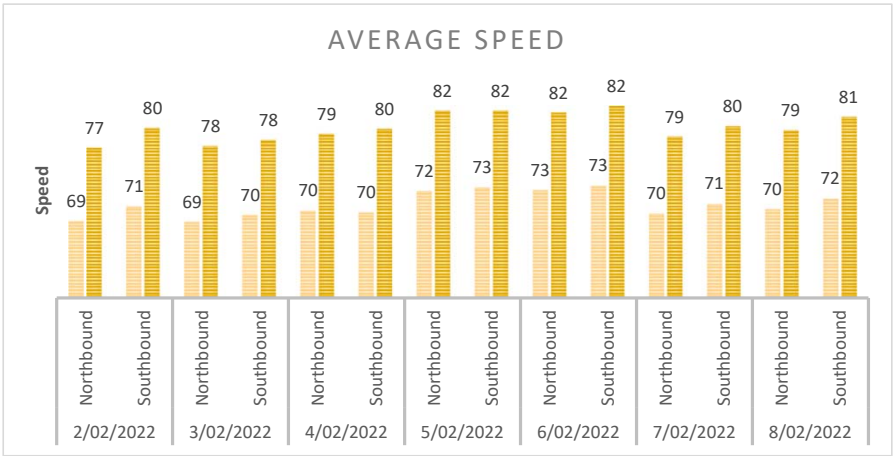
Day

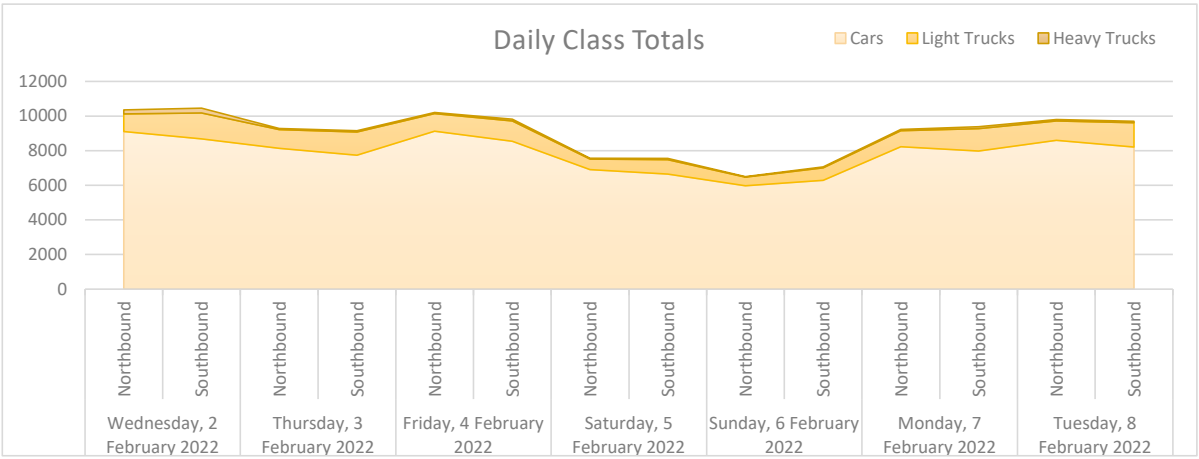
- 2/02/2022
- 3/02/2022
- 4/02/2022
- 5/02/2022
- 6/02/2022
- 7/02/2022
- 8/02/2022

Direction

- Northbound
- Southbound







Northbound

Southbound

TDC
Traffic Data & Control

2/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	4	4	0	0	85.1	-
0015	4	4	0	0	95.3	-
0030	0	0	0	0	-	-
0045	4	2	2	0	79.6	-
0100	2	2	0	0	118.3	-
0115	0	0	0	0	-	-
0130	0	0	0	0	-	-
0145	0	0	0	0	-	-
0200	2	2	0	0	87.9	-
0215	2	2	0	0	83.6	-
0230	3	3	0	0	85.6	-
0245	9	5	4	0	80.6	-
0300	6	2	4	0	79.7	-
0315	5	5	0	0	66	-
0330	3	3	0	0	69.7	-
0345	2	2	0	0	91.9	-
0400	3	3	0	0	89.5	-
0415	1	1	0	0	76.8	-
0430	15	12	3	0	73.1	89.6
0445	16	13	3	0	81	92.1
0500	6	5	1	0	84.8	-
0515	37	34	3	0	78.5	88.7
0530	97	77	20	0	72.4	80.5
0545	82	67	11	4	74.6	81.9
0600	47	43	4	0	77	84.7
0615	103	96	5	2	73.4	82.6
0630	145	126	18	1	73.6	82.1
0645	191	161	30	0	73.6	80.6
0700	127	105	21	1	70.9	79.7
0715	190	146	27	17	71.3	79.3
0730	172	148	15	9	69.7	77.6
0745	195	179	11	5	69.5	77.2
0800	206	177	27	2	67.5	75
0815	252	229	21	2	66.3	74.2
0830	297	251	37	9	63.6	72.5
0845	305	270	28	7	64	72
0900	264	221	38	5	64	72
0915	168	151	16	1	64.9	73.6
0930	221	189	28	4	67.3	74.6
0945	182	155	19	8	67.8	75.6
1000	171	147	14	10	69.1	75.7
1015	190	173	15	2	68.6	76.2
1030	183	163	20	0	69.7	78.1
1045	185	158	20	7	67	75.7
1100	172	138	18	16	69	76.7
1115	205	176	24	5	66.9	75.8
1130	210	186	16	8	69.9	76.5
1145	181	155	19	7	69	77.7
1200	185	165	16	4	68	76.3
1215	177	150	21	6	67.2	76.1
1230	158	142	13	3	67.3	75.2
1245	169	148	16	5	69.2	77.4
1300	195	163	25	7	69.5	77.7
1315	186	167	12	7	68.9	78.3
1330	201	177	18	6	69.5	77.9
1345	172	154	14	4	67.5	76.7
1400	149	128	17	4	67.8	75.7
1415	176	155	17	4	68	75.8
1430	211	182	19	10	66.1	75
1445	190	179	7	4	68.4	77.1
1500	215	196	18	1	64.4	70.3
1515	228	201	26	1	68	75.4
1530	277	250	22	5	67.5	74.7
1545	228	215	10	3	65.8	72.6
1600	288	249	35	4	69.4	76.1
1615	222	199	21	2	70.2	77.9
1630	235	207	28	0	68.8	75.7
1645	198	177	16	5	69.5	77.1
1700	231	212	17	2	72.7	81.8
1715	188	173	15	0	72.2	80.5
1730	144	136	8	0	73.4	82.2
1745	157	148	7	2	70.6	79
1800	120	109	11	0	74.8	83.7
1815	79	67	12	0	71.7	82.8
1830	74	71	3	0	74.9	85.8
1845	42	37	5	0	71.7	77
1900	38	31	5	2	73.1	80.8
1915	40	36	4	0	73.2	81.2
1930	35	34	1	0	69.6	82.1
1945	38	34	4	0	70.9	80.9
2000	27	24	2	1	65.8	73
2015	21	14	5	2	74	86.3
2030	22	19	2	1	69.8	77.9
2045	30	26	4	0	69.1	77.9
2100	28	28	0	0	70.1	78.5
2115	28	24	4	0	76.3	87.8
2130	16	16	0	0	78.8	90
2145	23	23	0	0	77.4	89.4
2200	11	11	0	0	73.5	94.2
2215	6	6	0	0	75.9	-
2230	7	6	1	0	70	-
2245	4	3	1	0	72.8	-
2300	14	14	0	0	77.1	88.6
2315	5	5	0	0	66.5	-
2330	2	1	1	0	56.6	-
2345	2	2	0	0	90.1	-
07-09	**1744**	**1505**	**187**	**52**	**67.1**	**75.8**
09-16	**5449**	**4784**	**518**	**147**	**67.6**	**76**
16-18	**1663**	**1501**	**147**	**15**	**70.7**	**78.5**
00-00	**10357**	**9105**	**1025**	**227**	**68.9**	**77.4**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	2	2	0	0	78.4	-
0015	0	0	0	0	-	-
0030	2	2	0	0	51.8	-
0045	2	2	0	0	71.5	-
0100	2	0	2	0	80	-
0115	2	0	2	0	63.5	-
0130	3	1	2	0	90.8	-
0145	0	0	0	0	-	-
0200	2	2	0	0	56.6	-
0215	3	3	0	0	70.6	-
0230	0	0	0	0	-	-
0245	3	3	0	0	72.5	-
0300	2	2	0	0	76	-
0315	0	0	0	0	-	-
0330	3	2	1	0	72.8	-
0345	3	3	0	0	82.1	-
0400	9	9	0	0	84.1	-
0415	7	3	4	0	85.9	-
0430	14	10	4	0	82.4	102.4
0445	13	10	1	2	79	92.9
0500	14	9	5	0	85.4	92.5
0515	45	36	7	2	79	91.3
0530	54	47	7	0	78.3	91.3
0545	74	59	15	0	78.6	87.4
0600	89	64	25	0	74.7	84.5
0615	80	62	15	3	76.8	84.6
0630	112	94	17	1	74	84.1
0645	163	128	32	3	73.3	82.8
0700	138	116	22	0	75.1	84.1
0715	187	137	46	4	74.2	82.3
0730	215	180	31	4	71.7	79.5
0745	202	162	28	12	70.6	79.6
0800	240	199	29	12	67	75.2
0815	228	209	17	2	66.1	75.2
0830	253	212	36	5	64.9	73.8
0845	265	221	34	10	64.9	74.5
0900	225	177	39	9	64.3	74.4
0915	225	183	34	8	64.4	73.1
0930	191	164	22	5	69.7	77.4
0945	205	170	31	4	70.3	78.7
1000	219	176	37	6	68.4	75.8
1015	245	193	41	11	68.4	76
1030	221	182	30	9	69.9	78.1
1045	226	187	32	7	71.6	78.3
1100	225	177	36	12	69.4	77.8
1115	222	189	26	7	70.5	77.1
1130	208	169	31	8	72.1	80.6
1145	183	148	26	9	72.2	80.1
1200	213	174	34	5	70.9	78.3
1215	225	189	26	10	71.9	79.6
1230	193	162	22	9	71.8	79.2
1245	162	134	24	4	70.4	77.6
1300	193	172	19	2	70	79.5
1315	188	158	23	7	72	79
1330	169	129	32	8	69.8	79.4
1345	189	154	26	9	73.4	80.3
1400	208	163	43	2	72.1	80.8
1415	218	173	42	3	69.5	77.2
1430	215	179	30	6	67.3	76.7
1445	213	184	20	9	65.5	73.8
1500	263	217	32	14	65.7	74.1
1515	206	182	21	3	69.6	77.4
1530	193	169	23	1	67.8	77.9
1545	178	143	30	5	68.4	78.1
1600	191	159	28	4	73.7	81.9
1615	181	146	30	5	74.1	84.2
1630	218	191	24	3	72.3	80.8
1645	160	137	23	0	70	79
1700	129	115	14	0	74	82.7
1715	180	151	25	4	71	78.6
1730	164	140	22	2	73.8	81.2
1745	137	122	14	1	70.9	80
1800	88	75	13	0	76.4	85.4
1815	100	86	14	0	75.2	85.7
1830	70	60	9	1	74.4	83.6
1845	58	49	9	0	75.9	85.1
1900	45	40	3	2	75.5	81
1915	58	47	11	0	80.5	92.3
1930	53	48	5	0	78.4	87
1945	46	41	3	2	67.5	74
2000	47	43	4	0	74.6	85.8
2015	38	29	9	0	75.4	85.9
2030	30	27	3	0	72.3	86.7
2045	39	36	3	0	74	83.9
2100	28	25	3	0	74.2	86.3
2115	10	6	2	2	75	-
2130	20	19	1	0	79.1	89.4
2145	20	17	3	0	73.9	88.9
2200	14	10	4	0	74	88.6
2215	12	12	0	0	67.7	81.5
2230	22	22	0	0	80.5	92.9
2245	12	10	2	0	67.9	88.8
2300	25	23	2	0	77.6	85.8
2315	8	8	0	0	67.8	-
2330	6	5	1	0	73.2	-
2345	2	2	0	0	60	-
07-09	**1728**	**1436**	**243**	**49**	**68.7**	**78.3**
09-16	**5821**	**4797**	**832**	**192**	**69.4**	**77.9**
16-18	**1360**	**1161**	**180**	**19**	**72.5**	**81**
00-00	**10463**	**8687**	**1498**	**278**	**70.6**	**79.7**

Northbound **Southbound**

TDC Traffic Data & Control

3/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	86.6	-
0015	3	3	0	0	81.8	-
0030	4	2	2	0	82.5	-
0045	0	0	0	0	-	-
0100	2	2	0	0	109.9	-
0115	0	0	0	0	-	-
0130	1	0	1	0	65.2	-
0145	2	0	2	0	71.4	-
0200	2	0	2	0	76	-
0215	0	0	0	0	-	-
0230	1	1	0	0	77.8	-
0245	3	2	1	0	78.7	-
0300	2	2	0	0	86.2	-
0315	2	2	0	0	76.3	-
0330	4	4	0	0	73.2	-
0345	3	3	0	0	87	-
0400	1	1	0	0	81.6	-
0415	0	0	0	0	-	-
0430	13	8	5	0	77.4	90.1
0445	20	15	5	0	79	95.5
0500	13	7	6	0	72.9	82
0515	16	14	2	0	71.1	79.2
0530	45	45	0	0	70.4	78.9
0545	56	49	4	3	74.1	83.2
0600	29	22	6	1	72.9	79.3
0615	60	52	7	1	72	83.1
0630	112	95	17	0	72.2	78.9
0645	114	102	12	0	73.8	82.1
0700	99	89	9	1	73.2	81.2
0715	122	101	21	0	70.8	78.2
0730	108	90	18	0	71	81.5
0745	150	123	23	4	71.2	78.6
0800	159	139	16	4	64.6	72
0815	233	207	23	3	66	72.9
0830	256	229	21	6	64.2	70.9
0845	280	243	32	5	65.3	73.1
0900	182	139	41	2	66.3	73.2
0915	207	184	21	2	65.7	73.8
0930	179	160	17	2	65.9	73.8
0945	199	167	30	2	67.2	74.7
1000	177	153	23	1	67.4	75.3
1015	173	161	12	0	66.8	74.3
1030	180	162	18	0	67.3	73.1
1045	169	147	21	1	66.6	74.5
1100	207	174	28	5	65.4	73.4
1115	190	169	20	1	66.1	74.4
1130	190	167	22	1	66.8	74.5
1145	194	172	22	0	66.6	72.9
1200	174	151	23	0	69	75.2
1215	183	171	10	2	65.8	74.1
1230	177	156	19	2	69	75.8
1245	200	173	25	2	68.8	75.2
1300	154	129	25	0	69.5	78.7
1315	193	162	27	4	68.8	76.5
1330	166	147	18	1	68.5	76.7
1345	165	148	14	3	70	79
1400	120	100	20	0	69.6	81.2
1415	179	160	18	1	69.3	77.8
1430	221	191	27	3	64.8	73.8
1445	154	140	14	0	66.9	75.7
1500	183	168	15	0	62.9	72.8
1515	190	172	18	0	65.8	73.3
1530	239	213	26	0	65.9	73.6
1545	218	195	23	0	67.2	76
1600	203	172	31	0	69.9	77.3
1615	219	185	34	0	69.1	76.9
1630	190	164	26	0	70.5	77.1
1645	230	205	25	0	71.3	79.6
1700	125	110	14	1	72.8	81.4
1715	181	168	13	0	70.9	79.3
1730	140	129	11	0	73.9	82.8
1745	127	117	10	0	73.2	81.9
1800	107	100	7	0	75.4	83.1
1815	100	87	13	0	71.4	80.2
1830	86	79	7	0	72.8	83.8
1845	55	49	6	0	74.1	85.8
1900	39	34	5	0	82.4	97.4
1915	33	28	5	0	77.2	90.7
1930	37	33	3	1	75.8	82.7
1945	35	31	4	0	73.1	83.3
2000	41	37	4	0	69.5	81.3
2015	37	30	7	0	73.8	81.2
2030	34	33	1	0	80	89
2045	12	10	2	0	81.2	94.3
2100	18	14	4	0	78.6	85.7
2115	28	23	3	2	76.5	86.4
2130	19	16	3	0	78.2	86.4
2145	23	20	3	0	76.1	91.3
2200	21	20	1	0	78.8	93.5
2215	14	13	1	0	80.1	95.4
2230	12	12	0	0	75.8	95.8
2245	8	3	3	2	88.2	-
2300	14	13	0	1	78.9	94.2
2315	5	5	0	0	73.7	-
2330	10	8	2	0	74.2	-
2345	2	2	0	0	88.4	-
07-09	**1407**	**1221**	**163**	**23**	**67.2**	**75.8**
09-16	**5163**	**4531**	**597**	**35**	**67**	**74.9**
16-18	**1415**	**1250**	**164**	**1**	**71.1**	**79.4**
00-00	**9286**	**8136**	**1080**	**70**	**68.8**	**77.6**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	0	0	0	0	-	-
0015	4	2	2	0	85.1	-
0030	0	0	0	0	-	-
0045	0	0	0	0	-	-
0100	3	2	1	0	70.2	-
0115	2	0	2	0	73.9	-
0130	2	2	0	0	50.2	-
0145	0	0	0	0	-	-
0200	0	0	0	0	-	-
0215	0	0	0	0	-	-
0230	0	0	0	0	-	-
0245	3	1	2	0	66.4	-
0300	0	0	0	0	-	-
0315	0	0	0	0	-	-
0330	2	2	0	0	71.3	-
0345	1	0	1	0	75.9	-
0400	9	9	0	0	77.8	-
0415	8	6	2	0	90.5	-
0430	4	2	2	0	87.6	-
0445	8	7	1	0	83.7	-
0500	11	10	1	0	72.2	86.1
0515	22	14	8	0	83.7	89.3
0530	57	46	11	0	75	84.3
0545	54	39	12	3	76.1	90.1
0600	76	54	18	4	72.7	83.9
0615	86	64	20	2	73.2	83.1
0630	120	112	8	0	75.5	84.9
0645	130	111	19	0	75.2	82.2
0700	126	98	28	0	73.2	82.8
0715	132	95	35	2	73.3	81.9
0730	177	150	26	1	70.2	77.7
0745	175	137	37	1	70.3	79.3
0800	200	178	20	2	64.7	72.7
0815	210	184	26	0	65.6	74.8
0830	189	143	43	3	65.3	73.8
0845	208	178	28	2	63.6	72.3
0900	168	145	23	0	64.8	74.6
0915	194	154	37	3	65.9	75.3
0930	208	161	44	3	68.6	76
0945	203	174	26	3	68.2	75.4
1000	201	167	30	4	69.6	78
1015	198	169	25	4	69.3	78.4
1030	228	194	34	0	67.9	75.7
1045	186	146	39	1	69.5	77.2
1100	189	167	21	1	70.8	79.1
1115	219	181	36	2	68.4	76.5
1130	207	178	27	2	66.6	74.5
1145	212	182	27	3	66.1	74.2
1200	199	180	13	6	66	72.9
1215	176	147	29	0	70.3	77.9
1230	168	145	22	1	69.1	75.4
1245	153	129	24	0	69.9	76.3
1300	195	167	28	0	68.3	76.1
1315	156	134	21	1	69.9	77.6
1330	167	131	34	2	70.3	79.3
1345	160	143	17	0	71.8	80.1
1400	181	159	17	5	71.5	79.2
1415	163	127	34	2	72.7	80.5
1430	203	173	28	2	66.4	73.2
1445	201	176	23	2	66.7	75.4
1500	202	176	25	1	65.4	74.3
1515	200	169	29	2	66	73.1
1530	173	152	21	0	67.5	75.2
1545	120	97	23	0	65.9	75.9
1600	168	146	22	0	70.2	79.9
1615	166	139	26	1	70.5	79.4
1630	175	160	15	0	72.3	80.8
1645	132	115	17	0	74.5	82.6
1700	125	111	14	0	72.2	83
1715	151	132	19	0	72.4	79.6
1730	109	94	15	0	73.5	80.2
1745	98	82	13	3	76.7	87.3
1800	110	103	7	0	73.6	82.3
1815	67	55	12	0	74.7	81.8
1830	70	64	6	0	72	80.1
1845	41	34	7	0	73.7	83.3
1900	56	53	3	0	72.7	81.4
1915	53	52	1	0	71.5	80.3
1930	41	36	5	0	74.2	85.5
1945	38	28	10	0	70.8	80.8
2000	53	38	15	0	73.2	82.1
2015	32	28	4	0	72.3	84.7
2030	42	36	6	0	75.4	83.6
2045	20	19	1	0	83.9	93.2
2100	23	21	2	0	77.6	94.2
2115	20	19	1	0	71.4	80.7
2130	16	15	1	0	75.2	87.9
2145	10	10	0	0	72.9	-
2200	10	9	1	0	73.5	-
2215	6	6	0	0	69.8	-
2230	18	16	2	0	77.1	96.8
2245	12	10	2	0	78.9	86.6
2300	11	11	0	0	83.7	95.6
2315	20	17	3	0	80.1	91.7
2330	12	10	1	1	75.5	87.2
2345	0	0	0	0	-	-
07-09	**1417**	**1163**	**243**	**11**	**67.7**	**77**
09-16	**5230**	**4423**	**757**	**50**	**68.3**	**76.3**
16-18	**1124**	**979**	**141**	**4**	**72.5**	**81.2**
00-00	**9154**	**7738**	**1341**	**75**	**69.6**	**78.3**

Northbound

Southbound

TDC
Traffic Data & Control

4/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	7	6	0	1	83	-
0015	0	0	0	0	-	-
0030	4	4	0	0	75.6	-
0045	8	6	2	0	74.2	-
0100	6	6	0	0	73.1	-
0115	3	3	0	0	81.3	-
0130	3	1	2	0	74.5	-
0145	0	0	0	0	-	-
0200	6	4	2	0	86.1	-
0215	4	4	0	0	89.8	-
0230	2	2	0	0	88.6	-
0245	2	0	2	0	87.6	-
0300	2	2	0	0	92.3	-
0315	2	2	0	0	77.2	-
0330	8	8	0	0	82.1	-
0345	1	1	0	0	86	-
0400	3	3	0	0	85.3	-
0415	2	2	0	0	68.8	-
0430	13	10	3	0	80.2	89.5
0445	13	11	2	0	78.9	87.6
0500	4	4	0	0	84.1	-
0515	12	10	2	0	74.5	84.9
0530	52	41	9	2	74.5	86.8
0545	57	45	8	4	76.4	87.8
0600	45	39	6	0	74.4	82.9
0615	53	37	12	4	77.2	84.6
0630	113	94	19	0	76.8	84.2
0645	104	85	19	0	76.8	86.2
0700	101	83	17	1	74.3	81.7
0715	82	63	16	3	74.6	83.9
0730	152	128	21	3	69	75.3
0745	153	142	11	0	69.9	77.9
0800	172	146	24	2	66.2	73.6
0815	202	177	23	2	68	75.9
0830	218	193	24	1	66.8	73.8
0845	245	221	21	3	64.8	70.6
0900	218	186	32	0	64.9	71.8
0915	169	155	12	2	64.3	70.7
0930	157	142	11	4	67	73.5
0945	183	164	18	1	64.2	71.1
1000	232	212	20	0	66	74.3
1015	162	153	9	0	70.1	77.9
1030	176	161	15	0	69.3	77.3
1045	225	201	22	2	70.1	77.4
1100	198	175	22	1	68.4	76
1115	210	193	16	1	69.5	76.6
1130	174	156	17	1	69.9	77.7
1145	220	196	22	2	66.3	73.1
1200	178	157	20	1	69.5	78.9
1215	209	190	19	0	70	77.8
1230	211	187	24	0	71.3	79.5
1245	175	156	17	2	69.5	77.6
1300	168	149	18	1	73.4	81.3
1315	201	187	12	2	68.4	76.4
1330	219	202	17	0	69.2	76.5
1345	169	155	14	0	71.3	78.4
1400	167	149	16	2	70.6	79.7
1415	214	181	31	2	69.9	76.5
1430	209	194	15	0	70.5	79.7
1445	235	209	24	2	66.7	74
1500	228	212	15	1	66	76.3
1515	214	187	27	0	67.6	78.1
1530	275	258	17	0	66.9	76.2
1545	210	195	14	1	68.5	77.5
1600	228	196	32	0	72.4	81.7
1615	267	233	31	3	68.4	78.1
1630	202	178	24	0	73.9	80.8
1645	208	187	21	0	71	79.2
1700	181	173	8	0	69	77.6
1715	186	161	25	0	73.6	82.3
1730	180	173	7	0	72.5	79.9
1745	185	168	14	3	73.6	82.5
1800	137	128	9	0	74.7	82
1815	138	124	13	1	76.7	86.6
1830	106	104	2	0	75	83.2
1845	83	71	9	3	75.8	87
1900	56	50	6	0	80.3	88.5
1915	70	67	3	0	77.2	88.6
1930	68	64	4	0	71.4	82.7
1945	54	50	3	1	69.2	81.5
2000	47	43	4	0	71	83.8
2015	45	43	2	0	70.8	78.3
2030	31	31	0	0	73	83.1
2045	20	20	0	0	72.9	81.2
2100	36	29	7	0	73.9	87.4
2115	42	39	1	2	70.8	84.9
2130	30	27	3	0	78	89.4
2145	33	27	6	0	80.3	92.5
2200	24	23	1	0	75	84.6
2215	17	17	0	0	78.6	87.3
2230	11	10	1	0	81	94.6
2245	18	12	5	1	81.3	89.5
2300	15	11	4	0	73.2	88.7
2315	11	8	3	0	74.3	87.4
2330	13	10	3	0	74.3	91.3
2345	10	9	1	0	69.4	-
07-09	**1325**	**1153**	**157**	**15**	**68.2**	**76.1**
09-16	**5606**	**5062**	**516**	**28**	**68.5**	**76.9**
16-18	**1637**	**1469**	**162**	**6**	**71.7**	**80.1**
00-00	**10212**	**9131**	**1013**	**68**	**70.1**	**79**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	7	7	0	0	72.5	-
0015	11	7	4	0	79.8	97
0030	4	4	0	0	86	-
0045	2	0	0	2	79.7	-
0100	2	2	0	0	72.8	-
0115	2	2	0	0	88.5	-
0130	2	0	2	0	83.1	-
0145	0	0	0	0	-	-
0200	4	2	2	0	81.9	-
0215	0	0	0	0	-	-
0230	2	2	0	0	60.2	-
0245	5	5	0	0	77.7	-
0300	0	0	0	0	-	-
0315	0	0	0	0	-	-
0330	6	6	0	0	85.2	-
0345	2	2	0	0	95.4	-
0400	4	4	0	0	86.7	-
0415	6	2	2	2	82.6	-
0430	16	12	4	0	79.9	95.5
0445	12	11	1	0	76.8	93.1
0500	17	13	2	2	80.4	88.4
0515	18	17	1	0	82	96.2
0530	36	30	6	0	77.7	88.6
0545	50	36	14	0	79.1	86.8
0600	43	30	13	0	73.8	86.8
0615	81	60	19	2	76.9	84
0630	124	104	20	0	74.2	83.4
0645	134	120	13	1	74.1	82.5
0700	135	112	21	2	72	80.3
0715	134	113	20	1	74.1	82.9
0730	178	149	29	0	71.2	79.6
0745	174	134	39	1	69.4	77.5
0800	220	193	25	2	66.9	75.9
0815	197	175	20	2	67.4	76.3
0830	208	177	26	5	62.2	70.6
0845	183	151	29	3	63.9	71.2
0900	202	183	16	3	64.4	72.9
0915	181	160	21	0	60.8	69.1
0930	166	139	27	0	67.5	76.1
0945	242	223	15	4	55.9	73.2
1000	249	225	23	1	64.7	71.5
1015	199	177	16	6	69.7	78.8
1030	227	201	26	0	69.4	76.8
1045	204	182	20	2	72.3	81.2
1100	207	187	13	7	71.6	79.9
1115	234	203	28	3	70.6	78.4
1130	223	196	23	4	70.6	78.3
1145	201	181	19	1	70	76.5
1200	253	209	42	2	70.9	80.1
1215	208	173	31	4	71	77.8
1230	215	198	17	0	70.1	78.8
1245	144	128	16	0	74.8	83.7
1300	173	152	20	1	71.5	79.2
1315	167	155	12	0	70.5	79.2
1330	208	183	25	0	67.4	77
1345	179	150	28	1	71.3	79.2
1400	189	160	29	0	71.2	79.7
1415	180	157	20	3	68.7	76.3
1430	184	154	28	2	68	76.7
1445	208	181	25	2	67.8	76.6
1500	188	160	26	2	67.1	75.8
1515	214	183	29	2	67.3	76.1
1530	194	167	23	4	66.9	75.6
1545	163	148	14	1	69	77.7
1600	151	126	21	4	72.7	80.1
1615	157	138	18	1	73.5	81.9
1630	157	129	26	2	74.6	82.7
1645	152	136	15	1	69.1	80.3
1700	118	113	5	0	72.5	81.8
1715	136	118	18	0	73.1	81.3
1730	139	124	15	0	73.7	80.8
1745	126	113	13	0	74.4	82.2
1800	90	77	13	0	72.6	82.5
1815	93	89	2	2	73.8	84.2
1830	86	71	15	0	75.6	85.5
1845	55	48	7	0	75.6	89.8
1900	51	42	9	0	77.7	87.6
1915	53	48	2	3	73.6	85.3
1930	51	45	5	1	74.5	84.6
1945	52	50	2	0	70.4	78.7
2000	41	37	4	0	67.2	75.6
2015	49	42	7	0	72.2	81.8
2030	63	59	4	0	71.9	83.2
2045	44	44	0	0	72.4	82.3
2100	46	45	1	0	77.1	90
2115	46	42	4	0	70.9	81.5
2130	31	26	5	0	72.3	79.5
2145	37	32	3	2	72.1	82.1
2200	31	29	2	0	77.3	87.9
2215	36	35	1	0	70.5	82.8
2230	17	15	2	0	77.4	88.4
2245	18	18	0	0	79	91.3
2300	33	28	5	0	78	84
2315	18	14	3	1	77.1	90.8
2330	15	15	0	0	73.1	84
2345	5	3	2	0	76.3	-
07-09	**1429**	**1204**	**209**	**16**	**67.9**	**77.4**
09-16	**5602**	**4915**	**632**	**55**	**68.5**	**77.6**
16-18	**1136**	**997**	**131**	**8**	**72.9**	**81.4**
00-00	**9818**	**8548**	**1173**	**97**	**69.9**	**79.6**

Northbound **Southbound**

TDC Traffic Data & Control

5/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	12	12	0	0	74.5	85.7
0015	0	0	0	0	-	-
0030	4	4	0	0	99	-
0045	6	6	0	0	83	-
0100	6	4	2	0	72.9	-
0115	1	1	0	0	79.6	-
0130	4	4	0	0	86.1	-
0145	2	2	0	0	72.3	-
0200	0	0	0	0	-	-
0215	2	1	1	0	78.1	-
0230	4	2	2	0	78.3	-
0245	0	0	0	0	-	-
0300	1	1	0	0	69.5	-
0315	2	2	0	0	55.1	-
0330	8	8	0	0	66.8	-
0345	2	2	0	0	82.1	-
0400	3	3	0	0	85.5	-
0415	2	2	0	0	69	-
0430	3	3	0	0	83.9	-
0445	7	7	0	0	85.8	-
0500	2	2	0	0	94	-
0515	11	11	0	0	75.3	87.4
0530	26	20	4	2	79	89.3
0545	35	25	9	1	83.9	93.6
0600	26	24	2	0	75.3	92.2
0615	29	26	3	0	75.5	87.2
0630	56	54	2	0	75.9	87.2
0645	52	43	9	0	79.6	89.7
0700	61	51	10	0	77.2	85.5
0715	40	29	10	1	72.7	84.9
0730	80	68	10	2	72	81
0745	122	95	25	2	72.4	81.6
0800	58	53	5	0	70.9	80.3
0815	95	85	10	0	72.7	81.4
0830	109	103	6	0	72.5	79.8
0845	120	107	13	0	69.1	78.6
0900	113	101	10	2	72.3	81.8
0915	136	117	19	0	71.4	79.4
0930	136	123	10	3	70.7	79.6
0945	153	136	14	3	73.7	83.8
1000	164	157	7	0	68.6	77.7
1015	159	145	11	3	71	79.7
1030	183	163	18	2	68.7	79.2
1045	176	163	11	2	71.7	78.9
1100	195	178	17	0	69.4	78.5
1115	213	203	7	3	71.9	81.4
1130	217	196	19	2	69.3	77.4
1145	211	203	8	0	71.3	79.5
1200	203	188	14	1	73.1	79.7
1215	197	188	9	0	70.2	79.7
1230	167	156	11	0	70.4	78.8
1245	173	163	10	0	74.4	83.3
1300	168	155	13	0	71.1	79.5
1315	173	157	15	1	72.7	81
1330	175	158	17	0	69.4	78.2
1345	162	150	12	0	69.6	78
1400	150	135	14	1	72.6	81.1
1415	163	158	5	0	71.5	80.6
1430	158	150	7	1	70.6	80.9
1445	148	120	26	2	72.6	80.8
1500	124	118	6	0	74.1	83.9
1515	150	140	10	0	70.2	78.2
1530	134	121	12	1	71.3	82
1545	139	128	11	0	74.4	84.1
1600	137	129	8	0	72.5	81.1
1615	149	141	7	1	71.8	79.6
1630	150	142	5	3	73.4	80.9
1645	144	133	11	0	74.3	84.4
1700	128	118	9	1	73.2	83
1715	119	110	9	0	74.1	83.9
1730	137	116	21	0	76.4	84.8
1745	125	110	15	0	75.1	84.3
1800	109	95	13	1	77.1	85.1
1815	69	62	7	0	75	84.7
1830	61	56	3	2	77	85.3
1845	68	59	7	2	78.3	86.9
1900	55	55	0	0	76.9	84.9
1915	62	52	9	1	74.3	83.4
1930	63	60	3	0	73.4	83.1
1945	41	38	3	0	74.6	83.8
2000	30	27	3	0	77.2	90.2
2015	42	42	0	0	68.3	77.4
2030	26	25	1	0	69	77.6
2045	32	30	2	0	73.6	84.8
2100	31	29	2	0	77.7	91.1
2115	20	18	2	0	71.4	84.1
2130	21	21	0	0	79.4	93.5
2145	16	16	0	0	77	89.6
2200	14	13	1	0	77.6	86.3
2215	23	22	1	0	75	85.2
2230	13	13	0	0	69.1	85.5
2245	18	18	0	0	71.9	85.2
2300	10	10	0	0	72.4	-
2315	7	7	0	0	75.2	-
2330	6	6	0	0	66	-
2345	4	0	4	0	72.1	-
07-09	**685**	**591**	**89**	**5**	**72.2**	**81.4**
09-16	**4640**	**4270**	**343**	**27**	**71.3**	**80.1**
16-18	**1089**	**999**	**85**	**5**	**73.8**	**83.1**
00-00	**7561**	**6903**	**612**	**46**	**72.4**	**81.7**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	8	8	0	0	73.7	-
0015	12	12	0	0	79.8	99.8
0030	8	8	0	0	86	-
0045	4	2	2	0	74.6	-
0100	9	7	2	0	78.9	-
0115	0	0	0	0	-	-
0130	0	0	0	0	-	-
0145	4	4	0	0	85.4	-
0200	2	2	0	0	97.7	-
0215	8	8	0	0	78.7	-
0230	0	0	0	0	-	-
0245	3	3	0	0	75.5	-
0300	2	1	0	1	86.9	-
0315	0	0	0	0	-	-
0330	0	0	0	0	-	-
0345	8	8	0	0	87	-
0400	2	2	0	0	95.1	-
0415	2	1	1	0	109.5	-
0430	3	3	0	0	85.4	-
0445	20	15	4	1	84.8	93.6
0500	7	4	2	1	88	-
0515	15	13	2	0	78.6	91.5
0530	7	5	2	0	66.1	-
0545	19	15	4	0	75.1	83.5
0600	27	26	1	0	75.8	84.5
0615	39	35	4	0	76.9	85
0630	43	38	5	0	80	86.7
0645	43	34	9	0	74.3	81.6
0700	53	42	9	2	75.2	86
0715	71	53	15	3	73.7	85.1
0730	60	53	7	0	74.9	83.7
0745	90	70	15	5	76.6	85.7
0800	114	97	14	3	74.9	84
0815	108	82	22	4	73.4	81.4
0830	131	115	16	0	73.5	82.1
0845	133	107	24	2	70.8	78.5
0900	137	117	20	0	73.7	82.4
0915	124	107	13	4	73.2	81.8
0930	149	130	14	5	70.8	78.8
0945	186	163	20	3	70.9	80.8
1000	191	172	15	4	68.1	76.5
1015	222	203	19	0	72.8	79.4
1030	162	139	18	5	70.1	79.2
1045	197	176	20	1	70.9	78.4
1100	148	135	9	4	69.7	78.4
1115	193	161	30	2	72.1	80.4
1130	178	161	17	0	70.5	80.3
1145	170	145	21	4	70.7	79.3
1200	177	163	13	1	72	80.6
1215	216	192	23	1	70.9	78.4
1230	151	142	7	2	71.2	78.5
1245	161	144	13	4	74.3	82.2
1300	173	155	16	2	71.3	79.6
1315	167	146	21	0	74.8	83.7
1330	194	179	15	0	71.2	78.8
1345	164	143	21	0	71.4	79.8
1400	143	129	14	0	73.4	81.6
1415	195	173	21	1	70.5	79
1430	147	137	10	0	71.2	79.5
1445	166	145	21	0	70.2	78.7
1500	122	111	11	0	75	82.9
1515	199	178	20	1	70.1	79.9
1530	134	122	12	0	74	82.4
1545	116	102	13	1	73	83.4
1600	137	119	18	0	72.9	82.4
1615	103	97	6	0	74.5	83.3
1630	89	78	11	0	74.5	81.5
1645	93	80	13	0	74	83.7
1700	97	83	13	1	72.9	80.4
1715	75	71	4	0	74.8	83.9
1730	91	82	9	0	75.3	87
1745	79	60	19	0	75.8	86.4
1800	72	58	12	2	78.8	87.1
1815	74	63	11	0	79.2	86.9
1830	70	54	16	0	73.8	84.7
1845	40	37	3	0	74.8	85.7
1900	36	32	2	2	78.7	89.6
1915	40	35	5	0	76.7	90.6
1930	48	47	1	0	75.7	88.2
1945	53	45	8	0	72.4	84.2
2000	38	35	2	1	72.3	86.3
2015	66	62	4	0	71.1	80.4
2030	60	58	2	0	76.2	87.2
2045	39	34	5	0	74.1	87.1
2100	47	45	2	0	72.5	81.1
2115	42	36	6	0	75.4	87.2
2130	41	37	2	2	76.8	92.3
2145	56	50	6	0	74	84.5
2200	67	60	7	0	73.8	84
2215	25	20	5	0	80.3	93.5
2230	23	21	2	0	80.5	94.6
2245	42	42	0	0	75.8	83.7
2300	31	28	3	0	72.5	85.4
2315	13	7	6	0	74	87.7
2330	17	17	0	0	68.3	88.5
2345	14	12	2	0	69.1	79.9
07-09	**760**	**619**	**122**	**19**	**73.8**	**82.6**
09-16	**4682**	**4170**	**467**	**45**	**71.6**	**80.1**
16-18	**764**	**670**	**93**	**1**	**74.2**	**84.1**
00-00	**7555**	**6648**	**832**	**75**	**72.8**	**81.7**

Northbound **Southbound**

TDC Traffic Data & Control

6/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	9	9	0	0	70.8	-
0015	9	9	0	0	75.9	-
0030	3	2	1	0	68.9	-
0045	6	6	0	0	86.5	-
0100	4	4	0	0	76.7	-
0115	0	0	0	0	-	-
0130	2	0	2	0	65	-
0145	0	0	0	0	-	-
0200	0	0	0	0	-	-
0215	4	2	2	0	82.4	-
0230	0	0	0	0	-	-
0245	4	4	0	0	75.7	-
0300	1	1	0	0	82.5	-
0315	0	0	0	0	-	-
0330	2	2	0	0	81.8	-
0345	2	2	0	0	82.4	-
0400	4	3	1	0	85.9	-
0415	2	2	0	0	72.6	-
0430	8	8	0	0	79.6	-
0445	4	4	0	0	80.7	-
0500	4	4	0	0	75.5	-
0515	3	3	0	0	72.7	-
0530	11	11	0	0	81.6	100.7
0545	14	11	1	2	77.9	91.5
0600	18	18	0	0	76.2	89.1
0615	26	19	6	1	75.3	91.2
0630	28	26	2	0	79.1	90.9
0645	24	17	7	0	73.7	82.3
0700	29	25	4	0	75.9	85.8
0715	31	27	4	0	76.1	84.1
0730	60	50	10	0	74	82.4
0745	58	51	6	1	75.5	86.1
0800	85	70	15	0	73.6	84.1
0815	63	57	6	0	73.8	81.5
0830	101	88	12	1	71.9	82.8
0845	115	110	5	0	73.9	81.4
0900	99	90	7	2	69.2	77.6
0915	94	81	12	1	73.2	81.4
0930	157	151	6	0	71.4	80.2
0945	174	158	11	5	71.1	78.8
1000	153	144	9	0	70.9	78.8
1015	145	133	11	1	70.4	79.2
1030	156	151	4	1	71.3	79.6
1045	133	122	10	1	69.5	76.9
1100	148	132	16	0	72.7	81.5
1115	144	133	11	0	74.1	82.3
1130	181	167	14	0	67.5	76.9
1145	212	203	7	2	69.1	76
1200	145	132	8	5	72.1	81
1215	222	204	18	0	70.4	77.5
1230	164	153	11	0	71.2	80.1
1245	164	155	9	0	69.4	78
1300	139	127	8	4	70.3	77.8
1315	170	154	14	2	70.3	79.7
1330	139	130	9	0	69.8	79.2
1345	163	156	7	0	74.1	83.2
1400	151	147	4	0	71.9	81.8
1415	151	135	16	0	72.7	81.9
1430	167	152	14	1	74.1	82
1445	156	150	6	0	72.8	82.1
1500	148	141	7	0	72.4	81.5
1515	131	125	5	1	71.2	82.1
1530	154	138	16	0	71	79.7
1545	141	129	12	0	73	81.5
1600	155	142	13	0	74.2	81.2
1615	112	101	11	0	71.3	81.9
1630	109	100	9	0	74.5	83.5
1645	93	87	6	0	75.4	84.4
1700	111	104	7	0	72.9	83
1715	107	94	13	0	74.4	82.9
1730	78	66	12	0	74.3	82.2
1745	77	71	6	0	73.3	82.8
1800	61	59	2	0	73.7	82.3
1815	76	66	10	0	79.3	88.9
1830	59	48	10	1	74.9	85.9
1845	42	38	4	0	78	85.6
1900	54	47	7	0	76.4	85.8
1915	49	44	5	0	78.1	89.5
1930	34	28	6	0	80.7	90.7
1945	42	38	4	0	75	86.9
2000	32	30	2	0	72.5	85.2
2015	14	13	1	0	73.4	86.5
2030	13	13	0	0	80.2	97.9
2045	24	20	4	0	74.7	85
2100	24	24	0	0	77	86.9
2115	12	12	0	0	75.2	85.3
2130	11	10	1	0	76.1	91.5
2145	13	13	0	0	77.9	86.8
2200	4	4	0	0	86.8	-
2215	4	4	0	0	73.3	-
2230	15	15	0	0	86	101.8
2245	10	9	1	0	79.8	-
2300	14	14	0	0	72.9	87.6
2315	8	8	0	0	82.9	-
2330	6	6	0	0	66.7	-
2345	4	4	0	0	74.5	-
07-09	**542**	**478**	**62**	**2**	**73.9**	**83.1**
09-16	**4301**	**3993**	**282**	**26**	**71.3**	**79.9**
16-18	**842**	**765**	**77**	**0**	**73.8**	**82.6**
00-00	**6502**	**5970**	**500**	**32**	**72.5**	**81.5**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	18	16	2	0	80.3	95.6
0015	6	6	0	0	67.9	-
0030	14	12	2	0	79.3	93.6
0045	10	10	0	0	77.6	-
0100	2	2	0	0	75.2	-
0115	0	0	0	0	-	-
0130	0	0	0	0	-	-
0145	2	2	0	0	101.7	-
0200	0	0	0	0	-	-
0215	4	4	0	0	85.8	-
0230	3	3	0	0	83.7	-
0245	2	2	0	0	80.3	-
0300	0	0	0	0	-	-
0315	0	0	0	0	-	-
0330	0	0	0	0	-	-
0345	4	4	0	0	81.5	-
0400	2	2	0	0	88.1	-
0415	0	0	0	0	-	-
0430	0	0	0	0	-	-
0445	5	5	0	0	83.2	-
0500	11	9	2	0	78.6	89.9
0515	6	5	1	0	80.4	-
0530	6	4	2	0	73.1	-
0545	10	7	3	0	80.7	-
0600	16	11	5	0	84	97.5
0615	15	13	2	0	75.6	91.9
0630	27	27	0	0	75.3	87.1
0645	30	28	2	0	75.9	87.2
0700	43	35	5	3	77.9	85.6
0715	36	31	5	0	75	89.4
0730	43	34	9	0	76.7	84.6
0745	51	43	8	0	77.6	88.6
0800	88	74	14	0	71	78.7
0815	86	72	12	2	73.4	82.4
0830	84	66	16	2	73.1	81.9
0845	129	112	17	0	71.5	78.4
0900	114	108	5	1	72.8	79.9
0915	146	128	16	2	72.2	79.2
0930	160	140	15	5	71.7	80.4
0945	195	160	32	3	71.1	79
1000	230	211	15	4	71	79.1
1015	217	189	27	1	72.4	81.4
1030	232	193	35	4	70.5	78.1
1045	190	171	17	2	72	81.7
1100	197	180	14	3	71.6	80.2
1115	166	149	13	4	71.5	80.5
1130	155	143	11	1	69.9	78.2
1145	209	179	28	2	72	78.3
1200	192	181	11	0	73.1	81
1215	180	160	19	1	73.9	84.8
1230	187	170	17	0	74.1	83.5
1245	153	139	12	2	69.9	77.5
1300	177	164	11	2	69.6	77.8
1315	194	178	12	4	71.9	79
1330	174	155	18	1	74	83.3
1345	152	135	15	2	70.8	78.9
1400	178	159	19	0	72	81.2
1415	173	161	12	0	73.1	81.9
1430	159	140	19	0	72.7	80.3
1445	174	151	23	0	76.8	84.4
1500	147	129	17	1	74.7	84.9
1515	135	117	18	0	72.6	81.7
1530	137	121	16	0	72.7	81.2
1545	115	106	8	1	73.3	82.3
1600	119	111	8	0	73.5	84.2
1615	108	91	17	0	74.8	84.3
1630	111	106	5	0	74.5	84.2
1645	90	82	8	0	74.6	85.6
1700	105	96	9	0	71.2	80.8
1715	70	61	9	0	75.9	86.7
1730	82	71	11	0	75.7	84.8
1745	81	66	15	0	75.1	85
1800	61	53	8	0	76	83.5
1815	59	52	7	0	76.8	86.8
1830	43	38	4	1	75.7	87.8
1845	46	40	6	0	73.5	86.4
1900	52	46	6	0	75	83.4
1915	56	47	9	0	74.8	85.6
1930	36	32	4	0	72.6	85.3
1945	33	31	2	0	77	89.9
2000	43	38	5	0	75	83.7
2015	50	48	2	0	77.3	87.6
2030	29	29	0	0	75.7	84.2
2045	20	16	4	0	75.5	86.9
2100	9	8	1	0	75.5	-
2115	18	18	0	0	75	86.1
2130	15	13	2	0	86.5	107.3
2145	18	17	1	0	83.2	91.1
2200	38	38	0	0	79.6	96
2215	13	13	0	0	71.5	85.8
2230	12	12	0	0	72.1	80.2
2245	19	19	0	0	80.3	90.4
2300	26	26	0	0	79.5	87.3
2315	8	8	0	0	65.5	-
2330	4	2	2	0	82.6	-
2345	0	0	0	0	-	-
07-09	**560**	**467**	**86**	**7**	**73.6**	**83**
09-16	**4838**	**4317**	**475**	**46**	**72.2**	**80.6**
16-18	**766**	**684**	**82**	**0**	**74.3**	**84.2**
00-00	**7065**	**6284**	**727**	**54**	**73.1**	**82.3**

Northbound **Southbound**

TDC Traffic Data & Control

7/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	2	2	0	0	81	-
0015	0	0	0	0	-	-
0030	0	0	0	0	-	-
0045	6	6	0	0	67.4	-
0100	2	0	2	0	104	-
0115	4	2	2	0	76.2	-
0130	4	4	0	0	81.5	-
0145	4	2	2	0	87.7	-
0200	0	0	0	0	-	-
0215	3	3	0	0	82	-
0230	4	4	0	0	75.3	-
0245	0	0	0	0	-	-
0300	3	1	2	0	72.2	-
0315	1	1	0	0	83.6	-
0330	5	5	0	0	88.2	-
0345	3	1	2	0	93.4	-
0400	0	0	0	0	-	-
0415	4	2	2	0	70	-
0430	14	12	2	0	80.7	90.1
0445	11	8	3	0	78.7	88.1
0500	12	9	3	0	76.3	80.1
0515	14	9	5	0	75.9	92.8
0530	45	39	6	0	75.9	87.3
0545	48	38	8	2	72.1	80.6
0600	44	34	10	0	72.3	81.4
0615	89	76	12	1	75.5	82.9
0630	102	82	19	1	77.1	84.1
0645	134	102	32	0	76.9	84.7
0700	117	91	23	3	73.5	81.5
0715	119	99	17	3	72.8	81
0730	148	127	19	2	71.9	79.8
0745	162	141	17	4	71.7	79.7
0800	127	114	8	5	69.5	76.8
0815	235	207	26	2	65.4	72.1
0830	256	231	24	1	65.4	72.3
0845	258	232	22	4	66.4	74.2
0900	182	156	26	0	67	73.1
0915	155	140	15	0	66.5	73.9
0930	187	164	19	4	67.7	76.5
0945	150	141	9	0	68.8	77.2
1000	167	156	9	2	68.9	76.4
1015	234	207	27	0	68.5	75
1030	157	142	14	1	70	79.4
1045	171	155	16	0	71	78.2
1100	173	150	21	2	69.2	76.9
1115	151	136	12	3	71.4	79.4
1130	145	125	20	0	68.2	75.1
1145	179	160	18	1	67.6	76.5
1200	180	173	4	3	69.2	77.7
1215	153	135	17	1	68.3	76.3
1230	171	154	13	4	69.3	78.3
1245	167	150	17	0	69.2	77.9
1300	178	155	21	2	69.2	77.4
1315	176	160	16	0	68.8	76.2
1330	164	144	16	4	70.5	76.7
1345	204	182	17	5	68.8	78.8
1400	145	132	12	1	71.1	78.7
1415	163	153	10	0	69.4	76.9
1430	198	181	16	1	65.2	72.4
1445	155	145	8	2	67	76.1
1500	208	182	26	0	62.8	71.3
1515	204	189	15	0	65.3	72.6
1530	270	252	18	0	65.6	73
1545	228	212	14	2	65.3	73.3
1600	198	174	23	1	71	79.8
1615	211	186	25	0	72.3	80.8
1630	239	212	25	2	72.2	79
1645	212	190	22	0	72.5	81.5
1700	209	196	12	1	70.9	80
1715	188	172	16	0	71.4	79.3
1730	162	153	9	0	72.4	81.3
1745	110	97	13	0	72.7	81.8
1800	83	71	10	2	76.5	87.3
1815	95	84	8	3	77.1	85.8
1830	48	42	6	0	76.3	82.4
1845	67	65	2	0	74.9	84.4
1900	63	58	5	0	74.5	83.2
1915	44	44	0	0	75.3	83.3
1930	45	41	4	0	75.6	83.2
1945	45	33	12	0	70.5	81.8
2000	34	30	4	0	70	80.8
2015	24	19	5	0	74.5	86.9
2030	25	21	4	0	75	88.1
2045	25	24	1	0	76	86.4
2100	6	6	0	0	80.7	-
2115	24	24	0	0	69.4	79.8
2130	9	8	1	0	75.5	-
2145	17	15	2	0	70.5	82.9
2200	14	13	1	0	82.6	99.7
2215	12	12	0	0	84.3	93
2230	12	10	2	0	81.3	92
2245	3	3	0	0	76.5	-
2300	4	3	1	0	83.3	-
2315	4	4	0	0	74.1	-
2330	0	0	0	0	-	-
2345	0	0	0	0	-	-
07-09	**1422**	**1242**	**156**	**24**	**68.6**	**77**
09-16	**5015**	**4531**	**446**	**38**	**68**	**76.3**
16-18	**1529**	**1380**	**145**	**4**	**71.9**	**80.2**
00-00	**9227**	**8225**	**927**	**75**	**69.8**	**78.7**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	2	2	0	0	83.6	-
0015	12	12	0	0	82	94.5
0030	0	0	0	0	-	-
0045	4	2	2	0	92.9	-
0100	2	2	0	0	56.1	-
0115	0	0	0	0	-	-
0130	0	0	0	0	-	-
0145	0	0	0	0	-	-
0200	4	3	1	0	84.2	-
0215	4	2	2	0	80.8	-
0230	0	0	0	0	-	-
0245	3	3	0	0	92.8	-
0300	2	0	2	0	83.3	-
0315	1	1	0	0	77.4	-
0330	6	6	0	0	74.5	-
0345	0	0	0	0	-	-
0400	5	5	0	0	92.6	-
0415	7	7	0	0	79.3	-
0430	16	12	4	0	80.7	97.7
0445	10	10	0	0	77.6	-
0500	17	12	5	0	80.8	96
0515	21	18	3	0	81.1	91.7
0530	57	49	8	0	76.6	90.4
0545	50	39	11	0	76.5	82.7
0600	81	64	16	1	74	84.9
0615	54	42	8	4	78.5	88
0630	138	124	9	5	78	85.5
0645	133	115	15	3	76.5	85.4
0700	162	125	36	1	72.1	80.5
0715	143	112	29	2	73.6	80.2
0730	159	138	21	0	73.3	81.5
0745	166	141	21	4	71.5	80.3
0800	219	186	27	6	66	74.3
0815	236	216	19	1	67.6	76.5
0830	177	156	20	1	65.4	73.7
0845	217	184	33	0	62.4	70.4
0900	173	128	38	7	66.2	74.3
0915	243	209	30	4	65.2	73.6
0930	243	202	38	3	67.6	74.9
0945	221	189	31	1	71.3	78.8
1000	206	192	13	1	70.2	77.8
1015	214	192	18	4	67.8	74
1030	209	173	33	3	71.4	80.3
1045	209	193	16	0	71.7	78.3
1100	195	167	25	3	69.1	78.3
1115	195	166	29	0	71.4	78.4
1130	161	129	30	2	69.2	78.6
1145	185	164	19	2	67.6	75.4
1200	232	202	27	3	69.4	77.1
1215	168	144	22	2	71	79.4
1230	199	173	20	6	69.5	79
1245	140	116	22	2	71.7	80.7
1300	168	150	18	0	70.8	79.2
1315	178	158	19	1	70.7	77.3
1330	200	159	39	2	71.5	79.4
1345	175	143	31	1	71.7	80
1400	178	161	16	1	70.7	78.4
1415	192	145	42	5	72.1	78.7
1430	212	174	38	0	66.1	75.1
1445	205	170	33	2	66.2	73.4
1500	178	146	30	2	68.1	75.8
1515	187	153	33	1	67.8	75.6
1530	163	134	26	3	69.4	78.2
1545	201	170	29	2	68.3	76.5
1600	184	145	34	5	73.4	81.8
1615	161	144	17	0	74.7	82.8
1630	161	138	23	0	73.4	80.6
1645	133	118	13	2	73	81.5
1700	136	121	15	0	74.5	81.1
1715	178	157	21	0	74.8	82.1
1730	120	101	19	0	75.5	85.1
1745	92	84	8	0	77.4	84.5
1800	78	62	16	0	76.3	89.5
1815	65	56	8	1	79.5	90
1830	53	46	7	0	79.6	86.4
1845	48	36	12	0	79.5	88.2
1900	45	41	4	0	75.4	85.2
1915	55	52	3	0	75.3	83.9
1930	35	31	4	0	69.7	79.7
1945	21	21	0	0	72.8	90.5
2000	25	20	5	0	76.7	92.2
2015	20	12	6	2	74	85.1
2030	25	21	0	4	67.5	82.5
2045	26	22	4	0	77.1	87.8
2100	29	27	2	0	75.3	86.8
2115	35	30	5	0	80.4	98.8
2130	22	22	0	0	78.1	92.8
2145	23	23	0	0	73.6	86.4
2200	20	16	4	0	86.7	107.5
2215	6	4	2	0	76.9	-
2230	7	7	0	0	72.2	-
2245	8	6	2	0	74.1	-
2300	19	18	1	0	79.2	91.6
2315	8	6	2	0	79.7	-
2330	2	2	0	0	75.4	-
2345	4	4	0	0	74.3	-
07-09	**1479**	**1258**	**206**	**15**	**68.5**	**77.6**
09-16	**5430**	**4602**	**765**	**63**	**69.3**	**77.4**
16-18	**1165**	**1008**	**150**	**7**	**74.4**	**82.3**
00-00	**9382**	**7983**	**1294**	**105**	**70.9**	**79.9**

Northbound **Southbound**

TDC Traffic Data & Control

8/02/2022

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	5	3	2	0	75.6	-
0015	3	3	0	0	71.2	-
0030	2	1	1	0	99.3	-
0045	2	2	0	0	78.2	-
0100	2	2	0	0	132.7	-
0115	4	4	0	0	92.5	-
0130	1	1	0	0	104.6	-
0145	2	1	0	1	69.5	-
0200	0	0	0	0	-	-
0215	1	1	0	0	83.7	-
0230	1	1	0	0	78	-
0245	0	0	0	0	-	-
0300	2	2	0	0	92.5	-
0315	6	4	2	0	76.1	-
0330	5	5	0	0	76.6	-
0345	0	0	0	0	-	-
0400	7	7	0	0	88.7	-
0415	11	8	2	1	78.5	94.9
0430	10	5	5	0	80	-
0445	14	12	2	0	78.2	91.8
0500	3	3	0	0	73.7	-
0515	14	7	7	0	85.5	96.4
0530	46	36	10	0	74.5	82.8
0545	47	39	6	2	74.4	85.9
0600	59	50	8	1	72.7	81.5
0615	61	48	11	2	74.9	84
0630	114	97	16	1	74.2	83.9
0645	128	112	15	1	75.6	83.3
0700	121	95	22	4	75.1	84.1
0715	129	98	30	1	71.2	79
0730	155	136	19	0	71.6	80
0745	180	150	24	6	71.5	81.3
0800	188	176	12	0	68.4	76.7
0815	190	171	17	2	68.5	76.3
0830	218	176	40	2	67.1	75.4
0845	244	214	29	1	67.6	74.6
0900	227	190	34	3	65.9	73.8
0915	182	162	19	1	65.8	73
0930	165	147	18	0	67.8	77.4
0945	224	193	30	1	69.6	79.7
1000	149	127	20	2	69.5	78.2
1015	173	149	24	0	68.8	75.9
1030	162	138	24	0	68.3	77.4
1045	172	147	19	6	69.4	77.9
1100	212	176	36	0	70	77.2
1115	241	213	28	0	70.2	78.5
1130	192	174	18	0	66.6	74.2
1145	196	177	16	3	70.1	77.7
1200	202	183	17	2	67.7	75.7
1215	196	171	23	2	69	77
1230	175	159	15	1	69.8	76.5
1245	160	143	14	3	69.6	79.5
1300	196	175	21	0	69.9	77.9
1315	172	147	24	1	69.4	77.4
1330	185	166	17	2	69.8	78.1
1345	174	152	21	1	71.4	81.7
1400	145	118	25	2	70.8	80.8
1415	173	153	18	2	69.6	78.6
1430	177	156	20	1	68.7	77.3
1445	155	138	15	2	68	76.5
1500	156	140	16	0	67.6	76.1
1515	177	155	22	0	67.9	78.1
1530	296	266	28	2	66.1	74.6
1545	262	223	35	4	67.5	73.5
1600	226	190	36	0	71.1	78.5
1615	234	218	15	1	70.5	77.6
1630	189	165	24	0	73	81.5
1645	243	222	18	3	71	79.2
1700	204	192	11	1	71.4	81.2
1715	195	180	12	3	72.6	80.3
1730	182	166	15	1	72.2	81.1
1745	163	147	14	2	73.3	82.9
1800	129	118	11	0	74.6	82.9
1815	116	106	10	0	75.1	83.5
1830	83	81	2	0	74.5	83
1845	62	53	9	0	76.5	87.9
1900	65	58	7	0	77.1	87.4
1915	56	54	2	0	72	84.8
1930	54	43	10	1	75.3	87.9
1945	43	36	7	0	76.6	87.4
2000	42	36	6	0	74.3	85.4
2015	34	32	1	1	75.5	82.9
2030	35	35	0	0	74.4	85.6
2045	32	28	4	0	72.1	78.5
2100	16	16	0	0	74.1	85.6
2115	23	18	5	0	78.2	89.7
2130	26	25	1	0	73.8	81.2
2145	8	8	0	0	70.1	-
2200	17	14	3	0	75	83.6
2215	10	8	1	1	81.7	-
2230	16	16	0	0	84.9	95.5
2245	2	2	0	0	68.7	-
2300	3	1	2	0	82.9	-
2315	8	6	2	0	95.5	-
2330	8	6	2	0	81.9	-
2345	8	8	0	0	77.7	-
07-09	**1425**	**1216**	**193**	**16**	**69.7**	**78.3**
09-16	**5296**	**4638**	**617**	**41**	**68.7**	**77**
16-18	**1636**	**1480**	**145**	**11**	**71.8**	**80.1**
00-00	**9803**	**8596**	**1127**	**80**	**70.3**	**79.4**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	8	7	0	1	72.3	-
0015	2	2	0	0	79.5	-
0030	0	0	0	0	-	-
0045	0	0	0	0	-	-
0100	0	0	0	0	-	-
0115	0	0	0	0	-	-
0130	2	2	0	0	97.8	-
0145	0	0	0	0	-	-
0200	2	2	0	0	68.1	-
0215	0	0	0	0	-	-
0230	0	0	0	0	-	-
0245	1	1	0	0	62.1	-
0300	0	0	0	0	-	-
0315	3	3	0	0	86	-
0330	3	3	0	0	76.7	-
0345	3	3	0	0	84.9	-
0400	3	3	0	0	86.4	-
0415	9	6	1	2	83.5	-
0430	5	4	1	0	76.5	-
0445	11	9	2	0	81.4	94.3
0500	28	25	3	0	84	97.6
0515	28	18	10	0	81.3	95.2
0530	43	34	6	3	81.4	93.5
0545	53	36	16	1	82.4	91.2
0600	69	58	11	0	77.6	87.8
0615	75	62	11	2	73.7	84.9
0630	149	133	14	2	76.7	83.5
0645	132	111	21	0	76.3	85.7
0700	122	103	19	0	75.9	83.3
0715	152	117	32	3	73.8	82.1
0730	193	156	35	2	72.3	80.1
0745	227	200	27	0	69	80.2
0800	192	164	24	4	65.3	76.7
0815	206	187	18	1	66.7	74.2
0830	227	191	34	2	70	79.1
0845	207	172	34	1	70.7	79.5
0900	194	157	37	0	67.8	75.9
0915	190	150	36	4	66.5	76.2
0930	212	186	24	2	68.8	76
0945	188	162	25	1	70.2	78.2
1000	247	217	30	0	69.3	76.9
1015	233	196	35	2	67.8	75.9
1030	176	152	21	3	68.9	77.3
1045	184	164	20	0	71.1	77.9
1100	189	152	34	3	71.4	80.3
1115	171	152	18	1	68.6	77.6
1130	191	147	40	4	70.9	79.8
1145	189	153	32	4	69	77.6
1200	193	172	21	0	70.7	79
1215	159	141	17	1	73.9	85
1230	188	158	30	0	70.3	77.9
1245	161	130	31	0	70.1	77.9
1300	166	141	23	2	75.6	82.4
1315	205	167	37	1	70.7	79
1330	203	165	35	3	73.7	82.3
1345	187	147	38	2	69.9	77.9
1400	194	167	27	0	71.1	80.1
1415	188	154	30	4	71.7	80.5
1430	191	155	36	0	67.1	75.9
1445	205	173	31	1	66.1	74.2
1500	235	191	43	1	66.8	75.2
1515	207	177	27	3	69	79
1530	220	182	36	2	64.8	74.8
1545	181	148	31	2	69.7	78.2
1600	213	193	20	0	72.4	80.4
1615	171	137	28	6	72.4	80.7
1630	171	141	26	4	75.8	83.2
1645	146	132	14	0	75.3	82.8
1700	135	126	9	0	77	86.7
1715	151	137	14	0	74.4	83.7
1730	146	118	26	2	77.7	86
1745	111	102	9	0	77.5	86.1
1800	83	74	7	2	77.1	85.8
1815	105	95	10	0	77.9	86.1
1830	47	39	8	0	77.5	85.9
1845	54	45	9	0	81.1	92.3
1900	51	42	9	0	77	86.5
1915	46	42	4	0	79	90.7
1930	60	52	7	1	71.3	84.7
1945	56	50	6	0	73.1	82.7
2000	31	25	6	0	70	86
2015	43	41	2	0	73.6	86.9
2030	32	28	4	0	72.8	84.3
2045	42	35	7	0	77.3	85.4
2100	35	34	1	0	75.7	83.5
2115	28	25	3	0	76.5	86.6
2130	30	26	4	0	81.7	93.4
2145	21	21	0	0	75.9	84.4
2200	16	16	0	0	78.9	91.6
2215	19	18	1	0	81.1	97.4
2230	4	4	0	0	62	-
2245	6	6	0	0	78.5	-
2300	27	24	3	0	77.5	88.1
2315	6	6	0	0	73.1	-
2330	5	5	0	0	71.9	-
2345	7	7	0	0	77.6	-
07-09	**1526**	**1290**	**223**	**13**	**70.1**	**79.4**
09-16	**5447**	**4556**	**845**	**46**	**69.6**	**78.1**
16-18	**1244**	**1086**	**146**	**12**	**75**	**83.5**
00-00	**9700**	**8214**	**1401**	**85**	**71.5**	**81**

Appendix C: Site Access AUL Concept Plan

DESIGN VEHICLE

Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226
P: (07) 5562-5377
W: www.bitziosconsulting.com.au
Brisbane
Level 2, 428 Upper Edward Street, Spring Hill 4000
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au
Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
	Yamba Road Rural Supplies Lot 11 Access	R.TU	28/03/2022

Scale @ A3 0 5 10 15 20 25 1:500

Project: Rural Supplies Lot 11 Yamba Road TIA

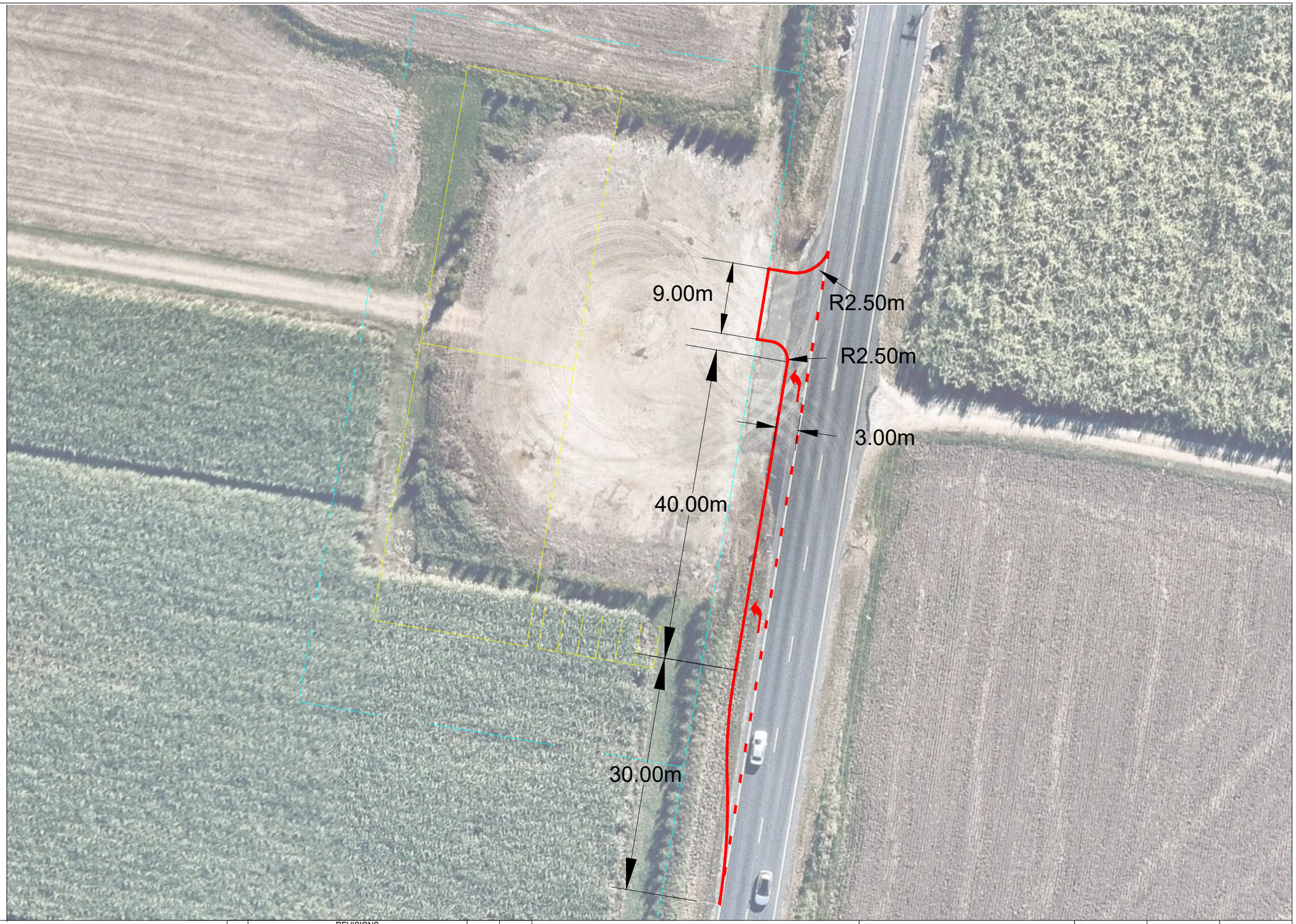
Title: Yamba Road Access Concept Plan

Design	Drawn	Checked
R.TU	R.TU	L.D

CONCEPT ONLY

Date: 28/03/2022

Project Number	Sheet Number	Issue
P5547	1	001



DESIGN VEHICLE

Gold Coast
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P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Yamba Road Rural Supplies Lot 11 Access	R.TU	28/03/2022

Scale @ A3 — 0 5 10 15 20 25 — 1:500

Project: Rural Supplies Lot 11 Yamba Road TIA

Title: Yamba Road Access
Concept Plan with Dimensions

Design	Drawn	Checked
R.TU	R.TU	L.D

CONCEPT ONLY

Date: 28/03/2022

Project Number	Sheet Number	Issue
P5547	2	001

ANNEXURE P

LOCAL STRATEGIC PLANNING STATEMENT ASSESSMENT

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
1.1	Does the proposal promote the long term liveability, health and resilience of the community, and supporting economic, social and cultural improvement? Particularly through: a) Protecting and enhancing terrestrial and aquatic biodiversity and our natural environment? b) A regenerative landscape planning approach that includes listening to First Nations People and caring for country? c) A hierarchy of avoiding, mitigating and managing natural hazards, as well as considering environmental constraints to be used in planning and design? d) Ensuring a collaborative approach to place making, that engages those who can contribute to making the Clarence Valley a community full of opportunities? e) North Coast Settlement Planning Guidelines 2019?	All	Y	- Provides an economic service supporting the local agricultural sector. - Future wastewater management system will protect water quality.
1.2	Does the proposal comply with the North Coast Urban Design Guidelines? Does the proposal comply with the Urban Design for Regional NSW guidelines?	All	N/A	
2.1	Does the proposal / process help expand existing partnerships with our First Nations communities to be involved in decision making? Have you referred to the NSW Government Architect 'Connecting with Country' and Designing with Country guidelines?	All	N/A	
2.2	Are First Nations communities involved in the development of strategic plans, inclusive of local growth management, housing and biodiversity strategies?	Strategic plans	N/A	
2.3	Has the proposal involved collaboration with Traditional Owners, Local Aboriginal Land Councils	All	N/A	AHIMS search shows no

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
	and DPIE in identifying sites of cultural significance and assets with economic development potential?			sites or aretfacts in vicinity
2.5	Have you considered the Clarence Valley Aboriginal Heritage Study and relevant studies and planning controls?	All	N/A	
2.6	Does the proposal incorporate First Nations cultural heritage and design in new developments?	Construction / design projects	N/A	
3.3	For any expansion of existing commercial or industrial lands or new development – is appropriate infrastructure that promotes active travel to work options included (walking, cycling, PT, accessibility etc.)?	All	N/A	
3.4	Have you explored options to promote smaller homes in appropriate locations of our existing centres to help achieve a target of 40% infill housing across the Clarence LGA?	Strategic planning	N/A	
4.3	Does the proposal comply with the Clarence Valley Affordable Housing Strategies, Plans and Policies?	All	N/A	
5.2	Does the proposal comply with the Crime Prevention Through Environmental Design (CPTED) and Safer by Design Evaluation?	Construction / design projects	N/A	
5.5	Are there opportunities to involve School Infrastructure NSW (SINSW) to explore and implement joint and shared use opportunities where there is mutual benefit for the school and the community?	All	N/A	

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
6.4	Is the re-use of Grafton Gaol and the Health Precinct sympathetic to the character of the surrounding streets and aspirations for the economic vitality of the Grafton CBD?	Grafton gaol and hospital precinct	N/A	
7.3	Have you explored options with state government (esp. TfNSW) and infrastructure providers to accelerate the provision of infrastructure and availability of residential and employment land to support a growing community and job opportunities in the Clarence Valley, where appropriate?	Strategic plans and major projects	N/A	
7.4	Working with State government, do facilities and redevelopment (Hospitals, Education, Corrections etc.) provide supporting infrastructure which will support a healthy, prosperous and sustainable Clarence Valley community, including for walking, cycling and other active travel? Will an 'active travel plan' be prepared to promote walking, cycling and sustainable modes of travel?	NSW Government projects	N/A	
8.1	Have you checked with TfNSW and other stakeholders to identify any impacts on major transport corridors and ensure they are protected for future transport alignments and avoid the encroachment of incompatible land uses?	Strategic plans and major projects	N/A	
9.2	Have you checked with SES, RFS and other emergency management authorities that the proposal will help make a more resilient community?	All	N/A	
9.3	Do Infrastructure proposals include the provision of 'green infrastructure' as well as its integration with recreation and open space planning? Have you considered the governments Greener Places guideline?	All	N/A	
10.2	Will the proposal help implement the TfNSW TfNSW Movement and Place Framework? Have you checked with TfNSW? Will the proposal help to promote active transport, including opportunities to develop an active transport network, through the development of an integrated transport and land use settlement strategy for the valley, along with a 'place plan' for key centres such as Grafton, and areas of	All	N/A	

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
	'investigation' for urban development?			
11.1	Does the proposal help implement the Clarence Valley Regional Economic Development Strategy?	All	Y	Will permit a new business and employment oppurtunity
11.4	Will the proposal help promote job opportunities in the marine industries? Does the proposal accord with the Far North Coast & Mid North Coast Marine based Industry Policy?	All	N/A	
12.1	Does the proposal help support Grafton CBD as the principal activity centre for business, retail, culture, entertainment and prestige events in the region?	All	N/A	
13.2	Have you examined opportunities to leverage proximity to Gold Coast Airport and Toowoomba Wellcamp Airport in the supply chain for products from the Clarence Valley?	All	N/A	
13.3	Does the proposal help to protect rural zoned land and productive agricultural land from urban and rural residential development by directing development to identified investigation areas and not adjacent to productive agricultural land? Does the proposal help to implement state government policy, such as the 'right to farm'?	All	N/A Y	Does not involve urban or rural residential expansion Will support the local agricultural sector.
13.4	Does the proposal help to implement the North Coast farmland mapping project undertaken by	All	N	Minor loss of agricultural

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
	DPI and DPIE, supplemented with local studies?			land assessed in PP and supported by DPI as it is offset by benefits to local agricultural sectors.
13.5	Have you explored opportunities for artisan food and drink industry developments to be located within existing business zones and centres to improve the vitality and viability of our main streets, particularly in Grafton and Yamba?	Strategic Plans	N/A	
13.6	Does the proposal help to implement work by relevant agencies to support bushfire recovery and future resilience of the agriculture and food producing sector of the Clarence? Does the proposal help to establish networks and training opportunities for primary producers to work with local First Nations to improve land management, especially cultural burning?	All	N/A	
13.7	Does the proposal identify opportunities to increase resilience of rural landscapes and promote regenerative agriculture, especially to increase carbon in soils to improve productive capacity, contribute to reducing atmospheric CO2, increase water holding capacity of soil so reducing drought impact and significantly reducing the effects of runoff and soil erosion on roads, bridges and other infrastructure?	All	N/A	
13.8	Does the proposal help to: a) reduce the density and proximity of energy dense nutrient poor (ENDP) aka 'fast food' outlets, particularly for vulnerable populations? b) facilitate community gardens and urban agriculture on public and private land, particularly in new land release areas and urban fringes so that neighbourhoods have access to local food growing lands? c) increase access to drinking water through the provision of bubbler/taps in public places, sporting venues and community facilities, and limit/discourage the consumption of sugar sweetened beverages (SSBs)? d) support and encourage community food centres (aka food hubs) which supply and promote locally grown produce and take a social justice approach to food? e) support and encourage local farmers markets which supply local produce thereby reducing food miles and supporting local and regional farmers?	All	N/A	

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
14.1	Does the change to the planning framework help to implement the Clarence River Way Masterplan? Will the proposal help to welcome and sustainably manage visitors to the area, particularly to enable appropriate development in Grafton and our river towns and coastal areas?	All	N/A	
14.2	Does the proposal help to update the Clarence Valley LEP and relevant DCPs to build on the strengths of the Clarence River and support appropriate tourism opportunities and help implement aspects of the Clarence River Way Masterplan?	Strategic Plans	N/A	
14.3	Does the proposal help to identify opportunities to expand nature-based adventure and cultural tourism by leveraging the Clarence Valleys natural, heritage and community assets?	All	N/A	
15.1	Will the proposal help to protect areas of High Environmental Value (HEV)? Does the proposal take a strategic approach to land use planning, informed by our biodiversity strategy and strategic environmental goals, particularly for corridors and areas of high environmental value?	All	N/A	
15.2	Does the proposal help to achieve waterway health and protect our marine environment?	Strategic plans	N/A	
15.3	Will the proposal help to ensure that water quality and aquatic biodiversity impacts are considered in planning decisions?	All	y	Future wastewater management system will

LSPS Action	LSPS Action (guiding Principle)	Applicable	Complies (Y / N or N/A)	Detailed Answer
	Will the changes ensure that the planning framework aligns with our coast and estuary management plans/programs, including to promote the values of riparian vegetation vegetated buffers and permeable surfaces to maintain and improve water quality and hydrology?			protect water quality
16.2	Have you checked biodiversity mapping layers and fauna corridors with Council?	All	N/A	
16.6	Does the proposal help implement Councils Biodiversity Strategy 2020?	All	N/A	
17.1	Does the proposal help create safer, more disaster resilient communities? Have you had particular regard to the long term social and economic costs of the potential effects of natural hazards and risk to life and evacuation capacity?	All	N/A	
18.3	Does the proposal consider the Clarence Valley Regional Water Efficiency Strategic Plan?	All	N/A	
19.1	Does the proposal help to sustainably manage natural, mineral and forestry resources? (e.g. Protecting quarry's from urban encroachment and vice versa)	All	N/A	
20.1	Does the proposal help to grow regional and sub-regional relationships with adjoining Councils, state government and other organisations?		N/A	
21.1	Does the proposal help increase community participation in decision making and comply with the Councils Community Participation Plan?	All	Y	Community consultation will be in accordance with Plan Making Guidelines
22.1	Will the proposal help Grafton to be recognised as a Regional City in the North Coast Regional Plan?	All	N/A	
23.1	Will the proposal help achieve the Priorities of the Local Strategic Planning Statement?	All	Y	Where applicable.

ANNEXURE Q

SEPP (RESILIENCE & HAZARDS) 2021 ASSESSMENT

Division 3 Coastal Environment Area

2.10 Development on land within the coastal environmental area

1. *Development consent must not be granted to development on land that is within the coastal environmental area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:-*

   a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,

   Comment: No impact future wastewater management systems for each shed will protect water quality.

   b) coastal environmental values and natural costal processes

   Comment: No impact.

   c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,

   Comment: No impact.

   d) marine vegetation, native vegetation and fauna and their habits, undeveloped headland and rock platforms

   Comment: No impact.

   e) existing public open space and safe access to and along the foreshore, beach, headland and rock platform for members of the public, including persons with a disability

   Comment: No impact.

   f) aboriginal cultural heritage, practices and places

   Comment: No sites or arefacts identified on AHIMS search see Annexure

   g) the use of the surf zone

   Comment: Not applicable.

2.11 Division 4 Development on land within the coastal use area.

1. *Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:-*

    a) has considered whether the proposed development is likely to cause an adverse impact on the following:-

        i. *existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability*

        Comment: N/A

        ii. *overshadowing, wind funnelling and the loss of views from public places to foreshores*

        Comment: N/A

        iii. the visual amenity and scenic qualities of the coast, including coastal headlands

        Comment: N/A

        iv. Aboriginal cultural heritage, practices and places

        Comment: No sites or arefacts identified on AHIMS search see Annexure

        v. Cultural and built environment heritage

        Comment: No impact.