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To: **Woolworths Group Limited**

Project: **Wyong Regional Distribution Centre Expansion**

Our Ref: **SY075550.000**

Date: **March 2022**

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Revision:

Issue	Date	Comment
A	02/2022	Issue for comment
B	03/2022	Infrastructure Staging & Delivery Plan

EXECUTIVE SUMMARY

Servicing Capability

- Potable Water
  - Estimated Potable Water Demand
    - Average Day Demand 68kl/day
    - Max Day Demand 122kl/day
  - Potable water reticulation system exists adjacent to the site. A 200mm water main provides frontage to the site for connection of potable water supply.
- Waste Water
  - Estimated Waste Water Demand 15kl/day
  - The site is served by a 225mm sewer main adjacent to the south-west corner of the site.
  - Adequate waste water capacity exists to serve the proposed development.
- Electricity
  - The site is currently serviced by an existing Ausgrid padmount substation established onsite and high voltage feeder (within easement) from Woolworths Way.
  - Electrical demand for the expansion has been determined to be 1339amps.
- Telco
  - NBN is the network provider for the area and has established underground fibre optic cables within Woolworths Way.
- Gas
  - Jemena have a 1,050kPa gas reticulation main in Burnet Road near the intersection with Woolworths Way. Although gas is not required for this development if a demand did arise the 1,050kPa main would be adequate to serve most warehouse/logistics centre requirements.

1.0 INTRODUCTION

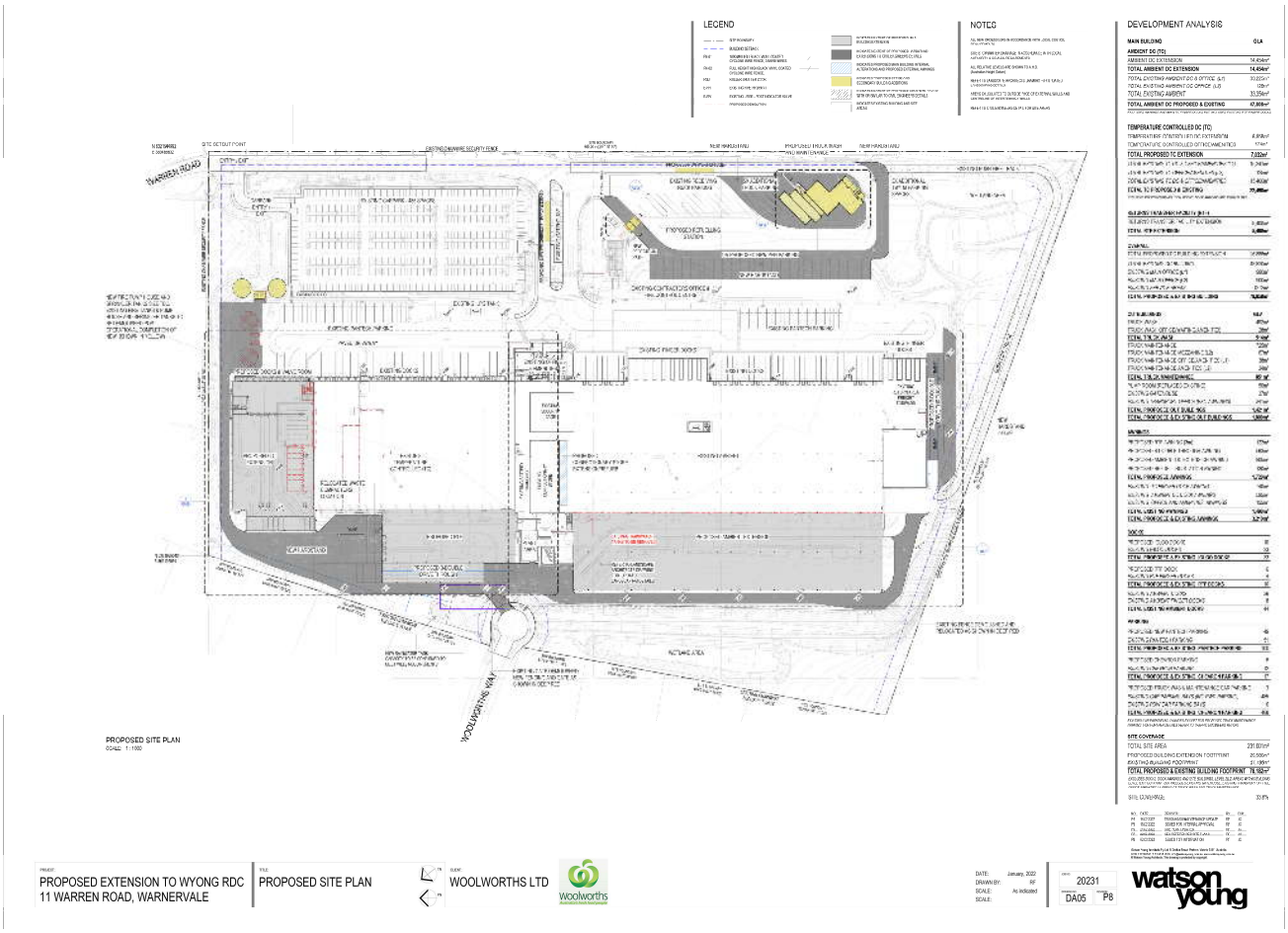
It is anticipated that a State Significant Development (SSD) application will be made to Department of Planning, Industry and Environment. As part of that application the Department has issued SEARS requirements for the proposed development under application No. SSD-33701741.

The existing facility is a substantial warehouse/distribution centre and the proposal to expand the facility consists of:

- 14,160m^2 of ambient expansion
- 4,220m^2 return transfer facility
- 5,580m^2 of temperature controlled expansion
- New Banana Ripening rooms
- Ancillary facilities to address vehicle movement within the site

The site is described as Lot 413 DP1058215 and is located within a well-established and well serviced industrial precinct. Substantial infrastructure has been installed by the utility service operators that will provide adequate capacity to service the proposed development.

Concept architectural layout has been provided that is the basis of comments within this report. The architectural is shown as follows:



1.1 SEARS REQUIREMENTS

Sears requirements outlined in SSD-31552370 from the Department of Planning, Industry & Environment have been used. Those requirements outline key issues one of which is the following:

Infrastructure Requirements & Utilities	How It Is Addressed	Section of this Report
Assess the impacts of the development on existing utility infrastructure & service provider assets surrounding the site. Infrastructure Delivery, Management and Staging Plan	Identify existing services through site inspection and utilising existing service utility plans	Section 3, 4, 5 & 6
Identify any infrastructure upgrades required onsite and offsite to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.	Determine demand requirements for the development, determine if any upgrades or infrastructure amplifications required.	Appendix A & B
Provide infrastructure staging plan, description of how infrastructure requirements would be coordinated, funded and delivered to facilitate the development.	Assess existing infrastructure if staging of any upgrades (if required) will be required and if so what funding is required	Sec 3.0 Sec 4.0 Sec 7.0

2.0 SERVICE AUTHORITIES:

The service authorities who provide infrastructure services to this area are:

(a) Central Coast Council: Potable Water & Waste Water Infrastructure
(b) Ausgrid: Electrical Infrastructure
(c) NBN Co: Telecommunications Infrastructure
(d) Jemena: Gas Infrastructure

3.0 POTABLE WATER AND WASTE WATER

3.1 POTABLE WATER

a) Immediately adjacent to the site along the frontage of Woolworths Way is a 200mm water main. This main is available for connection and the current development is connected to this main.

b) The current distribution building is a substantial logistics facility, large water storage tanks are installed within the site for fire suppression requirements.

c) Potable Water Average Day Demand is estimated at 68kl/day for warehouse/distribution development with associated office facilities (refer Appendix A). This calculates as a demand of 1.6litres/second over a 12 hour working shift. This level of demand can be catered by the existing 200mm main in Woolworths Way.

d) The potable water demand generated by the new facilities is considered to be low. As stated above this demand will be adequately catered by the existing potable water reticulation system. Current water pressure and flow rates are adequate to service the proposed expansion of the existing distribution facility.

3.2 WASTE WATER

a) A 225mm sewer line serves the subject property. The 225mm pipe size is a standard size required for commercial and industrial developments. The 225mm main drains to a Sewer Pump Station south-east of the site near the end of Jack Grant Ave for transfer by rising main to waste water treatment plant.

b) This existing main will adequately cater for the proposed development.

c) Waste Water discharge is estimated as 15kl/day or 0.35litres/second over a 12 hour work shift – a level of discharge that will be adequately catered for by the existing waste water system.

4.0 ELECTRICITY

a) The client has engaged an Electrical Design Consultant to assess the impact of the proposed new facilities and provide recommendations as to infrastructure expansion required by the expansion of the centre.

b) The consultant has determined that the ambient expansion, return transfer facility and the temperature controlled area would create and additional load of 1,339amps (Refer to Appendix B).

c) The consultant has examined each of the expansion areas and advised that existing infrastructure within the site is adequate to service the expansion areas with the only recommendation to include new light and power boards within the expansion area.

d) The consultants review and recommendations clearly indicate that Ausgrid's existing reticulation system involving onsite padmount substation and associated high voltage feeders (11kv) provides adequate capacity to service the expansion areas.

5.0 GAS

a) Jemena is the utility supplier for gas. Jemena has installed a 1,050kPa high pressure gas main in Burnet Rd.

b) Gas supply is not proposed for the proposed development however if a need for gas was required the existing 1,050kPa gas main could be extended along Woolworths Way to service the site.

6.0 TELCOMMUNICATIONS

a) NBN Co is the network provider for this area.

b) Prior to NBN Co being the provider for this area Telstra had fibre optic systems within Woolworths Way and Burnet Road.

c) The subject site is adequately serviced by the existing fibre optic system in Woolworths Way and the new expansion facilities will not impact on the existing network capability.

7.0 EXPECTED IMPACTS ON EXISTING INFRASTRUCTURE

a) Existing electrical substation located onsite, together with the high voltage feeder from Woolworths Way are adequate to service the proposed expansion of the distribution centre.

b) Existing potable water and waste water systems are adequate to supply the proposed expansion of the distribution centre. No amplifications to the existing system are required.

c) Telecommunication facilities are adequate to serve the proposed expansion.

8.0 INFRASTRUCTURE STAGING & DELIVERY PLAN

8.1 POTABLE WATER & WASTE WATER INFRASTRUCTURE

Central Coast Council is the water supply authority for the area and as such has an asset creation path pursuant to Sec 307 certificate process.

This development has minimal impact on existing potable water and waste water reticulation systems and no amplification of existing assets will be required.

Therefore, no delivery or staging plan is required for this development.

8.2 ELECTRICITY

Sec 4.0 above outlines the electrical consultants assessment that the existing Ausgrid reticulation system has adequate capacity to support the proposed development.

8.3 TELCO & GAS

Telecommunications assets serving the current distribution do not need to be amplified to service the proposed development and as such no staging plan is required.

Gas services are not required for the proposed development.

8.4 COST

All development related infrastructure is developer funded even if amplification of existing assets was required – which they are not required as stated above.

9.0 CONCLUSION

The subject development is adequately serviced by existing infrastructure and no amplification of existing utility infrastructure is required.

APPENDIX A
POTABLE WATER & WASTE WATER DEMAND

The proposed expansion is related to storage/distribution components of the logistics facilities with a small office and amenities area associated with temperature controlled expansion area.

Therefore, the INCREASE in demand for potable water and waste water is assessed as follows:

1.1 Potable Water

- Warehouse/logistics facilities floor area of 14,160m^{2}of ambient expansion, 4,220m^2 return transfer facility and 5,580m^2 of temperature controlled expansion provides a total of 23,960m^2 of floor area.

- Office staff amenities approx. 200m^2

Utilising a demand per square meter of floor area that Sydney Water have developed in their publication "Average Daily Water Use by Property Development Type" the following potable water demands result:

Type	Floor Area	Average Day Demand/m^2	Total
Warehouse	23,960	2.82litres/day	67kldday
Office	200	2.27litres/day	1kl/day
		Total	**68kl/day**

Potable Water:
Average Day Demand = 68kl/day
Max Day Demand = 122kl/day

1.2 Waste Water

Sydney Water have also assessed some of the newer industrial release precincts in Sydney on the basis of population demand in a facility based on a floor space ratio. Utilising that ratio as a guide would produce a waste water demand of approximately 15kl/day of discharge.

APPENDIX B
COMMENTS BY ELECTRICAL CONSULTANT

Electrical Due Diligence Report

FOR

WOOLWORTHS WYONG TC EXTENSION

CLIENT

WOOLWORTHS LIMITED

1 WOOLWORTHS WAY, BELLA VISTA NSW

(Version No 1 preliminary)

	Description	Date

Woolworths Limited
1 Woolworths Way
Bella Vista

D Catterson and Associates
88 Arthur Street
Croydon Park

Contents

1.0 INTRODUCTION

Woolworths Limited are proposing to extend their existing “Woolworths Wyong RCD” facility located at 1 Warren Road, Warnervale NSW 2259.

D Catterson and Associates were engaged by Woolworths Limited to survey the existing building and interrogate the existing documentation and report on:

- Establish what infrastructure is existing
- Evaluate existing energy bills to determine the existing electrical power usage.
- Calculate the additional load requirements as a result of the expansion.
- Provide recommendations as to any additional power supplies that would be required.
- Provide recommendations as to the infrastructure changes/ additions that would be required by the expansion.

A site inspection was undertaken as part of the works.

2.0 EXISTING INFRASTRUCTURE

2.1 Substations

The existing development is fed from a Supply Authority chamber type substation No S-18348.

Informal advise is that the substation has a firm rating of 5,329 Amps/ phase.

Communications between the Supply Authority and the developer when the building was constructed show that approval was given at the time to have 2 x 3,000amps, 3-phase 50Hz, 415/240 busbar services to feed the development.

The above means that each of the busbars can be loaded to 3,000-amps, however the combined load applied to these bus-bars at any one point in time should not exceed 5,329-amps.

2.2 Main Switchboard & Service Mains

The feed from the substation comprises two Vas Electrobars (busbar), each rated at 3,200-amps/phase. These extend from the substation wall at high level to a main switch room adjacent where they drop down to feed to two (2) Site Main Switchboards.

Both Main Switchboards are provided with 3,200-amp Terasaki Electric circuit breakers which appear to have been set at a 3,000-amps tripping current.

The Main Switchboard are both rated as 3200-amps per phase and have a number of spare ways where additional circuit breakers could be installed.

2.3 Existing Maximum Demand

There are two (2) Supply Authority meters in the main switch room, and both are labelled NMI: 4103674530.

The last two years meter data has been exported from these meters (presumably by the energy provider) and the following has been extracted:

- Combined Maximum Demand is 1346.166KVA (1,896-amps) and occurred on 18/12/2021 and this occurred at 19.00hrs.

- The “Plant” main switchboard Maximum Demand is 1169.999KVA (1,624-amps) and this occurred on 01.02.2020 at 13.30hrs.
- The “Light & Power” main switchboard Maximum Demand is 304.35KVA (422-amps) and this occurred at 5.30hrs.
- existing development is fed from a Supply Authority chamber type substation No S-18348.

As stated earlier the substation has a firm rating of 5,329-amps and the actual maximum demand to date has been 1170-amps, hence the substation has **4,159-amps spare capacity**.

3.0 NEW MAXIMUM DEMAND

The expansion appears to have three Options that are being considered at this time. The Options can be briefly described as:

Option 7: Expand the ambient, RTF & TC areas.

Option 8: Expand the TC area.

Option 9: Expand the ambient space.

Maximum demand calculations have been undertaken to estimate the additional load of each of these Options and the results are that Option 7 will require an additional 1,339-amps, Option 8 will require an additional 918-amps and Option 9 will require an additional 413-amps.

As can been seen the additional load of any of these options will not exceed the spare capacity. The loadings of the new infrastructure is made up of four load groups being “refrigeration”, Ripening Rooms”, Light” and “Power”.

3.1 Refrigeration Expansion Maximum Demand

As we understand it, there are four major compressors associated with the refrigeration and one of these compressors has been redundant and thus has not been called into operation or if it has only sporadically.

From the refrigeration report and discussions with the refrigeration consultant, we understand that while this compressor is already installed and operational, it unlikely it has ever contributed a load to the electrical system. The refrigeration consultant has recommended that the expansion addressed by putting this compressor into normal operation, hence we should consider its load of 220-amps as additional load as a result of the expansion.

3.2 Ripening Rooms Expansion Maximum Demand

We have received from the Client a load schedule for ripening rooms that were installed at TTI in Melbourne, to be used as a load guide. The schedule lists the circuit breakers for conditioning, ventilation and lighting. We have diversified these circuit breaker settings by 0.75 to arrive at what we believe the design load would have been when the circuit breaker setting was selected. On the right of the schedule there is a figure (no heading) which we suspect is the maximum demand, and our calculation arrived at 47.63-amps/room and the schedule shows 83.6 for two rooms.

3.3 Light and Power Expansion Maximum Demand

We have used a area value of 6VA/sm for general lighting and 15VA/sm for power throughout the expansion area. This is an industry standard and is typically quite conservative.

4.0 NEW INFRASTRUCTURE

The new infrastructure required by the new loads applied as a result of the expansion is recommended as follows:

3.1 Refrigeration Expansion Infrastructure

The existing four compressors and the associated switchboards, etc are already installed and the impact of the expansion is that the fourth compressor which has been sitting generally unused in stand-by mode will be placed into operation.

As this is existing, it will not be necessary to provide new infrastructure for this component.

3.2 Ripening Rooms Expansion Infrastructure

We recommend that the ripening rooms be provided with a new dedicated switchboard, somewhere adjacent to the ripening rooms. From the schedule provided for the Melbourne project, it appears that the ripening rooms would be delivered to Woolworths as a full package by a specialist contractor, hence it would be preferred to have an independent switchboard.

While the report prepared by the refrigeration consultant suggest the ripening rooms should be fed from the MSB that feeds “light & power”, the reality is that there is adequate spare capacity and adequate spare capacity in both MSB’s to handle this load. Our preference is also the “light & power” MSB, as we like to see each MSB equally loaded, but this is not a major concern

3.3 Light and Power Expansion Infrastructure

We would recommend that new light and power boards should be located throughout the expansion area as required. This would be finalized when load locations and details are more fully understood, but the simple rule of thumb should be that no board is loaded more than 75% of a 250-amp busbar and no circuit should exceed 95-metres in route length.