# Traffic Impact Assessment

## Americold Prospect South Expansion

Prepared for Americold Logistics Ltd
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## Revision History

| Revision Nº | Prepared By | Description | Date |
|---|---|---|---|
| 001 | Lukas Labutis | First submission to client | 11/05/2022 |
| 002 | Daniel Dang | Amendment for latest EIS | 28/09/2022 |
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## Document Acceptance

| Action | Name | Signed | Date |
|---|---|---|---|
| Prepared by | Daniel Dang<br>Lukas Labutis | | 11/05/2022 |
| Reviewed by | ShaunPaul Power | | 18/10/2022 |
| Approved by | Chris Morley | | |
| on behalf of | Beca Limited | | |

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# 1 Overview

## 1.1 Background

Americold Logistics (Americold) currently operates an existing two-building cold storage facility in Prospect. To accommodate future customer needs, Americold is intending to expand the facility and provide additional storage area, loading docks and supporting facilities. To enable this development, Americold is submitting a State Significant Development Application (SSDA) including an Environmental Impact Statement (EIS) to the Department of Planning, Industry and Environment (DPIE) for approval.

To support this proposal, Beca Pty Ltd (Beca) has undertaken a Traffic Impact Assessment (TIA) as part of the required documentation to address the traffic and transport-related Secretary Environmental Assessment Requirements (SEARs).

## 1.2 Purpose of this Report

This report provides an assessment of the potential traffic impacts of the proposed development, considering existing and future conditions and analysing the impact of the site's expansion on road network performance. It also provides an assessment of car parking and loading requirements, cyclist and pedestrian access, safety and circulation within the site. This impact assessment includes the construction period in 2022, expected opening year of 2023 and future year operation of 2033.

The traffic modelling process is described in this report, undertaken using SIDRA Intersection (v9) software, to quantify the potential traffic impact of the site expansion. This provides a comparative assessment of the performance of the affected intersections before and after the proposed upgrade of the facility. Recommendations and conclusions are provided in section 7.

This report also addresses the traffic and transport-related SEARs as detailed in section 1.3.

## 1.3 Secretary Environmental Assessment Requirements (SEARs)

The traffic and transport-related SEARs and how they are addressed in this report are shown in the table below.

| Traffic and access requirement | Relevant report section |
|---|---|
| A quantitative Traffic Impact Assessment prepared in accordance with the relevant Council, Austroads and RMS/TfNSW guidelines | All sections of this report |
| Details of all daily and peak traffic and transport movements likely to be generated by the development (vehicle type, public transport) during construction and indicative operation | Section 5 |
| Cumulative assessment that considers the change in traffic and parking impacts between the proposed expansion and the existing development, including how access, parking and loading/unloading operations integrate with the existing onsite operations during construction and operations | Sections 3.2, 3.3, 3.4 |
| Details and a justification of access to, from and within the site (vehicular and pedestrian) | Section 3.2 |
| Impacts on the safety and capacity of the surrounding road network (including intersections along Reservoir Road and Prospect Highway) and access points, using SIDRA modelling or similar to assess impacts form current traffic counts and cumulative traffic from existing and the proposed development | Section 6 |
| Demonstrate that sufficient loading/ unloading, car parking and pedestrian and cyclist facilities have been provided for the development | Section 4 |
| Details of road upgrades, new roads or access points required for the development, if necessary | Section 6 |

## 1.4 References

The following documents were referred to in the development of this report:

- Cumberland Council Development Control Plan (DCP) (2021)
- RTA Guide to Traffic Generating Developments (2002)
- RMS Traffic Modelling Guidelines (2013)
- Australian/New Zealand Standard 2890.6: Off-street parking for people with disabilities

# 2 Existing Conditions

## 2.1 Site Location

The existing site is located within an established industrial area at 554 – 562 Reservoir Rd, Prospect NSW as shown in Figure 2.1. Surrounding land uses and trip attractors include:

- Prospect Reservoir to the southwest
- The Sydney Motorsport Park and Raging Waters to the west
- The industrial area stretching south
- A smaller industrial and commercial area to the north
- Residential areas to the north and east

The location and surrounding land uses are shown in the diagram below.

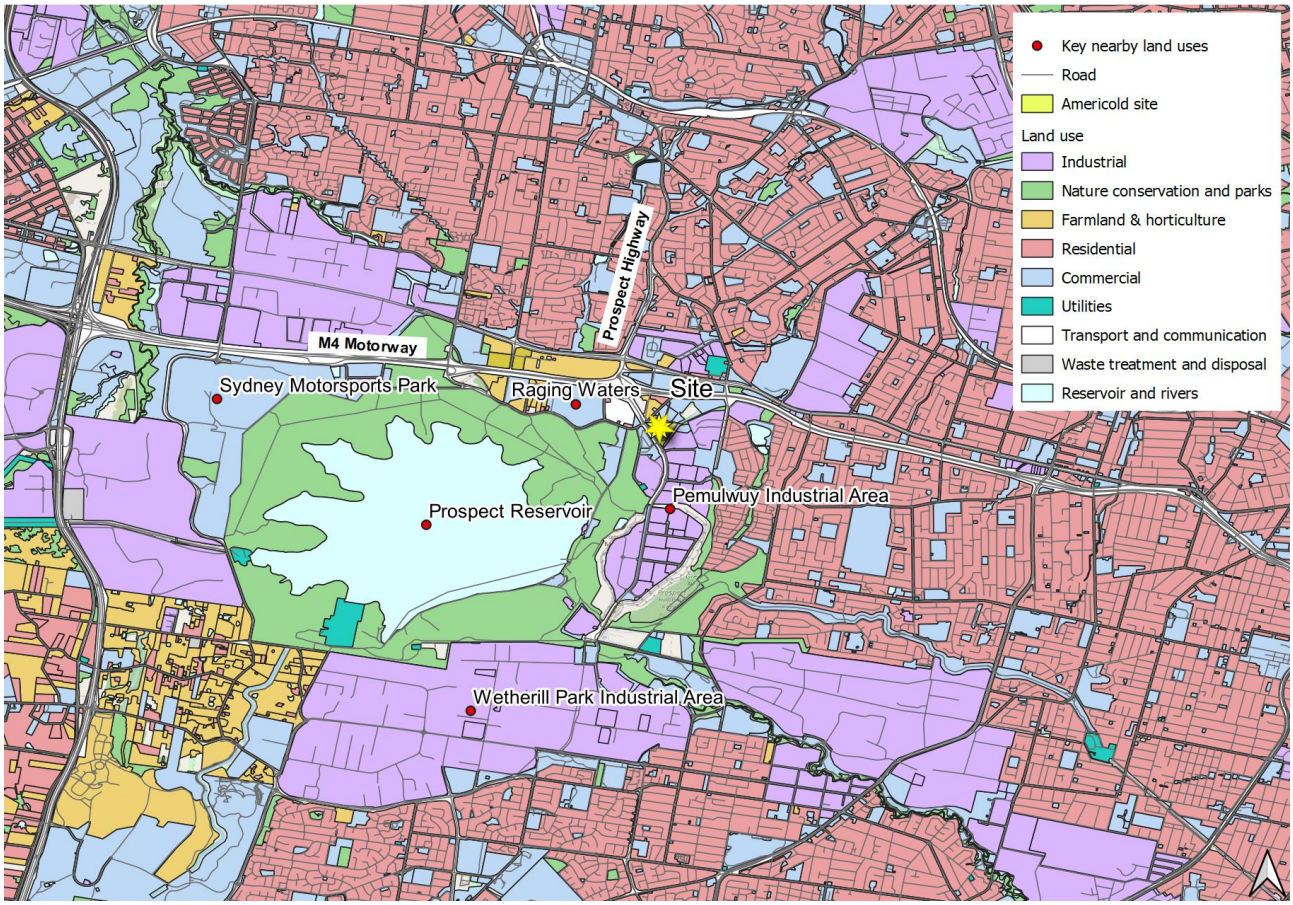



Figure 2.1: Site location and surrounding land uses

## 2.2 Site context and transport networks

### 2.2.1 Road network

The site lies on the south-eastern corner of the Prospect Highway / Reservoir Road intersection, with site access provided via Reservoir Road. The intersection type is a roundabout with single approach and departure lanes. The roundabout is located approximately 350m to the south of the M4 Motorway.

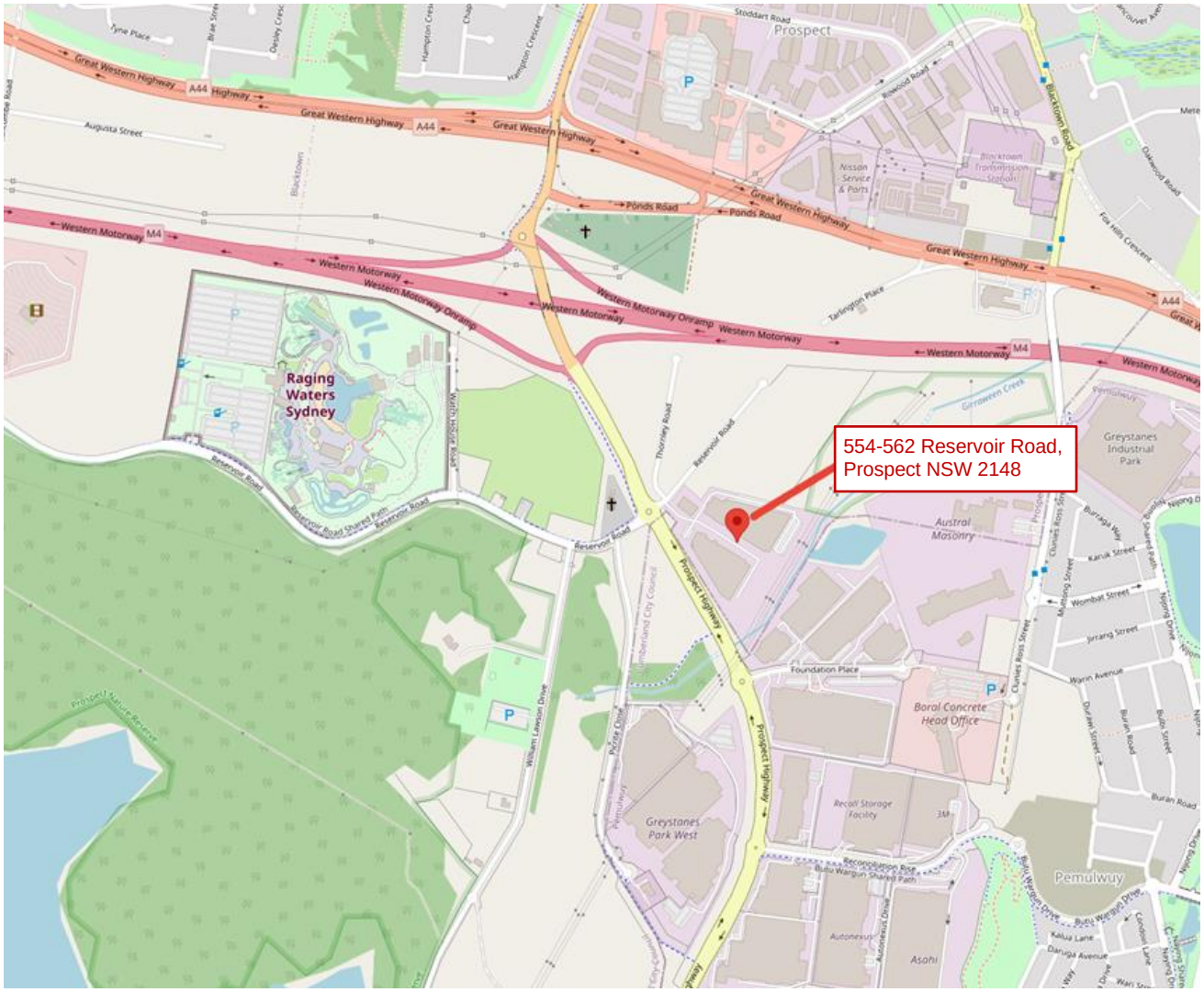



Figure 2.2: Adjacent road network

Prospect Highway south of the M4 Motorway is a local north-south road that serves a sub-arterial function, linking the industrial land uses with the arterial road network at the M4 Motorway and Great Western Highway. Adjacent to the site, the road types generally consist of one lane of traffic in each direction with a speed limit of 60km/h.

Reservoir Road is a local east-west road, providing access to the site as well as destinations to the west including Prospect Reservoir, Raging Waters, and Sydney Motorsport Park. It is an undivided road containing one travel lane in each direction with a speed limit of 60km/h.

There are no heavy vehicle access restrictions along the M4 and Prospect Highway.

The below diagrams show pictures of each road taken from the intersection of Prospect Highway / Reservoir Road.

Prospect Highway, immediately south-west of the intersection with Reservoir Road, facing north

Prospect Highway, 15m south of the intersection with Reservoir Road, facing south

Reservoir Road, immediately south-west of the intersection with Prospect Highway, facing west

Reservoir Road, 30m east of the intersection with Prospect Highway, facing east

Figure 2.3: Key roads near the site

The Prospect Highway / Reservoir Road intersection is a single-lane roundabout with four approaches and all movements are permitted. The northern approach of Prospect Highway provides a connection from the greater Blacktown area and access to both the M4 Western Motorway and the Great Western Highway. Eastern Reservoir Road leads to the site, while its western arm leads to attractions such as Raging Waters Sydney and Sydney Motorsport Park, eventually connecting to Balmoral Street north of the Great Western Motorway. The southern arm of Prospect Highway leads to other industrial land uses such as the Western Sydney Employment Area.

The Reservoir Road / Thornley Road intersection is a four-way give-way intersection connected to the site access driveway, approximately 15 metres to the east of the above roundabout. The site access driveway serves as the only entry and exit point for Americold. Further east of Reservoir Road is a smaller, unrelated refrigerated transport facility, and a no through road which is utilised for on-street parking. Similarly, Thornley Road is also utilised for parking as it that currently connects to no facilities. These factors lead to the main movements through this intersection being the right-turn into the site access driveway from vehicles travelling on Reservoir Road, and the left turn from the site into Reservoir Road before proceeding to the roundabout.

### 2.2.2 Walking and cycling

Pedestrian access in the vicinity of the site is limited. A shared path is provided on the western side of Prospect Highway north of Reservoir Road, which continues to the west on the northern side of Reservoir Road. A narrow footpath is also provided on the eastern side of Prospect Highway south of Reservoir Road.

There are no formal pedestrian crossings at the intersection of Prospect Highway / Reservoir Road roundabout.

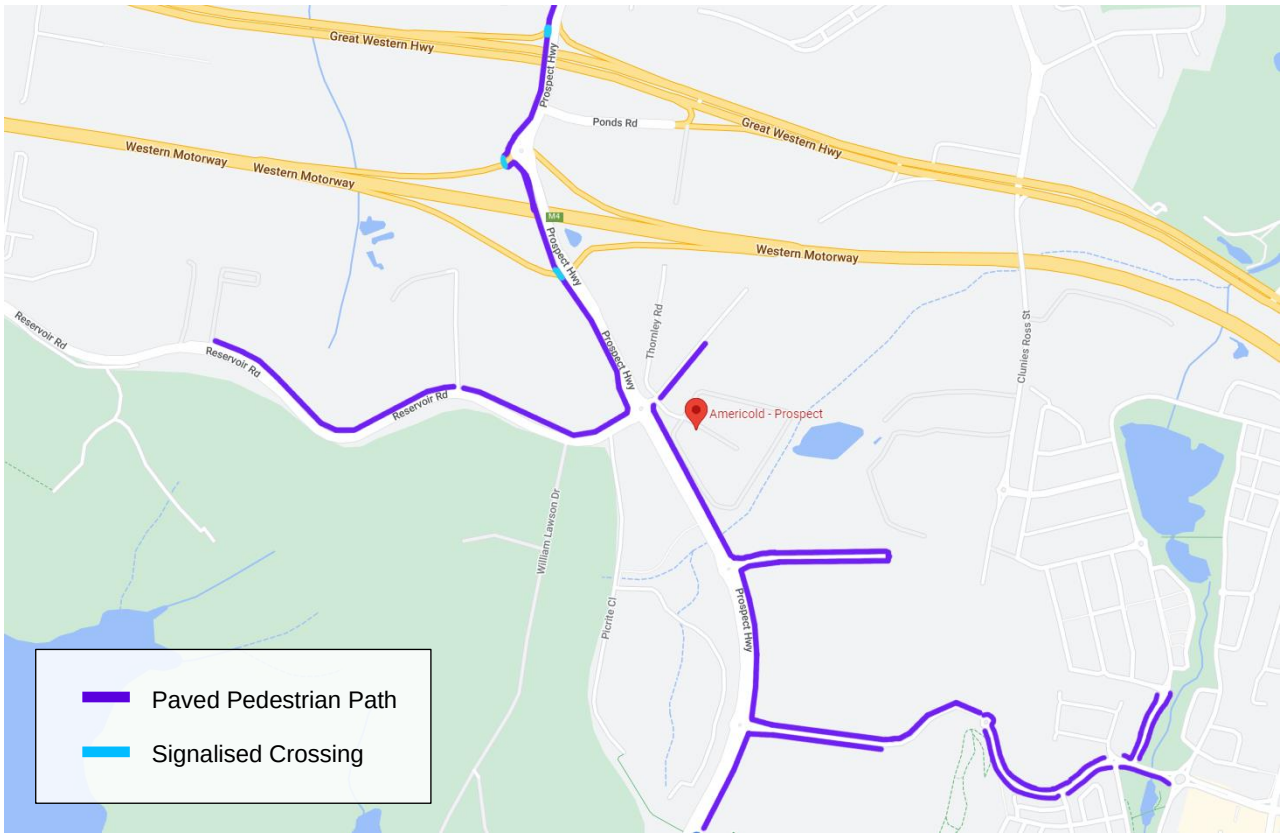



Figure 2.4: Pedestrian paths and crossings to the site

The shared path on Prospect Highway provides an off-road cycling route to the north, connecting the site to Blacktown and surrounding residential areas. Prospect Highway south of Reservoir Road is designated as a moderate difficulty on-road cycling route by the TfNSW Cycleway Finder. This provides access to the south and links to a shared path on Reconciliation Rise, leading to residential areas to the southeast. An on-road low difficulty route along William Lawson Drive within Prospect Reservoir also provides access to the southwest.

Cycling routes in accordance with the TfNSW Cycleway Finder are shown below.

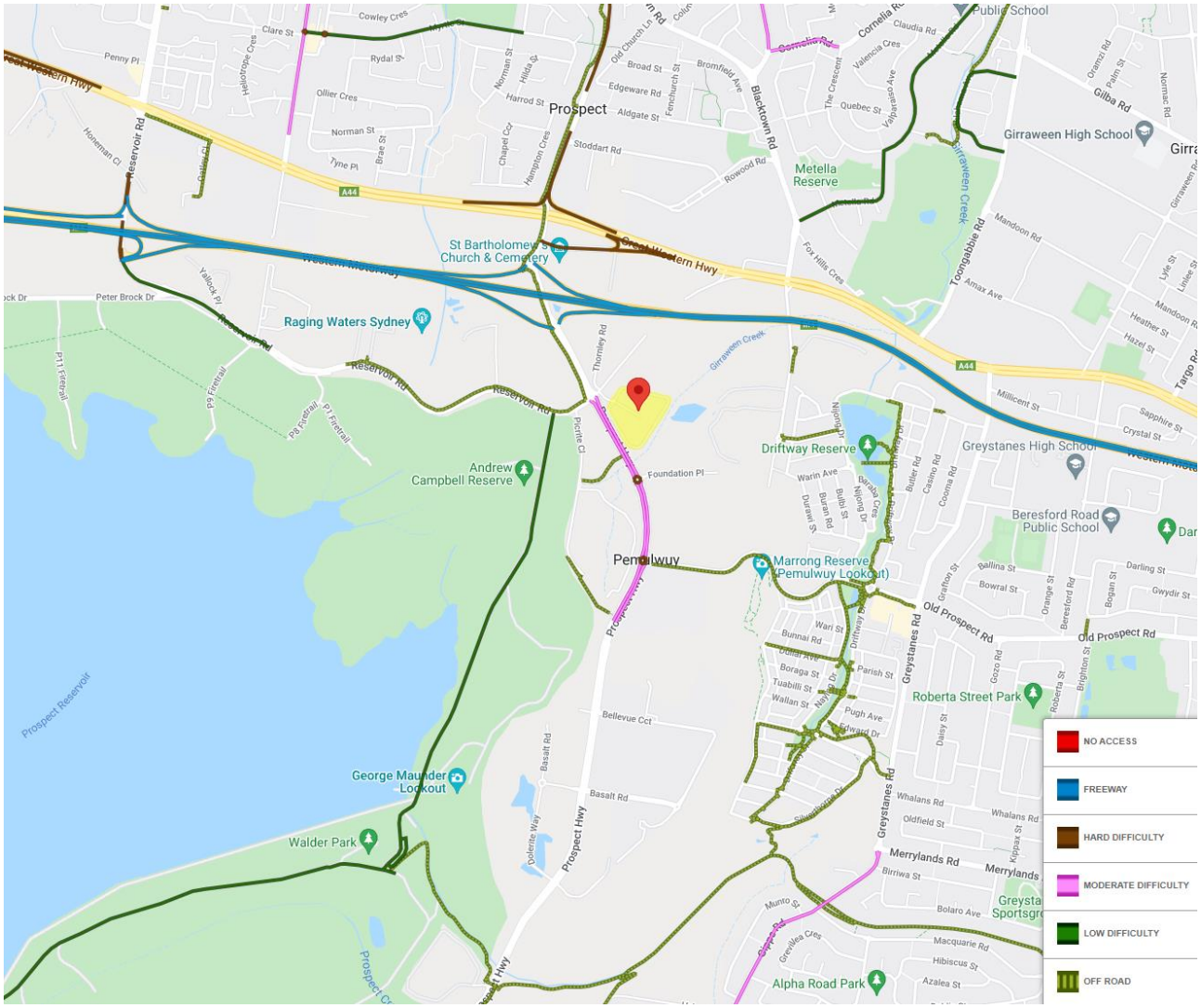



Figure 2.5: Cycling routes in the vicinity of the site

Although there is limited walking and cycling connectivity at the intersection of Prospect Highway / Reservoir Road, TfNSW is planning to upgrade this intersection with signalised crossings which will improve pedestrian and cycling access. The TfNSW Prospect Highway upgrade is detailed in section 2.6.

### 2.2.3 Public transport

Public transport in the area is limited. No train stations are in proximity, although several bus routes travel near the site. The closest bus route is the 812 – Blacktown to Fairfield via Prospect Highway, which travels along the Prospect Highway and passes by the site. This provides access between Blacktown, Prairiewood and Fairfield, and the closest bus stop is an approximate 700m (5-10 minute walk) to the south.

Several other bus routes travel through Pemulwuy, although associated bus stops are located an approximate 30-minute walk from the site and require pedestrians to walk along Butu Wargun Drive, as the car park between Foundation Place and Clunies Ross Street is fenced off private property.

Relevant bus routes and their characteristics are summarised in the following table.

Table 2.1: Bus routes serving the site and surrounds

| Route no. | Name | Frequency (peak) | Nearest bus stop | Distance to nearest bus stop |
|---|---|---|---|---|
| 800 | Blacktown to Fairfield via Pemulwuy | 15 min | Driftway Dr before Butu Wargun Dr | 2,000m |
| 809 | Pemulwuy to Merrylands via South Wentworthville | 30 min | Driftway Dr before Butu Wargun Dr | 2,000m |
| 810X | Parramatta to Merrylands via Pemulwuy | 30 min | Butu Wargun Dr opp Pemulwuy Marketplace | 2,000m |
| 811X | Parramatta to Pemulwuy via Beresford Rd | 30 min | Driftway Dr before Butu Wargun Dr | 2,000m |
| 812 | Blacktown to Fairfield via Prospect Hwy | 30 min | Reconciliation Rd at Butu Wargun Dr | 800m |

The bus routes and closest bus stops are shown in the following diagram.

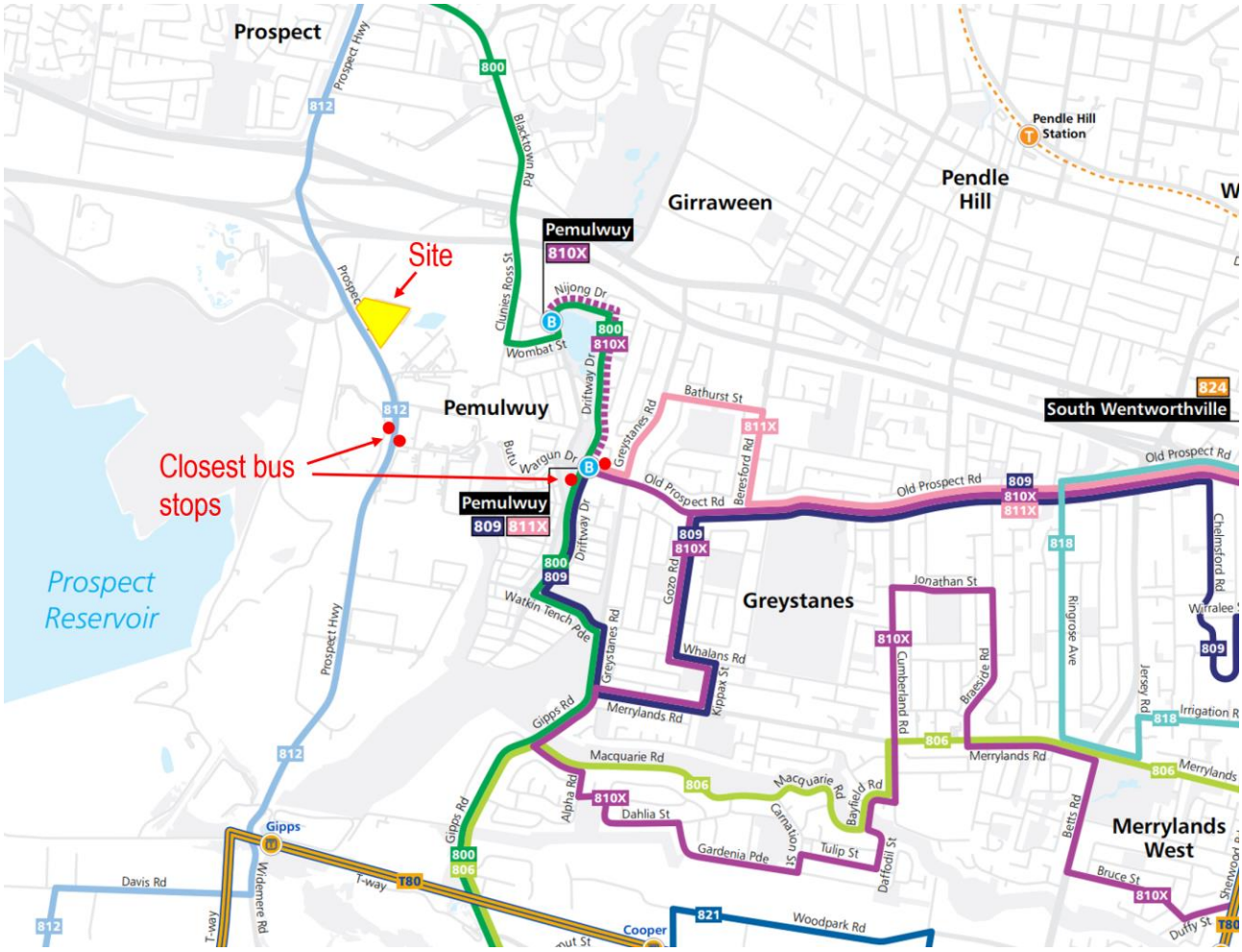



Figure 2.6: Bus routes serving the site

Additional bus stops are planned to be provided on the Prospect Highway at the intersection with Reservoir Road as part of the TfNSW upgrade, described in section 2.6. This would significantly improve bus access to the site, providing bus stops immediately next to the site and effectively servicing areas to the north and south.

## 2.3 Existing site facilities

### 2.3.1 Land use

The existing cold storage facility consists predominantly of industrial warehouse space with a small office building. The existing Gross Floor Area (GFA) includes:

- Industrial warehouse:
  - North building: 10,350m$^2$
  - South building: 8,232m$^2$
  - Total: 18,582m$^2$
- Office building: 735m$^2$

### 2.3.2 Employment Context

The site currently accommodates a mix of part-time and fulltime warehouse employees, up to approximately 96 staff during the morning shift, 54 staff for the afternoon shift and 5 staff for the night shift. In addition, various admin staff and container unpacking workers are also employed.

Due to the mix of fulltime and part-time employees, shift times are staggered. At the 11:00 critical shift change times, to the maximum number during crossover will be 137 staff in total. Based on this number the site has an adequate number of carparking spaces to meet this demand (ie excess of 34 car spaces). Shift patterns and staffing numbers on a typical workday provided by Americold are shown in Table 2.2.

Fulltime Warehouse shift times are:

- Day shift: 5:00am – 1:30pm
- Afternoon shift: 1:30pm – 9:30pm
- Night shift: 9:00pm – 5:00am

Part-time Warehouse shift times are:

- Day shift: 5:00am – 11:00am
- Afternoon shift: 11:15am – 5:15pm
- Night shift: 5:30pm – 11:30pm

Office Admin staff shift times are:

- Day shift: 9:00am – 5:00pm

Gatehouse admin staff shift times are:

- Day shift: 4:00am – 12:00pm
- Afternoon shift: 12:00pm – 6:00pm

Container unpacking crew shift times are:

- Day shift: 6:00am – 4:00pm

Most shift times do not coincide with the typical road network peak hours, and therefore site traffic demand associated with shift changeovers does not coincide with peak background traffic demand. The only employees who commute within the network peak hours are:

AM Peak: Office Admin staff

PM Peak: Part time Warehouse afternoon & night shift, Office Admin staff and Gatehouse admin staff afternoon shift.

Table 2.2: Americold generalised shift patterns and staffing levels on a typical workday

<table>
<tr><th>Time</th><th>05:00</th><th>09:00</th><th>11:00</th><th>12:00</th><th>13:00</th><th>17:00</th><th>18:00</th><th>21:00</th><th>24:00</th></tr>
<tr><td>Full Time Shift</td><td colspan="4">05:00 – 13:20</td><td colspan="3">13:30 – 21:50</td><td colspan="2">21:00 – 05:20</td></tr>
<tr><td>Part Time Shift</td><td colspan="2">05:00 – 11:00</td><td colspan="3">11:15 – 17:15</td><td colspan="3">17:30 – 23:30</td><td>n/a</td></tr>
<tr><td>No. working Full Time Warehouse Employees</td><td colspan="4">61</td><td colspan="3">27</td><td colspan="2">5</td></tr>
<tr><td>No. working Part Time Warehouse Employees</td><td colspan="2">35</td><td colspan="3">27</td><td colspan="3">26</td><td>n/a</td></tr>
<tr><td>No. working Office Staff</td><td>n/a</td><td colspan="4">6</td><td colspan="3">n/a</td></tr>
<tr><td>No. working Gatehouse Admin Staff</td><td colspan="3">1</td><td colspan="3">2</td><td colspan="3">1</td></tr>
<tr><td>No. working Container Unpacking Staff</td><td>n/a</td><td colspan="4">7</td><td colspan="4">n/a</td></tr>
</table>

Total Daily Fulltime Warehouse Staff: 93
Total Daily Part-time Warehouse Staff: 88

As shown in table 2.2 above, the highlighted blue cells identify the maximum number of staff onsite at one time (ie 11am part time shift change over). As a comparison, the maximum number of staff onsite at the 1:30pm full time shift changeover will be 130.

### 2.3.3 Car parking and loading

There are 91 formal car parking spaces provided on site, as well as approximately 70 informal parking spaces, located across the following three areas:

- 70 spaces for staff on the northern side of the site adjacent to the northern warehouse
- 21 spaces (including 2 accessible spaces) for visitors in the western corner of the site adjacent to the southern warehouse and access driveway
- Around 70 spaces on the eastern side of the site for staff, as informal parking without line marking

Unrestricted on-street parking is also available on Reservoir Road and Thornley Road.

There are 27 loading docks situated in the centre of the site, abutting each warehouse. Approximately eight truck parking spaces are also provided on the eastern end of the site which can accommodate trucks queuing or drivers taking breaks.

Loading docks in the centre of the site (facing east)

The car park at the northern side of the site (facing north)

Figure 2.7: Site facilities

### 2.3.4 Bicycle parking

Five bicycle racks are provided at the northern end of the site between the access driveway and the car park, which could potentially accommodate 10 bicycles. End of trip facilities are available within the northern warehouse in the form of lockers and showers.

Visitor parking at northern side of the site (facing south)

Bicycle parking at north side of the site (facing west)

Figure 2.8: Parking facilities

In total, the existing site contains the following parking provisions:

- 70 designated off-street car parking spaces for staff
- 21 visitor car parking spaces, including two accessible car parking spaces
- Approximately 70 informal car parking spaces
- 10 bicycle parking spaces
- 27 loading bays
- 8 truck parking spaces
- Additional on-street parking along Reservoir Road and Thornley Road with no restrictions

The existing facilities are shown in Figure 2.9.

## 2.4 Site access and circulation

Access to and from the site is provided on Reservoir Road via a two-way driveway for all vehicles and a footpath for pedestrians. As Prospect Highway is a state road and consists of a single lane only, no direct site access is provided here, consistent with surrounding developments.

Site circulation is illustrated below in Figure 2.9.

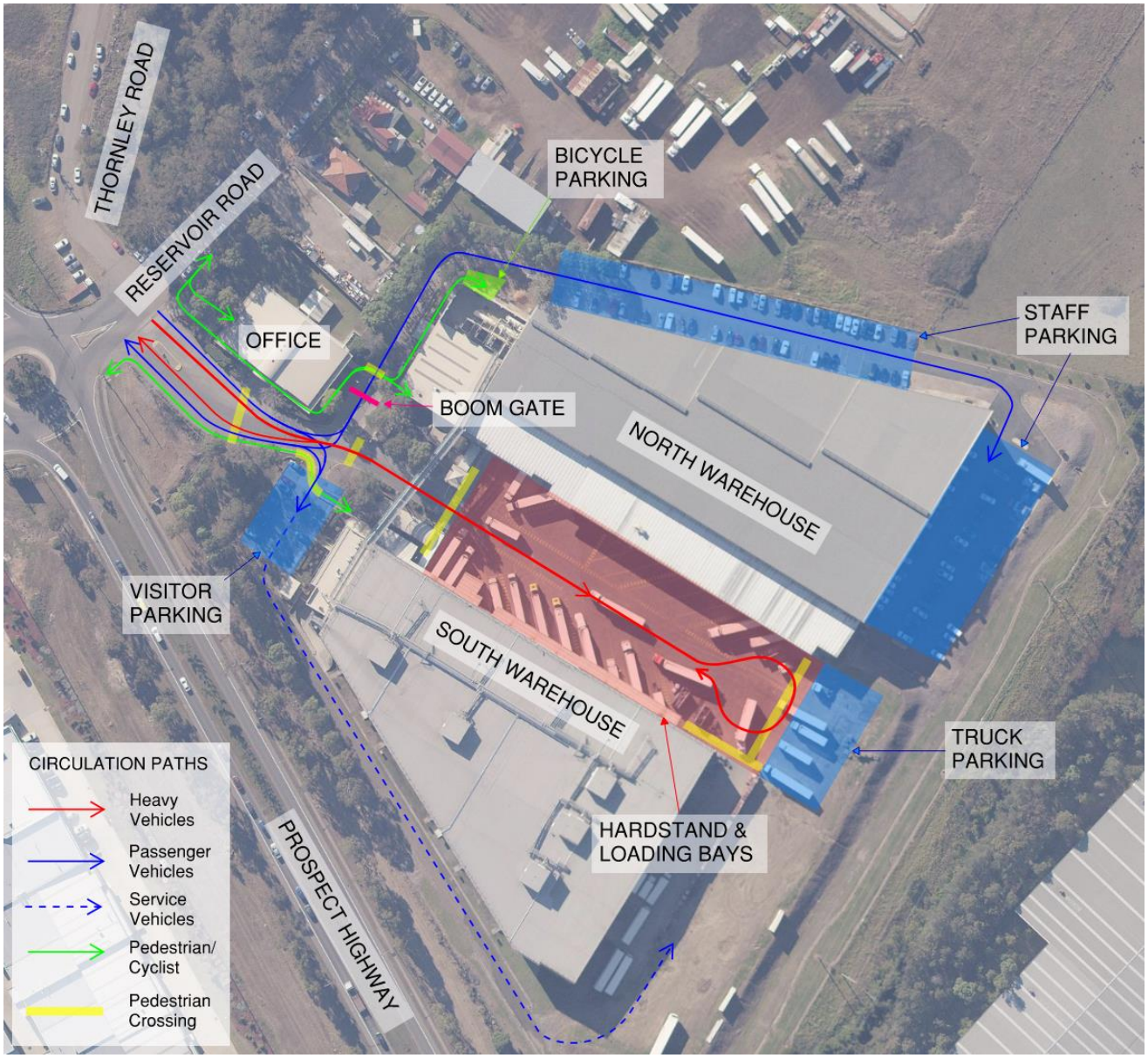



Figure 2.9: Existing Site Circulation

Base map source: SIX Maps (2022), available from: maps.six.nsw.gov.au/

Heavy vehicles currently drive straight through the hardstand between the two storage facilities and perform a U-turn to access the loading bays. After loading/unloading they continue forward to exit the facility via the same access driveway.

The site speed limit is 10km/h and speed humps are provided to slow down vehicles, particularly since the driveway slopes down upon entry to the site. A mirror is provided to improve sightlines at the northern corner of the site, and signage is provided to control traffic and manage conflict through give-way signs, parking restrictions and other regulatory signage.

Passenger vehicles either turn left (towards the staff car park) or right (to the visitor car park) after entering the site. Access to the staff car park is controlled by boom gates. Past the visitor car park is a gated, unpaved path leading to the back of the southern warehouse.

Pedestrians can access the main office building directly from the footpath from Reservoir Road, and subsequent access to site facilities is provided through formal marked pedestrian crossings. The marked crossings provide efficient access between all facilities on-site, although the line marking in some areas (particularly the hardstand) is partially faded.

Cyclists must dismount to use the pedestrian paths above and can access the cycle parking via designated pedestrian paths. The cycle parking is located away from heavy vehicle routes and relatively close to the site entry.

Marked crossing and boom gates in front of the main office before the car parks (facing north)

Designated pedestrian paths on the northern side of the site (facing west)

Figure 2.10: Access management

In general, access is provided safely and managed well, separating access paths for different user groups and managing conflict at key points.

### 2.4.1 Mode share

According to data provided by Americold Logistics, almost all staff currently access the site by private vehicle, while three staff members in total (< 1%) arrive by cycling. The mode share reflects the nature and location of the site as a facility in an industrial area with limited public and active transport infrastructure.

However, planned upgrades to Prospect Highway as described in section 2.6 are expected to encourage travel by public and active transport by improving related infrastructure and access, and existing bicycle parking on site can accommodate increases in cycling demand.

## 2.5 Safety

Based on crash data obtained from the TfNSW Centre for Road Safety, there were no fatal crashes in proximity of the new site within the last five years. Figure 2.11 and Figure 2.12 show the crash data in the vicinity of the site for reporting years 2016 – 2020.

In this period, the Prospect Hwy / Reservoir Rd roundabout had 2 minor / towaway crashes (no heavy vehicles), the area near M4 slip lane onto Prospect Highway had 3 major crashes (no heavy vehicles) and 4 minor/ towaway crashes (1 heavy vehicle), and Prospect Hwy/ Reconciliation Rd had 1 minor heavy vehicle crash. No pedestrian or cyclist incidents have been reported in the near vicinity along Prospect Highway.

The site vicinity's vehicle incident rate may be further mitigated with the planned Prospect Highway / Reservoir Road signalised intersection upgrade from the existing roundabout.

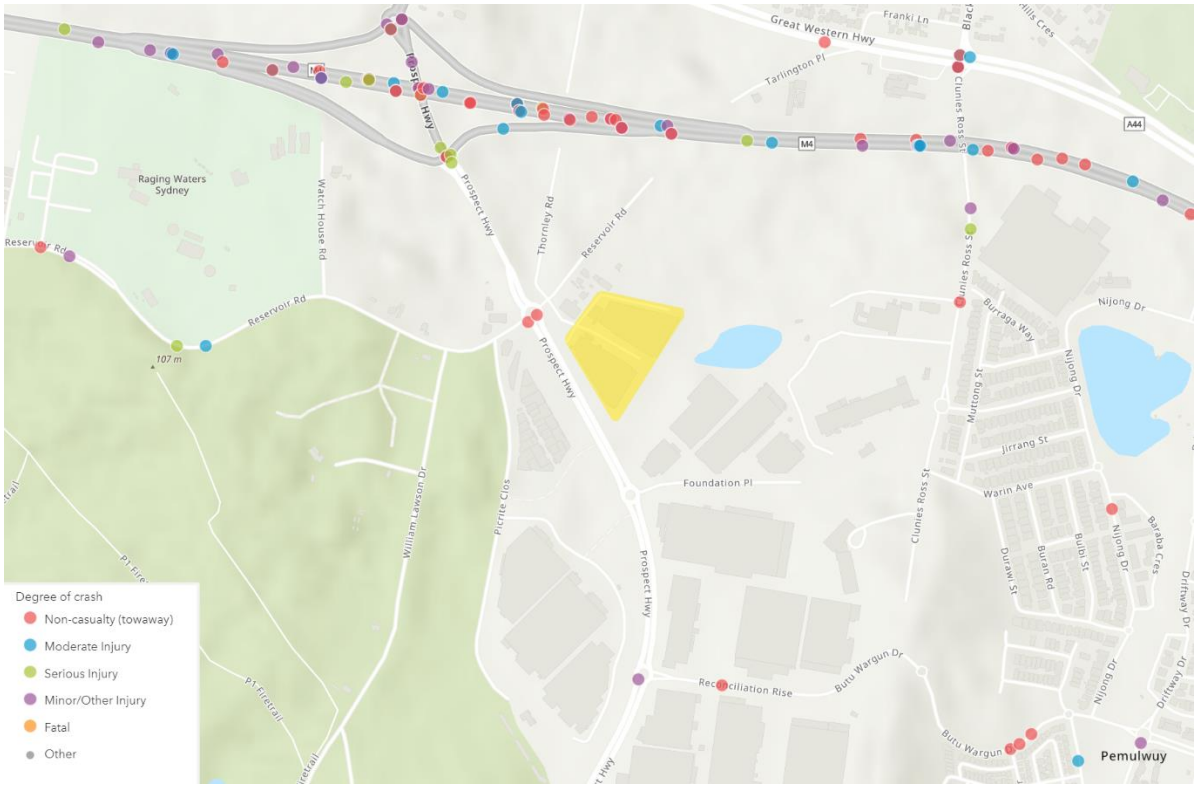
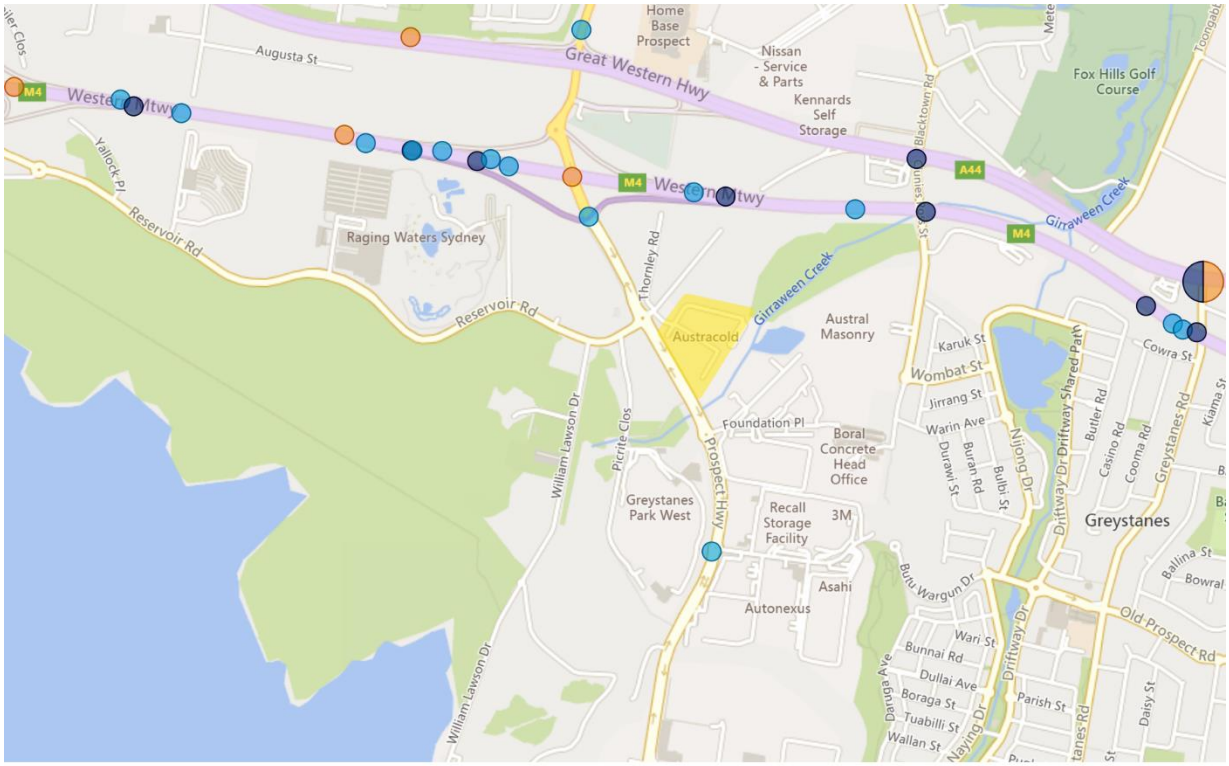



Figure 2.11: Crash data in vicinity of site (highlighted)

Source: Centre for Road Safety - Crash Map (2022).




Fatal Serious Injury Moderate Injury Minor/Other Injury

Figure 2.12: Heavy Vehicle Crash Data in vicinity of site

Source: Centre for Road Safety – Heavy Vehicle Crash Map (2022).

## 2.6 Future developments and upgrades in the vicinity of the site

TfNSW is planning to upgrade Prospect Highway between Reservoir Road, Prospect and St Martins Crescent, Blacktown. The project will upgrade the existing undivided two-lane road to a divided four-lane road, including the following key features:

- Signalisation of intersections including Prospect Highway / Reservoir Road.
- Provision of additional approach lanes with right turn bays at the intersection of Prospect Highway / Reservoir Road.
- Provision of pedestrian crossings on the southern and western legs of Prospect Highway / Reservoir Road.
- New bus stops in each direction adjacent to the intersection of Prospect Highway / Reservoir Road.
- Improvements to the existing shared path on Prospect Highway.
- Increase of the speed limit from 60km/h to 70km/h along Prospect Highway.

The upgrade will significantly increase capacity at the intersection of Prospect Highway / Reservoir Road, as well as improve access by walking, cycling and bus. This should address some of the key deficiencies identified in the existing conditions.

This upgrade is planned to be delivered by 2024, and a map of the proposal is provided in Appendix A. A diagram illustrating the proposed configuration of the Prospect Highway / Reservoir Road intersection is shown below.

There are no other anticipated developments or upgrades in proximity to the site which are expected to have a significant impact.

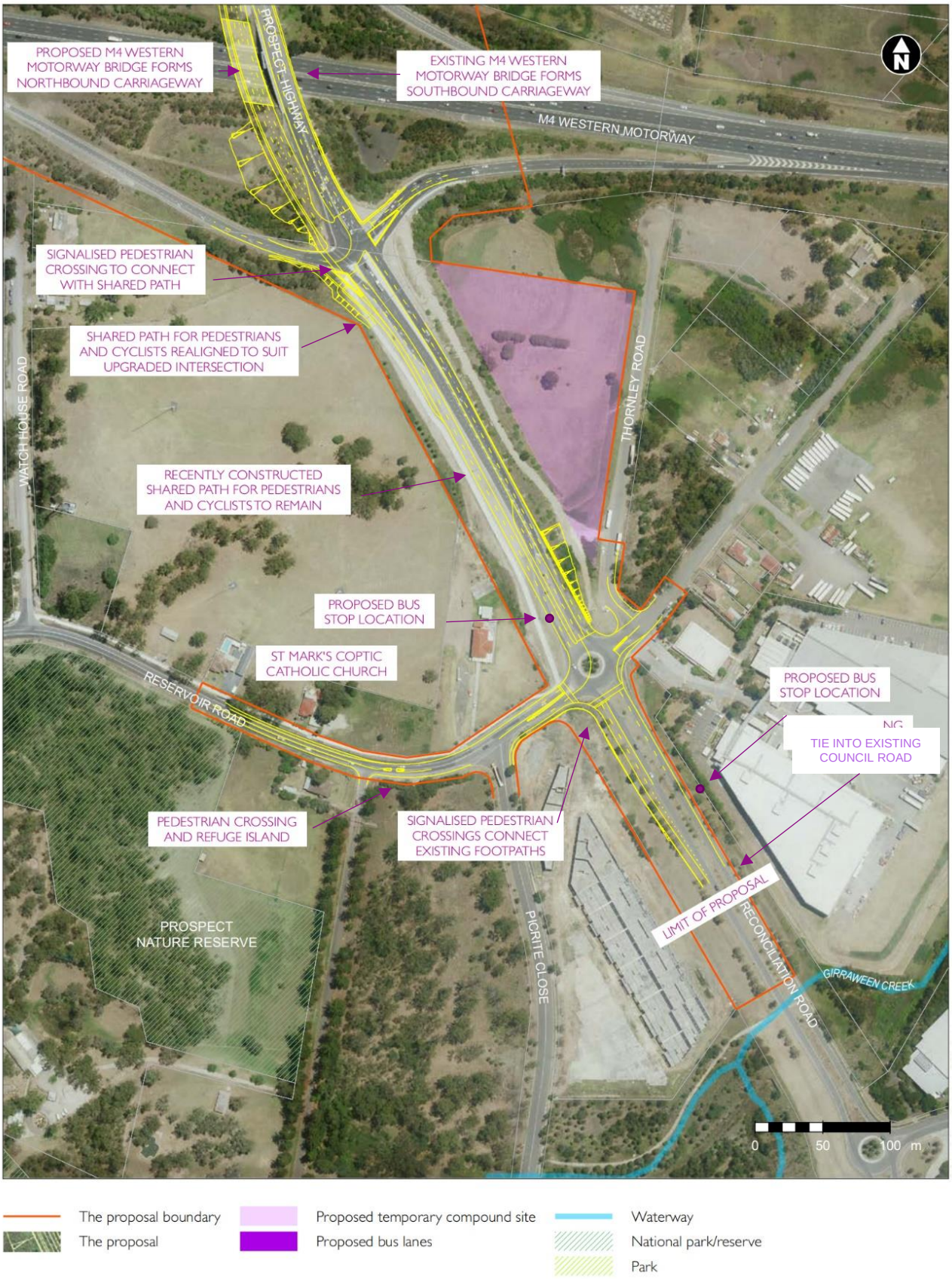



Figure 2.13: Infrastructure upgrade along Prospect Highway

Source: Prospect Highway Upgrade 2014 Review of Environmental Factors, Figure 3-1

# 3 Proposed development

The following sections detail the proposed changes from existing conditions.

## 3.1 Development Proposal

The architectural plans indicating the proposed upgrade are attached in Appendix B. The proposal will intensify the existing industrial land use and includes the following key facilities:

- A new freezer store building adjacent to the southern warehouse, with attached annex
- A hardstand extension for pallet storage adjacent to the northern warehouse
- A new plastic-pallets building at the existing car park adjacent to the access driveway
- Ancillary buildings including back of house and plant rooms
- A new ramp and circulation route on the south-eastern boundary of the site to accommodate truck access
- A new passenger vehicle entrance for staff, separated from the heavy vehicle access driveway
- A new car park in the eastern corner of the site

The changes to floor space are shown below.

Table 3.1: Proposed land uses and floor space

| Land use | Existing (sqm GFA) | Change (sqm GFA) | Proposed (sqm GFA) |
|---|---|---|---|
| Industrial | 18,582 | +5,810 | 24,392 |
| Office | 735 | +24 | 759 |

The proposed development represents a 31% increase in industrial floor space and a 3% increase in office floor space.

As detailed in Section 2.3.2, the site currently employees approximately 291 full and part employees, reflecting a mix of direct Americold employees and labour hire staff. The site is currently accommodates approximately 198 staff in total on a typical workday, consisting of:

- 6 office workers
- 4 staff in the administration/operations team
- 181 warehouse staff (93 fulltime, 88 part-time)
- 4-7 unpacking crew members

The proposed development is expected to generate a requirement for up to 15 additional staff over the first 10 years of operation, for a total of up to 213 staff working throughout a typical workday resulting in:

- 7 office workers
- 4 staff in the administration/operations team
- 195 warehouse staff (100 fulltime, 95 part-time)
- 4-7 unpacking crew members

Similarly to existing conditions, the warehouse staff are split into shifts and the crossover will only occur for a brief period of time.

## 3.2 Parking and Loading

The proposed development will provide:

- An extension of the existing car park on the north-eastern boundary of the site, providing an additional 33 car parking spaces (including 3 accessible spaces)

- Two new accessible parking spaces adjacent to the office building
- Formalisation of the car park on the eastern corner of the site, providing 66 car parking spaces
- Conversion of part of this informal parking area to semi-trailer parking, providing 12 semi-trailer parking spaces
- Removal of the existing visitor car park of 21 spaces to accommodate a new pallet building, relocating these spaces to the northern boundary of the site mixed with the staff car park
- An additional seven loading bays to service the new freezer store building
- A holding zone for heavy vehicles on the southern boundary of the site to accommodate any queuing and waiting

In summary, the parking and loading provision for the proposed development is shown below.

Table 3.2: Proposed parking and loading spaces

| Land use | Existing | Change | Proposed |
|---|---|---|---|
| Standard car parking spaces | 89* | +77 | 166 |
| Accessible parking spaces | 2 | +3 | 5 |
| Bicycle parking spaces | 10 | - | 10 |
| Loading bays | 25 | +7 | 32 |
| Truck holding area | 8 | -2 | 6 |
| Semi-trailer parking | 0 | +12 | 12 |

*Excluding informal car parking spaces

Upon completion of the proposed expansion development, the additional space is anticipated to allow for the operation of additional B-doubles. With the new heavy-vehicle circulation plan detailed in section 3.3, B-doubles will be able to be unhitched in the central loading hardstand, the new truck holding area on the new southern access roadway, and the new trailer parking area.

The expected breakdown of additional daily heavy vehicles post-development are as follows:

- 13 B-doubles
- 50 Semi-trailers
- 15 Rigid Vehicles

## 3.3 Access and Circulation

Proposed access and circulation arrangements are shown in the diagram below.

Figure 3.1: Proposed New Site Circulation

A new access driveway for passenger vehicles is proposed to the east of the existing access driveway and office building, leading directly to the car parks on the eastern side of the site. This will separate passenger cars from heavy vehicles, improving safety and efficiency, and enabling more direct access to the car park.

A new ramp for heavy vehicles is proposed from the existing access driveway, leading these vehicles around the southern side of the site and allowing them to enter the loading docks from the back. This enables one-way movement throughout the site and front-entry to the hardstand, removing the need for a U-turn in the existing case. It also reduces potential conflict at the access driveway and provides additional queuing space for trucks along the southern boundary if needed.

Pedestrian and cycling access will remain as per existing conditions, with a footpath connecting Reservoir Road to the office building and marked pedestrian crossings providing safe access through the site.

Swept paths have been undertaken to confirm safe and efficient access for vehicles and have demonstrated that a 26m B-Double and 19m Prime Mover can efficiently circulate throughout the site in relevant areas. The swept paths are attached in Appendix D.

The proposal has been designed to improve safe and efficient access and circulation within the site, and effectively increases separation between heavy vehicles, passenger vehicles and pedestrians. As a result, the site is deemed to provide for safe access and circulation.

## 3.4 Construction Traffic Assessment

At the time of the assessment the full construction program had not been finalised, nor a contractor's construction traffic management plan been completed. As such, the assumptions utilised in the traffic assessment are as follows:

- Construction of the project will only be conducted during standard hours
- Construction staging is assumed to follow the plans detailed in Appendix E of the Environmental Impact Statement.
- Project construction traffic is derived from the Noise and Vibration Impact Assessment (Rev A) by Resonate Consultants, which was conservatively estimated as:
  - 50 light vehicle movements per day or 25 movements during the peak hour
  - 20 heavy vehicle movements per day or 10 movements during the peak hour
- Construction traffic will solely utilise Prospect Highway to commute to and from the site and will not disrupt the roadway otherwise. Construction vehicle movements in relation to the construction process are anticipated to be contained within Reservoir Road, Thornley Road, and inside the site perimeter.

### 3.4.1 Construction Traffic Impact on the Road Network

The existing site lies adjacent to Reservoir Road, which current experiences very little traffic as it accommodates few other establishments. Opposite to the site access driveway is Thornley Road, a 300-metre long cul de sac with no existing developments. Both roads are currently utilised for light-vehicle parking. It is anticipated that construction traffic would realistically utilise the same roads for both construction staff's light vehicle parking as well as heavy-vehicle parking. As there is very little development and vehicle traffic along these roads, construction traffic parking is not expected to greatly impact existing land use and traffic conditions.

As per assumptions, construction traffic generation during the AM peak hour is estimated as 25 light vehicle movements and 10 heavy vehicle movements. Background traffic counts for the critical peak AM period are 1815 light vehicles and 501 heavy vehicles, which is further detailed in section 5.1. Construction traffic thus comprises of less than 1.4% of daily background light vehicle traffic, and less than 2% of the daily background heavy vehicle traffic.

As per the modelling results detailed in section 6.7, the Prospect Highway / Reservoir Road intersection currently operates at LOS B in the AM peak hour and operates at LOS A at the Reservoir Road / Thornley Road / Site access intersection. When modelled, construction traffic had little impact on the network's performance, with the worst impact of an additional 8.1s on the western leg of Reservoir Road, however the intersections retain their Level of Service. The results are shown below in Table 3.3 and Table 3.4.

Table 3.3: Impact of Construction Traffic on the Prospect Highway / Reservoir Road Intersection

| AM Peak | Degree of Saturation | | Avg. Delay | | | 95% back of queue (veh) | | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Existing | With Construction | Existing | With Construction | Impact | Existing | With Construction | Impact | Existing | With Construction |
| South: Prospect Highway (S) | | | | | | | | | | |
| L2 | 0.786 | 0.796 | 5.8 | 6 | +0.2 | 10.3 | 10.8 | +0.5 | LOS A | LOS A |
| T1 | 0.786 | 0.796 | 6.2 | 6.3 | +0.1 | 10.3 | 10.8 | +0.5 | LOS A | LOS A |
| R2 | 0.786 | 0.796 | 12.6 | 11.6 | -1.0 | 10.3 | 10.8 | +0.5 | LOS A | LOS A |
| U | 0.786 | 0.796 | 12.2 | 12.4 | +0.2 | 10.3 | 10.8 | +0.5 | LOS A | LOS A |
| Approach | 0.786 | 0.796 | 6.2 | 6.4 | +0.2 | 10.3 | 10.8 | +0.5 | LOS A | LOS A |
| East: Reservoir Road (E) | | | | | | | | | | |
| L2 | 0.261 | 0.262 | 31.4 | 31.5 | +0.1 | 1.3 | 1.3 | 0.0 | LOS C | LOS C |
| T1 | 0.261 | 0.262 | 31.9 | 32 | +0.1 | 1.3 | 1.3 | 0.0 | LOS C | LOS C |
| R2 | 0.261 | 0.262 | 34.7 | 34.8 | +0.1 | 1.3 | 1.3 | 0.0 | LOS C | LOS C |
| U | 0.261 | 0.262 | 26.7 | 26.8 | +0.1 | 1.3 | 1.3 | 0.0 | LOS B | LOS B |
| Approach | 0.261 | 0.262 | 33.4 | 33.5 | +0.1 | 1.3 | 1.3 | 0.0 | LOS C | LOS C |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| North: Prospect Highway (N) | | | | | | | | | | |
| L2 | 0.892 | 0.922 | 17.2 | 20.9 | +3.7 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |
| T1 | 0.892 | 0.922 | 16.5 | 20.4 | +3.9 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |
| R2 | 0.892 | 0.922 | 20.5 | 24.5 | +4.0 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |
| U | 0.892 | 0.922 | 22.2 | 26.2 | +4.0 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |
| Approach | 0.892 | 0.922 | 16.8 | 20.8 | +4.0 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |
| West: Reservoir Road (W) | | | | | | | | | | |
| L2 | 0.815 | 0.865 | 33.6 | 41.8 | +8.2 | 11.9 | 14.5 | +2.6 | LOS C | LOS C |
| T1 | 0.815 | 0.865 | 34.1 | 40.4 | +6.3 | 11.9 | 14.5 | +2.6 | LOS C | LOS C |
| R2 | 0.815 | 0.865 | 35.7 | 43.8 | +8.1 | 11.9 | 14.5 | +2.6 | LOS C | LOS D |
| U | 0.815 | 0.865 | 37 | 45.1 | +8.1 | 11.9 | 14.5 | +2.6 | LOS C | LOS D |
| Approach | 0.815 | 0.865 | 35.4 | 43.5 | +8.1 | 11.9 | 14.5 | +2.6 | LOS C | LOS D |
| All Vehicles | 0.892 | 0.922 | 16 | 19.1 | +3.1 | 20.1 | 24.1 | +4.0 | LOS B | LOS B |

Table 3.4: Impact of Construction Traffic on the Reservoir Road / Thornley Road Intersection

| AM Peak | Degree of Saturation | | Avg. Delay | | | 95% back of queue (veh) | | | Level of Service | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Existing | With Construction | Existing | With Construction | Impact | Existing | With Construction | Impact | Existing | With Construction |
| South: Site Access (S) | | | | | | | | | | |
| L2 | 0.038 | 0.037 | 0.4 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | LOS A | LOS A |
| T1 | 0.038 | 0.037 | 0.4 | 0.6 | +0.2 | 0.1 | 0.1 | 0.0 | LOS A | LOS A |
| R2 | 0.038 | 0.037 | 0.5 | 0.5 | 0.0 | 0.1 | 0.1 | 0.0 | LOS A | LOS A |
| Approach | 0.038 | 0.037 | 0.4 | 0.4 | 0.0 | 0.1 | 0.1 | 0.0 | LOS A | LOS A |
| East: Reservoir Road (E) | | | | | | | | | | |
| L2 | 0.029 | 0.029 | 6.3 | 6.3 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| T1 | 0.029 | 0.029 | 0 | 0 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| R2 | 0.029 | 0.029 | 5.5 | 5.6 | +0.1 | 0 | 0 | 0.0 | LOS A | LOS A |
| Approach | 0.029 | 0.029 | 0.8 | 0.8 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| North: Thornley Road (N) | | | | | | | | | | |
| L2 | 0.006 | 0.006 | 4.6 | 4.6 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| T1 | 0.006 | 0.006 | 3.9 | 3.9 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| R2 | 0.006 | 0.006 | 4.9 | 5 | +0.1 | 0 | 0 | 0.0 | LOS A | LOS A |
| Approach | 0.006 | 0.006 | 4.5 | 4.5 | 0.0 | 0 | 0 | 0.0 | LOS A | LOS A |
| West: Reservoir Road (W) | | | | | | | | | | |
| L2 | 0.061 | 0.035 | 2.5 | 2.4 | -0.1 | 0.2 | 0.3 | +0.1 | LOS A | LOS A |
| T1 | 0.061 | 0.035 | 0.2 | 0.2 | 0.0 | 0.2 | 0.3 | +0.1 | LOS A | LOS A |
| R2 | 0.061 | 0.035 | 2.7 | 2.7 | 0.0 | 0.2 | 0.3 | +0.1 | LOS A | LOS A |
| Approach | 0.061 | 0.035 | 2.1 | 2.2 | +0.1 | 0.2 | 0.3 | +0.1 | LOS A | LOS A |
| All Vehicles | 0.061 | 0.037 | 1.6 | 1.9 | +0.3 | 0.2 | 0.3 | +0.1 | LOS A | LOS A |

### 3.4.2 Construction Traffic Impact During Construction staging

During construction, temporary access configurations will be established to accommodate construction works. This will involve three stages as described below.

**Stage 1**

Temporary construction hoarding will be provided at the eastern end of the hardstand to enable construction of the new roadways and external areas of the site. This reduces the space for coldstore heavy vehicles to U-turn at the hardstand, however swept paths have been undertaken to ensure these movements can still be accommodated (refer to **Error! Reference source not found.**). Two existing loading docks at the eastern end must remain unused to accommodate this manoeuvre. Construction vehicles will travel along the southern boundary of the site, separated from other user groups. Other access and circulation configurations remain as existing.

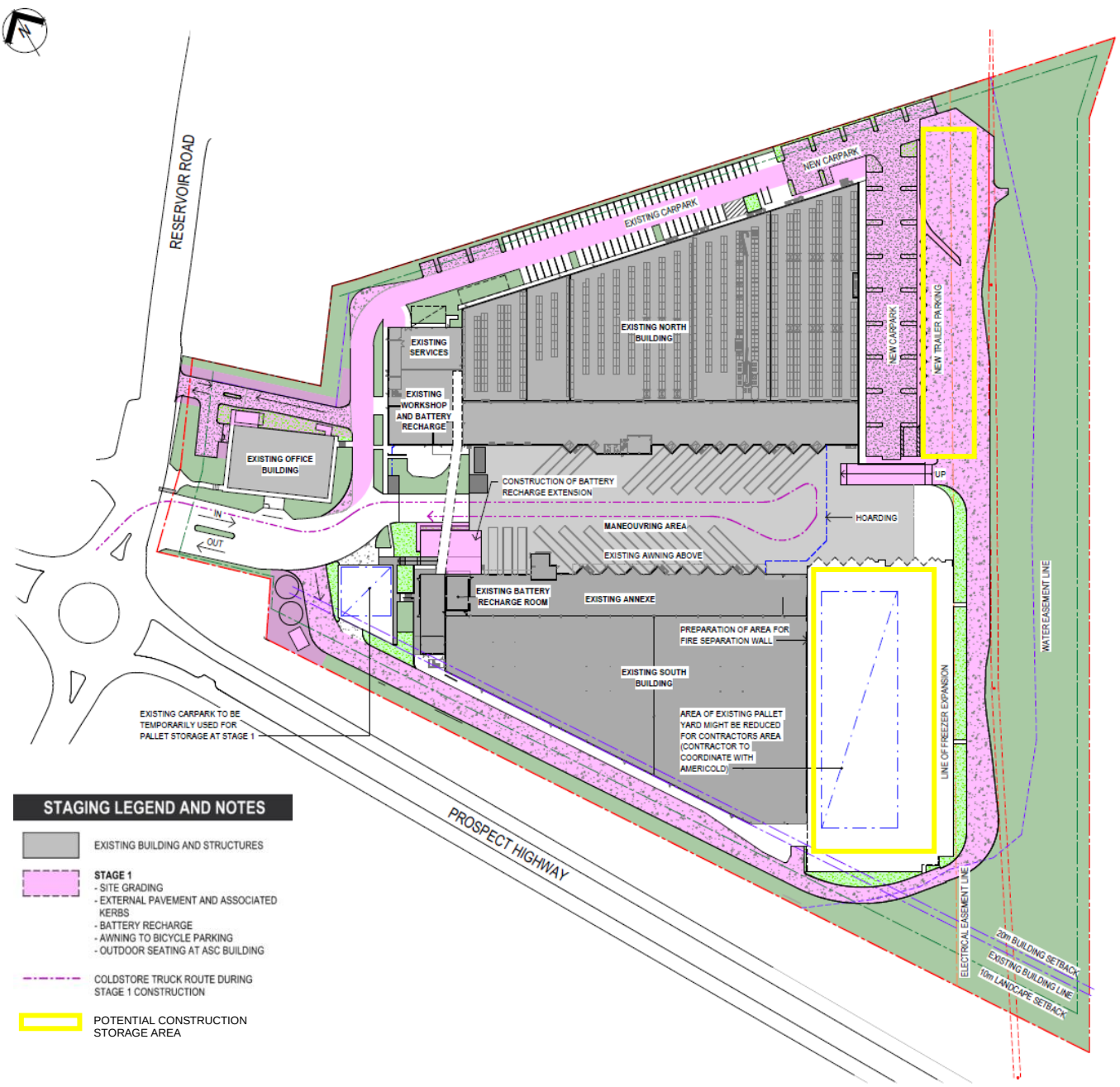



Figure 3.2: Access during construction Stage 1

The new driveway will be situated approximately 60m east of the Prospect Highway Intersection. Construction of the new light-vehicle driveway is isolated from any site vehicle movements in the existing conditions. Construction vehicles may occupy the adjoining portion of Reservoir Road, however there is little traffic further east of the site, and Reservoir Road is sufficiently wide enough (approximately 10 metres) to safely constrain construction footprint and conduct traffic management by the contractor.

For the rest of the site, which involves formalising access roadways and parking facilities, construction vehicles will be contained within the site's perimeters- utilising the southern access road for circulation, and the pallet yard and future trailer parking area for vehicle and equipment storage. This minimises the construction impact to the site's existing access and circulation.

During that construction of the new carparks and pavement of the northern access roadway, there will be issues of displaced available staff parking which must be managed. The impact of which may be minimised with the construction traffic management plan to stage available parking spaces, coordinate reduced site operations by Americold and/or coordinate alternative means of transport and parking off-site.

**Stage 2**

By Stage 2, the ramp adjacent to the construction hoarding will have been completed to enable vehicle access to the hardstand from the southeast and construction of the new warehouse and annex. Coldstore heavy vehicles will then enter using the new access driveway and travel along the northern boundary of the site to access the hardstand. Although coldstore heavy vehicle traffic must mix with passenger vehicles in the stage, this improves safety and efficiency at the hardstand by removing the need to U-turn and enables all existing loading docks to be utilised. The following diagram illustrates the extent of works and heavy vehicle access during Stage 2.

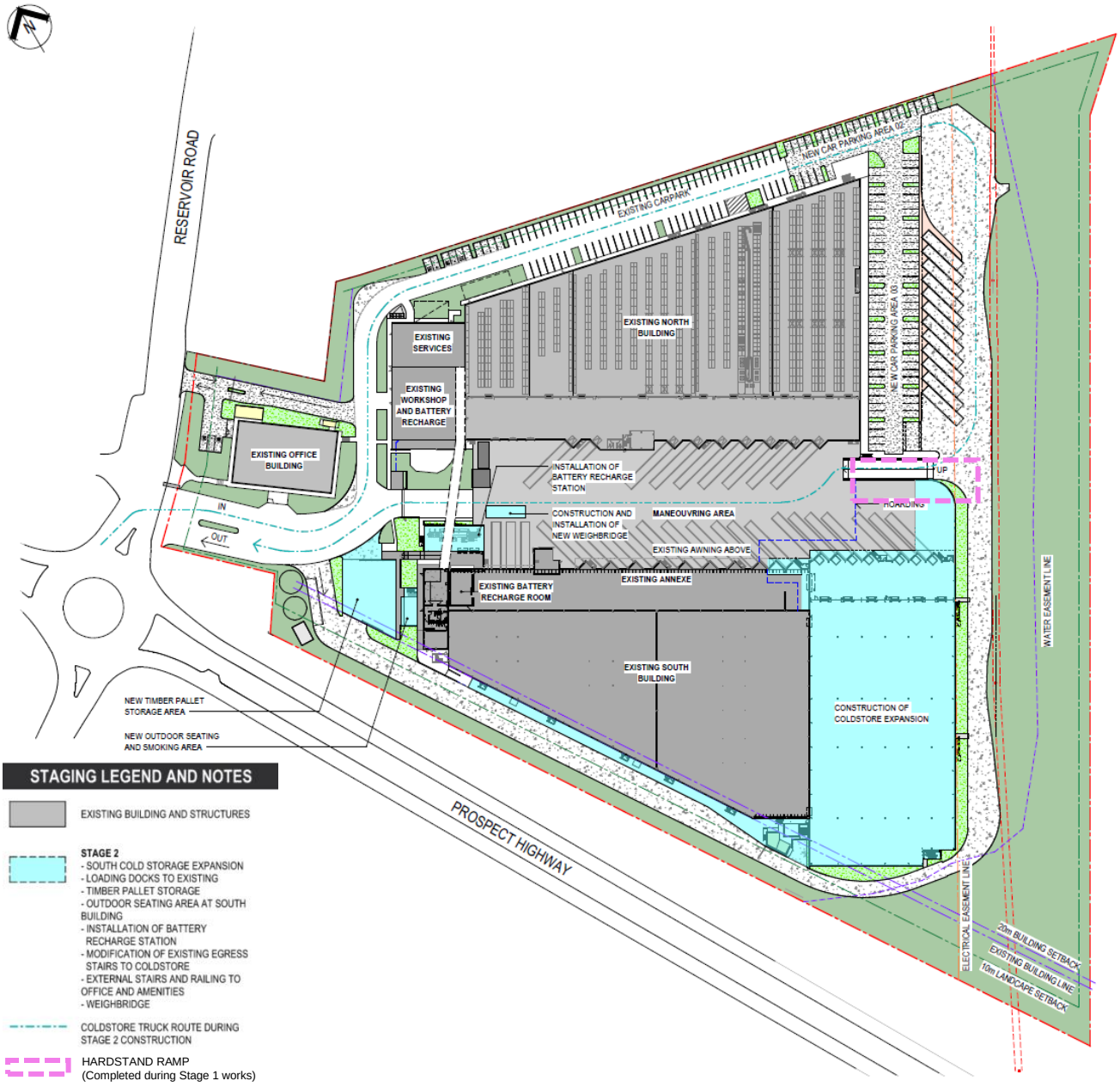



Figure 3.3: Extent of works and heavy vehicle access during construction Stage 2

From this stage onward, construction vehicles are entirely contained within the site perimeters, and will have no impact on the surrounding road network. Furthermore, construction vehicle movements are generally restricted to the southern side of the site, separating construction traffic to normal site traffic, and thus having little impact on the site vehicle's operations and circulation.

**Stage 3**

Stage 3 involves the construction of staff amenities and the internal fitout. Heavy vehicle access is provided via the southern roadway, separating heavy vehicles from passenger vehicles and pedestrian movement as per the end state configuration. The following diagram illustrates the access configuration during construction Stage 3.

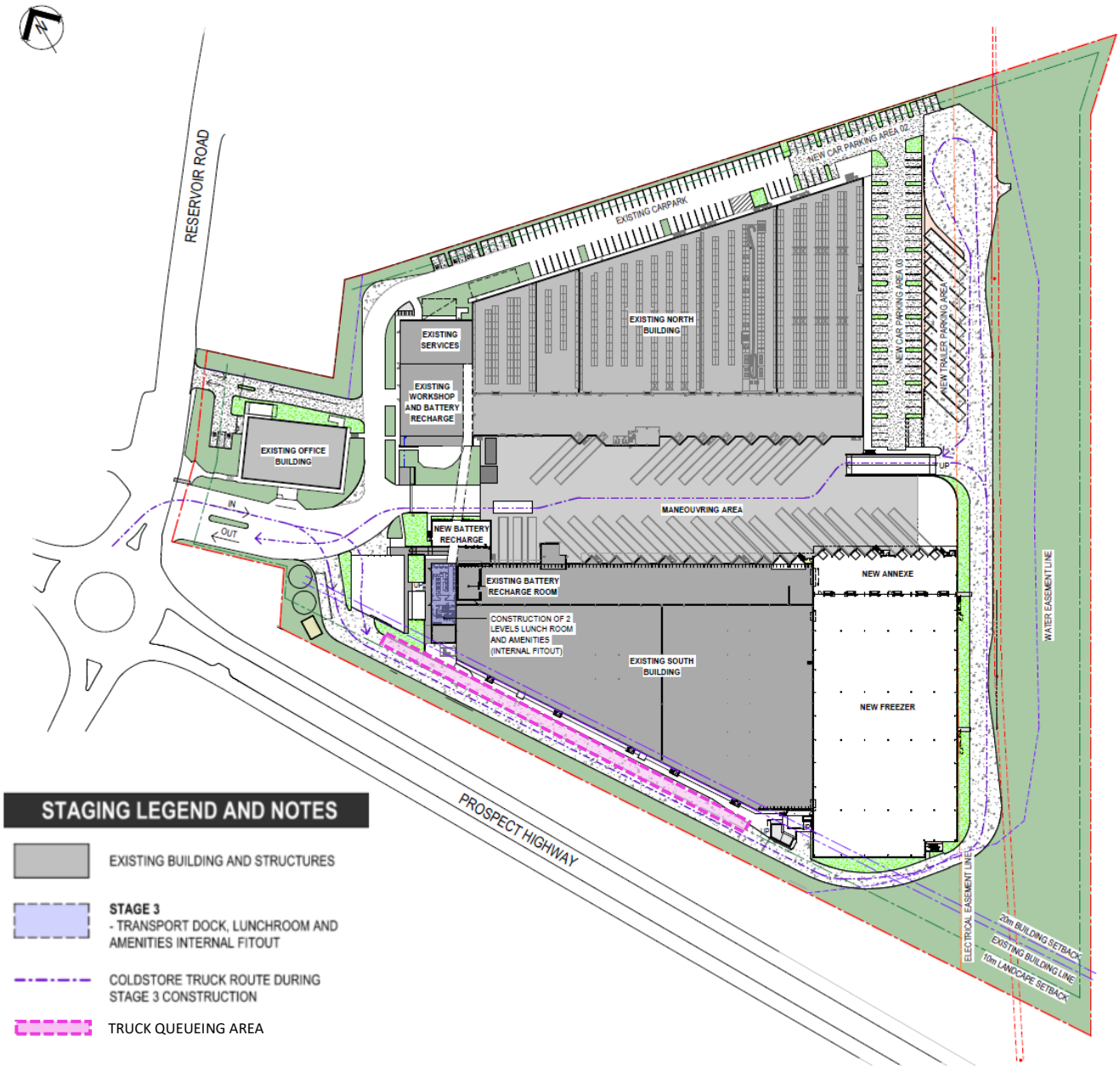



Figure 3.4: Heavy vehicle access during construction Stage 3

At this stage, comparatively little construction traffic is anticipated and may utilise the heavy-vehicle queueing space on the southern access road for parking and equipment.

Overall, construction of the expansion project is anticipated to have minimal impact on the surrounding road network from the generated vehicles involved. Access and circulation of site operations will be moderately impacted during part of Stage 1's construction. However, construction zones and construction vehicles will be segregated from coldstore light and heavy vehicles during Stage 2 and Stage 3, while also being completely contained within the site perimeter, resulting in very little impact to site traffic and no impact to the surrounding road network.

# 4 Parking and loading assessment

This section presents an assessment of the proposed car parking provision against the guidelines presented in the Cumberland Council Development Control Plan (DCP), with the provisions required for industrial zone developments outlined in Part D and F3 taking priority.

It is noted that pursuant to clause 2.10 of the State Environmental Planning Policy (Planning Systems) 2021 the Cumberland Council DCP does not apply to State Significant Development. However, as the SEARs require that the Traffic Impact Assessment provide an assessment in accordance with relevant Council guidelines, an assessment of the development in terms of the transport provisions of the Cumberland DCP has been provided.

## 4.1 Car parking

The car parking guidelines outlined in Part D – Development in Industrial Zones of the Cumberland Council DCP refer to the provisions set out in Part G3. Table 4.1 summarises the minimum parking calculations.

Table 4.1: Minimum Parking Requirements according to the Cumberland Council DCP Part G3

| Item | Warehouse | Office |
|---|---|---|
| Proposed floor space | 24,378 $m^2$ GFA | 773 $m^2$ GFA |
| DCP required parking rate | 1 space per 300 $m^2$ GFA | 1 space per 40 $m^2$ GFA |
| Minimum car parking spaces | 82 | 20 |
| **Total minimum car parking spaces** | **102** | |

The total car parking for staff and visitors is proposed to be 171 car parking spaces and therefore exceeds the recommended minimum of 102 spaces.

An excess of spaces is proposed to be provided, which will help to cater for increased demand at shift crossover times. This is mitigated due to the mix of the warehouse's fulltime, part time and casual workers who have staggered shift times, as well as office staff and other employees having different working hours.

The maximum expected number of staff on-site at shift crossover times is 137 people based on data provided by Americold Logistics (assuming zero car sharing, since reported car sharing is minimal). There is therefore a potential excess of approximately 34 parking spaces at the time of peak parking demand, which occurs during the morning. Furthermore, it is projected that at most only 15 additional workers would be employed in the future, resulting in an excess of 19 parking spaces in future years during the worst-case crossover.

The site also provides on-site storage space for approximately 20 vehicles within the circulation roadway between the staff car park and site boundary. This can accommodate for vehicles waiting to park so that the road network is not affected by queue spillbacks.

The proposed parking provision is therefore deemed appropriate, and if required it is recommended that traffic and site management strategies (e.g. staggering shift times to reduce peak parking demand) are

utilised instead of providing additional parking. This would better manage parking demand, as additional spaces would be unutilised for most of the day.

In addition to the parking requirements, accessible car spaces must be provided for people with disabilities, as required by AS 2890.6 – Off-street Parking for People with Disabilities. According to Table B1 of AS 2890.6, two accessible car spaces must be provided where there are up to 50 total car spaces, and an additional one accessible car space for every additional 50 spaces or part thereof.

The minimum accessible parking required, based on the proposed 171 total spaces, is therefore five accessible spaces. The total proposed accessible car parking for staff and visitors is proposed to be five car parking spaces and therefore meets the required minimum.

## 4.2 Cycle parking

Based on the Cumberland Council DCP Part G3 guidelines, one bicycle parking space is specified per 10 office employees, and none are required for the warehouse employees. Visitor bicycle parking is not required.

The proposed facility is projected to have up to 213 total staff working on a typical day in the future, which includes up to 8 workers in the office space in a single shift. Therefore at least one bicycle parking space is required to meet the DCP guidelines.

The existing site provides 5 bicycle racks, allowing for 10 bicycle parking spaces, and therefore exceeds the specifications of the DCP. The upgraded site is proposed to maintain the 10 bicycle parking spaces, which allows for an approximate 5% mode share in cycling across all site employees. This promotes cycling as a sustainable travel mode and allows for future increases in demand.

Cumberland Council DCP Part D specifies end of trip facilities to adequately service the provided bicycle parking spaces such as showers and lockers. The site presently provides four showers (three male showers and one female shower) and over 70 lockers, and hence satisfies the guidelines.

Furthermore, Part D of the DCP requires that the bicycle parking location to be secure, covered, and convenient. The existing parking space is proposed to be covered and is presently adjacent to the end of trip facilities building, hence meeting this requirement.

In industrial zones and areas with high volumes of heavy vehicles, the TfNSW Cycleway Design Toolbox contains the following design considerations:

- Cycling facilities should be separated from vehicle traffic
- Cyclists should be given priority at driveways
- Open sightlines and high visibility should be maintained where possible
- Sufficient lighting should be provided
- Conflict points with cyclists should be minimised

These measures have been taken into consideration in the design of the site.

## 4.3 Provision for loading vehicles

The Cumberland Council DCP Part D refers to Part G3 for the loading requirements of industrial zones. It specifies the following requirements for loading bays for industrial land uses:

- 1 space / 800m$^2$ GFA up to 8,000m$^2$ GFA; plus
- 1 space / 1,000m$^2$ GFA thereafter

This results in the following requirements for loading bays.

Table 4.2: Requirements for loading bays

| Item | Value | Unit |
|---|---|---|
| Industrial floor space | 25,435 | sqm GFA |
| Requirement (up to 8,000 sqm GFA) | 10 | spaces |
| Requirement (> 8,000 sqm GFA) | 18 | spaces |
| **Total requirement** | **28** | **spaces** |

The existing site contains a total of 25 loading bays. The proposed development includes an additional seven loading bays abutting the extension of the southern building, resulting in a proposed total of 32 loading bays. The proposed development therefore contains sufficient provision for loading.

The loading bays additional to the requirement will improve efficiency of operations and provide spare capacity to minimise the likelihood of potential queuing.

# 5 Traffic demand

## 5.1 Existing Traffic Volumes

### 5.1.1 Traffic generation

Information provided by Americold Logistics indicates that the site currently generates around 160-200 heavy vehicle movements per day, comprised of heavy rigid vehicles (~40), semi-trailers (~130) and B-doubles (~30). Almost all staff drive to the site in single-occupancy passenger vehicles, although three staff ride bicycles. Most traffic is generated outside the road network peak periods as these tend to be the most efficient times for commercial deliveries and staff shift times begin and end outside these periods.

Traffic surveys were undertaken for the AM and PM peak hours (7-9am and 4-6pm respectively) to accurately capture existing traffic volumes generated by the site during the network peak hours and the following volumes were obtained.

Table 5.1: Existing traffic volumes generated by the site

| Direction | Light vehicles | Heavy vehicles | Large trucks* | Total |
|---|---|---|---|---|
| **AM Peak** | | | | |
| Inbound | 12 | 4 | 8 | **24** |
| Outbound | 2 | 3 | 7 | **12** |
| **AM Total** | **14** | **7** | **15** | **36** |
| **PM Peak** | | | | |
| Inbound | 13 | 1 | 5 | **19** |
| Outbound | 14 | 6 | 5 | **25** |
| **PM Total** | **27** | **7** | **10** | **44** |

*Large trucks refer to vehicles of class 6 – 12 by the Austroads Vehicle Classification standard.

The site traffic represents approximately 1.5-2% of total traffic at the intersection of Prospect Highway / Reservoir Road, which experiences approximately 2,140-2,350 vehicles per hour depending on the peak period.

Refer to section 6.4 for further details regarding the traffic surveys.

A summary of peak hour and daily (weekday) traffic demand at the Prospect Highway / Reservoir Road intersection is shown in Table 5.2. Key assumptions in calculating daily demand include the following:

- As per section 2.3.2 and data provided by Americold Logistics, the site accommodates approximately:

  - 6 office workers
  - 4 staff in the administration/operations team
  - 181 warehouse staff (93 fulltime, 88 part-time)
  - 4-7 unpacking crew members
- All staff are assumed to arrive and depart once per day (i.e. generate two trips per day)
- Daily background traffic demand was assumed to be ten times the AM peak hour demand, as per the RMS Traffic Modelling Guidelines assumption that "peak hour is assumed to be around 10 per cent of AADT".

Note that daily traffic is significantly higher than peak hour traffic since warehouse staff shift times are staggered throughout the day and generally do not coincide with network peak hours.

Table 5.2: Summary of peak hour and daily weekday traffic demand at the Prospect Highway / Reservoir Road intersection

| Demand | Site traffic | | | Background traffic | | |
|---|---|---|---|---|---|---|
| | Light vehicles | Heavy vehicles | Total vehicles | Light vehicles | Heavy vehicles | Total vehicles |
| AM peak hour | 14 | 22 | 36 | 1,815 | 501 | 2,316 |
| PM peak hour | 27 | 17 | 44 | 1,840 | 248 | 2,088 |
| Daily | 468 | 180 | 648 | 18,150 | 5,008 | 23,158 |

### 5.1.2 Traffic distribution

The site comprises a large proportion of the total traffic on the eastern approach of the Prospect Highway / Reservoir Road intersection and the only other facility using this road is another refrigerated transport facility. Therefore, the turning movements at the intersection from the traffic surveys obtained were used for the distribution of traffic generated by the site. The distribution of traffic was found to be the following.

Table 5.3: Traffic distribution from observed counts

| Direction | AM Peak | | PM Peak | |
|---|---|---|---|---|
| | Inbound | Outbound | Inbound | Outbound |
| North (via Prospect Highway) | 56% | 67% | 78% | 48% |
| East (via Reservoir Road) | N/A | N/A | N/A | N/A |
| South (via Prospect Highway) | 29% | 17% | 6% | 26% |
| West (via Reservoir Road) | 15% | 17% | 16% | 26% |
| **Total** | **100%** | **100%** | **100%** | **100%** |

The distribution shows that the majority of traffic travel to/from the north, aligning with the M4 Motorway as a key travel route for heavy vehicles.

## 5.2 Future Traffic Volumes

### 5.2.1 Traffic generation

The traffic generation estimates were split based on heavy and light vehicles, as these are driven by different land uses and are expected to grow in different proportions.

The heavy vehicle traffic expected to be generated by the site due to the proposed development was estimated using data provided by Americold Logistics. The anticipated future truck movements provided are 300-350 heavy vehicles per day, compared to 160-200 in the existing situation. This represents an

approximate increase of 80%. Although the floor space of the industrial site facilities are only being expanded by approximately 31%, the increase in vehicle movements may be in part due to improvements in site efficiency, for example improved heavy vehicle circulation leading to faster turnover rates. The additional heavy vehicle movements have therefore been adopted as a conservative case.

The light vehicle traffic expected to be generated by the site was estimated using information provided by Americold Logistics. As detailed in section 2.3.2, it is projected that up to 15 additional workers will be employed as a result of the site expansion. The distribution of which is detailed in section 3.1, which comprises of seven additional full-time warehouse employees, seven additional part-time warehouse employees, and one additional office admin employee.

Of the seven additional part-time warehouse employees, distributing them with respect to current shift-time staffing volumes yields three additional morning employees, two additional afternoon employees, and two additional night employees.

As identified in section 2.3.2, the following shift times correspond with peak-hour traffic:

AM Peak: Office Admin staff (+1)

PM Peak: Part time Warehouse afternoon (+2) & night shift (+2), Office Admin staff (+1) and Gatehouse Admin staff afternoon shift (+0).

Applying this information to the existing site traffic results in the following expected traffic growth.

Table 5.4: Expected traffic generation

| | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|
| **Vehicle type** | **Existing** | **Additional** | **Total AM** | **Existing** | **Additional** | **Total PM** |
| Light vehicles | 16 | +1 | **17** | 35 | +5 | **40** |
| Heavy vehicles | 6 | +5 | **11** | 10 | +8 | **18** |
| Large trucks | 15 | +12 | **27** | 9 | +7 | **16** |
| **Total** | **37** | **+18** | **55** | **54** | **+20** | **74** |

The proposed development is therefore expected to generate an additional 18 vehicles in the AM peak and 20 vehicles in the PM peak. This represents an increase of less than 1% of total traffic at the intersection of Prospect Highway / Reservoir Road.

### 5.2.2 Traffic distribution

Traffic distribution was assumed to be identical to the existing distribution (refer to section 5.1.2).

## 5.3 Public transport, cycling and walking

According to data provided by Americold Logistics, staff currently access the site with a 99% passenger vehicle mode share, and 3 staff members (< 1%) arrive by cycling. The existing cycling facilities allow for an approximate 5% cycling mode share, therefore allowing for an increase in cycling as a travel mode.

The proposed upgrade of Prospect Highway by TfNSW detailed in section 2.6 includes bus stops adjacent to the site and formalised pedestrian crossings at the intersection of Prospect Highway / Reservoir Road, which will effectively integrate the site with surrounding transport network and is expected to encourage sustainable travel modes in the future.

# 6 Traffic modelling

## 6.1 Modelling approach

SIDRA Network, an intersection modelling tool, was used to assess the potential impacts of the development on the surrounding road network.

Standard measures used in the assessment include:

- Average delay (s) – indicates the delay per vehicle experienced by drivers travelling through the intersection. At priority-controlled intersections other than roundabouts, the worst-case average delay over all approaches is used to represent the average delay of the intersection
- The Level of Service (LoS) – a categorical measure of the total vehicle delay at an intersection, used to understand the general operational performance. Standard LoS criteria are shown in the table below
- Degree of Saturation (DoS) – represents the operating capacity of the intersection. A DoS of 1 means that the intersection is operating at full capacity, although this indicates an unstable condition and typically an upper limit of 0.9 is used to ensure the intersection can recover from fluctuations in demand and overflow queues
- Queue lengths (m) – indicate the extent of vehicles waiting at each approach to the intersection. This is an important measure to assess the potential impact of intersection operations on adjacent intersections and ensure movements are contained within lane lengths provided

Table 6.1: Level of Service criteria for intersections in accordance with TfNSW

| LoS | Avg. delay per vehicle (s) | Traffic signals / roundabout | Give-way / stop signs |
|---|---|---|---|
| A | < 14 | Good operation | Good operation |
| B | 15 – 28 | Good with acceptable delays & spare capacity | Acceptable delays & spare capacity |
| C | 29 – 42 | Satisfactory | Satisfactory, but accident study required |
| D | 43 – 56 | Operating near capacity | Near capacity & accident study required |
| E | 57 – 70 | At capacity; at signals, incidents will cause excessive delays<br>Roundabouts require other control modes | At capacity, requires other control mode |
| F | > 70 | Over capacity, unstable operation | Over capacity, unstable operation |

Source: RTA Guide to Traffic Generating Developments (2002)

## 6.2 Modelled scenarios

To identify the potential impact on the road network, the following scenarios were modelled:

1. 2022 Base Model – Existing conditions

2. 2023 Background Traffic Only – Future conditions on opening year without the proposed development traffic

3. 2023 With Proposed Development – Future conditions on opening year including the proposed development traffic to determine the incremental impact on road network performance

4. 2033 Background Traffic Only – Future conditions without the proposed development traffic to understand potential operating conditions in the long-term, and including the TfNSW upgrade of the Prospect Highway / Reservoir Road intersection

5. 2033 With Proposed Development – Future conditions including the proposed development traffic to determine the potential incremental impact in the long-term, and including the TfNSW upgrade of the Prospect Highway / Reservoir Road intersection

All scenarios were modelled for both the AM and PM peak hours.

For the future models, it was assumed that the planned upgrade of Prospect Highway / Reservoir Road to signals will be in place.

## 6.3 Intersection layout

### 6.3.1 Base model and 2023 opening year layout

The following intersections were included in the model:

- Prospect Highway / Reservoir Road
- Reservoir Road / Site Access

The study area was limited to these two intersections as it is expected that the greatest impact by the proposal will be at the Prospect Highway and Reservoir Road intersection and the development site traffic represents a small proportion of overall traffic which disperses beyond Prospect Highway. Furthermore, the peak site traffic does not coincide with standard network peak hours will reduce the impact, and planned changes to the area in accordance with the TfNSW approved scheme means that this intersection will be upgraded within one year.

The modelled intersections were connected as a network in SIDRA. Figure 6.1 shows the layout of the modelled network in the existing conditions base model and 2023 opening year model.

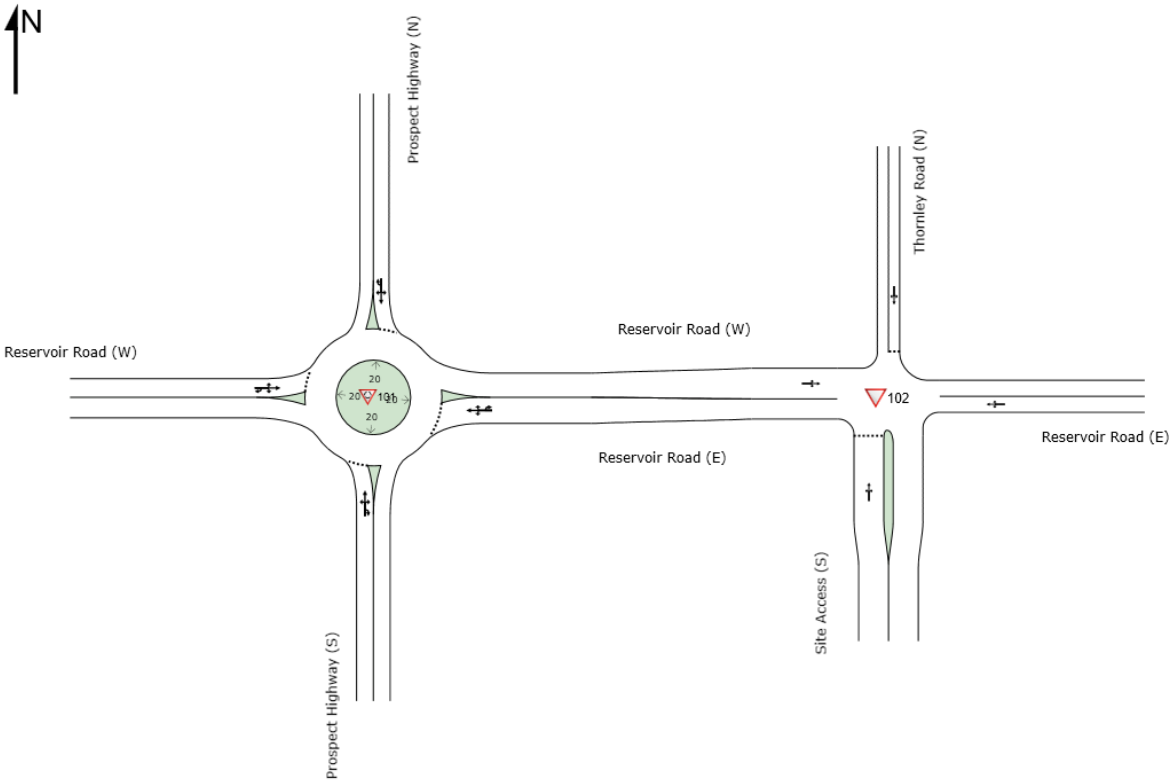



Figure 6.1: SIDRA Base Network Layout

The Prospect Highway / Reservoir Road intersection is a single-lane roundabout with four approaches and all movements permitted. The Reservoir Road / Thornley Road intersection, located 15 metres to the east of the roundabout, is a four-way give-way intersection connected to the site access driveway. Beyond this intersection, Reservoir Road (E) and Thornley Road (N) are both no through roads.

### 6.3.2 2033 Future model with TfNSW Upgrade - Signalised Intersection

The future 2033 model includes the planned TfNSW upgrade of the Prospect Highway / Reservoir Road intersection to a signalised intersection. The associated geometry and lane allocation were based on the TfNSW Review of Environmental Factors (REF) and its June 2021 Addendum. Figure 6.2 shows the layout of the modelled network.

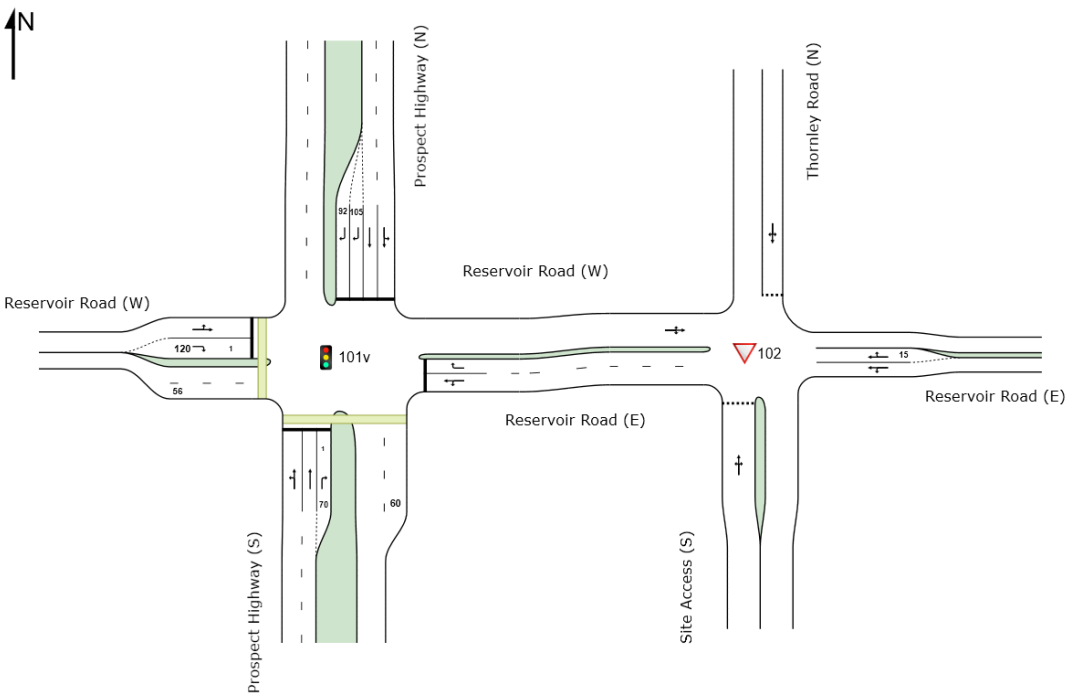



Figure 6.2: Sidra Upgraded Signalised Network Layout

## 6.4 Data collection

Video Traffic surveys were undertaken by Trans Traffic Survey on three separate days, the 16th of March, 24th of August and the 25th of August. The following peak periods were extracted to inform the modelling:

- AM peak: 7:00 AM – 9:00 AM
- PM peak: 4:00 PM – 6:00 PM

No recorded traffic disruptions were identified on the day of the survey, although a reduced speed limit to 80km/h on the M4 Motorway applied. Construction around the Prospect Highway / Reservoir Road intersection was present during the August surveys but there were no obstructions to the road traffic itself.

Vehicles were classified in accordance with the Austroads standard vehicle classifications.

Of the three days surveyed, the volumes recorded on the 16th of March were found to be generally higher during the morning and afternoon peak and thus deemed as the critical volumes used for modelling. A comparison of the surveyed volumes differences is attached in Appendix E. Based on the data collected, the peak one-hour periods were identified to be the following:

- AM peak: 7:45 AM – 8:45 AM
- PM peak: 4:45 PM – 5:45 PM

Traffic volumes from the same periods were used to develop the base model.

## 6.5 Base model development, calibration & validation

The base model was developed based on existing conditions and the traffic survey data collected. The model was calibrated and validated using geometric measurements, surveyed queue lengths and site observations to achieve an accurate reflection of existing conditions. Due to the site operating as an industrial site with high proportions of heavy vehicle movements, Large Trucks were also added as a user class in SIDRA, additional to the standard Light Vehicles and Heavy Vehicles. This more effectively accounts for the variety of heavy vehicles using the site and is a conservative approach.

Intersection layout and traffic behaviour have been gained through inspection of the intersection. The roundabout's Environmental Factor was iteratively adjusted to calibrate the roundabout's capacity and delay times to observed conditions according to the SIDRA guidelines. Modelled queue lengths were then validated based on the surveyed maximum queue length, the results are shown below in Table 6.2:.

Table 6.2: Observed Queue Lengths compared to calibrated base model results

| Approach | Peak | Max Observed Queue (Veh) | 95% BACK OF QUEUE [ Veh* | Dist* (m)] | Aver. Delay (sec) |
|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 8 | 10 | 100 | 6.2 |
| Reservoir Rd (E) | AM | 4 | 2 | 25 | 33.4 |
| Prospect Hwy (N) | AM | 16 | 20 | 180 | 16.8 |
| Reservoir Rd (W) | AM | 13 | 12 | 100 | 35.4 |
| **Intersection** | **AM** | | **20** | **180** | **16.0** |
| Prospect Hwy (S) | PM | 7 | 15 | 120 | 6.4 |
| Reservoir Rd (E) | PM | 3 | 1 | 5 | 6.9 |
| Prospect Hwy (N) | PM | 7 | 4 | 35 | 6.1 |
| Reservoir Rd (W) | PM | 14 | 9 | 75 | 31.3 |
| **Intersection** | **PM** | | **15** | **120** | **10.1** |

* 95% Back of Queue - Veh count rounded to the nearest integer, Dist rounded to the nearest 5 metres

Overall, the model results correlate well to the observed behaviour of the intersection in both the AM and PM peak. The magnitude of queue lengths and their relative size in proportion to the other approaches match observed values, and hence represents existing conditions.

The base model is deemed fit for purpose to be used a as base for developing the future scenarios. It should be noted that it will only be used to model the opening year of the 2023 development, and future year scenarios beyond this will have the new signalised intersection instead of the roundabout intersection.

## 6.6 Future year model assumptions

Background traffic was assumed to grow at a rate of 2% per annum to reflect general development in surrounding areas. This resulted in a 2% increase in background traffic in the 2023 scenarios, and an approximate 24% increase in the 2033 scenarios.

To improve network performance, for the signalised Prospect Highway / Reservoir Road intersection, a standard double-diamond intersection phasing sequence was implemented instead of the single diamond sequence outlined in the REF (attached in Appendix A). Notably, the dedicated diamond movements and its overlap phases serviced the demand for right turn movements more effectively on all approaches.

## 6.7 Results

The SIDRA modelling results are included in Appendix C.

Table 6.3 and Table 6.4 summarise the operational performance of the base model for each intersection.

Table 6.3: Prospect Highway / Reservoir Road 2022 Base Model Results

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 0.786 | 6.2 | LOS A | 10.3 | 99.3 |
| Reservoir Rd (E) | AM | 0.261 | 33.4 | LOS C | 1.3 | 23.6 |
| Prospect Hwy (N) | AM | 0.892 | 16.8 | LOS B | 20.1 | 179.7 |
| Reservoir Rd (W) | AM | 0.815 | 35.4 | LOS C | 11.9 | 99.6 |
| **Intersection** | **AM** | **0.892** | **16** | **LOS B** | **20.1** | **179.7** |
| Prospect Hwy (S) | PM | 0.871 | 6.4 | LOS A | 15.1 | 118.3 |
| Reservoir Rd (E) | PM | 0.079 | 6.9 | LOS A | 0.4 | 4.1 |
| Prospect Hwy (N) | PM | 0.438 | 6.1 | LOS A | 3.6 | 33 |
| Reservoir Rd (W) | PM | 0.738 | 31.3 | LOS C | 9.3 | 74.0 |
| **Intersection** | **PM** | **0.871** | **10.1** | **LOS A** | **15.1** | **118.3** |

Table 6.4: Reservoir Road / Thornley Road / Site Access 2022 Base Model Results

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Site Access (S) | AM | 0.037 | 0.4 | LOS A | 0.1 | 1.9 |
| Reservoir Rd (E) | AM | 0.029 | 0.8 | LOS A | 0.0 | 0.1 |
| Thornley Rd (N) | AM | 0.006 | 4.5 | LOS A | 0.0 | 0.1 |
| Reservoir Rd (W) | AM | 0.035 | 2.1 | LOS A | 0.2 | 2.1 |
| **Intersection** | **AM** | **0.037** | **1.6** | **NA** | **0.2** | **2.1** |
| Site Access (S) | PM | 0.036 | 0.1 | LOS A | 0.2 | 1.8 |
| Reservoir Rd (E) | PM | 0.011 | 0.8 | LOS A | 0.0 | 0.1 |
| Thornley Rd (N) | PM | 0.016 | 5.4 | LOS A | 0.0 | 0.3 |
| Reservoir Rd (W) | PM | 0.039 | 1.7 | LOS A | 0.2 | 2.0 |
| **Intersection** | **PM** | **0.039** | **1.5** | **NA** | **0.2** | **2** |

The results indicate that the Prospect Highway / Reservoir Road intersection currently operates at an acceptable level of service in both AM and PM peak periods, however the northern approach is nearing capacity in the AM peak. The Reservoir Road / Thornley Road / Site access intersection operates at a high level of service with spare capacity.

Table 6.5 - Table 6.8 summarise the future 2023 operation of the intersections with and without the Americold site expansion.

Table 6.5: Prospect Highway / Reservoir Road 2023 Model Results (No site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 0.804 | 6.5 | LOS A | 11.3 | 108.8 |
| Reservoir Rd (E) | AM | 0.292 | 37.8 | LOS C | 1.4 | 24.9 |
| Prospect Hwy (N) | AM | 0.916 | 19.6 | LOS B | 23.3 | 208.1 |
| Reservoir Rd (W) | AM | 0.871 | 45.1 | LOS D | 15.0 | 124.7 |
| **Intersection** | **AM** | **0.916** | **19.0** | **LOS B** | **23.3** | **208.1** |
| Prospect Hwy (S) | PM | 0.892 | 7.2 | LOS A | 17.7 | 138.5 |
| Reservoir Rd (E) | PM | 0.080 | 7.0 | LOS A | 0.4 | 4.2 |
| Prospect Hwy (N) | PM | 0.450 | 6.1 | LOS A | 3.7 | 34.2 |
| Reservoir Rd (W) | PM | 0.810 | 41.0 | LOS C | 11.7 | 92.8 |
| **Intersection** | **PM** | **0.892** | **12.0** | **LOS A** | **17.7** | **138.5** |

Table 6.6: Prospect Highway / Reservoir Road 2023 Model Results (with site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] | Impact of Site Upgrade Aver. Delay (sec) | 95% Queue (veh) |
|---|---|---|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 0.822 | 7.6 | LOS A | 12.1 | 122.6 | +1.1 | +0.8 |
| Reservoir Rd (E) | AM | 0.412 | 47.9 | LOS D | 1.3 | 24.9 | +10.1 | -0.1 |
| Prospect Hwy (N) | AM | 0.930 | 21.9 | LOS B | 25.5 | 228.4 | +2.3 | +2.2 |
| Reservoir Rd (W) | AM | 0.928 | 60.8 | LOS E | 19.4 | 162.1 | +15.7 | +4.4 |
| **Intersection** | **AM** | **0.929** | **22.9** | **LOS B** | **25.4** | **227.5** | **+3.9** | **+2.1** |
| Prospect Hwy (S) | PM | 0.904 | 8.4 | LOS A | 19.7 | 154.3 | +1.2 | +2.0 |
| Reservoir Rd (E) | PM | 0.106 | 7.3 | LOS A | 0.5 | 6.0 | +0.3 | +0.1 |
| Prospect Hwy (N) | PM | 0.460 | 6.2 | LOS A | 3.8 | 35.7 | +0.1 | +0.1 |
| Reservoir Rd (W) | PM | 0.849 | 48.5 | LOS D | 13.3 | 105.6 | +7.5 | +1.6 |
| **Intersection** | **PM** | **0.904** | **13.8** | **LOS A** | **19.7** | **154.3** | **+1.8** | **+2.0** |

Table 6.7: Reservoir Road / Thornley Road / Site Access 2023 Model Results (No site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Site Access (S) | AM | 0.041 | 0.4 | LOS A | 0.1 | 1.8 |
| Reservoir Rd (E) | AM | 0.017 | 0.8 | LOS A | 0.0 | 0.1 |
| Thornley Rd (N) | AM | 0.006 | 4.5 | LOS A | 0.0 | 0.1 |
| Reservoir Rd (W) | AM | 0.035 | 2.0 | LOS A | 0.2 | 2.1 |
| **Intersection** | **AM** | **0.041** | **1.6** | **NA** | **0.2** | **2.1** |
| Site Access (S) | PM | 0.035 | 0.1 | LOS A | 0.2 | 1.8 |
| Reservoir Rd (E) | PM | 0.011 | 0.7 | LOS A | 0.0 | 0.1 |
| Thornley Rd (N) | PM | 0.016 | 5.4 | LOS A | 0.0 | 0.4 |
| Reservoir Rd (W) | PM | 0.041 | 1.8 | LOS A | 0.2 | 2.3 |
| **Intersection** | **PM** | **0.041** | **1.5** | **NA** | **0.2** | **2.3** |

Table 6.8: Reservoir Road / Thornley Road / Site Access 2023 Model Results (with site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] | Impact of Site Upgrade Aver. Delay (sec) | 95% Queue (veh) |
|---|---|---|---|---|---|---|---|---|
| Site Access (S) | AM | 0.072 | 0.5 | LOS A | 0.4 | 7.7 | +0.1 | +0.3 |
| Reservoir Rd (E) | AM | 0.018 | 1.1 | LOS A | 0.3 | 4.2 | +0.3 | +0.3 |
| Thornley Rd (N) | AM | 0.007 | 4.5 | LOS A | 0.0 | 0.2 | 0.0 | 0.0 |
| Reservoir Rd (W) | AM | 0.049 | 2.3 | LOS A | 0.2 | 3.4 | +0.3 | 0.0 |
| **Intersection** | **AM** | **0.072** | **1.7** | **NA** | **0.4** | **7.7** | **+0.1** | **+0.2** |
| Site Access (S) | PM | 0.051 | 0.2 | LOS A | 0.2 | 3.1 | +0.1 | 0.0 |
| Reservoir Rd (E) | PM | 0.011 | 0.8 | LOS A | 0.0 | 0.1 | +0.1 | 0.0 |
| Thornley Rd (N) | PM | 0.021 | 6.1 | LOS A | 0.1 | 0.5 | +0.7 | +0.1 |
| Reservoir Rd (W) | PM | 0.056 | 2.0 | LOS A | 0.3 | 3.6 | +0.2 | +0.1 |
| **Intersection** | **PM** | **0.056** | **1.7** | **NA** | **0.3** | **3.6** | **+0.2** | **+0.1** |

Overall, the site upgrade has minimal impact on the operation the Prospect Highway / Reservoir Road intersection, and it continues to operate at a high level of service. The primary north and south movements along Prospect Highway are largely unaffected, while the increased traffic egressing the site causes an increased delay on the eastern and western approaches. However, the intersection still operates at an average LoS B (AM peak) and LoS A (PM peak), and the level of service is categorised as good operation in accordance with the RTA Guide to Traffic Generating Developments. Furthermore, as the planned TfNSW upgrade is expected to be completed by 2024, any impacts will be experienced for a maximum of one year before the intersection capacity is increased.

The Reservoir Road / Thornley Road intersection remains largely unaffected by the site upgrade.

Table 6.9 - Table 6.12 summarise the future 2033 operation of the intersections with and without the AmeriCold site expansion. This includes the signalised upgrade of Prospect Highway / Reservoir Road roundabout intersection.

Table 6.9: Prospect Highway / Reservoir Road 2033 Model Results (without site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 0.801 | 35.0 | LOS C | 36.1 | 343.9 |
| Reservoir Rd (E) | AM | 0.161 | 54.5 | LOS D | 1.0 | 18.0 |
| Prospect Hwy (N) | AM | 0.982 | 67.0 | LOS E | 71.6 | 646.4 |
| Reservoir Rd (W) | AM | 0.994 | 103.2 | LOS F | 43.4 | 342.4 |
| **Intersection** | **AM** | **0.994** | **60.2** | **LOS E** | **71.6** | **646.4** |
| Prospect Hwy (S) | PM | 0.850 | 29.5 | LOS C | 38.1 | 296.4 |
| Reservoir Rd (E) | PM | 0.248 | 47.5 | LOS D | 1.6 | 14.2 |
| Prospect Hwy (N) | PM | 0.697 | 23.3 | LOS B | 13.6 | 124.9 |
| Reservoir Rd (W) | PM | 0.820 | 53.0 | LOS D | 10.8 | 91.1 |
| **Intersection** | **PM** | **0.850** | **31.8** | **LOS C** | **38.1** | **296.4** |

Table 6.10: Prospect Highway / Reservoir Road 2033 Model Results (with site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] | Impact of Site Upgrade Aver. Delay (sec) | 95% Queue (veh) |
|---|---|---|---|---|---|---|---|---|
| Prospect Hwy (S) | AM | 0.805 | 35.6 | LOS C | 36.5 | 348.2 | +0.6 | +0.4 |
| Reservoir Rd (E) | AM | 0.242 | 55.9 | LOS D | 1.0 | 18.0 | +1.4 | 0.0 |
| Prospect Hwy (N) | AM | 0.989 | 70.0 | LOS E | 74.0 | 667.8 | +3.0 | +2.4 |
| Reservoir Rd (W) | AM | 0.995 | 103.8 | LOS F | 43.5 | 343.4 | +0.6 | +0.1 |
| **Intersection** | **AM** | **0.995** | **61.7** | **LOS E** | **74.0** | **667.8** | **+1.5** | **+2.4** |
| Prospect Hwy (S) | PM | 0.850 | 29.5 | LOS C | 38.1 | 296.4 | 0.0 | 0.0 |
| Reservoir Rd (E) | PM | 0.310 | 48.2 | LOS D | 1.8 | 18.0 | +0.7 | +0.2 |
| Prospect Hwy (N) | PM | 0.697 | 23.4 | LOS B | 14.0 | 128.9 | +0.1 | +0.4 |
| Reservoir Rd (W) | PM | 0.820 | 53.0 | LOS D | 10.8 | 91.1 | 0.0 | 0.0 |
| **Intersection** | **PM** | **0.850** | **31.9** | **LOS C** | **38.1** | **296.4** | **+0.1** | **0.0** |

Table 6.11: Reservoir Road / Thornley Road / Site Access 2033 Model Results (without site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] |
|---|---|---|---|---|---|---|
| Site Access (S) | AM | 0.027 | 0.3 | LOS A | 0.1 | 1.8 |
| Reservoir Rd (E) | AM | 0.012 | 0.7 | LOS A | 0.2 | 3.5 |
| Thornley Rd (N) | AM | 0.007 | 4.6 | LOS A | 0.0 | 0.2 |
| Reservoir Rd (W) | AM | 0.043 | 2.1 | LOS A | 0.2 | 2.0 |
| **Intersection** | **AM** | **0.043** | **1.5** | **NA** | **0.2** | **3.5** |
| Site Access (S) | PM | 0.044 | 0.2 | LOS A | 0.1 | 1.7 |
| Reservoir Rd (E) | PM | 0.016 | 0.6 | LOS A | 0.0 | 0.0 |
| Thornley Rd (N) | PM | 0.029 | 5.5 | LOS A | 0.1 | 0.6 |
| Reservoir Rd (W) | PM | 0.035 | 1.8 | LOS A | 0.1 | 1.6 |
| **Intersection** | **PM** | **0.044** | **1.7** | **NA** | **0.1** | **1.7** |

Table 6.12: Reservoir Road / Thornley Road / Site Access 2033 Model Results (with site expansion)

| Approach | Peak | Deg. Satn (v/c) | Aver. Delay (sec) | Level of Service | 95% BACK OF QUEUE [ Veh | Dist (m)] | Impact of Site Upgrade Aver. Delay (sec) | 95% Queue (veh) |
|---|---|---|---|---|---|---|---|---|
| Site Access (S) | AM | 0.071 | 0.3 | LOS A | 0.2 | 3.3 | 0.0 | +0.1 |
| Reservoir Rd (E) | AM | 0.011 | 0.9 | LOS A | 0.5 | 11.9 | +0.2 | +0.3 |
| Thornley Rd (N) | AM | 0.007 | 4.7 | LOS A | 0.1 | 0.9 | +0.1 | +0.1 |
| Reservoir Rd (W) | AM | 0.061 | 2.4 | LOS A | 0.2 | 3.2 | +0.3 | 0.0 |
| **Intersection** | **AM** | **0.071** | **1.7** | **NA** | **0.5** | **11.9** | **+0.2** | **+0.3** |
| Site Access (S) | PM | 0.093 | 0.2 | LOS A | 0.2 | 2.9 | 0.0 | +0.1 |
| Reservoir Rd (E) | PM | 0.012 | 0.6 | LOS A | 0.0 | 0.4 | 0.0 | 0.0 |
| Thornley Rd (N) | PM | 0.056 | 6.2 | LOS A | 0.2 | 1.8 | +0.7 | +0.1 |
| Reservoir Rd (W) | PM | 0.048 | 2.0 | LOS A | 0.2 | 2.4 | +0.2 | +0.1 |
| **Intersection** | **PM** | **0.093** | **1.9** | **NA** | **0.2** | **2.9** | **+0.2** | **+0.1** |

In the 2033 future year modelling scenario, when compared to the background traffic only scenario, the site upgrade has minimal impact on the operation of the Prospect Highway / Reservoir Road intersection. Although the intersection is expected to operate at LoS E (AM peak) and LoS C (PM peak), the poorer performance is attributed to the increase in background traffic over the 10-year period, which represents a total of approximately 97% of traffic growth at the intersection, instead of the upgraded site's development which represents only 3% of the traffic growth. The site traffic adds only 1.5s of average delay to the intersection in the AM peak hour, 0.1s in the PM peak hour, and has no impact on the degree of saturation.

The Reservoir Road / Thornley Road intersection in the year 2033 modelling remains largely unaffected by the site upgrade and continues to operate at a high level of service.

It is noted that assumptions regarding the signal phasing of the Prospect Highway / Reservoir Road intersection and the background traffic growth rate may impact expected future intersection performance (refer to section 6.6). For example, a reduced background traffic growth rate of 1% would result in significantly less traffic demand on the road network and may change the expected level of service in future years. As a result, any modelling performed by TfNSW associated with the planned upgrade of the Prospect Highway / Reservoir Road intersection may present different results.

A summary of the modelling results under all scenarios is shown in the table below for convenient comparison.

Table 6.13: Summary of Intersection Modelling Results

| Peak | Intersection | Model Year | Deg. Satn (v/c) | Aver. Delay (sec) | Level Of Service | 95% BACK OF QUEUE (veh) |
|---|---|---|---|---|---|---|
| AM | Prospect Highway / Reservoir Road | 2022 Base | 0.892 | 16.0 | LOS B | 20.1 |
| | | 2023 No Expansion | 0.916 | 19.0 | LOS B | 23.3 |
| | | 2023 With Expansion | 0.929 | 22.9 | LOS B | 25.4 |
| | | 2033 No Expansion | 0.994 | 60.2 | LOS E | 71.6 |
| | | 2033 With Expansion | 0.995 | 61.7 | LOS E | 74.0 |
| | Reservoir Road / Thornley Rd / Site Access | 2022 Base | 0.037 | 1.6 | LOS A | 0.2 |
| | | 2023 No Expansion | 0.041 | 1.6 | LOS A | 0.2 |
| | | 2023 With Expansion | 0.072 | 1.7 | LOS A | 0.4 |
| | | 2033 No Expansion | 0.043 | 1.5 | LOS A | 0.2 |
| | | 2033 With Expansion | 0.071 | 1.7 | LOS A | 0.5 |
| PM | Prospect Highway / Reservoir Rd | 2022 Base | 0.871 | 10.1 | LOS A | 15.1 |
| | | 2023 No Expansion | 0.892 | 12.0 | LOS A | 17.7 |
| | | 2023 With Expansion | 0.904 | 13.8 | LOS A | 19.7 |
| | | 2033 No Expansion | 0.850 | 31.8 | LOS C | 38.1 |
| | | 2033 With Expansion | 0.850 | 31.9 | LOS C | 38.1 |
| | Reservoir Road / Thornley Rd / Site Access | 2022 Base | 0.039 | 1.5 | LOS A | 0.2 |
| | | 2023 No Expansion | 0.041 | 1.5 | LOS A | 0.2 |
| | | 2023 With Expansion | 0.056 | 1.7 | LOS A | 0.3 |
| | | 2033 No Expansion | 0.044 | 1.7 | LOS A | 0.1 |
| | | 2033 With Expansion | 0.093 | 1.9 | LOS A | 0.2 |

# 7 Conclusions and recommendations

Key findings of the Traffic Impact Assessment are the following:

- The development will provide sufficient car parking (171 spaces) in accordance with the Cumberland Council DCP (102 spaces). The additional parking provision helps to accommodate increased demand at shift crossover times, and management strategies should be used to manage any temporary excess demand, which could include staggering shift times. The car parking provision is therefore deemed satisfactory.
- The proposed development will provide sufficient bike parking (10 spaces) in accordance with the Cumberland Council DCP (four spaces) and allows for future uptake in cycling demand to encourage sustainable travel. The bike parking provision is therefore deemed satisfactory.
- The proposed development provides for safe and efficient access and circulation throughout the site by all transport modes
- SIDRA modelling has demonstrated that the proposed development is not expected to adversely impact road network operations
- Faded line-marking for pedestrian crossings and hatched areas on site should be renewed

As the intersection modelling has demonstrated that the proposed development will not negatively impact adjacent road network operations, no road network upgrades are required.

# A

## Appendix A – Prospect Highway planned upgrade

# 3 Description of the proposal

## 3.1 The proposal

The proposal involves upgrading Prospect Highway between Reservoir Road, Prospect and 200 metres north of St Martins Crescent, Blacktown, a length of 3.6 kilometres. The proposal would deliver a minimum of a four lane divided road (two lanes in each direction) with a variable width central median (up to 12 metres wide at one point). Some sections would be six lanes, with the additional lanes being dedicated bus lanes. The upgrade of Prospect Highway occurs generally to the west of the existing carriageway as shown on Figure 3-1 to Figure 3-5.

The general features of the proposal include:

- A new two way link road between the Great Western Highway and Prospect Highway. Two new signalised intersections would be provided at the junctions of the two way link road and Great Western Highway and the two way link road and Prospect Highway. The two way link road would replace the existing Great Western Highway eastbound exit ramp and provide access to and from Prospect Highway. It would provide access for Great Western Highway traffic to travel northbound and southbound along Prospect Highway

- A two span bridge over the M4 Western Motorway for northbound traffic would be provided. The proposed structure would be a Super T construction duplicating the existing four lane bridge and be located on the western side of the existing structure. The new bridge would include two dedicated right turn lanes to travel east on the M4 Western Motorway, two dedicated through lanes for northbound traffic on Prospect Highway and a 3.6 metre shared path on the western side

- The existing bridge over the M4 Western Motorway would be maintained. It would provide two dedicated right turn lanes to travel west on the M4 Western Motorway and two dedicated through lanes for southbound traffic on Prospect Highway

- A two span bridge over the Great Western Highway for northbound traffic would be provided. The proposed structure would be a Super T construction duplicating the existing two lane bridge and be located on the western side of the existing structure. The new bridge would include two dedicated through lanes for northbound traffic on Prospect Highway and a 3.6 metre shared path on the western side

- The existing single span bridge over the Great Western Highway would be maintained. It would provide two dedicated through lanes for southbound traffic on Prospect Highway

- Upgrading of seven existing intersections on Prospect Highway, including provision of traffic lights and/or additional lanes for through and turning movements. The intersections to be upgraded are:

  - Reservoir Road / Prospect Highway / Reconciliation Road
  - M4 Western Motorway westbound entry and exit ramps / Prospect Highway
  - M4 Western Motorway eastbound entry and exit ramps / Prospect Highway
  - Stoddart Road / Prospect Highway
  - Harrod Street / Prospect Highway

- Keyworth Drive / Prospect Highway
- St Martins Crescent / Prospect Highway

- Upgrading of the Blacktown Road / Prospect Highway signalised intersection to include a pedestrian crossing of Prospect Highway

- Upgrading of three intersections and altering traffic movements to left in, left out only (no right turns). These intersections are:

  - Ponds Road / Prospect Highway
  - Vesuvius Street / Prospect Highway
  - Tudor Avenue / Prospect Highway

- Upgrading of Roger Place / Prospect Highway intersection and changing the access arrangement to left in, right in and left out only

- Road widening to provide additional traffic lanes on Prospect Highway at the following locations:
  - Four lanes between Reservoir Road / Reconciliation Road and Blacktown Road
  - Six lanes between Lancelot Street and St Martins Crescent, with widening to the western side, including two dedicated kerbside bus lanes
  - Six lanes from St Martins Crescent to 200 metres north of St Martins Crescent, within the existing road pavement area, including two dedicated kerbside bus lanes

- A central median of variable width between the intersection of Reservoir Road / Prospect Highway / Reconciliation Road and the Great Western Highway / Prospect Highway intersection

- A central median of about 5.9 metres width between the new Great Western Highway / Prospect Highway intersection and Roger Place, except at the location of the proposed Old Church Lane to Keyne Street underpass where the median narrows to a width of 3.5 metres

- A central median of about 4.2 metres width from Roger Place until the northern limit of the proposal 200 metres past St Martins Crescent

- The Old Church Lane to Keyne Street pedestrian underpass under Prospect Highway would be upgraded to meet required design standards for a pedestrian underpass

- The temporary shared path would be upgraded to a 3.6 metre wide shared path on the western side of Prospect Highway between the M4 Western Motorway westbound ramps and the Harrod Street intersection

- The Blacktown City Council shared path north of Harrod Street would be realigned and form a connection with the new signalised pedestrian crossing at Blacktown Road

- Pedestrian path 1.2 metres in width on the eastern side of Prospect Highway between Keyworth Drive and Roger Place

The proposal would also include:

- Provision of retaining walls at the following three locations:

  - St Bartholomew's Church and Cemetery
  - Proposed two way link road continuing north along Prospect Highway
  - Adjacent to the high voltage electricity tower (north-west of the M4 Western Motorway)

- Upgrade of the existing pavement and cross drainage systems including the construction and extension of pavement drainage lines, as required

- Excavation work to increase Blacktown City Council's detention basin capacity by about 300 cubic metres

- Utilities relocation and adjustment where required

- The proposal would relocate one existing bus stop from south to north of Harrod Street and four existing bus stops located between Keyworth Drive and north of St Martins Crescent at the northern end of the proposal corridor (three northbound, one southbound)

- Two new bus stops at Reservoir Road

- Landscaping and urban design in consultation with Blacktown City Council and Holroyd City Council.

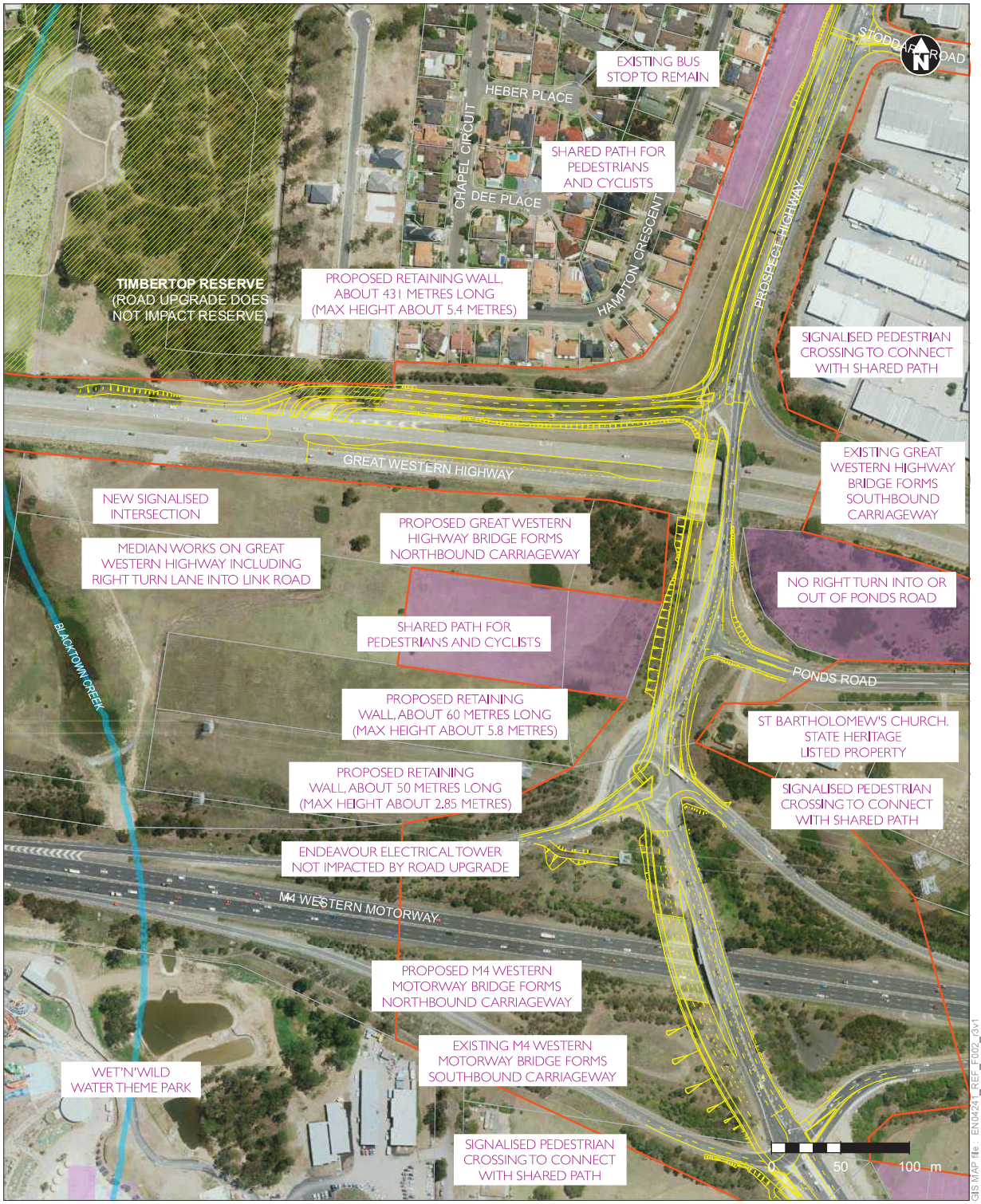
Figure 3-1 to Figure 3-5 illustrates the main features of the proposal. The concept design for the proposal is included in Appendix B. The concept design would be refined following public display of this REF, receipt of community feedback and during the detailed design phase

The proposal boundary
The proposal
Proposed temporary compound site
Proposed bus lanes
Waterway
National park/reserve
Park

3-5
3-4
3-3
3-2
3-1

Figure 3-1
Main features of the proposal

Prospect Highway Upgrade
Review of Environmental Factors




The proposal boundary
The proposal
Proposed temporary compound site
Proposed bus lanes
Waterway
National park/reserve
Park

3-5
3-4
3-3
3-2
3-1

Figure 3-2
Main features of the proposal

Prospect Highway Upgrade
Review of Environmental Factors

The proposal boundary
The proposal
Proposed temporary compound site
Proposed bus lanes
Waterway
National park/reserve
Park

3-5
3-4
3-3
3-2
3-1

Figure 3-3
Main features of the proposal

The proposal boundary
The proposal
Proposed temporary compound site
Proposed bus lanes
Waterway
National park/reserve
Park

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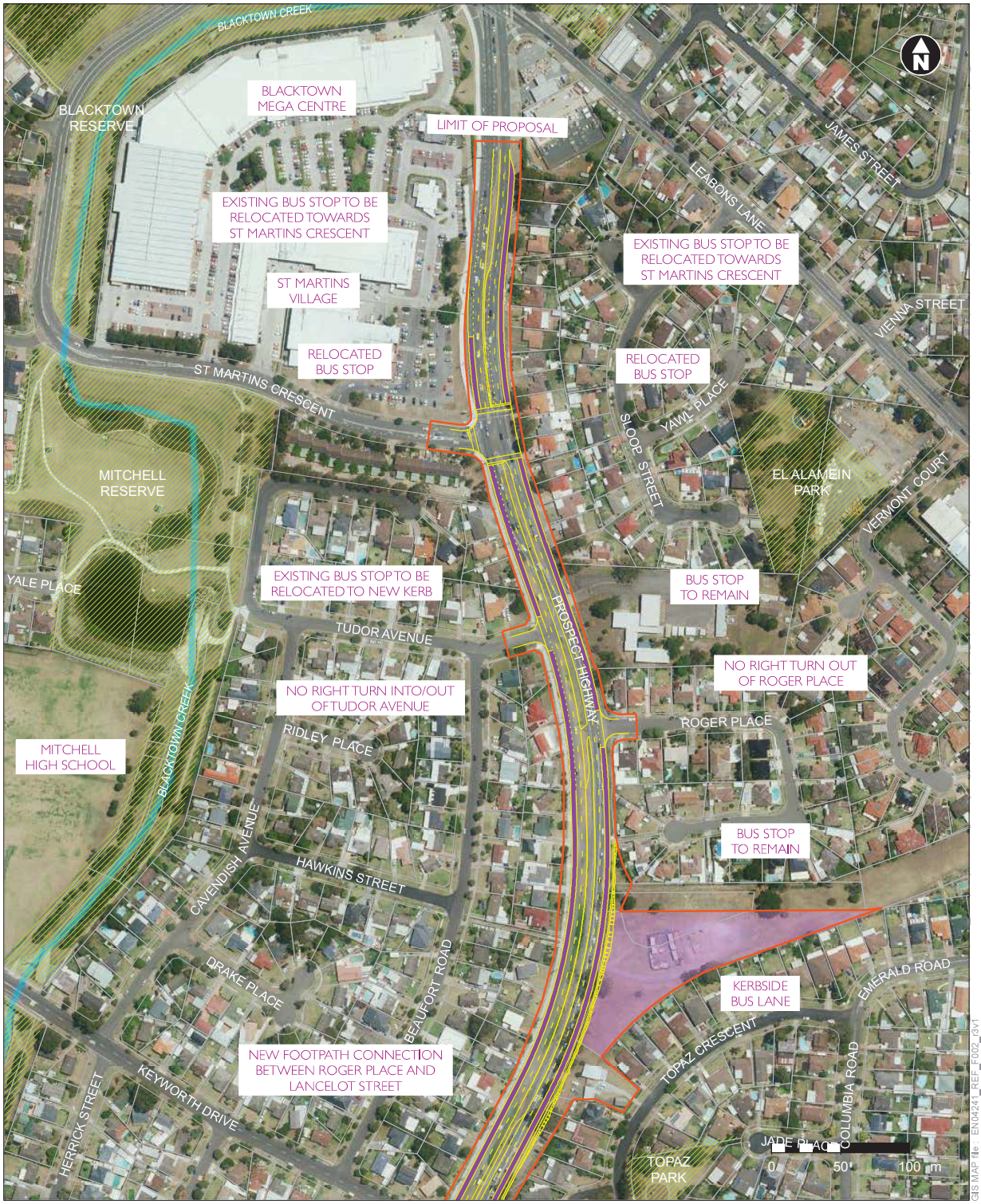
3-4
3-3
3-2
3-1

Figure 3-4
Main features of the proposal




The proposal boundary
The proposal
Proposed temporary compound site
Proposed bus lanes
Waterway
National park/reserve
Park

3-5
3-4
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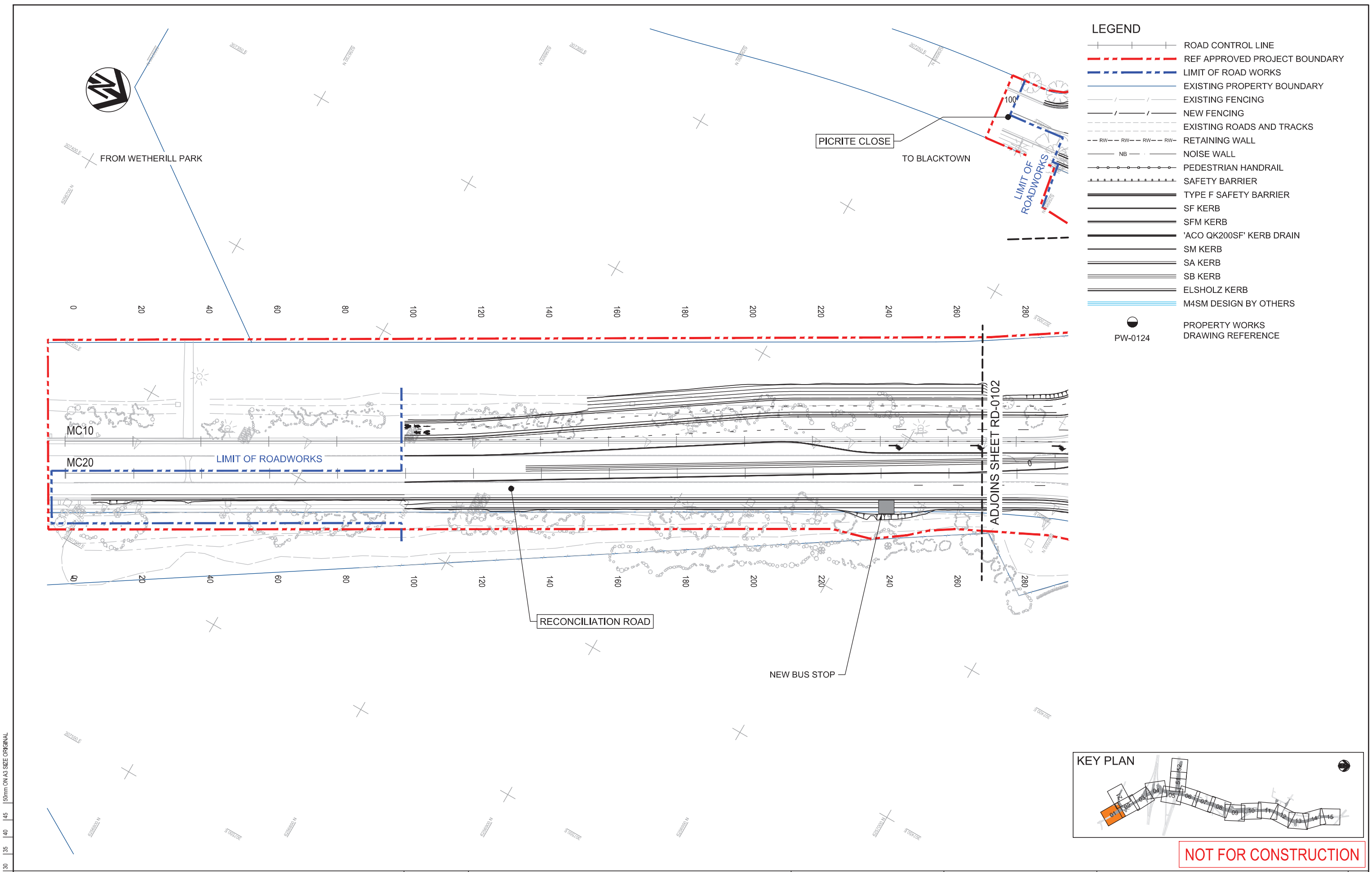
3-2
3-1

Figure 3-5
Main features of the proposal

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| B | 21.06.2019 | ISSUE FOR TENDER REVIEW | 012 | CS |
| C | 08.08.2019 | ISSUE FOR TENDER | 022 | CS |
| D | 27.11.2020 | RE-ISSUED FOR TENDER | 039 | CS |
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PH 02 9925-5555 FAX 02 9925-5566

PLOT DATE / TIME: 20 Apr 2021 13:14:32 | PLOT BY: NH11177

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| DRG CHECK | R. STEENKAMP | 10.02.17 |
| DESIGN | C. DALGLEISH | 10.02.17 |
| DESIGN CHECK | R. STEENKAMP | 10.02.17 |
| DESIGN MNGR | S. TAYLOR | 10.02.17 |
| PROJECT MNGR | C. SUTTON | 10.02.17 |

CLIENT: NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR

CITY OF BLACKTOWN
MR644 PROSPECT HIGHWAY
PROSPECT HWY UPGRADE FROM RESERVOIR ROAD TO 200m NORTH OF ST MARTINS CRESCENT
ROAD ALIGNMENT PLAN
SHEET 01 — SHEET 17 OF 862 — A3

RMS REGISTRATION No. DS2015/000269 — PART 1

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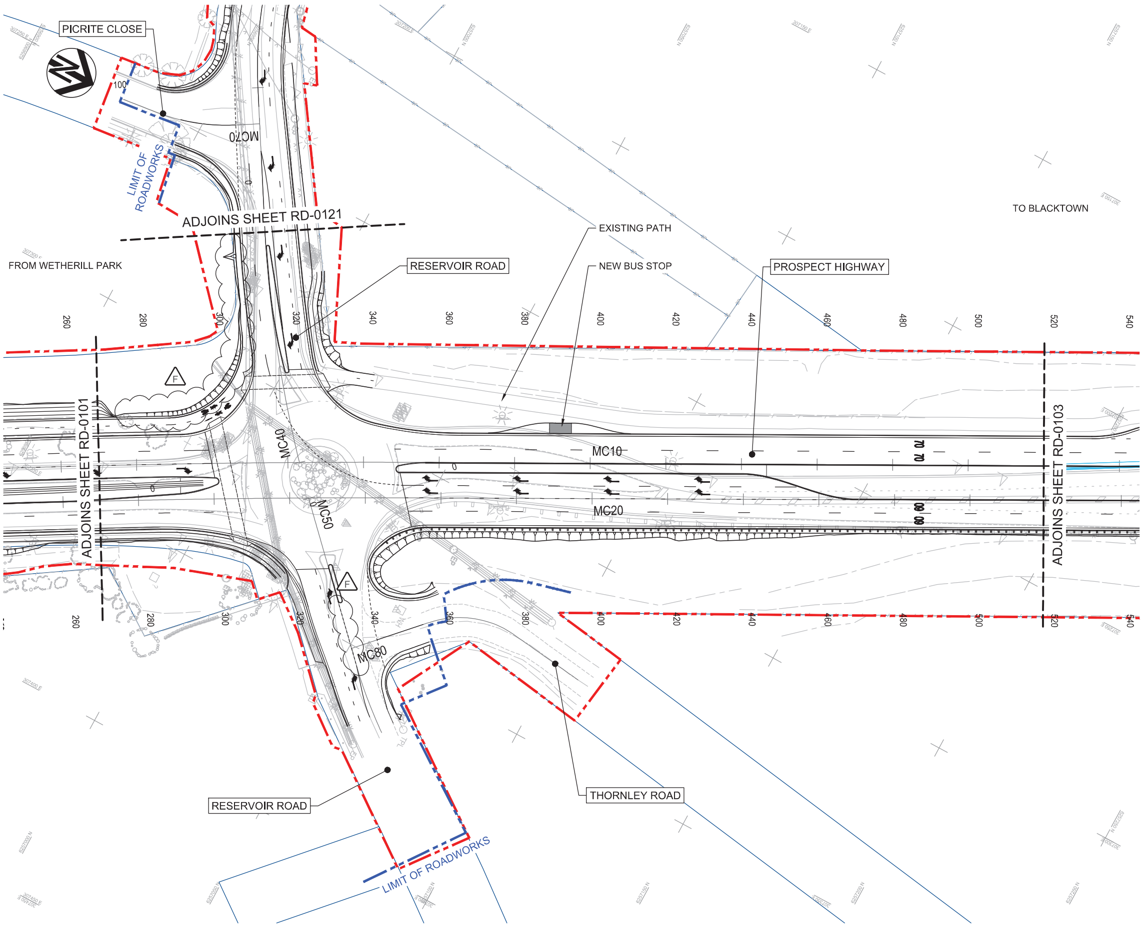


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- REF APPROVED PROJECT BOUNDARY
- LIMIT OF ROAD WORKS
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCING
- NEW FENCING
- EXISTING ROADS AND TRACKS
- RETAINING WALL
- NOISE WALL
- PEDESTRIAN HANDRAIL
- SAFETY BARRIER
- TYPE F SAFETY BARRIER
- SF KERB
- SFM KERB
- 'ACO QK200SF' KERB DRAIN
- SM KERB
- SA KERB
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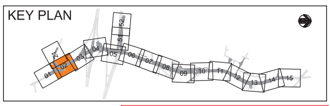
- ELSHOLZ KERB
- M4SM DESIGN BY OTHERS
- PW-0124 — PROPERTY WORKS DRAWING REFERENCE

## KEY PLAN



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| DESIGN CHECK | R. STEENKAMP | 10.02.17 |
| DESIGN MNGR | S. TAYLOR | 10.02.17 |
| PROJECT MNGR | C. SUTTON | 10.02.17 |

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PREPARED FOR

CITY OF BLACKTOWN
MR644 PROSPECT HIGHWAY

# PROSPECT HWY UPGRADE FROM RESERVOIR ROAD TO 200m NORTH OF ST MARTINS CRESCENT
## ROAD ALIGNMENT PLAN

SHEET 02 — SHEET 18 OF 862 — A3

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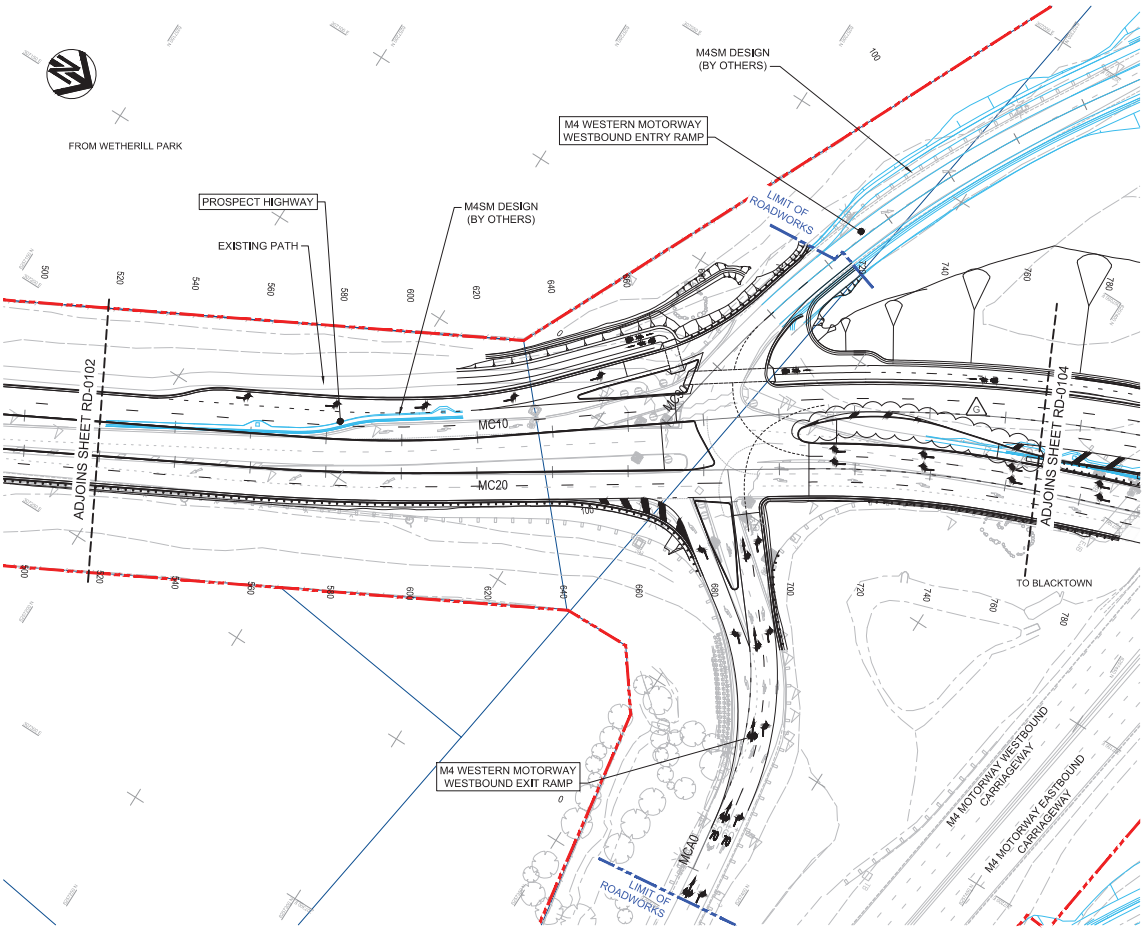


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- SM KERB
- SA KERB
- SB KERB
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ROAD ALIGNMENT PLAN
SHEET 03 — SHEET 19 OF 862

A3

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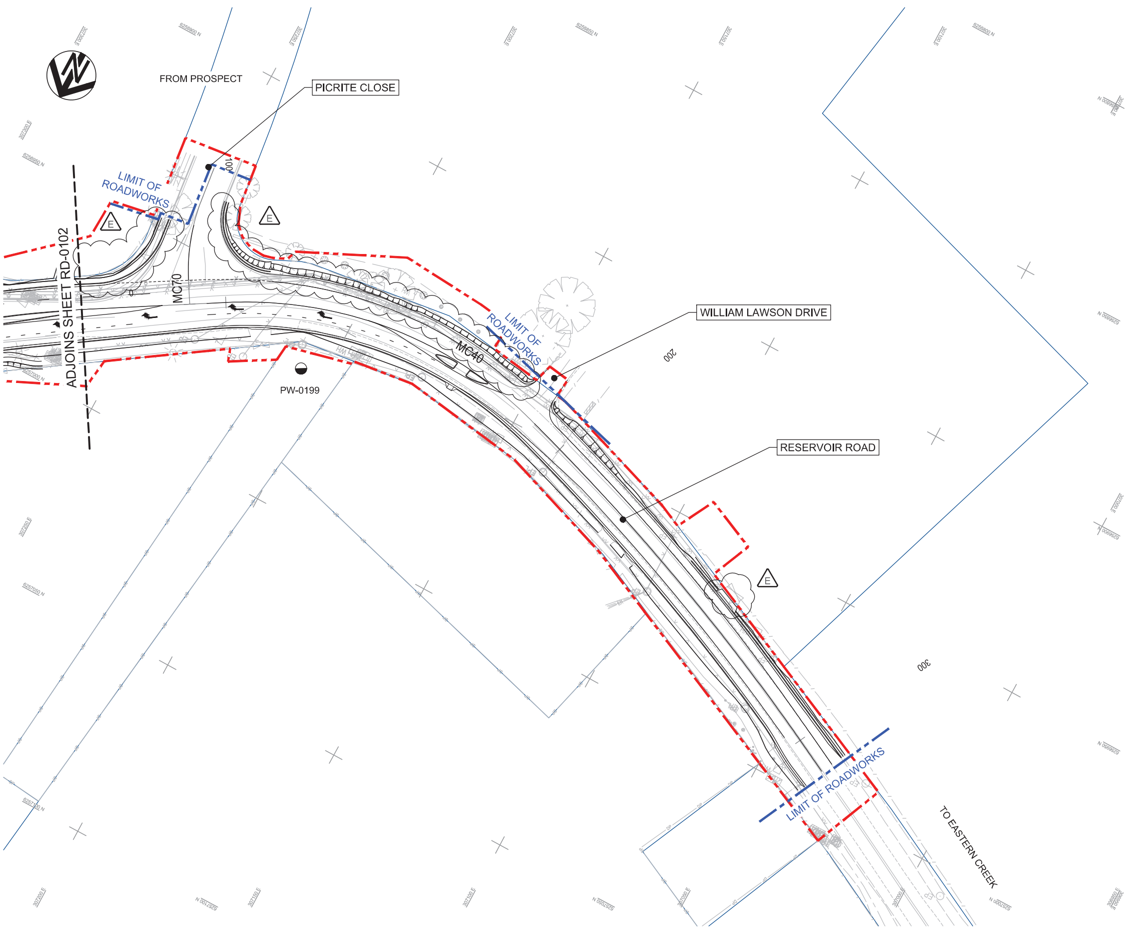


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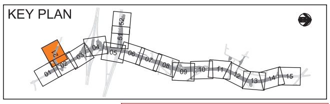
- PW-0124 PROPERTY WORKS DRAWING REFERENCE

KEY PLAN

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| PROJECT MNGR | C. SUTTON | 10.02.17 |

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR

CITY OF BLACKTOWN
MR644 PROSPECT HIGHWAY

# PROSPECT HWY UPGRADE FROM RESERVOIR ROAD TO 200m NORTH OF ST MARTINS CRESCENT
## ROAD ALIGNMENT PLAN

SHEET 16 — SHEET 32 OF 862 — A3

RMS REGISTRATION No. DS2015/000269 — PART 1

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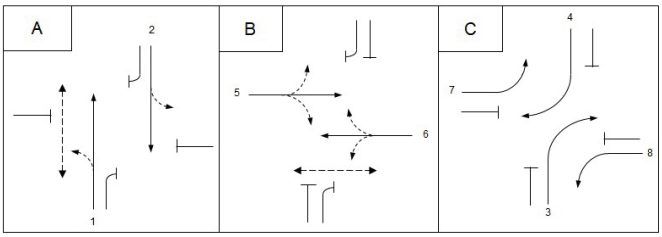
**Future signal phase timing: Prospect Highway / Reservoir Road / Reconciliation Road**

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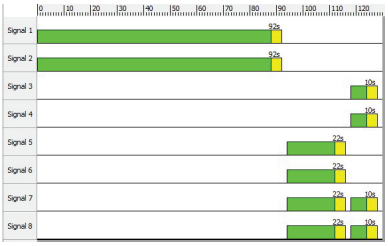


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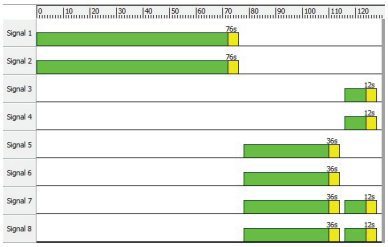


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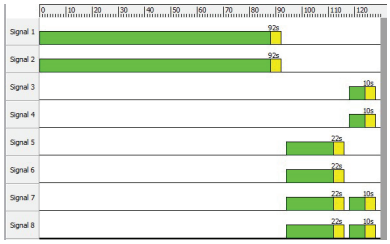


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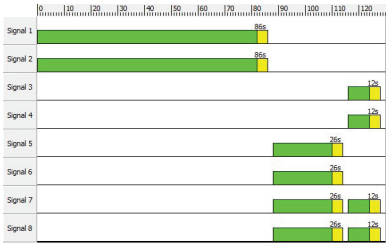


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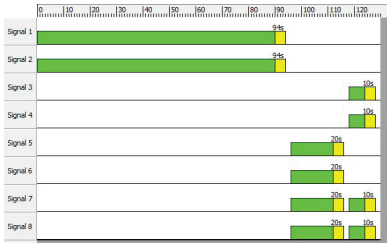


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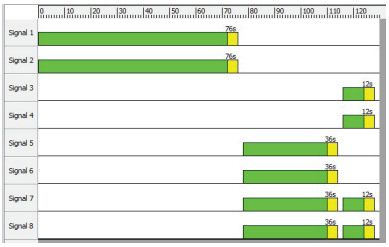


# B

## Appendix B – Architectural site plan

Drawing Plotted: 28/06/2022 10:09:42 PM

# PROSPECT SOUTH EXPANSION

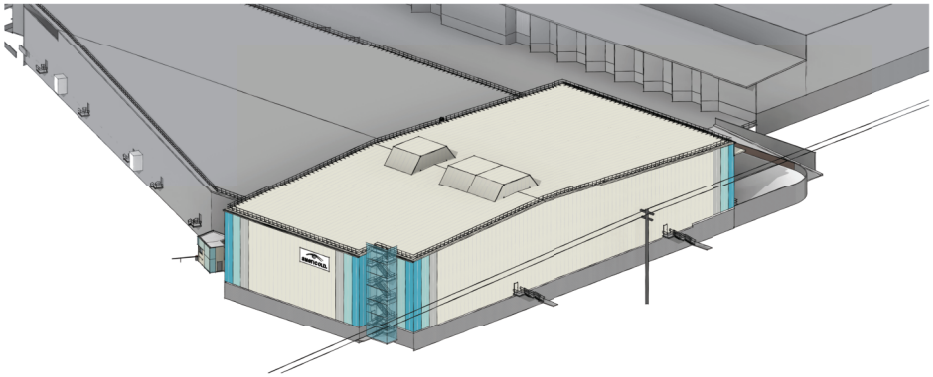
ARCHITECTURAL

Prepared for: AMERICOLD
At: 560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA
Prepared by: BECA PTY. LTD.
ABN: 85 004 974 341

**Project No.: 2527456**
**ISSUED FOR DEVELOPMENT APPLICATION**
**JUNE 2022**

## ARCHITECTURAL DRAWING LIST

| SHEET NO. | SHEET NAME |
|---|---|
| DA-0101 | COVER SHEET |
| DA-0201 | DRAWING STANDARD CONVENTIONS & INDEX |
| DA-0501 | SITE PLAN |
| DA-0502 | STAGING PLAN - STAGE 1 |
| DA-0503 | STAGING PLAN - STAGE 2 |
| DA-0504 | STAGING PLAN - STAGE 3 |
| DA-2101 | EXISTING SITE CONDITION AND DEMOLITION PLAN |
| DA-3101 | SOUTH BUILDING EXPANSION FLOOR PLAN |
| DA-3102 | OFFICE, AMENITIES AND LUNCH ROOM PLANS |
| DA-3201 | SOUTH BUILDING EXPANSION ROOF PLAN |
| DA-4101 | ELEVATIONS - SHEET 1 |
| DA-4102 | ELEVATIONS - SHEET 2 |
| DA-5101 | SECTIONS - SHEET 1 |
| DA-5102 | SECTIONS - SHEET 2 |
| DA-9101 | 3d VIEWS |



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## DRAWING ANNOTATIONS

**DOORS & WINDOWS**

DOOR NUMBERS

D 01 01 RO

D = DOOR
1 = LEVEL 1
01 = DOOR NUMBER
A = DOOR TYPE

WINDOW NUMBERS

WG-02-A DIM

W = WINDOW
G = GROUND LEVEL
02 = WINDOW NUMBER
A = WINDOW TYPE

**WALL TYPE AND FINISHES TAG**

LN.01 LN.01

REFER IN CONJUNCTION WITH THE ARCHITECTURAL MATERIAL, FINISHES AND FIXTURES AND SPECIFIC LEGENDS WHICH ARE LOCATED ON EITHER THE FLOOR PLANS OR ON THIS SHEET

**FLOOR TYPE AND FINISHES TAG**

CN.01 CN.01

REFER IN CONJUNCTION WITH THE ARCHITECTURAL MATERIAL, FINISHES AND FIXTURES AND SPECIFIC LEGENDS WHICH ARE LOCATED ON EITHER THE FLOOR PLANS OR ON THIS SHEET

**CEILING TYPE AND FINISHES TAG**

CL.01 CL.01

REFER IN CONJUNCTION WITH THE ARCHITECTURAL MATERIAL, FINISHES AND FIXTURES AND SPECIFIC LEGENDS WHICH ARE LOCATED ON EITHER THE FLOOR PLANS OR ON THIS SHEET

N

NORTH SYMBOL

**ROOM NUMBERS**

AREA (IF REQUIRED)
LEVEL
NUMBER
1.G - 01
NAME
ROOM NAME

**EXPRESSION OF LEVELS**

| | |
|---|---|
| RL 17.520 | REDUCED LEVEL FOR PLAN VIEWS |
| + 17.520 | SPOT LEVEL |
| FFL 17.520 | FINISHED FLOOR LEVEL FOR AREAS WITH CARPET, VINYL TILES FIXED DIRECTLY TO SL, AND PAINT FINISHES FFL = SURFACE LEVEL / FINISH FLOOR LEVEL |
| FCL 17.520 | FINISHED CEILING LEVEL |
| SL 17.520 | STRUCTURAL SURFACE LEVEL FOR CONCRETE WORK SL INCLUDES ALL CONCRETE TOPPING SLABS AND LEVELLING SCREEDS |
| RL 17.520 | REDUCED LEVEL |

**PROJECT TITLE REFERENCE**

LETTER - FOR PLAN AND DETAIL
NUMBER - FOR SECTION, ELEVATION CUT DETAIL
1 AR-100 SECTION 1:100
BACK REFERENCE TO THE DRAWING SHEET THE DETAIL IS REFERENCED FROM

**REFERENCE SYMBOLS**

1 AR-100

LONG, CROSS, & DETAIL SECTIONS

A AR-100

PLAN DETAILS, CALLOUTS

1 AR-100

ELEVATIONS

1 4 AR-100 2 3

ROOM ELEVATIONS

## COMMON ABBREVIATIONS

| | |
|---|---|
| ADJ | ADJUSTABLE |
| AFL | ABOVE FINISHED FLOOR LEVEL |
| AHD | AUSTRALIAN HEIGHT DATUM |
| AL | ALUMINIUM |
| AS | AUSTRALIAN STANDARD |
| BCA | BUILDING CODE OF AUSTRALIA |
| CE | CIVIL ENGINEERING ITEM |
| CHS | CIRCULAR HOLLOW SECTION |
| CJ | CONTROL JOINT |
| COL | COLUMN |
| COS | CHECK ON SITE |
| DB | DISTRIBUTION BOARD |
| DGP | DOUBLE GPO |
| DPC | DAMP PROOF COURSE |
| EA | EQUAL ANGLE |
| EDB | ELECTRICAL DISTRIBUTION BOARD |
| EJ | EXPANSION JOINT |
| EQ | EQUAL |
| EX. | EXISTING |
| FCL | FINISHED CEILING LEVEL |
| FE | FIRE EXTINGUISHERS / BLANKETS |
| FFL | FINISHED FLOOR LEVEL |
| FG | FIXED GLASS |
| FH | FIRE HYDRANT |
| FHR | FIRE HOSE REEL |
| FIP | FIRE INDICATOR PANEL |
| FRL | FIRE RESISTANCE LEVEL |
| FW | FLOOR WASTE |
| GAL | GALVANISED |
| GPO | GENERAL PURPOSE OUTLET |
| GS | GAS OUTLET |
| HDG | HOT DIP GALVANISED |
| HMR | HIGH MOISTURE RESISTANCE |
| HP | HIGH POINT |
| HW | HOT WATER |
| LP | LOW POINT |
| m | METRES |
| $m^2$ | SQUARE METRES |
| $m^3$ | CUBIC METRES |
| MDF | MEDIUM DENSITY FIBREBOARD |
| mm | MILLIMETRES |
| MS | MILD STEEL |
| MSB | MAIN SWITCH BOARD |
| NCC | NATIONAL CONSTRUCTION CODE |
| NTS | NOT TO SCALE |
| PFC | PARALLEL FLANGE CHANNEL |
| PIR | POLYISOCYANURATE PANEL |
| PVC | POLYVINYL CHLORIDE |
| R | RADIUS |
| RL | REDUCED LEVEL |
| RWH | RAINWATER HEAD |
| RWO | RAINWATER OUTLET |
| SE | STRUCTURAL ENGINEERING ITEM |
| SHS | SQUARE HOLLOW SECTION |
| SIM | SIMILAR |
| TBC | TO BE CONFIRMED |
| TYP | TYPICAL |
| UA | UNEQUAL ANGLE |
| UB | UNIVERSAL BEAM |
| UC | UNIVERSAL COLUMN |
| UPS | UNINTERRUPTED POWER SUPPLY |

## MATERIALS, FINISHES AND FIXTURES

**BK.01**
BLOCKWORK WALL - GB SMOOTH
COLOUR: NICKEL

**BK.02 (PUMP HOUSE AND BATTERY RECHARGE)**
BLOCKWORK WALL, RENDERED PAINTED FINISH
SEMI GLOSS ACRYLIC PAINT FINISH
COLOUR: COLORBOND® EVENING HAZE (COS) TO MATCH NORTH BUILDING METAL CLADDING

**CD.01**
PREFINISHED PROFILED METAL WALL CLADDING
COLOUR: COLORBOND® SURFMIST

**IP.01 (WALL AND ROOF)**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR: COLORBOND® SURFMIST, BOTH SIDES

**IP.02**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® SHALE GREY
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP.03**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FAIRY WREN
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP.04**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FRASER COAST
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

PAINT FINISH / PREFINISHED SKIN FOR FIRE RATED WALL
COLOUR: COLORBOND® SURFMIST

**RF.01**
PROFILED METAL ROOF SHEETING
WITH INSULATION PROFILE TO MATCH EXISTING
COLOUR: COLORBOND® SURFMIST

FLASHING, GUTTERS AND DOWNPIPES TO MATCH ADJOINING WALL COLOURS

**SC.01**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR TO MATCH COLORBOND® FAIRY WREN

**SC.02**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR TO MATCH COLORBOND® SHALE GREY

**SC.03**
SLATTED SCREEN FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR: COLORBOND® SHALE GREY

## KEY PLAN

560 RESERVOIR RD
PROSPECT NSW 2148

## GENERAL NOTES

1. IF THE CONTRACTOR FINDS ANY INCONSISTENCY , ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.
2. THE CONTRACTOR IS TO READ ALL DRAWINGS TO COORDINATE FIXTURES, FITTINGS AND DIMENSIONS.
3. GRIDS ARE PROVIDED FOR REFERENCE ONLY.
4. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BEFORE FABRICATION.
5. MATERIAL PERFORMANCE TO COMPLY WITH ALL ASPECTS OF NCC / BCA AND RELEVANT AUSTRALIAN STANDARDS.
6. APPLY PROPRIETARY MATERIALS AND COMPONENTS TO THE MANUFACTURER'S EXPRESS WRITTEN INSTRUCTIONS.
7. DO NOT SCALE DRAWINGS
8. ALL DIMENSIONS ARE IN MILLIMETRES
9. REFER TO PROJECT SPECIFICATION AND MATERIAL, FINISHES AND FIXTURES SCHEDULE FOR PRODUCT SELECTION.

ELECTRICAL :
1. REFER TO ELECTRICAL SERVICES DRAWINGS WHEN APPLICABLE.

PLUMBING & DRAINAGE
1. REFER TO HYDRAULIC SERVICES DRAWINGS WHEN APPLICABLE

STRUCTURAL
1. REFER TO STRUCTURAL ENGINEERS DRAWINGS.
2. TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DOCUMENTATION ANY INCONSISTENCY, ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.

FIRE
1. REFER TO FIRE REPORT FOR DETAILED INFORMATION

OTHER:
1. AT COMPLETION LEAVE THE SITE CLEAN AND TIDY.

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| C | ISSUED FOR DEVELOPMENT APPLICATION | DM | BT | AM | 28.06.22 |
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| | Drawn | R. HANDAYANI | 11.05.22 |
| | Dwg Verifier | M. WARNE | 11.05.22 |
| Reduced Scale (A3) | Dwg Check | D. MCNAMARA | 11.05.22 |

Beca

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: DRAWING STANDARD CONVENTIONS & INDEX

Discipline: ARCHITECTURAL

Drawing No. 2527456-DA-0201 Rev. C

DO NOT SCALE FOR SET OUT DIMENSIONS

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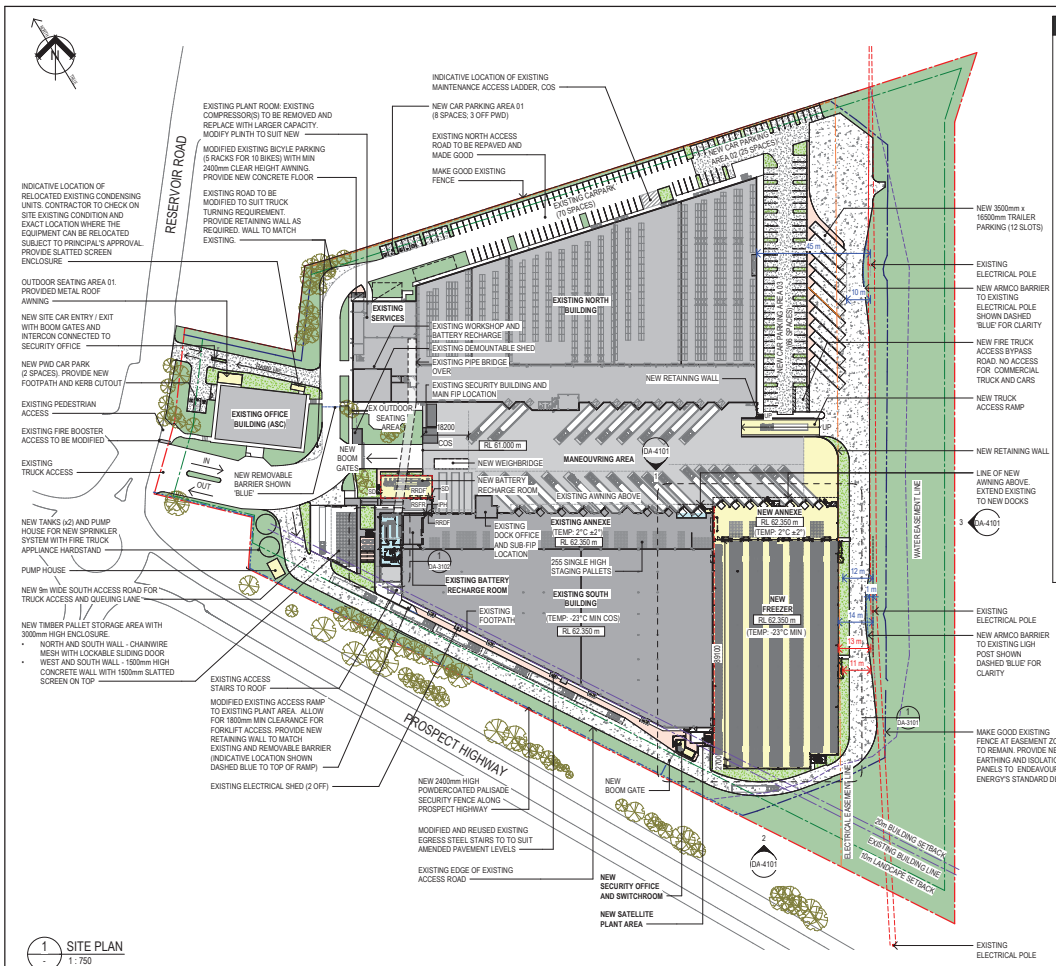


1 SITE PLAN
1 : 750

## DEVELOPMENT CALCULATIONS

| | |
|---|---|
| **TOTAL SITE AREA (APPROX. m²)** | **65,662 m²** |
| SITE COVERAGE AREA | **24,987m²** |
| EFFICIENCY | **38 %** |
| TOTAL BUILDING AREA | **24,722 m²** |
| EFFICIENCY | **38 %** |
| LANDSCAPE AREA | **18,350 m²** |
| EFFICIENCY | **28%** |
| **BUILDING AREA BREAKDOWN (APPROX. m²)** | |
| NORTH BUILDING (INC. SERVICES ROOMS) | **10,350 m²** |
| SOUTH BUILDING | **13,637 m²** |
| EX FREEZER AND ANNEXE (INCL. DOCK OFFICE) | 7,845 m² |
| EX OFFICE REFURB , 2 LEVELS | 340 m² |
| EX PLANT ROOM | 47 m² |
| NEW DEVELOPMENT | 5,405 m² |
| EXISTING OFFICE BUILDING (ASC) | **735 m²** |
| **NEW DEVELOPMENT FLOOR AREA (APPROX. m²)** | **5,405 m²** |
| NEW SOUTH BUILDING EXPANSION | 5,140 m² |
| NEW SOUTH FREEZER | 4,435 m² |
| NEW ANNEXE | 705 m² |
| NEW DOCK TO EXISTING ANNEXE (2 off) | 36 m² |
| NEW SECURITY OFFICE AND SWITCHROOM | 24 m² |
| NEW BATTERY RECHARGE ROOM | 175 m² |
| NEW PUMP HOUSE | 30 m² |
| NEW SATELLITE PLANT AREA | **60 m²** |
| NEW TIMBER PALLET ENCLOSURE | **415 m²** |
| NEW COVERED OUTDOOR SEATING AREAS | **125 m²** |
| AWNING TO NEW LOADING DOCKS | **140 m²** |
| NEW HEAVY DUTY PAVEMENT | **6,300 m²** |
| NEW ASPHALT PAVEMENT | **3,100 m²** |
| NEW HARDSTAND EXPANSION INC. RAMP | **575 m²** |
| EXISTING LANDSCAPE AREA | **16,800m²** |
| NEW LANDSCAPE AREA | **1,550 m²** |
| **CAR PARKING** | **171** |
| EXISTING CARPARK | 70 |
| PWD PARKING | 5 |
| NEW CARPARK | 96 |
| EXISTING BICYCLE PARKING | **10** |

**NOTES:**
1. GROSS FLOOR AREA MEASUREMENT
   - TOTAL FLOOR SPACE MEASURED FROM THE INSIDE FACE OF THE EXTERIOR WALLS AND CENTRELINE OF INTERIOR WALLS
2. ALL AREAS ARE APPROXIMATE.

## GENERAL NOTES

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2. INTERNAL EGRESS TO BE FURTHER ASSESSED AFTER CONFIRMATION OF RACKING LAYOUT.
3. BACKGROUND EQUIPMENT AND RACKING LAYOUT SHOWN INDICATIVE. EQUIPMENT/ VENDOR LAYOUT SUBJECT TO CHANGE DEPENDING ON APPROVED VENDOR LAYOUT.
4. SITE BOUNDARY AND EASEMENT ZONES BASED ON SITE SURVEY FILE "SY074943.000.3.1" RECEIVED FROM LAND PARTNERS ON 11/08/2020.
5. EXISTING BUILDING LAYOUT BASED ON DRAWING RECEIVED FROM AMERICOLD ON 05/06/2020.
6. FOR DETAILED EXTERNAL LEVELS AND LOCATION OF RETAINING WALLS REFER TO CIVIL DRAWINGS.
7. INDICATIVE ZONE FOR IN-GROUND WEIGHBRIDGE LOCATION SHOWN FOR REFERENCE ONLY. EXACT WEIGHBRIDGE DIMENSION AND SETOUT TO FINALIZED ON DETAILED DESIGN STAGE.
8. REFER TO LANDSCAPE DRAWING FOR DETAILED LOCATION OF NEW TREES AND DETAILED LANDSCAPE SCOPE.
9. DO NOT SCALE DRAWINGS.
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

## SITE LEGEND

- SITE BOUNDARY
- BOUNDARY EASEMENT / ELECTRICAL EASEMENT LINE
- LANDSCAPE SETBACK LINE
- NEW SECURITY FENCE - 2400MM HIGH PALISADE FENCE
- EXISTING FENCE TO REMAIN AND MADE GOOD.
- EXISTING SECURITY FENCE LINE
- EXISTING BLOCK WALL FENCE
- FIRE RATED WALLS (FRL 120/120/120)
- EXISTING BUILDING AND STRUCTURES
- NEW BUILDING AND STRUCTURES
- EXISTING TO BE MODIFIED
- EXISTING LANDSCAPE ZONE
- NEW LANDSCAPE ZONE
- NEW HEAVY DUTY PAVEMENT
- ASPHALT PAVEMENT
- EXISTING VEGETATION

## EASEMENT NOTES

- DRAIN WATER EASEMENT
- ELECTRICAL POWER LINES
- 1 m — 'RED' DIMENSION DENOTES APPROXIMATE DISTANCE FROM ELECTRICAL POWER LINE TO EXTERNAL FACE OF WALL / STAIRS
- 1 m — 'BLUE' DIMENSION DENOTES APPROXIMATE DISTANCE FROM CENTRELINE OF THE NEAREST ELECTRICAL POLE TO EXTERNAL FACE OF WALL / STAIRS

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**NOT FOR CONSTRUCTION**

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| | Drg Check | D. MCNAMARA 11.05.22 |

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Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: SITE PLAN

Discipline: ARCHITECTURAL

Drawing No. 2527456-DA-0501 Rev. C

DO NOT SCALE FOR SET OUT DIMENSIONS

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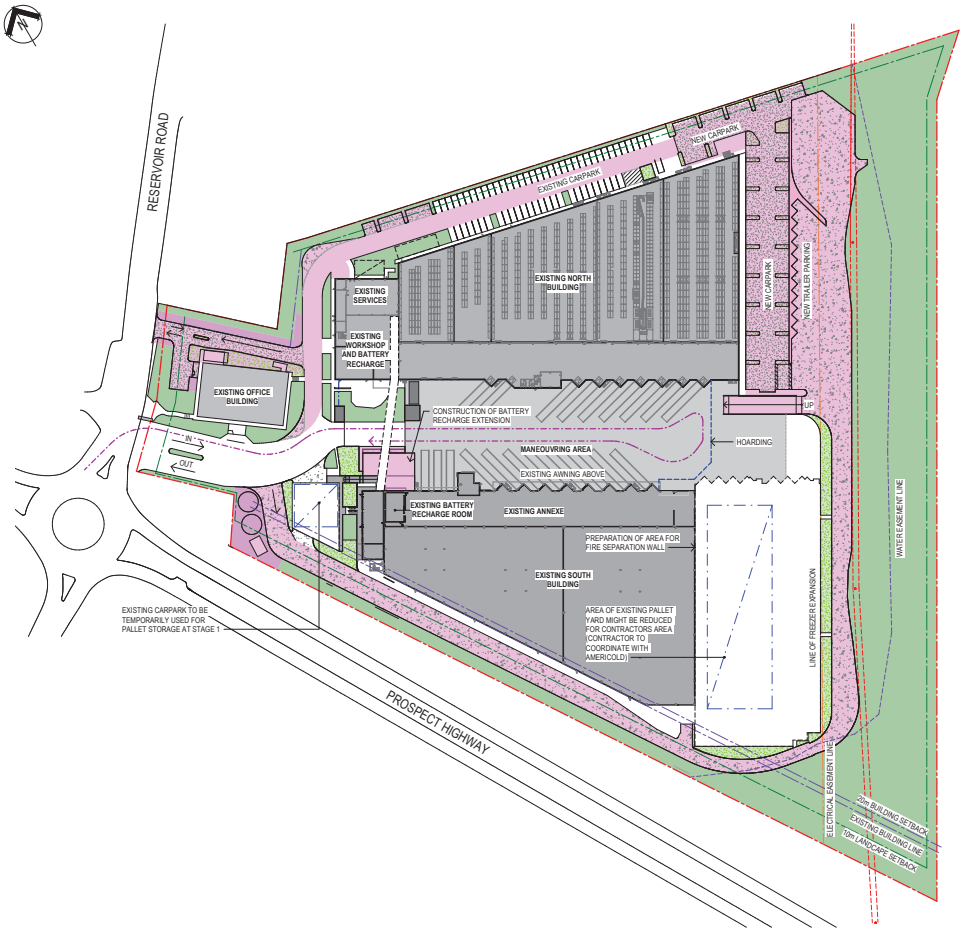


## SITE LEGEND

- SITE BOUNDARY
- POWER LINE EASEMENT BOUNDARY
- LANDSCAPE SETBACK LINE
- SECURITY FENCE LINE
- EXISTING HARDSTAND
- NEW BUILDING AND STRUCTURES
- NEW FOOTPATH
- EXISTING DOCKS TO BE MODIFIED
- EXISTING BUILDING AND STRUCTURES
- LANDSCAPE ZONE

## GENERAL NOTES

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## STAGING LEGEND AND NOTES

- EXISTING BUILDING AND STRUCTURES
- **STAGE 1**
  - SITE GRADING
  - EXTERNAL PAVEMENT AND ASSOCIATED KERBS
  - BATTERY RECHARGE
  - AWNING TO BICYCLE PARKING
  - OUTDOOR SEATING AT ASC BUILDING
- **STAGE 2**
  - SOUTH COLD STORAGE EXPANSION
  - LOADING DOCKS TO EXISTING
  - TIMBER PALLET STORAGE
  - OUTDOOR SEATING AREA AT SOUTH BUILDING
  - INSTALLATION OF BATTERY RECHARGE STATION
  - MODIFICATION OF EXISTING EGRESS STAIRS TO COLDSTORE
  - EXTERNAL STAIRS AND RAILING TO OFFICE AND AMENITIES
  - WEIGHBRIDGE
- **STAGE 3**
  - TRANSPORT DOCK, LUNCHROOM AND AMENITIES INTERNAL FITOUT
- COLDSTORE TRUCK ROUTE DURING STAGE 1 CONSTRUCTION
- COLDSTORE TRUCK ROUTE DURING STAGE 2 CONSTRUCTION
- COLDSTORE TRUCK ROUTE DURING STAGE 3 CONSTRUCTION

**NOTES:**

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2. CONTRACTOR TO INCLUDE HOARDING PLAN AND ALTERNATIVE EGRESS ROUTE FOR DIFFERENT CONSTRUCTION STAGES.
3. REFER TO PPR DOCUMENT FOR BUILDING SERVICES STAGING.

1 / - STAGING PLAN - STAGE 1
1 : 750

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| | Dwg Verifier | M. WARNE 11.05.22 |
| | Dwg Check | D. MCNAMARA 11.05.22 |

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Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: STAGING PLAN - STAGE 1

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-0502

Rev.: C

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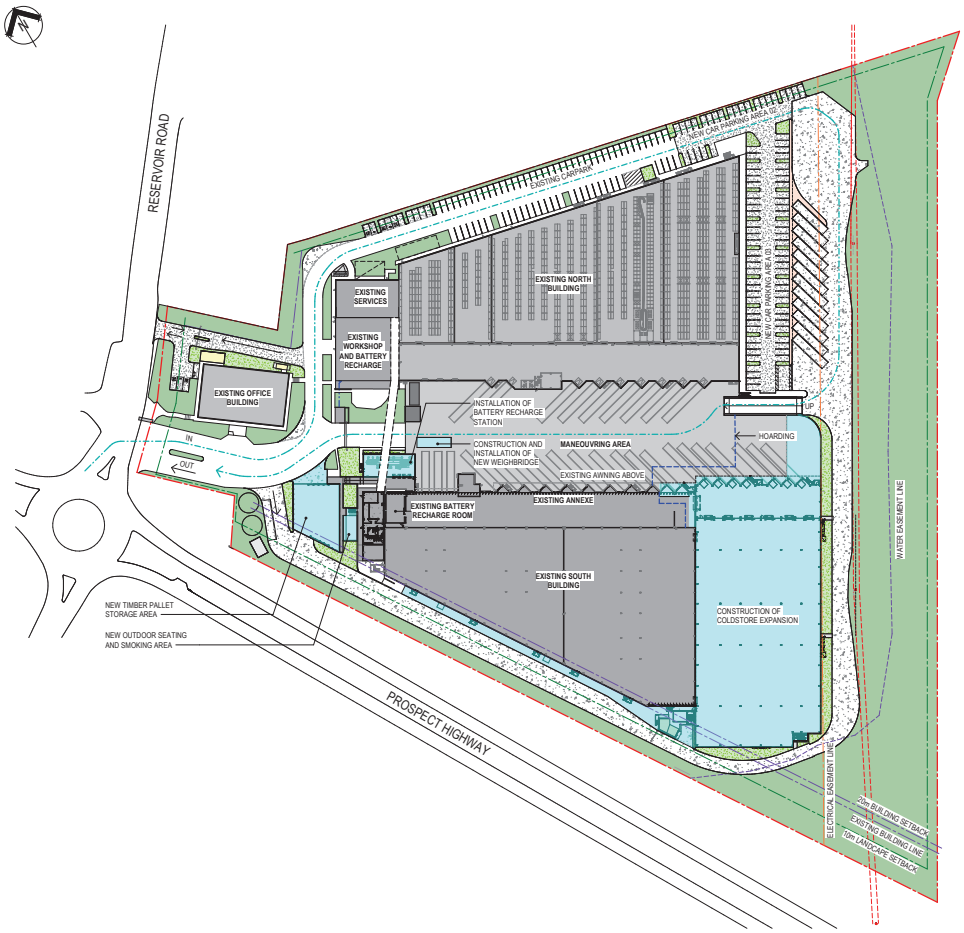


## SITE LEGEND

- SITE BOUNDARY
- POWER LINE EASEMENT BOUNDARY
- LANDSCAPE SETBACK LINE
- SECURITY FENCE LINE
- EXISTING HARDSTAND
- NEW BUILDING AND STRUCTURES
- NEW FOOTPATH
- EXISTING DOCKS TO BE MODIFIED
- EXISTING BUILDING AND STRUCTURES
- LANDSCAPE ZONE

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## STAGING LEGEND AND NOTES

- EXISTING BUILDING AND STRUCTURES
- **STAGE 1**
  - SITE GRADING
  - EXTERNAL PAVEMENT AND ASSOCIATED KERBS
  - BATTERY RECHARGE
  - AWNING TO BICYCLE PARKING
  - OUTDOOR SEATING AT ASC BUILDING
- **STAGE 2**
  - SOUTH COLD STORAGE EXPANSION
  - LOADING DOCKS TO EXISTING
  - TIMBER PALLET STORAGE
  - OUTDOOR SEATING AREA AT SOUTH BUILDING
  - INSTALLATION OF BATTERY RECHARGE STATION
  - MODIFICATION OF EXISTING EGRESS STAIRS TO COLDSTORE
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2. CONTRACTOR TO INCLUDE HOARDING PLAN AND ALTERNATIVE EGRESS ROUTE FOR DIFFERENT CONSTRUCTION STAGES.
3. REFER TO PPR DOCUMENT FOR BUILDING SERVICES STAGING.

1 / - STAGING PLAN - STAGE 2
1 : 750

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

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| | Dsg Verifier | M. WARNE 11.05.22 |
| | Drg Check | D. MCNAMARA 11.05.22 |

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: STAGING PLAN - STAGE 2

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-0503

Rev.: C

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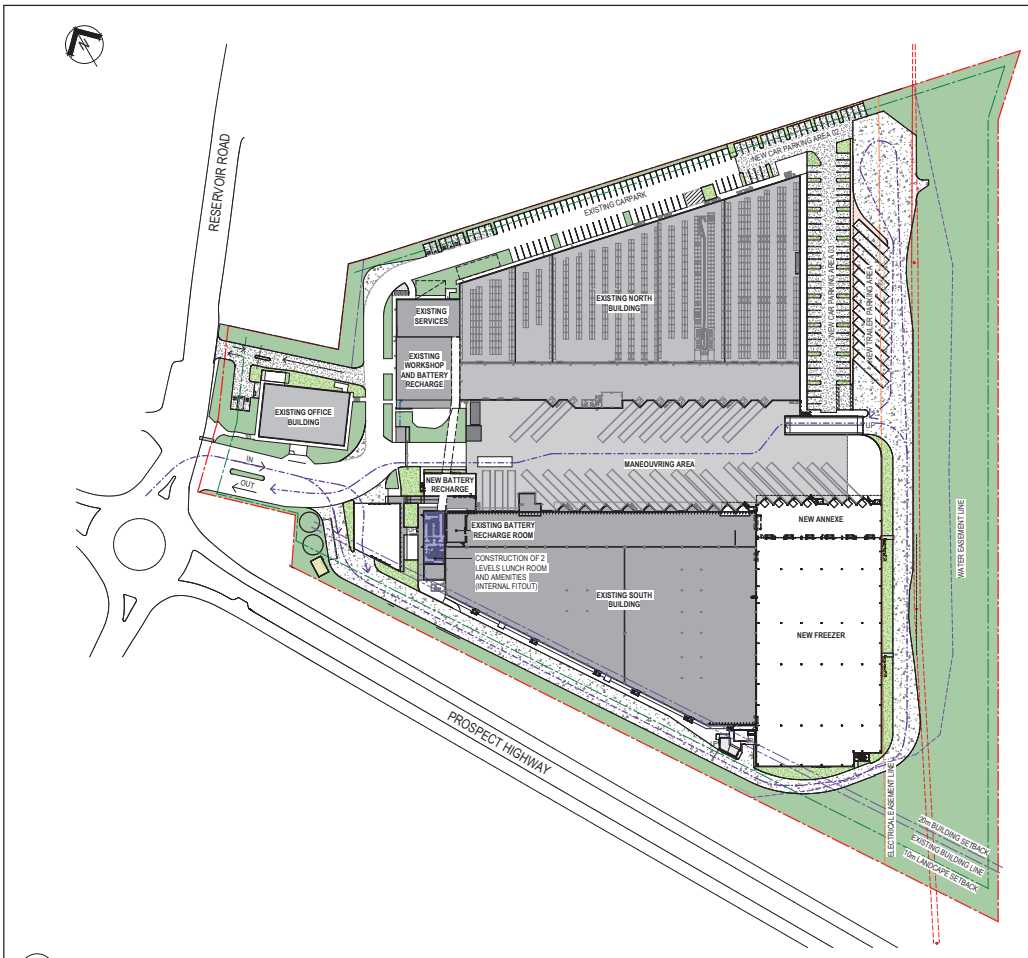


1 STAGING PLAN - STAGE 3
1 : 750

## SITE LEGEND

- SITE BOUNDARY
- POWER LINE EASEMENT BOUNDARY
- LANDSCAPE SETBACK LINE
- SECURITY FENCE LINE
- EXISTING HARDSTAND
- NEW BUILDING AND STRUCTURES
- NEW FOOTPATH
- EXISTING DOCKS TO BE MODIFIED
- EXISTING BUILDING AND STRUCTURES
- LANDSCAPE ZONE

## GENERAL NOTES

1. IF THE CONTRACTOR FINDS ANY INCONSISTENCY, ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.
2. INTERNAL EGRESS TO BE FURTHER ASSESSED AFTER CONFIRMATION OF RACKING LAYOUT.
3. BACKGROUND EQUIPMENT AND RACKING LAYOUT SHOWN INDICATIVE. EQUIPMENT/ VENDOR LAYOUT SUBJECT TO CHANGE DEPENDING ON APPROVED VENDOR LAYOUT.
4. SITE BOUNDARY AND EASEMENT ZONES BASED ON SITE SURVEY FILE "SY074943.000.3.1" RECEIVED FROM LAND PARTNERS ON 11/08/2020.
5. EXISTING BUILDING LAYOUT BASED ON DRAWING RECEIVED FROM AMERICOLD ON 05/06/2020.
6. FOR DETAILED EXTERNAL LEVELS AND LOCATION OF RETAINING WALLS REFER TO CIVIL DRAWINGS.
7. INDICATIVE ZONE FOR IN-GROUND WEIGHBRIDGE LOCATION SHOWN FOR REFERENCE ONLY. EXACT WEIGHBRIDGE DIMENSION AND SETOUT TO FINALIZED ON DETAILED DESIGN STAGE.
8. REFER TO LANDSCAPE DRAWING FOR DETAILED LOCATION OF NEW TREES AND DETAILED LANDSCAPE SCOPE.
9. DO NOT SCALE DRAWINGS
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

## STAGING LEGEND AND NOTES

- EXISTING BUILDING AND STRUCTURES
- **STAGE 1**
  - SITE GRADING
  - EXTERNAL PAVEMENT AND ASSOCIATED KERBS
  - BATTERY RECHARGE
  - AWNING TO BICYCLE PARKING
  - OUTDOOR SEATING AT ASC BUILDING
- **STAGE 2**
  - SOUTH COLD STORAGE EXPANSION
  - LOADING DOCKS TO EXISTING
  - TIMBER PALLET STORAGE
  - OUTDOOR SEATING AREA AT SOUTH BUILDING
  - INSTALLATION OF BATTERY RECHARGE STATION
  - MODIFICATION OF EXISTING EGRESS STAIRS TO COLDSTORE
  - EXTERNAL STAIRS AND RAILING TO OFFICE AND AMENITIES
  - WEIGHBRIDGE
- **STAGE 3**
  - TRANSPORT DOCK, LUNCHROOM AND AMENITIES INTERNAL FITOUT
- COLDSTORE TRUCK ROUTE DURING STAGE 1 CONSTRUCTION
- COLDSTORE TRUCK ROUTE DURING STAGE 2 CONSTRUCTION
- COLDSTORE TRUCK ROUTE DURING STAGE 3 CONSTRUCTION

**NOTES:**
1. THIS STAGING DRAWING IS PROVIDED FOR REFERENCE / GUIDE ONLY. PART OF CONTRACTOR'S SCOPE IS TO PROVIDE DETAILED STAGING PLAN FOR PRINCIPAL'S REVIEW AND APPROVAL.
2. CONTRACTOR TO INCLUDE HOARDING PLAN AND ALTERNATIVE EGRESS ROUTE FOR DIFFERENT CONSTRUCTION STAGES.
3. REFER TO PPR DOCUMENT FOR BUILDING SERVICES STAGING.

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| | Dsg Verifier | M. WARNE 11.05.22 |
| | Drg Check | D. MCNAMARA 11.05.22 |

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Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: STAGING PLAN - STAGE 3

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-0504

Rev.: C

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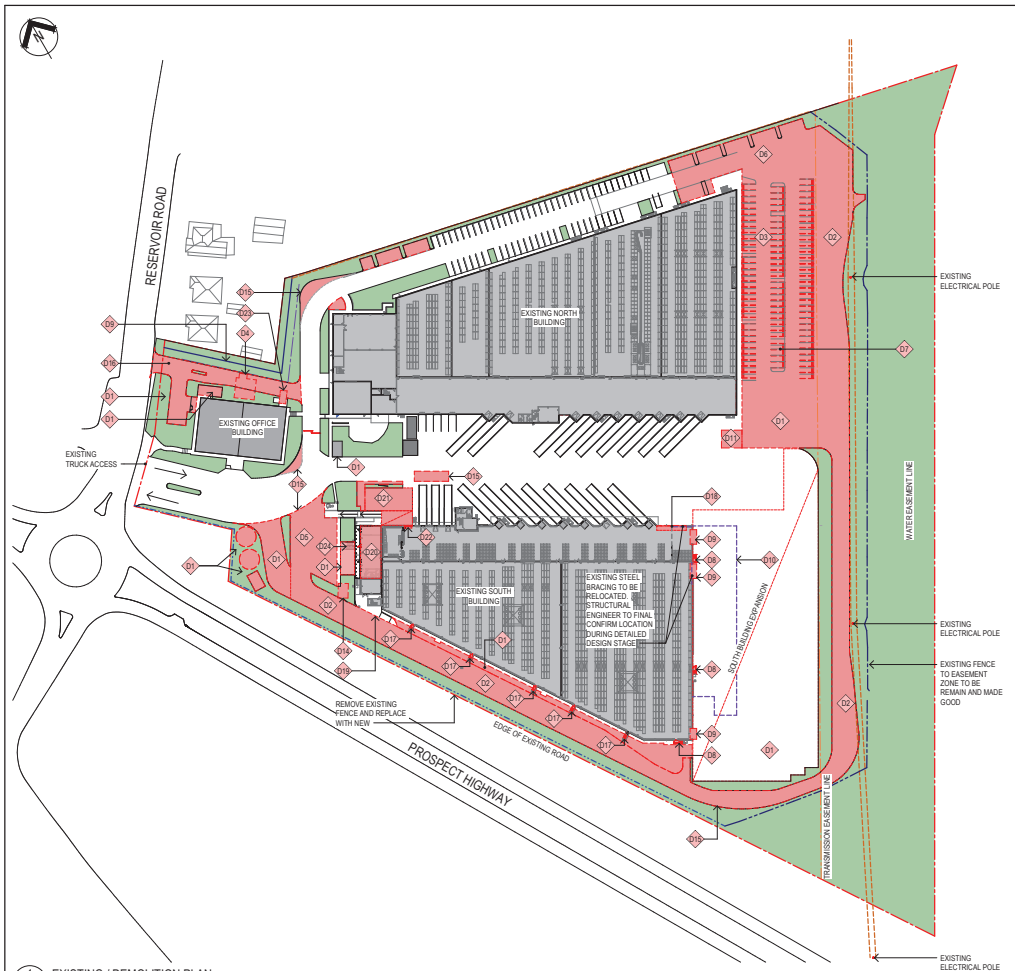


1 EXISTING / DEMOLITION PLAN
1 : 750

## DEMOLITION LEGEND

- D1 EXISTING LANDSCAPE AREA TO BE MODIFIED TO SUIT NEW SITE LAYOUT
- D2 EXISTING ACCESS ROAD / HARD STAND TO BE MODIFIED AND RE- PAVED TO SUIT NEW LAYOUT
- D3 EXISTING CARPARK AREA TO BE MODIFIED TO SUIT NEW LAYOUT. REFER TO CIVIL DETAILS FOR REGRADING OF EXISTING PAVEMENT
- D4 DEMOLISH EXISTING OUTDOOR SEATING SHELTER.
- D5 EXISTING CARPARK TO BE REMOVED. AREA TO BE MODIFIED TO ACCOMMODATE NEW TIMBER PALLET STORAGE.
- D6 MODIFY EXISTING DRIVEWAY AND LANDSCAPE AREA FOR NEW CAR PARK AREA.
- D7 EXISTING CARPARK TO BE REMOVED. EXISTING PAVEMENT TO BE MODIFIED TO SUIT NEW LAYOUT
- D8 CAREFULLY REMOVE EXISTING EGRESS DOORS AND STAIRS. INFILL REDUNDANT WALL OPENING TO SUIT NEW LAYOUT
- D9 CAREFULLY REMOVE PART OF EXISTING INSULATED PANEL WALL FOR NEW DOOR OPENING
- D10 CAREFULLY DEMOLISH EXISTING CONCRETE BLOCK RETAINING WALL FOR NEW BUILDING EXPANSION
- D11 CAREFULLY CUT BACK EXISTING CONCRETE HARDSTAND FOR NEW TRUCK RAMP AND MAKE GOOD UPON COMPLETION
- D12 CAREFULLY REMOVE PART OF EXISTING INSULATED PANEL AND ASSOCIATED DOORS AND METALWORK TO SUIT NEW DOCK LAYOUT. DEMOLISH PART OF EXISTING FLOOR TO SUIT NEW DOCK LEVELLER
- D13 CAREFULLY REMOVE EXISTING DOOR AND ENLARGE OPENING TO ACCEPT NEW DOOR
- D14 DEMOLISH EXISTING OUTDOOR SEATING AREA. PAVED ADJACENT EXISTING LANDSCAPE AREA TO FOR NEW OUTDOOR SEATING AREA.
- D15 AMEND ROAD ALIGNMENT AND PREPARE FOR A NEW RETAINING WALL (WHERE REQUIRED)
- D16 REMOVE EXISTING VEGETATION TO SUIT NEW LAYOUT
- D17 CAREFULLY REMOVE EXISTING EGRESS STEEL STAIRS. MODIFY AND RELOCATE TO NEW POSITION
- D18 CAREFULLY DEMOLISH EXISTING EXTERNAL INSULATED WALL PANEL TO ACCOMMODATE TWO NEW DOCKS. MODIFY EXISTING SLAB TO ACCEPT NEW DOCK LEVELLERS
- D19 DEMOLISH EXISTING RETAINING WALL AND MODIFY EXTENT OF RAMP
- D20 GROUND FLOOR - DEMOLISH INTERNAL FITOUT OF EXISTING OFFICE AND AMENITIES. MODIFICATION TO EXISTING EXTERNAL WALLS AND WINDOWS REQUIRED TO SUIT NEW LAYOUT. INFILL REDUNDANT WALL OPENING. MAKE GOOD EXISTING

  FIRST FLOOR - DEMOLISH AND REMOVE INTERNAL OFFICE FITOUT. MAKE GOOD EXISTING
- D21 DEMOLISHED EXISTING TRUCK WASH BAY SHELTER AND ADJACENT AWNING TO SOUTH BUILDING ENTRY
- D22 MODIFY EXISTING WALL AND CAREFULLY REMOVE EXISTING RAPID ROLLER AND INSULATED PANEL DOORS TO ACCOMMODATE FOR NEW DOOR SIZE
- D23 CAREFULLY REMOVE EXISTING HVAC UNIT AFFECTED BY VEHICLE ACCESS. REROUTE DUCTS / PIPE CONNECTIONS TO SUIT NEW LAYOUT
- D24 MAKE GOOD EXISTING CONCRETE STAIRS OR RECONSTRUCT TO COMPLY WITH NCC. BALUSTRADE TO FIRST FLOOR LEVEL TO BE REMOVED AND REPLACED WITH NEW.

## GENERAL NOTES

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8. REFER TO LANDSCAPE DRAWING FOR DETAILED LOCATION OF NEW TREES AND DETAILED LANDSCAPE SCOPE.
9. DO NOT SCALE DRAWINGS
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

## GENERAL DEMOLITION LEGEND AND NOTES

- EXISTING DOOR TO REMAIN AND MADE GOOD
- EXISTING DOOR TO BE REMOVED. MAKE GOOD EXISTING WALL OPENING
- EXISTING WALL TO BE RETAINED AND MADE GOOD
- EXTERNAL SITE AREA TO BE MODIFIED TO SUIT NEW LAYOUT
- EXISTING STRUCTURE TO BE REMOVED / DEMOLISHED. MAKE GOOD ADJOINING WALL EDGES TO BE RETAINED
- DEMOLISHED VEGETATION
- REMAINING VEGETATION

**NOTES**

A. MAKE GOOD ALL AREAS AND MATERIALS AFFECTED BY DEMOLITION.
B. REASONABLE CARE SHOULD ALWAYS BE TAKEN TO PROTECT AND PRESERVE ALL ELEMENTS WHICH ARE NOT DUE FOR DEMOLITION.
C. PRIOR TO REMOVING WALL / PARTITIONS, CONFIRM ON SITE IF ANY OR PART OF THE EXISTING WALLS / PARTITIONS TO BE REMOVED ARE LOAD BEARING OR NOT.
D. CONTRACTOR TO TERMINATE AND CAP ALL EXISTING SERVICES INCLUDING AND WHERE APPLICABLE ELECTRICAL, MECHANICAL, WATER, SEWER, STORM WATER AND FIRE MAIN.
E. ALLOW FOR ALL DEMOLISHED MATERIALS TO BE REMOVED OFF-SITE. ALLOW FOR ALL PAYMENT OF TRANSPORT AND TIP FEES.
F. THESE DRAWINGS OUTLINE THE GENERAL DEMOLITION WORKS REQUIRED TO FACILITATE THE PROPOSED BUILDING WORKS. THE CONTRACTOR SHALL MAKE THEIR OWN DETAILED INVESTIGATIONS TO IDENTIFY THE FULL EXTENT OF THE DEMOLITION WORKS REQUIRED, PRIOR TO COMMENCING ANY WORK.

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| | Drg Check S. MCNAMARA 11.05.22 | |

Beca

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: EXISTING SITE CONDITION AND DEMOLITION PLAN

Discipline: ARCHITECTURAL

Drawing No. 2527456-DA-2101 Rev. C

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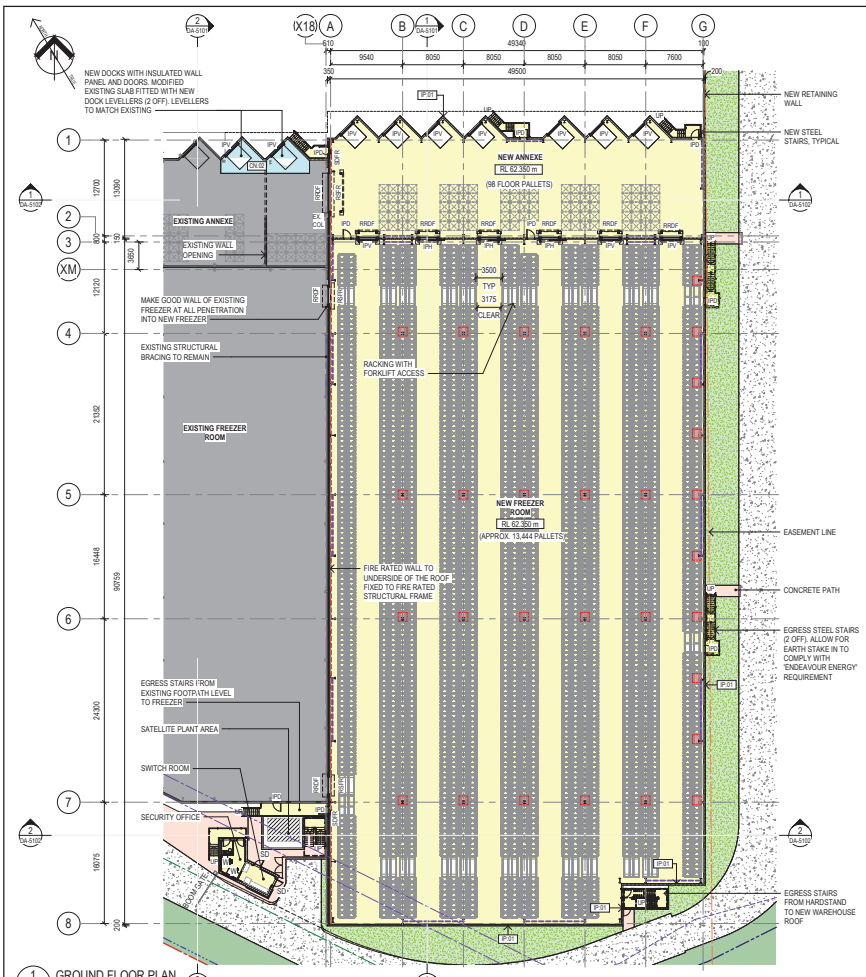


1 GROUND FLOOR PLAN
DA-0501 1 : 250

## RACKING SYSTEM AND PALLET CALCULATION

| RACKING SYSTEM TYPE | NUMBER OF PALLETS |
|---|---|
| 9h DOUBLE DEEP RACKING | 11988 |
| 9h DOUBLE DEEP RACKING LESS PALLET SPACE FOR COLUMN | 810 |
| 9h DOUBLE DEEP RACKING WITH FORKLIFT ACCESS | 528 |
| 9h HALF BAY DOUBLE DEEP RACKING | 36 |
| 9h DOUBLE DEEP RACKING WITH WALKTHROUGH | 96 |
| TOTAL NUMBER OF PALLETS | 13458 |

LESS 3 HORIZONTAL BRACING TO WALL ALONG GRID G
**= 13,444 TOTAL NUMBER OF PALLETS TO FREEZER EXPANSION**

## GENERAL NOTES

1. IF THE CONTRACTOR FINDS ANY INCONSISTENCY, ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.
2. ALL DIMENSIONS ARE TO FACE OF STRUCTURE OR WALLS UNLESS NOTED OTHERWISE.
3. FINISHED FLOOR LEVEL ARE NOTED AS 'RL'.
4. ALL DOORS TO FIRE SEPARATION WALL MUST ACHIEVE THE REQUIRED FIRE RATING REQUIRED FOR COMPLIANCE. FULLY SEAL WALL PENETRATIONS.
5. ALL NEW DOCKS TO BE TAILGATE DOCKS. DOCK LEVELLER TO MATCH EXISTING
6. LOCATION OF RELOCATED STRUCTURAL BRACING TO EXISTING BUILDING NOT SHOWN ON THIS DRAWING. FINAL LOCATION TO BE CONFIRMED BY THE CONTRACTOR'S STRCUTURAL ENGINEER DURING DETAILED DESIGN STAGE.
7. ALLOW FOR FLOOR INSULATION TO UNDERSIDE OF ANNEXE SLAB.
8. INTERNAL EGRESS TO BE FURTHER ASSESSED AFTER CONFIRMATION OF RACKING LAYOUT.
9. BACKGROUND EQUIPMENT AND RACKING LAYOUT SHOWN INDICATIVE. EQUIPMENT/ VENDOR LAYOUT SUBJECT TO CHANGE DEPENDING ON APPROVED VENDOR LAYOUT.
10. ALLOW FOR A SAFE BARRIERS AND BOLLARDS TO NEW ANNEXE AREA. LAYOUT BY OTHERS. YPE OF SAFETY BARRIER INCLUDING GATES TO IDENTIFIED WORK AREA IS TO BE CONFIRMED BY THE PRINCIPAL.
11. SITE BOUNDARY AND EASEMENT ZONES BASED ON SITE SURVEY FILE "SY074943.000.3.1" RECEIVED FROM LAND PARTNERS ON 11/08/2020.
12. EXISTING BUILDING LAYOUT BASED ON DRAWING RECEIVED FROM AMERCOLD ON 05/06/2020.
13. DO NOT SCALE DRAWINGS
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

## LEGEND

- EXISTING BUILDING AND STRUCTURES
- NEW SOUTH BUILDING EXPANSIONS
- PART OF EXISTING TO BE MODIFIED
- NEW HEAVY DUTY HARDSTAND
- NEW FOOTPATH
- LANDSCAPE ZONE
- COLUMN LOCATION TO RACKING
- FIRE RATED WALL (FRL 120/120/120)
- IPD — INSULATED PANEL DOOR
- IPH — INSULATED PANEL DOOR, HORIZONTAL SLIDING
- IPV — INSULATED PANEL DOOR, VERTICAL SLIDING
- RRD — RAPID ROLLER DOOR
- RRDF — RAPID ROLLER DOOR - FREEZER GRADE
- RSFR — ROLLER SHUTTER DOOR - FIRE RATED (OPEN / CLOSE ON FIRE SIGNAL)
- SD — SOLID CORE DOOR
- SDFR — SLIDING INSULATED MANDOOR - FIRE RATED (OPEN / CLOSE ON FIRE SIGNAL)

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| | Drg Check | D. MCNAMARA 11.05.22 |

Beca

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Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: SOUTH BUILDING EXPANSION FLOOR PLAN

Discipline: ARCHITECTURAL

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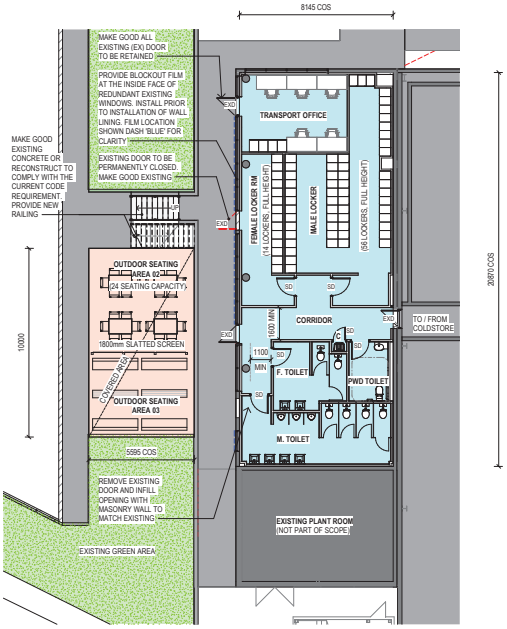
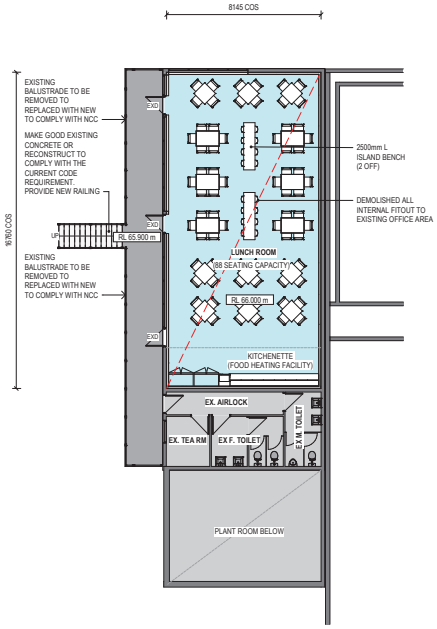



1 DA-0501 GROUND FLOOR - OFFICE AND AMENITIES PLAN
1 : 100




2 - FIRST FLOOR - LUNCH ROOM PLAN
1 : 100

## GENERAL NOTES AND LEGENDS

- EXISTING BUILDING AND STRUCTURE
- EXISTING REFUBISHMENT
- FITOUT OF EXISTING TO REMAIN. MAKE GOOD EXISTING
- EXISTING WINDOW TO BE BLOCKED OFF
- EXD — EXISTING DOOR TO REMAIN AND MAKE GOOD
- SD — NEW SOLID CORE DOOR, PAINTED FINISH
- EXISTING DOOR TO REMAIN AND MADE GOOD
- EXISTING DOOR TO BE REMOVED. MAKE GOOD EXISTING WALL OPENING
- EXISTING WALL TO BE RETAINED AND MADE GOOD
- EXISTING WALLS TO BE REMOVED / DEMOLISHED. MAKE GOOD ADJOINING WALL EDGES TO BE RETAINED

NOTE:
1. ALL INTERNAL PARTITIONS TO BE FULL HEIGHT WALLS (UP TO UNDERSIDE OF STRUCTURE) UNLESS NOTED OTHERWISE.
2. PROVIDE THERMAL INSULATION TO ALL EXTERNAL WALLS AND ROOF TO COMPLY WITH PART J REQUIREMENT OF THE NCC
3. PROVIDE ACOUSTIC INSULATION TO INTERNAL WALLS
4. ALL FITTINGS WITHIN ACCESSIBLE TOILETS AND SHOWERS ARE TO COMPLY WITH AS 1428.1-2021 DESIGN FOR ACCESS & MOBILITY.
5. DO NOT SCALE DRAWINGS
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

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Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: OFFICE, AMENITIES AND LUNCH ROOM PLANS

Discipline: ARCHITECTURAL

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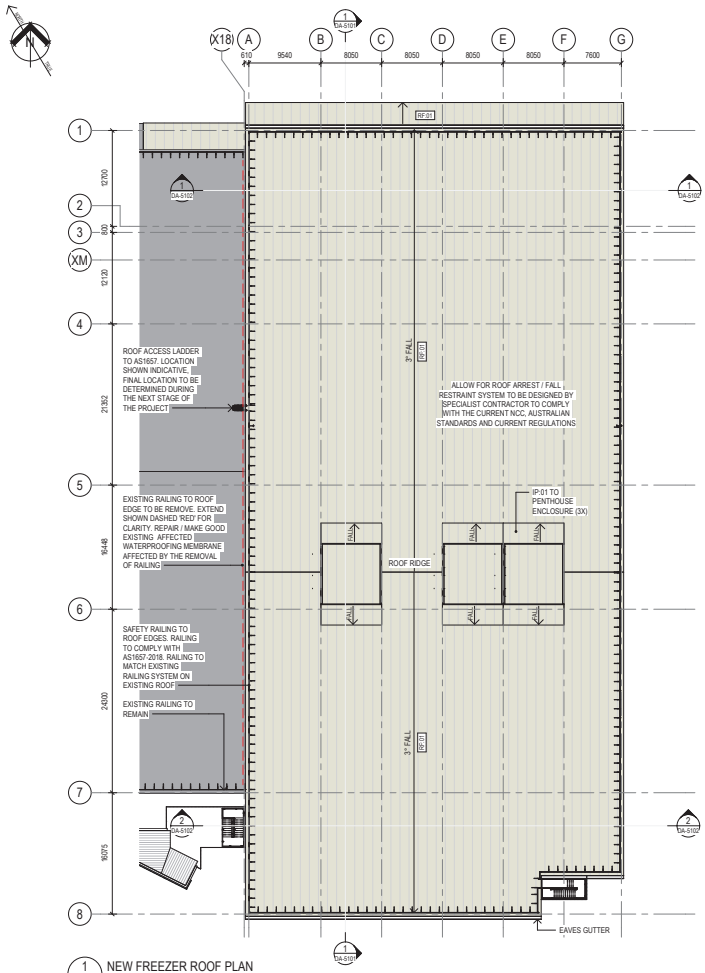


1 NEW FREEZER ROOF PLAN
1 : 250

## GENERAL NOTES

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Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: SOUTH BUILDING EXPANSION ROOF PLAN

Discipline: ARCHITECTURAL

Drawing No. 2527456-DA-3201

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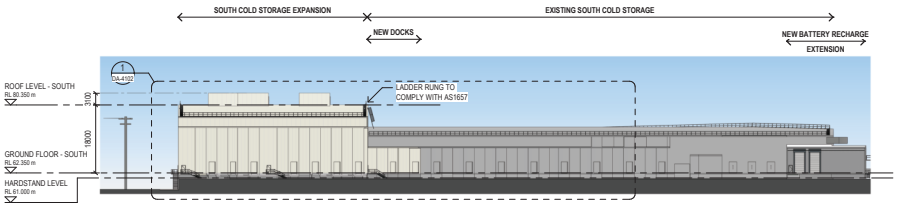
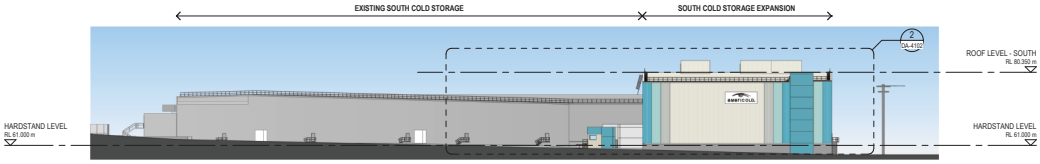
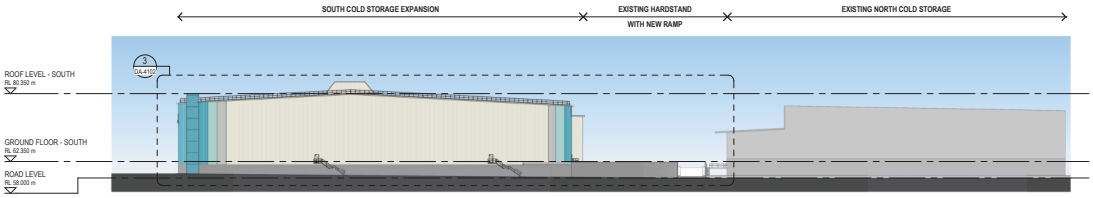



1 DA-0501 OVERALL - NORTH ELEVATION
1 : 500




2 DA-0501 OVERALL - SOUTH ELEVATION
1 : 500




3 DA-0501 OVERALL EAST ELEVATION
1 : 500

## MATERIAL FINISHES & LEGEND

**BK:01**
BLOCKWORK WALL - GB SMOOTH
COLOUR: NICKEL

**CD:01**
PREFINISHED PROFILED METAL WALL CLADDING
COLOUR: COLORBOND® SURFMIST

**IP:01 / RF:01**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR: COLORBOND® SURFMIST, BOTH SIDES

**IP:02**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® SHALE GREY
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP:03**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FAIRY WREN
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP:04**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FRASER COAST
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

PAINT FINISH / PREFINISHED SKIN FOR FIRE RATED WALL
COLOUR: COLORBOND® SURFMIST

**RF:02**
PROFILED METAL ROOF SHEETING WITH INSULATION PROFILE TO MATCH EXISTING TO ANCILLARY BUILDING
COLOUR: COLORBOND® SURFMIST

FLASHING, GUTTERS AND DOWNPIPES TO MATCH ADJOINING WALL COLOURS

**SC:01**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR TO MATCH COLORBOND® FRASER COAST

**SC:02**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR TO MATCH COLORBOND® SHALE GREY

**SC:03**
SLATTED SCREEN FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR: COLORBOND® SHALE GREY

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| D | ISSUED FOR DEVELOPMENT APPLICATION | DM | BT | AM | 28.06.22 |
| C | REISSUED FOR PRICING | DM | BT | AM | 14.06.22 |
| B | ISSUED FOR DEVELOPMENT APPLICATION - DRAFT | DM | BT | AM | 26.05.22 |
| A | ISSUED FOR PRICING | DM | BT | AM | 11.05.22 |

| | | |
|---|---|---|
| Original Scale (A1) As indicated | Design | D.MCNAMARA 11.05.22 |
| Reduced Scale (A3) | Drawn | R. HANDAYANI 11.05.22 |
| | Dsg Verifier | M. WARNE 11.05.22 |
| | Drg Check | D. MCNAMARA 11.05.22 |

Beca

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: ELEVATIONS - SHEET 1

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-4101

Rev.: D

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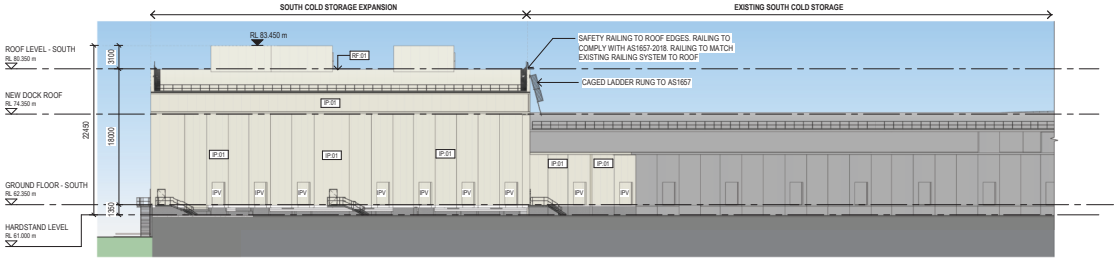
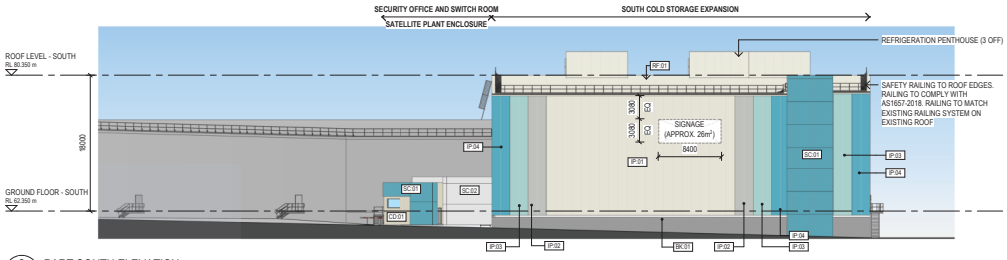
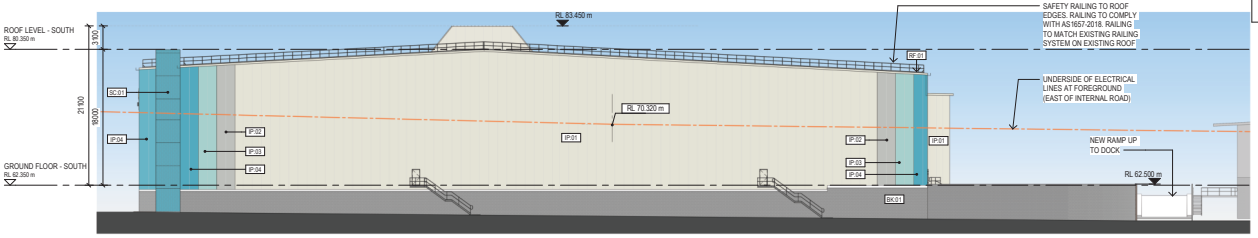
Drawing Plotted: 28/06/2022 10:28:43 PM




1 NORTH ELEVATION (FACING DOCK)
DA-4101 1 : 250




2 PART SOUTH ELEVATION
DA-4101 1 : 250




3 EAST ELEVATION
DA-4101 1 : 250

## MATERIAL FINISHES & LEGEND

**BK:01**
BLOCKWORK WALL - GB SMOOTH
COLOUR: NICKEL

**CD:01**
PREFINISHED PROFILED METAL WALL CLADDING
COLOUR: COLORBOND® SURFMIST

**IP:01 / RF:01**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR: COLORBOND® SURFMIST, BOTH SIDES

**IP:02**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® SHALE GREY
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP:03**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FAIRY WREN
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

**IP:04**
PREFINISHED PIR INSULATED PANELS
SKIN COLOUR OUTSIDE: COLORBOND® FRASER COAST
SKIN COLOUR INSIDE: COLORBOND® SURFMIST

PAINT FINISH / PREFINISHED SKIN FOR FIRE RATED WALL
COLOUR: COLORBOND® SURFMIST

**RF:02**
PROFILED METAL ROOF SHEETING WITH INSULATION PROFILE TO MATCH EXISTING TO ANCILLARY BUILDING
COLOUR: COLORBOND® SURFMIST

FLASHING, GUTTERS AND DOWNPIPES TO MATCH ADJOINING WALL COLOURS

**SC:01**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH COLOUR TO MATCH COLORBOND® FRASER COAST

**SC:02**
EXPANDED METAL PANEL FIXED TO STEEL STRUCTURE, POWDER COATED FINISH COLOUR TO MATCH COLORBOND® SHALE GREY

**SC:03**
SLATTED SCREEN FIXED TO STEEL STRUCTURE, POWDER COATED FINISH
COLOUR: COLORBOND® SHALE GREY

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| D | ISSUED FOR DEVELOPMENT APPLICATION | DM | BT | AM | 28.06.22 |
| C | REISSUED FOR PRICING | DM | BT | AM | 14.06.22 |
| B | ISSUED FOR DEVELOPMENT APPLICATION - DRAFT | DM | BT | AM | 26.05.22 |
| A | ISSUED FOR PRICING | DM | BT | AM | 11.05.22 |

Original Scale (A1): As indicated
Reduced Scale (A3):

| | | |
|---|---|---|
| Design | D.MCNAMARA | 11.05.22 |
| Drawn | R. HANDAYANI | 11.05.22 |
| Dsg Verifier | M. WARNE | 11.05.22 |
| Drg Check | D. MCNAMARA | 11.05.22 |

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: ELEVATIONS - SHEET 2

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-4102

Rev.: D

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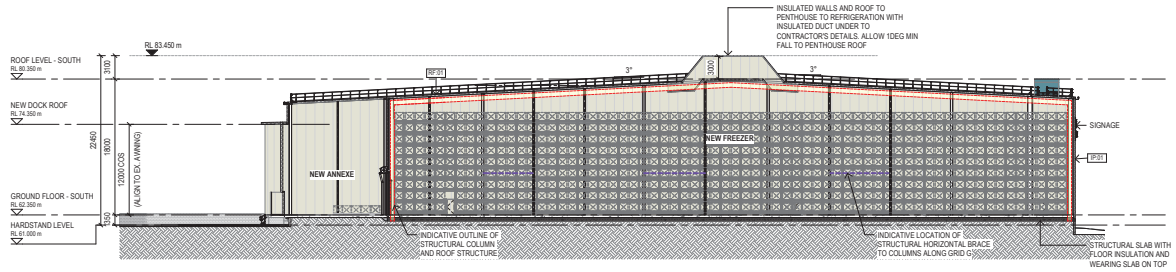
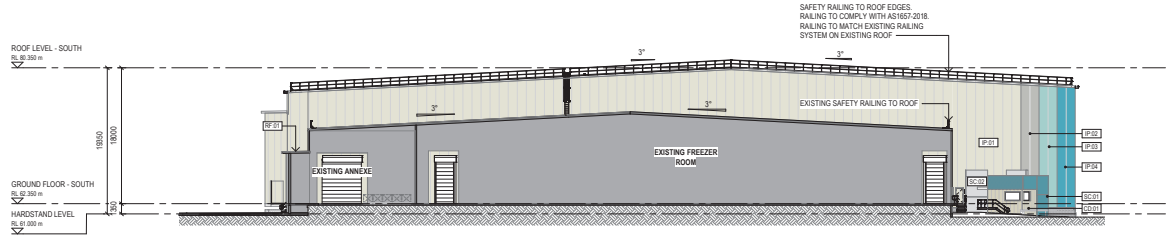
Drawing Plotted: 28/06/2022 10:30:20 PM

## GENERAL NOTES

1. IF THE CONTRACTOR FINDS ANY INCONSISTENCY, ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.
2. INTERNAL EGRESS TO BE FURTHER ASSESSED AFTER CONFIRMATION OF RACKING LAYOUT.
3. BACKGROUND EQUIPMENT AND RACKING LAYOUT SHOWN INDICATIVE. EQUIPMENT/ VENDOR LAYOUT SUBJECT TO CHANGE DEPENDING ON APPROVED VENDOR LAYOUT.
4. SITE BOUNDARY AND EASEMENT ZONES BASED ON SITE SURVEY FILE "SY074943.000.3.1" RECEIVED FROM LAND PARTNERS ON 11/08/2020.
5. EXISTING BUILDING LAYOUT BASED ON DRAWING RECEIVED FROM AMERICOLD ON 05/06/2020.
6. FOR DETAILED EXTERNAL LEVELS AND LOCATION OF RETAINING WALLS REFER TO CIVIL DRAWINGS.
7. INDICATIVE ZONE FOR IN-GROUND WEIGHBRIDGE LOCATION SHOWN FOR REFERENCE ONLY. EXACT WEIGHBRIDGE DIMENSION AND SETOUT TO FINALIZED ON DETAILED DESIGN STAGE.
8. REFER TO LANDSCAPE DRAWING FOR DETAILED LOCATION OF NEW TREES AND DETAILED LANDSCAPE SCOPE.
9. DO NOT SCALE DRAWINGS.
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE




1 DA-3101 SECTION THROUGH NEW ANNEXE AND FREEZER ROOM
1 : 250




2 DA-3101 SECTION THROUGH EXISTING FREEZER ROOM
1 : 250
(NOTE: SIMILAR TO WEST ELEVATION VIEW OF COLD STORAGE EXPANSION)

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| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| D | ISSUED FOR DEVELOPMENT APPLICATION | DM | BT | AM | 28.06.22 |
| C | REISSUED FOR PRICING | DM | BT | AM | 14.06.22 |
| B | ISSUED FOR DEVELOPMENT APPLICATION - DRAFT | DM | BT | AM | 26.05.22 |
| A | ISSUED FOR PRICING | DM | BT | AM | 11.05.22 |

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| Original Scale (A1) | Design | D.MCNAMARA 11.05.22 |
| As indicated | Drawn | R. HANDAYANI 11.05.22 |
| Reduced Scale (A3) | Dsg Verifier | M. WARNE 11.05.22 |
| | Drg Check | D. MCNAMARA 11.05.22 |

Beca

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: SECTIONS - SHEET 1

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-5101

Rev.: D

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## GENERAL NOTES

1. IF THE CONTRACTOR FINDS ANY INCONSISTENCY, ERROR OR OMISSION IN THE DOCUMENTS, OR BETWEEN DOCUMENTS, THE ARCHITECT MUST BE NOTIFIED.
2. INTERNAL EGRESS TO BE FURTHER ASSESSED AFTER CONFIRMATION OF RACKING LAYOUT.
3. BACKGROUND EQUIPMENT AND RACKING LAYOUT SHOWN INDICATIVE. EQUIPMENT/ VENDOR LAYOUT SUBJECT TO CHANGE DEPENDING ON APPROVED VENDOR LAYOUT.
4. SITE BOUNDARY AND EASEMENT ZONES BASED ON SITE SURVEY FILE "SY074943.000.3.1" RECEIVED FROM LAND PARTNERS ON 11/08/2020.
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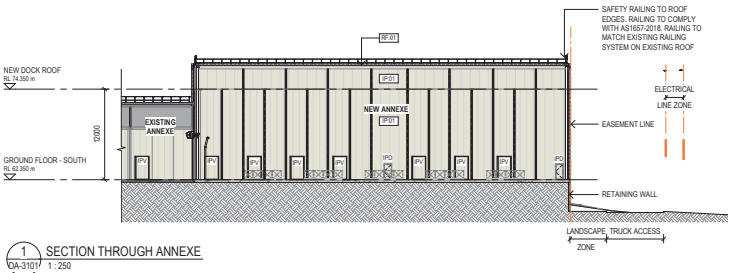
7. INDICATIVE ZONE FOR IN-GROUND WEIGHBRIDGE LOCATION SHOWN FOR REFERENCE ONLY. EXACT WEIGHBRIDGE DIMENSION AND SETOUT TO FINALIZED ON DETAILED DESIGN STAGE.
8. REFER TO LANDSCAPE DRAWING FOR DETAILED LOCATION OF NEW TREES AND DETAILED LANDSCAPE SCOPE.
9. DO NOT SCALE DRAWINGS
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE




1 SECTION THROUGH ANNEXE
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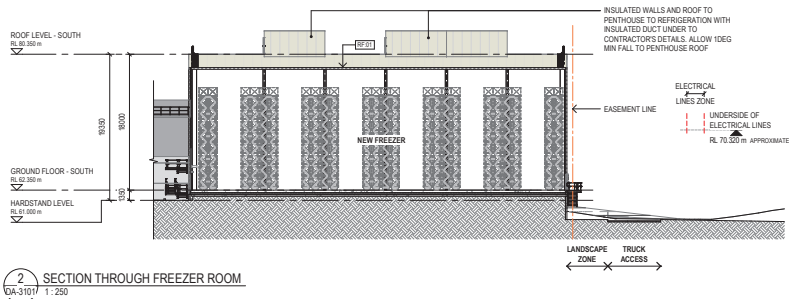


2 SECTION THROUGH FREEZER ROOM
DA-3101 1 : 250

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

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| C | REISSUED FOR PRICING | DM | BT | AM | 14.06.22 |
| B | ISSUED FOR DEVELOPMENT APPLICATION - DRAFT | DM | BT | AM | 26.05.22 |
| A | ISSUED FOR PRICING | DM | BT | AM | 11.05.22 |

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| Original Scale (A1) As indicated | Design | D.MCNAMARA 11.05.22 |
| | Drawn | R. HANDAYANI 11.05.22 |
| Reduced Scale (A3) | Dsg Verifier | M. WARNE 11.05.22 |
| | Drg Check | D. MCNAMARA 11.05.22 |

Client: americold.

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: SECTIONS - SHEET 2

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-5102

Rev.: D

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VIEW ALONG PROSPECT HIGHWAY

VIEW FACING SOUTH COLD STORE DOCKS

**FOR APPROVAL**
**NOT FOR CONSTRUCTION**

| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| B | ISSUED FOR DEVELOPMENT APPLICATION | DM | BT | AM | 28.06.22 |
| A | ISSUED FOR DEVELOPMENT APPLICATION - DRAFT | DM | BT | AM | 25.05.22 |

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| Original Scale (A1) As indicated Reduced Scale (A3) | Design | D.MCNAMARA 25.05.22 |
| | Drawn | R. HANDAYANI 25.05.22 |
| | Dsg Verifier | M. WARNE 25.05.22 |
| | Drg Check | D. MCNAMARA 25.05.22 |

Client: AMERICOLD

Project: PROSPECT SOUTH EXPANSION
560 RESERVOIR RD PROSPECT NSW 2148, AUSTRALIA

Title: 3d VIEWS

Discipline: ARCHITECTURAL

Drawing No.: 2527456-DA-9101

Rev.: B

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# C

# Appendix C – SIDRA modelling results

# PHASING SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 AM signalised upgrade (No dev) (Site Folder: 2033 AM (No Development))]

## Network: N101 [2033 AM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Prospect Highway / Reservoir Road 2033 AM signalised upgrade (No dev)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)

**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times determined by the program**
**Downstream lane blockage effects included in determining phase times**
**Phase Sequence: DD Proposed Signalling**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G*, G1*, G2***
**Output Phase Sequence: A, D, D1*, E, G***
(* Variable Phase)

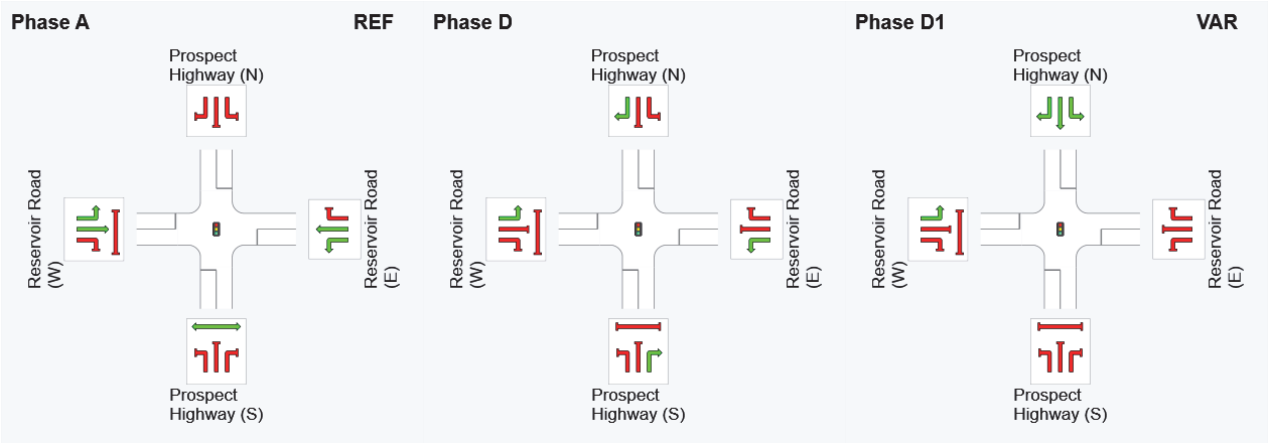
### Phase Timing Summary

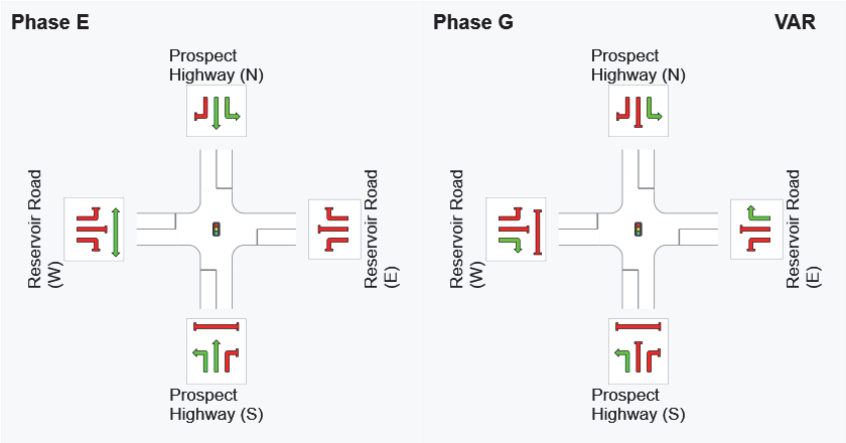
| Phase | A | D | D1 | E | G |
|---|---|---|---|---|---|
| Phase Change Time (sec) | 0 | 12 | 24 | 26 | 98 |
| Green Time (sec) | 6 | 6 | *** | 66 | 36 |
| Phase Time (sec) | 12 | 12 | 2 | 72 | 42 |
| Phase Split | 9% | 9% | 1% | 51% | 30% |

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

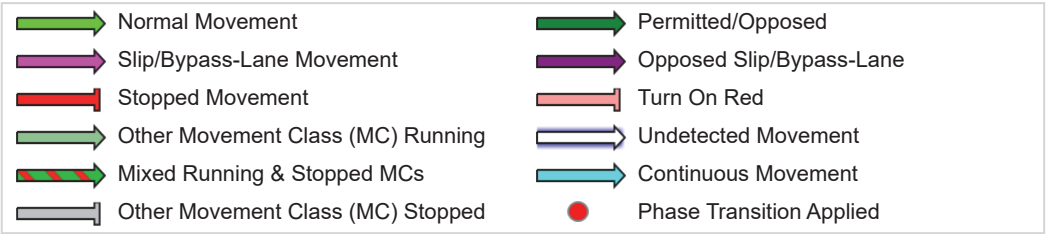
*** No green time has been calculated for this phase because the next phase starts during its intergreen time. This occurs with overlap phasing where there is no single movement connecting this phase to the next, or where the only such movement is a dummy movement with zero minimum green time specified.
If a green time is required for this phase, specify a dummy movement with a non-zero minimum green time.

### Output Phase Sequence






REF: Reference Phase
VAR: Variable Phase

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Project: C:\Users\DD392\Beca\2527456 - Prospect South Expansion - Documents\Technical - Working Files\06 - Traffic\SIDRA\AmeriCold Model.sip9

# PHASING SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 PM signalised upgrade (No dev) (Site Folder: 2033 PM (No Development))]

## Network: N101 [2033 PM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Prospect Highway / Reservoir Road 2033 PM signalised upgrade (No dev)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Practical Cycle Time)

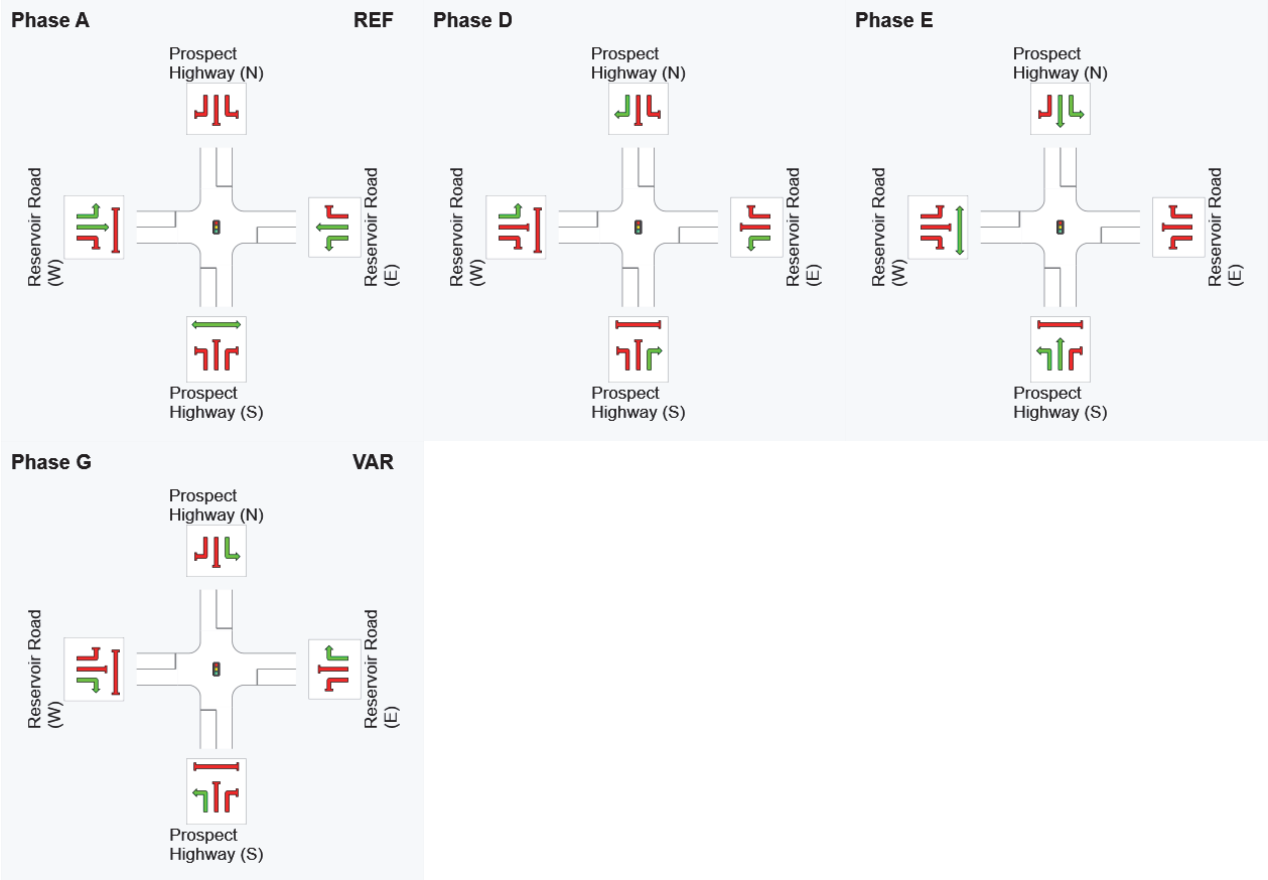
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times determined by the program**
**Downstream lane blockage effects included in determining phase times**
**Phase Sequence: DD Proposed Signalling - Import**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G*, G1*, G2***
**Output Phase Sequence: A, D, E, G***
(* Variable Phase)

### Phase Timing Summary

| Phase | A | D | E | G |
|---|---|---|---|---|
| Phase Change Time (sec) | 0 | 12 | 24 | 80 |
| Green Time (sec) | 6 | 6 | 50 | 14 |
| Phase Time (sec) | 12 | 12 | 56 | 20 |
| Phase Split | 12% | 12% | 56% | 20% |

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence




REF: Reference Phase
VAR: Variable Phase

| | |
|---|---|
| Normal Movement | Permitted/Opposed |
| Slip/Bypass-Lane Movement | Opposed Slip/Bypass-Lane |
| Stopped Movement | Turn On Red |
| Other Movement Class (MC) Running | Undetected Movement |
| Mixed Running & Stopped MCs | Continuous Movement |
| Other Movement Class (MC) Stopped | Phase Transition Applied |

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Project: C:\Users\DD392\Beca\2527456 - Prospect South Expansion - Documents\Technical - Working Files\06 - Traffic\SIDRA\AmeriCold Model.sip9

# PHASING SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 AM signalised upgrade (with development) (Site Folder: 2033 AM (Development))]

## Network: N101 [2033 AM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Prospect Highway / Reservoir Road 2033 AM signalised upgrade (with development)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)

**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times determined by the program**
**Downstream lane blockage effects included in determining phase times**
**Phase Sequence: DD Proposed Signalling - Import**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G*, G1*, G2***
**Output Phase Sequence: A, D, D1*, E, G***
(* Variable Phase)

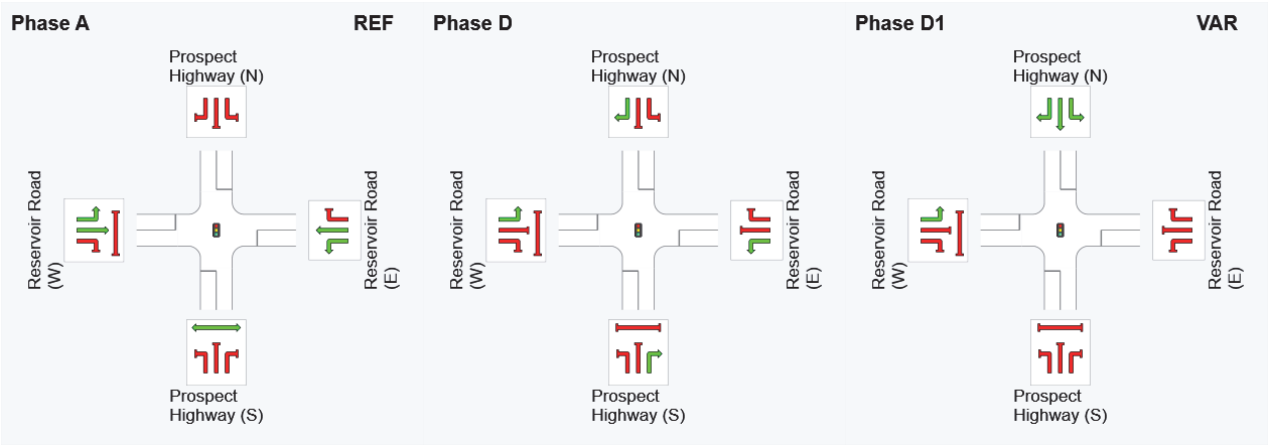
### Phase Timing Summary

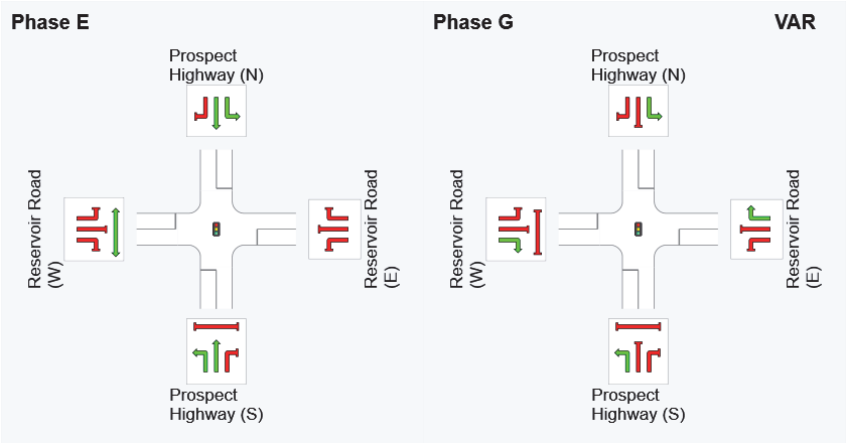
| Phase | A | D | D1 | E | G |
|---|---|---|---|---|---|
| Phase Change Time (sec) | 0 | 12 | 24 | 26 | 98 |
| Green Time (sec) | 6 | 6 | *** | 66 | 36 |
| Phase Time (sec) | 12 | 12 | 2 | 72 | 42 |
| Phase Split | 9% | 9% | 1% | 51% | 30% |

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

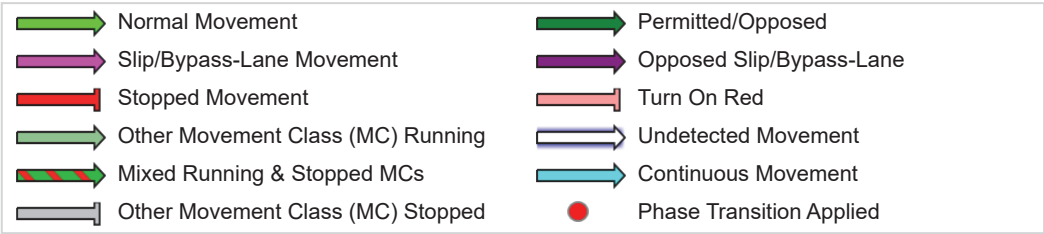
*** No green time has been calculated for this phase because the next phase starts during its intergreen time. This occurs with overlap phasing where there is no single movement connecting this phase to the next, or where the only such movement is a dummy movement with zero minimum green time specified.
If a green time is required for this phase, specify a dummy movement with a non-zero minimum green time.

### Output Phase Sequence






REF: Reference Phase
VAR: Variable Phase

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# PHASING SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 PM signalised upgrade (with development) (Site Folder: 2033 PM (Development))]

## Network: N101 [2033 PM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Prospect Highway / Reservoir Road 2033 PM signalised upgrade (with development)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Practical Cycle Time)

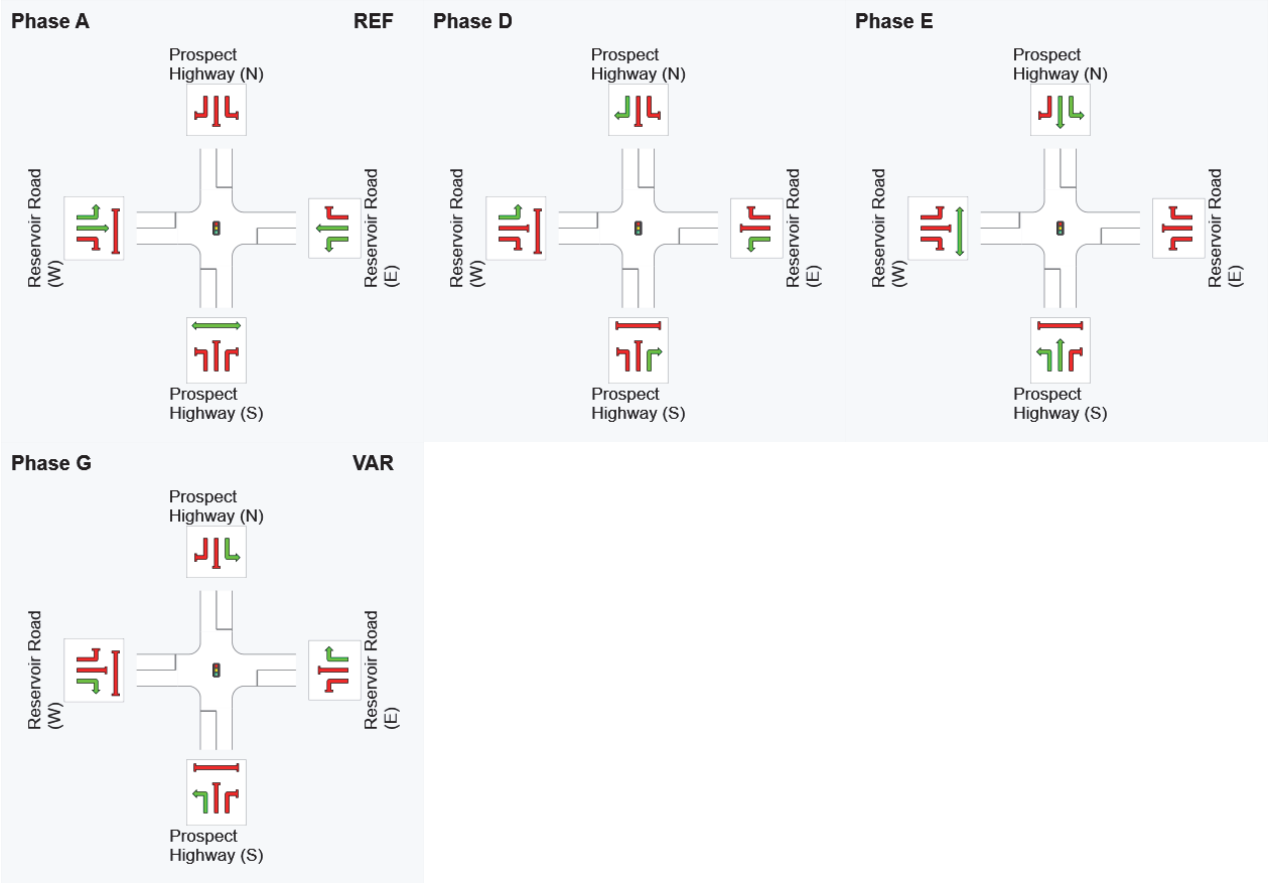
**Timings based on settings in the Site Phasing & Timing dialog**
**Phase Times determined by the program**
**Downstream lane blockage effects included in determining phase times**
**Phase Sequence: DD Proposed Signalling - Import**
**Reference Phase: Phase A**
**Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G*, G1*, G2***
**Output Phase Sequence: A, D, E, G***
(* Variable Phase)

### Phase Timing Summary

| Phase | A | D | E | G |
|---|---|---|---|---|
| Phase Change Time (sec) | 0 | 12 | 24 | 80 |
| Green Time (sec) | 6 | 6 | 50 | 14 |
| Phase Time (sec) | 12 | 12 | 56 | 20 |
| Phase Split | 12% | 12% | 56% | 20% |

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

### Output Phase Sequence




REF: Reference Phase
VAR: Variable Phase

| | |
|---|---|
| Normal Movement | Permitted/Opposed |
| Slip/Bypass-Lane Movement | Opposed Slip/Bypass-Lane |
| Stopped Movement | Turn On Red |
| Other Movement Class (MC) Running | Undetected Movement |
| Mixed Running & Stopped MCs | Continuous Movement |
| Other Movement Class (MC) Stopped | Phase Transition Applied |

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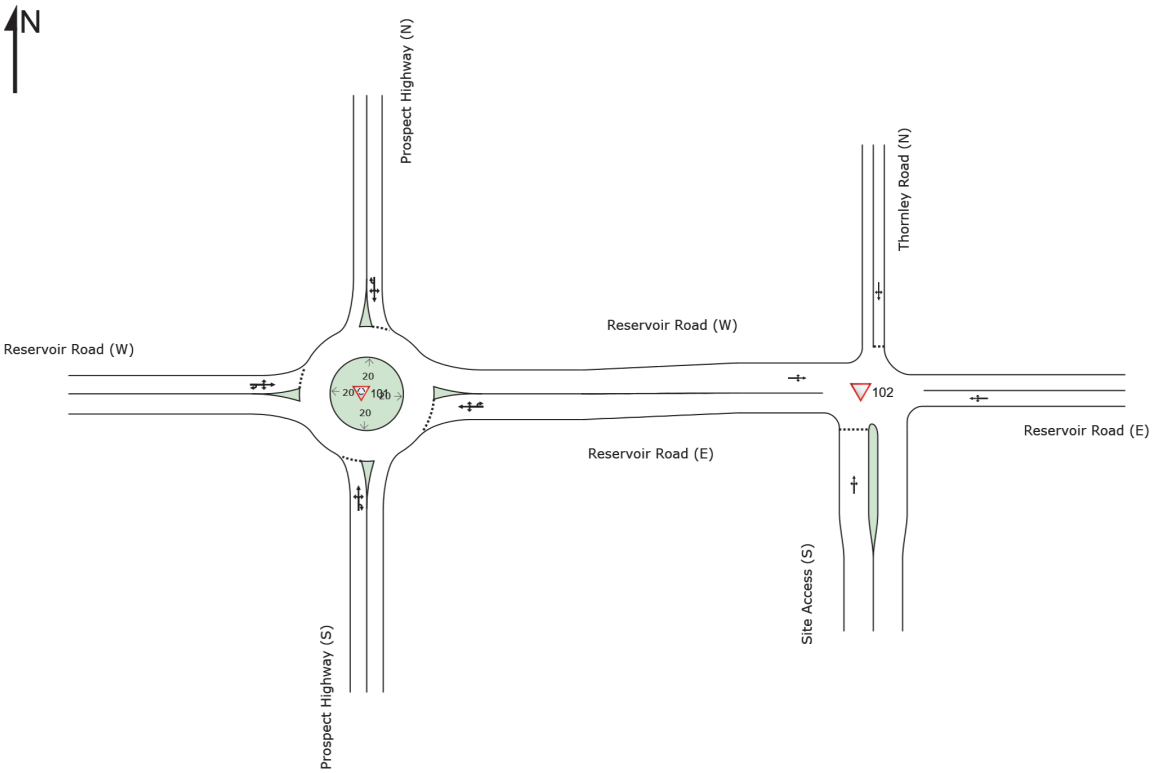
# NETWORK LAYOUT

## Network: N101 [base 2022 AM (7:45 - 8:45) (Network Folder: 2022)]

AmeriCold traffic network 2022 AM (7:45 - 8:45)
Network Category: Base Year

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.




| SITES IN NETWORK | | |
|---|---|---|
| **Site ID** | **CCG ID** | **Site Name** |
| 101 | NA | Prospect Highway / Reservoir Road AM |
| 102 | NA | Reservoir Road / Site Access / Thornley Road AM |

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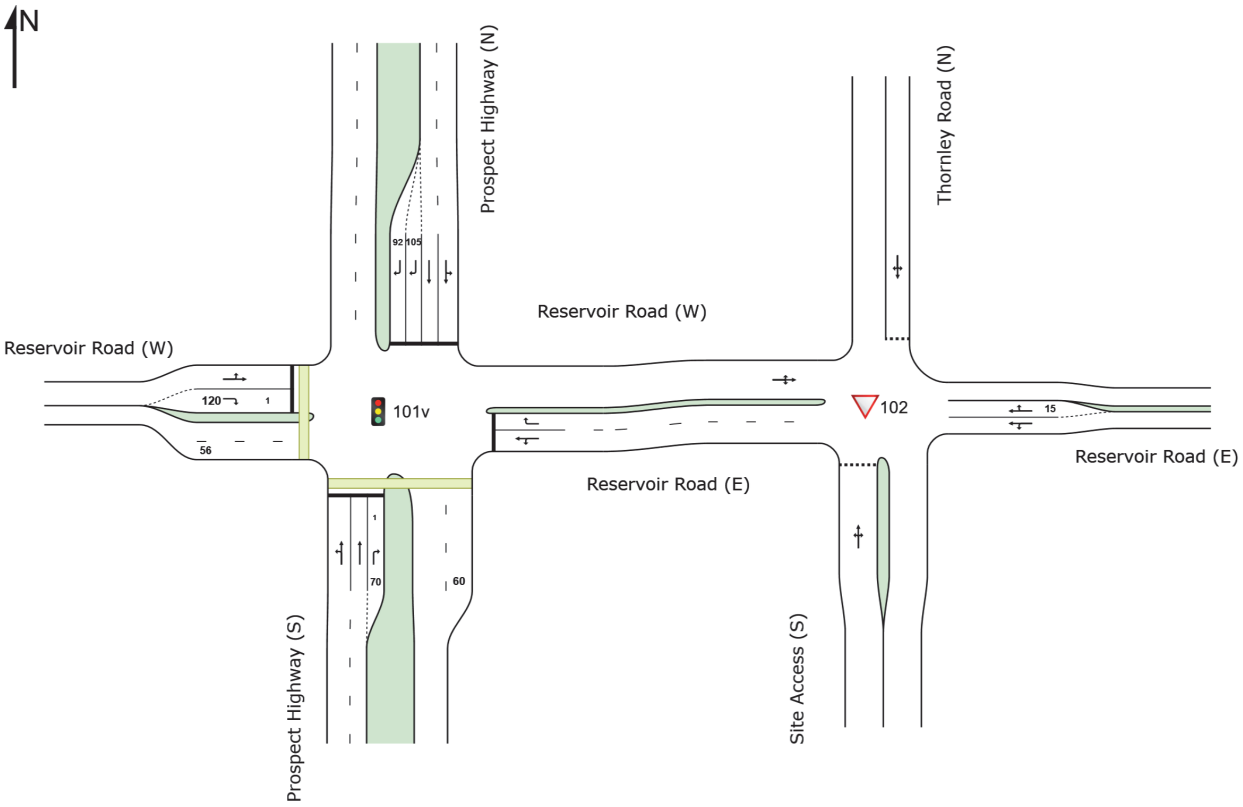
# NETWORK LAYOUT

## Network: N101 [2033 AM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.




| SITES IN NETWORK | | |
|---|---|---|
| **Site ID** | **CCG ID** | **Site Name** |
| 101v | NA | Prospect Highway / Reservoir Road 2033 AM signalised upgrade (No dev) |
| 102 | NA | Reservoir Road / Site Access / Thornley Road 2033 AM signalised upgrade (No dev) |

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road PM (Site Folder: 2022 PM (4:45 - 5:45))]

## Network: N101 [base 2022 PM (4:45 - 5:45) (Network Folder: 2022)]

Reservoir Road / Site Access / Thornley Road - 2022 Existing Conditions
Site Category: Base Year
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 37 | 42.3 | 37 | 42.3 | 0.036 | 0.1 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.036 | 0.4 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.036 | 0.5 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 10.0 |
| Approach | | 40 | 39.3 | 40 | 39.3 | 0.036 | 0.1 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 52.7 |
| 5 | T1 | 19 | 7.7 | 19 | 7.7 | 0.011 | 0.0 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.6 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 55.7 |
| Approach | | 21 | 6.7 | 21 | 6.7 | 0.011 | 0.8 | NA | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.0 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 1 | 0.0 | 1 | 0.0 | 0.016 | 4.6 | LOS A | 0.0 | 0.3 | 0.15 | 0.51 | 0.15 | 44.6 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.016 | 3.9 | LOS A | 0.0 | 0.3 | 0.15 | 0.51 | 0.15 | 41.0 |
| 9 | R2 | 12 | 25.0 | 12 | 25.0 | 0.016 | 5.7 | LOS A | 0.0 | 0.3 | 0.15 | 0.51 | 0.15 | 41.3 |
| Approach | | 15 | 20.0 | 15 | 20.0 | 0.016 | 5.4 | LOS A | 0.0 | 0.3 | 0.15 | 0.51 | 0.15 | 41.8 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 7 | 25.0 | 7 | 25.0 | 0.039 | 2.4 | LOS A | 0.2 | 2.0 | 0.09 | 0.31 | 0.09 | 41.1 |
| 11 | T1 | 18 | 45.5 | 18 | 45.5 | 0.039 | 0.1 | LOS A | 0.2 | 2.0 | 0.09 | 0.31 | 0.09 | 55.0 |
| 12 | R2 | 30 | 27.8 | 30 | 27.8 | 0.039 | 2.6 | LOS A | 0.2 | 2.0 | 0.09 | 0.31 | 0.09 | 33.7 |
| Approach | | 55 | 33.3 | 55 | 33.3 | 0.039 | 1.7 | NA | 0.2 | 2.0 | 0.09 | 0.31 | 0.09 | 44.9 |
| All Vehicles | | 132 | 29.3 | 132 | 29.3 | 0.039 | 1.5 | NA | 0.2 | 2.0 | 0.08 | 0.21 | 0.08 | 30.5 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road AM (Site Folder: 2022 AM (7:45 - 8:45))]

## Network: N101 [base 2022 AM (7:45 - 8:45) (Network Folder: 2022)]

Prospect Highway / Reservoir Road - 2022 Existing Conditions
Site Category: Base Year
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 165 | 23.3 | 165 | 23.3 | 0.786 | 5.8 | LOS A | 10.3 | 99.3 | 0.75 | 0.59 | 0.76 | 53.7 |
| 2 | T1 | 803 | 29.9 | 803 | 29.9 | 0.786 | 6.2 | LOS A | 10.3 | 99.3 | 0.75 | 0.59 | 0.76 | 50.4 |
| 3 | R2 | 10 | 60.0 | 10 | 60.0 | 0.786 | 12.6 | LOS A | 10.3 | 99.3 | 0.75 | 0.59 | 0.76 | 44.8 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.786 | 12.2 | LOS A | 10.3 | 99.3 | 0.75 | 0.59 | 0.76 | 53.1 |
| Approach | | 979 | 29.1 | 979 | 29.1 | 0.786 | 6.2 | LOS A | 10.3 | 99.3 | 0.75 | 0.59 | 0.76 | 51.3 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 100.0 | 5 | 100.0 | 0.261 | 31.4 | LOS C | 1.3 | 23.6 | 0.92 | 0.97 | 0.93 | 24.9 |
| 5 | T1 | 5 | 100.0 | 5 | 100.0 | 0.261 | 31.9 | LOS C | 1.3 | 23.6 | 0.92 | 0.97 | 0.93 | 39.1 |
| 6 | R2 | 20 | 75.0 | 20 | 75.0 | 0.261 | 34.7 | LOS C | 1.3 | 23.6 | 0.92 | 0.97 | 0.93 | 19.4 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.261 | 26.7 | LOS B | 1.3 | 23.6 | 0.92 | 0.97 | 0.93 | 4.9 |
| Approach | | 31 | 80.0 | 31 | 80.0 | 0.261 | 33.4 | LOS C | 1.3 | 23.6 | 0.92 | 0.97 | 0.93 | 24.4 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 19 | 31.6 | 19 | 31.6 | 0.892 | 17.2 | LOS B | 20.1 | 179.7 | 1.00 | 1.17 | 1.61 | 34.1 |
| 8 | T1 | 861 | 18.5 | 861 | 18.5 | 0.892 | 16.5 | LOS B | 20.1 | 179.7 | 1.00 | 1.17 | 1.61 | 44.1 |
| 9 | R2 | 88 | 8.0 | 88 | 8.0 | 0.892 | 20.5 | LOS B | 20.1 | 179.7 | 1.00 | 1.17 | 1.61 | 50.4 |
| 9u | U | 2 | 0.0 | 2 | 0.0 | 0.892 | 22.2 | LOS B | 20.1 | 179.7 | 1.00 | 1.17 | 1.61 | 44.6 |
| Approach | | 970 | 17.7 | 970 | 17.7 | 0.892 | 16.8 | LOS B | 20.1 | 179.7 | 1.00 | 1.17 | 1.61 | 44.9 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 47 | 34.0 | 47 | 34.0 | 0.815 | 33.6 | LOS C | 11.9 | 99.6 | 1.00 | 1.39 | 1.95 | 42.0 |
| 11 | T1 | 5 | 40.0 | 5 | 40.0 | 0.815 | 34.1 | LOS C | 11.9 | 99.6 | 1.00 | 1.39 | 1.95 | 39.5 |
| 12 | R2 | 366 | 10.2 | 366 | 10.2 | 0.815 | 35.7 | LOS C | 11.9 | 99.6 | 1.00 | 1.39 | 1.95 | 43.4 |
| 12u | U | 3 | 0.0 | 3 | 0.0 | 0.815 | 37.0 | LOS C | 11.9 | 99.6 | 1.00 | 1.39 | 1.95 | 48.0 |
| Approach | | 422 | 13.2 | 422 | 13.2 | 0.815 | 35.4 | LOS C | 11.9 | 99.6 | 1.00 | 1.39 | 1.95 | 43.2 |
| All Vehicles | | 2402 | 22.4 | 2402 | 22.4 | 0.892 | 16.0 | LOS B | 20.1 | 179.7 | 0.90 | 0.97 | 1.31 | 46.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road AM (Site Folder: 2022 AM (7:45 - 8:45))]

## Network: N101 [base 2022 AM (7:45 - 8:45) (Network Folder: 2022)]

Reservoir Road / Site Access / Thornley Road - 2022 Existing Conditions
Site Category: Base Year
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 15 | 90.9 | 15 | 90.9 | 0.037 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.037 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.037 | 0.5 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 10.0 |
| Approach | | 17 | 76.9 | 17 | 76.9 | 0.037 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 100.0 | 1 | 100.0 | 0.029 | 6.3 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 47.2 |
| 5 | T1 | 17 | 76.9 | 17 | 76.9 | 0.029 | 0.0 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.8 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.029 | 5.5 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.8 |
| Approach | | 19 | 73.3 | 19 | 73.3 | 0.029 | 0.8 | NA | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.2 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.006 | 4.6 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 45.1 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.006 | 3.9 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 41.7 |
| 9 | R2 | 2 | 0.0 | 2 | 0.0 | 0.006 | 4.9 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 42.1 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.006 | 4.5 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 43.3 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.035 | 2.5 | LOS A | 0.2 | 2.1 | 0.14 | 0.33 | 0.14 | 50.8 |
| 11 | T1 | 11 | 33.3 | 11 | 33.3 | 0.035 | 0.2 | LOS A | 0.2 | 2.1 | 0.14 | 0.33 | 0.14 | 54.8 |
| 12 | R2 | 27 | 47.8 | 27 | 47.8 | 0.035 | 2.7 | LOS A | 0.2 | 2.1 | 0.14 | 0.33 | 0.14 | 32.5 |
| Approach | | 41 | 40.0 | 41 | 40.0 | 0.035 | 2.1 | NA | 0.2 | 2.1 | 0.14 | 0.33 | 0.14 | 43.8 |
| All Vehicles | | 84 | 52.4 | 84 | 52.4 | 0.037 | 1.6 | NA | 0.2 | 2.1 | 0.10 | 0.23 | 0.10 | 32.6 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road PM (Site Folder: 2022 PM (4:45 - 5:45))]

## Network: N101 [base 2022 PM (4:45 - 5:45) (Network Folder: 2022)]

Prospect Highway / Reservoir Road - 2022 Existing Conditions
Site Category: Base Year
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 273 | 8.3 | 273 | 8.3 | 0.871 | 6.2 | LOS A | 15.1 | 118.3 | 0.81 | 0.59 | 0.83 | 54.0 |
| 2 | T1 | 1003 | 8.6 | 1003 | 8.6 | 0.871 | 6.5 | LOS A | 15.1 | 118.3 | 0.81 | 0.59 | 0.83 | 50.8 |
| 3 | R2 | 2 | 50.0 | 2 | 50.0 | 0.871 | 14.3 | LOS A | 15.1 | 118.3 | 0.81 | 0.59 | 0.83 | 44.4 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.871 | 13.0 | LOS A | 15.1 | 118.3 | 0.81 | 0.59 | 0.83 | 52.8 |
| Approach | | 1279 | 8.6 | 1279 | 8.6 | 0.871 | 6.4 | LOS A | 15.1 | 118.3 | 0.81 | 0.59 | 0.83 | 51.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 33.3 | 16 | 33.3 | 0.079 | 4.5 | LOS A | 0.4 | 4.1 | 0.64 | 0.72 | 0.64 | 44.9 |
| 5 | T1 | 16 | 25.0 | 16 | 25.0 | 0.079 | 4.8 | LOS A | 0.4 | 4.1 | 0.64 | 0.72 | 0.64 | 54.4 |
| 6 | R2 | 30 | 31.8 | 30 | 31.8 | 0.079 | 9.1 | LOS A | 0.4 | 4.1 | 0.64 | 0.72 | 0.64 | 38.7 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.079 | 10.4 | LOS A | 0.4 | 4.1 | 0.64 | 0.72 | 0.64 | 18.4 |
| Approach | | 63 | 29.8 | 63 | 29.8 | 0.079 | 6.9 | LOS A | 0.4 | 4.1 | 0.64 | 0.72 | 0.64 | 46.5 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 40.0 | 26 | 40.0 | 0.438 | 6.0 | LOS A | 3.6 | 33.0 | 0.55 | 0.54 | 0.55 | 44.3 |
| 8 | T1 | 457 | 21.8 | 457 | 21.8 | 0.438 | 5.4 | LOS A | 3.6 | 33.0 | 0.55 | 0.54 | 0.55 | 51.6 |
| 9 | R2 | 74 | 16.9 | 74 | 16.9 | 0.438 | 10.0 | LOS A | 3.6 | 33.0 | 0.55 | 0.54 | 0.55 | 54.7 |
| 9u | U | 3 | 0.0 | 3 | 0.0 | 0.438 | 11.7 | LOS A | 3.6 | 33.0 | 0.55 | 0.54 | 0.55 | 52.9 |
| Approach | | 560 | 21.9 | 560 | 21.9 | 0.438 | 6.1 | LOS A | 3.6 | 33.0 | 0.55 | 0.54 | 0.55 | 52.1 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 163 | 5.1 | 163 | 5.1 | 0.738 | 28.4 | LOS B | 9.3 | 74.0 | 1.00 | 1.28 | 1.69 | 43.8 |
| 11 | T1 | 5 | 0.0 | 5 | 0.0 | 0.738 | 28.2 | LOS B | 9.3 | 74.0 | 1.00 | 1.28 | 1.69 | 41.0 |
| 12 | R2 | 170 | 13.6 | 170 | 13.6 | 0.738 | 34.1 | LOS C | 9.3 | 74.0 | 1.00 | 1.28 | 1.69 | 44.8 |
| 12u | U | 1 | 0.0 | 1 | 0.0 | 0.738 | 35.0 | LOS C | 9.3 | 74.0 | 1.00 | 1.28 | 1.69 | 49.3 |
| Approach | | 339 | 9.3 | 339 | 9.3 | 0.738 | 31.3 | LOS C | 9.3 | 74.0 | 1.00 | 1.28 | 1.69 | 44.3 |
| All Vehicles | | 2242 | 12.6 | 2242 | 12.6 | 0.871 | 10.1 | LOS A | 15.1 | 118.3 | 0.77 | 0.68 | 0.88 | 49.9 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road 2023 AM (No dev) (Site Folder: 2023 AM (No Development))]

## Network: N101 [2023 AM No Development (Network Folder: 2023 (No Development))]

Prospect Highway / Reservoir Road - 2023 AM (No dev)
Site Category: Future Conditions 1
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 168 | 23.5 | 168 | 23.5 | 0.804 | 6.2 | LOS A | 11.3 | 108.8 | 0.79 | 0.61 | 0.81 | 53.6 |
| 2 | T1 | 820 | 29.9 | 820 | 29.9 | 0.804 | 6.5 | LOS A | 11.3 | 108.8 | 0.79 | 0.61 | 0.81 | 50.2 |
| 3 | R2 | 10 | 60.0 | 10 | 60.0 | 0.804 | 13.0 | LOS A | 11.3 | 108.8 | 0.79 | 0.61 | 0.81 | 44.5 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.804 | 12.5 | LOS A | 11.3 | 108.8 | 0.79 | 0.61 | 0.81 | 52.9 |
| Approach | | 999 | 29.1 | 999 | 29.1 | 0.804 | 6.5 | LOS A | 11.3 | 108.8 | 0.79 | 0.61 | 0.81 | 51.1 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 100.0 | 5 | 100.0 | 0.292 | 35.9 | LOS C | 1.4 | 24.9 | 0.93 | 1.00 | 1.01 | 23.3 |
| 5 | T1 | 5 | 100.0 | 5 | 100.0 | 0.292 | 36.5 | LOS C | 1.4 | 24.9 | 0.93 | 1.00 | 1.01 | 37.6 |
| 6 | R2 | 20 | 75.0 | 20 | 75.0 | 0.292 | 39.1 | LOS C | 1.4 | 24.9 | 0.93 | 1.00 | 1.01 | 18.3 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.292 | 29.7 | LOS C | 1.4 | 24.9 | 0.93 | 1.00 | 1.01 | 4.4 |
| Approach | | 31 | 80.0 | 31 | 80.0 | 0.292 | 37.8 | LOS C | 1.4 | 24.9 | 0.93 | 1.00 | 1.01 | 23.0 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 19 | 31.6 | 19 | 31.6 | 0.916 | 19.9 | LOS B | 23.3 | 208.1 | 1.00 | 1.27 | 1.78 | 31.9 |
| 8 | T1 | 878 | 18.4 | 878 | 18.4 | 0.916 | 19.2 | LOS B | 23.3 | 208.1 | 1.00 | 1.27 | 1.78 | 42.2 |
| 9 | R2 | 90 | 7.9 | 90 | 7.9 | 0.916 | 23.2 | LOS B | 23.3 | 208.1 | 1.00 | 1.27 | 1.78 | 49.1 |
| 9u | U | 2 | 0.0 | 2 | 0.0 | 0.916 | 24.9 | LOS B | 23.3 | 208.1 | 1.00 | 1.27 | 1.78 | 42.5 |
| Approach | | 989 | 17.7 | 989 | 17.7 | 0.916 | 19.6 | LOS B | 23.3 | 208.1 | 1.00 | 1.27 | 1.78 | 43.1 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 48 | 33.3 | 48 | 33.3 | 0.871 | 43.2 | LOS D | 15.0 | 124.7 | 1.00 | 1.53 | 2.29 | 39.0 |
| 11 | T1 | 5 | 40.0 | 5 | 40.0 | 0.871 | 43.8 | LOS D | 15.0 | 124.7 | 1.00 | 1.53 | 2.29 | 36.1 |
| 12 | R2 | 375 | 10.2 | 375 | 10.2 | 0.871 | 45.3 | LOS D | 15.0 | 124.7 | 1.00 | 1.53 | 2.29 | 40.3 |
| 12u | U | 3 | 0.0 | 3 | 0.0 | 0.871 | 46.6 | LOS D | 15.0 | 124.7 | 1.00 | 1.53 | 2.29 | 45.4 |
| Approach | | 431 | 13.1 | 431 | 13.1 | 0.871 | 45.1 | LOS D | 15.0 | 124.7 | 1.00 | 1.53 | 2.29 | 40.2 |
| All Vehicles | | 2450 | 22.3 | 2450 | 22.3 | 0.916 | 19.0 | LOS B | 23.3 | 208.1 | 0.91 | 1.04 | 1.46 | 44.5 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2023 AM (No dev) (Site Folder: 2023 AM (No Development))]

## Network: N101 [2023 AM No Development (Network Folder: 2023 (No Development))]

Reservoir Road / Site Access / Thornley Road 2023 AM (No dev)
Site Category: Future Conditions 1
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 15 | 90.9 | 15 | 90.9 | 0.041 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.041 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.041 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 10.0 |
| Approach | | 17 | 76.9 | 17 | 76.9 | 0.041 | 0.4 | LOS A | 0.1 | 1.8 | 0.16 | 0.06 | 0.16 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 100.0 | 1 | 100.0 | 0.017 | 6.3 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 47.2 |
| 5 | T1 | 17 | 76.9 | 17 | 76.9 | 0.017 | 0.0 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.8 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.017 | 5.5 | LOS A | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.8 |
| Approach | | 19 | 73.3 | 19 | 73.3 | 0.017 | 0.8 | NA | 0.0 | 0.1 | 0.01 | 0.08 | 0.01 | 53.2 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.006 | 4.6 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 45.1 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.006 | 3.9 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 41.7 |
| 9 | R2 | 2 | 0.0 | 2 | 0.0 | 0.006 | 4.9 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 42.1 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.006 | 4.5 | LOS A | 0.0 | 0.1 | 0.05 | 0.49 | 0.05 | 43.3 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.035 | 2.5 | LOS A | 0.2 | 2.1 | 0.14 | 0.32 | 0.14 | 50.9 |
| 11 | T1 | 11 | 33.3 | 11 | 33.3 | 0.035 | 0.2 | LOS A | 0.2 | 2.1 | 0.14 | 0.32 | 0.14 | 54.9 |
| 12 | R2 | 26 | 50.0 | 26 | 50.0 | 0.035 | 2.7 | LOS A | 0.2 | 2.1 | 0.14 | 0.32 | 0.14 | 32.5 |
| Approach | | 40 | 41.2 | 40 | 41.2 | 0.035 | 2.0 | NA | 0.2 | 2.1 | 0.14 | 0.32 | 0.14 | 44.0 |
| All Vehicles | | 83 | 53.2 | 83 | 53.2 | 0.041 | 1.6 | NA | 0.2 | 2.1 | 0.11 | 0.22 | 0.11 | 32.6 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road 2023 PM (No dev) (Site Folder: 2023 PM (No Development))]

## Network: N101 [2023 PM No Development (Network Folder: 2023 (No Development))]

Prospect Highway / Reservoir Road 2023 PM (No dev)
Site Category: Future Conditions 1
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 278 | 8.2 | 278 | 8.2 | 0.892 | 6.9 | LOS A | 17.7 | 138.5 | 0.88 | 0.62 | 0.92 | 53.8 |
| 2 | T1 | 1023 | 8.6 | 1023 | 8.6 | 0.892 | 7.2 | LOS A | 17.7 | 138.5 | 0.88 | 0.62 | 0.92 | 50.5 |
| 3 | R2 | 2 | 50.0 | 2 | 50.0 | 0.892 | 15.3 | LOS B | 17.7 | 138.5 | 0.88 | 0.62 | 0.92 | 43.9 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.892 | 13.7 | LOS A | 17.7 | 138.5 | 0.88 | 0.62 | 0.92 | 52.4 |
| Approach | | 1305 | 8.6 | 1305 | 8.6 | 0.892 | 7.2 | LOS A | 17.7 | 138.5 | 0.88 | 0.62 | 0.92 | 51.6 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 33.3 | 16 | 33.3 | 0.080 | 4.7 | LOS A | 0.4 | 4.2 | 0.65 | 0.72 | 0.65 | 44.7 |
| 5 | T1 | 16 | 25.0 | 16 | 25.0 | 0.080 | 4.9 | LOS A | 0.4 | 4.2 | 0.65 | 0.72 | 0.65 | 54.3 |
| 6 | R2 | 30 | 31.8 | 30 | 31.8 | 0.080 | 9.2 | LOS A | 0.4 | 4.2 | 0.65 | 0.72 | 0.65 | 38.5 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.080 | 10.6 | LOS A | 0.4 | 4.2 | 0.65 | 0.72 | 0.65 | 18.1 |
| Approach | | 63 | 29.8 | 63 | 29.8 | 0.080 | 7.0 | LOS A | 0.4 | 4.2 | 0.65 | 0.72 | 0.65 | 46.4 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 40.0 | 26 | 40.0 | 0.450 | 6.0 | LOS A | 3.7 | 34.2 | 0.56 | 0.54 | 0.56 | 44.2 |
| 8 | T1 | 466 | 21.8 | 466 | 21.8 | 0.450 | 5.5 | LOS A | 3.7 | 34.2 | 0.56 | 0.54 | 0.56 | 51.6 |
| 9 | R2 | 78 | 16.0 | 78 | 16.0 | 0.450 | 10.0 | LOS A | 3.7 | 34.2 | 0.56 | 0.54 | 0.56 | 54.7 |
| 9u | U | 3 | 0.0 | 3 | 0.0 | 0.450 | 11.7 | LOS A | 3.7 | 34.2 | 0.56 | 0.54 | 0.56 | 52.8 |
| Approach | | 574 | 21.7 | 574 | 21.7 | 0.450 | 6.1 | LOS A | 3.7 | 34.2 | 0.56 | 0.54 | 0.56 | 52.1 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 166 | 5.0 | 166 | 5.0 | 0.810 | 38.1 | LOS C | 11.7 | 92.8 | 1.00 | 1.38 | 1.96 | 40.5 |
| 11 | T1 | 5 | 0.0 | 5 | 0.0 | 0.810 | 37.9 | LOS C | 11.7 | 92.8 | 1.00 | 1.38 | 1.96 | 37.3 |
| 12 | R2 | 173 | 13.3 | 173 | 13.3 | 0.810 | 43.8 | LOS D | 11.7 | 92.8 | 1.00 | 1.38 | 1.96 | 41.4 |
| 12u | U | 1 | 0.0 | 1 | 0.0 | 0.810 | 44.7 | LOS D | 11.7 | 92.8 | 1.00 | 1.38 | 1.96 | 46.4 |
| Approach | | 345 | 9.1 | 345 | 9.1 | 0.810 | 41.0 | LOS C | 11.7 | 92.8 | 1.00 | 1.38 | 1.96 | 41.0 |
| All Vehicles | | 2287 | 12.5 | 2287 | 12.5 | 0.892 | 12.0 | LOS A | 17.7 | 138.5 | 0.81 | 0.72 | 0.98 | 48.7 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2023 PM (No dev) (Site Folder: 2023 PM (No Development))]

## Network: N101 [2023 PM No Development (Network Folder: 2023 (No Development))]

Reservoir Road / Site Access / Thornley Road 2023 PM (No dev)
Site Category: Future Conditions 1
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 36 | 44.0 | 36 | 44.0 | 0.035 | 0.1 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.035 | 0.4 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.035 | 0.5 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 10.0 |
| Approach | | 39 | 40.7 | 39 | 40.7 | 0.035 | 0.1 | LOS A | 0.2 | 1.8 | 0.09 | 0.02 | 0.09 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 52.7 |
| 5 | T1 | 19 | 7.7 | 19 | 7.7 | 0.011 | 0.0 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.6 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 55.7 |
| Approach | | 21 | 6.7 | 21 | 6.7 | 0.011 | 0.7 | NA | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.0 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 1 | 0.0 | 1 | 0.0 | 0.016 | 4.6 | LOS A | 0.0 | 0.4 | 0.14 | 0.51 | 0.14 | 44.6 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.016 | 3.9 | LOS A | 0.0 | 0.4 | 0.14 | 0.51 | 0.14 | 41.0 |
| 9 | R2 | 12 | 25.0 | 12 | 25.0 | 0.016 | 5.7 | LOS A | 0.0 | 0.4 | 0.14 | 0.51 | 0.14 | 41.3 |
| Approach | | 15 | 20.0 | 15 | 20.0 | 0.016 | 5.4 | LOS A | 0.0 | 0.4 | 0.14 | 0.51 | 0.14 | 41.8 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 7 | 25.0 | 7 | 25.0 | 0.041 | 2.4 | LOS A | 0.2 | 2.3 | 0.09 | 0.32 | 0.09 | 41.0 |
| 11 | T1 | 17 | 40.0 | 17 | 40.0 | 0.041 | 0.1 | LOS A | 0.2 | 2.3 | 0.09 | 0.32 | 0.09 | 55.1 |
| 12 | R2 | 30 | 33.3 | 30 | 33.3 | 0.041 | 2.6 | LOS A | 0.2 | 2.3 | 0.09 | 0.32 | 0.09 | 33.4 |
| Approach | | 53 | 34.4 | 53 | 34.4 | 0.041 | 1.8 | NA | 0.2 | 2.3 | 0.09 | 0.32 | 0.09 | 44.4 |
| All Vehicles | | 129 | 30.0 | 129 | 30.0 | 0.041 | 1.5 | NA | 0.2 | 2.3 | 0.09 | 0.21 | 0.09 | 30.4 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road 2023 AM (Site Folder: 2023 AM (Development))]

## Network: N101 [2023 AM With Development (Network Folder: 2023 (Development))]

Prospect Highway / Reservoir Road 2023 AM
Site Category: Future Conditions 1
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 168 | 23.5 | 168 | 23.5 | 0.822 | 7.2 | LOS A | 12.6 | 122.2 | 0.84 | 0.66 | 0.89 | 53.4 |
| 2 | T1 | 820 | 29.9 | 820 | 29.9 | 0.822 | 7.5 | LOS A | 12.6 | 122.2 | 0.84 | 0.66 | 0.89 | 50.0 |
| 3 | R2 | 13 | 69.2 | 13 | 69.2 | 0.822 | 14.9 | LOS B | 12.6 | 122.2 | 0.84 | 0.66 | 0.89 | 44.1 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.822 | 13.5 | LOS A | 12.6 | 122.2 | 0.84 | 0.66 | 0.89 | 52.6 |
| Approach | | 1002 | 29.3 | 1002 | 29.3 | 0.822 | 7.6 | LOS A | 12.6 | 122.2 | 0.84 | 0.66 | 0.89 | 50.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 6 | 100.0 | 6 | 100.0 | 0.412 | 46.5 | LOS D | 1.3 | 24.9 | 0.95 | 1.07 | 1.17 | 20.2 |
| 5 | T1 | 6 | 100.0 | 6 | 100.0 | 0.412 | 47.1 | LOS D | 1.3 | 24.9 | 0.95 | 1.07 | 1.17 | 34.4 |
| 6 | R2 | 28 | 81.8 | 28 | 81.8 | 0.412 | 48.9 | LOS D | 1.3 | 24.9 | 0.95 | 1.07 | 1.17 | 15.8 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.412 | 38.1 | LOS C | 1.3 | 24.9 | 0.95 | 1.07 | 1.17 | 3.4 |
| Approach | | 41 | 84.8 | 41 | 84.8 | 0.412 | 47.9 | LOS D | 1.3 | 24.9 | 0.95 | 1.07 | 1.17 | 20.0 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 23 | 39.1 | 23 | 39.1 | 0.929 | 22.8 | LOS B | 25.4 | 227.5 | 1.00 | 1.34 | 1.91 | 30.3 |
| 8 | T1 | 878 | 18.4 | 878 | 18.4 | 0.929 | 21.3 | LOS B | 25.4 | 227.5 | 1.00 | 1.34 | 1.91 | 40.9 |
| 9 | R2 | 90 | 7.9 | 90 | 7.9 | 0.929 | 25.3 | LOS B | 25.4 | 227.5 | 1.00 | 1.34 | 1.91 | 48.1 |
| 9u | U | 2 | 0.0 | 2 | 0.0 | 0.929 | 27.0 | LOS B | 25.4 | 227.5 | 1.00 | 1.34 | 1.91 | 41.0 |
| Approach | | 993 | 17.9 | 993 | 17.9 | 0.929 | 21.7 | LOS B | 25.4 | 227.5 | 1.00 | 1.34 | 1.91 | 41.7 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 48 | 33.3 | 48 | 33.3 | 0.928 | 59.0 | LOS E | 19.4 | 162.1 | 1.00 | 1.74 | 2.81 | 34.9 |
| 11 | T1 | 6 | 50.0 | 6 | 50.0 | 0.928 | 61.7 | LOS E | 19.4 | 162.1 | 1.00 | 1.74 | 2.81 | 31.7 |
| 12 | R2 | 375 | 10.2 | 375 | 10.2 | 0.928 | 61.0 | LOS E | 19.4 | 162.1 | 1.00 | 1.74 | 2.81 | 36.1 |
| 12u | U | 3 | 0.0 | 3 | 0.0 | 0.928 | 62.3 | LOS E | 19.4 | 162.1 | 1.00 | 1.74 | 2.81 | 41.6 |
| Approach | | 432 | 13.3 | 432 | 13.3 | 0.928 | 60.8 | LOS E | 19.4 | 162.1 | 1.00 | 1.74 | 2.81 | 35.9 |
| All Vehicles | | 2468 | 22.9 | 2468 | 22.9 | 0.929 | 23.3 | LOS B | 25.4 | 227.5 | 0.93 | 1.13 | 1.64 | 42.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2023 AM (Site Folder: 2023 AM (Development))]

## Network: N101 [2023 AM With Development (Network Folder: 2023 (Development))]

Reservoir Road / Site Access / Thornley Road 2023 AM
Site Category: Future Conditions 1
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 25 | 94.7 | 25 | 94.7 | 0.072 | 0.5 | LOS A | 0.4 | 7.7 | 0.16 | 0.07 | 0.16 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.072 | 0.5 | LOS A | 0.4 | 7.7 | 0.16 | 0.07 | 0.16 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.072 | 0.6 | LOS A | 0.4 | 7.7 | 0.16 | 0.07 | 0.16 | 10.0 |
| Approach | | 28 | 85.7 | 28 | 85.7 | 0.072 | 0.5 | LOS A | 0.4 | 7.7 | 0.16 | 0.07 | 0.16 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 100.0 | 3 | 100.0 | 0.018 | 6.3 | LOS A | 0.3 | 4.2 | 0.01 | 0.11 | 0.01 | 46.3 |
| 5 | T1 | 17 | 76.9 | 17 | 76.9 | 0.018 | 0.0 | LOS A | 0.3 | 4.2 | 0.01 | 0.11 | 0.01 | 52.3 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.018 | 5.5 | LOS A | 0.3 | 4.2 | 0.01 | 0.11 | 0.01 | 53.0 |
| Approach | | 21 | 75.0 | 21 | 75.0 | 0.018 | 1.1 | NA | 0.3 | 4.2 | 0.01 | 0.11 | 0.01 | 51.5 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 4.6 | LOS A | 0.0 | 0.2 | 0.05 | 0.49 | 0.05 | 45.0 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.007 | 3.9 | LOS A | 0.0 | 0.2 | 0.05 | 0.49 | 0.05 | 41.6 |
| 9 | R2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 5.1 | LOS A | 0.0 | 0.2 | 0.05 | 0.49 | 0.05 | 42.0 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.007 | 4.5 | LOS A | 0.0 | 0.2 | 0.05 | 0.49 | 0.05 | 43.3 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.049 | 2.6 | LOS A | 0.2 | 3.4 | 0.15 | 0.34 | 0.15 | 50.7 |
| 11 | T1 | 11 | 33.3 | 11 | 33.3 | 0.049 | 0.3 | LOS A | 0.2 | 3.4 | 0.15 | 0.34 | 0.15 | 54.7 |
| 12 | R2 | 36 | 61.3 | 36 | 61.3 | 0.049 | 2.8 | LOS A | 0.2 | 3.4 | 0.15 | 0.34 | 0.15 | 31.7 |
| Approach | | 51 | 51.2 | 51 | 51.2 | 0.049 | 2.3 | NA | 0.2 | 3.4 | 0.15 | 0.34 | 0.15 | 41.6 |
| All Vehicles | | 105 | 62.1 | 105 | 62.1 | 0.072 | 1.7 | NA | 0.4 | 7.7 | 0.12 | 0.23 | 0.12 | 29.7 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101 [Prospect Highway / Reservoir Road 2023 PM (Site Folder: 2023 PM (Development))]

## Network: N101 [2023 PM With Development (Network Folder: 2023 (Development))]

Prospect Highway / Reservoir Road 2023 PM
Site Category: Future Conditions 1
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 278 | 8.2 | 278 | 8.2 | 0.906 | 8.3 | LOS A | 20.1 | 157.2 | 0.93 | 0.69 | 1.03 | 53.6 |
| 2 | T1 | 1023 | 8.6 | 1023 | 8.6 | 0.906 | 8.6 | LOS A | 20.1 | 157.2 | 0.93 | 0.69 | 1.03 | 50.1 |
| 3 | R2 | 2 | 50.0 | 2 | 50.0 | 0.906 | 17.2 | LOS B | 20.1 | 157.2 | 0.93 | 0.69 | 1.03 | 43.4 |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.906 | 15.0 | LOS B | 20.1 | 157.2 | 0.93 | 0.69 | 1.03 | 52.1 |
| Approach | | 1305 | 8.6 | 1305 | 8.6 | 0.906 | 8.6 | LOS A | 20.1 | 157.2 | 0.93 | 0.69 | 1.03 | 51.3 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 20 | 46.7 | 20 | 46.7 | 0.109 | 5.1 | LOS A | 0.6 | 6.1 | 0.66 | 0.75 | 0.66 | 43.8 |
| 5 | T1 | 20 | 33.3 | 20 | 33.3 | 0.109 | 5.1 | LOS A | 0.6 | 6.1 | 0.66 | 0.75 | 0.66 | 53.8 |
| 6 | R2 | 38 | 39.3 | 38 | 39.3 | 0.109 | 9.5 | LOS A | 0.6 | 6.1 | 0.66 | 0.75 | 0.66 | 36.6 |
| 6u | U | 1 | 0.0 | 1 | 0.0 | 0.109 | 10.6 | LOS A | 0.6 | 6.1 | 0.66 | 0.75 | 0.66 | 17.7 |
| Approach | | 80 | 39.0 | 80 | 39.0 | 0.109 | 7.3 | LOS A | 0.6 | 6.1 | 0.66 | 0.75 | 0.66 | 45.1 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 34 | 45.5 | 34 | 45.5 | 0.461 | 6.3 | LOS A | 3.8 | 35.7 | 0.56 | 0.55 | 0.56 | 44.2 |
| 8 | T1 | 466 | 21.8 | 466 | 21.8 | 0.461 | 5.5 | LOS A | 3.8 | 35.7 | 0.56 | 0.55 | 0.56 | 51.5 |
| 9 | R2 | 78 | 16.0 | 78 | 16.0 | 0.461 | 10.0 | LOS A | 3.8 | 35.7 | 0.56 | 0.55 | 0.56 | 54.7 |
| 9u | U | 3 | 0.0 | 3 | 0.0 | 0.461 | 11.7 | LOS A | 3.8 | 35.7 | 0.56 | 0.55 | 0.56 | 52.8 |
| Approach | | 582 | 22.3 | 582 | 22.3 | 0.461 | 6.2 | LOS A | 3.8 | 35.7 | 0.56 | 0.55 | 0.56 | 52.0 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 166 | 5.0 | 166 | 5.0 | 0.858 | 47.5 | LOS D | 13.7 | 108.7 | 1.00 | 1.48 | 2.20 | 37.7 |
| 11 | T1 | 5 | 0.0 | 5 | 0.0 | 0.858 | 47.4 | LOS D | 13.7 | 108.7 | 1.00 | 1.48 | 2.20 | 34.3 |
| 12 | R2 | 173 | 13.3 | 173 | 13.3 | 0.858 | 53.3 | LOS D | 13.7 | 108.7 | 1.00 | 1.48 | 2.20 | 38.6 |
| 12u | U | 1 | 0.0 | 1 | 0.0 | 0.858 | 54.1 | LOS D | 13.7 | 108.7 | 1.00 | 1.48 | 2.20 | 44.0 |
| Approach | | 345 | 9.1 | 345 | 9.1 | 0.858 | 50.4 | LOS D | 13.7 | 108.7 | 1.00 | 1.48 | 2.20 | 38.2 |
| All Vehicles | | 2312 | 13.2 | 2312 | 13.2 | 0.906 | 14.2 | LOS A | 20.1 | 157.2 | 0.84 | 0.77 | 1.07 | 47.5 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2023 PM (Site Folder: 2023 PM (Development))]

## Network: N101 [2023 PM With Development (Network Folder: 2023 (Development))]

Reservoir Road / Site Access / Thornley Road 2023 PM
Site Category: Future Conditions 1
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 53 | 54.1 | 53 | 54.1 | 0.053 | 0.1 | LOS A | 0.2 | 3.1 | 0.10 | 0.03 | 0.10 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.053 | 0.5 | LOS A | 0.2 | 3.1 | 0.10 | 0.03 | 0.10 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.053 | 0.6 | LOS A | 0.2 | 3.1 | 0.10 | 0.03 | 0.10 | 10.0 |
| Approach | | 56 | 51.3 | 56 | 51.3 | 0.053 | 0.2 | LOS A | 0.2 | 3.1 | 0.10 | 0.03 | 0.10 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 52.7 |
| 5 | T1 | 19 | 7.7 | 19 | 7.7 | 0.011 | 0.0 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.6 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 55.7 |
| Approach | | 21 | 6.7 | 21 | 6.7 | 0.011 | 0.8 | NA | 0.0 | 0.1 | 0.02 | 0.08 | 0.02 | 57.0 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 1 | 0.0 | 1 | 0.0 | 0.022 | 4.6 | LOS A | 0.1 | 0.5 | 0.17 | 0.52 | 0.17 | 44.4 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.022 | 4.0 | LOS A | 0.1 | 0.5 | 0.17 | 0.52 | 0.17 | 40.7 |
| 9 | R2 | 15 | 40.0 | 15 | 40.0 | 0.022 | 6.5 | LOS A | 0.1 | 0.5 | 0.17 | 0.52 | 0.17 | 40.9 |
| Approach | | 18 | 33.3 | 18 | 33.3 | 0.022 | 6.1 | LOS A | 0.1 | 0.5 | 0.17 | 0.52 | 0.17 | 41.4 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 8 | 40.0 | 8 | 40.0 | 0.057 | 2.4 | LOS A | 0.3 | 3.6 | 0.10 | 0.33 | 0.10 | 36.7 |
| 11 | T1 | 17 | 40.0 | 17 | 40.0 | 0.057 | 0.1 | LOS A | 0.3 | 3.6 | 0.10 | 0.33 | 0.10 | 54.8 |
| 12 | R2 | 42 | 44.0 | 42 | 44.0 | 0.057 | 2.6 | LOS A | 0.3 | 3.6 | 0.10 | 0.33 | 0.10 | 32.7 |
| Approach | | 67 | 42.5 | 67 | 42.5 | 0.057 | 2.0 | NA | 0.3 | 3.6 | 0.10 | 0.33 | 0.10 | 41.3 |
| All Vehicles | | 162 | 39.8 | 162 | 39.8 | 0.057 | 1.6 | NA | 0.3 | 3.6 | 0.10 | 0.21 | 0.10 | 28.0 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 AM signalised upgrade (No dev) (Site Folder: 2033 AM (No Development))]

## Network: N101 [2033 AM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Prospect Highway / Reservoir Road 2033 AM signalised upgrade (No dev)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 205 | 23.2 | 205 | 23.2 | 0.801 | 38.6 | LOS C | 36.1 | 343.9 | 0.91 | 0.85 | 0.92 | 41.8 |
| 2 | T1 | 998 | 29.9 | 998 | 29.9 | 0.801 | 33.8 | LOS C | 36.1 | 343.9 | 0.91 | 0.84 | 0.92 | 33.5 |
| 3 | R2 | 10 | 60.0 | 10 | 60.0 | * 0.232 | 83.3 | LOS F | 0.8 | 11.7 | 1.00 | 0.69 | 1.00 | 13.7 |
| Approach | | 1213 | 29.0 | 1213 | 29.0 | 0.801 | 35.0 | LOS C | 36.1 | 343.9 | 0.91 | 0.84 | 0.92 | 35.4 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 5 | 100.0 | 5 | 100.0 | 0.161 | 76.3 | LOS F | 0.7 | 13.2 | 0.97 | 0.69 | 0.97 | 14.5 |
| 5 | T1 | 5 | 100.0 | 5 | 100.0 | 0.161 | 71.1 | LOS F | 0.7 | 13.2 | 0.97 | 0.69 | 0.97 | 28.8 |
| 6 | R2 | 23 | 72.2 | 23 | 72.2 | 0.097 | 46.0 | LOS D | 1.0 | 18.0 | 0.79 | 0.69 | 0.79 | 15.9 |
| Approach | | 33 | 80.8 | 33 | 80.8 | 0.161 | 54.5 | LOS D | 1.0 | 18.0 | 0.85 | 0.69 | 0.85 | 18.6 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 20 | 30.0 | 20 | 30.0 | 0.382 | 29.4 | LOS C | 13.3 | 121.3 | 0.67 | 0.60 | 0.67 | 28.2 |
| 8 | T1 | 1072 | 18.5 | 1072 | 18.5 | * 0.982 | 66.1 | LOS E | 71.6 | 646.4 | 0.91 | 1.03 | 1.16 | 24.1 |
| 9 | R2 | 111 | 7.3 | 111 | 7.3 | 0.809 | 82.6 | LOS F | 6.0 | 45.9 | 1.00 | 0.85 | 1.21 | 30.3 |
| Approach | | 1202 | 17.7 | 1202 | 17.7 | 0.982 | 67.0 | LOS E | 71.6 | 646.4 | 0.91 | 1.01 | 1.16 | 25.0 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 60 | 33.9 | 60 | 33.9 | 0.374 | 69.5 | LOS E | 4.2 | 47.5 | 0.96 | 0.77 | 0.96 | 31.5 |
| 11 | T1 | 5 | 40.0 | 5 | 40.0 | * 0.374 | 63.0 | LOS E | 4.2 | 47.5 | 0.96 | 0.77 | 0.96 | 29.5 |
| 12 | R2 | 459 | 10.1 | 459 | 10.1 | * 0.994 | 108.0 | LOS F | 43.4 | 342.4 | 1.00 | 1.10 | 1.49 | 27.0 |
| Approach | | 524 | 13.1 | 524 | 13.1 | 0.994 | 103.2 | LOS F | 43.4 | 342.4 | 1.00 | 1.06 | 1.43 | 27.5 |
| All Vehicles | | 2972 | 22.2 | 2972 | 22.2 | 0.994 | 60.2 | LOS E | 71.6 | 646.4 | 0.93 | 0.95 | 1.11 | 28.8 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | |
| P1 | Full | 11 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 257.7 | 232.3 | 0.90 |
| West: Reservoir Road (W) | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P4 | Full | 11 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 249.0 | 221.8 | 0.89 |
| All Pedestrians | | 21 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 253.4 | 227.1 | 0.90 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2033 AM signalised upgrade (No dev) (Site Folder: 2033 AM (No Development))]

## Network: N101 [2033 AM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Reservoir Road / Site Access / Thornley Road 2033 AM signalised upgrade (No dev)
Site Category: Future Conditions 2
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 15 | 90.9 | 15 | 90.9 | 0.027 | 0.2 | LOS A | 0.1 | 1.8 | 0.10 | 0.03 | 0.10 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.027 | 0.5 | LOS A | 0.1 | 1.8 | 0.10 | 0.03 | 0.10 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.027 | 0.6 | LOS A | 0.1 | 1.8 | 0.10 | 0.03 | 0.10 | 10.0 |
| Approach | | 17 | 76.9 | 17 | 76.9 | 0.027 | 0.3 | LOS A | 0.1 | 1.8 | 0.10 | 0.03 | 0.10 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 100.0 | 1 | 100.0 | 0.012 | 6.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 49.5 |
| 5 | T1 | 21 | 75.0 | 21 | 75.0 | 0.012 | 0.0 | LOS A | 0.2 | 3.5 | 0.01 | 0.06 | 0.01 | 57.2 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.2 | 3.5 | 0.02 | 0.07 | 0.02 | 56.5 |
| Approach | | 23 | 72.2 | 23 | 72.2 | 0.012 | 0.7 | NA | 0.2 | 3.5 | 0.01 | 0.06 | 0.01 | 56.5 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 4.6 | LOS A | 0.0 | 0.2 | 0.06 | 0.48 | 0.06 | 45.0 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.007 | 4.2 | LOS A | 0.0 | 0.2 | 0.06 | 0.48 | 0.06 | 41.5 |
| 9 | R2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 5.1 | LOS A | 0.0 | 0.2 | 0.06 | 0.48 | 0.06 | 41.9 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.007 | 4.6 | LOS A | 0.0 | 0.2 | 0.06 | 0.48 | 0.06 | 43.2 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.043 | 2.7 | LOS A | 0.2 | 2.0 | 0.11 | 0.31 | 0.11 | 50.9 |
| 11 | T1 | 13 | 36.4 | 13 | 36.4 | 0.043 | 0.3 | LOS A | 0.2 | 2.0 | 0.11 | 0.31 | 0.11 | 54.9 |
| 12 | R2 | 26 | 50.0 | 26 | 50.0 | 0.043 | 2.9 | LOS A | 0.2 | 2.0 | 0.11 | 0.31 | 0.11 | 32.8 |
| Approach | | 42 | 41.7 | 42 | 41.7 | 0.043 | 2.1 | NA | 0.2 | 2.0 | 0.11 | 0.31 | 0.11 | 45.0 |
| All Vehicles | | 89 | 53.7 | 89 | 53.7 | 0.043 | 1.5 | NA | 0.2 | 3.5 | 0.08 | 0.20 | 0.08 | 34.5 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 PM signalised upgrade (No dev) (Site Folder: 2033 PM (No Development))]

## Network: N101 [2033 PM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Prospect Highway / Reservoir Road 2033 PM signalised upgrade (No dev)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Practical Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 339 | 8.2 | 339 | 8.2 | * 0.850 | 33.0 | LOS C | 38.1 | 296.4 | 0.93 | 0.92 | 1.01 | 44.1 |
| 2 | T1 | 1247 | 8.5 | 1247 | 8.5 | 0.850 | 28.5 | LOS B | 38.1 | 296.4 | 0.94 | 0.92 | 1.02 | 35.9 |
| 3 | R2 | 2 | 50.0 | 2 | 50.0 | 0.033 | 57.6 | LOS E | 0.1 | 1.6 | 0.96 | 0.62 | 0.96 | 18.0 |
| Approach | | 1589 | 8.5 | 1589 | 8.5 | 0.850 | 29.5 | LOS C | 38.1 | 296.4 | 0.93 | 0.92 | 1.02 | 38.4 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 30.8 | 16 | 30.8 | 0.248 | 51.0 | LOS D | 1.6 | 14.2 | 0.97 | 0.72 | 0.97 | 19.3 |
| 5 | T1 | 16 | 23.1 | 16 | 23.1 | 0.248 | 48.4 | LOS D | 1.6 | 14.2 | 0.97 | 0.72 | 0.97 | 34.5 |
| 6 | R2 | 29 | 30.4 | 29 | 30.4 | 0.155 | 45.1 | LOS D | 1.3 | 14.0 | 0.91 | 0.72 | 0.91 | 18.0 |
| Approach | | 61 | 28.6 | 61 | 28.6 | 0.248 | 47.5 | LOS D | 1.6 | 14.2 | 0.94 | 0.72 | 0.94 | 24.2 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 26 | 38.5 | 26 | 38.5 | 0.198 | 20.3 | LOS B | 4.2 | 41.3 | 0.58 | 0.52 | 0.58 | 35.0 |
| 8 | T1 | 551 | 21.9 | 551 | 21.9 | 0.509 | 17.2 | LOS B | 13.6 | 124.9 | 0.68 | 0.61 | 0.68 | 43.1 |
| 9 | R2 | 93 | 16.3 | 93 | 16.3 | * 0.697 | 60.5 | LOS E | 3.6 | 30.5 | 1.00 | 0.80 | 1.14 | 34.7 |
| Approach | | 670 | 21.8 | 670 | 21.8 | 0.697 | 23.3 | LOS B | 13.6 | 124.9 | 0.72 | 0.63 | 0.74 | 40.5 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 195 | 4.7 | 195 | 4.7 | 0.619 | 48.3 | LOS D | 9.3 | 69.1 | 0.98 | 0.82 | 0.98 | 37.9 |
| 11 | T1 | 6 | 0.0 | 6 | 0.0 | * 0.619 | 42.6 | LOS D | 9.3 | 69.1 | 0.98 | 0.82 | 0.98 | 34.7 |
| 12 | R2 | 203 | 13.4 | 203 | 13.4 | 0.820 | 57.8 | LOS E | 10.8 | 91.1 | 1.00 | 0.94 | 1.25 | 36.1 |
| Approach | | 404 | 9.0 | 404 | 9.0 | 0.820 | 53.0 | LOS D | 10.8 | 91.1 | 0.99 | 0.88 | 1.12 | 36.9 |
| All Vehicles | | 2724 | 12.3 | 2724 | 12.3 | 0.850 | 31.8 | LOS C | 38.1 | 296.4 | 0.89 | 0.84 | 0.96 | 38.2 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | |
| P1 | Full | 11 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 237.8 | 232.3 | 0.98 |
| West: Reservoir Road (W) | | | | | | | | | | | |
| P4 | Full | 11 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 229.0 | 221.8 | 0.97 |
| All Pedestrians | | 21 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 233.4 | 227.1 | 0.97 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\Users\DD392\Beca\2527456 - Prospect South Expansion - Documents\Technical - Working Files\06 - Traffic\SIDRA\AmeriCold Model.sip9

# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2033 PM signalised upgrade (No dev) (Site Folder: 2033 PM (No Development))]

## Network: N101 [2033 PM Signalised Upgrade No Dev (Network Folder: 2033 (TfNSW signalised upgrade - No Dev))]

Reservoir Road / Site Access / Thornley Road 2033 PM signalised upgrade (No dev)
Site Category: Future Conditions 2
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 33 | 44.0 | 33 | 44.0 | 0.044 | 0.1 | LOS A | 0.1 | 1.7 | 0.10 | 0.03 | 0.10 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.044 | 0.4 | LOS A | 0.1 | 1.7 | 0.10 | 0.03 | 0.10 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.044 | 0.5 | LOS A | 0.1 | 1.7 | 0.10 | 0.03 | 0.10 | 10.0 |
| Approach | | 36 | 40.7 | 36 | 40.7 | 0.044 | 0.2 | LOS A | 0.1 | 1.7 | 0.10 | 0.03 | 0.10 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 1 | 0.0 | 0.016 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.04 | 0.00 | 53.7 |
| 5 | T1 | 21 | 6.3 | 21 | 6.3 | 0.016 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.04 | 0.00 | 59.0 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 5.6 | LOS A | 0.0 | 0.0 | 0.09 | 0.54 | 0.09 | 50.3 |
| Approach | | 23 | 5.6 | 23 | 5.6 | 0.016 | 0.6 | NA | 0.0 | 0.0 | 0.01 | 0.06 | 0.01 | 57.7 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.029 | 4.6 | LOS A | 0.1 | 0.6 | 0.15 | 0.49 | 0.15 | 44.6 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.029 | 4.1 | LOS A | 0.1 | 0.6 | 0.15 | 0.49 | 0.15 | 41.0 |
| 9 | R2 | 16 | 25.0 | 16 | 25.0 | 0.029 | 5.8 | LOS A | 0.1 | 0.6 | 0.15 | 0.49 | 0.15 | 41.2 |
| Approach | | 20 | 20.0 | 20 | 20.0 | 0.029 | 5.5 | LOS A | 0.1 | 0.6 | 0.15 | 0.49 | 0.15 | 41.8 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 5 | 25.0 | 5 | 25.0 | 0.035 | 2.5 | LOS A | 0.1 | 1.6 | 0.08 | 0.30 | 0.08 | 41.2 |
| 11 | T1 | 14 | 41.7 | 14 | 41.7 | 0.035 | 0.1 | LOS A | 0.1 | 1.6 | 0.08 | 0.30 | 0.08 | 55.2 |
| 12 | R2 | 21 | 33.3 | 21 | 33.3 | 0.035 | 2.7 | LOS A | 0.1 | 1.6 | 0.08 | 0.30 | 0.08 | 34.0 |
| Approach | | 40 | 35.3 | 40 | 35.3 | 0.035 | 1.8 | NA | 0.1 | 1.6 | 0.08 | 0.30 | 0.08 | 45.5 |
| All Vehicles | | 119 | 28.6 | 119 | 28.6 | 0.044 | 1.7 | NA | 0.1 | 1.7 | 0.08 | 0.20 | 0.08 | 31.4 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 AM signalised upgrade (with development) (Site Folder: 2033 AM (Development))]

## Network: N101 [2033 AM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Prospect Highway / Reservoir Road 2033 AM signalised upgrade (with development)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 205 | 23.2 | 205 | 23.2 | 0.805 | 38.9 | LOS C | 36.5 | 348.2 | 0.91 | 0.85 | 0.92 | 41.7 |
| 2 | T1 | 998 | 29.9 | 998 | 29.9 | 0.805 | 34.2 | LOS C | 36.5 | 348.2 | 0.91 | 0.84 | 0.93 | 33.4 |
| 3 | R2 | 14 | 71.4 | 14 | 71.4 | * 0.356 | 85.0 | LOS F | 1.1 | 18.7 | 1.00 | 0.71 | 1.00 | 13.5 |
| Approach | | 1217 | 29.3 | 1217 | 29.3 | 0.805 | 35.6 | LOS C | 36.5 | 348.2 | 0.91 | 0.84 | 0.93 | 35.1 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 8 | 100.0 | 8 | 100.0 | 0.242 | 77.2 | LOS F | 0.9 | 18.0 | 0.98 | 0.71 | 0.98 | 14.3 |
| 5 | T1 | 8 | 100.0 | 8 | 100.0 | 0.242 | 72.0 | LOS F | 0.9 | 18.0 | 0.98 | 0.71 | 0.98 | 28.6 |
| 6 | R2 | 30 | 79.2 | 30 | 79.2 | 0.134 | 46.6 | LOS D | 1.0 | 18.0 | 0.80 | 0.70 | 0.80 | 15.5 |
| Approach | | 45 | 86.1 | 45 | 86.1 | 0.242 | 55.9 | LOS D | 1.0 | 18.0 | 0.86 | 0.70 | 0.86 | 18.4 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 25 | 40.0 | 25 | 40.0 | 0.385 | 29.6 | LOS C | 13.3 | 122.8 | 0.67 | 0.60 | 0.67 | 28.1 |
| 8 | T1 | 1072 | 18.5 | 1072 | 18.5 | * 0.989 | 69.6 | LOS E | 74.0 | 667.8 | 0.91 | 1.05 | 1.19 | 23.4 |
| 9 | R2 | 111 | 7.3 | 111 | 7.3 | 0.809 | 82.6 | LOS F | 6.0 | 45.9 | 1.00 | 0.85 | 1.21 | 30.3 |
| Approach | | 1207 | 17.9 | 1207 | 17.9 | 0.989 | 70.0 | LOS E | 74.0 | 667.8 | 0.91 | 1.03 | 1.18 | 24.3 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 60 | 33.9 | 60 | 33.9 | 0.393 | 69.8 | LOS E | 4.3 | 49.4 | 0.97 | 0.77 | 0.97 | 31.5 |
| 11 | T1 | 6 | 50.0 | 6 | 50.0 | * 0.393 | 63.3 | LOS E | 4.3 | 49.4 | 0.97 | 0.77 | 0.97 | 29.4 |
| 12 | R2 | 459 | 10.1 | 459 | 10.1 | * 0.995 | 108.7 | LOS F | 43.5 | 343.4 | 1.00 | 1.11 | 1.50 | 26.9 |
| Approach | | 525 | 13.3 | 525 | 13.3 | 0.995 | 103.8 | LOS F | 43.5 | 343.4 | 1.00 | 1.06 | 1.43 | 27.4 |
| All Vehicles | | 2994 | 22.7 | 2994 | 22.7 | 0.995 | 61.7 | LOS E | 74.0 | 667.8 | 0.93 | 0.95 | 1.12 | 28.4 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | |
| P1 | Full | 11 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 257.7 | 232.3 | 0.90 |
| West: Reservoir Road (W) | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P4 | Full | 11 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 249.0 | 221.8 | 0.89 |
| All Pedestrians | | 21 | 64.2 | LOS F | 0.0 | 0.0 | 0.96 | 0.96 | 253.4 | 227.1 | 0.90 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2033 AM signalised upgrade (with development) (Site Folder: 2033 AM (Development))]

## Network: N101 [2033 AM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Reservoir Road / Site Access / Thornley Road 2033 AM signalised upgrade (with development)
Site Category: Future Conditions 2
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 25 | 94.7 | 25 | 94.7 | 0.071 | 0.2 | LOS A | 0.2 | 3.3 | 0.10 | 0.04 | 0.10 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.071 | 0.7 | LOS A | 0.2 | 3.3 | 0.10 | 0.04 | 0.10 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.071 | 0.8 | LOS A | 0.2 | 3.3 | 0.10 | 0.04 | 0.10 | 10.0 |
| Approach | | 28 | 85.7 | 28 | 85.7 | 0.071 | 0.3 | LOS A | 0.2 | 3.3 | 0.10 | 0.04 | 0.10 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 3 | 100.0 | 3 | 100.0 | 0.011 | 6.1 | LOS A | 0.0 | 0.4 | 0.00 | 0.10 | 0.00 | 48.1 |
| 5 | T1 | 21 | 75.0 | 21 | 75.0 | 0.011 | 0.0 | LOS A | 0.5 | 11.9 | 0.01 | 0.09 | 0.01 | 55.9 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.5 | 11.9 | 0.02 | 0.08 | 0.02 | 56.4 |
| Approach | | 24 | 73.7 | 24 | 73.7 | 0.011 | 0.9 | NA | 0.5 | 11.9 | 0.01 | 0.09 | 0.01 | 54.9 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 4.6 | LOS A | 0.1 | 0.9 | 0.06 | 0.48 | 0.06 | 44.9 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.007 | 4.3 | LOS A | 0.1 | 0.9 | 0.06 | 0.48 | 0.06 | 41.4 |
| 9 | R2 | 2 | 0.0 | 2 | 0.0 | 0.007 | 5.3 | LOS A | 0.1 | 0.9 | 0.06 | 0.48 | 0.06 | 41.8 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.007 | 4.7 | LOS A | 0.1 | 0.9 | 0.06 | 0.48 | 0.06 | 43.1 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 4 | 0.0 | 4 | 0.0 | 0.061 | 2.8 | LOS A | 0.2 | 3.2 | 0.13 | 0.33 | 0.13 | 50.6 |
| 11 | T1 | 13 | 36.4 | 13 | 36.4 | 0.061 | 0.4 | LOS A | 0.2 | 3.2 | 0.13 | 0.33 | 0.13 | 54.5 |
| 12 | R2 | 36 | 61.3 | 36 | 61.3 | 0.061 | 3.0 | LOS A | 0.2 | 3.2 | 0.13 | 0.33 | 0.13 | 31.9 |
| Approach | | 53 | 51.1 | 53 | 51.1 | 0.061 | 2.4 | NA | 0.2 | 3.2 | 0.13 | 0.33 | 0.13 | 42.5 |
| All Vehicles | | 111 | 62.0 | 111 | 62.0 | 0.071 | 1.7 | NA | 0.5 | 11.9 | 0.09 | 0.21 | 0.09 | 31.3 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 101v [Prospect Highway / Reservoir Road 2033 PM signalised upgrade (with development) (Site Folder: 2033 PM (Development))]

## Network: N101 [2033 PM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Prospect Highway / Reservoir Road 2033 PM signalised upgrade (with development)
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated  Cycle Time = 100 seconds (Site Practical Cycle Time)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | | | | |
| 1 | L2 | 339 | 8.2 | 339 | 8.2 | * 0.850 | 33.0 | LOS C | 38.1 | 296.4 | 0.93 | 0.92 | 1.01 | 44.1 |
| 2 | T1 | 1247 | 8.5 | 1247 | 8.5 | 0.850 | 28.5 | LOS B | 38.1 | 296.4 | 0.94 | 0.92 | 1.02 | 35.9 |
| 3 | R2 | 2 | 50.0 | 2 | 50.0 | 0.033 | 57.6 | LOS E | 0.1 | 1.6 | 0.96 | 0.62 | 0.96 | 18.0 |
| Approach | | 1589 | 8.5 | 1589 | 8.5 | 0.850 | 29.5 | LOS C | 38.1 | 296.4 | 0.93 | 0.92 | 1.02 | 38.4 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 20 | 43.8 | 20 | 43.8 | 0.324 | 51.7 | LOS D | 1.8 | 18.0 | 0.97 | 0.73 | 0.97 | 19.0 |
| 5 | T1 | 20 | 31.3 | 20 | 31.3 | 0.324 | 49.1 | LOS D | 1.8 | 18.0 | 0.97 | 0.73 | 0.97 | 34.3 |
| 6 | R2 | 38 | 40.0 | 38 | 40.0 | 0.220 | 45.8 | LOS D | 1.5 | 18.0 | 0.92 | 0.73 | 0.92 | 17.3 |
| Approach | | 78 | 38.7 | 78 | 38.7 | 0.324 | 48.2 | LOS D | 1.8 | 18.0 | 0.95 | 0.73 | 0.95 | 23.6 |
| North: Prospect Highway (N) | | | | | | | | | | | | | | |
| 7 | L2 | 35 | 48.6 | 35 | 48.6 | 0.203 | 20.5 | LOS B | 4.2 | 43.2 | 0.58 | 0.54 | 0.58 | 34.8 |
| 8 | T1 | 551 | 21.9 | 551 | 21.9 | 0.523 | 17.4 | LOS B | 14.1 | 129.4 | 0.69 | 0.62 | 0.69 | 42.9 |
| 9 | R2 | 93 | 16.3 | 93 | 16.3 | * 0.697 | 60.5 | LOS E | 3.6 | 30.5 | 1.00 | 0.80 | 1.14 | 34.7 |
| Approach | | 679 | 22.5 | 679 | 22.5 | 0.697 | 23.4 | LOS B | 14.1 | 129.4 | 0.73 | 0.64 | 0.75 | 40.4 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 195 | 4.7 | 195 | 4.7 | 0.619 | 48.3 | LOS D | 9.3 | 69.1 | 0.98 | 0.82 | 0.98 | 37.9 |
| 11 | T1 | 6 | 0.0 | 6 | 0.0 | * 0.619 | 42.6 | LOS D | 9.3 | 69.1 | 0.98 | 0.82 | 0.98 | 34.7 |
| 12 | R2 | 203 | 13.4 | 203 | 13.4 | 0.820 | 57.8 | LOS E | 10.8 | 91.1 | 1.00 | 0.94 | 1.25 | 36.1 |
| Approach | | 404 | 9.0 | 404 | 9.0 | 0.820 | 53.0 | LOS D | 10.8 | 91.1 | 0.99 | 0.88 | 1.12 | 36.9 |
| All Vehicles | | 2749 | 12.9 | 2749 | 12.9 | 0.850 | 31.9 | LOS C | 38.1 | 296.4 | 0.89 | 0.84 | 0.96 | 38.1 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

**Pedestrian Movement Performance**

| Mov ID | Crossing | Dem. Flow ped/h | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Ped ped | Dist ] m | Prop. Que | Effective Stop Rate | Travel Time sec | Travel Dist. m | Aver. Speed m/sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Prospect Highway (S) | | | | | | | | | | | |
| P1 | Full | 11 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 237.8 | 232.3 | 0.98 |
| West: Reservoir Road (W) | | | | | | | | | | | |
| P4 | Full | 11 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 229.0 | 221.8 | 0.97 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| All Pedestrians | 21 | 44.2 | LOS E | 0.0 | 0.0 | 0.94 | 0.94 | 233.4 | 227.1 | 0.97 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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# MOVEMENT SUMMARY

## Site: 102 [Reservoir Road / Site Access / Thornley Road 2033 PM signalised upgrade (with development) (Site Folder: 2033 PM (Development))]

## Network: N101 [2033 PM Signalised Upgrade with Dev (Network Folder: 2033 (TfNSW signalised upgrade + Development))]

Reservoir Road / Site Access / Thornley Road 2033 PM signalised upgrade (with development)
Site Category: Future Conditions 2
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Site Access (S) | | | | | | | | | | | | | | |
| 1 | L2 | 49 | 54.1 | 49 | 54.1 | 0.097 | 0.2 | LOS A | 0.2 | 2.9 | 0.11 | 0.03 | 0.11 | 9.9 |
| 2 | T1 | 1 | 0.0 | 1 | 0.0 | 0.097 | 0.6 | LOS A | 0.2 | 2.9 | 0.11 | 0.03 | 0.11 | 10.0 |
| 3 | R2 | 1 | 0.0 | 1 | 0.0 | 0.097 | 0.6 | LOS A | 0.2 | 2.9 | 0.11 | 0.03 | 0.11 | 10.0 |
| Approach | | 52 | 51.3 | 52 | 51.3 | 0.097 | 0.2 | LOS A | 0.2 | 2.9 | 0.11 | 0.03 | 0.11 | 9.9 |
| East: Reservoir Road (E) | | | | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 1 | 0.0 | 0.012 | 5.5 | LOS A | 0.0 | 0.4 | 0.00 | 0.04 | 0.00 | 53.7 |
| 5 | T1 | 21 | 6.3 | 21 | 6.3 | 0.012 | 0.0 | LOS A | 0.0 | 0.4 | 0.00 | 0.04 | 0.00 | 59.0 |
| 6 | R2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 5.6 | LOS A | 0.0 | 0.0 | 0.09 | 0.53 | 0.09 | 50.3 |
| Approach | | 23 | 5.6 | 23 | 5.6 | 0.012 | 0.6 | NA | 0.0 | 0.4 | 0.01 | 0.06 | 0.01 | 57.7 |
| North: Thornley Road (N) | | | | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 2 | 0.0 | 0.056 | 4.6 | LOS A | 0.2 | 2.1 | 0.18 | 0.50 | 0.18 | 44.3 |
| 8 | T1 | 2 | 0.0 | 2 | 0.0 | 0.056 | 4.2 | LOS A | 0.2 | 2.1 | 0.18 | 0.50 | 0.18 | 40.6 |
| 9 | R2 | 20 | 40.0 | 20 | 40.0 | 0.056 | 6.6 | LOS A | 0.2 | 2.1 | 0.18 | 0.50 | 0.18 | 40.7 |
| Approach | | 24 | 33.3 | 24 | 33.3 | 0.056 | 6.2 | LOS A | 0.2 | 2.1 | 0.18 | 0.50 | 0.18 | 41.2 |
| West: Reservoir Road (W) | | | | | | | | | | | | | | |
| 10 | L2 | 6 | 40.0 | 6 | 40.0 | 0.049 | 2.5 | LOS A | 0.2 | 2.4 | 0.09 | 0.32 | 0.09 | 36.8 |
| 11 | T1 | 14 | 41.7 | 14 | 41.7 | 0.049 | 0.2 | LOS A | 0.2 | 2.4 | 0.09 | 0.32 | 0.09 | 55.0 |
| 12 | R2 | 29 | 44.0 | 29 | 44.0 | 0.049 | 2.8 | LOS A | 0.2 | 2.4 | 0.09 | 0.32 | 0.09 | 33.2 |
| Approach | | 49 | 42.9 | 49 | 42.9 | 0.049 | 2.0 | NA | 0.2 | 2.4 | 0.09 | 0.32 | 0.09 | 42.5 |
| All Vehicles | | 149 | 38.5 | 149 | 38.5 | 0.097 | 1.8 | NA | 0.2 | 2.9 | 0.10 | 0.21 | 0.10 | 28.9 |

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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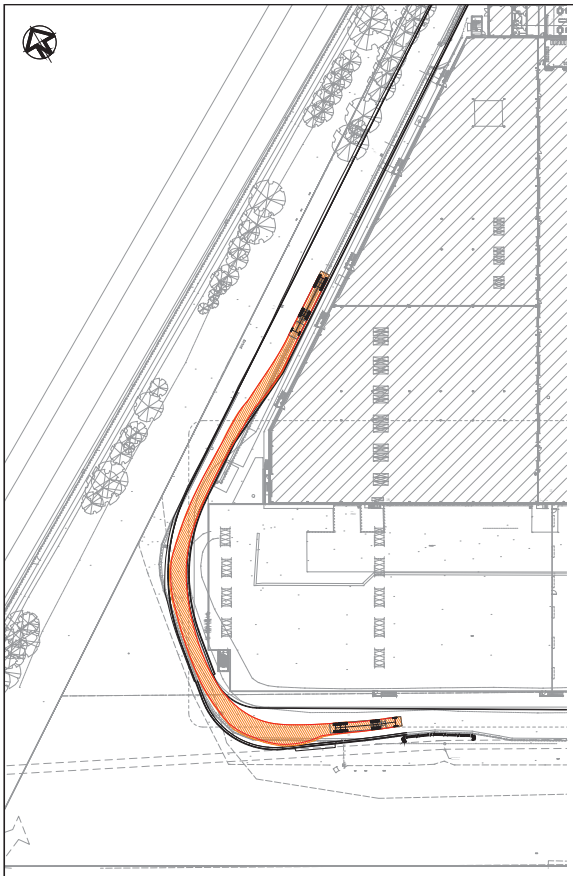
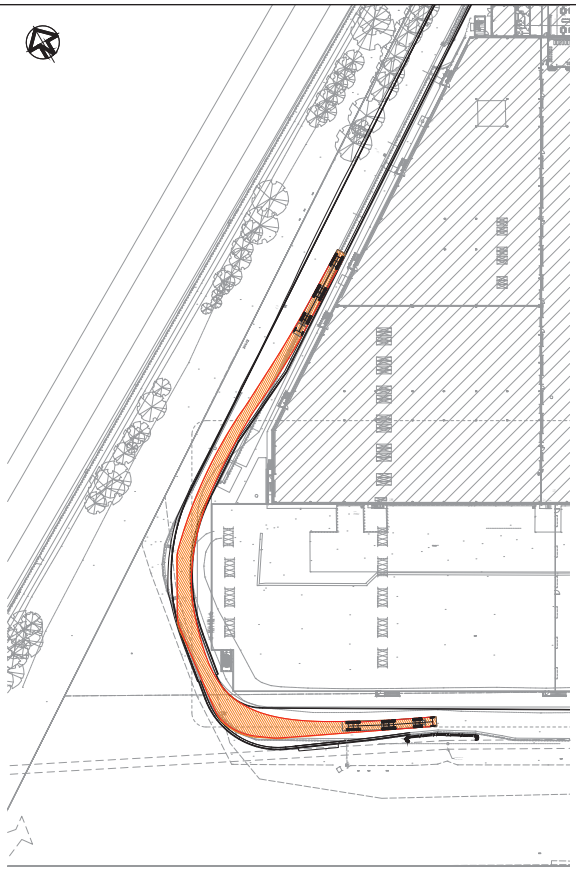
# D

## Appendix D – Swept paths





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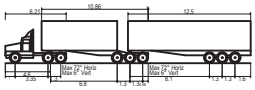
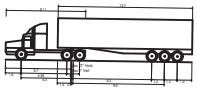


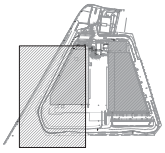

B-Double (25.0m)

| | |
|---|---|
| Overall Length | 25.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.300m |
| Min Body Ground Clearance | 0.540m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 15.000m |




Prime mover and semi-trailer (19 m)

| | |
|---|---|
| Overall Length | 19.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.300m |
| Min Body Ground Clearance | 0.540m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 12.500m |



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|---|---|---|---|---|---|
| B | UPDATED WITH DESIGN VEHICLE DETAILS | H.K | B.D | C.O | 20.05.22 |
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| | Drg Check | B.STRANG 10.05.22 |
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Project: PROSPECT SOUTH EXPANSION CIVIL WORKS

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SHEET 1 OF 5

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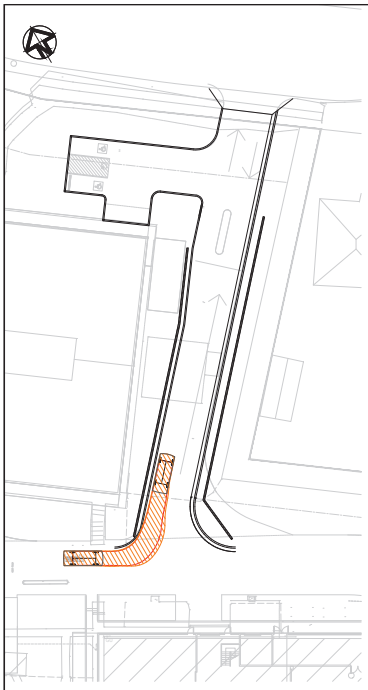
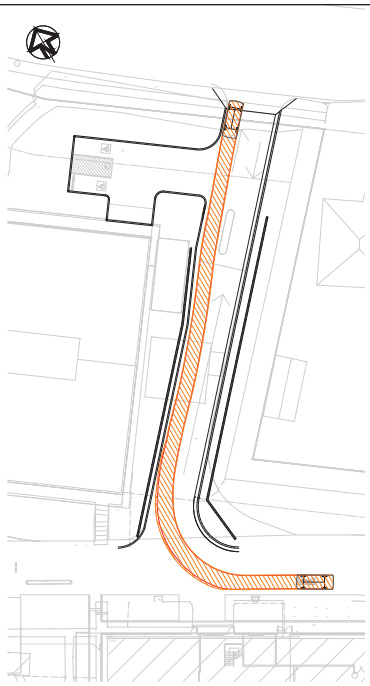
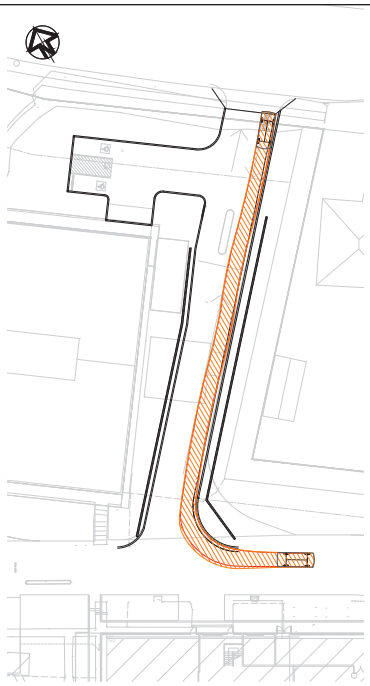
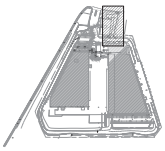






BB5 Vehicle (8m min radius) (2004)

| | |
|---|---|
| Overall Length | 4.910m |
| Overall Width | 1.870m |
| Overall Body Height | 1.421m |
| Min Body Ground Clearance | 0.159m |
| Track Width | 1.770m |
| Lock-to-lock time | 4.00s |
| Curb to Curb Turning Radius | 8.000m |



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Project: PROSPECT SOUTH EXPANSION CIVIL WORKS

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Discipline: CIVIL

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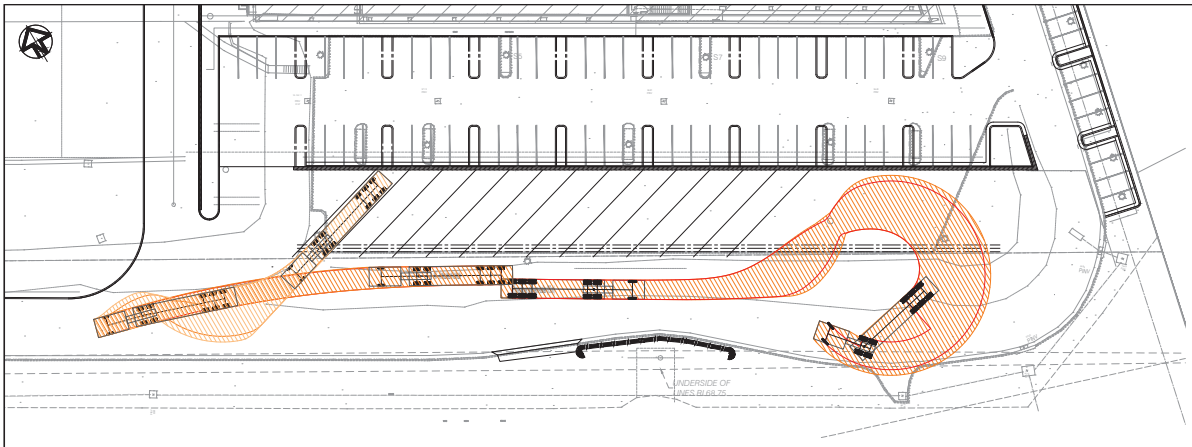


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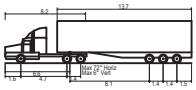
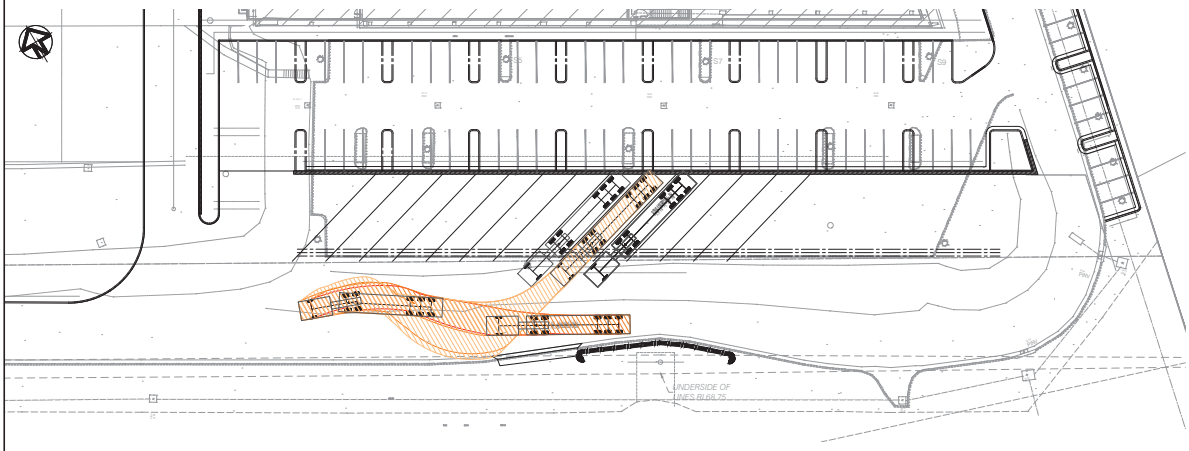
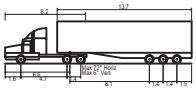



AV - Articulated Vehicle

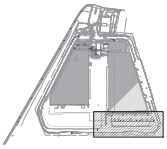
| | |
|---|---|
| Overall Length | 19.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.301m |
| Min Body Ground Clearance | 0.418m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 12.500m |




AV - Articulated Vehicle

| | |
|---|---|
| Overall Length | 19.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.301m |
| Min Body Ground Clearance | 0.418m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 12.500m |



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| B | UPDATED WITH DESIGN VEHICLE DETAILS | A.K | B.D | C.O | 20.05.22 |
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Project: PROSPECT SOUTH EXPANSION CIVIL WORKS

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Discipline: CIVIL

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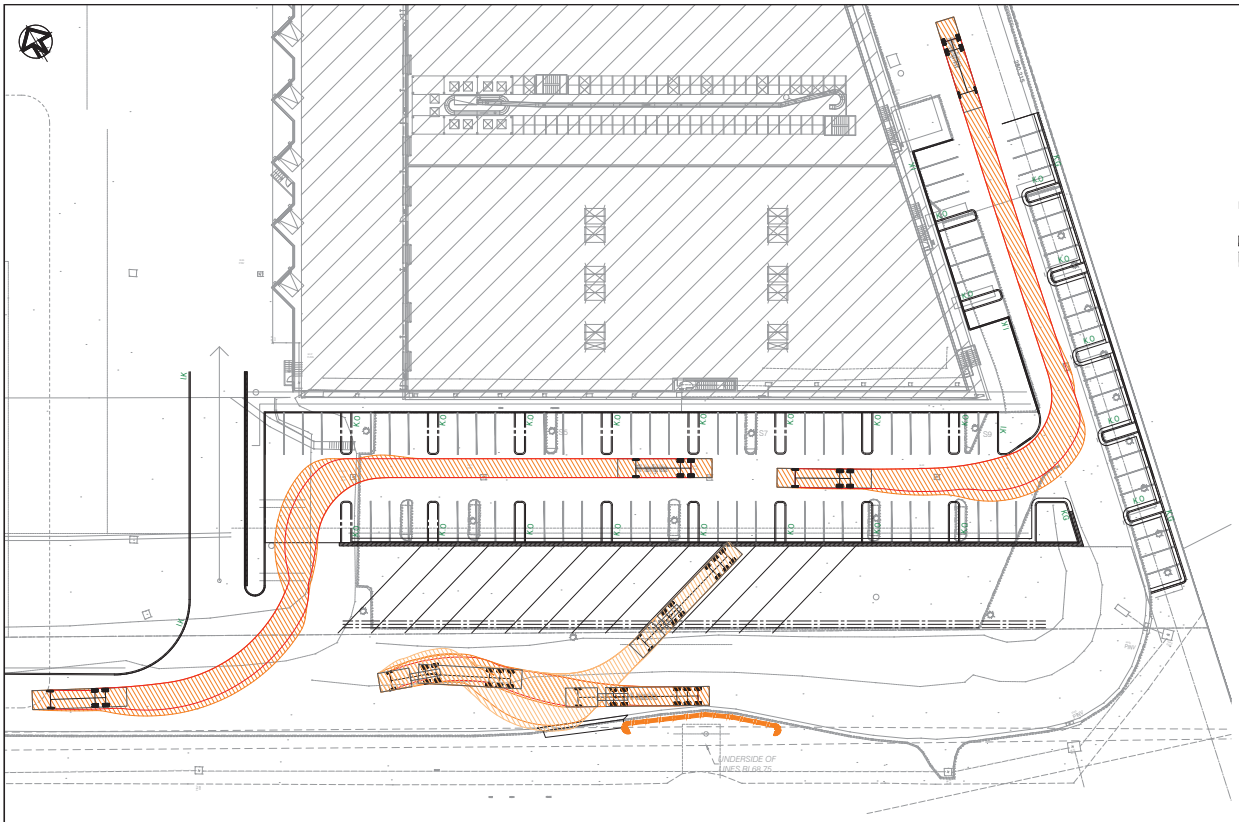
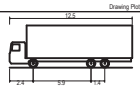
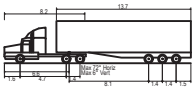


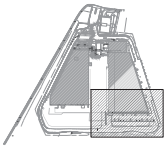

HRV - Heavy Rigid Vehicle

| | |
|---|---|
| Overall Length | 12.500m |
| Overall Width | 2.500m |
| Overall Body Height | 4.300m |
| Min Body Ground Clearance | 0.417m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 12.500m |




AV - Articulated Vehicle

| | |
|---|---|
| Overall Length | 19.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.301m |
| Min Body Ground Clearance | 0.418m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 12.500m |



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SHEET 4 OF 5

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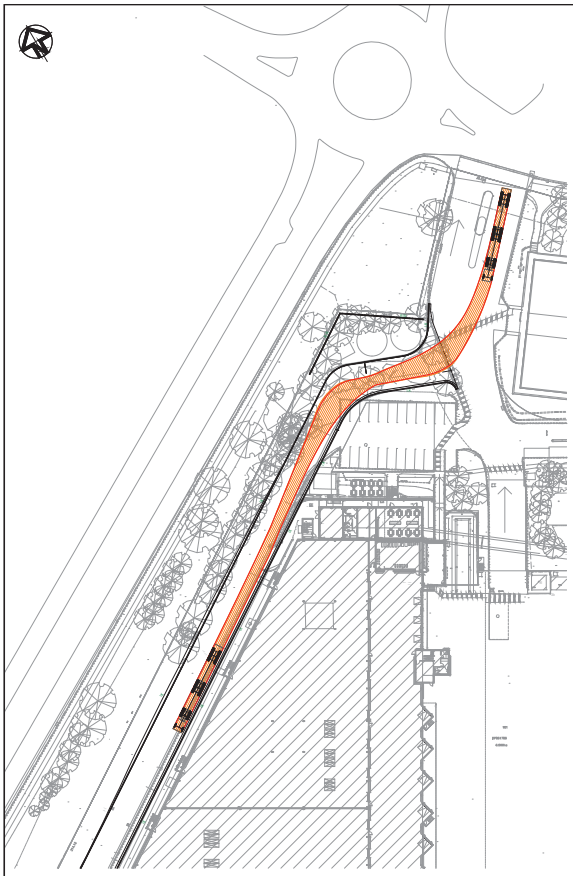
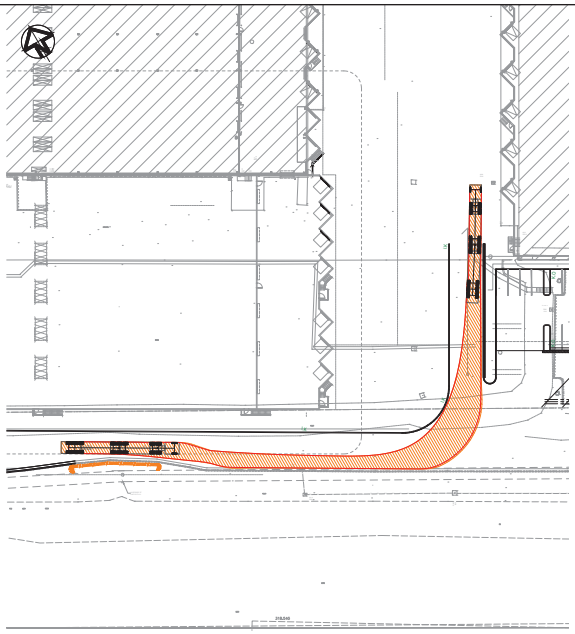
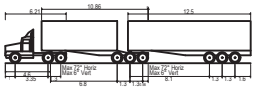
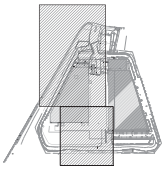







B-Double (25.0m)

| | |
|---|---|
| Overall Length | 25.000m |
| Overall Width | 2.500m |
| Overall Body Height | 4.300m |
| Min Body Ground Clearance | 0.540m |
| Track Width | 2.500m |
| Lock-to-lock time | 6.00s |
| Curb to Curb Turning Radius | 15.000m |



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| No. | Revision | By | Chk | Appd | Date |
|---|---|---|---|---|---|
| A | ISSUE A FOR EIS | H.A | S.D | C.O | 20.09.22 |

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| | Drawn | H.ALMAGHI 20.09.22 |
| Reduced Scale (A3) | Dwg Verifier | C.OMEG 20.09.22 |
| | Dwg Check | B.STRANG 20.09.22 |
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Project: PROSPECT SOUTH EXPANSION CIVIL WORKS

Title: VEHICLE TRACKING

SHEET 5 OF 5

Discipline: CIVIL

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# E

## Appendix E – Surveyed Traffic Volumes Comparison

**Comparison of Traffic Volumes on Prospect Highway / Reservoir Road across 3 surveyed days**

Survey conducted 16/03/2022 = peak hour

***All Vehicles***

| Time | | North Approach Prospect Hwy | | | | East Approach Reservoir Rd | | | | South Approach Prospect Hwy | | | | West Approach Reservoir Rd | | | | Hourly Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | L | U | R | WB | L | U | R | NB | L | U | R | EB | L | Hour |
| 7:00 | 7:15 | 0 | 18 | 217 | 5 | 0 | 3 | 1 | 1 | 0 | 0 | 195 | 36 | 0 | 88 | 3 | 8 | 2319 |
| 7:15 | 7:30 | 1 | 20 | 186 | 3 | 0 | 4 | 1 | 0 | 0 | 0 | 203 | 39 | 0 | 88 | 2 | 10 | 2317 |
| 7:30 | 7:45 | 0 | 25 | 186 | 3 | 0 | 6 | 1 | 1 | 0 | 2 | 205 | 37 | 1 | 84 | 1 | 17 | 2339 |
| 7:45 | 8:00 | 0 | 25 | 235 | 3 | 0 | 4 | 0 | 0 | 0 | 3 | 194 | 57 | 1 | 90 | 1 | 5 | 2351 |
| 8:00 | 8:15 | 1 | 23 | 190 | 8 | 0 | 6 | 0 | 0 | 0 | 3 | 197 | 35 | 0 | 94 | 2 | 14 | 2295 |
| 8:15 | 8:30 | 1 | 22 | 209 | 4 | 0 | 4 | 2 | 3 | 0 | 1 | 202 | 38 | 2 | 78 | 2 | 11 | |
| 8:30 | 8:45 | 0 | 17 | 222 | 4 | 0 | 2 | 2 | 1 | 0 | 3 | 183 | 29 | 0 | 101 | 0 | 17 | |
| 8:45 | 9:00 | 0 | 31 | 209 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 185 | 34 | 0 | 71 | 1 | 24 | |
| 16:00 | 16:15 | 0 | 14 | 118 | 1 | 1 | 13 | 0 | 1 | 0 | 0 | 221 | 56 | 0 | 46 | 0 | 55 | 2098 |
| 16:15 | 16:30 | 0 | 8 | 111 | 7 | 0 | 5 | 0 | 2 | 0 | 2 | 236 | 53 | 0 | 52 | 0 | 25 | 2105 |
| 16:30 | 16:45 | 0 | 22 | 119 | 3 | 0 | 5 | 2 | 1 | 0 | 0 | 229 | 68 | 1 | 40 | 1 | 32 | 2135 |
| 16:45 | 17:00 | 1 | 20 | 117 | 10 | 0 | 4 | 3 | 0 | 0 | 0 | 244 | 65 | 0 | 41 | 2 | 41 | 2143 |
| 17:00 | 17:15 | 1 | 17 | 103 | 11 | 0 | 10 | 1 | 4 | 0 | 1 | 235 | 65 | 0 | 40 | 3 | 42 | 2092 |
| 17:15 | 17:30 | 1 | 13 | 103 | 3 | 0 | 6 | 6 | 4 | 0 | 1 | 255 | 60 | 0 | 40 | 0 | 39 | |
| 17:30 | 17:45 | 0 | 21 | 117 | 1 | 0 | 2 | 2 | 4 | 0 | 0 | 235 | 74 | 0 | 41 | 0 | 34 | |
| 17:45 | 18:00 | 0 | 16 | 115 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 221 | 57 | 1 | 44 | 2 | 34 | |

Survey conducted 24/08/2022

| Time | | North Approach Prospect Hwy | | | | East Approach Reservoir Rd | | | | South Approach Prospect Hwy | | | | West Approach Reservoir Rd | | | | Hourly Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | L | U | R | WB | L | U | R | NB | L | U | R | EB | L | Hour |
| 7:00 | 7:15 | 1 | 23 | 171 | 11 | 0 | 3 | 4 | 2 | 0 | 1 | 190 | 32 | 0 | 86 | 3 | 13 | 2171 |
| 7:15 | 7:30 | 4 | 14 | 189 | 3 | 0 | 3 | 2 | 2 | 0 | 2 | 180 | 31 | 0 | 67 | 3 | 23 | 2171 |
| 7:30 | 7:45 | 6 | 25 | 169 | 5 | 0 | 3 | 0 | 0 | 1 | 0 | 197 | 46 | 0 | 70 | 2 | 13 | 2184 |
| 7:45 | 8:00 | 3 | 25 | 201 | 3 | 0 | 4 | 3 | 0 | 1 | 3 | 183 | 42 | 0 | 87 | 2 | 14 | 2174 |
| 8:00 | 8:15 | 2 | 26 | 197 | 3 | 0 | 6 | 3 | 3 | 0 | 2 | 173 | 35 | 0 | 75 | 2 | 13 | 2152 |
| 8:15 | 8:30 | 2 | 27 | 176 | 4 | 0 | 2 | 2 | 0 | 0 | 3 | 174 | 29 | 0 | 105 | 3 | 9 | |
| 8:30 | 8:45 | 5 | 19 | 204 | 7 | 0 | 7 | 3 | 1 | 0 | 1 | 163 | 33 | 1 | 67 | 2 | 14 | |
| 8:45 | 9:00 | 1 | 21 | 203 | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 190 | 46 | 0 | 60 | 4 | 16 | |
| 16:00 | 16:15 | 2 | 23 | 123 | 1 | 0 | 3 | 4 | 1 | 0 | 0 | 224 | 69 | 0 | 38 | 2 | 63 | 2168 |
| 16:15 | 16:30 | 0 | 24 | 117 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 251 | 52 | 0 | 49 | 0 | 35 | 2158 |
| 16:30 | 16:45 | 1 | 6 | 136 | 4 | 0 | 5 | 3 | 2 | 1 | 3 | 248 | 59 | 0 | 40 | 3 | 34 | 2155 |
| 16:45 | 17:00 | 1 | 20 | 122 | 7 | 0 | 5 | 0 | 1 | 0 | 1 | 245 | 57 | 0 | 28 | 2 | 42 | 2106 |
| 17:00 | 17:15 | 1 | 13 | 116 | 7 | 0 | 9 | 4 | 3 | 0 | 2 | 228 | 73 | 0 | 36 | 1 | 50 | 2001 |
| 17:15 | 17:30 | 1 | 17 | 111 | 4 | 0 | 8 | 3 | 1 | 0 | 4 | 264 | 55 | 0 | 34 | 3 | 31 | |
| 17:30 | 17:45 | 2 | 8 | 114 | 5 | 0 | 7 | 5 | 2 | 0 | 0 | 239 | 54 | 1 | 40 | 1 | 18 | |
| 17:45 | 18:00 | 0 | 13 | 120 | 3 | 0 | 5 | 1 | 3 | 0 | 1 | 178 | 41 | 0 | 40 | 0 | 21 | |

Survey conducted 25/08/2022

| Time | | North Approach Prospect Hwy | | | | East Approach Reservoir Rd | | | | South Approach Prospect Hwy | | | | West Approach Reservoir Rd | | | | Hourly Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Start | Period End | U | R | SB | L | U | R | WB | L | U | R | NB | L | U | R | EB | L | Hour |
| 7:00 | 7:15 | 2 | 29 | 220 | 0 | 0 | 3 | 0 | 1 | 0 | 2 | 160 | 26 | 0 | 61 | 0 | 9 | 2161 |
| 7:15 | 7:30 | 3 | 22 | 199 | 5 | 0 | 1 | 2 | 1 | 2 | 2 | 188 | 50 | 0 | 80 | 3 | 12 | 2180 |
| 7:30 | 7:45 | 0 | 37 | 162 | 3 | 0 | 3 | 1 | 0 | 0 | 1 | 200 | 37 | 0 | 93 | 1 | 13 | 2143 |
| 7:45 | 8:00 | 0 | 33 | 176 | 0 | 0 | 2 | 1 | 1 | 0 | 5 | 172 | 33 | 0 | 91 | 1 | 12 | 2107 |
| 8:00 | 8:15 | 0 | 26 | 200 | 5 | 0 | 3 | 2 | 3 | 0 | 1 | 157 | 36 | 0 | 78 | 3 | 18 | 2123 |
| 8:15 | 8:30 | 0 | 26 | 209 | 1 | 0 | 1 | 2 | 2 | 0 | 3 | 160 | 32 | 0 | 85 | 1 | 11 | |
| 8:30 | 8:45 | 2 | 22 | 178 | 5 | 0 | 3 | 3 | 0 | 1 | 1 | 172 | 37 | 0 | 75 | 3 | 13 | |
| 8:45 | 9:00 | 0 | 23 | 180 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 191 | 46 | 0 | 70 | 2 | 26 | |
| 16:00 | 16:15 | 0 | 14 | 142 | 1 | 0 | 2 | 1 | 2 | 0 | 0 | 226 | 62 | 0 | 47 | 1 | 54 | 2133 |
| 16:15 | 16:30 | 0 | 15 | 127 | 3 | 0 | 3 | 2 | 0 | 0 | 1 | 245 | 53 | 0 | 41 | 0 | 57 | 2098 |
| 16:30 | 16:45 | 1 | 10 | 128 | 2 | 0 | 4 | 0 | 1 | 0 | 2 | 246 | 59 | 0 | 40 | 1 | 37 | 2046 |
| 16:45 | 17:00 | 1 | 18 | 119 | 7 | 0 | 4 | 1 | 1 | 0 | 1 | 233 | 59 | 0 | 34 | 0 | 25 | 2010 |
| 17:00 | 17:15 | 1 | 7 | 92 | 11 | 0 | 2 | 3 | 3 | 0 | 3 | 233 | 74 | 0 | 41 | 0 | 47 | 1978 |
| 17:15 | 17:30 | 2 | 11 | 109 | 4 | 0 | 13 | 3 | 4 | 0 | 1 | 236 | 44 | 1 | 29 | 1 | 37 | |
| 17:30 | 17:45 | 0 | 12 | 101 | 2 | 0 | 9 | 2 | 3 | 0 | 0 | 233 | 63 | 0 | 33 | 1 | 36 | |
| 17:45 | 18:00 | 2 | 18 | 112 | 2 | 0 | 2 | 1 | 1 | 0 | 1 | 219 | 60 | 0 | 27 | 2 | 24 | |