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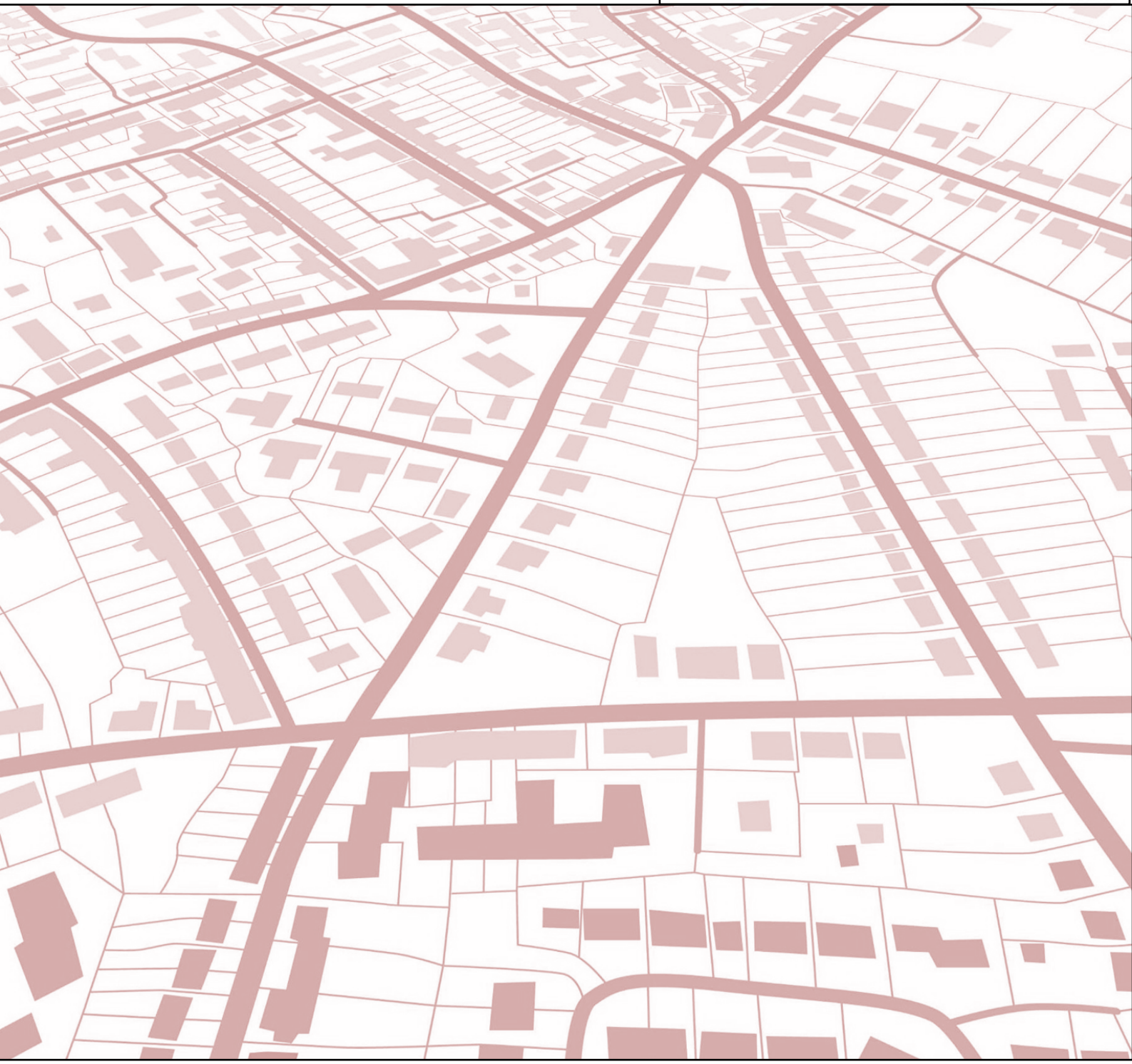
The Traffic Controllers Pty Ltd
ABN 65 602 952 723
422/1 Avro Street
Bankstown Aerodrome NSW 2200
https://ttcnsw.com.au/



Proposed – Double-R Industrial Development

1 Marathon Street Westdale

Traffic Impact Assessment

Ref: CJS3717
Date: 26 September 2024 – V1.2

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1. Introduction to the scope of development

This report has been prepared to accompany a development application to Council for a mixed-use development located at 1 Marathon Street, Westdale - Proposed Lot 307 in Lot 82 DP 1299265 previously Lot 97 DP 1286236.

The proposed development involves the erection of a large industrial building consisting of a showroom, workshop, parts sales, associated storage, staff amenities, ancillary offices, advertising structures, outdoor heavy vehicle display area, customer and employee parking, hardstand manoeuvring, and associated landscaping.

The proposed building and site are to be used for a heavy machinery services and sales business.

The subject site is located within the “Lot 307 in Lot 82 DP 1299265 previously Lot 97 DP 1286236”, as outlined in Proposed Double-R Industrial Development plan – the aim is to construct a functioning business spark while meeting the requirements of the TfNSW - File No: NTH24/00598/001 and : DA2024-0314.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- The development is supported by a robust and reliable Transport Impact Assessment (TIA), prepared by a suitably qualified person in accordance with the *Austroads Guide to Traffic Management Part 12*, the complementary TfNSW supplements and *RTA Guide to Traffic Generating Developments*.
- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic condition on that road network
- reviews the public transport services available in the vicinity of the site
- estimates the traffic generation potential of the development proposal and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the development proposal in terms of road network capacity

- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards

- assesses the adequacy and suitability of the quantum of off-streetcar parking and loading provided on the site.

1 Marathon St, Westdale NSW 2340, (Figure 1).

The proposed development scheme represents the of works which will confirm the traffic impacts and parking assessment of the driveway access application as well as ingress and egress of vehicles from the area that may impact public traffic.

Driveways must be provided in accordance with *AS2890.1 Parking Facilities*.

The proposed development scheme involves:

- Local parking facilities
- Car parking spaces

The purpose of the report is to:

- Describe the site, its context, and the proposed development scheme.
- Describe the existing road network and traffic circumstances.
- assess the potential traffic implications.
- assess the adequacy of the proposed on-site parking provision.
- assess the appropriateness of the proposed vehicle access, internal circulation, and servicing arrangements.

1.1 Assessment terminology and tools

- ADT (Average Daily Traffic): The total traffic volume during a given time period, ranging from 2 to 364 consecutive days, divided by the number of days in that time period, and expressed in VPD (vehicles per day).

- AADT (Annual Average Daily Traffic): Average daily traffic on a roadway link for all days of the week during a period of one year, expressed in vpd (vehicles per day).

- ATR (Automatic Traffic Recorder): A monitoring device that counts traffic volume in number of vehicles continuously, round the clock, and throughout the year at the roadway segment where it is installed.

- AVC (Automatic Vehicle Classifier): A monitoring device that counts the number of vehicles by specific vehicle classes in accordance with their axle configurations at the roadway segment where it is installed.

- ACF (Axle Correction Factor): A factor used to convert the number of counted axles into the number of vehicles in consideration of some counted vehicles which are equipped with more than two axles.

- Coverage Count: A short-duration traffic count used for estimating the network traffic data on an annual average basis.

- D Factor: It is the proportion of the 30th highest hourly traffic volume of the year in the heavier direction and called Directional Split.

- K Factor: It is the proportion of AADT on a roadway segment during the hour in which the 30^{th} highest hourly traffic flow of the year takes place.

- ESAL (Equivalent Single Axle Load): A unit that represents the amount of pavement. consumption/damage caused by an axle or group of axles, based on the loaded weight of the axle or the axle group, divided by the pavement consumption/damage caused by a single axle weighing 18,000 pounds. Roadway Link, Segment, or Section: A stretch of the road, usually between intersections, on which its AADT remains constant.

- SAF (Seasonal Adjustment Factor): A factor used to convert short-term counts/measurements.
  into annual average traffic data.

- WIM (Weigh-in-Motion): A device that monitors axle weights and axle configuration of each vehicle along with the number of such vehicles passing through the roadway site where it is installed

1.2 introduction to Parking and Traffic Assessment

This report forms a detailed analysis of the surrounding traffic parking and road networks that could be impacted by the proposed demolition and construction while defining the related requirements requested by the governing authorities such as TfNSW

Each authority has a guideline that is designed to provide a direction for safe practices and approved processes for projects within NSW and national wide.

The purpose of the *Austroads Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments* is to provide guidance on the process to identify and assess potential impacts of land developments on road corridor management through preparation of an integrated transport assessment (sometimes referred to as a transport impact assessment or traffic impact assessment).

The TCAWS Technical Manual is to be read and used by personnel responsible for designing, implementing, operating, reviewing and inspecting temporary traffic management (TTM) at Transport construction or maintenance work sites. Where this Technical Manual refers to a Transport roadwork site, it includes any Transport construction or maintenance work that impacts on the road network, this could include rail or maritime infrastructure projects.

In the context of TTM, the Technical Manual contains instructions for the following:

- Manage risks associated with TTM;
- Develop a traffic management plan (TMP);
- Design, select, obtain approval, record and store a traffic guidance scheme (TGS); and
- Undertake traffic management in a number of specific situations.

The purpose of this Technical Manual is to ensure that traffic control at Transport work sites continually strives for best practice. It is also intended to help personnel understand their obligations under the *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2017*.

For works conducted by contract, this Technical Manual complements the following Transport

specifications:

- G10 (Traffic Management);
- D&C G10 (Traffic Management);
- G10M (Traffic Management (Maintenance Works);
- G22 (WHS Construction Work); and
- D&C G22 (WHS Construction Work).

Appendices of this Technical Manual noted as *mandatory* are key to the application of the Technical Manual. Appendices noted as *informational* are optional and have been provided to assist practitioners with application. Variations to and departures from the requirements of this Technical Manual must be in accordance with the departure process described in *Section 2.8 Departures from this Technical Manual.*

Traffic Impact and Parking Assessment
Transport and Accessibility
An assessment of all relevant vehicular traffic routes and intersections for access to/ from the subject properties.
An assessment of construction and operational traffic impacts on existing intersections, capacity of the local and classified road network.
Identify road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network for the development (if required).
The adequacy of public transport, pedestrian, and bicycle networks in the vicinity of the site.
Access arrangements, including car and bus pick-up/drop-off facilities if proposed, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian, and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones.
Details of on-site car parking spaces construction of a new double carport
An assessment of the cumulative on-street parking impacts of cars and bus pick- up/drop-off, local residential parking and any other parking demands associated with the development.
An assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED.
Emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the arrival and departure times).

2. Development Site, Context and Existing/Proposed circumstances

The development site (Figure 2) is DA2024-0314 for proposed mixed use development comprising sales, offices, commercial business and warehouse - proposed lot 307 in Lot 82 DP 1299265, Marathon Street, Westdale Currently the subject site has no minimum lot size defined under TRLEP10; therefore, the lot size is used to determine the applicable area clearance threshold. The size of the subject lot is 4 ha.

The threshold for clearing, above which the BAM and offsets scheme applies, is 0.5 ha.

The proposed development will not involve clearing native vegetation greater than the 0.5 ha threshold.

indicative measuring of the site lists the size as 88,923sqm

The lot that is classified as is zoned E3 Productivity Support (Figure 3) under Tamworth Regional

Local Environmental Plan 2010 (TRLEP12). The E3 zone is an open zone.

Council advised during the Pre DA held on 3 August 2023 that

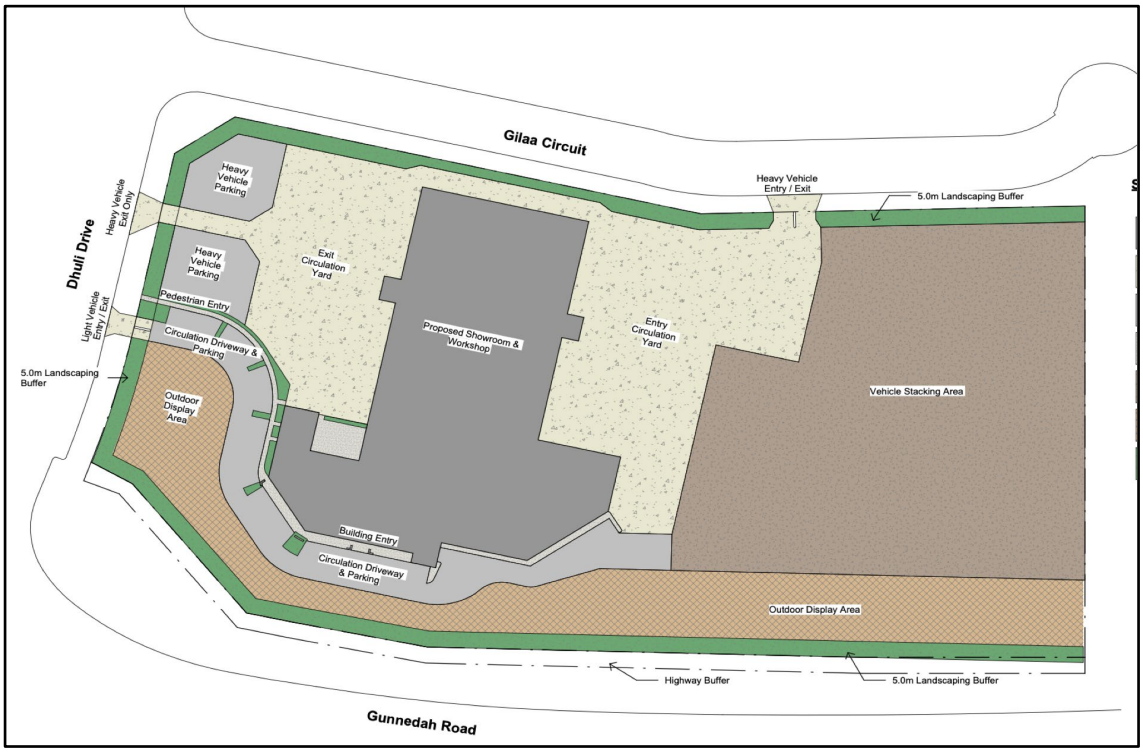


Figure 2- site map*

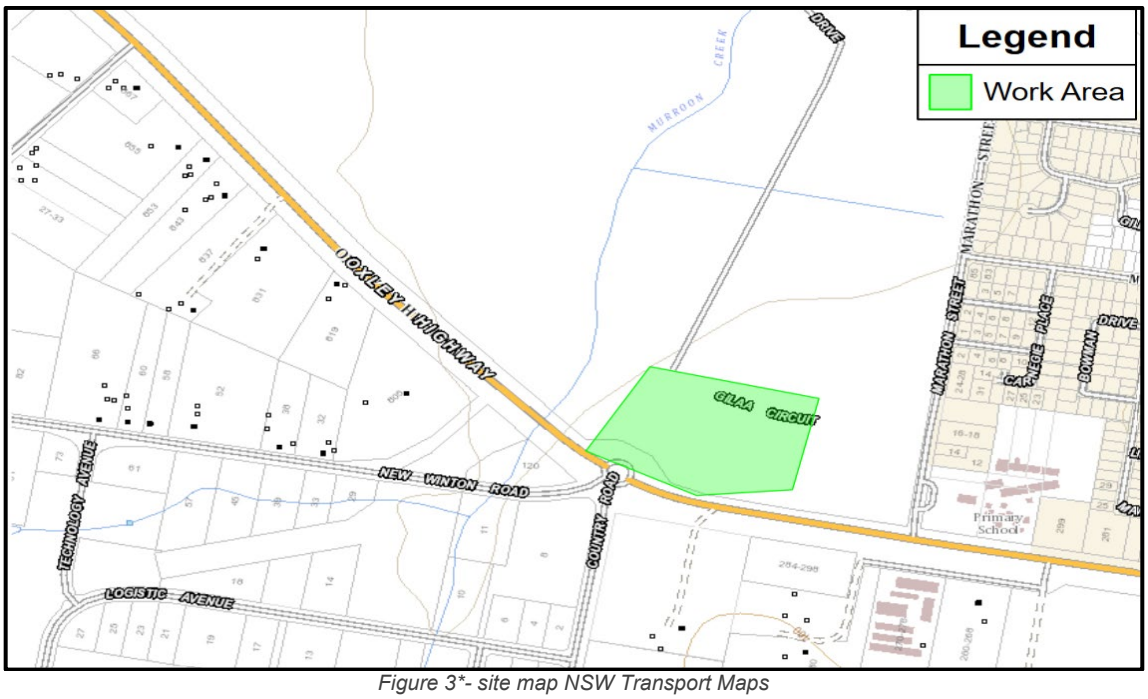


Figure 3- site map NSW Transport Maps*

2.2 Street view of existing location

Figure 3- Westbound roundabout entrance Gunnedah Rd*

Figure 4- Eastbound roundabout entrance Gunnedah Rd*

Figure 5- Northbound roundabout entrance Country Rd*

Figure 6- Site access and exit*

2.4 Phasing of the Development

Phase 1
This phase would include the erection of the showroom offices and staff toilets, including a mezzanine, which will be used for storage only, a small part of the parts store area.

A portion of the workshop, which will include eight bays for servicing agricultural vehicles, a pre-delivery vehicle preparation bay, a temporary wash bay, an ablution block for the workshop staff, an outdoor display area, concrete hardstand circulation for the vehicle manoeuvring areas.

Provide separate entry and exit access for light and heavy vehicles off Dhuli Drive and 46 parking spaces for customers and staff. Also, additional staff parking consisting of an additional 53 spaces on the gravel hardstand area and landscaping along the road frontage in front of the building works.

Phase 1 = 30 weeks
Phase 2 = 20 weeks
Phase 3 = 20 Weeks

The timing of the stages is unknown at this point and will be decided in the future pending funding from client.

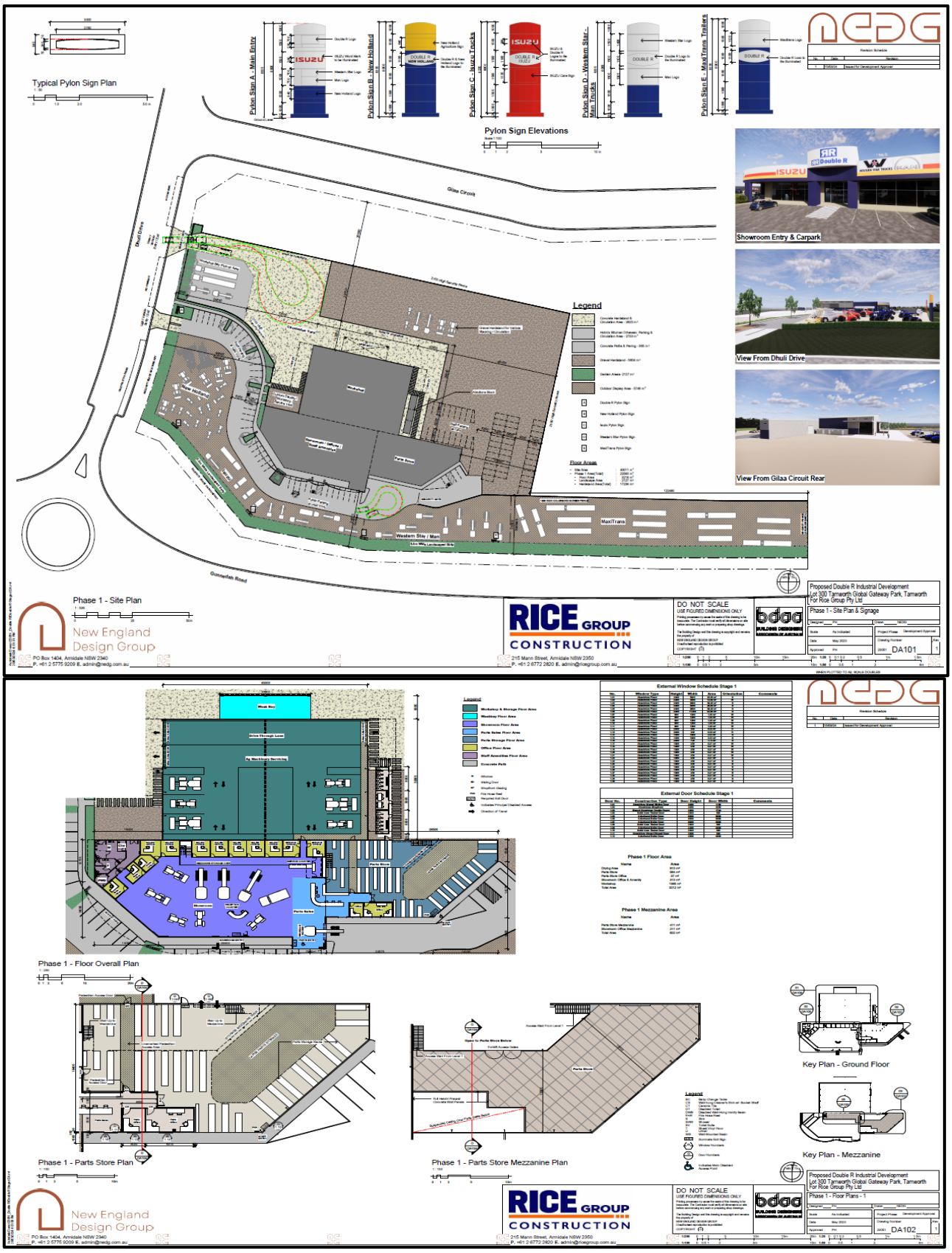


Figure 7- Phase 1 – Swept Path and site plan*

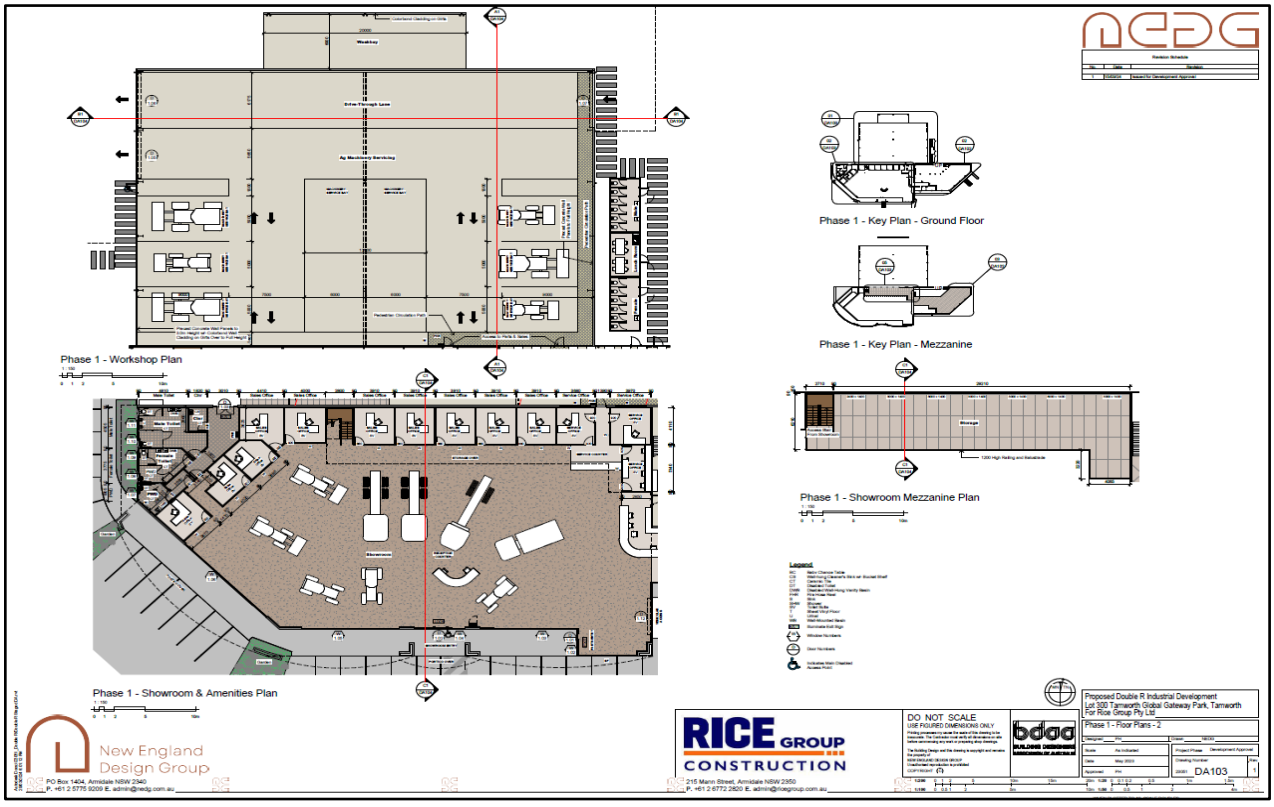


Figure 8- Phase 1 -1*

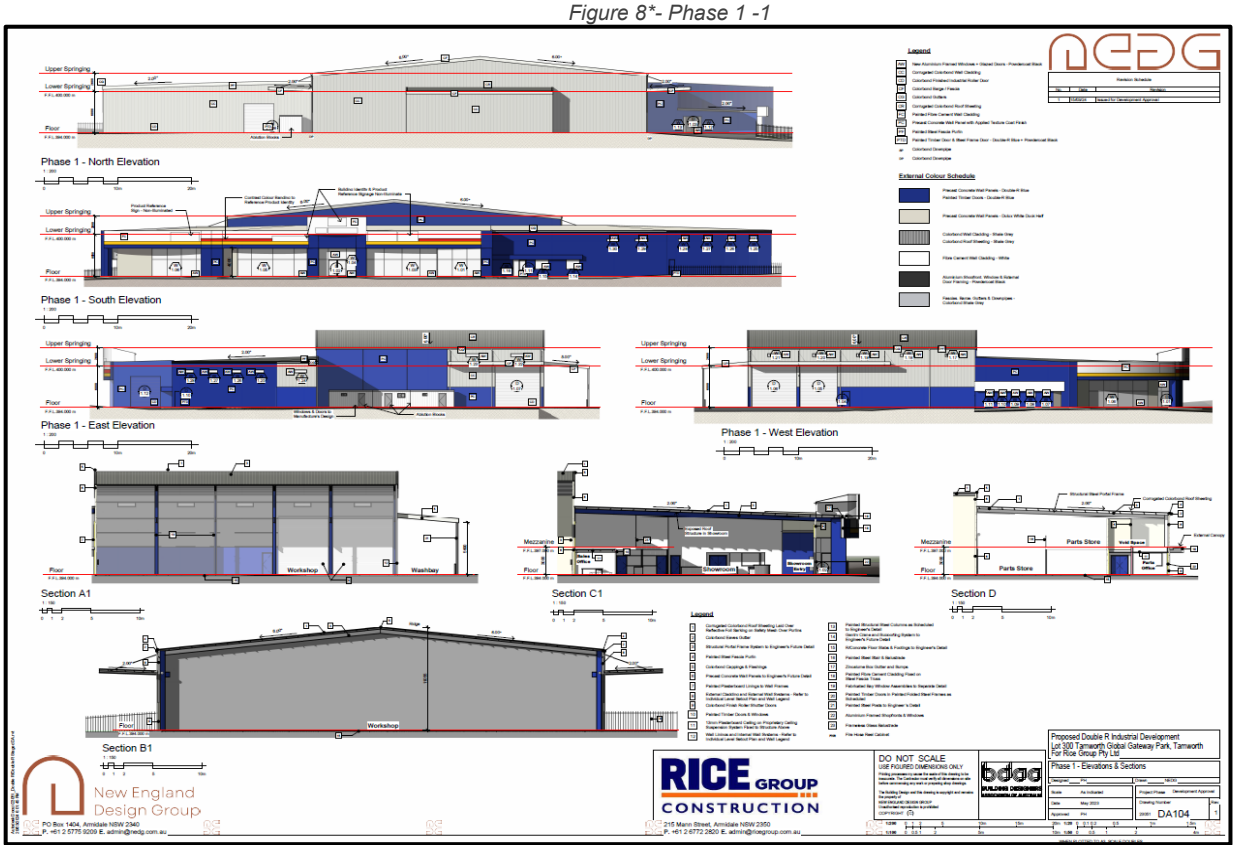


Figure 9- Phase 1 -2*

Phase 2

This phase will make additions to the buildings constructed in Phase 1 to extend the workshop to 14 service bays, add additional workshop storage, extend the workshop canopy, relocate the wash bay, extend the circulation yard hardstand, and add additional heavy vehicle access from Gilaa Circuit.

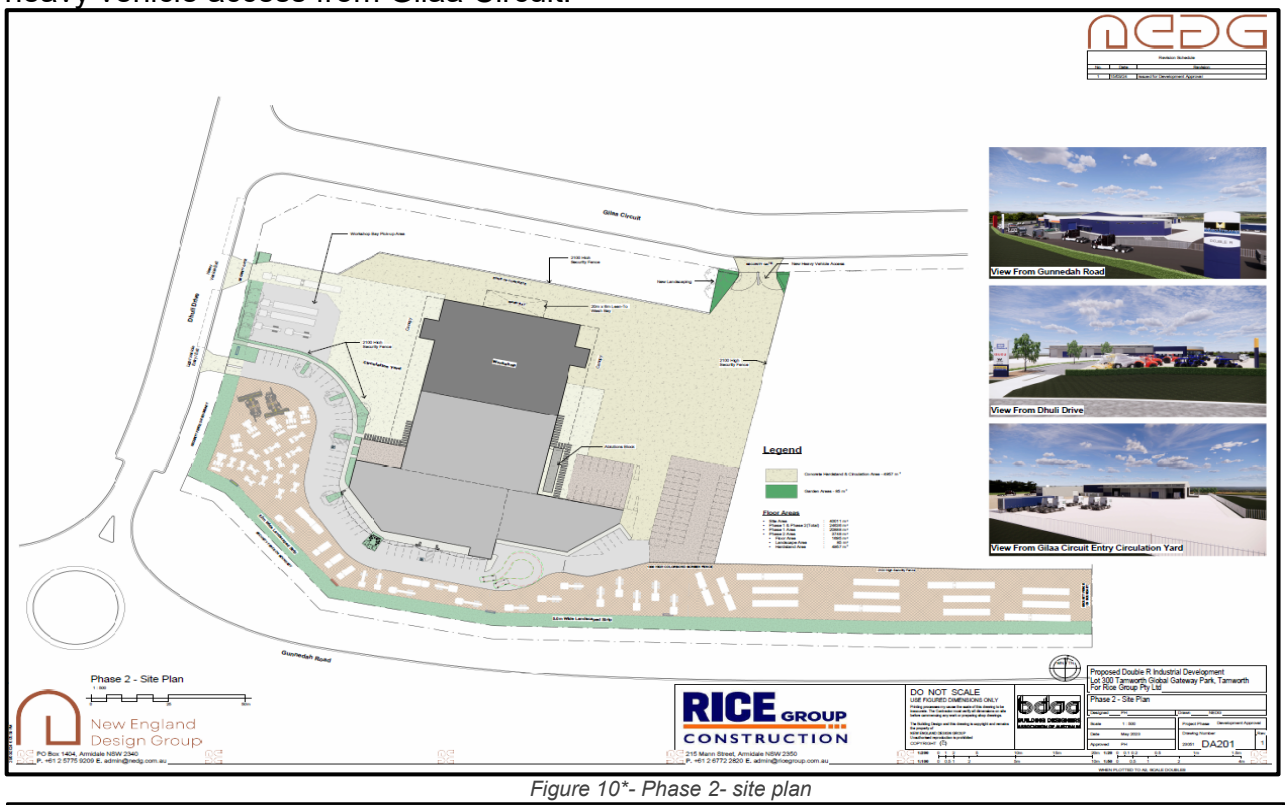


Figure 10- Phase 2- site plan*

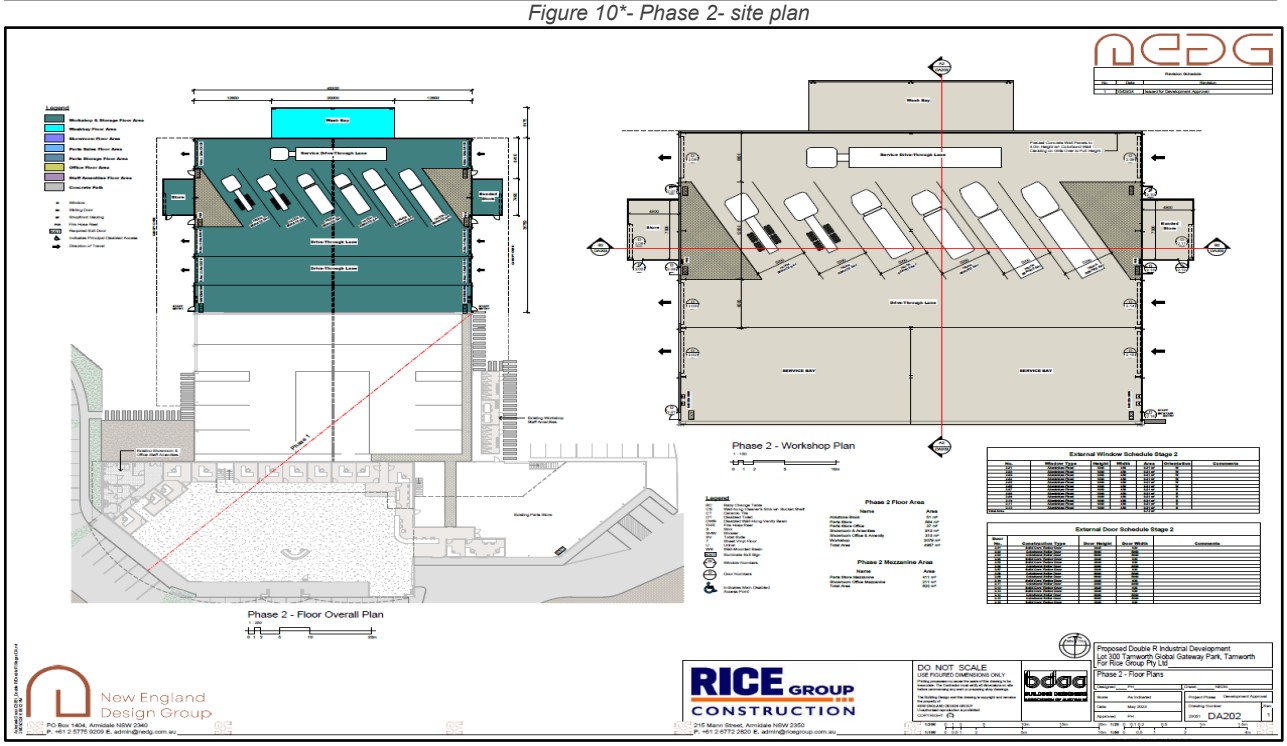


Figure 11- Phase 2-1*

Phase 3

This phase will extend the workshop to 16 bays, relocate and enclose the wash bay, extend the circulation yard hardstand and add an additional hot mix vehicle stacking area, provide an additional 22 staff parking spaces, extend the parts store workshop office and amenities, provide a staff room, convert the showroom mezzanine from storage to offices, and extend the outdoor display.

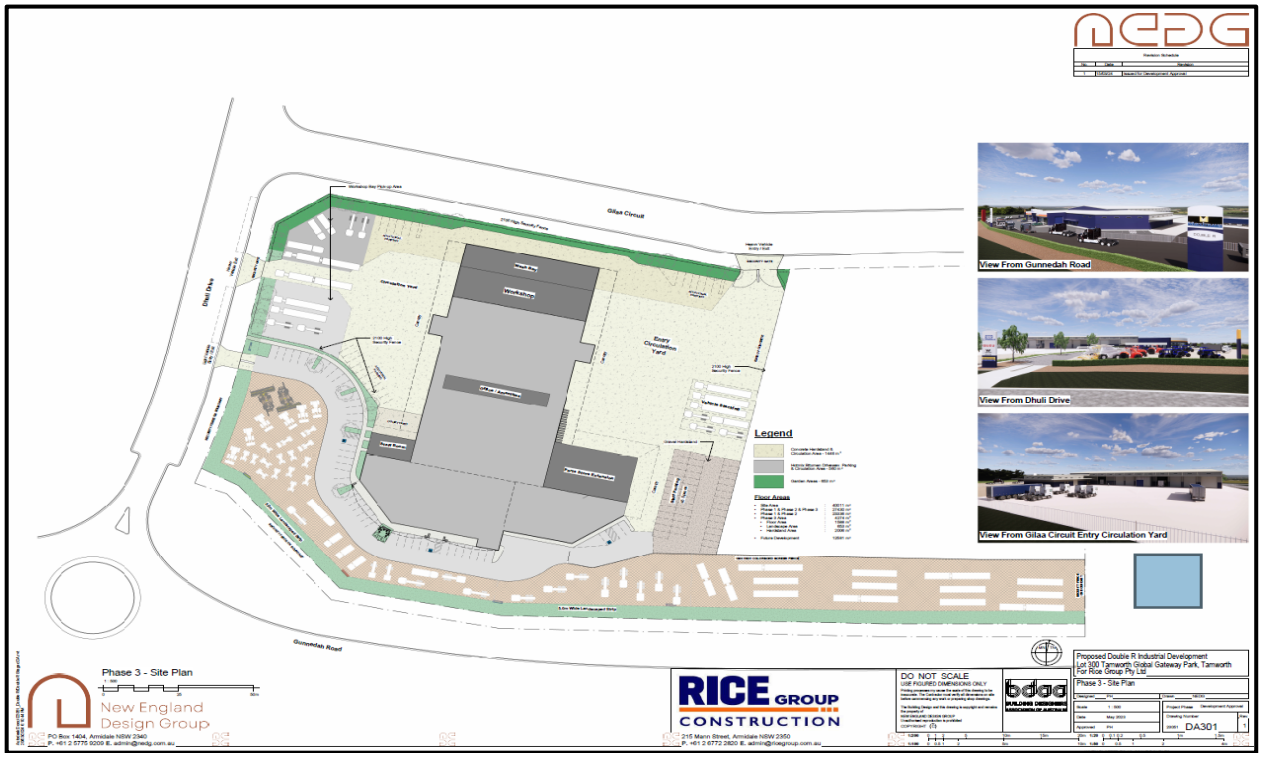


Figure 12- Phase 3 – site plan*

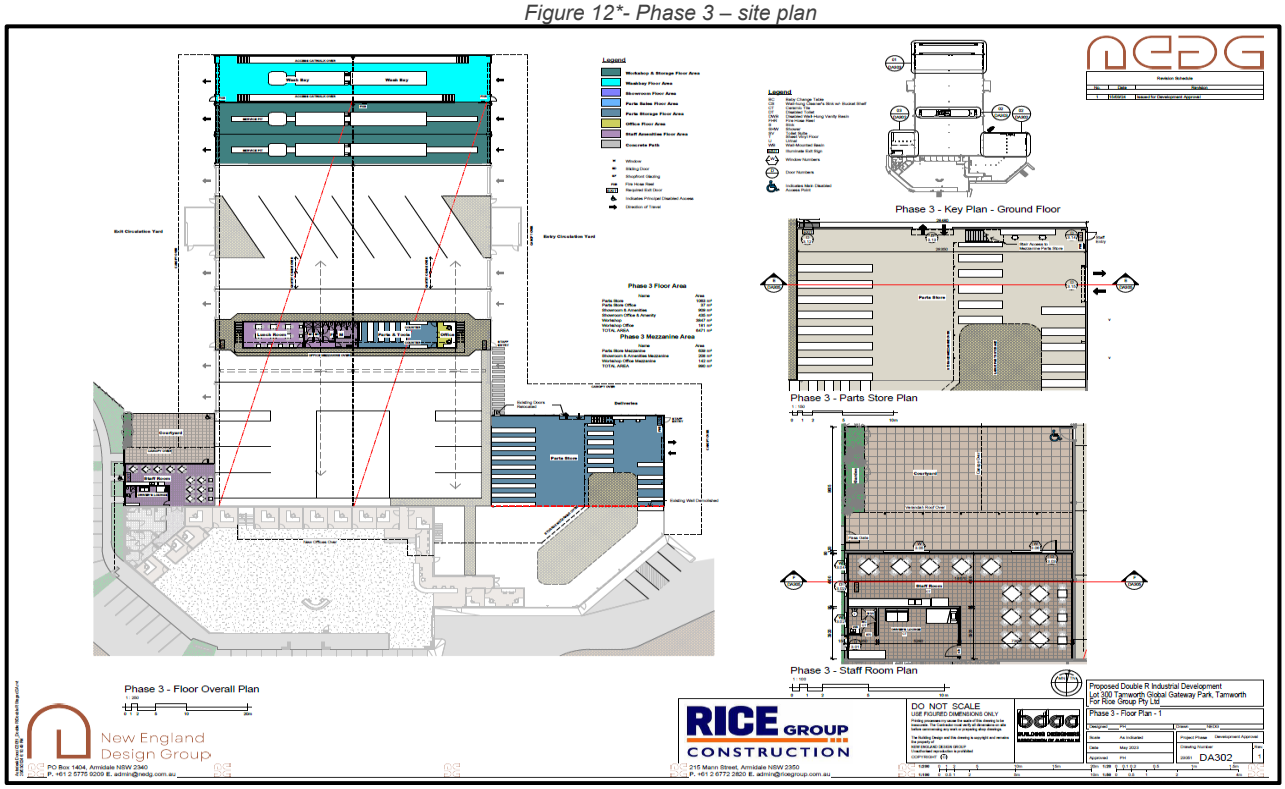


Figure 13- Phase 3 – 1*

Although the proposed phases are outlined above, it's important to note this Development Application is not being submitted as a concept Development Application under Division

2.1 Parking provisions

The development has been designed to separate light vehicle access from heavy vehicular access and to ensure the entrance to the site for heavy vehicles is located a significant distance from the roundabout on Gunnedah Road in order to ensure there are minimal traffic impacts on the roundabout.

The flow of heavy vehicles through the site has been carefully planned. The vehicles will enter through the driveway on Gilaa Circuit, traverse through the development site, and exit via Dhuli Drive. This design ensures that there is enough distance and space within the site and on the internal street network to prevent heavy vehicles from waiting on the road network and causing traffic congestion.

The development proposes a total of 173 parking spaces:

- Forty-seven (47) of these spaces are located along the light vehicle access driveway in front of the proposed development.
- Eighty-five (85) spaces are located on the hardstand gravel surface dedicated for employee parking.
- Twenty-five (25) spaces are allocated for large vehicles at the northwestern corner of the property and also to the east of the proposed building. These parking areas will be used for the parking of heavy vehicles, awaiting service and post-service, and
- Sixteen (16) workshop bays for parking vehicles while being serviced.

Tamworth Regional Development Control Plan 2010 requires a total of 181 spaces for the development. This parking has been calculated in accordance with the Pre-DA advice provided for each element proposed within the mixed-use development and shown in Table 1.

Type of Development	Council Rate requirement	Total Proposed Gross Floor Area or spaces	Parking Spaces Required
Parts Store and Office	1 per 300 m^2	1816 m^2	6.05
Showroom Amenities and Office	1 per 40 m^2	1642 m^2	36.48
Workshop and Office	1 per 40 m^2 or 3 spaces per workshop bay whichever is the greater	4727 m^2 16 bays	118.17 48
Total number of parking spaces required			181.17

(Table 1: Tamworth Regional Development Control Plan parking rates)

The proposed development has an 8-parking space shortfall. This shortfall is not significant when the following factors are taken into consideration.

The business involves the sales and servicing of large, heavy vehicles, which requires a significant amount of floor space for each service bay, which is equipped with the latest tools and technologies to ensure that high-quality services are delivered to customers. The time required for servicing these vehicle types is much longer than for small vehicles and, therefore, is not considered to generate the demand for 118 parking spaces.

The design response proposes a large workshop with a total area of 4727 m2, providing ample space for the efficient servicing of such vehicles. The total floor area of the workshop significantly skews the total number of spaces required under TRDCP10. The alternative rate of three spaces per workshop bay would only require 48 spaces instead of 118. This would reduce the total number of spaces required for the development to only 91.

Given the proposed development and the traffic likely to be generated, the total number of 173 proposed spaces in the development is considered to be more than suitable.

When planning a development and assessing its impacts, the need for vehicles to be parked or to stop for picking up or setting down passengers or goods needs to be assessed, taking into account the following:

- types of vehicles
- types of vehicle users
- duration of stay for the parked or stopped vehicle
- times of the day, week or season when required
- locations to be used for stopping and parking and their feasibility, practicability and impact on moving vehicles and pedestrians
- demand for (i.e. numbers of) parking and stopping spaces
- order of priority in allocating spaces when demands at particular places or times exceed supply

- use of each mode of travel
- vehicular access to and from the parking or stopping spaces
- pedestrian or goods delivery access to and from the parking or stopping spaces
- the provision of off-street parking that may be required for road safety or other reasons, it may be mandated in the case of large developments
- dimensions and layout of spaces and access routes so that the likely types of vehicles can be accommodated.

  Every trip involving an on-road vehicle creates a demand for parking or stopping:

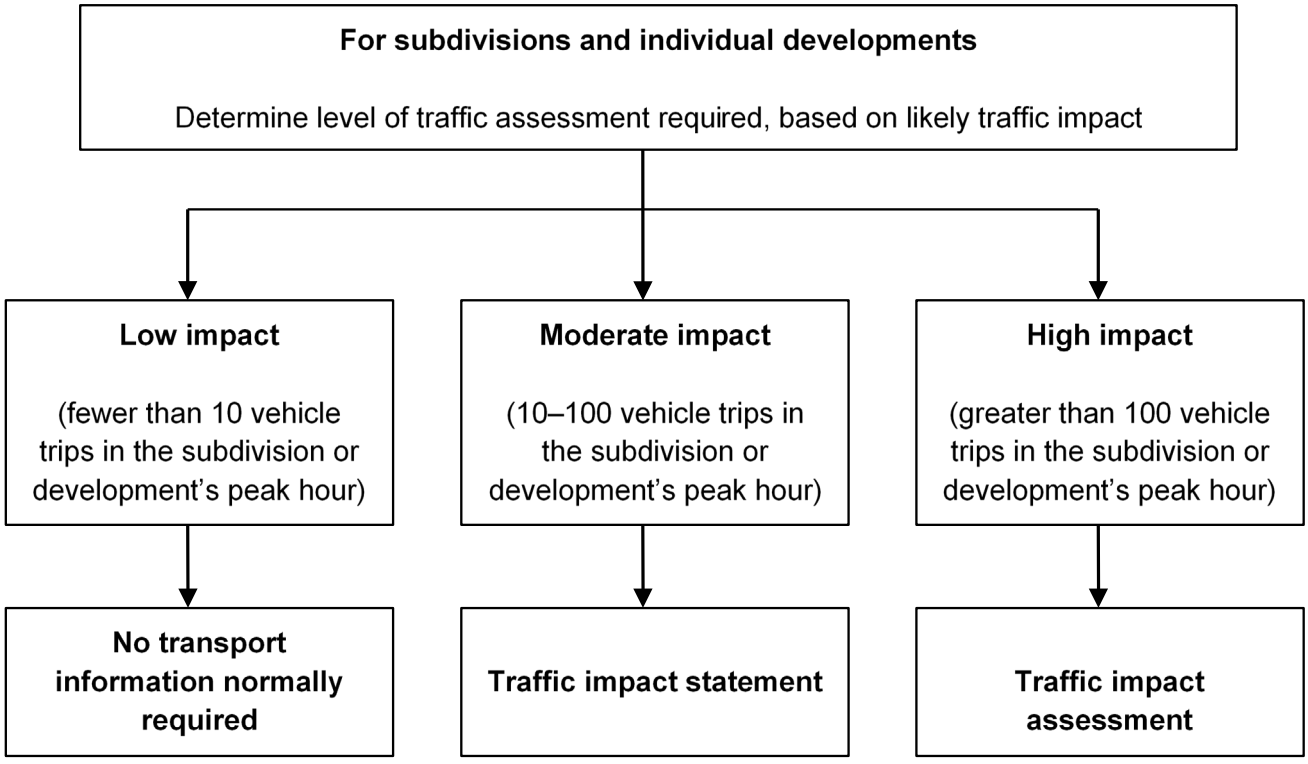
  - Cars need to be garaged or parked at residences and parked at shops, businesses and other attractions, for varying amounts of time. Passengers often need to be dropped off or picked up, creating a demand for places to stop briefly.
  - Motorcycles have similar parking demands.
  - Cars with caravans need to stop at toilets, rest areas and tourist attractions.
  - Buses need to stop to pick up or set down passengers. They also need a place to stop or lay over at the end of the scheduled route.
  - Taxis need places to store and queue (taxi ranks), places to wait for passengers and places to set down passengers and collect a fare.
  - Cyclists need somewhere to park their bicycles. Security from theft is a particular issue.
  - Charging points for electric vehicles may need to be provided (AS IEC 61851.23:2014, AS IEC 62196.2:2014).
  - Marked parking spaces for car-sharing schemes may need to be provided.
  - Trucks need space to stop for load

3. Traffic Network Assessment

Depending on the type, scale and location of a development, the traffic impacts may need to be assessed for a considerable distance on the approach route(s) along an arterial road and geometric elements of the road may need to be expanded, modified or redesigned at mid-block locations and at intersections. Consider the following examples:

- A large development involving signalization of an access point is likely to require assessment of existing nearby major intersections for capacity and safety. Also, the intervening sections of the approach road must carry the total predicted traffic volume (through traffic plus development traffic), and the traffic approaching the development must be in the correct lane (left or right); auxiliary lanes may be required. Successive and closely spaced access points and side streets are each likely to need dedicated turning lanes.
- A rural development (e.g. involving an extractive industry) may produce a significant increase in the proportion of heavy vehicles using the access road(s), as well as a significant increase in total traffic volume. In this situation any haul route needs to be identified and then assessed for traffic operation on road sections and at intersections, and for pavement impact and safety. An increase of 5% or 10% in traffic volume may be sufficient to warrant an assessment (Section 5.2.2).

*For advice concerning traffic management on approach roads see the Guide to Traffic Management Parts 5*and *6* (Austroads 2020e and Austroads 2020f).



(Table 2: Source: Modified from Western Australian Planning Commission (2006).)

3.1 Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by Transport for New South Wales (TfNSW) is illustrated below in figure 14*

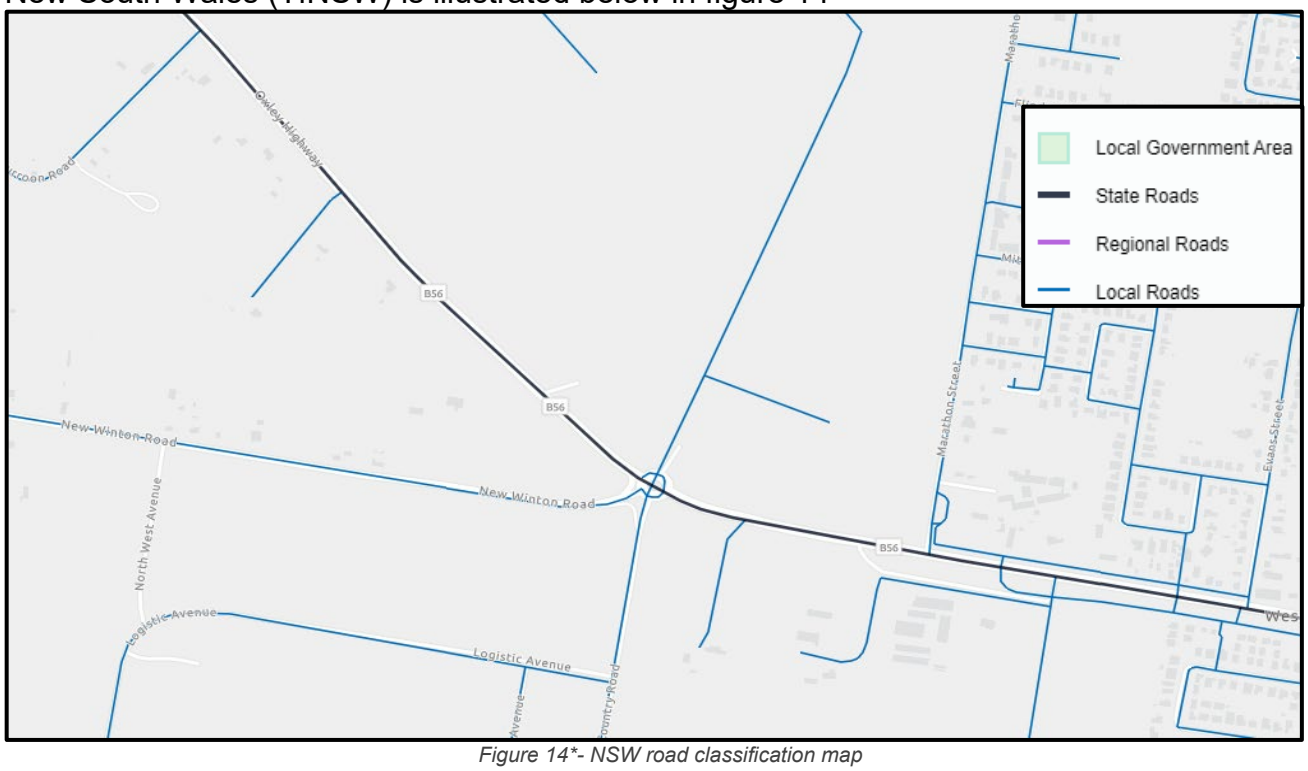


Figure 14- NSW road classification map*

Oxley Hwy/Gunnedah Rd is classified by TfNSW as a B56 *State Road* and provides the key western/southern road link in the area, linking Tamworth to the western and southwestern tablelands.

Route B56 is an east-west route in northern New South Wales, connecting the Mid North Coast with the New England and central western New South Wales. It follows two portions of the Oxley Highway between Port Macquarie and near Coonabarabran but does not extend to Gilgandra, Warren and Nevertire as the Oxley Highway does. B56 replaces that portion of National Route 34 between Port Macquarie and the Newell Highway junction near Coonabarabran.

Oxley Highway is a rural highway in New South Wales, Australia linking Nevertire, Gilgandra, Coonabarabran, Tamworth, and Walcha to Port Macquarie, on the coast of the Tasman Sea. It was named to commemorate John Oxley, the first European to explore much of inland New South Wales in 1818.

General information	
Type	Highway
Length	653 km (406 mi)[1]
Gazetted	August 1928 (as Main Road 11)[2]
Route number(s)	B56 B56 (2013–present) (Coonabarabran–Port Macquarie)
Former route number	34 National Route 34 (1955–2013) Entire route

West end	A32 **Mitchell Highway** Nevertire, New South Wales
	• A39 Newell Highway • B55 Castlereagh Highway • A39 Newell Highway • B51 Kamilaroi Highway • A15 New England Highway • B95 Fossickers Way • A15 New England Highway • A1 Pacific Highway
East end	**Gordon Street** Port Macquarie, New South Wales

3.2 Road Classification

When considering the potential impact of a development on particular roads in the network, it is important to establish the agreed traffic function of each of the roads potentially affected.

Is it primarily a traffic route or a local street? This then enables an objective assessment of whether the development, and its access and traffic needs, are compatible with the road's function.

In these guidelines 'road classification' means a road's 'functional classification' – its traffic function.

For further advice and information on road hierarchy and functional classification, refer to Commentary 3 and the *Guide to Traffic Management Parts 1, 4* and *5* (Austroads 2020a, 2020d and 2020e).

For effective traffic management of the road network, a clear distinction needs to be made between those roads that are to function principally as arterial roads (or traffic routes) and those that are to function principally as local streets. Within each of these two primary categories of traffic function, finer distinctions can be made.

3.2.1 Arterial Roads and Local Streets

In urban areas, the principal classification of each road as either a traffic route or a local street should result in an interconnecting network of traffic routes at a sufficiently close spacing, considering the intensity of traffic generating development. Each area bounded by traffic routes is a local traffic area which should be small enough that no road within it has excessively high traffic volumes.

Town planning schemes may include objectives for road networks such as 'to provide a network of streets with clear physical distinctions between traffic routes and residential streets based on function, legibility, convenience, traffic volumes, vehicle speeds, public safety and amenity' (Department of Transport, Planning and Local Infrastructure 2005). The distinction between arterial roads and local streets supports such objectives.

The single most important step in achieving the clear two-class arterial road/local street separation in areas of new development is to prevent frequent direct-frontage driveway access from roads which will function primarily as traffic routes. Ideally, traffic routes need to be provided at 0.8 to 1.5 km spacings and may be on existing or newly created road alignments. Indeed, many jurisdictions mandate that direct access to a traffic route is not permitted when practical, alternative access is available via a lower-priority road.

The basic idea is that link and place form two components that can be used to evaluate or rate a particular road segment or network. The basic idea is shown in Figure 14.1.

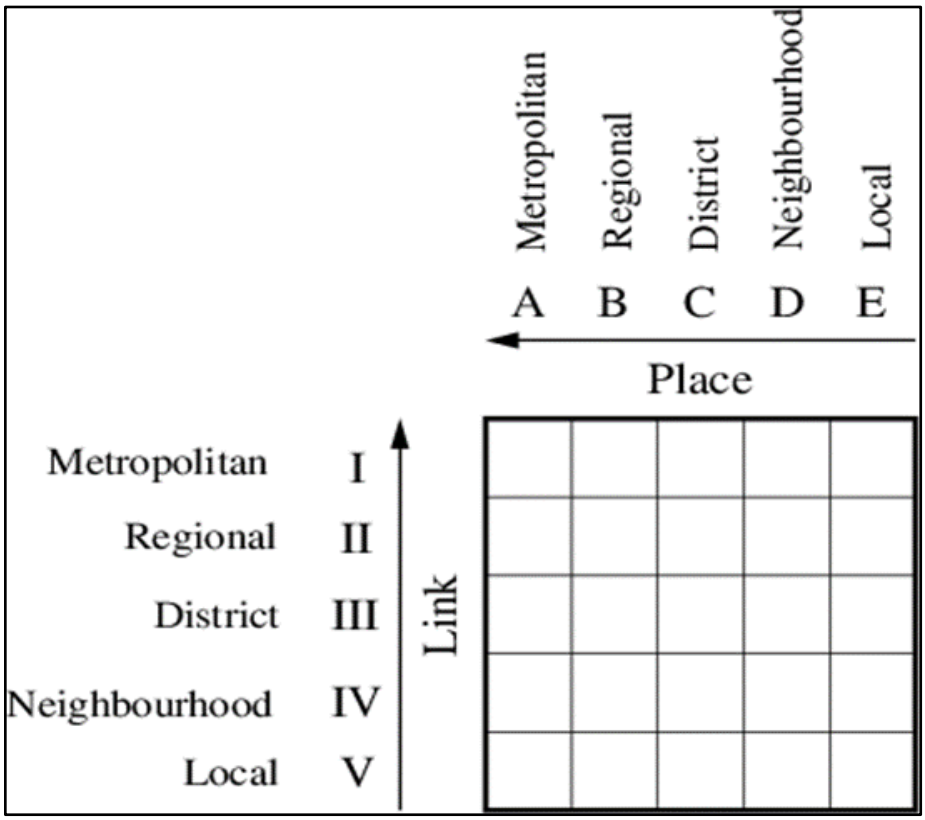


Table 1- Source: Based on Boujenko, Morris and Jones (2012).*

3.3 Existing Road Asset Conditions

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated in the below figures. Key features of those traffic controls are detailed below:

- 60 km/h SPEED LIMIT which applies to Oxley Hwy & Gunnedah Rd

Figure 15- Westbound Gunnedah Rd 60kmph*

Figure 16- Eastbound Gunnedah Rd 60kmph*

Figure 17- Eastbound Gunnedah Rd 40kmph – school zone hours only*

3.2 Road Configuration and Speeds

Within the immediate area of the site regarding the fronting road asset - Oxley Hwy/Gunnedah Road configurations include:

- Single – Form one Lane merge from 2 lane carriageways.
- Dual (2) lane carriageways
- 2 Lane Roundabout
- Slip lanes and acceleration lanes

60 km/h SPEED LIMIT which applies to Oxley Hwy/Gunnedah Rd Road extends within the immediate area. 40 km/h speed limit applies during school hours Eastbound on Oxley Hwy/Gunnedah Rd – See Figure

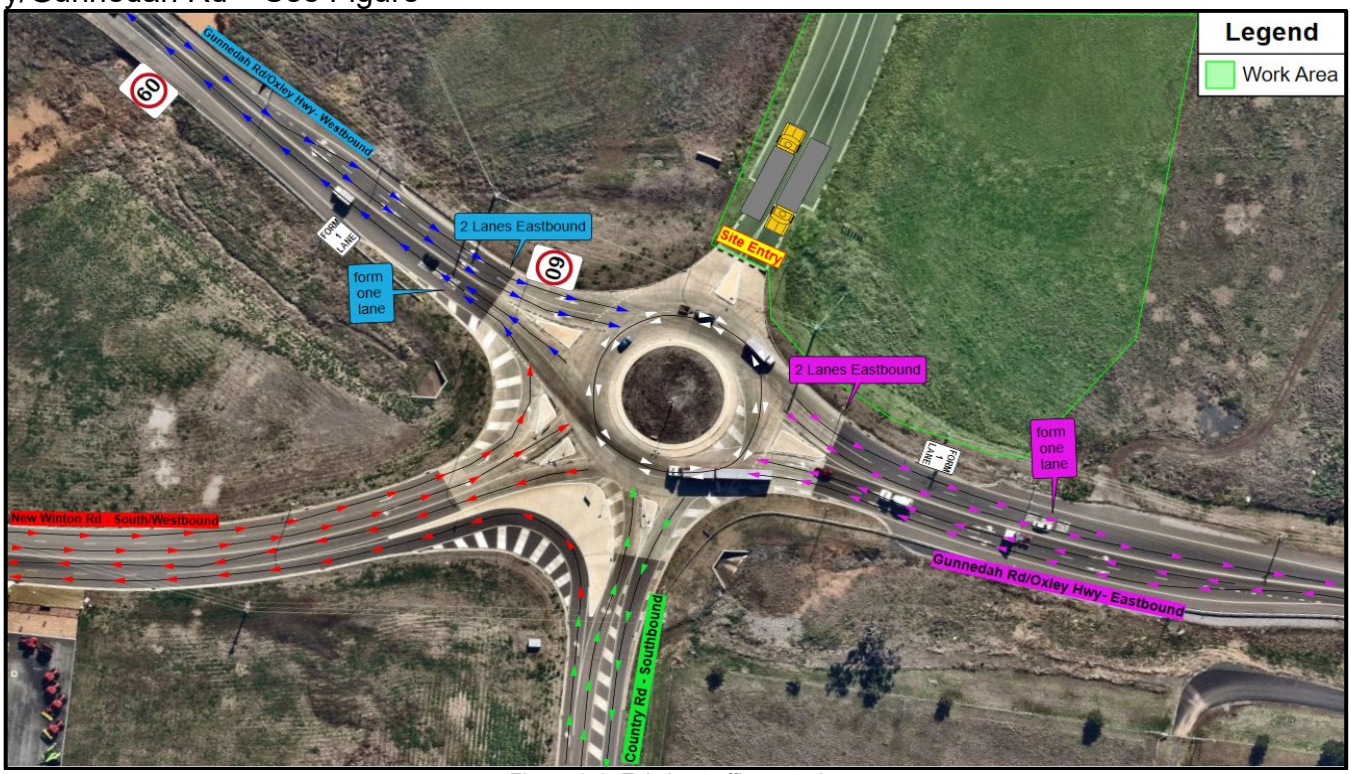


Figure 17- Existing traffic controls*

3.4 Public Transport

Public Transport will not be affected but the works due to the enclosed site nature of the works.

Buses run to schedules. Delays (i.e. greater travel time variability) for buses make the choice of this travel mode option less desirable. Whether a development includes roadways traversed by buses or it simply generates a demand for on-road bus stops, the layout of the bus route and the number and location of the bus stops should take account of bus scheduling needs, as well as the convenience of bus passengers.

Bus passengers need safe and convenient pedestrian access to and from bus stops. Where several bus routes service one location, convenient and safe interchanging between bus routes should also be provided in the design.

Developments of a recreational or tourist nature will often require on-site parking for coaches. This needs to be located so that passengers can safely alight and access the venue. Where will they be able to safely stand if they are waiting for a coach to arrive? Can the coaches travel without reversing in areas used by pedestrians or other vehicles? Matters such as these should be considered at the planning stage so that adequate space is provided in the layout for the safe operation of buses and coaches.

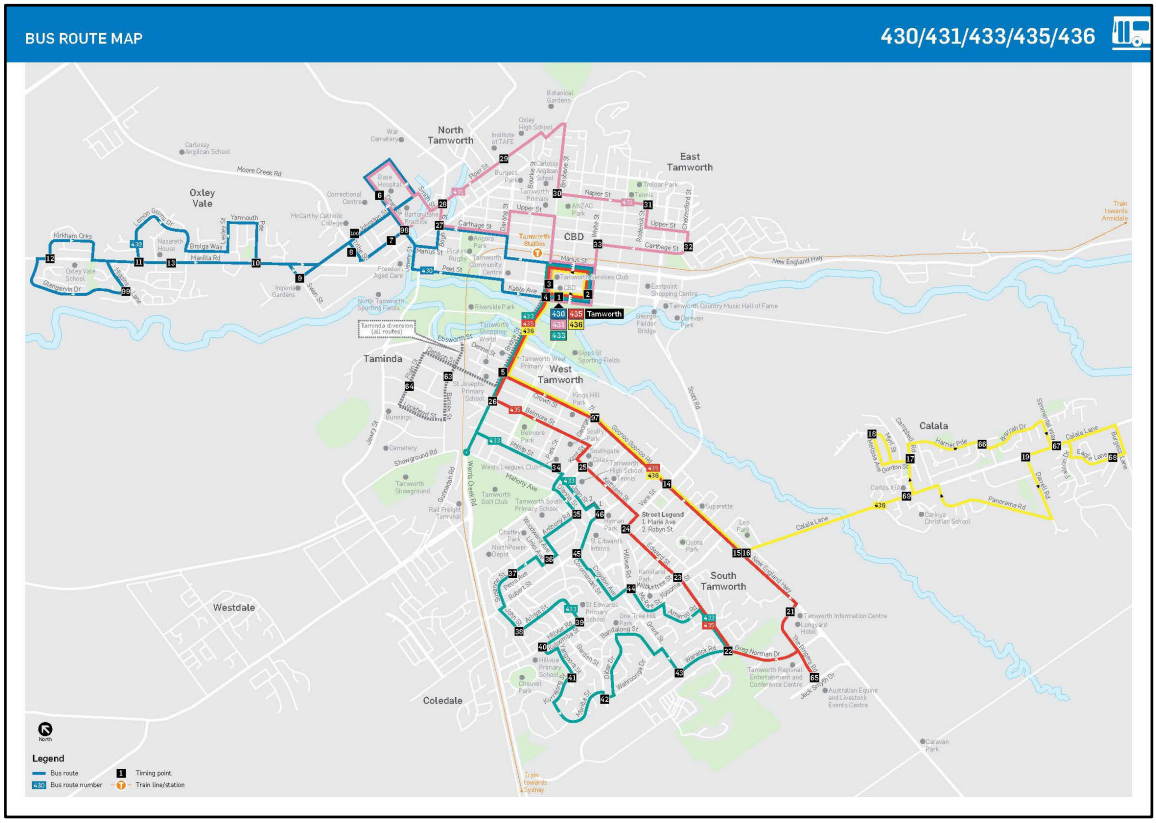


Figure 18- BUS Route Mapping*

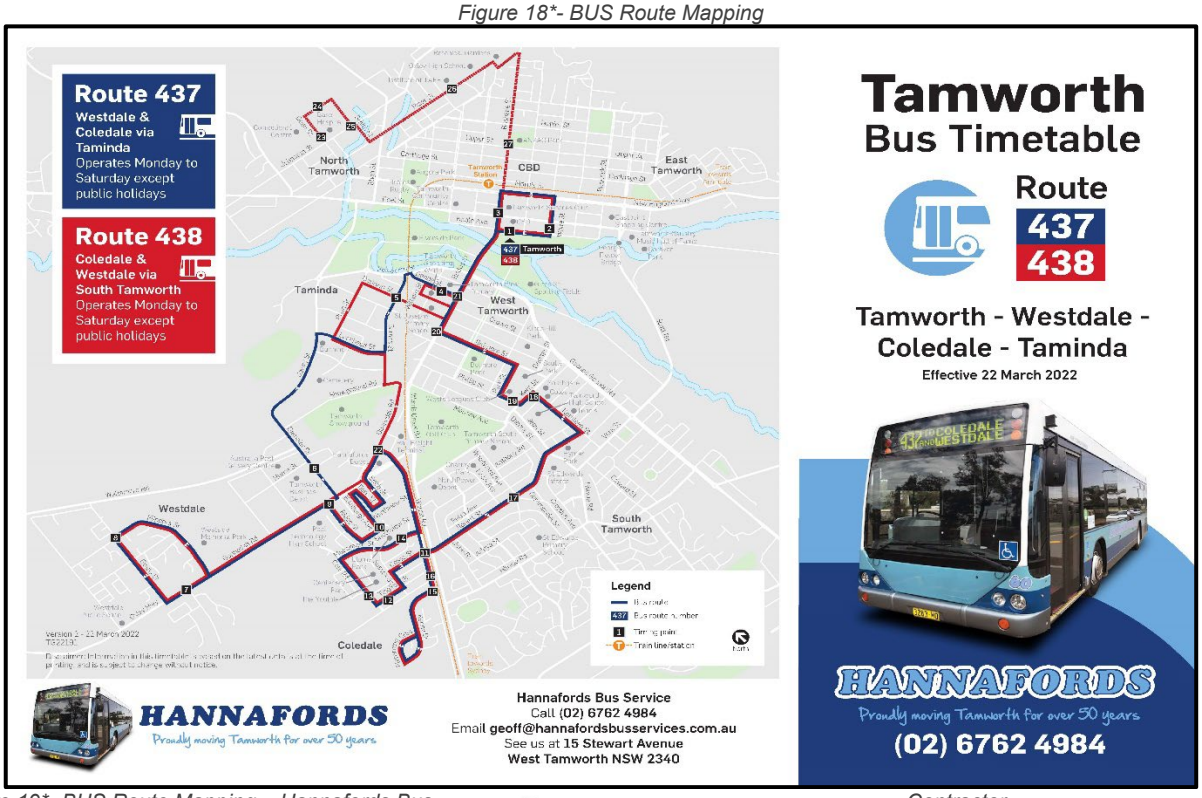


Figure 19- BUS Route Mapping – Hannafords Bus Contractor*

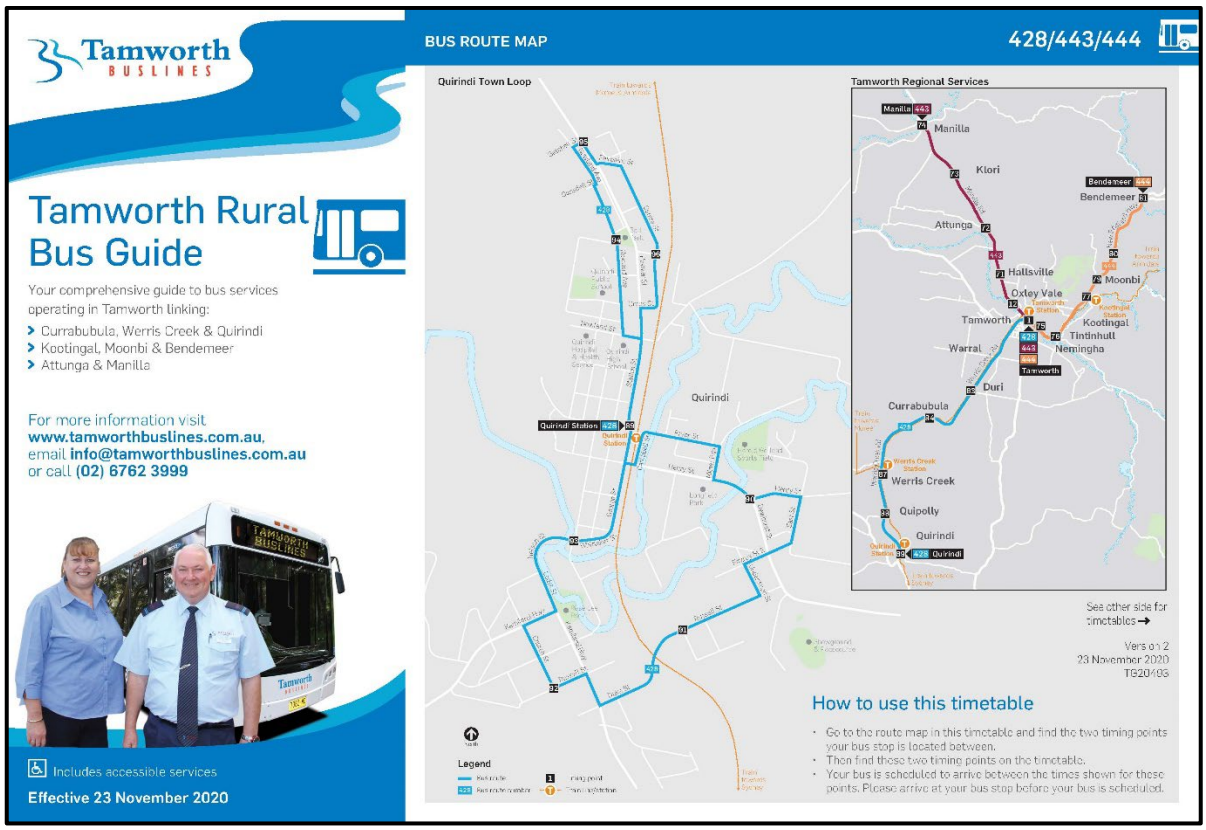


Figure 19- BUS Route Mapping*

3.5 Public Movements

The accommodation of pedestrians and cyclists, including access to and location of pedestrian and cycling facilities in the case for this project is not applicable, due to the enclosed project works, however the endorsing of pedestrian signage at the frontage of the entrance to the project would be recommended.

Access management is an important part of managing roads in a way that is safe and consistent with their primary traffic function. There is often pressured to permit direct driveway access onto the majority of roads in a developing area, to reduce development costs per site. However, if this occurs on roads that, due to their location in the network, will need to function as through-routes, the lower site development cost is inevitably offset by higher transport, amenity and safety costs, to the detriment of future residents and road users.

There is a general right of access between a road and abutting property, unless action is taken to restrict that access. Access management is the process of controlling where and how that access may take place.

Clearly, the mobility, safety and amenity of road users and occupiers of abutting land are influenced by the provisions for access to and from roads. Taken in this light, the objective of access management is to achieve a level of interaction between the road and abutting land that is consistent with the function of the particular road. Access needs to be designed and managed in a way that allows the road to perform its traffic functions safely and efficiently.

Access to and from roads is generally controlled in two ways:

- Access control by laws, statutory regulations or planning regulations that apply to a particular road, a class of road or a type of development for the abutting land.
- Access control by geometric design. One example is the provision of service roads, where the driveway, side street and parking interactions take place clear of the main carriageway.

Providing arterial roads is a basic part of the town planning system and so access management is an essential part of the larger planning framework. Broad planning policies and objectives need to incorporate access management.

The need for access planning and management arises because vehicle movements generated by a development can potentially create interruptions to traffic on a road. On many roads, these interruptions are of little or no concern because they are infrequent, and traffic volumes are low. However, on roads carrying high traffic volumes or fast-moving traffic these interruptions can create inefficiencies and other costs to the community, such as:

- increased crash rates, due to incompatible traffic activity or unexpected traffic movements
- increased delay and interruptions, including to public transport
- reduced arterial road capacity
- reduced efficiency of the road network
- deterioration in the driver's perception of the safety and ease of use of an access point
- increased vehicle emissions and reduced air quality
- increased fuel consumption
- functional obsolescence of the roadway (i.e. the ability of the road to perform its primary traffic function is slowly degraded)
- diminished value of the public investment.

A Framework for Arterial Road Access Management (Austroads 2000b) provides basic steps and factors around road access management that should be considered when planning new roads, preparing development applications or assessing proposals. Table 2 from the report sets out the crash experience for various levels of access management.

On Rural Roads	• As a rule of thumb, there are 10 crashes per 100MVkm(1) of travel per access point. • Typically, the comparative crash rates for no access control: partial control: high level of control will be roughly in the ratios 100:60:40. That is, there could be 2–3 times the number of crashes if there is no access control. • On four-lane rural roads, each private access adds 2–3 per cent to the crash rate, and much more at higher degrees of road curvature. • Each commercial access point per kilometer can add 5–10 per cent to the crash rate at low access frequencies (perhaps 10–15 accesses/100MVkm for each access point). • An access point on a four-lane rural highway can be up to 10 times more hazardous without a median than with one.
On Urban Arterials	• Allowing direct access and frequent minor junctions can increase the casualty crash rate by 30 per cent on divided roads and 70 per cent on undivided roads. • Each non-commercial access point adds 1–2 per cent to the crash rate on low-access four-lane roads, and 2–3 per cent on two-lane roads. • Going from zero to 10 commercial access points per km on two-lane urban roads can add about 80 per cent to the crash rate. Going from zero to 20 access points per km can double or treble the rate. • On four-lane roads, each extra commercial access point can add 5–10 accesses/100MVkm above 10 access points per km. • Urban arterials without medians have a 30–40 per cent higher crash rate than divided sections.

Figure 2 MVkm denotes million vehicle kilometers. Source: Austroads (2000b).*

A Safe System approach should be used to manage the crash risk on roads with abutting access. In conjunction with the road hierarchy, each pillar of the Safe System acts differently to reduce the crash risk, as follows:

- Safe Roads: This pillar seeks to ensure that roadside infrastructure can support the level of activity on the road and the desired speed limit. In high-speed environments, development that directly abuts the road is unlikely to be appropriate and service roads would be required. Footpaths should be provided in the service road and not the main carriageway. On mixed use arterial roads, abutting development (including residential) would require a lower speed limit. Service roads are not required, and footpaths may be provided adjacent to the road. On rural highways, regular development should not be permitted, but the road network is unlikely to be dense enough to enable convenient side road access. In these situations, appropriate turning and deceleration lanes should be provided together with a speed limit reduction if access would create a hazard.

- Safe Speeds: This pillar seeks to ensure that the speed limit, or operating speeds, suit the road environment. Generally, where there are greater levels of roadside development and activity, speeds should be lower. Higher speeds are only appropriate where there is less development, and the roadside infrastructure (e.g. flexible safety barriers) can support them.

- Safe People: For the System to work effectively, it requires that road users act within safe limits. This pillar seeks to encourage good road user behavior through the licensing and registration of drivers; the education of the public in regard to road crash risk; and the enforcement of the road rules. In addition, the provision of adequate infrastructure can discourage unsafe behavior. For example, providing a pedestrian crossing where there is an obvious desire line can discourage indiscriminate crossing of the road.

For more details about access management, see Austroads (2000b) and the Guide to Traffic Management Part 5 (Austroads 2020e).

3.5.1 Pedestrians

Where a development is designed to be used by people in nearby residential areas, direct convenient and attractive pedestrian access should be provided. This will assist in encouraging walking and reduce the number of short car trips. Pedestrian facilities should also address the needs of people with vision impairment and other disabilities.

Pedestrian safety in car parks may be enhanced by designing the parking aisles to include measures that keep vehicle speeds low. Where there are significant numbers of pedestrians, separate footpaths should be provided. Provision should also be made for ensuring that pedestrians with disabilities have adequate access to all areas (including car parks) within a development. Where a footpath meets a trafficked area, consideration should be given as to whether drivers or pedestrians will expect arrival of the other, and whether they can see each other in sufficient time.

Pedestrian/traffic conflict can be addressed by:

- Avoiding the conflict altogether (put the trafficked route somewhere else)
- Having the conflict point at a location with low traffic speeds
- Reducing traffic speeds – recommended 40km/h
- Having the conflict point at a location where traffic movements are simple, so pedestrians do not need to make complex decisions about when to proceed
- Providing good sight distance in combination with low speeds (avoiding pedestrians walking out from between parked cars or near walls or stopped trucks or buses)
- Having the conflict point where it is expected, rather than where it might not be expected
- Ensuring that the priority for drivers and pedestrians is correctly indicated to both groups and is compatible with the traffic speeds
- Ensuring that any pavement markings are in accordance with the relevant standard and correctly installed.

3.5.2 Cyclists

Depending on the nature and scale of a development, cyclists may access it from the adjacent road system or from dedicated bicycle routes. Where there are nearby bicycle facilities (off-road bicycle paths or on-road bicycle lanes) bicycle links into the development need to be considered. Convenient, safe and attractive cycle access should be provided.

Secure bicycle parking is an essential part of a network of bicycle facilities. For security reasons bicycle parking needs to be provided in a location that is convenient and visible to the public. In some planning schemes, there are specific requirements for bicycle parking at developments in particular land use zones. The recently updated Australian/New Zealand Standard for bicycle parking (AS 2890.3: 2015) outlines the requirements.

4. Traffic Management for Development projects

This section provides advice on the elements that contribute to a land-use development working well from a traffic perspective – whether the traffic is pedestrian, bicycle, or motorized.

Table 2* provides an initial checklist for use in ensuring that traffic management arrangements assist in achieving the basic function of the development efficiently and safely. All expected users of the development should experience site access and internal movement which is both efficient and safe. Traffic operations and safety on adjacent roads should not be unduly compromised by the development. Practitioners are encouraged to apply these principles in traffic management for developments and to gauge the traffic impacts of a development with these requirements in mind.

Issue	Considerations	Prompt questions
Access and traffic movements	Origins	From where will the likely users come? At what typical times of day? What are the prime approach directions and modes of travel? What parts of the development are the prime access points?
	Road user types	Who are the likely users of the development? Will they come by vehicle? If so, in private vehicles or by public transport? Where within the development will they need to go?
	Vehicle types	What vehicle types will be accessing the site? Does this vary for different sections of the development? Are all relevant vehicle types catered for?
	Non-motorized users	Will pedestrian movements, adjacent to and within the site, be prime factors? Are special facilities needed?
	Disabled users	What is the extent of disabled access requirements? What are the relevant statutory requirements or design rules?
	External areas	What traffic controls and parking arrangements are there on roads adjacent to the site? Do these need to be modified?
Safety	Safe speeds	What are the likely traffic speeds – for approaching, adjacent and within-development traffic? Does the site design naturally promote safe speeds? Are additional controls needed? Planners and designers should be aware of the Safe System speeds and kinetic energy minimization, see (Austroads 2016b and 2016c).
	Conflicts	How are potential vehicle-vehicle and vehicle-pedestrian conflicts to be controlled or managed? Do pedestrians and vehicles need to be grade separated? How can conflicts be reduced by choice of intersection (e.g. roundabouts) or grade separation?
	Sight distance	At all potential conflict points, is there adequate sight distance? Is additional traffic control needed?
Environmental effects	Adjoining developments	Will the traffic movements be compatible with those from adjoining developments?
	Noise, pollution	Will the types of vehicles accessing the site give rise to noticeably increased noise or atmospheric pollution?

Table 2- Elements to consider in traffic management of developments*

5. Vehicle Types and Parameters

Developments that will generate a different type of traffic that may require geometric improvements or cause damage to an existing pavement (e.g. heavy vehicles, buses, road trains).

3.1 Heavy Vehicles

It is important to identify the type and size of heavy vehicles that will need to gain access to the development. This will help in determining the appropriate design vehicle and checking vehicle to be used in the development's design.

Most planning schemes require that in new areas, as well as with large developments in existing areas, loading and unloading must take place on-site rather than from a vehicle stopped on a public road. Most developments that have significant loading or unloading have a loading dock where vehicles are required to reverse into position. Developments in new areas should be designed so that all reversing and other maneuvering takes place on-site and away from conflicts with pedestrians and other vehicles. Reversing of trucks off public roads creates a potential hazard for other road users, including pedestrians and cyclists.
While it often cannot be avoided in existing areas, it should not be permitted for new developments on an existing traffic route/arterial road, due to the degree of conflict.

The type of development has a bearing on the type of heavy vehicles that require access. Examples are:

- local shops – food delivery trucks (design service truck, 12.5 m long)
- shopping centers – large delivery trucks (design prime mover and semi-trailer, 26.0 m overall length)
- offices – furniture removal trucks (design single-unit truck/bus, 12.5 m long)
- factories – large delivery vehicles (design prime mover and semi-trailer, 19.0 m overall length; or long extendable semi-trailers for indivisible loads, up to 25 m long; or B-doubles, up to 26 m long)
- warehouses – similar to factories
- hospitals – food delivery vehicles, including large ones (design single-unit truck/bus, 12.5 m long)
- rubbish tips – garbage trucks and large waste transfer trucks (design single-unit truck/bus, 12.5 m long; design prime mover and semi-trailer, 19.0 m overall length)
- service stations – 19.0 to 26.0 m; may be up to 53.3 m in some jurisdictions and locations
- mines – truck-trailer combinations, B-doubles, B-triples or other configurations
- farming – truck-trailer combinations, B-doubles, B-triples or other configurations.

6. Traffic Conditions

An indication of the traffic conditions in the vicinity of the site is provided by data published by Transport for NSW and local council/private entity surveys undertaken for this study.

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 – Land Use Traffic Generation (October 2002)* and the updated

TfNSW has permanent and temporary roadside collection devices which continuously collect traffic information data. This data is part of a TfNSW permanent traffic counting campaign to record and assess traffic conditions in real time.

traffic generation rates in the RMS *Technical Direction TDT 2013/04a (August 2013)* document.

The *TDT 2013/04a* document notes that it replaces those sections of the RMS *Guidelines* indicated, and states that it must be followed when RMS is undertaking trip generation and/or parking demand assessments.

The *RMS Guidelines* & the updated *TDT 2013/04a* document are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

High Density Residential Flat Dwellings

AM:0.19 peak hour vehicle trips per unit PM: 0.15 peak hour vehicle trips per unit

Commercial Premises

AM:1.6 peak hour vehicle trips per 100m^2 GFA

PM:1.2 peak hour vehicle trips per 100m^2 GFA

The TfNSW *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

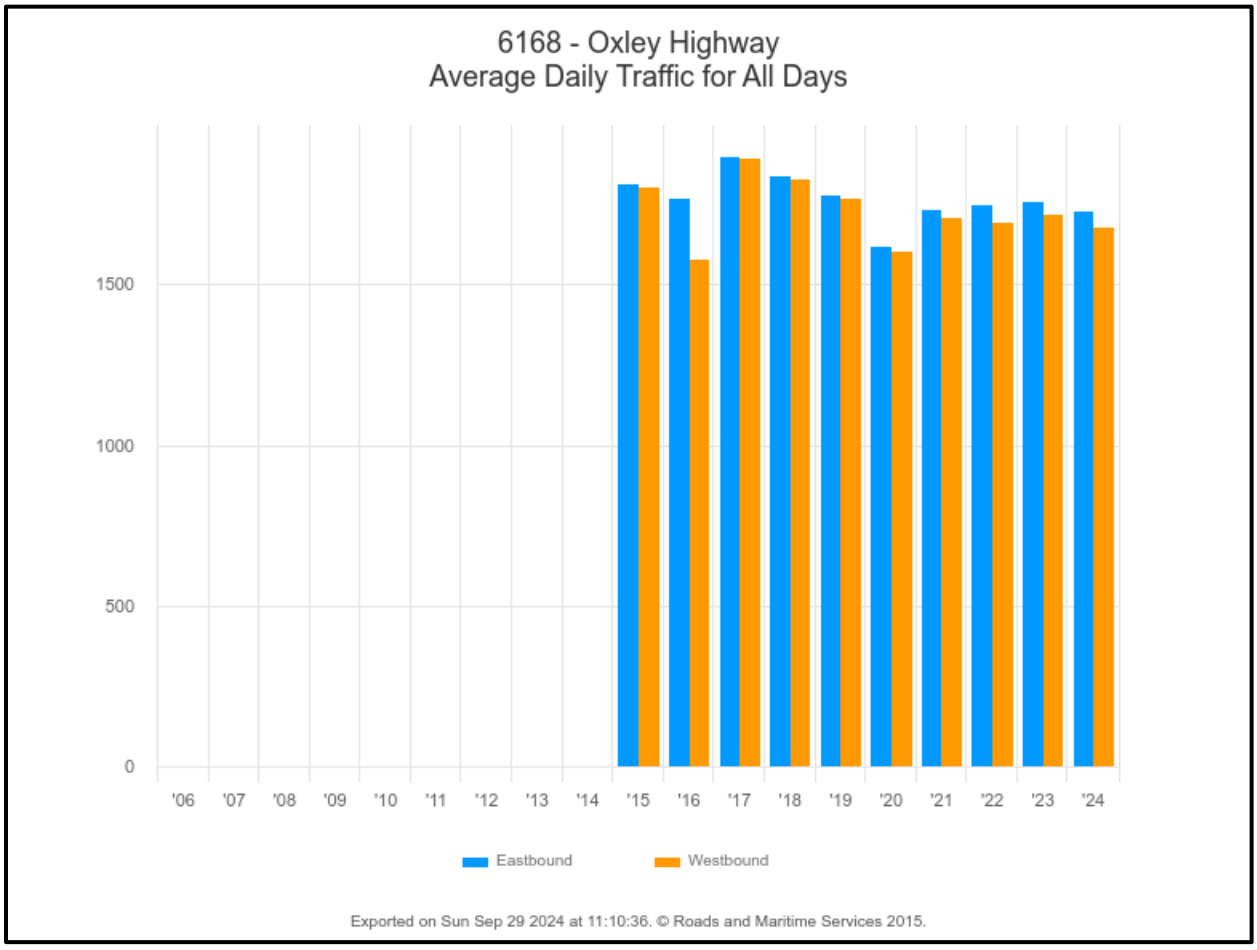
A *high density building* refers to a building containing 20 or more dwellings or vehicle spaces available. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick- up/set-down activities.

Application of the above traffic generation rate to the various components of the development proposal yields a traffic generation potential of approximately 11 vehicle trips per hour (vph) during the AM commuter peak period and approximately 9 vph during the PM commuter peak period, as set in the following page:

	2020	2021	2022	2023	2024
E	1,624 22.11%	1,737 23.03%	1,752 22.95%	1,761 23.51%	1,731 24.84%
W	1,607 23.71%	1,710 23.86%	1,697 24.28%	1,721 25.28%	1,680 26.43%
E W	3,231 22.90%	3,447 23.44%	3,449 23.60%	3,482 24.38%	3,411 25.62%



	D AADT	2024 YERALY	ANNUAL GROWTH RATE
OXLEY HWY,	3411	1.4M	**STANDARD 3% APPROX**
COUNTRY RD	**1437**	**950K**	**STANDARD 3% APPROX**

The results of our private analysis and survey of the area undertaken at Oxly Hwy & Country Rd intersection during the weekday afternoon and Saturday midday peak periods are provided below. Our analysis indicates a various but conclusive result of a moderately effected area will small to moderate-time delays and waiting periods as traffic is very minimal.

WD PM		***WE MD***	
LOS	**AVD**	**LOS**	***AVD***
A	*7.5s+*	*A*	*7.5s+*

7. Project Construction Traffic Volumes

The proposed development has an 8-parking space shortfall. This shortfall is not significant when the following factors are taken into consideration.

The business involves the sales and servicing of large, heavy vehicles, which requires a significant amount of floor space for each service bay, which is equipped with the latest tools and technologies to ensure that high-quality services are delivered to customers. The time required for servicing these vehicle types is much longer than for small vehicles and, therefore, is not considered to generate the demand for 118 parking spaces.

The design response proposes a large workshop with a total area of 4727 m^2, providing ample space for the efficient servicing of such vehicles. The total floor area of the workshop significantly skews the total number of spaces required under TRDCP10. The alternative rate of three spaces per workshop bay would only require 48 spaces instead of 118. This would reduce the total number of spaces required for the development to only 91.

Given the proposed development and the traffic likely to be generated, the total number of 173 proposed spaces in the development is considered to be more than suitable.

Clause 2.119 *Development with frontage to classified road of State Environmental Planning Policy (Transport and Infrastructure) 2021*

The proposed development has been designed so that there is no direct access to Gunnedah Road. Furthermore, the proposed development is unlikely to produce any harmful smoke or dust, which could adversely affect Gunnedah Road. The vehicular access has been designed to provide circular movement of heavy vehicles through the site and has the vehicles entering a considerable distance from the roundabout on Gunnedah Road. The existing road infrastructure can suitably accommodate the traffic volume the development will likely generate. The sales, spare parts, and workshop development are unlikely to affect traffic movements along Gunnedah Road.

The proposed access for light vehicles into the proposed development is located within 90m of the Gunnedah Road roundabout and proposes more than 50 parking spaces, meaning the development is a type required to be referred to Transport for NSW under Column 3 of Schedule 3 of the Transport and Infrastructure SEPP.

As indicated earlier, the proposed entry for heavy vehicles is located in Gilaa Circuit, a considerable distance from the Gunnedah Road Roundabout and should, therefore, not impact traffic movements and the function of Gunnedah Road or the Roundabout.

All vehicle maneuvering areas are proposed to be sealed with concrete or hot mix bitumen, ensuring the vehicles leaving the subject site will not track dirt and other debris onto the public road network

8. Traffic Management Parameters

Austroads Part 10 & TfNSW TCAWs Manual 6.1provides an outline of the transport control devices available to road agencies to manage the road corridor through an overview of:

- principles and application of transport control devices
- signage and marking schemes needed to manage the road corridor network in a holistic way
- types of signs (both static and electronic) available and guidance on their use and management
- electronic signs and guidance on their use and management but not going into the operation of the variable message signs (VMS)
- types of pavement markings and guidance on their use and management
- use of guideposts and delineators
- traffic signals and guidance on their use and management but not going into the operation of the signals
- traffic islands and guidance on their use and management

current and emerging devices that utilize direct communication with equipped vehicles and may be used for transport control purposes.

9. Road Safety Assessment

A road agency or planning authority should consider the level of road safety assessment required for a particular development. Some developments will require both types of assessment.

The types of development projects that should include this type of assessment are described in Section

This assessment may involve reviewing the known crash pattern at or near the development site, so that development works can either address the problem, not make it worse or be designed to accommodate future road agency works to address the problem

• for larger developments, should consider traffic accessing the development site during construction (trucks, cranes, etc.) and its changing nature during the development

• should assess the safety of the development's access points in relation to nearby access points, intersections and traffic control devices

• should assess the safety of the internal traffic layout, access point layouts, pedestrian and cycle path layouts and commercial vehicle area layouts

This should be undertaken for any project where:

- the internal traffic layout consists of more than a short driveway leading to a single parking area of, say, 10 spaces, or
- the conditions for road safety audit (below) apply.
-

9.1 independent road safety audits

This should be undertaken where the risks to the public are significant, specifically where:

- roads surrounding the development have existing road safety issues
- the development is large and complex with high levels of activity by all road users (e.g. residential subdivisions and industrial subdivisions of more than 20 lots; shopping centers (new and expanding) with more than 50 car parking spaces)
- large-scale rural projects such as mines or quarries which significantly change the type and behavior of traffic in the area of the development and its approach routes
- there is significant use by pedestrians or cyclists, or both
- the development directly abuts an arterial road/traffic route (i.e. the

volumes of traffic and traffic speeds are higher).

Designers should consider road safety issues as they design a development. The design should complement the Safe System principles applied at the planning stage. However, to be consistently effective, a road safety assessment requires the input of a road safety engineer. This is someone with experience in the diagnosis and treatment of crash locations and the design of effective remedial treatments. This experience is gained from the investigation of hazardous locations (see the Guide to Road Safety Part 8 (Austroads 2015b)) and is an essential ingredient in road safety auditing (see the Guide to Road Safety Part 6A (Austroads 2019)).

The following are requirements for who should undertake an assessment or audit:

- For a road safety assessment of a development as part of a TIA report, the road safety engineer may be directly employed by the developer.

- For a separate road safety audit report, the road safety engineer must be independent of both the development's proponents and advisors, and the authors of the TIA report. If the development is large, an audit may be required at more than one design phase.

To ensure that the development is as closely aligned with safe system principles as possible, a Safe System assessment (SSA) may additionally be undertaken. The framework for doing so is set out in the Austroads research report AP-R509-16: Safe System Assessment Framework.

An SSA is an examination of a road- related program, project or initiative designed to assess the degree to which that project aligns with safe system principles. It is best undertaken as early in the design process as possible and usually firstly involves an assessment of the existing conditions to determine a baseline score, followed by an assessment of each design option to determine how well those options compare in terms of alignment with safe system principles. The SSA will then make recommendations on how to improve alignment, regardless of whether the project improves on the baseline score. In this way, Safe System alignment can influence the choice of option selected for further development

9.1 Typical Road Safety Issues

Project Management is to ensure that all potential road safety issues on-site and on existing and proposed roads near a development have been identified and addressed. Depending on the type, size and location of the development it is suggested that the following types of issues be considered:

- vehicular and pedestrian site access, including driveway locations and shape, new turn lanes, swept paths of large vehicles, footpath locations near traffic
- pedestrian-vehicle conflicts on-site and adjacent to the site
- adequacy of parking provision and the need to avoid parking overflow onto nearby roads (especially into traffic lanes on traffic routes)
- speeds within the site and at access/conflict points
- visibility at conflict points
- safe provision for public transport and its patrons
- generation of pedestrian and cyclist movements across existing arterial roads
- safety impact of congestion in peak periods, including changes to turning movements and the use of nearby streets

type, layout and operation of adjacent intersections

Due to the project size it may have a direct impact on the road pavement – and possibly bridges and culverts – in the area near the development. Examples include quarries (where the vehicles accessing the development are large and heavy) and developments that generate volumes of traffic, which exceed the earlier design volume for the road pavement, in terms of the number of equivalent standard axles (ESAs). In these cases, an assessment of the development's impacts on the road pavement will be required for road and areas that are not rated to receive such heavy loads and high traffic.

Where existing roads will be exposed to increased heavy vehicle traffic or new vehicle types, e.g. buses resulting from subdivision development, pavement impact can be a significant consideration, especially where old road pavements are involved.

Issues to be considered with any large road project may also include drainage, utility service relocation and effects on existing structures or watercourses.

Further discussion and advice on pavement impact issues is given in the *Guide to Pavement Technology* (*Austroads 2007–19).*

Road Design and Network	
• The internal road layout will connect with the 'ring road' to accommodate the varied development on the site. An indicative internal road layout is shown on the TGGP Precinct Plan.	N/A
• The road layout shall be designed in accordance with the Tamworth Global Gateway	N/A
• Precinct Design Criteria Report and The TRC Engineering Minimum Standards.	N/A
• The road reserve shall be designed at an appropriate width to allow for future recycled water connections.	N/A
• Subdivisions must incorporate an alternative movement network consisting of cycleways and shared pathways with	N/A
the objective of facilitating non-motorised movement within and beyond the estate.	
• Cycle ways shall be designed in accordance with the Cycleway Concept Plan. (Figure 9)	N/A
Traffic and Access	
• Development that is traffic generating development and requires referral to Transport for New South Wales will not be fast tracked	Acknowledged
• Development application plans for lots fronting Goddard Lane are to incorporate road widening of 5 metres on the eastern side for the length of Goddard lane.	N/A
• The principal access points to the TGGP are from the Country Road five-way roundabout and from Goddard Lane. A major 'ring road' is to connect these points of access as per the TGGP Precinct Plan.	N/A
• Direct lot access from Oxley Highway, Marathon Street and Goonan Street will not be permitted.	N/A
• Proposals that include unsealed vehicle manoeuvring areas must install a mechanism (such as shaker plates or a wash down area) to ensure no transfer of dirt from the site onto the road reserve will occur.	The development does not propose any manoeuvring areas which are not sealed
Parking	
Refer to Appendix A for parking rates.	See Above
Signage	

• Development Applications seeking to display signage to the Oxley Highway should include an assessment of the road safety criteria under Part 3 of the Transport Corridor Outdoor Advertising and Signage Guidelines.	See Appendix 3
Noise	
• Windows, doors, and other wall openings shall be arranged to minimise noise impacts where the development is located adjoining or adjacent to existing residential areas.	N/A
• External plant (generators, air conditioning plant etc.) shall be enclosed to minimise noise nuisance where the development is located adjacent to existing residential areas.	See Above
• Details, including the proposed location of external plant shall be submitted with the development application.	Areas have been shown on the plans for the positioning of external plant
Tamworth Regional Airport	
• Development applications that are located within the flight path or likely to adversely affect aircrafts or the airport facility must be referred to the owner/operator of the Tamworth Regional Airport.	Acknowledged
• Factors affecting the operation of the Airport must be considered including light glare, plumes, bird attractants.	This proposed development is not likely to cause light issues for the airport or attract birds.
• Development applications that must be referred to the Airport will not be fast tracked.	Acknowledged
• A condition will be imposed on any development consent to require that notification be provided to the Airport Manager a minimum of 21 days before the operation of a crane for building work.	Acknowledged
• The Tamworth Regional Local Environmental Plan 2010 contains controls relating to the construction of buildings within the vicinity of the Tamworth Airport, which may impact on the height and construction standards.	See Above
2 Special areas	

• Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes, or residential areas?	The proposed signage is not considered to detract from the amenity or visual quality of any environmentally sensitive area, heritage area, natural or other conservation areas, open space areas, waterways, rural landscapes, or residential areas.
8 Safety	
• Would the proposal reduce the safety for any public road?	The proposal should not reduce the safety of any public road.
• Would the proposal reduce the safety for pedestrians or bicyclists?	The proposal should not reduce safety for pedestrians or cyclists.
• Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	The proposal will not obscure sightlines from public areas due to the location and significant separation between the structures.
• Where there is potential for light spill to adjoining properties, all illuminated signage shall be fitted with a timer switch to dim or turn off by 11pm each night.	Acknowledged, however, there is no external illuminated signage proposed.
• Signage must comply with SEPP 64 – Advertising and Signage Schedule 1 Assessment Criteria.	See Assessment under Appendix 2.
• "Special promotional advertisements" may be installed in accordance with clause 25 of SEPP 64 – Advertising and Signage provided that the sign does not compromise any Public Art or the integrity of the space in which it is located in the main streets, public parks and gardens and major venues across the region's city, towns and villages.	N/A
• External illumination to signs must be top mounted and directed downwards.	N/A
• The following types of signs are not acceptable:	
• Portable signs within public footways and road reserves including variable message signs, A Frame and Sandwich Boards;	N/A

• Outdoor furniture (including chairs, bollards and umbrellas) advertising products such as coffee, alcohol or soft drink;	N/A
• A roof sign or wall sign projecting above the roof or wall to which it is affixed;	N/A
• Flashing or intermittently illuminated signs;	N/A
• Advertisements on parked motor vehicles or trailers (whether or not registered) for which the principal purpose is for advertising;	N/A
• Signs fixed to trees, lights, telephone or power poles;	N/A
• Signs which could reduce road safety by adversely interfering with the operation of traffic lights or authorized road signs;	The proposed signs should have no adverse impacts on road users.
• Any sign which would in the opinion of Council, be unsightly, objectionable or injurious to the amenity of the locality, any natural landscape, public reserve or public place;	N/A
• Numerous small signs and advertisements carrying duplicate information; and	N/A
• Overhead banners and bunting, except in the form of temporary advertisement	N/A

10. Recommendations and conclusions

It is of the Recommendations that current operations regarding - 1 Marathon St, Westdale NSW 2340

The proposed development is considered in the public interest, as it should have a minimal Traffic related impacts and is in accordance with the TfNSW Polices and independent findings as all remaining works are to be enclosed from within an excluded project works area.

10.1 Recommendations working hours

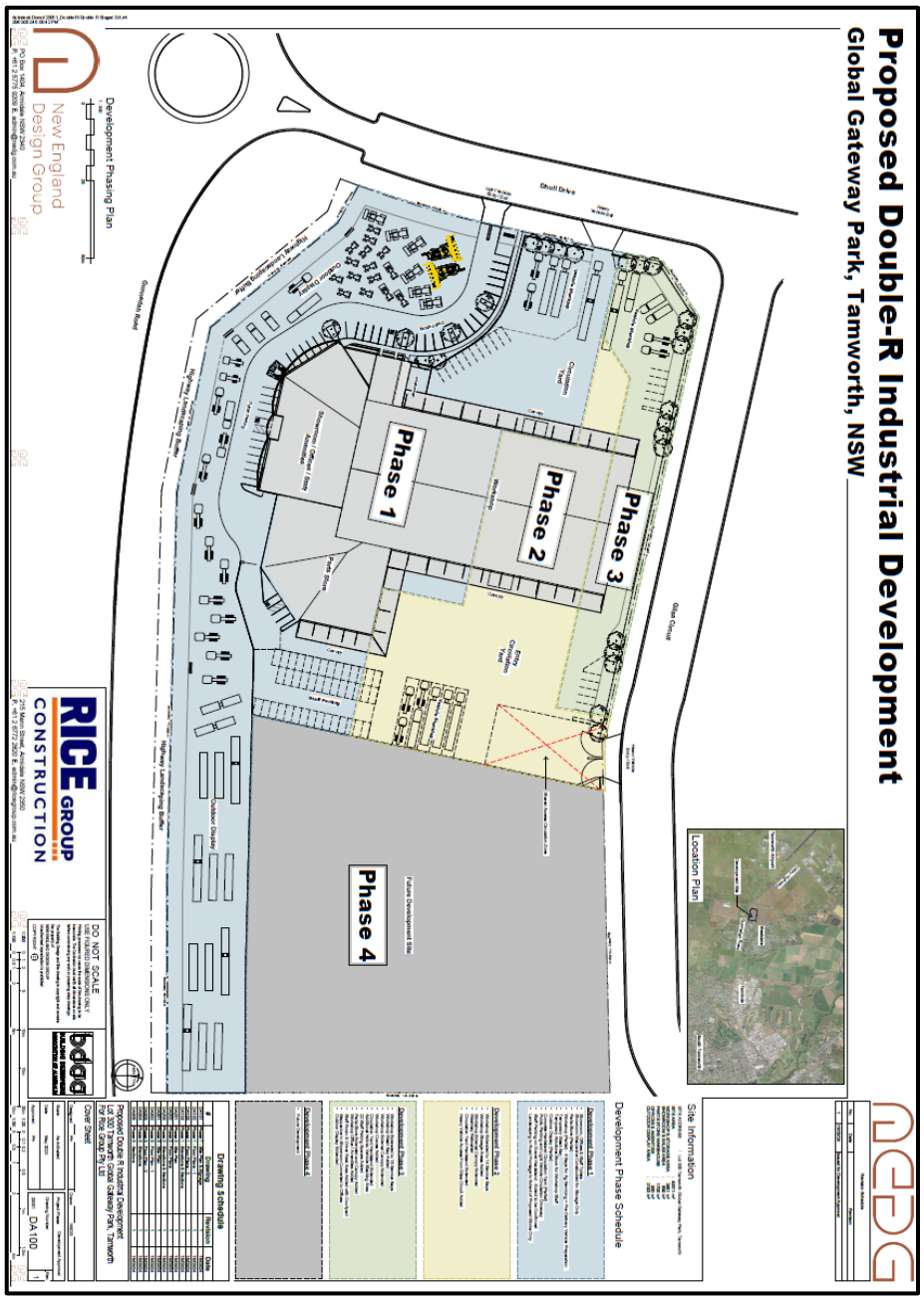
The number of vehicle trips potentially generated by the development can be mitigated by initiatives for walking, cycling, public transport use, car-pooling, telecommuting or through other demand management techniques such as alternative working hours or out-of-hours delivery. Some jurisdictions may require large companies to actively implement such initiatives through their corporate travel plans.

The proposed development should have only a minimal impact on the amenity and environment during the works other than some construction noise and traffic. The distances of the proposed development from noise receptors should also reduce the potential impacts significantly. These impacts will be further mitigated by adhering to the following construction hours:

Monday to Friday, 7 am to 6 pm; and Saturday 8 am to 1 pm.

Appendix A

Project Documents



Appendix C

Turning Path Assessment

Disclaimer:

TTC is committed to providing a safe working environment to all employees, contractors visitors and general public. Managing traffic at a construction workplace is an important part of ensuring the workplace is without risks to health and safety. We will manage all traffic including vehicles moving around the workplace.

Traffic includes cars, trucks and powered mobile plant, pedestrians, employees, cyclists, visitors, and contractors.

TTC policies and procedures will ensure as far as is reasonably practicable, workers and others are not exposed to health and safety risks arising from any works to be undertaken. We are committed to implementing control measures to prevent any injuries by moving vehicles at the workplace.

Our key objectives include.

- Demonstrate compliance with all applicable Work Health and Safety and Traffic Management Legislations, Regulations, Guidelines, Manuals and Australian Standards.
- Develop and maintain zero harm culture.
- Provide the highest practicable level of protection to road workers and any personnel hat might be affected by the works for the duration of the project.
- Provide assistance to all traffic during the construction phase.
- Minimize vehicles movements or minimize the related risks.
- Develop Specific Traffic Management and Traffic Control plans.

TTC is committed to providing continuous update of all our procedures and plans to all relevant employees and stakeholders through regular trainings and inspections.

This Traffic Management Plan complies with Austroads section 3 static worksites manual, AS 1742.3 & TCAWS V6.1.

This Traffic Management Plan was drafted & completed by: Mohamad Hassoun

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