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PRECINCT TRAFFIC MANAGEMENT PLAN – LOCKHART LGA (THE ROCK)



A2I | Albury to Illabo

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GLOSSARY

TABLE 1: GLOSSARY

| TERM | DEFINITION |
|-----------------------------------|--|
| ARTC | Australian Rail Track Corporation |
| CCS | Community Communication Strategy |
| CEMP | Construction Environmental Management Plan |
| CoA | Conditions of Approval |
| Construction | Includes work required to construct the CSSI as defined in the Project Description described in the documents listed in Condition A1 including commissioning trials of equipment and temporary use of any part of the CSSI but excluding Low Impact Work which is carried out or completed prior to approval of the CEMP. |
| CSSI | Critical State Significant Infrastructure |
| DPHI | NSW Department of Planning, Housing and Infrastructure |
| EAD | Per CoA A1, Environmental Assessment Documentation that includes: <ul style="list-style-type: none"> • Inland Rail – Albury to Illabo Environmental Impact Statement (ARTC, August 2022); • Albury to Illabo Response to Submissions (ARTC, November 2023); • Albury to Illabo Preferred Infrastructure Report (ARTC, November 2023); • Albury to Illabo Preferred Infrastructure Report Response to Submissions (ARTC, February 2024); • Inland Rail – Albury to Illabo (SSI-10055) Response to request for additional information – Air Quality Assessment (letter dated 1 May 2024); • Part 1 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024); • Part 2 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024). |
| EIS | Environmental Impact Statement |
| EPA | Environment Protection Authority (NSW) |
| EPBC Act | <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> (Federal) |
| EPL | Environment Protection Licence |
| Environmental Representative (ER) | The Environmental Representative(s) for the CSSI approved by the Planning Secretary |
| km | Kilometre |
| LoS | Level of Service |
| m | metre |
| MR | Martinus Rail |
| NHVR | National Heavy Vehicle Regulator |
| NSW | New South Wales |
| Planning Secretary | Secretary of the NSW Department of Infrastructure, Housing and Infrastructure, or delegate |
| PIR | Preferred Infrastructure Report |
| PTMP | Precinct Traffic Management Plan (this Plan) |

| TERM | DEFINITION |
|-----------------|---|
| Primary CoA/UMM | CoA and/or UMMs that are specific to the development of this Plan |
| POEO Act | <i>NSW Protection of Environment Operations Act 1997</i> |
| Rail Corridor | Land that is: <ul style="list-style-type: none">a. owned, leased, managed or controlled by a public authority for the purpose of a railway or rail infrastructure facilities, or zoned under an environmental planning instrument predominantly, orb. solely for development for the purpose of a railway or rail infrastructure facilities. |
| RMAR | Road Maintenance Access Road |
| ROL | Road Occupancy Licence |
| Transport | Transport for New South Wales (formerly Roads and Maritime Services) |
| TMP | Traffic Management Plan |
| UMM | Updated Environmental Management Measures |
| VMP | Vehicle Movement Plan |

REFERENCED DOCUMENTS

This Precinct Traffic Management Plan (PTMP) is a subplan to the project wide Construction Traffic, Transport, and Access Management Plan and has been prepared by Martinus in accordance with...

- Albury to Parkes (A2P) Construction Environment Management Framework (CEMF) (ARTC);
- Construction Traffic, Transport, and Access Management Plan - Stage B Albury to Illabo | A2I
- Australian Standard 1428.1-2009 Design for access and mobility;
- Australian Standard AS 1742 Parts 1 to 14, Manual of Uniform Traffic Devices (as required);
- Australian Standard AS 1743.3-2019 Traffic control devices for works on roads;
- Australian Standard AS 3845.2:2017 Road Safety Barrier Systems and Devices;
- Australian Standard AS 3845.1:2015 Road Safety Barrier Systems and Devices;
- Austroads Guide to Temporary Traffic Management: Parts 1-10 (2021);
- Austroads Guide to Traffic Management – Parts 1-13 (2020);
- Austroads Guide to Road Design – Parts 1-8 (2020);
- Austroads Guide to Road Safety – Parts 1-9 (2019);
- Austroads Safe System Assessment Framework (2016);
- Austroads Design Vehicles and Turning Path Templates (2023);
- Transport Management Centre – Road Occupancy Manual (2015);
- NSW Speed Zoning Standard (Transport for NSW (Transport), 2023);
- Transport for NSW Traffic control at work sites Technical Manual (2022);
- Roads and Maritime Delineation Manual (2008);
- Guide to Traffic Generating Developments Version 2.2 (Roads and Traffic Authority (RTA), 2002);
- Level Crossing Closures Policy (Transport for NSW (Transport), n.d.);
- Cycling Aspects of Austroads Guides (Austroads, 2014);
- NSW Bicycle Guidelines version 1.2 (RTA, 2005);
- Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004);
- Construction of New Level Crossing Policy (Transport, 2017a);
- Future Transport Strategy (Transport, 2022);
- NSW Freight and Ports Plan 2018-2023 (Transport, 2018b)
- NSW Sustainable Design Guidelines Version 4.0 (Transport, 2017b);
- Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan (RTA, 2011);
- Guides to Road Design (Austroads, 2021).
- Supplement to Austroads Guide to Road Design (Transport, 2023).
- ARTC Inland Rail Albury to Illabo (A2I) Project Technical Paper 1 – Traffic and Transport (July 2022)
- Appendix C Addendum Assessment to Technical Paper 1: Traffic and Transport Parts 1 and 2 (November 2023)
- Appendix D Addendum Assessment to Technical Paper 1: Traffic and Transport (February 2024)
- All relevant TfNSW Supplements and Technical Directions.
- All relevant TfNSW Austroads Supplements.

1 INTRODUCTION

1.1 Inland Rail

The Australian Government has committed to building a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane, via central-west New South Wales (NSW) and Toowoomba in Queensland. Inland Rail is a major national project that will enhance Australia's existing national rail network and serve the interstate freight market. The Inland Rail route, which is about 1,700 kilometres (km) long, involves:

- Using the existing interstate rail line through Victoria and southern New South Wales
- Upgrading approximately 400 km of existing track, mainly in western New South Wales
- Providing approximately 600 km of new track in northern New South Wales and south-east Queensland

Inland Rail has been divided into 13 projects, seven of which are in New South Wales. Refer to Figure 1 for map of proposed Inland Rail route from Melbourne to Brisbane.

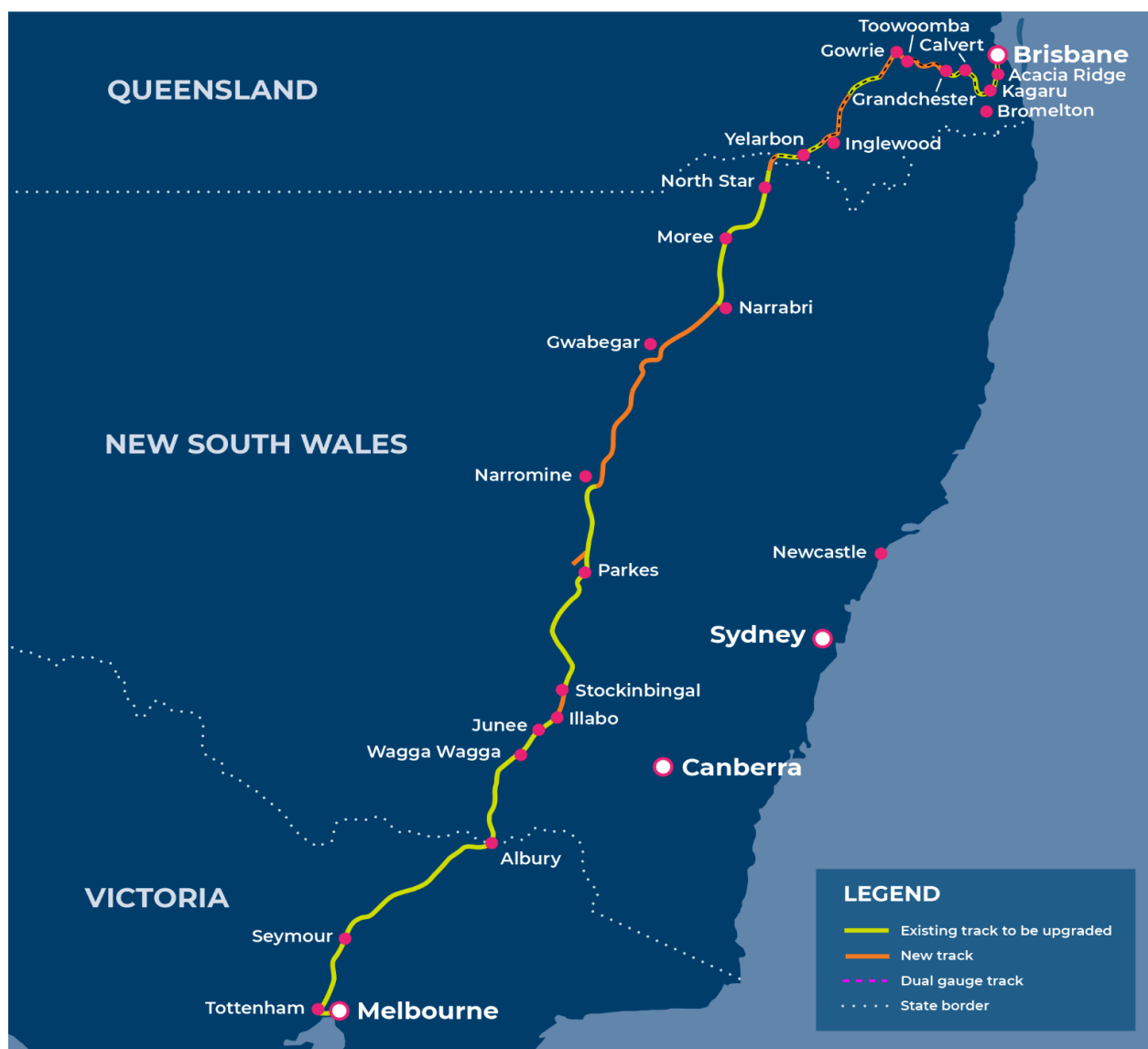


FIGURE 1: RAIL ALIGNMENT

1.2 Albury to Parkes (A2P)

As part of the Inland Rail program of projects, the Australian Rail Track Corporation (ARTC) has appointed Martinus as the delivery contractor for the Albury to Parkes (A2P) project, which comprises the brownfield sections between Albury and

Illabo (A2I) and Stockinbingal to Parkes (S2P). The greenfield portion between Illabo to Stockinbingal (I2S) is not a part of the A2P project scope.

The A2I portion is Design and Construct (D&C) works and is subject to an Environmental Impact Statement (EIS), with anticipated approval in Q2 2024. The S2P portion comprises both Construct-Only (CO) and Design and Construct works and is subject to a Review of Environmental Factors (REF) which has been assessed and approved.

The Project will be delivered under an Incentivised Target Cost (ITC) contract.

1.3 Project Scope

This Incentivised Target Cost (ITC) project is typically an Enhancement project where ARTC has identified the Albury to Illabo (A2I) and Stockinbingal to Parkes (S2P) tracks to be authorised for double-stacked freight container trains.

Within the A2I section there are twenty (20) Design and Construct (D&C) projects.

Within the S2P section there are two (2) Construct only projects (Daroobalgie New Loop and Wyndham Avenue track lowering) and seven (7) Design and Construct (D&C) projects.

The D&C scope typically includes works associated with route clearance to accommodate the new F2M clearance envelope, necessary to accommodate the double-stacked freight container trains and this includes.

- Structure Modifications
- Track reconfigurations
- Bridge replacements
- Track lowering
- Track Slews
- Bridge removal

1.4 Site Location

The Albury to Parkes Project is split into two areas (A2I and S2P) – refer Figure 2.



FIGURE 2: ALBURY TO PARKES AREA SPLIT

1.5 Background

This Precinct Traffic Management Plan (PTMP) has been developed to document the Temporary Traffic Management arrangements and Construction Access Routes proposed during works within the Lockhart Shire Council Local Government Area (LGA).

1.6 Objectives

The objectives of this PTMP are to:

- Avoid or minimise potential impacts of construction activities on road safety and the existing transport network and associated infrastructure.
- Avoid or minimise potential impacts on the community and stakeholders with respect to traffic and transport.
- Where potential impacts cannot be avoided, identification of site-specific mitigation measures to minimise and mitigate impacts on road safety, traffic flow and access.
- Demonstrate how compliance with the obligations imposed by the requirements of the Ministers Conditions of Approval with respect to traffic and transport will be achieved.

1.7 Scope of this Plan

The works within the Lockhart LGA at the following enhancement sites:

- **The Rock Yard Clearances**

2 LOCALITY AND EXISTING CONDITIONS

2.1 Overview

Characteristics of the key roads and intersections proposed to support the construction activities are described below for The Rock Yard Clearances enhancement site.

2.2 The Rock Yard Clearances



FIGURE 3: STATE, REGIONAL AND LOCAL ROADS YERONG CREEK YARD CLEARANCES

2.2.1 Key Roads

Overview

The following table provides an overview of key roads proximate the Yerong Creek Yard Clearances enhancement site proposed to support construction activities.

TABLE 2: KEY ROADS – YERONG CREEK YARD CLEARANCES ENHANCEMENT SITE

| Road | Road name | Road Hierarchy |
|------|----------------------------------|--------------------------|
| 1 | Railway Street (Olympic Highway) | Classified State Road |
| 2 | Urana Street | Classified Regional Road |

Railway Street (Olympic Highway)

Traffic and Lane Configurations

The following table details the typical traffic and lane configurations of the Railway Street (Olympic Highway), proximate The Rock Yard Clearances enhancement site.

TABLE 3: TRAFFIC AND LANE CONFIGURATIONS – RAILWAY STREET (OLYMPIC HIGHWAY)

| Road name | Road hierarchy | Road Configuration | Lane Configuration | Speed Limit | AADT |
|----------------------------------|-----------------------|--------------------|--------------------|-------------|-----------------------------------|
| Railway Street (Olympic Highway) | Classified State Road | Two-lane, two-way | ~3.5m wide lanes | 50km/hr | 3,077, 18% HV (2010) ¹ |

¹ No data available, volumes estimated as Olympic Highway – 50m East of Mangoplah Road, The Rock 2655



FIGURE 4: RAILWAY STREET (OLYMPIC HIGHWAY) (SOURCE: GOOGLE MAPS)

Pedestrian and Cyclist Facilities

The following table provides a review of pedestrian and cyclist provisions along Railway Street (Olympic Highway), proximate The Rock Yard Clearances enhancement site.

TABLE 4: PEDESTRIAN AND CYCLIST FACILITIES – RAILWAY STREET (OLYMPIC HIGHWAY)

| Provisions | Comment |
|---|------------------------------|
| Are footpaths provided on one or both sides of the road? | No formed footpaths provided |
| If yes, what is the width of the footpath(s)? | N/A |
| Does the road currently form part of a Principal Cycle Network? | No |
| Are designated on-road cycle lanes provided? | No |
| Is the road designated as a Bicycle Awareness Zone (BAZ)? | No |

Public Transport Facilities

Details of public transport facilities and services operating along the Railway Street (Olympic Highway), proximate The Rock Yard Clearances enhancement site is detailed in Table 5 below.

TABLE 5: PUBLIC TRANSPORT FACILITIES – RAILWAY STREET (OLYMPIC HIGHWAY)

| Bus stop ID | Direction | Services | Service frequency |
|--|---------------------------|----------|----------------------|
| The Rock Station, Coach Stop (26552) | Northbound and southbound | Unknown | Unknown |
| Olympic Hwy opposite Mangoplah Rd (265516) | Northbound | S123 | Single service 07:45 |

Parking Facilities

Details of parking facilities along the Railway Street (Olympic Highway), proximate The Rock Yard Clearances enhancement site is detailed in Table 6 below.

TABLE 6: PARKING FACILITIES – RAILWAY STREET (OLYMPIC HIGHWAY)

| Location | Parking | Time of day restriction |
|---------------------------------------|--|-------------------------|
| Olympic Highway | Roadside parking | No restrictions |
| The Rock Station, off Olympic Highway | Off road unsealed and unmarked parking | No restrictions |

Urana Street

Traffic and Lane Configurations

The following table details the typical traffic and lane configurations of Urana Street, proximate The Rock enhancement site.

TABLE 7: TRAFFIC AND LANE CONFIGURATIONS – URANA STREET

| Road name | Road hierarchy | Road Configuration | Lane Configuration | Speed Limit | AADT |
|--------------|--------------------------|--------------------|--------------------|-------------|---------------------------------|
| Urana Street | Classified Regional Road | Two-lane, two-way | ~3.6m wide lanes | 50km/hr | 764, 12% HV (2014) ² |

² No data available, volumes estimated as Sladen Street, Henty with equivalent HV proportion.



FIGURE 5: URANA STREET (SOURCE: GOOGLE MAPS)

Pedestrian and Cyclist Facilities

The following table provides a review of pedestrian and cyclist provisions along Urana Street, proximate The Rock Yard Clearances enhancement site.

TABLE 8: PEDESTRIAN AND CYCLIST FACILITIES – URANA STREET

| Provisions | Comment |
|---|--|
| Are footpaths provided on one or both sides of the road? | Yes – Shared path with rail crossing southern and western side |
| If yes, what is the width of the footpath(s)? | ~2.0m wide |
| Does the road currently form part of a Principal Cycle Network? | No |
| Are designated on-road cycle lanes provided? | No |
| Is the road designated as a Bicycle Awareness Zone (BAZ)? | No |

Public Transport Facilities

Details of public transport facilities and services operating along Urana Street, proximate The Rock Yard Clearances enhancement site is detailed in Table 9 below.

TABLE 9: PUBLIC TRANSPORT FACILITIES – URANA STREET

| Bus stop ID | Direction | Services | Service frequency |
|-------------------------------|-----------------------|----------|---|
| Urana Street at Day Street | Eastbound – westbound | S265, | Single arriving AM service Single departing PM service |
| | | S754 | Single departing AM service Single arriving PM service |
| | | S124 | Single arriving PM service |
| | | S194 | Single departing AM service |
| Day Street after Urana Street | Southbound | S263 | Two (2) services daily |

Parking Facilities

Details of parking facilities along Urana Street, proximate The Rock Yard Clearances enhancement site are detailed in Table 10 below.

TABLE 10: PARKING FACILITIES – URANA STREET

| Location | Parking | Time of day restriction |
|---|--|-----------------------------|
| Urana Street (between divided carriageway and Railway Street (Olympic Highway)) | Kerbside parallel parking on the southern side only | Vehicle under 4.5t GVM only |
| Urana Street – westbound carriageway | Kerbside parallel parking on the northern side of the carriageway. Front to kerb 45-degree parking on the southern side of the carriageway. | No restrictions |
| Urana Street – eastbound carriageway | Kerbside parallel parking on the southern side of the carriageway. Front to kerb 45-degree parking on the northern side of the carriageway. | No restrictions |

3 PROPOSED ARRANGEMENTS

3.1 The Rock Enhancement Site

3.1.1 Site Location

The Rock Yard Clearances enhancement site is shown below in

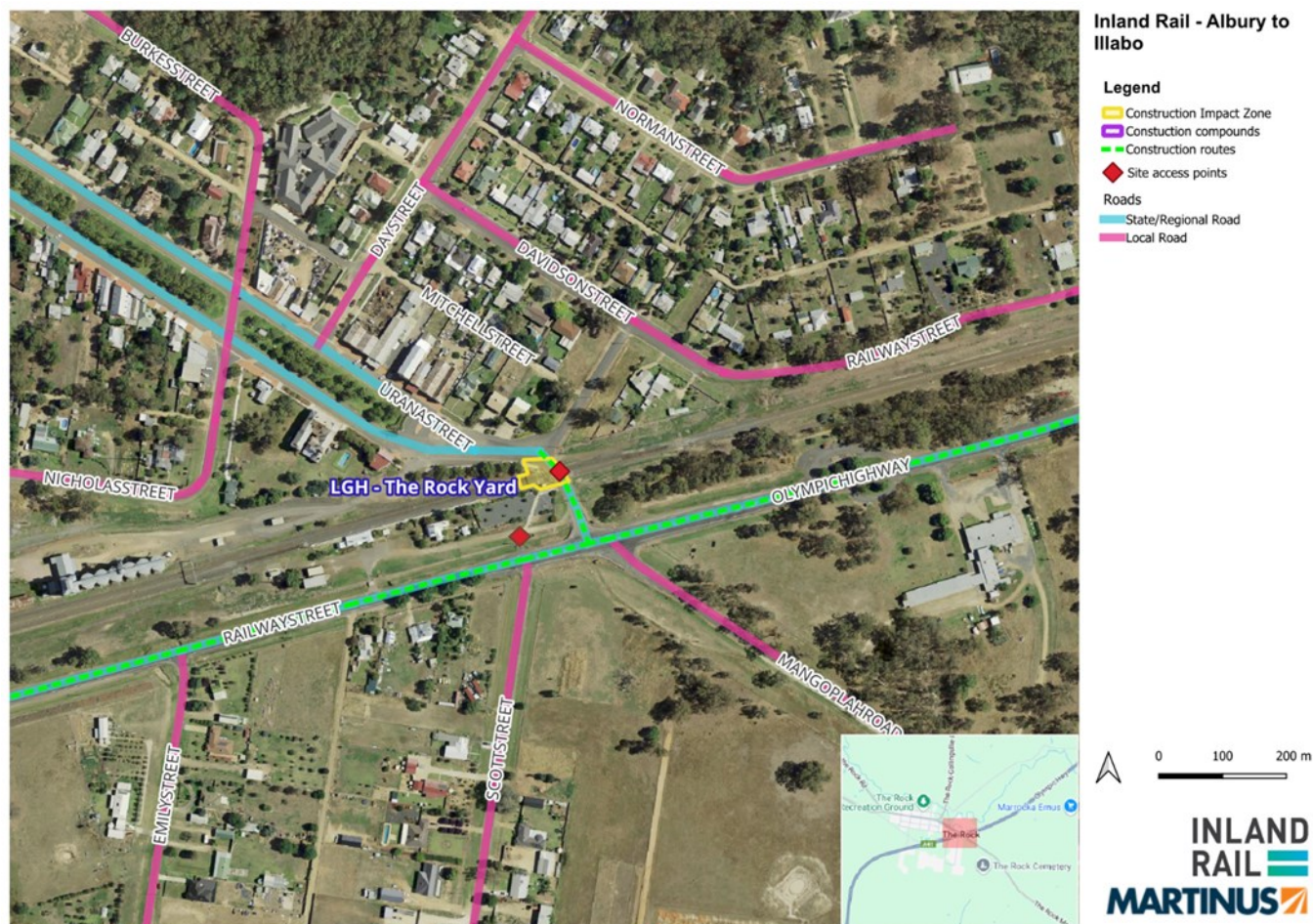


FIGURE 6: THE ROCK ENHANCEMENT SITE

3.1.2 Works Required

The scope of work at The Rock Yard Clearances enhancement site comprises of the following:

- Site establishment including establishment of site compound off the Olympic Highway, adjacent the rail corridor, in the station car park area.
- Signalling modifications (short-term works – refer to Section 3.1.14)

3.1.3 Timing and Duration

The proposed arrangements are planned to be implemented during early September 2025.

3.1.4 Operating Conditions

There will be no long-term changes to the existing conditions on the roads in the vicinity of The Rock Yard Clearances enhancement site resulting from the works.

Temporary speed limit reductions and/or short-term traffic control (intermittent stops) may be implemented along Urana Street or the Olympic Highway to facilitate the safe and efficient movement of construction vehicles (refer to Section 3.1.13).

3.1.5 Construction Traffic

The peak volume of additional traffic generated by the Table Top Yard Clearance works required to access the worksite has been broken down as follows:

TABLE 11: SITE ACCESS CONSTRUCTION VEHICLE MOVEMENTS

| Site access | Vehicle type | Scope | Vehicle movements (one-way) per shift | Vehicle movements (one-way) per peak hour |
|-------------|----------------------------|--|--|---|
| Gate TR1 | Light vehicles | Site access | ≤ four (4) per shift (during peak periods) | ≤ one (1) per peak hour (during peak periods) |
| | Light vehicle with trailer | Delivery of materials, smaller plant, equipment and removal of waste | ≤ two (2) per shift (during peak periods) | ≤ one (1) per peak hour (during peak periods) |
| Gate TR2 | Light vehicles | Site access | ≤ six (6) per shift (during peak periods) | ≤ one (1) per peak hour (during peak periods) |

Heavy vehicles are not expected to be required to facilitate the works, and as such, a light vehicle with a trailer is expected to be the largest vehicle type accessing the worksite.

3.1.6 Site Access

Overview

Access to The Rock Yard Clearances enhancement site will be via two (2) existing access points located on Railway Street (Olympic Highway) and Urana Street. The location of the site access gates is shown the figure below.



FIGURE 7 SITE ACCESS LOCATIONS - THE ROCK ENHANCEMENT SITE

A summary of permitted movements and methods of control at site access locations is provided below in Table 12, with further details provided in subsequent sections of this report.

TABLE 12: SITE ACCESS DETAILS – THE ROCK ENHANCEMENT SITE

| Access | Site Entry/Exit | Vehicle type | Permitted Movements | Control |
|--|-----------------|----------------------------|---------------------------------------|----------|
| Gate TR1 – Existing access off Olympic Highway | Entry and exit | Light vehicle | Left in, left out | Give-way |
| | | Light vehicle with trailer | | |
| Gate TR2 – Existing access off Urana Street | Entry and exit | Light vehicle | Left and right in, left and right out | Give-way |

A swept path analysis has been undertaken, demonstrating the ability for construction vehicles to manoeuvre into and out of the nominated site access points. This assessment is provided in Appendix B.

Gate TR1 – Station Car Park access off Olympic Highway, 160m west of Urana Street

Located off Railway Street (Olympic Highway), Gate TR1 is an existing access that will provide access to The Rock Yard Clearances enhancement site compound.



FIGURE 8: GATE TR1 – OLYMPIC HIGHWAY

Details of permitted movements and methods of control at Gate TR1 is summarised in Table 12



FIGURE 9: SITE ACCESS DETAILS – GATE TR1

Sight Distance Assessment

A sight distance assessment against the requirements stipulated within Austroads *Guide to Road Design, Part 3: Geometric Design* and *Part 4A: Unsignalised and Signalised Intersections* has been undertaken using aerial imagery to ensure that construction vehicles can safely manoeuvre into and out of the access.

TABLE 13: SIGHT DISTANCE ASSESSMENT – GATE TR1

| Direction | Speed limit | S.S.D. | | S.I.S.D. | | M.G.S.D. | |
|----------------|----------------------|------------------|-----------|-------------|-----------|-------------|-----------|
| | | Requirement | Achieved? | Requirement | Achieved? | Requirement | Achieved? |
| East of access | 50km/hr ² | 73m ¹ | Yes | 123m | Yes | 83m | Yes |
| West of access | 50km/hr ² | 73m ¹ | Yes | 123m | Yes | 83m | Yes |

1. Desirable minimum value for all road types.

2. As per TfNSW supplement to Austroads Guide to Road Design (TS 02642:1.0) value shown are posted speed plus 10km/h (i.e. posted speed 50km/h plus 10km/h = 60km/h).

As detailed above, sight distance provisions at the access achieve the minimum requirements for the existing posted speed limit.

Acceleration and Deceleration Lanes

As a guide, an assessment against the warrants for turn treatments stipulated within Austroads *Guide to Traffic Management, Part 6* indicates that any auxiliary provisions are not warranted for vehicles entering site, due to the low volume of construction vehicles (in this case, light vehicles) expected to enter the site access and volume of vehicles travelling along the Olympic Highway. On egress, an auxiliary lane is not considered warranted as:

- Suitable gaps in traffic are expected to exist for vehicles exiting the site access to enter the traffic stream along the Olympic Highway.
- Turning volumes are expected to be low (i.e. up to three (3) vehicles per hour).
- The observation angle falls within the acceptable range of the minimum gap sight distance (MGSD) model.

Rather, the provision of appropriate sight distance (refer above) is expected to allow construction vehicles to safely and efficiently egress the site.

Gate TR2 – Urana Street ~120m north of Draper Smissen Street intersection

Located off Urana Street, Gate TR2 is an existing access that will provide access to The Rock Yard Clearances enhancement site compound.



FIGURE 10: GATE TR2 – URANA STREET

Details of permitted movements and methods of control at Gate TR2 is summarised in Table 12.



FIGURE 11: SITE ACCESS DETAILS – GATE TR2

Sight Distance Assessment

A sight distance assessment against the requirements stipulated within Austroads *Guide to Road Design, Part 3: Geometric Design* and *Part 4A: Unsignalised and Signalised Intersections* has been undertaken using aerial imagery to ensure that construction vehicles can safely manoeuvre into and out of the access.

TABLE 14: SIGHT DISTANCE ASSESSMENT – GATE TR2

| Direction | Speed limit | S.S.D. | | S.I.S.D. | | M.G.S.D. | |
|-----------------|-------------|------------------|-----------|-------------|-----------|-------------|-----------|
| | | Requirement | Achieved? | Requirement | Achieved? | Requirement | Achieved? |
| South of access | 50km/hr | 73m ¹ | Yes | 123m | No | 83m | Yes |
| North of access | 50km/hr | 73m ¹ | Yes | 123m | Yes | 83m | Yes |

1. Desirable minimum value for all road types.

2. As per TfNSW supplement to Austroads Guide to Road Design (TS 02642:1.0) value shown are posted speed plus 10km/h (i.e. posted speed 50km/h plus 10km/h = 60km/h).

As documented above, sight distance provisions north of Gate TR2 achieve the minimum requirements set out Austroads *Guide to Road Design Part 3: Geometric Design*, and *Part 4A: Signalised and Unsignalised Intersections*, however, sight distance provisions south of Gate TR2 do not meet the minimum safe intersection sight distance (S.I.S.D) requirements. That said, due to the horizontal curvature of Urana Street as it crosses the existing rail crossing and approaches Gate TR2 (~40m radius curvature), it is reasonably expected that vehicles approaching the access will so at speeds lower than the 50km/hr posted speed limit. On this basis, the existing 50km/hr speed limit is considered appropriate given requirements of appropriate safe stopping distance (S.S.D) and minimum gap sight distance (M.G.S.D) are achieved.

Acceleration and Deceleration Lanes

As a guide, an assessment against the warrants for turn treatments stipulated within Austroads *Guide to Traffic Management, Part 6* indicates that any auxiliary provisions are not warranted for vehicles entering site, due to the low volume of construction vehicles (in this case, light vehicles/light vehicle with trailer) expected to enter the site access and volume of vehicles travelling along the Olympic Highway. On egress, an auxiliary lane is not considered warranted as:

- Suitable gaps in traffic are expected to exist for vehicles exiting the site access to enter the traffic stream along the Olympic Highway.
- Turning volumes are expected to be low (i.e. up to three (3) vehicles per hour).
- The observation angle falls within the acceptable range of the minimum gap sight distance (MGSD) model.

Rather, the provision of appropriate sight distance and reduced speed limits (refer above), is expected to allow construction vehicles to safely and efficiently egress the site.

3.1.7 Construction Vehicle Access Routes

Construction vehicles will access the worksite via the routes identified within Environmental Approval Documentation, with the routes detailed below in Table 15.

TABLE 15: CONSTRUCTION VEHICLE ACCESS ROUTES – THE ROCK ENHANCEMENT SITE

| Site Access | Direction | Access Route | Largest suitable vehicle type |
|-------------|-----------|--|-------------------------------|
| Gate TR1 | Inbound | Olympic Highway, left turn into access gate | Light vehicle with trailer |
| | Outbound | Left turn onto Olympic Highway, continue straight onto Olympic Highway / left turn onto Urana Street / right turn onto Mangoplah Road. | |
| Gate TR2 | Inbound | Olympic Highway left/right turn onto Urana Street, left turn into access gate. | Light vehicle |
| | | Urana Street right turn into access gate | |
| | Outbound | Left turn onto Urana Street | |
| | | Right turn onto Urana Street, left/right turn onto Olympic Highway | |

These access routes are depicted in Figure 12 and Figure 13.



FIGURE 12: CONSTRUCTION VEHILCE ACCESS ROUTES – GATE TR1



FIGURE 13: CONSTRUCTION VEHILCE ACCESS ROUTES – GATE TR2

A swept path analysis has been undertaken for key movements along the construction vehicle access routes and is detailed in Section 4.3. Where larger vehicle types are required to access the site, further assessment will be undertaken to determine the suitability of identified access routes.

3.1.8 Impact on Traffic Flow

Key Roads

To evaluate the impact of the works on key roads, an assessment of road (mid-block) performance has been undertaken in relation to Level of Service (LOS) for the key road links with and without traffic generated by the works. The assessment has been carried out using a combination of peak hour background traffic volumes, in conjunction with expected peak hour construction traffic volumes to determine an operating LOS for key road links for both the “without construction traffic” and “with construction traffic” scenarios.

Road link LOS for key road links have been determined using Table 4.4 from the *Guide to Traffic Generating Developments* (RTA 2002), which has been replicated below.

TABLE 16: LINK LOS ADAPTED FROM THE GUIDE TO TRAFFIC GENERATING DEVELOPMENT (2002)

| LOS | One lane per direction (veh/hr) | Two lanes per direction (veh/hr) |
|-------|---------------------------------|----------------------------------|
| LOS A | 200 | 900 |
| LOS B | 380 | 1,400 |
| LOS C | 600 | 1,800 |
| LOS D | 900 | 2,200 |
| LOS E | More than 900 | 2,800 |

While it is recognised that TfNSW’s *Guide to Transport Impact Assessment* has superseded the *Guide to Traffic Generating Developments*, the process of assessment is considered appropriate in quantifying potential impacts to traffic flow and the road network resulting from the works. It is also noted that this approach is consistent with the Link LOS assessment undertaken within *Technical Paper 1: Traffic and Transport* and its addendums.

The link LOS assessment for The Rock enhancement site is shown in Table 17 below. It should be noted that to determine future year background traffic demands (2025), an annual growth rate of 2% (compounding) has been applied to the recorded background traffic volumes (refer to Section 2)

TABLE 17: AM PEAK LINK LOS ASSESSMENT – THE ROCK ENHANCEMENT SITE

| Road link | No. of lanes (per direction) | Road type | 2024 peak hour Background volume (one way) | Without construction traffic LOS | Construction volume (one way) | Total volume | Percent increase in volumes | With project LOS |
|------------------------------|------------------------------|-----------|--|----------------------------------|-------------------------------|--------------|-----------------------------|------------------|
| Olympic Highway ¹ | 1 | Highway | 275 | A | 9 | 284 | 3% | A |
| Urana Street ² | 1 | Urban | 51 | A | 8 | 59 | 14% | A |

1. No data available, volumes estimated as Olympic Highway – 50m East of Mangoplah Road, The Rock 2655

2. No data available, volumes estimated as Sladen Street, Henty

The link LOS assessment for The Rock enhancement site shows that with construction traffic, there is no change is LOS from the “without construction traffic scenario” during the AM and PM peak periods. As a result, no significant impact to road operation or performance are expected to result from the traffic generated by the works. As such, mitigations are not considered warranted as a result of the works.

Key Intersections

To evaluate the impact of the works on key intersections, a first principles assessment has been undertaken. To undertake this assessment, consideration has been given to the volume of construction traffic associated with the works within The Rock enhancement site. As detailed within Section 3.1.6, a peak of three (3) construction vehicles per hour (one (1) vehicle every 20 minutes) is expected to be generated during the works. The addition of three (3) construction vehicles per hour is not expected to result in any significant impacts to intersection performance.

3.1.9 Impact on Public Transport

There will be no change to or impact on public transport operations or access during the work at The Rock Yard Clearances enhancement site.

3.1.10 Impact on Pedestrians and Cyclists

There will be no change to or impact to pedestrian and cyclist facilities or access during at The Rock Yard Clearances enhancement site.

3.1.11 Access for Businesses and Residents

There will be no change to or impact on access for businesses and/or residents during the work at The Rock Yard Clearances enhancement site.

3.1.12 Changes to Kerbside Management

There will be no changes to kerbside allocations during the work at The Rock Yard Clearances enhancement site.

3.1.13 Works Requiring Traffic Control

The works are generally associated with signal infrastructure at the level crossing. As such, it is expected that works will be performed under traffic control during the possession. The table below details the short-term traffic control requirements for the works.

TABLE 18: TRAFFIC CONTROL REQUIREMENTS – THE ROCK ENHANCEMENT SITE

| Location | Activity | Traffic control | Duration | Timing | Expected impacts |
|-----------------------------|----------------------|---------------------------------------|------------------------|---|--|
| Urana Street level crossing | Signal modifications | Hold and release / intermittent stops | Possession hours only. | During rail possessions only, and subject to the times permitted under the appropriate approval issued by the relevant authority. | Minor delays to traffic travelling along Urana Street and the Olympic Highway. |

4 ROAD SAFETY ASSESSMENT OF CONSTRUCTION VEHICLE ACCESS ROUTES

4.1 Background

While the above assessment considered the ability for construction vehicles to manoeuvre into and out work sites using the designated access routes, consideration has not been given to the appropriateness of the use of roads along the designated access routes by construction vehicles.

To evaluate any potential impacts associated with the use of roads along the designated access routes by construction vehicles, an assessment encompassing:

- A crash history analysis to understand crashes and risks
 - A review of historical crash data provides a way to look at factors contributing to the likelihood or consequence of crashes.
- A turn path analysis
 - By undertaking turn path analysis, the mobility of construction vehicles can be evaluated, and potential risks associated with introducing construction vehicles is able to be attained.
- A risk assessment in the road safety context (comparing the current level of risk (i.e., current traffic) with the proposed level of risk (i.e., current traffic plus construction traffic)).
 - A risk assessment based on network road design attributes supplemented by crash data considering potential safety or transport issues.

Unlike the initial assessments documented within Appendix D of the Addendum Assessment to Technical Paper 1: Traffic and Transport, this assessment has considered the roads and locations impacted by the project.

4.2 Crash History

4.2.1 Background

While it is recognised that as part of *Technical Paper 1 – Traffic and Transport* a crash analysis was undertaken, limited findings were presented, with the following observations made:

- The Rock enhancement site:
 - Single minor injury Olympic Highway north of Urana Street
 - Data taken 2015-2019
 - Insufficient number of crashes were recorded for any significant observation around this enhancement site

Unlike the initial analysis undertaken, this analysis has been conducted to identify predominant crash types and any crash patterns or trends along particular sections of construction vehicle access routes and identify contributing factors and discuss potential countermeasures where required. The analysis comprises the following steps:

- The first step of the analysis involves obtaining electronically the detail of each of the recorded crashes that occurred within the bounds of the construction vehicle access routes. Crash data used in this assessment has been sourced from the *Transport for NSW, Interactive Crash Statistics* (<https://www.transport.nsw.gov.au/roadsafety/statistics/interactive-crash-statistics>).
- Next, to identify whether a particular location has a potential crash problem, an initial analysis of crash frequency has been undertaken (i.e., number of crashes) with respect to the lower limiting threshold values (i.e., locations with three (3) or more recorded crashes) is first undertaken. Where the number of crashes at a particular location exceeds the lower limiting threshold, a further desktop analysis has been undertaken to identify predominant crash types (i.e., rear-end, head-on etc.) and common crash characteristics (i.e., time-of-day, day/night/duck etc. of the occurrence of all the recorded crashes). Through the identification and summation of predominant crash types at a particular location, comparison against crash-specific threshold values is undertaken to determine whether further analysis of crash causation is required, and investigation of countermeasures.

TABLE 19: CRASH HISTORY DATA THRESHOLDS

| Type of location and criteria | Number of towaway and casualty crashes in five (5) years | | | | | | |
|--|--|--------------|---------------------------------------|------------------------------|--------------------------------|-------------|--|
| | Pedestrian | Intersection | Rear-end, overtaking, vehicle turning | Right-turn-against, oncoming | Off-road lost control, head-on | Manoeuvring | Lower limiting threshold (further analysis required) |
| Cross-intersection (not signalised or roundabout) | | 3 | 5 | 5 | | | 3 |
| Non-signalised intersection (not roundabout or cross-intersection) | | 4 | 5 | 5 | | | 4 |
| Signalised intersection | | 5 | 9 | 5 | | | 5 |
| Roundabout | | 5 | 5 | | | | 5 |
| Rural intersection ("Give Way" or "Stop" control) | | 3 | 4 | 4 | | 3 | 3 |
| Urban mid-block location | | | 3 | 3 | 3 | 4 | 3 |
| Rural mid-block location | | | 3 | 3 | 3 | | 3 |
| Mid-block location with a pedestrian crash problem | 3 | | | | | | 3 |

Notes:

Threshold numbers are representative of high-volume roads, with some non-injury crashes report (*Austroads Guide to Road Safety, Part 2: Safe Roads – Table 4.1*)

Urban = 80km/hr or lower, rural = over 80km/hr

'Mid-block' means a length of road between intersections

For intersection locations, include crashes within 30m (urban) or 100m (rural).

4.2.2 Crash Analysis

The Rock (including Urana Street)

The figure below shows the location of crashes along the section of Urana Street, between the Railway Street (Olympic Highway) and the site access on Urana Street, recorded between the period from 2019 to 2023.

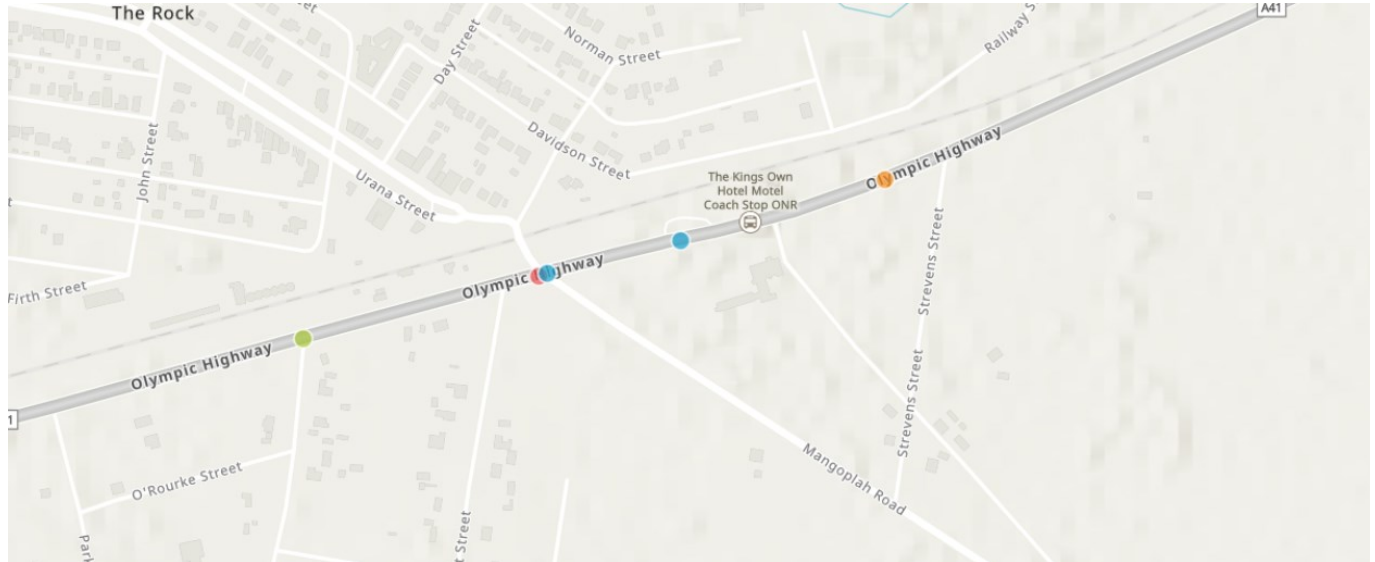


FIGURE 14: CRASH LOCATIONS MAP – THE ROCK PRECINCT FROM 2019 TO 2023

From the available crash data, four (4) crashes were recorded along or proximate to The Rock Yard Clearances enhancement site:

- One (1) crash proximate the Railway Street (Olympic Highway) and Emily Street intersection
 - One (1) serious injury.
- Two (2) crashes proximate the Railway Street (Olympic Highway) and Urana Street/Mangoplah Rd intersection
 - One (1) moderate injury.
 - One (1) non-casualty (towaway).
- One (1) crash on Railway Street (Olympic Highway) ~200m east of the Urana Street/Mangoplah Rd intersection
 - One (1) moderate injury.

With respect to the identified thresholds, the occurrence of four (4) crashes on Railway Street (Olympic Highway) proximate The Rock Yard Clearances enhancement site is not considered to present any trends or patterns warranting further investigation.

4.3 Swept Path Analysis

4.3.1 Overview

To ensure that construction vehicles can safely manoeuvre along the identified construction routes, a review of vehicle movements at intersections has been undertaken. A summary of identified construction routes to be utilised by construction vehicles throughout the works is provided by the swept path assessment provided in Appendix B.

4.4 Risk Assessment

A risk assessment has been undertaken to identify, evaluate, and to mitigate potential hazards associated with the introduction of construction vehicles traffic linked to the works. Through this assessment, key hazards such as adverse conditions resulting from increased vehicle demands (i.e., congestion), road user safety and pedestrian safety have been analysed for both current (i.e. current operating conditions) and future (current with construction traffic) scenarios.

Identified risks have been considered using the risk scoring matrix shown in Table 20, with the risk assessment detailed in Table 21.

From the risk assessment, where a risk has been observed to have a “High” risk level, or where an increase in risk level has been observed, further consideration of mitigation measures has been undertaken to reduce the likelihood or consequence of the risk.

TABLE 20: RISK ASSESSMENT SCORING MATRIX

| | | Potential consequence | | | | |
|----------------------|--|-----------------------|------------------|-----------------------|---------------------|--------------|
| | | Property damage (1) | Minor injury (2) | Medical treatment (3) | Hospitalisation (4) | Fatality (5) |
| Potential Likelihood | Almost certain (5) (likely to occur more than once a year) | M | M | H | H | H |
| | Likely (4) (likely to occur approximately once a year) | M | M | M | H | H |
| | Moderate (3) (likely to occur 5 once every five years) | L | M | M | M | H |
| | Unlikely (2) (likely to occur approximately once every 5 – 10 years) | L | L | M | M | M |
| | Rare (1) (likely to occur with less frequency than once every 10 years) | L | L | L | M | M |

TABLE 21: RISK ASSESSMENT

| | | Current level of risk (current traffic) | | | Future level of risk (current traffic plus construction vehicles) | | | Mitigation (proposed mitigation and residual risk) | | | | |
|---------------|---|--|-------------|------------|--|-------------|------------|---|------------|-------------|------------|---|
| Project risks | | Likelihood | Consequence | Risk level | Likelihood | Consequence | Risk level | Mitigation | Likelihood | Consequence | Risk level | Comment |
| Urana Street | | | | | | | | | | | | |
| 1 | Carriageway width is not suitable to accommodate the movements of vehicles, resulting in vehicles travelling within the opposing carriageway | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Urana Street generally features 3.6m wide lanes with sealed shoulders. |
| 2 | Road performance is impacted by the addition of construction vehicles, resulting in adverse conditions: <ul style="list-style-type: none">Urana Street | 1 | 3 | L | 1 | 3 | L | - | - | - | - | Section 3.1.8 shows that the road performance will not be significantly impacted by the additional of construction vehicles during the works. |
| 3 | Intersection performance is impacted by the addition of construction vehicles, resulting in adverse conditions at intersections: <ul style="list-style-type: none">Urana Street / Olympic Highway | 1 | 3 | L | 1 | 3 | L | - | - | - | - | Section 3.1.8 shows that the road performance will not be significantly impacted by the additional of construction vehicles during the works. |
| 4 | Vehicles are unable to safely perform turning manoeuvres at intersections, resulting in conflicts with other road users / damage to infrastructure at the intersection: | 1 | 3 | L | 1 | 3 | L | - | - | - | - | Construction vehicles are expected to be limited to light vehicles/light vehicles with trailer only for the works. |
| 5 | Kerbside parking narrows the road, restricts traffic flow and inhibits the ability to manoeuvre safely into and out of side streets. | 1 | 3 | L | 1 | 3 | L | - | - | - | - | There are no intended impacts to parking in this location with negligible changes in traffic conditions. |
| 6 | Cyclists impacted by wind turbulence of passing vehicles. | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Low speed zone will limit any wind turbulence. |

| | | Current level of risk (current traffic) | | | Future level of risk (current traffic plus construction vehicles) | | | Mitigation (proposed mitigation and residual risk) | | | | Comment |
|----------------------------------|--|--|-------------|------------|--|-------------|------------|---|------------|-------------|------------|---|
| Project risks | | Likelihood | Consequence | Risk level | Likelihood | Consequence | Risk level | Mitigation | Likelihood | Consequence | Risk level | |
| 7 | Conflict between cyclists and vehicles where there isn't enough space to safely overtake | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Generally, there is more than adequate sight distance to safely overtake a cyclist when permitted. |
| Railway Street (Olympic Highway) | | | | | | | | | | | | |
| 1 | Carriageway width is not suitable to accommodate the movements of vehicles, resulting in vehicles travelling within the opposing carriageway | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Railway Street (Olympic Highway) generally features 3.5m wide lanes with sealed shoulders. |
| 2 | Road performance is impacted by the addition of construction vehicles, resulting in adverse conditions: <ul style="list-style-type: none"> Railway Street (Olympic Highway) | 1 | 3 | L | 1 | 3 | L | - | - | - | - | Section 3.1.8 shows that the road performance will not be significantly impacted by the additional of construction vehicles during the works. |
| 3 | Vehicles entering and exiting driveways are unrecognised by approaching drivers, resulting in rear-end collisions. | 1 | 3 | L | 1 | 3 | L | - | - | - | - | Appropriate stopping sight distance appears to be achieved along Railway Street (Olympic Highway). |
| 4 | Vehicles entering and exiting kerbside parking spaces resulting in rear-end and side-swipe collisions | 1 | 3 | L | 1 | 3 | L | - | - | - | - | There are no intended impacts to parking in this location with negligible changes in traffic conditions. |
| 5 | Kerbside parking narrows the road, restricts traffic flow and inhibits the ability to manoeuvre safely into and out of side streets. | 1 | 3 | L | 1 | 3 | L | - | - | - | - | There are no intended impacts to parking in this location with negligible changes in traffic conditions. |
| 6 | Cyclists impacted by wind turbulence of passing vehicles. | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Low speed zone will limit any wind turbulence. |
| 7 | Conflict between cyclists and vehicles where there isn't enough space to safely overtake | 1 | 4 | M | 1 | 4 | M | - | - | - | - | Generally, there is more than adequate sight distance to safely overtake a cyclist when permitted. |

5 OPERATIONAL REQUIREMENTS

5.1 Temporary Road Safety Barriers and End Treatments

The use road safety barriers and end treatments will be in accordance with the approved products nominated within the TfNSW Accepted Road Safety Barrier Systems and Devices guidance.

5.2 Temporary Signage

The type, location and sizes of existing signage to be retained and/or removed and new signage to be installed during the operation of this TGS will be as per the drawings attached at Appendix A. These TGS are indicative documents and obtaining the relevant approval will occur outside the PTMP process.

5.3 Temporary Pavement Markings

There are no alterations to pavement markings required for this work.

5.4 Variable Message Signs

Variable message signs may be provided as part of the project's traffic management on the approach to the project works. Typically, VMS will be installed two (2) weeks prior to any changes to traffic conditions and/or to support high impact works.

The VMS will be deployed and programmed in accordance with TfNSW TS 00198:1.0 Portable Variable Message Signs.

5.5 Works to be Constructed Under Traffic Control

The works are generally confined to the rail corridor and as such do not involve works be constructed under traffic. Temporary speed limit reductions and/or traffic control will be implemented as required to manage some site entry and exit movements for construction heavy vehicles.

All works requiring traffic control will be managed under the necessary approval(s) from the relevant authorities.

5.6 Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) is about designing urban environments such that opportunities for offending are reduced and feelings of safety are enhanced. CPTED aims to reduce opportunities for crime by increasing the risks and efforts for offenders as well as reducing the rewards.

The applicable CPTED requirements for temporary works on this project are as follows:

- Natural Surveillance: Perception that people can be seen is increased
- Natural access control: Create and control access to private spaces
- Good definition of space and ownership: Reduce the ambiguity between private and public spaces

Where pedestrian access has the potential of be being affected by the Project construction work, a screening assessment has been undertaken to determine whether further analysis is required. The screening assessment for The Rock enhancement site is included in Table 22.

TABLE 22: CPTED SCREENING ASSESSMENT

| Question | | Yes/No | Comments |
|----------|---|--------|----------|
| 1 | Are any pedestrian footpaths required to be diverted due to the Project construction work? (If 'no', the screening assessment is complete. If 'yes' proceed to Question 2). | No | |
| 2 | If pedestrian diversions are required as a result of the construction work, does the diversion direct pedestrians onto existing pedestrian or shared access footpaths? (If 'yes', the screening assessment is complete. If 'no' proceed to Question 3) | - | |
| 3 | Does the diverted pedestrian footpath provide for clear lines of sight to public places and provide natural surveillance? | - | |
| 4 | Does the diverted pedestrian footpath facilitate access to public space (e.g. does not create enclosed spaces or spaces that only have one entry and exit point) | - | |
| 5 | Does the diverted pedestrian footpath provide good definition of space and ownership. | - | |
| 6 | Is lighting sufficient and meet ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting, relevant Australian Standards in the series ASINZS 1158 - Lighting for Roads and Public | - | |

6 COMMUNICATION AND COORDINATION

6.1 Traffic Communications

The Traffic Management Team and Stakeholder and Community Relations Team will work closely with each other to ensure there is a seamless approach to managing traffic communications. Refer to Section 6.9 of the CTTAMP.

6.2 Traffic Management Construction Liaison Group

The TMCLG will be the forum for discussion of the effectiveness of the PTMP. Refer to Section 6.9 of the CTTAMP.



APPENDICES



APPENDIX A

List of Expected Traffic Guidance Schemes

TABLE 23: LIST OF EXPECTED TRAFFIC GUIDANCE SCHEMES

| TGS # | Title | Comment |
|-------------------|---|-------------------------|
| MR-A2I-TR-TGS-001 | Urana Street and Olympic Highway – hold and release | During possession only. |



APPENDIX B

Swept Path Analysis



GREATER HUME SHIRE COUNCIL
CTTAMP MITIGATIONS
LOCKHART PRECINCT
SWEPT PATH ANALYSIS
THE ROCK



LOCALITY PLAN

© GOOGLE MAPS

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| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\dgn\05-Drawing Production\05-D-PLAN - Uranquinty Route Sheet Arrangement.dgn | | LINEAR REFERENCING START: N/A FINISH: N/A | | PLOT DATE / TIME 23/07/2025 8:41:16 AM | | PLOT BY ThomHunter | | CLIENT | | A2I CTTAMP STAGE B LOCKHART PRECINCT SWEPT PATH ANALYSIS | | A3 |
| PREPARED BY | | DESIGNED | | VERIFIED | | PROJECT MANAGER | | COUNCIL CLIENT REPRESENTATIVE | | MARTINUS | | |
| SIGNED | | SIGNED | | SIGNED | | SIGNED | | SIGNED | | RIGORE PROJECT No. RES 2501.78.207 | | STAGE 1 |
| NAME T. HUNTER | | NAME J. COLES | | NAME J. GORRIE | | NAME P. BILLINGHAM | | NAME P. BILLINGHAM | | CLIENT PROJECT No. | | ISSUE 1 |
| TITLE CADET ENGINEER | | TITLE LEAD DESIGNER | | TITLE PROJECT MANAGER | | TITLE CLIENT REPRESENTATIVE | | TITLE CLIENT REPRESENTATIVE | | PMO REGISTRATION No. RES2501.78.207 | | |
| DATE | | DATE | | DATE | | DATE | | DATE | | PREPARED FOR MARTINUS PTY LTD | | SHEET No. SW9-001 |



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0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL



LEGEND

- XXXX

DESIGN CONTROL CALLOUT
- FULL PLAN SHEETS AT 1:500



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| EXTERNAL REFERENCE FILES | | | | REV | DATE | AMENDMENT / REVISION DESCRIPTION | | WVR No. | APPROVAL | SCALES ON A3 SIZE DRAWING | | DRAWINGS / DESIGN PREPARED BY | | | | | | | |
| | | | | | | | | | |  | | DRAWN | J.COLES | 27/08/2025 | | RIGORE REGISTRATION No. RES2501.78.207 | PART 1 | | |
| | | | | | | | | | | | | DRG CHECK | J.GORRIE | 27/08/2025 | | | | | |
| | | | | | | | | | | | | DESIGN | J.COLES | 27/08/2025 | | | | | |
| | | | | | | | | | | | | DESIGN CHECK | J.GORRIE | 27/08/2025 | | | | | |
| | | | | | | | | | | | | DESIGN MNGR | J.GORRIE | 27/08/2025 | | | | | |
| CO-ORDINATE SYSTEM MGA ZONE 55 (GDA2020) | | HEIGHT DATUM AHD | | PROJECT MNGR | | P. BILLINGHAM | 27/08/2025 | ISSUE STATUS | | SHEET No. SW9-003 | | ISSUE 1 | | | | | | | |

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LEGEND

DESIGN VEHICLE COMPLETED SWEEP

DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS
DESIGN PASSENGER VEHICLE (10.3 m)
RADIUS 8 m
TURNING SPEED 15 - 20 km/h

0 10
SCALE 1:1000m

90°

60°

30°

0°

30°

60°

90°

120°

150°

180°

PATH OF FRONT OVERHANG

OUTSIDE FRONT WHEEL PATH

INSIDE REAR WHEEL PATH

7.03 m RADIUS

5.2

3.7

0.95

3.05

3.48

VEHICLE PROFILE NOT TO SCALE

NOTES

1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA

PASSENGER VEHICLE (10.3 m)

OVERALL LENGTH

OVERALL WIDTH

OVERALL BODY HEIGHT

TRACK WIDTH

LOCK-TO-LOCK TIME

CURB TO CURB TURNING RADIUS

TURNING SPEED

10.30 m

1.84 m

1.50 m

1.84 m

6.00 s

7.03 m

15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|-----------------|------|---|--|---------|----------|---|--|--|--|--|--|---|--|------------|--|--|
| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT <div>MARTINUS</div> | | LOCKHART SHIRE COUNCIL | | A3 | | |
| EXTERNAL REFERENCE FILES | | | | | | REV | DATE | AMENDMENT / REVISION DESCRIPTION | | WVR No. | APPROVAL | SCALES ON A3 SIZE DRAWING | | DRAWINGS / DESIGN PREPARED BY | | | | A2I CTTAMP LOCKHART PRECINCT SWEPT PATH ANALYSIS SWEPT PATH - LV - OLYMPIC HIGHWAY - GATE TR1 - LI | | | | |
| | | | | | | | | | | | | <div><div>05101520</div><div>SCALE 1:500m</div></div> | | <div><div></div><div>RIGORE</div><div>ENGINEERING SERVICES</div></div> | | | | | | | | |
| | | | | | | | | | | | | CO-ORDINATE SYSTEM MGA ZONE 55 (GDA2020) | | HEIGHT DATUM AHD | | RIGORE REGISTRATION No. RES2501.78.207 | | | | PART 1 | | |
| | | | | | | | | | | | | | | | | | | ISSUE STATUS | | ISSUE 1 | | |
| | | | | | | | | | | | | | | | | | | SHEET No. SW9-004 | | | | |

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED



LEGEND

DESIGN VEHICLE COMPLETED SWEEP

DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS
DESIGN PASSENGER VEHICLE (10.3 m)
RADIUS 8 m
TURNING SPEED 15 - 20 km/h

0 10
SCALE 1:1000m

VEHICLE PROFILE NOT TO SCALE

NOTES

1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA

PASSENGER VEHICLE (10.3 m)

OVERALL LENGTH10.30 m

OVERALL WIDTH1.84 m

OVERALL BODY HEIGHT1.50 m

TRACK WIDTH1.84 m

LOCK-TO-LOCK TIME6.00 s

CURB TO CURB TURNING RADIUS7.03 m

TURNING SPEED15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|-----------------|------|---|--|--|--|---|----------|---------------------------|--|--|--|--|--|----|--|-------------------------------|--|-----------|--|------------|--|
| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT <div>MARTINUS</div> A2I CTTAMP LOCKHART PRECINCT SWEPT PATH ANALYSIS SWEPT PATH - LV - OLYMPIC HIGHWAY - GATE TR1 - LO RIGORE REGISTRATION No. RES2501.78.207 ISSUE STATUS | | LOCKHART SHIRE COUNCIL | | A3 | | | | | | | |
| EXTERNAL REFERENCE FILES | | | | | | REV | DATE | AMENDMENT / REVISION DESCRIPTION | | | | WVR No. | APPROVAL | SCALES ON A3 SIZE DRAWING | | | | DRAWINGS / DESIGN PREPARED BY | | | | | | | | | |
| | | | | | | | | | | | | <div><div>05101520</div><div>SCALE 1:500m</div></div> | | | | | | <div><div><div></div></div><div>RIGOREENGINEERING SERVICES</div></div> | | | | | | | | | |
| | | | | | | | | | | | | CO-ORDINATE SYSTEM MGA ZONE 55 (GDA2020) | | | | | | | | | | HEIGHT DATUM AHD | | | | | |
| | | | | | | | | | | | | DESIGN MNGR J.GORRIE | | | | | | | | | | PROJECT MNGR P. BILLINGHAM | | | | | |
| | | | | | | | | | | | | | | | | | | SHEET No. SW9-005 | | | | | | PART 1 | | ISSUE 1 | |

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED



LEGEND

DESIGN VEHICLE COMPLETED SWEEP

DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

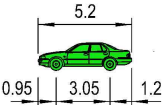
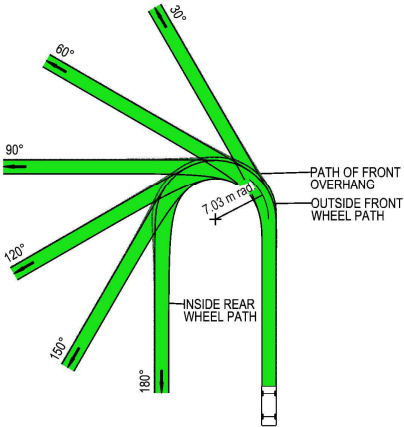
DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS
DESIGN PASSENGER VEHICLE (5.2 m)
RADIUS 8 m
TURNING SPEED 15 - 20 km/h

010

SCALE 1:1000m



VEHICLE PROFILE NOT TO SCALE

- NOTES
1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA
- PASSENGER VEHICLE (5.2 m)

OVERALL LENGTH

5.20 m

OVERALL WIDTH

1.84 m

OVERALL BODY HEIGHT

1.50 m

TRACK WIDTH

1.84 m

LOCK-TO-LOCK TIME

6.00 s


CURB TO CURB TURNING RADIUS

7.03 m

TURNING SPEED

15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT  | | LOCKHART SHIRE COUNCIL | | A3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXTERNAL REFERENCE FILES | | | | REV | | DATE | | AMENDMENT / REVISION DESCRIPTION | | | | WVR No. | | | | APPROVAL | | SCALES ON A3 SIZE DRAWING | | | | DRAWINGS / DESIGN PREPARED BY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL



LEGEND

DESIGN VEHICLE COMPLETED SWEEP

DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS

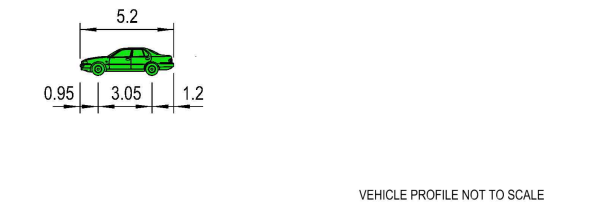
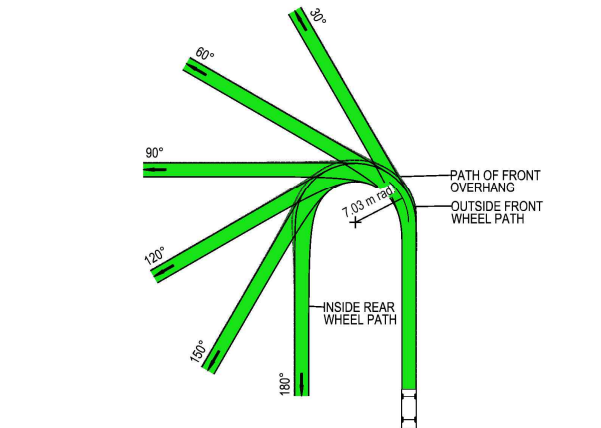
DESIGN PASSENGER VEHICLE (5.2 m)

RADIUS 8 m

TURNING SPEED 15 - 20 km/h

0 10

SCALE 1:1000m



NOTES

1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA

PASSENGER VEHICLE (5.2 m)

OVERALL LENGTH

5.20 m

OVERALL WIDTH

1.84 m

OVERALL BODY HEIGHT

1.50 m

TRACK WIDTH

1.84 m

LOCK-TO-LOCK TIME

6.00 s


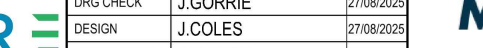

CURB TO CURB TURNING RADIUS

7.03 m

TURNING SPEED

15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|-----------------|--|---|--|----------------------------------|--|--------------------------------|--|-----------------------|--|---|--|---|--|---------------------------|--|--------------|--|-------------------------------|--|------------|--|---|--|--|--|--|--|------|--|
| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT  | | LOCKHART SHIRE COUNCIL | | A3 | | | | | | | | | | | | | | | |
| EXTERNAL REFERENCE FILES | | | | REV | | DATE | | AMENDMENT / REVISION DESCRIPTION | | | | WVR No. | | | | APPROVAL | | SCALES ON A3 SIZE DRAWING | | | | DRAWINGS / DESIGN PREPARED BY | | | | TITLE | | NAME | | DATE | | | |
| | | | | | | | | | | | | | | | |  | | | | DRAWN | | J.COLES | | 27/08/2025 | |  | | A2I CTTAMP LOCKHART PRECINCT SWEPT PATH ANALYSIS SWEPT PATH - LV - URANA STREET - GATE TR2 - LO | | RIGORE REGISTRATION No. RES2501.78.207 | | PART | |
| | | | | | | | | | | | | | | | | | | | | DRG CHECK | | J.GORRIE | | 27/08/2025 | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | DESIGN | | J.COLES | | 27/08/2025 | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | DESIGN CHECK | | J.GORRIE | | 27/08/2025 | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | DESIGN MNGR | | J.GORRIE | | 27/08/2025 | | | | | | ISSUE | | | |
| | | | | | | | | | | | | | | | | | | | | PROJECT MNGR | | P. BILLINGHAM | | 27/08/2025 | | | | | | 1 | | | |
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THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED



LEGEND

DESIGN VEHICLE COMPLETED SWEEP

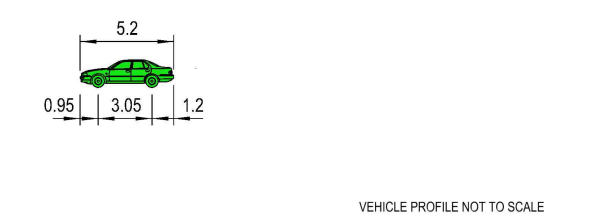
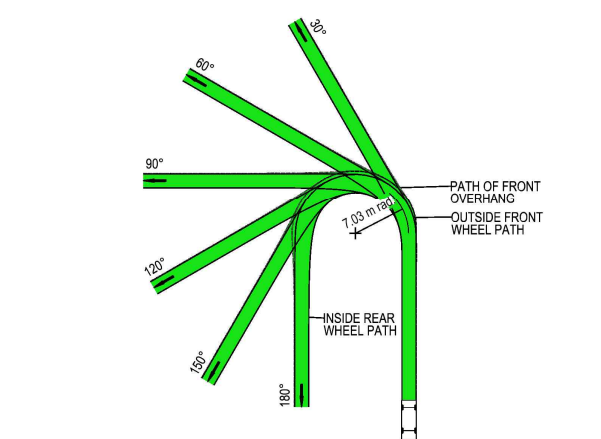
DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS
DESIGN PASSENGER VEHICLE (5.2 m)
RADIUS 8 m
TURNING SPEED 15 - 20 km/h

0 10
SCALE 1:1000m



NOTES

1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA

PASSENGER VEHICLE (5.2 m)

OVERALL LENGTH

5.20 m

OVERALL WIDTH

1.84 m

OVERALL BODY HEIGHT

1.50 m

TRACK WIDTH

1.84 m

LOCK-TO-LOCK TIME

6.00 s

CURB TO CURB TURNING RADIUS

7.03 m

TURNING SPEED

15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | |
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| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT | | LOCKHART SHIRE COUNCIL | | A3 | |
| EXTERNAL REFERENCE FILES | | | | WVR No. | APPROVAL | SCALES ON A3 SIZE DRAWING | | DRAWINGS / DESIGN PREPARED BY | | TITLE | | NAME | | DATE | | PART | |
| | | | | | | 0 5 10 15 20 SCALE 1:500m | | | | DRAWN | | J.COLES | | 27/08/2025 | | 1 | |
| | | | | | | | | | | DRG CHECK | | J.GORRIE | | 27/08/2025 | | 1 | |
| | | | | | | | | | | DESIGN | | J.COLES | | 27/08/2025 | | 1 | |
| | | | | | | | | | | DESIGN CHECK | | J.GORRIE | | 27/08/2025 | | 1 | |
| | | | | | | | | | | DESIGN MNGR | | J.GORRIE | | 27/08/2025 | | 1 | |
| | | | | | | | | | | PROJECT MNGR | | P. BILLINGHAM | | 27/08/2025 | | 1 | |
| | | | | | | CO-ORDINATE SYSTEM MGA ZONE 55 (GDA2020) | | HEIGHT DATUM AHD | | | | | | | | SHEET No. SW9-008 | |
| | | | | | | | | | | | | | | | | ISSUE 1 | |
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LEGEND

DESIGN VEHICLE COMPLETED SWEEP

DESIGN VEHICLE CONDITIONAL PASS SWEEP PATH

DESIGN VEHICLE FAILED SWEEP PATH

0.5m VEHICLE CLEARANCE

AUSTROADS

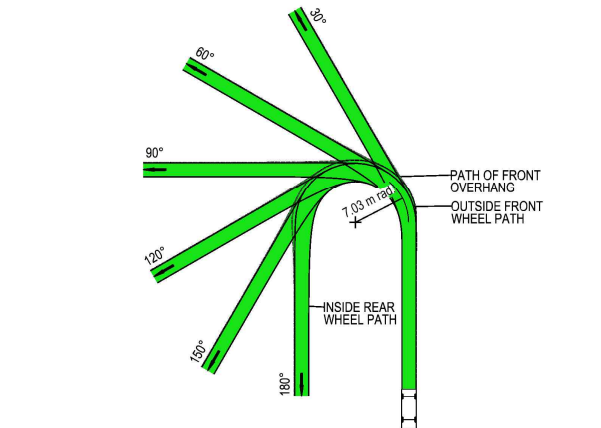
DESIGN PASSENGER VEHICLE (5.2 m)

RADIUS 8 m

TURNING SPEED 15 - 20 km/h

010

SCALE 1:1000m



5.2

0.953.051.2

VEHICLE PROFILE NOT TO SCALE

NOTES

1. LOCATE FACE OF KERBS AT LEAST 0.6m CLEAR OF WHEEL PATHS

2. ALLOW 0.6m CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.

3. THE OUTSIDE EDGE OF THE SWEEP PATH REMAINS WITHIN THE PAVED AREA

PASSENGER VEHICLE (5.2 m)

OVERALL LENGTH

5.20 m

OVERALL WIDTH

1.84 m

OVERALL BODY HEIGHT

1.50 m

TRACK WIDTH

1.84 m

LOCK-TO-LOCK TIME

6.00 s




CURB TO CURB TURNING RADIUS

7.03 m

TURNING SPEED

15 - 20 km/h

NOT FOR CONSTRUCTION

| | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|-----------------|------|---|--|---------|----------|---|--|---|--|---|---------------|------------------------|--|------|--|---|------------|
| DRAWING FILE LOCATION / NAME K:\Rigore Engineering Services\PMO\Active work sets\2501.78.207 CTTAMP Mitigations\Dgn\05-Drawing Production\ID-PLAN - THE ROCK SHEET ARRANGEMENT.dgn | | | | DESIGN LOT CODE | | DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING | | | | PLOT DATE / TIME 29/08/2025 | | PLOT BY ThomHunter | | CLIENT  | | LOCKHART SHIRE COUNCIL | | A3 | | | |
| EXTERNAL REFERENCE FILES | | | | REV | DATE | AMENDMENT / REVISION DESCRIPTION | | WVR No. | APPROVAL | SCALES ON A3 SIZE DRAWING | | DRAWINGS / DESIGN PREPARED BY | | | | TITLE | NAME | DATE | | | |
| | | | | | | | | | |  | |  | | DRAWN | J.COLES | 27/08/2025 | A2I CTTAMP LOCKHART PRECINCT SWEPT PATH ANALYSIS SWEPT PATH - LV - URANA STREET - GATE TR2 - RO | | RIGORE REGISTRATION No. RES2501.78.207 | | PART 1 |
| | | | | | | | | | | | | | | DRG CHECK | J.GORRIE | 27/08/2025 | | | | | ISSUE 1 |
| | | | | | | | | | | | | | | DESIGN | J.COLES | 27/08/2025 | | | | | |
| | | | | | | | | | | | | | | DESIGN CHECK | J.GORRIE | 27/08/2025 | | | | | |
| | | | | | | | | | | CO-ORDINATE SYSTEM MGA ZONE 55 (GDA2020) | | HEIGHT DATUM AHD | | DESIGN MNGR | J.GORRIE | 27/08/2025 | | | | | |
| | | | | | | | | | | | | | | PROJECT MNGR | P. BILLINGHAM | 27/08/2025 | ISSUE STATUS | | SHEET No. SW9-009 | 1 | |



MARTINUS 

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