DARACON Group

Shared Path Bridge over Newcastle Road, Jesmond

Construction Traffic Management - SubPlan

1630

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APPENDICES

1 INTRODUCTION

1.1 CONTEXT

The Construction Traffic Management Plan (CTMP) forms part of the Construction Environmental Management Process (Plan) (CEMPP) for the Shared Path Bridge (SPB) over Newcastle Road, Jesmond which is being delivered as early works for the Newcastle Inner City Bypass (NICB) between Rankin Park and Jesmond (RP2J). The key features of the SPB are shown on Figure 1.

This CTMP has been prepared to address the requirements of:

- the NSW Minister's Infrastructure Approval.
- the environmental management measures listed in Newcastle Inner City Bypass – Rankin Park to Jesmond Environmental Impact Statement (EIS) (prepared by GHD for Roads and Maritime, 2016) as amended by Newcastle Inner City Bypass Rankin Park to Jesmond Submissions and Preferred Infrastructure Report (SPIR) (prepared by GHD for Roads and Maritime, 2018)
- Roads and Maritime specifications
- all applicable legislation.

1.2 BACKGROUND

The EIS assessed the potential traffic and transport impacts during construction of the RP2J project, including the SPB.

As part of EIS development, a detailed traffic and transport assessment was prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning and Environment (DP&E). The traffic and transport assessment was included in the EIS as Appendix F.

Further consideration of traffic and transport impacts was undertaken subsequent to exhibition of the EIS. A traffic and transport assessment prepared for the SPIR was included as Appendix C. Consideration of the SPB design refinements against the outcomes of the traffic and transport assessment carried out for the EIS and SPIR was provided in Section 6.3 of the SPIR. Revised environmental management measures (EMMs) were provided within the SPIR. Where applicable to the SPB, the REMMs from the SPIR have been included in this CTMP.

1.3 PROJECT OVERVIEW AND SCOPE

The Shared Path Bridge (SPB) over Newcastle Road, Jesmond project involves construction of a new shared path bridge over Newcastle Road and associated works at Jesmond within the City of Newcastle (CoN) local government area. The shared path bridge comprises of a single span steel tied arch approximately 34m over Newcastle Road with approach ramps and stairs on both sides of Newcastle Road.

The key scope of items covered by this CTMP involves the following;

- A new shared path bridge over Newcastle Road west of Steel Street.
- Ramps, stairs and retaining structures providing access to the new shared path bridge.
- Relocation of existing utilities including overhead electricity and underground water mains.

- Roadworks in Coles Street and Jesmond park to connect the new bridge to existing facilities.
- Roadworks for minor widening on the northern side of Newcastle road west of Steel Street.
- Removal of the existing mid-block pedestrian crossing and adjustment of the existing bus shelter.
- Miscellaneous works including erosion and sedimentation, utility adjustments, the construction of earthworks, drainage, kerbs and/or gutters, pavement, safety barriers, a sandstone block retaining wall, installation of CCTV, concrete paving for the shared path, footpaths and driveways, pavement markings and vegetation works.

Figure 1: Key Features of the SPB Project

1.4 CONSULTATION

1.4.1 CONSULTATION FOR PREPARATION OF THE CTMP

This CTMP has been developed in consultation with the CoN as required by CoA A9(a). The draft CTMP was provided to Newcastle City Council in February 2019. In accordance with CoA A5, the evidence of the consultation undertaken for the preparation of this CTMP is provided in the following table.

1.4.2 CONSULTATION LOG

Table 1: Consultation Log

Department	Contact	Date	Correspondence Type	Description
CoN		March 2019		

1.4.3 ONGOING CONSULTATION DURING CONSTRUCTION

Ongoing consultation between Roads and Maritime and Daracon, stakeholders, the community and CoN regarding the management of ancillary facilities will be undertaken during the construction of the SPB as required. The process for consultation is documented in the Construction Community Liaison Management Plan (CCLMP), which includes the key principals contained within the RP2J Community Communication Strategy (CCS) developed by Roads and Maritime.

Ongoing consultation between Roads and Maritime and Daracon, and stakeholders, the community and CoN regarding the management of traffic and transport impacts will be undertaken during the construction of the SPB as described in the Construction Community Liaison Sub Plan.

During construction of the SPB, measures will be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties, as required by CoA E70. Alternative pedestrian access, vehicular access, and parking arrangements, and signage to direct customers to these businesses and affected properties, will be developed in consultation with affected businesses. Signage and direction to businesses will be provided before, and for the duration of, any disruption during construction of the SPB.

2 OBJECTIVES AND TARGETS

2.1 PURPOSE

The purpose of this CTMP is to describe how impacts on traffic and transport will be managed during construction of the SPB.

2.2 OBJECTIVES

The key objective of the CTMP is to ensure that traffic and transport impacts due to construction of the SPB are minimised. To achieve this objective, Daracon will:

- provide traffic relief on key parts of the surrounding road network.
- minimise the overall impacts on road users
- maintain access for the local community, transport operators and businesses
- implement appropriate measures to address the requirements of the conditions of approval and the REMMs.
- implement appropriate measures to comply with all relevant legislation and other requirements as described in Section 3.1 of this CTMP.

2.3 TARGETS

Targets for the management of traffic and transport impacts during the construction of the SPB are to:

- implement traffic control operations to minimise delays to road users taking into consideration traffic volumes including peak times of the day and seasonal traffic
- plan all construction vehicle movements to minimise disruption to traffic flow on roads within the SPB and surrounds
- minimise impacts on, and complaints from, the community and stakeholders.

This plan has been developed taking into consideration the Integrated Project Management Plan, Daracon's Legal and Other Requirements including but not limited to relevant Acts, Regulations, Codes of Practice and Industry Standards / Guidelines.

In addition, the framework for this plan has been prepared to align with the Daracon Management System (DMS), AS/NZS & ISO Standards and Client requirements where applicable.

3 SUB-PLAN REFERENCE DOCUMENTS

Daracon will comply with all legislation, standards and guidelines, client documents and project approvals, as nominated within the Section 3 of this TMP.

3.1 LEGISLATION AND REGULATORY REQUIREMENTS

- Roads Act 1993
- Transport Administration Act 1998
- Australian Road Rules
- Approved and valid Road Occupancy Licences (ROL)
- Approved relevant Speed Zone Authorisations (SZA)
- Road Occupancy Permit to be obtained from the City of Newcastle prior to commencing any works.
- Work Health Safety Act 2011;
- Work Health Safety Regulation 2017;
- NSW National Parks and Wildlife Act 1974;
- NSW Water Management Act 2000;
- Commonwealth Environmental Protection and Biodiversity Conservation Act 1999;
- Environmental Planning and Assessment Act 1979 No 203;
- Environmental Planning and Assessment Regulation 2000;

3.2 STANDARDS, CODES OR GUIDELINES

- SafeWork NSW Codes of Practice;
- SafeWork Australia Codes of Practice;
- Australian and NZ (AS/NZS) Standards;
- AS/NZS 4801:2001 Occupational Health and Safety Management Systems;
- Roads & Maritime Services (RMS) Construction Guidelines;
- Roads & Maritime Services Practice Note VII *Roadworks outside of normal working hours and* Roads & Maritime Services Traffic Control at Worksites Manual. (TCAW)
- Roads & Maritime Services Guide to Delineation and Signage for the Separation of Plant, People and Vehicles on Construction Sites
- Roads and Maritime QA Specification G1 – Job Specific Requirements for Shared Path Bridge over Newcastle Road, Jesmond
- Roads and Maritime QA Specification G10 – Traffic Management
- Roads and Maritime QA Specification G36 – Environmental Protection (Management System)
- Guide to Road Safety Audit Practices (RTA, 2011)
- NSW Speed Zoning Guidelines (RTA, 2011)
- Guide: Signposting (RTA, 2007)
- NSW Bicycle Guidelines (RTA, 2005)
- Road Design Guide (Roads and Maritime, 2015)
- Technical Direction TDT 2014/006 Variable Speed Limit Signs (Roads and Maritime, 2014)

- Technical Direction TDT 2013/06 Provision of Variable Message Signs on motorways for on-road presentation of real time travel time information (Roads and Maritime, 2013)
- Road Occupancy Manual (Transport Management Centre, 2015)
- Tourist Signposting guide (Roads and Maritime and Destination NSW, 2012)
- Guide to Road Design – Parts 1-7 (Austroads, 2009)
- Guide to Road Safety - Parts 1-9 (Austroads, 2009)
- Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017)
- Austroads Road Safety Audit Second Edition 2002: Checklist 4. Pre-opening scheme audit
- Austroads Road Safety Audit Second Edition 2002: Checklist 5: Roadwork traffic scheme audit
- Austroads Road Safety Audit Second Edition 2002: Checklist 6: Existing roads: road safety audit
- Austroads Traffic Engineering Practice – Part 14
- Australian Standard AS1742.3-2009 Traffic control devices for works on roads
- Australian Standard AS 4852.2-2009 Variable message signs
- Australian Standard AS1742 Parts 1 to 14, Manual of uniform traffic control devices
- Australian / New Zealand Standard – AS/NZS3845:1999 Road Safety Barrier Systems.

3.3 PROJECT APPROVALS AND/OR LICENSING

- No requirement for Environmental Protection Licence (EPL)
- Road occupancy licence to be obtained in accordance with Section 138 of the Roads Act for construction work within the road corridor

3.4 CLIENT DOCUMENTS

The following Client documents have been identified as being important to ensure Daracon deliver the project safely, with minimal environmental impact and to specification.

TABLE 1 – CLIENT DOCUMENTS

Client Document Number and Name	
Document Number	Document Name
Newcastle Inner City Bypass – Rankin Park to Jesmond Environmental Impact Statement (GHD, November 2016)	
Submissions and Preferred Infrastructure Report – Newcastle Inner City Bypass, Rankin Park to Jesmond (GHD, March 2018)	
NSW Department of Planning & Environment Minister's Conditions of Approval (Feb 2019)	
Department of the Environment and Energy (DoEE) - Commonwealth Controlled Action Approval (April 2019)	
QA Specification G1	Job Specific Requirements
QA Specification G10	Traffic Management
QA Specification G22	Work Health and Safety (Construction and Maintenance Works)
QA Specification Q6	Quality Management System (Type 6)

Where there are changes to the above document references, communication of changes that are applicable to this project will be communicated to all workers using a suitable means of communication as prescribed within this Sub-Plan.

3.5 HOLDPOINTS

Roads and Maritime specifications are a key source of environmental protection management processes relevant to this CTMP. The specifications set out environmental protection requirements, including Hold Points, that will be complied with during construction of the SPB. A Hold Point is a point beyond which a work process must not proceed without express written authorisation from Roads and Maritime. Hold points applicable to traffic management are provided in Table 2.

Table 2: Schedule of Hold Points Relevant to Traffic Management

Clause no.	Description
Specification Q6 – Quality management System (Type 6)	
8.3	Implementation of rectification work
8.5.2	The process referred to in the Corrective Action Request
Specification G1 – Job Specific Requirements	
5.2 & 14.1	Establishment of Site Facilities
19	Use of revised construction staging strategy
28	Transport of the fabricated steel arch span to the Site
Specification G10 – Traffic Management	
1.7.4	Submission of traffic control personnel details
2.1.1	Submission of Road Occupancy Licence application for Newcastle Road
2.1.1	Submission of a copy of Road Occupancy Licence application and approval (including any conditions) from Newcastle City Council for local roads
2.2.1	Submission of Traffic Management Plan (TMP) and associated documents
2.4.1	Submission of Traffic Control Plan (TCP), where submitted separately from the TMP
4.4.2	Opening of temporary roadway or detour to traffic.

4 CONDITIONS OF APPROVAL

Table 3: Conditions of Approval

CoA	Requirement	Reference
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; (d) outline of the issues raised by the identified party and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	Section 1.4
E62	ll road roads within one (1) kilometre of the SSI (including construction ancillary facilities) proposed to be used by heavy vehicles must be identified in the Construction Traffic Management Sub-plan.	Section 5
E63	Local roads proposed to be used by heavy vehicles for the SSI works that were not assessed in the ecosystem services and the SPIR, must be approved by the Planning Secretary through the Construction Traffic Management Sub-plan (including any revisions to the sub-plan that identify additional local roads) The request to the Planning Secretary must include a traffic and pedestrian impact assessment, and a swept path analysis, if required. The traffic and pedestrian impact assessment must: (a) demonstrate that the use of local roads will not compromise the safety of the public and have no more than minimal amenity impacts; (b) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and (c) describe the measures that will be implemented to minimise safety and amenity impacts to any schools, aged care facilities and child care facilities during their peak operation times.	Section 5

E64	The requirements of Conditions E62 and E63 in relation to Bridge 7 may be addressed by the documents required under Condition A	This CTMP, Section 5

EXISTING CONDITIONS

4.1 EXISTING TRAFFIC ENVIRONMENT

The Shared Path Bridge will be constructed across Newcastle Road (A15) to the west of the road's intersection with Steel Street and approximately 350 m east of the Jesmond roundabout that connects Newcastle Road to the existing Jesmond to Sandgate section of the NICB (A37).

The existing road network and key traffic routes in the vicinity of the SPB are shown in Figure 3.

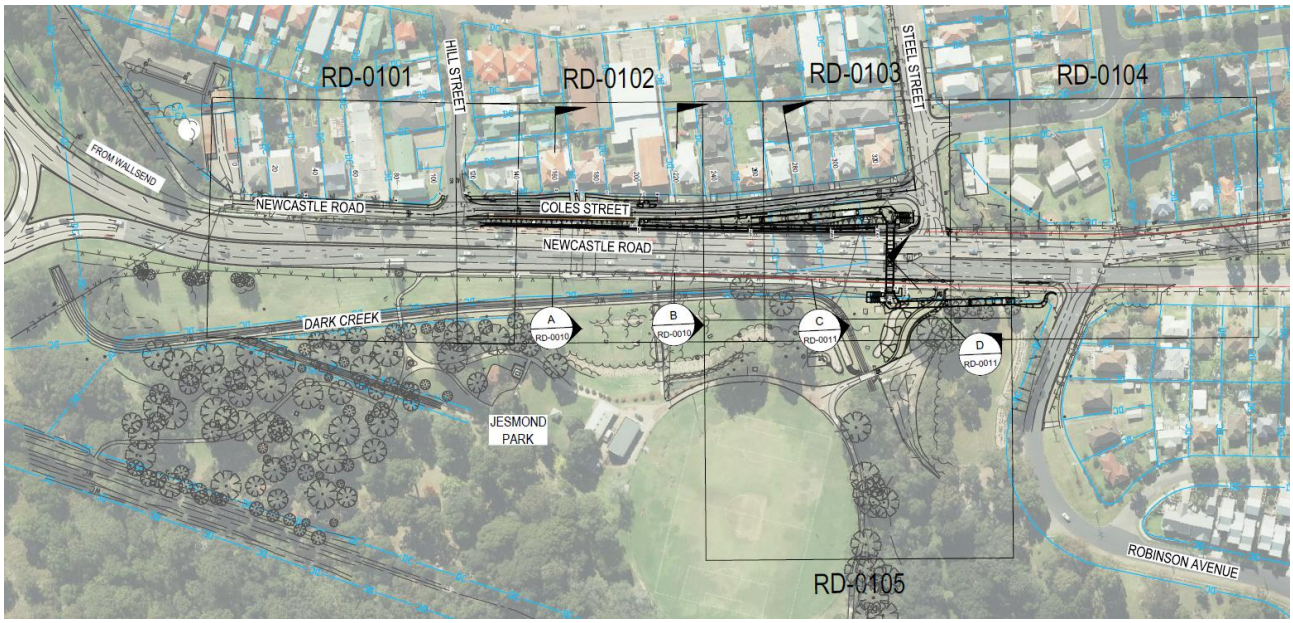


Figure 2: Site Overview

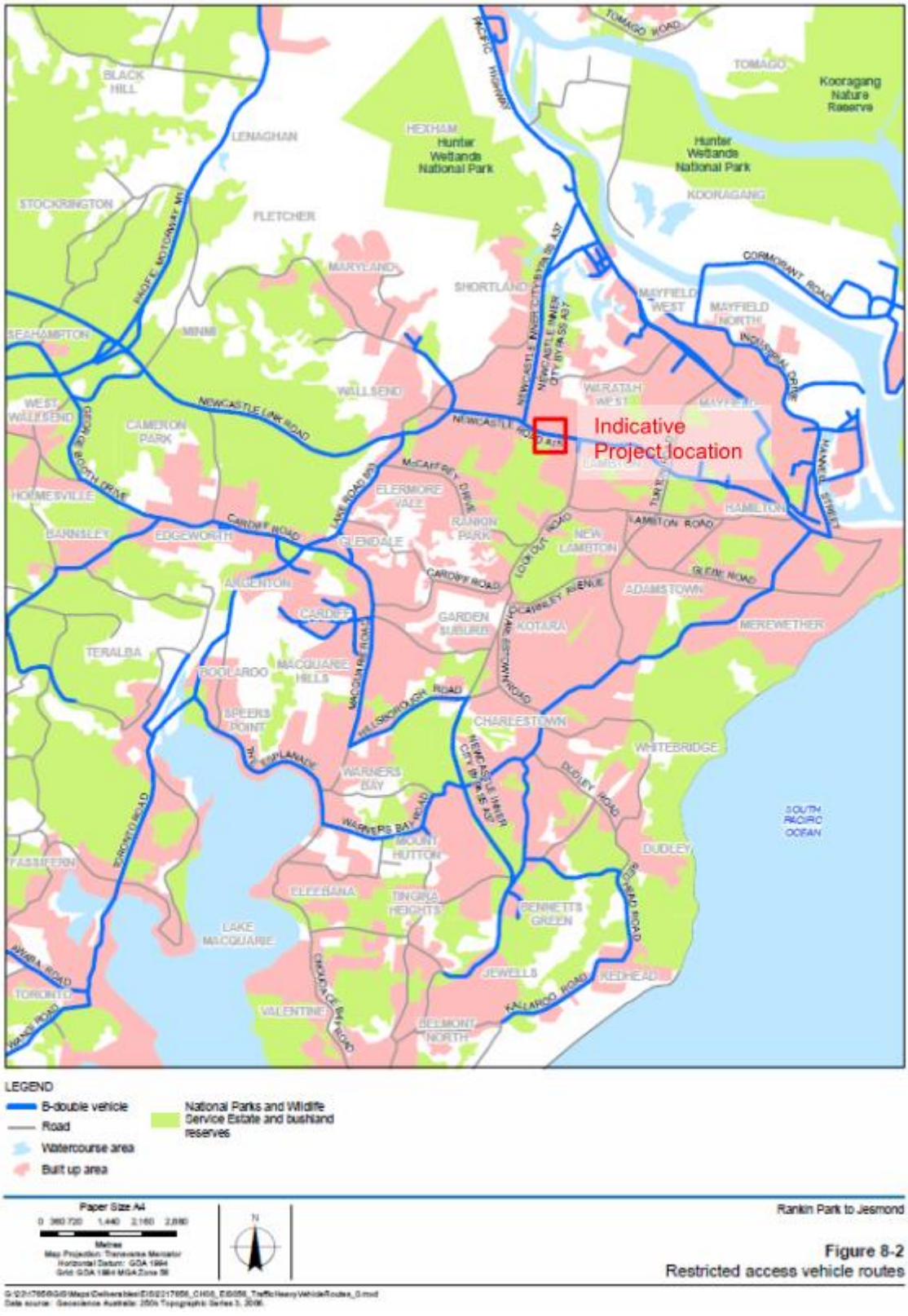


Figure 3: Road Newtork and B Double vehicle routes in the vicinity of the SPB project

4.1.1 STATE AND ARTERIAL ROADS

State and arterial roads State roads that provide key traffic movements in the vicinity of the SPB include:

NICB Jesmond to Sandgate (A37) serves as a key north-south traffic route in the northern Newcastle region, connecting to the Pacific Highway at Sandgate. It is a four-lane divided dual carriageway, generally with two lanes in each direction, which operates at a maximum speed of 90 km/h.

NICB Charlestown Road, Lookout Road and Croudace Street (A37) provide a north-south traffic route from Newcastle Road to the western road network in the Newcastle region. These roads have four-lanes and vary between undivided and divided. The posted maximum speed limit is generally 60-70 km/h. A 40 km/h school zone operates on Croudace Street at Lambton Public School. A number of traffic light sets control traffic flow along Lookout Road and Croudace Street.

4.1.2 NEWCASTLE ROAD

Newcastle Road (A15) serves as the key east-west traffic route in the area. It connects Newcastle to the Pacific Motorway (M1) to the west, while also providing a connection to the north via an intersection with the Jesmond to Sandgate section of the NICB. It is generally a dual carriageway with two lanes in each direction and operates at speed limits of 60 km/h. A number of traffic controlled signals, control traffic and pedestrian flows along this road. Several uncontrolled intersections and driveways are located on Newcastle Road.

4.1.3 REGIONAL ROAD NETWORK

Regional roads that intersect with the State roads in the vicinity of the SPB include:

McCaffrey Drive provides a key east-west route through the area, including access from the west to the John Hunter Hospital precinct. It also links the section of the NICB from Kotara Heights to Rankin Park to suburbs in the north-west. It is single carriageway, typically with two lanes in each direction and a maximum speed limit of 60 km/h.

Howe Street (MR 188) is a two-way road that intersects with Croudace Street at Lambton and connects the area to New Lambton. It has a posted speed limit of 60 km/h.

Russel Road (MR 223) provides an east-west link from Croudace Street at New Lambton Heights to New Lambton and Broadmeadow. It is generally two lanes in each direction and has a posted speed limit of 60 km/h.

4.1.4 LOCAL ROAD NETWORK

Local roads that will provide ancillary facility access and/or connect to Newcastle Road near the SPB include:

- Steel Street
- Coles Street
- Robinson Avenue
- Hill Street

Steel, Coles, Hill Street and Robinson Ave, are local roads that accommodates Lambton and North Lambton housing estates. There are two churches with the affected constriction area, one located on Hill Street and the other on Roberts Street. Localised traffic to date shows traffic volumes are anticipated to be less than 200 vehicles per day. Immediately south of the limit of the works is Jesmond park and cricket grounds which are primarily accessed via Robinson Avenue. All the mentioned local roads are currently controlled by Newcastle City Council.

Local roads are characterised by:

- One lane in each direction with a speed limit of 50km/hr

4.1.5 PROPERTY ACCESS

Property accesses to the existing road network consist primarily of private driveways. Key property accesses near the Shared Path Bridge include:

- Coles St Eastbound – 18 driveways provide access to residential buildings
- Robinson Avenue Southbound – 3 driveways provide access to residential buildings
- Robinson Avenue Northbound – 1 driveway provides access to Jesmond Park (and the site compound area)

4.1.6 PARKING

Generally, untimed on-street parking is permitted on most of the regional and local roads in the area. On-street parking is permitted in some of the marked shoulder areas of Newcastle Road, including adjacent to Jesmond Park in the westbound lanes. A number of disabled car parking spaces are provided in the shoulder area on the westbound lane of Newcastle Road adjacent to Jesmond Park. Parking is restricted in the shoulder area on the eastbound lane between the signalised pedestrian crossing on Newcastle Road and Steel Street.

Informal off-street parking occurs in the green space adjacent to the westbound lane of Coles Street.

The Jesmond Park parking area, located off Robinson Avenue, provides off-street untimed parking for users of the park.

4.1.7 HEAVY VEHICLES AND FREIGHT

The section of NICB between Jesmond and Sandgate, Newcastle Road and Lake Road (B53) form key components of the heavy vehicle road network in the area. The heavy vehicle routes through the area are described below:

- Newcastle Road is permitted to be used by B-Double trucks. This road provides the main heavy vehicle route between the Pacific Motorway (M1) and the inner areas of Newcastle, including the Port of Newcastle.
- NICB Jesmond to Sandgate can be used by B-Double trucks. It connects Newcastle Road to areas to the north of Newcastle, including Kooragang Island and the Port of Newcastle
- Lake Road is permitted to be used by B-Double trucks. It connects Newcastle Road with areas to the south of Newcastle such as Lake Macquarie.

4.1.8 BUS FACILITIES

A number of public bus services operate in the area

- Route 100 – between Jesmond and Charlestown, along Newcastle Road and Lookout Road/ Croudace Street, servicing the John Hunter Hospital precinct
- Route 224 – between Wallsend and Newcastle via Kotara, along McCaffrey Drive and Lookout Road, servicing the John Hunter Hospital precinct
- Route 222 – between Wallsend and Newcastle along Grandview Road and Lookout Road/ Croudace Street, servicing the John Hunter Hospital precinct
- Routes 226, 230, 231 and 235 – between Glendale, Maryland and Wallsend to Newcastle along Newcastle Road and Croudace Street to its intersection with Howe Street
- Route 363 – between Warners Bay and Newcastle along Cardiff Road, Lookout Road and Russell Road, servicing the John Hunter Hospital precinct.

School bus services also operate during morning and afternoon periods from Monday to Friday during school terms. These services operate along Newcastle Road, Blue Gum Road, Croudace Street, Russell Road, Lookout Road, McCaffrey Drive, Grandview Road and Main Road.

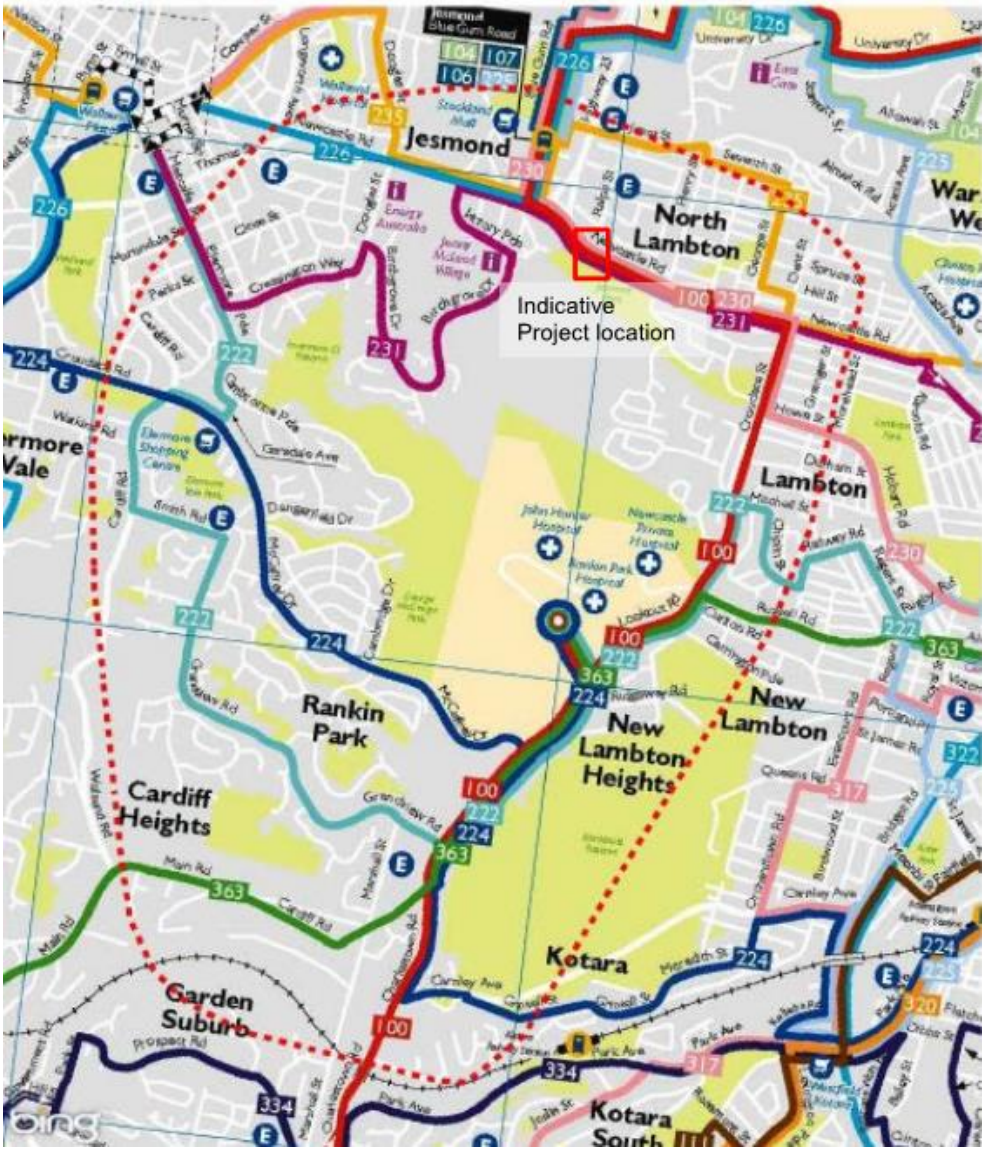


Figure 4: Public transport routes

4.1.9 PEDESTRIANS AND CYCLISTS

Pedestrian and cycle infrastructure in the area comprises shared paved and unpaved paths and pedestrian paths and dedicated pedestrian crossings, as shown on Figure 5 and Figure 6.

Facilities in Jesmond Park include a paved shared path which runs in an east-west direction along the southern edge of the park to the Newcastle Road/ Blue Gum Road intersection. This path forms part of regional cycling route R5 – Newcastle City Centre to Glendale which connects a number of key locations in Newcastle. An extension of this shared path runs in a north-south direction from Jesmond Park to the John Hunter Hospital precinct. This path forms part of local cycling route L8 – University to John Hunter Hospital.

A network of paved footpaths within Jesmond Park provide a connection between Newcastle Road and the east-west shared path.

South of Jesmond Park, a number of fire trails and informal tracks in the bushland area are used informally by cyclists, bush walkers and by pedestrians accessing the John Hunter Hospital precinct.

A shared path on the southern side of Newcastle Road runs between Robinson Avenue and the midblock signalised pedestrian crossing near Hill Street.

A shared path is also provided on the eastern side of the existing NICB Jesmond to Shortland section, with an overbridge located about 250 m north of the Jesmond roundabout. Cyclists are permitted to use the road shoulders along the existing NICB sections.

Any temporary pedestrian and cyclist detours required during construction will be detailed on our Traffic Control Plans.

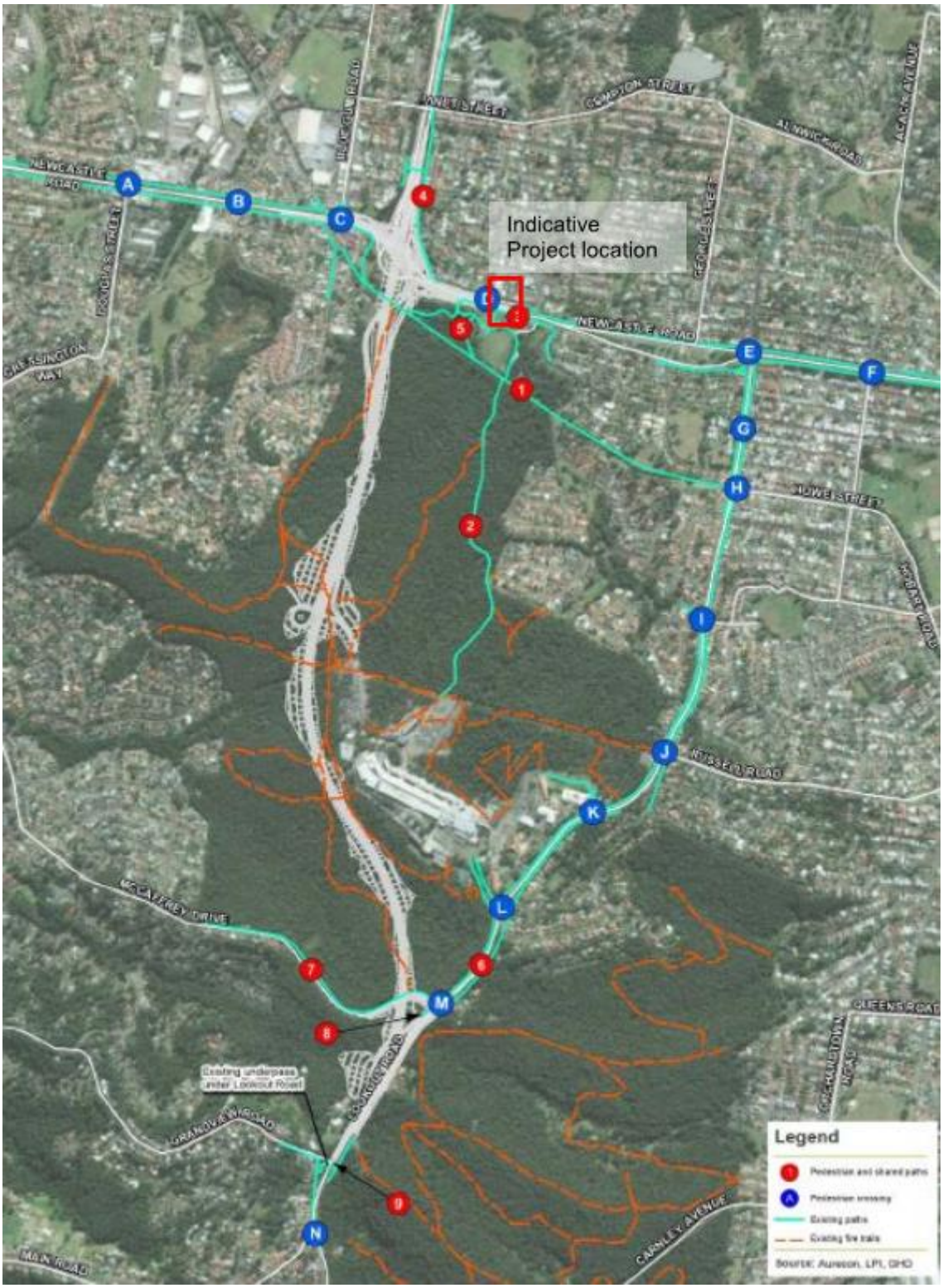


Figure 5: Pedestrian Network

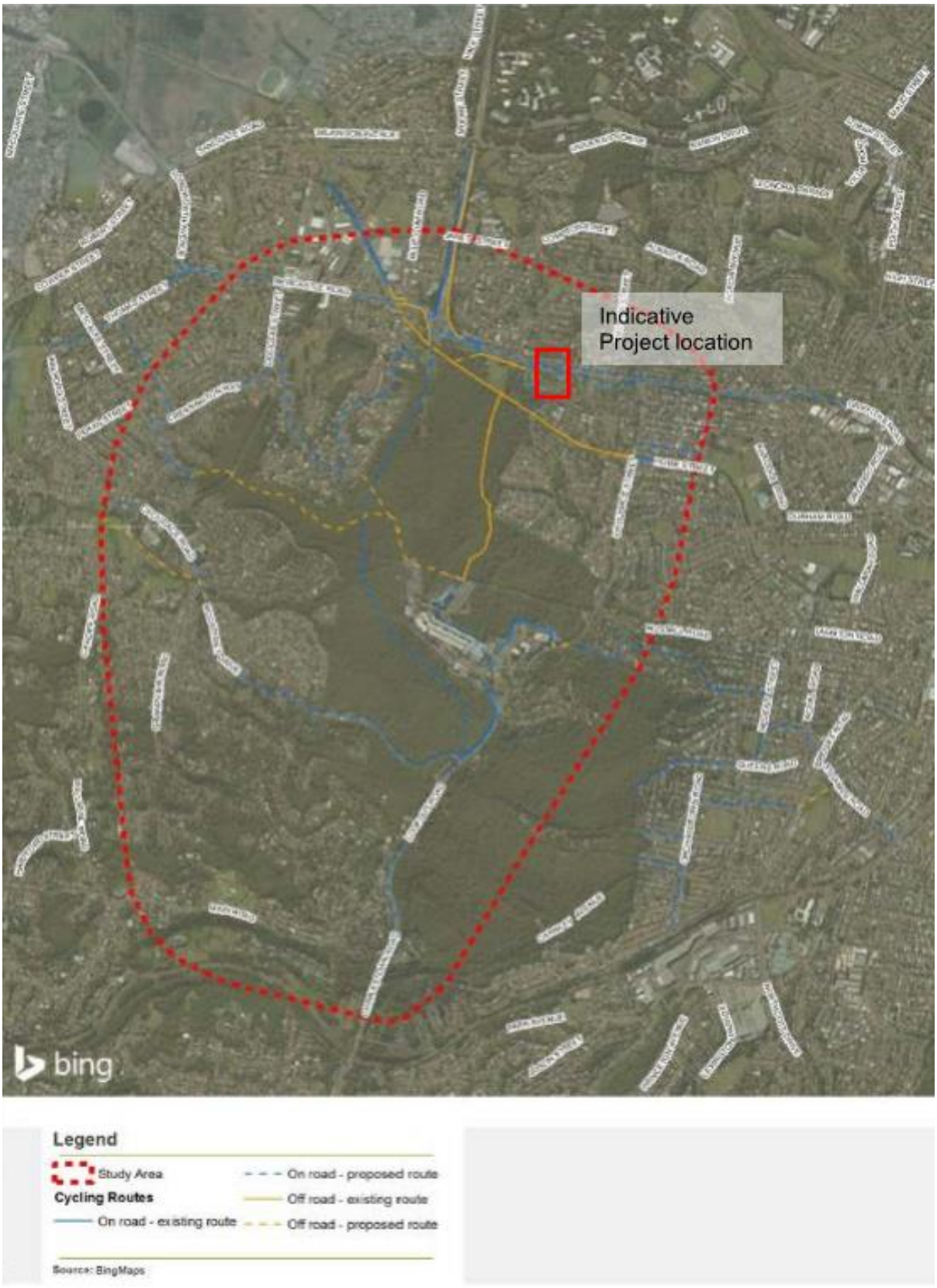


Figure 6: Cycling Network

4.2 EXISTING ROAD NETWORK PERFORMANCE

4.2.1 EXISTING TRAFFIC VOLUMES

Traffic surveys undertaken during 2014 and 2015 measured average daily traffic (ADT) along the road network in the vicinity of the Project. The ADT volumes are summarised in Table 4-1. The data highlights the high volume of traffic along Newcastle Road.

Table 4: Existing Traffic Volumes

Road / Location	ADT (vehicles/day)
Newcastle Inner City Bypass, north of Newcastle Road	36,100
Newcastle Road, east of Newcastle Inner City Bypass	60,200
Newcastle Road, east of Croudace St	46,500
Newcastle Road, west of Newcastle Inner City Bypass	44,300

4.2.2 CRASHES

Crash data for Newcastle Road over a four year period ending in 2014 reveals that 16 crashes resulting in four injuries occurred at the mid-block pedestrian crossing on Newcastle Road near the intersection with Hill Street. Replacement of the existing crossing with the SPB is expected to reduce crashes in the vicinity of the Newcastle Road/ Steel Street intersection by 50%.

5 CONSTRUCTION TRAFFIC IMPACTS

5.1 TRAFFIC GENERATING ACTIVITIES

A minor increase in traffic volumes on the existing road network is expected during construction of the SPB as a result of workers and management staff commuting to the construction site, deliveries of equipment and disposal of waste from the work site.

The main traffic generating construction activities comprise of:

- delivery of construction materials
- access to ancillary facilities from public roads
- disposal of material off site
- light vehicle movements

The following will be required to support these construction activities:

- partial road (shoulder area) closure on Newcastle Road and Coles Street
- temporary full road closure
- temporary road detours
- temporary short term lane closures
- temporary long term lane closure along Coles St

- traffic controls such as temporary safety barriers
- temporary speed limit restrictions on existing roads adjacent to the construction sites.

5.2 HAULAGE ROUTES

Haulage of material to the construction site will generally occur via the restricted access vehicle network described in section 4.1.7. Use of local roads for haulage of bulk materials may be required on sections of McCaffrey Drive, Lookout Road. Where local roads are to be used during construction, Daracon will liaise with the City of Newcastle regarding their use and comply with Council's requirements for condition inspection and maintenance, haulage and delivery of materials, parking of plant and equipment, and other construction activities.

Heavy vehicle movement will primarily involve:

- Delivery of construction materials;
- Spoil and waste removal and,
- Delivery and removal of construction equipment and machinery.

Construction vehicles would access the site via arterial roads wherever possible. The potential impacts of construction on the local traffic networks is expected to be negligible. Table 5 is a summary of the expected construction materials and haulage routes to site.

Table 5: Proposed Material Sources

Material	Source Location	Estimated Quantities Tonnes	Proposed Haulage Route
Selected Material (Roads)	Buttai Quarry	**700t**	From Buttai Quarry via John Renshaw Dr, Hunter Expressway, Newcastle Link Road, Thomas Street to Newcastle Road and Coles Street
Selected Material (Retaining Walls)	Buttai Quarry	**2100t**	From Buttai Quarry via John Renshaw Dr, Hunter Expressway, Newcastle Link Road, Thomas Street to Newcastle Road and Coles Street
Road Base Material	SCE Mayfield	**700t**	From McIntosh Drive Mayfield, North on Industrial Drive, Sandgate Road, Newcastle City Bypass, Newcastle Road and Coles Street.
Sandstone Blocks	Grants Road Sands	**575t**	Grants Road Sommersby, Wisemans Ferry Road, Peats Ridge Road, Pacific Mwy, Newcastle Link Road, Thomas Street to Newcastle Road and Coles Street
Concrete (All Works)	Boral Concrete (Jesmond)	**1400m3**	Mordue Parade, The Crescent, Newcastle Road.
Drainage Aggregate	QPN	**350t**	From QPN Quarry via Lovedale Rd, Hunter Expressway, Newcastle Rd

Pipe Bedding/Backfill	Boral Seaham	**200t**	South on Italia Road, Pacific Hwy, Inner City Bypass, Newcastle Road.

Light vehicles will be used to transport staff to construction areas and for minor construction activities such as inspections and movement of light equipment. The majority of these movement will occur along main roads such as Newcastle Road and Croudace Street, although light vehicles will use local roads to access ancillary facilities.

There may be disruptions to existing property owners, business and churches within proximity of the work. Arrangements shall be made to minimise disruptions such as alternative access arrangements, staged construction programming to minimise disruptions etc. Pedestrian access to properties will be maintained at all times.

5.3 DIRECT ACCESS IMPACTS

Site access and egress shall directly impact the local community and will be strictly controlled by implementing environmental and traffic controls for all work stages. Some of the main access direct impacts are detailed in Table 6 below.

Table 6: Site Access Impacts

Location	Areas Directly Impacted
Newcastle Road	• Bus Stops • Pedestrians and Cyclist • Loss of off street car parking
Coles Street	• Local Residents • Local Businesses • Churches • Loss of off street car parking • WB traffic lane removed
Robinson Avenue, Hill Street & Steel Street	• Local Residents • Local Businesses • Loss of off street car parking
Robert Street	• Increased vehicle movements

5.4 ANCILLARY FACILITY ACCESS

The locations of ancillary facilities required for construction of the SPB are shown in APPENDIX 6 of this plan. Further details of these facilities are provided in Daracon's Ancillary Facilities Management Plan.

Access to the ancillary facility and construction site north of Newcastle Road will be from Newcastle

Road and via Steel Street, Robert Street, Hill Street and Coles Street. Access to the ancillary facility and construction site located south of Newcastle Road will be from Newcastle Road and via Robinson Avenue and the access road to Jesmond Park.

Access to construction sites, and management measures to ensure safe passage through, around, or past construction sites will be in accordance with the requirements detailed in Roads and Maritime Specification G10.

Traffic movements to and from ancillary facilities are expected to have minor impacts on the local road network. Light vehicle movements will comprise the majority of the construction traffic movements for ancillary sites.

5.4.1 ADDITIONAL ANCILLARY FACILITIES

Daracon has also identified additional ancillary facilities considered for use as temporary storage of stockpile material. This is indicatively shown in Figure 7 below. The use of such areas not pre-approved for project use will be on the condition of any and all relevant approvals from the land owner and RMS Specification requirements.

Figure 7: Proposed Facilities

5.5 DELIVERY OF THE SPB MAIN SPAN

Delivery and installation of the fabricated steel arch main span for the SPB will require a temporary full closure of Newcastle Road. Delivery and installation of SPB main span will involve a single night closure of Newcastle Road between immediately east of the Jesmond roundabout and immediately west of the intersection with the A37 / Dent Street at Lambton.

A detour route will be implemented for through traffic that would normally use Newcastle Road during the closure period (refer APPENDIX 5). The SPB main span will be delivered to site on an oversized semi-trailer under an Oversize Over Mass (OSOM) Permit. Daracon will obtain all necessary permits and arrange for escort vehicles as required for the transport of the main span to the site, in accordance with Roads and Maritime Fact Sheet: Transport Management Plans for Oversize and/or Over Mass Movements in NSW. Delivery will occur along designated restricted access vehicle routes NICB Jesmond to Sandgate, Lookout Drive, Croudace Street and Charlestown Road or Newcastle Road and will be undertaken as out of hours work.

Parking of the OSOM vehicle may occur on the stub road of the Shortland to Sandgate section bypass section of the under emergency situations.

5.6 PUBLIC TRANSPORT

Construction of the SPB will not impact existing bus routes. However, the SPB works will require two existing bus stops and associated bus zones on Newcastle Road located to the west of the SPB to be permanently removed. The locations of the bus stops to be removed include:

- Newcastle Road westbound, west of the existing mid-block pedestrian crossing (bus stop number 2299 27).
- Newcastle Road eastbound, west of the existing mid-block pedestrian crossing (bus stop number 2299 20).

The decommissioning of the bus stops and bus zones will not occur prior to completion and opening of the SPB.

The Newcastle Road eastbound bus stop located on the corner of Newcastle Rd and Steel Street will be temporarily closed during construction. Whilst this is the closed the eastbound bus stop at the Traffic Signals will remain operational. Once the new east bound bus stop under the SPB has been built and is made operational, the bus stop at the existing Traffic Signals will be permanently closed.

Bus users will retain access to the two westbound bus stops located on the southern side of Newcastle Road for the majority of the construction period. The western most bus stop will be permanently closed towards the end of the project when signage works are being completed (this bus stop becomes a 4P parking area).

Daracon and RMS will consult with bus operators regarding potential impacts to services prior to commencement of construction. Local residents will be informed of any changes to bus operations and access during construction and prior to the opening of the SPB. Consultation and communication with affected bus operators and the community will be in accordance with the RP2J CCS.

5.7 PEDESTRIAN AND CYCLIST ACCESS

Construction of the SPB will affect pedestrian and cyclists, who may be required to use temporary alternative paths where construction activities occur across existing paths. Access to Jesmond Park via Robinson Avenue will be retained during construction of the SPB.

The existing pedestrian ramp and signalised pedestrian crossing of Newcastle Road located west of the SPB will be removed at the completion of the SPB.

5.8 PROPERTY ACCESS

Access to the site north of Newcastle Road shall be from Newcastle Road and via Steel Street, Robert Street, Hill Street and Coles Street subject to compliance with the requirements detailed in RMS G10, Annexure G10/A2.

Access to the site south of Newcastle Road must be from Newcastle Road and via Robinson Avenue and the access road to Jesmond Park.

At least one-way access (or alternative arrangements satisfying the owner and/or occupier) must be maintained at all times to properties.

Daracon will liaise with owners and/or residents of affected properties and businesses, and provide notification prior to commencing the construction of driveways or works affecting access to properties / businesses.

Vehicular and pedestrian access to each property and business will be made available at all times, unless the property owner, occupier and/or business operator agrees to alternative arrangement. Notification to each of the emergency services must be provided when access may be significantly impeded. All existing turn movements are to be maintained to all properties unless agreed otherwise by property owners / residents.

Property owners/residents shall be provided with a minimum of 4 weeks notice prior to the commencement of any construction works that will affect property or business access. Those affected shall be advised of the extent of the construction works, the timing of the works, what mitigation measures will be put in place and what (if any) special arrangements the property owner / resident requires. The occupant / owner will be again be consulted 48 hours prior to the construction works commencing and liaise regularly as works are carried out.

Construction activities undertaken on driveways or other similar structures in the nature strip (e.g. mailboxes) must take into account the specific needs of the individual property owners and residents. Driveways must be re-constructed / repaired like-for-like unless otherwise agreed with the property owners and the Principal.

The driveways to be re-constructed must comply with Newcastle Council requirements and have a maximum grade of 2% where the footpath crosses them.

Daracon will maintain continuous access for Telstra, Optus and their contractors to the existing pit west of Steel Street for inspection and maintenance activities.

5.9 PARKING

There will be loss of parking along Coles Street during construction due to establishment of the ancillary facility, widening of the street and closure of the west bound lane. Parking for construction personnel will be provided at ancillary facilities or adjoining local roads during construction of the SPB. No parking of construction, staff or subcontractor vehicles will be permitted on the road shoulder of Newcastle Road, or along the Jesmond Park access road and its parking areas.

Newcastle Road parking will not be affected by construction. Additional parking is created at completion of the project on the westbound side with the removal of the bus stop adjacent to the existing set of traffic signals.

5.10 EMERGENCY SERVICES

Although the construction of the SPB has the potential to cause delays to response times for emergency services, it is anticipated to have a very minor impact on emergency vehicles as access on existing roads will be maintained for the majority of the project.

Daracon will consult with and keep emergency services fully informed of all changed traffic conditions throughout construction.

Signage will be implemented to ensure that all construction and adjusted property accesses are clearly signposted. Emergency vehicle access to the bushland areas surrounding the SPB will be provided at all times.

5.11 OVERVIEW OF TRAFFIC STAGING

Daracon have generally adopted the proposed construction staging as provided at tender time. Further development of this staging will occur following contract award. Diagrammatic representation of the work areas and proposed traffic control arrangements are shown in APPENDIX 4 and shall be read in conjunction with the detailed construction program for the works.

5.11.1 STAGE 1 – ENABLING WORKS

Scope of works during this stage generally includes the following activities

- Workshops and start up meetings
- Development and submission of all site management plans;
- Procurement process for service providers and long lead time items;
- Pre-construction surveys of land, local roads, structures and buildings;
- Site establishment
- Site survey for control and boundaries etc;
- Installation of VMS and Radar Speed Devices per G10 requirements;
- Hardstand area and site compound
- Ausgrid Electrical works
- 100mm and 375mm Water Main Relocation
- Erosion and Sediment Controls
- Footpaths
- Bus Shelter Demolition

- Concrete L Shaped Retaining Walls

5.11.2 STAGE 2 – BRIDGE CONSTRUCTION

Scope of works during this stage generally includes the following activities

- Remaining Concrete L Shaped Retaining Walls
- Newcastle Road Widening Pavements
- Footpaths
- Construct New Shared Path Bridge
- Install the Steel Tied Arch Span
- Place the Concrete Deck
- Complete ramps, stairs, balustrade and steel works
- Bridge Lighting

5.11.3 STAGE 3 - COLES STREET

Scope of works during this stage generally includes the following activities

- Remove existing signalised intersection and redirect pedestrians over new Shared Path Bride
- Mill and sheet on Newcastle road as night works
- Construct Sandstone retaining wall
- Coles Street Road Widening

5.11.4 STAGE 4 – FINISHING WORKS

Scope of works during this stage generally includes the following activities

- Shared Path connection in Jesmond Park
- Final wearing course where not previously complete
- Final Linemarking and road furniture
- Final Landscaping
- Demobilise site

5.12 SITE SPECIFIC REQUIREMENTS

The following specific project requirements are drawn directly from the RMS “Traffic Management” specification for this Contract being Shared Path over Newcastle Road, Jesmond – February 2019.

Daracon will liaise with Newcastle City Council in relation to traffic management arrangements that have the potential to impact local roads adjacent to the Site and seek Council’s advice in relation to forthcoming traffic generating special events when planning any worksite traffic arrangements.

The minimum requirements for shoulder and lane widths noted below can only be amended or reduced with the prior written approval of the Principal.

5.12.1 TRAFFIC ON NEWCASTLE ROAD

The following restrictions apply to traffic management on Newcastle Road for this Contract:

(a) The traffic capacity existing at the Site at the Date of Contract must be maintained, except as provided elsewhere under this clause.

(b) Apart from long term shoulder closures, you must avoid restrictions to traffic on Newcastle Road during increased traffic volumes associated with events at McDonald Jones Stadium, Newcastle Entertainment Centre, Newcastle Showground and Newcastle CBD/Foreshore and liaise with Newcastle City Council Special Events, McDonald Jones Stadium, Newcastle Entertainment Centre and Newcastle Showground to ascertain when such events are occurring.

(c) Long term closure of the existing shoulder is permitted in accordance with an approved Road Occupancy Licence.

(d) Realignment of traffic on Newcastle Road is permitted during the closure of the existing shoulder provided the minimum lane and shoulder widths specified in Clause G10/A3.1 (Refer Table 7) are provided.

(e) The restriction of traffic to a single lane traffic flow in the eastbound or westbound direction using Traffic Controllers will be permitted for night time work between 7.30pm and 5.00am Monday to Sunday in accordance with an approved Road Occupancy Licence.

(f) Intermittent traffic stoppages in the eastbound or westbound direction using Traffic Controllers may be permitted for night time work between 7.30pm and 5.00am Monday to Sunday in accordance with an approved Road Occupancy Licence.

   a. Short term intermittent traffic stoppages up to two minutes may occur during the ROL licensed period on the condition that no stoppage occurs while any traffic is delayed by general congestion or any traffic remains delayed by a previous stoppage.

(g) The full closure of Newcastle Road will only be permitted for the installation of the main bridge span following the implementation of traffic detour arrangements approved by the Principal. Such closure will only be permitted on Sunday, Monday, Tuesday or Wednesday nights between 9.00pm and 4.00am or on Saturday night between 9.00pm and 10.00am.

Table 7: Road Design Standards - Newcastle Rd (G10 Cl A4.1)

Item	Description	Requirement
A3.1.1	Design Travel Speed	60 km/hr
A3.1.2	Traffic Lane Widths	3.2 m
A3.1.3	Outside Shoulder Widths	0.5m

5.12.2 TRAFFIC ON LOCAL ROADS

The following restrictions apply to traffic management in local roads for this Contract:

(a) All movements into and out of local roads existing at the Site at the Date of Contract must be maintained during construction except as noted in section (b) below.

(b) Subject to approval from Newcastle City Council, traffic in Coles Street may be restricted to a single 3.5m wide traffic lane adjacent to the northern kerb during the construction of works in Coles Street with the traffic flow direction being from Hill Street to Steel Street.

(c) Alternative arrangements, such as short term stoppages, may be carried out subject to prior approval from the City of Newcastle.
(d) The closure of side roads is not permitted.
(e) Existing access to Jesmond Park from Robinson Avenue must be maintained at all times

5.12.3 PEDESTRIANS, CYCLISTS AND BUS STOPS

(a) The existing signalised pedestrian crossing of Newcastle Road must be maintained until the new shared path bridge and approaches has been completed and opened for use.
(b) Safe access for pedestrians and cyclists in Coles Street must be maintained at all times.
(c) The existing eastbound bus stop west of Steel Street may be closed during construction of the works on the northern side of Newcastle Road.
(d) The bus stops and bus shelters on Newcastle Road adjacent to the existing signalised pedestrian crossing must remain in operation until the crossing is decommissioned.
(e) Use of the existing signalised pedestrian crossing by construction personnel must be limited so far as practical during periods of peak traffic on Newcastle Road due to traffic impacts on Newcastle Road. However, the use of the pedestrian refuge near Steel Street should not be used as an alternative to the signalised pedestrian crossing.

5.12.4 SPECIAL EVENTS

A special event in traffic management terms is defined as any planned activity that is wholly or partially conducted on a road, requires multiple agency involvement, requires special traffic management arrangements and may involve large numbers of participants and/or spectators. Special events may include:

- local festivals and celebrations
- sporting events
- parades and marches
- seasonal variations in traffic volumes
- NSW holiday periods

Special events may include events at McDonald Jones Stadium, Newcastle Entertainment Centre, Newcastle Showground and Newcastle CBD/Foreshore. Daracon will liaise with CoN Special Events, McDonald Jones Stadium, Newcastle Entertainment Centre and Newcastle Showground to determine if any special events are proposed during the construction period that may impact traffic within the construction area and Jesmond Park. Where special events are expected to generate additional vehicle or pedestrian traffic in the area affected by construction of the SPB, Daracon will co-operate with the event organiser, Roads and Maritime, CoN and other authorities to minimise construction impacts to traffic and pedestrian flows on the existing road network or adjacent to the construction site. Daracon will ensure the safety of pedestrians through and around the construction site during such events.

The procedure to be implemented for consultation with the above parties shall include:

- Initial phone consultation with representative from each stakeholder: Emails and contact details shall be obtained during this initial briefing.

- Monthly email issued to each party providing, as a minimum, a schedule of specific activities that may affect traffic volumes along Newcastle Rd.

5.12.5 REQUIREMENTS FOR SITE/ LIGHT VEHICLES

- Rotating flashing light.
- Reverse alarm.
- Two-way radio.
- Fire Extinguisher.
- First Aid Kit.

5.12.6 SITE LICENCE REQUIREMENTS

- A person must hold the relevant licence or competency to drive or operate any vehicle or equipment being driven except whilst under training.

5.12.7 DRIVING

- In line with Daracon's Drug and Alcohol Policy, site requirement Blood Alcohol Level of 0.00% is the expected standard whilst on-site and whilst operating machinery plant or vehicles;
- Smoking is prohibited in all vehicles;
- When driving, mobile phone use is prohibited;
- Seat belts shall be worn by all drivers and passengers in any vehicle;
- Passengers will not be carried on any vehicle unless the equipment provides for permanent seating;
- Operators of vehicles including light vehicles, trucks, water carts, large loaders, scrapers, cranes and low loaders when travelling on haul roads shall announce their intended travel route prior to entering the road network;
- Vehicle operators following another vehicle shall maintain a safe distance of separation with consideration for road and weather conditions. A minimum separation of a three second gap shall be maintained by the following vehicles;
- Drivers of any vehicle shall as soon as possible report any defect in the vehicle as well as damage to the vehicle or injury to themselves or passengers, or near miss arising out of a vehicle incident on-site and;
- Operators of vehicles are to comply with site Radio Protocol.

5.12.8 SITE ACCESS

- All personnel entering site are to do so via the routes & gates nominated in the Vehicle Movement Plan. A copy of this plan is located in APPENDIX 2 of this plan;
- All suppliers and subcontractors to be advised of access routes prior to mobilisation/visiting site to ensure correct access is maintained;
- Delivery vehicles and/or any other vehicles wishing to enter the Daracon site are to do so via the routes & gates nominated in the Vehicle Movement Plan and;
- All deliveries to be undertaken, unless otherwise approved, during approved hours of construction only detailed as follows:
    - Monday to Friday: 7:00am to 6:00pm

- Saturday: Only with prior approval from RMS.

5.12.9 SPEED LIMITS

- Site speed limit is 30km/h on all site construction/haulage roads;
- Site Speed Limit around Park up Zones and Site Facilities (e.g. site sheds) is 15km/h;
- On the local roads leading into site and not under the conditions similar to the previous item, follow the speed limit designated for area;
- All drivers shall be required to drive at a speed suitable to the current conditions of the site, but they shall not exceed the permissible speed limit defined.
- Note to always drive to the conditions on or around the site, but not exceeding the nominated speed limit.

5.12.10 DUTY TO GIVE WAY

- All drivers of all vehicles and equipment will have a general duty of care to give way where there is a reasonable possibility of a collision or dangerous situation being created due to the interaction with oncoming vehicles;
- All drivers shall give way to emergency vehicles;
- At intersections that are not signposted drivers shall give way to the right and;
- Light and support vehicles shall generally give way to heavy mobile equipment on site, except where signposted.

5.12.11 VEHICLE MOVEMENT, PARKING AND OVERTAKING

- All vehicles shall be driven on the left-hand side of any ramp or road unless authorised or directed by traffic signs;
- Reverse parking is required unless signposted otherwise;
- A driver shall not park or stand his/her vehicle in a position that will endanger vehicles or people. In particular a driver shall not park his vehicle in blind spot of heavy vehicles;
- When parking before leaving his/her vehicle the driver shall ensure that the vehicle is fundamentally stable. (Vehicle should not move if taken out of gear and handbrake released);
- Where provided all light vehicles shall park in the designated bays;
- Signage shall be erected showing the manner in which vehicles shall be parked and;
- Go lines or similar to be utilised for rubber tyred heavy vehicles to ensure fundamental stability of plant and ensure safe egress and access for operators at park up locations.

5.12.12 TOWING

- SWMS to be developed prior to towing of any vehicle;
- Vehicles to be used for towing must be fitted with an approved tow hitch and;
- No certified lifting chains to be used as towing slings.

5.13 TRAFFIC CONTROL PLANS

A Traffic Control Plan (TCP) shows the arrangements for warning traffic and guiding it around, past or through a worksite. TCPs shall be prepared for every worksite that may have an impact on traffic movement and shall be updated as necessary to reflect changes in traffic flow or work practices. Only suitably trained personnel (refer TCAW 2.4) shall select, design, approve and implement TCPs.

5.13.1 SELECTION

The Project Manager may choose a Standard Traffic Control Plan from the TCAW where it accurately reflects the conditions at a worksite. Minor modifications to the design which may have been identified in a Risk Assessment and/or site inspection shall be made by the Traffic Control Site Manager.

5.13.2 DESIGN

The Project Manager shall determine whether a site-specific TCP is required. Designing a site- specific TCP shall be done by a person with a current certificate in the Design and Audit of Traffic Control Plans.

5.13.3 APPROVAL

TCPs shall be approved for use by the Project Manager before being forwarded, with all relevant permits and details to RMS.

5.13.4 IMPLEMENTATION

Implementation of an approved TCP is a critical activity that includes the following steps (refer TCAW 4.3):

- Place all signs, markings and control facilities
- Complete a Risk Assessment and identify any modifications required
- Drive through the site to make sure the TCP is effective
- Record implementation, risk assessment and modifications
- Monitor conditions frequently and record results
- If minor adjustments are required during implementation, changes would be recorded on TCP.

Refer APPENDIX 8 for Daily Inspection Form and Implementation Risk Assessment Form.

5.13.5 TRAFFIC MANAGEMENT INSPECTIONS

Daracon's Traffic Control site manager will co-ordinate the inspection of long term traffic management layout on a daily basis. Further details on the inspections is discussed in section 6.6.

5.14 VEHICLE MOVEMENT PLAN

Vehicle Movement Plans (VMPs) must provide for traffic associated with the Works, such as trucks delivering materials and equipment and work Supervisors' vehicles, to safely manoeuvre into and out of traffic streams, and turn at work areas, depots, stockpile sites, etc and turn around. The VMP must show the vehicle entry and exit points to the worksite and Indicate clearly that these are the only points where interface with the road traffic is permitted.

A VMP shall be prepared for each stage of works and submitted as per G10 Clause 2.7.1 for approval by the principal. A VMP will typically be a standalone document, however may be incorporated into the TMP. Each VMP must be approved prior to works commencing. VMPs are located in APPENDIX 2.

5.15 PUBLIC RELATIONS AND COMMUNICATION

The local community, road users and other stakeholders shall be kept informed of changed traffic arrangements so that adverse impacts can be minimized.
Refer to separate Community Liaison Plan.

5.16 TEMPORARY ROADWAYS

The following Road Design Standards are per G10 Annexure A4.1

Table 8: Road Design Standards For Newcastle Rd

Item	Description	Requirement
A3.1.1	Design Travel Speed	60 km/hr
A3.1.2	Traffic Lane Widths	3.2 m
A3.1.3	Outside Shoulder Widths	0.5m

5.17 TRAFFIC CONTROLLERS

Traffic Controllers must have completed RMS accredited course for Traffic Controllers and must wear yellow vest with RMS logo and the words Authorised Traffic Controller.

White overalls with reflective bands must be worn at night.

Traffic Controllers shall wear approved high visibility clothing;

If working for RMS or on an RMS project the high visibility clothing shall be high visibility fluorescent safety vests clearly bearing the letters “RMS” and the words “Authorised Traffic Controller”;

If working for Local Government the high visibility clothing shall display the logo or name of the Local Government organisation and the words “Authorised Traffic Controller”.

The approach speed of traffic to traffic controller/s shall be restricted to 60 km/hr or less.

The sight distance between the traffic controller/s and oncoming traffic shall not be less than 1.5D where D is the distance equal to the speed of traffic approaching the work site in km/hr or the speed limit applying to the road.

An additional traffic controller and/or warning signs shall be considered on approach to the work site if there is restricted sight distance to the traffic controller;

If the traffic controllers cannot see or hear each other additional communication mechanisms shall be provided such as having an additional traffic controller placed within sight of the original traffic controllers or portable two-way radios;

Traffic controllers shall be relieved every two hours for at least 15 minutes before returning to traffic control duties.

Traffic controllers shall be located so that an accessible escape route is available or protection from oncoming traffic is available.

5.18 TEMPORARY SPEED ZONES

Where required, temporary speed zones authority (SZA) shall be implemented to control the speed of traffic through road works sites. A copy of the SZA shall be kept onsite and also provided to traffic controllers.

5.19 EMERGENCY RESPONSE

In accordance with G10 section 2.7 a Traffic Incident Management Sub-Plan shall be designed and implemented for the work and shall include the response to traffic emergencies such as accidents or unplanned disruptions. This shall be developed in consultation with RMS Regional Traffic Operations Manager and includes:

(a) nominate a specific site contact person to deal with issues related to clearing the Newcastle Road when notified by RMS Regional Traffic Operations or the NSW Police;
(b) provide capacity on site for basic early traffic control that may be required at an incident, such as cones, signs and clearing debris;
(c) keep suitable plant available on site during construction for moving temporary concrete safety barriers;
(d) hold spare safety barriers, signs and the like on site to allow quick replacement if damaged;
(e) require that RMS Regional Traffic Operations be contacted immediately if a traffic incident occurs during working hours;
(f) keep records of communications with the RMS Regional Traffic Operations and NSW Police; and
(g) keep records of all traffic incidents attended.

Report information required in G10 to the Principal immediately of the occurrence of an incident.

Following any traffic incidents, rectify any damage to safety barriers, signs or the like to maintain the approved level of safety. Promptly remove and/or reposition traffic control devices and/or remove debris that interferes with traffic flow (under direction of RMS Regional Traffic Operations, NSW Police or the Principal) within the Site.

The Project Supervisor or designee shall be on 24hour call to respond to emergencies and contact numbers shall be prominently displayed to enable early notification and response.

The Traffic Incident Management Sub-Plan is contained within APPENDIX 7 .

5.20 DILAPIDATION REPORTING

In accordance with CoA E68, prior to both the commencement and completion of the SPB construction, the Contractor will carry out Road Dilapidation Report/s (condition surveys) of the local roads to be used by heavy vehicles as listed in Section 4.1.4.

The pre-construction reports will be provided to CoN within three weeks of completion of the reports and no later than two weeks before the use of roads by heavy vehicles. The post-construction dilapidation reports will be provided to the Roads and Maritime Project Manager and CoN within three weeks of completion of the surveys.

Daracon will be responsible for ensuring that any damage to roads as a result of works associated with construction of the SPB is rectified so as to restore the road to at least the condition it was pre-construction, unless otherwise agreed by CoN.

5.21 SPECIFIC STRATEGIES (DETAILS FOR CONSTRUCTION UNDER TRAFFIC)

This table summarises the identified traffic aspects of the work, assess their impact and describes the control strategies that will be implemented.

Copies of the detailed TCPs and VMPs incorporating these strategies are in Appendices 1 and 2.

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact Assessment**	**Control Measure**
Traffic Sources		
Through traffic	Large number of vehicles pass through area. Any re-configurations to the road network may cause delays to a number of vehicles.	Maintain two traffic lanes at all times during the agreed hrs to minimise the delays to passing vehicles on Newcastle Road. Any alternatives must be approved by RMS.
	Disruption to traffic or unexpected stoppages resulting in traffic accident	Install appropriate warning signs in accordance with TCP's. Ensure local residents are notified of the current construction activities. VMS and radar boards to be used.
Works traffic	Access to work areas limited leading to longer program durations and ultimately longer traffic disruptions	Maximise work area lengths by minimising number of separate stages and keeping two-way traffic where possible. Where possible, stage deliveries outside of Peak times of Monday to Friday; • 04:30 am to 09:00 am (the morning peak) • 03:00 pm to 06:30 pm (the evening peak) Access to site to be controlled by appropriate controls per the approved traffic control plan/s. Design/implement access to accommodate all vehicle types.

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact Assessment**	**Control Measure**
	Accidents with passing traffic	Observe posted road speeds and drive to conditions. Adhere to NSW road rules. Site distance at site entrances to be improved by removing vegetation, signage to be installed at access points
Pedestrians	No designated route for pedestrians – injury, complaints etc Pedestrians not protected from adjacent traffic, overhead works	Provide for pedestrian paths – development of pedestrian management plan. Barriers in place and/or fencing to delineate and separate pedestrians from adjacent traffic flows.
Cyclists	Cyclists have no pathway through site	Shared pedestrian / cycleway arrangement – observe minimum G10 lane widths. Advanced warning signs.
Heavy vehicles	Traffic accidents and delays	Observe posted road speeds and drive to conditions. Adhere to NSW road rules. Left in left out when accessing high hazard risk areas. Endeavour to have slow down bay to entering site or turn off from traffic flow if possible. Communication with RMS over size permit section for construction periods that may adversely impact heavy vehicle passage. Queue monitoring at all times when traffic is disrupted. Deliveries to be organised for out of peak periods. Designated vehicle movement plans (VMP) developed. Signage for accesses in place with delivery companies inducted to those requirements before delivery to site.

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact Assessment**	**Control Measure**
Property access	Disruption to local residents and private access.	Staging to keep two-way traffic through work area. Inform local residents of impending disruptions and provide alternative routes and access where possible. Daracon to advise RMS/ Council in advance for out of hrs works and where access to properties may be affected.
	Reduced or altered access during construction	Access or alternate access to be kept operational. Respect access owners and keep them informed of progress and any pending disruptions
Side roads	Reduced or altered access during construction	Access or alternate access to be kept operational. Respect access owners and keep them informed of progress and any pending disruptions.
Public transport	Disruption to bus stops	Access to bus stop at intersection to be kept clear and operational until bridge completed Avoid deliveries or congestion during \Peak activity times Provide sufficient notification to bus companies of changes to existing operations.
Night work	Noise impacts.	Manage works in accordance with the noise and vibration management plan. Do not locate lighting towers outside residents if possible. Gain approval for night works and provide information to RMS/Council of works areas to enable community notification.
Businesses	Disruption to local businesses	Maintain access and existing turn movements to all properties unless agreed by the property owner Traffic Control Plans implemented.

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact Assessment**	**Control Measure**
Uninformed locals	Unexpected disruption or inconvenience	Project Manager and Supervisor to keep RMS/ Council informed of status of works and any pending traffic changes. Community Liaison Plan to be adhered to.
RMS and Site Visitors	Vehicle and/or personal accident	RMS and Site Visitors will be appropriately inducted and expected to fully comply with the requirements of this Sub-Plan

6 COMPLIANCE MANAGEMENT

6.1 ROLE AND RESPONSIBILITIES

The organisational structure and roles and responsibilities for Daracon personnel and provided within the IPMP (refer IPMP – Appendix 2). The roles and responsibilities specific to the construction of the SPB are provided within the IPMP, which displays the organisational chart for the project (refer IPMP – Appendix 1).

6.1.1 PROJECT MANAGER

The project Manager shall support the TCSM to ensure that the requirements of G10 are meet as outlined in TCSM role and responsibilities below.

6.1.2 TRAFFIC CONTROL SITE MANAGER

Tony Trajkov will be the nominated Traffic Control Site Manager for the construction of the SPB. The Traffic Control Site Manager will hold a current Roads and Maritime Prepare a Work Zone Traffic Management Plan qualification and will be responsible for the overall management of traffic during construction of the SPB, in accordance with Specification G10. The Traffic Control Site Manager's responsibilities include:

- maintaining current copies of the Traffic Incident Management Plans, TCPs, VMPs, PMPs, Traffic Staging /Safety Plans, EWMS, ROLs and SZAs and their controlled documentation
- ensuring that the approved traffic control measures are established, implemented and maintained in accordance with the approved plans.
- amending and updating the plans, as required, to ensure that they remain current as the work progresses
- carrying out regular inspections and auditing of the traffic control measures
- identifying locations and times where traffic congestion or unsafe conditions for vehicles, cyclists, pedestrians and workers are occurring, and providing recommendations for improvement
- liaising with all key internal and external stakeholders including Roads and Maritime, the TMC, NSW Police and CoN on traffic management and safety issues
- facilitating traffic awareness and providing information for toolbox talks to site personnel.

6.2 COMMUNICATION

Communication with stakeholders and the community is detailed within the Construction Community Liaison Management Plan (CCLMP), which includes the key aspects identified within the Community Communication Strategy (CCS) developed by RMS.

Traffic management information will be communicated to the community and stakeholders in accordance with the principles and procedures outlined in the CCLMP.

6.3 COMPLAINTS MANAGEMENT

The management of complaints for the SPB will be in accordance with the Construction Community Liaison Management Plan (CCLMP), which includes the key aspects identified within the Complaints Management System (CMS) developed by RMS.

6.4 TRAFFIC MANAGEMENT RISK ASSESSMENT WORKSHOP

Daracon will conduct a traffic management risk assessment workshop prior to the commencement of any traffic management works. The workshop will be attended by, as a minimum, Daracons Traffic Control Site Manager, road designer, personnel involved in preparing the CTMP, the Roads and Maritime Project Manager (or delegate).

The purpose of the workshop is to identify and address the risks associated with the road safety, traffic management and local road network issues specific to the construction site. The outcomes of the workshop will be documented in the Project Risk Register. The identified risks will be managed through the implementation of TCPs and other measures outlined in this CTMP.

The representatives outlined in the following table will be offered an opportunity to attend the traffic risk assessment workshop.

Table 9: Risk Workshop Representatives

Organisation	First	Last	Mobile	Email
Roads and Maritime	[redacted]	[redacted]	[redacted]	[redacted]
Roads and Maritime	[redacted]	[redacted]	[redacted]	[redacted]
Roads and Maritime	[redacted]	[redacted]	[redacted]	[redacted]
Roads and Maritime	[redacted]	[redacted]	[redacted]	[redacted]
Roads and Maritime	[redacted]	[redacted]		[redacted]
Daracon Group	[redacted]	[redacted]	[redacted]	[redacted]
Daracon Group	[redacted]	[redacted]	[redacted]	[redacted]
Guardian Traffic	[redacted]	[redacted]	[redacted]	[redacted]
The City of Newcastle	[redacted]	[redacted]	[redacted]	[redacted]
NSW Police	[redacted]	[redacted]	[redacted]	[redacted]
Keolis Downer	[redacted]	[redacted]	[redacted]	[redacted]
Road Safety Auditor	[redacted]	[redacted]	[redacted]	[redacted]

6.5 TRAINING

To ensure that this CTMP is effectively implemented, all site personnel (including sub-contractors) will undergo site induction training that includes traffic and transport management issues prior to construction commencing. The induction training will address elements related to traffic and transport management, including:

- existence and requirements of this CTMP
- relevant legislation and regulations
- incident response, management and reporting
- road safety
- road occupancy
- standard construction hours
- roles and responsibilities for traffic management
- requirements to maintain surrounding property access for residences, business owners, and their visitors, and to minimise disruptions to these properties for the duration of construction of the SPB
- temporary and interim traffic arrangements
- response procedure for dealing with traffic incidents.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in traffic and transport management or those undertaking an activity with a high risk of environmental impact.

Daily pre-start meetings will inform the site workforce of any environmental issues relevant to traffic and transport that could potentially be impacted by, or impact on, the day's activities.

A register of all project site inductions and traffic training carried out will be maintained. Records of attendees at toolboxes will be kept on file.

For more information on training, refer to the Integrated Project Management Plan (IPMP).

6.6 MONITORING AND INSPECTION

Daracon's Traffic Control site manager will co-ordinate the inspection of long term traffic management layout on a daily basis. The inspection will cover;

- Signs are visable and in good condition
- Condition of linemarking
- Condition of devices such as barriers, end treatments,
- Position of devices in relation to the approved TCP
- Change in condition that will impact on effectiveness of Traffic management devices and signs.

The inspections will be recorded on a daily inspection form which will be populated with site specific information. A sample of this form is provided in APPENDIX 8 . A schedule of inspection monitoring requirements is outlined in the following table.

Table 10: Inspection / Monitoring Schedule

Inspection / monitoring	Frequency	Responsibility
Traffic control plan inspection Ensure all traffic control signs and devices are functioning and implemented in the correct location	Commencement and completion of each day.	Traffic Control Site Manager
Traffic management risk assessment checklist	Daily	Traffic Control Site Manager
Traffic control safety inspection Ensure traffic control plans implemented are approved and Construction sites are operating safely	Monthly	Traffic Control Site Manager / Roads and Maritime Project Manager
Road condition surveys/ Road dilapidation reports	Pre-Construction and immediately prior to Completion	Traffic Control Site Manager / Roads and Maritime Project Manager

Inspection of short term traffic management layouts will be undertaken by the supervisor of the traffic control company.

Inspections of long term layouts over long weekends and extended holiday periods will be carried out by a combination of Daracon staff and staff of our traffic control company depending on availability. Staff that normally travel through the area over holiday periods will conduct inspections.

This is in addition to the normal arrangements to nominate contact for after hours callout during the holiday periods.

6.7 INCIDENT PLANNING AND RESPONSE

Responses to traffic incidents will be undertaken as described in Section 5.19 of the CTMP, the TIRMP and PIRMP.

6.8 AUDITING

Audits (both internal and external) will be undertaken to assess the effectiveness of traffic management, compliance with the CTMP, conditions of approval and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 11.4 of the IPMP and Section 5.9 of the CEMPP.

6.8.1 ROAD SAFETY AUDITS

Road safety audits will occur during the construction of the SPB. Road safety audits will be conducted by an independent Road Safety Auditor certified to level 3 in the Roads and Maritime Services Road Safety Auditor Register. The Roads and Maritime Project Manager will attend all road safety audits. Audit findings will be actioned as per the risk levels stipulated in the audit report, eg. high risks will require immediate action. Road safety audit reports will be provided to the Roads and Maritime Project Manager.

Daracon's Traffic Control Site Manager will be responsible for managing the road safety audit programs.

6.9 NON CONFORMANCES

A non-conformance is the failure or refusal to comply with the requirements of project system documentation, including this CTMP. Non-conformances may be identified through auditing and review processes (Section 11.4 of the IPMP and section 5.9 of the CEMPP), monitoring and inspection processes (Section 11 of the IPMP) or incident management (Section 9 of the IPMP and Section 6.11 of the CEMPP).

6.10 REPORTING

Reporting requirements and responsibilities are documented in Section 5.11 of the IPMP and section 5.11 of the CEMPP.

Records for CTMP may include the following:

- Qualifications;
- Designer;
- Traffic Controller;
- Submission to client;
- TCP approval;
- Temporary speed zone approval;
- Public relations initiatives;
- Letters;
- Handouts;
- Maps and plans;

- Confirmation of implementation;
- Monitoring reports;
- TMC communications and;
- Incident reports and corrective action.

6.10.1 REPORTING TO THE PRINCIPAL

The principal shall be provided with a monthly report summarising the performance of Traffic Management. The report shall include:

- A summary of daily inspections of traffic control measures.
- Compliance with the CTMP and its component plans, and ROL conditions.
- Compliance with specified travel times, and delays to traffic or queue lengths exceeding allowable limits; and
- Where applicable, analysis trends as applied to traffic management and safety measures.

7 REVIEW AND IMPROVEMENT

7.1 CONTINUOUS IMPROVEMENT

Continuous improvement of this CTMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- identify areas of opportunity for improvement of environmental management and performance
- identify environmental risks not already included in the risk register
- determine the cause or causes of non-conformances and deficiencies
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- verify the effectiveness of the corrective and preventative actions
- document any changes in procedures resulting from process improvement
- make comparisons with objectives and targets.

7.2 CTMP UPDATE AND AMENDMENT

The processes described in section 11 of the IPMP may result in the need to update or revise this CTMP. This will occur as needed.

Any revisions and/or changes to the CTMP will be distributed to all relevant stakeholders in accordance with the approved document control procedure detailed in section 13 of the IPMP.

8 DEFINITIONS

All terms referenced within this plan are included within **REG.00001** *Definitions & Glossary of Terms Register.*

9 ASSOCIATED DOCUMENTS AND PROCEDURES

Approved Forms, Process Flowcharts, Registers and/or other documents referenced within the body of, or those that are associated with this plan, are accessible and made available for all Daracon personnel via the following link: https://dms.daracon.com.au/documents

Other documents referenced within the body of, or those that are associated with this plan, are included in Error! Reference source not found..

Operational Work Instruction

OWI.016 (Operational Work Instruction) Traffic and Pedestrian Management is to be used by projects when planning for activities involving traffic and pedestrian management and utilised to implement specific environmental controls for the construction works.

APPENDIX 1 Traffic Control Plans

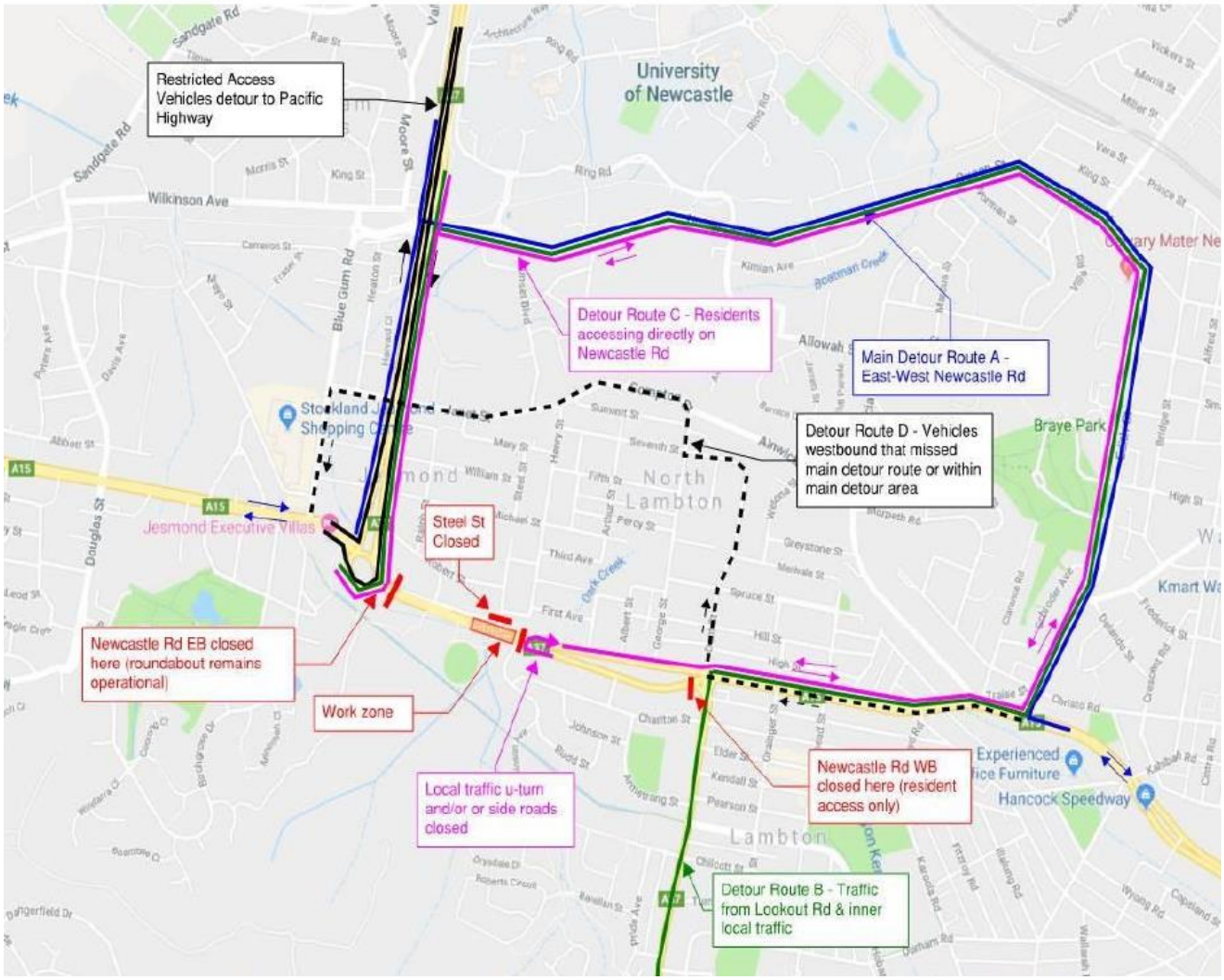
APPENDIX 2 Vehicle Movement Plans

APPENDIX 3 Pedestrian Movement Plans

Included as part of VMP.

APPENDIX 4 Staging Plans

APPENDIX 5 Main Span Bridge Install Proposed Detour Route



APPENDIX 6 Proposed Compounds

APPENDIX 7 Traffic Incident Management Plan

APPENDIX 8 Traffic Management Inspections

APPENDIX 9 OWI.016 Operational Work Instruction

APPENDIX 10 Traffic Risk Assessment

APPENDIX 11 Traffic Manager Qualifications