HASLIN

Construction Environmental Management Plan

Traffic Management Sub-Plan

Eurobodalla Southern Storage Project

Construction Consultative Committee

eurobodalla shire council

Contents

Glossary/ Abbreviations

Abbreviations / Ref.	Expanded text / Meaning
CEMP	Construction Environmental Management Plan
Contract	Contract No. 10018541; Eurobodalla Southern Storage Construction
Contractor	Haslin Constructions
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EWMS	Environmental Work Method Statements
GVM	Gross Vehicle Mass
Principal / ESC	Eurobodalla Shire Council
NSW PWA	New South Wales Public Works Advisory
PAP	Principal's Authorised Person
Project	Eurobodalla Southern Storage - Storage Construction
TCP	Traffic Control Plan
Technical Specification	Technical Specification; Eurobodalla Southern Storage - Storage Construction Contract No. 10018541; 14/01/2022
TfNSW	Transport for New South Wales, formerly Roads and Maritime Services (RMS)
TMP	Construction Traffic Management Sub Plan
OEH	Office of Environment and Heritage
RMS	Roads and Maritime Services
ROL	Road Occupancy Licence
Soc	Statement of Commitments
SWMS	Safe Work Method Statement
SZA	Speed Zone Authorisation
VMP	Vehicle Movement Plan
VMS	Variable Message Sign
WHS	Work, Health & Safety

Document Control and Records

Documentation and document control for this Plan, including issue of any amendments will be done generally in accordance with the contract. This Plan is maintained by Haslin Constructions (Haslin) and maintained throughout construction through regular reviews carried out on an initial 3 month of the project starting then on a biannually basis, or as changes require.

At all times an up-to-date copy of this plan shall be kept on site and made available to all employees and contractors involved in the project. Amendments that are made to this document are recorded on the register of amendments below and shall be approved by management staff. Superseded versions of this document shall be maintained for a period of 7 years to demonstrate record of environmental management and compliance.

This document shall be created and approved by the client. A controlled copy shall be supplied to all relevant parties, and distribution of controlled copies shall be recorded on the distribution register below (controlled hardcopy only). When changes are made to this document, parties listed below shall be provided with updates.

Register of Amendments				
Date:	Version No.:	Description of Amendments:	Prepared by:	Approved by:
17/08/22	0	Draft for review	Andrew Berick	Justin McCarthy

Company Management Plan Authorisation			
	Name/Position	Date:	Signature
Prepared by:	Project Engineer – Andrew Berick	17/08/22	
Reviewed by:	Senior Project Engineer – Ben Lyons	17/08/22	
Approved by:	Senior Project Manager – Justin McCarthy	17/08/22	

Distribution Register			
Version No.	Date of Issue:	Name of Recipient:	Position/Organisation
0	17/08/22	Ross Bailey	PAP / NSW PWA

1. Introduction

1.1 Context

This Traffic Management Sub Plan (TMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Eurobodalla Southern Water Supply Storage (Project).

This TMP has been prepared to address the requirements of the Minister's Development Consent and the environmental management measures listed in the Eurobodalla Southern Water Supply Storage Environmental Impact Statement (EIS), including all applicable legislation and the Technical Specification for the Project.

1.2 The approved project

The Eurobodalla Southern Water Supply Storage (the Project) was granted Development Consent from the Department of Planning and Environment (DPE) on 17 October 2019. Development Consent is provided in Appendix A.

The Project consists of an off-stream water storage facility and associated ancillary facilities. Water would be extracted from the Tuross River, using a new river intake pump station, and transferred to the storage via the Storage Inlet Pipeline. As necessary, the storage volume would be supplemented by water extracted from an existing borefield adjacent the storage.

Key features of the Project include:

- a 3,000 megalitre storage capacity
- a 370 metre long embankment, 39 metres in height and a crest width of 20 metres located on an unnamed tributary of the Tuross River
- a spillway
- permanent erosion control structures located downstream of the spillway
- inlet works to convey and dissipate raw water transferred from the river intake pump station through a pipeline constructed along the left abutment to the proposed water storage facility
- outlet works to allow transfer of water from the storage to the existing southern water treatment plant (WTP)
- instrumentation to monitor seepage, reservoir levels and water quality
- a consequence category of "High C" for both flood and sunny day scenarios in accordance with the Australian National Committee on Large Dams (ANCOLD) Guidelines on the consequence categories of dams (2012)
- a thermal stratification control system
- a boat ramp at the storage for maintenance and water quality monitoring
- safety and perimeter fencing at the storage.

Key features of the ancillary facilities include:

- new river intake pump station with a total river extraction capacity made up of a combination of flows from the river intake (up to 26 megalitres) and the borefield (up to six megalitres)
- installation of the following new pipelines including:
  - a pipeline with a capacity of 26 megalitres per day to transfer raw water from the new river intake pump station to the storage inlet chute
  - a cross connection to the proposed water storage inlet pipeline with a capacity of six megalitres per day providing connection to supply water from the storage to the balance tank at the existing

WTP
- a pipeline connection from the existing borefield pipeline to the river intake pump station.

- a new storage access road that is about one kilometre in length and extends from Eurobodalla Road opposite the existing WTP to the embankment crest
- basic right-turn and basic left-turn treatment at the intersection of the new storage access road and Eurobodalla Road would be provided
- a new access road that would provide a route for vehicles to access the new river intake pump station
- power supply including the construction of new sub-stations located near the storage and the river intake pump station.

1.3 Scope of this plan

With the approval of the Secretary of Planning, construction of the project is being staged as follows:

- Stage 1: Tuross River Intake Pump Station clearing.
- Stage 2: Tuross River Intake Pump Station construction.
- Stage 3: Vegetation clearing and topsoil stripping of the access road, construction of the access road to the forestry boundary and construction of the inlet pipeline to the forestry boundary.
- Stage 4: Partial clearing of the entire storage site.
- Stage 5: All other works.

This Plan only applies to Stage 5 of the approved project, being the construction of all remaining works on site to enable the project to become operational. Works in Stage 1, Stage 2 and Stage 3 will continue in parallel with Stage 5 and be delivered under respective Construction Environmental Management Plans.

The scope of works is detailed in Figure 1.

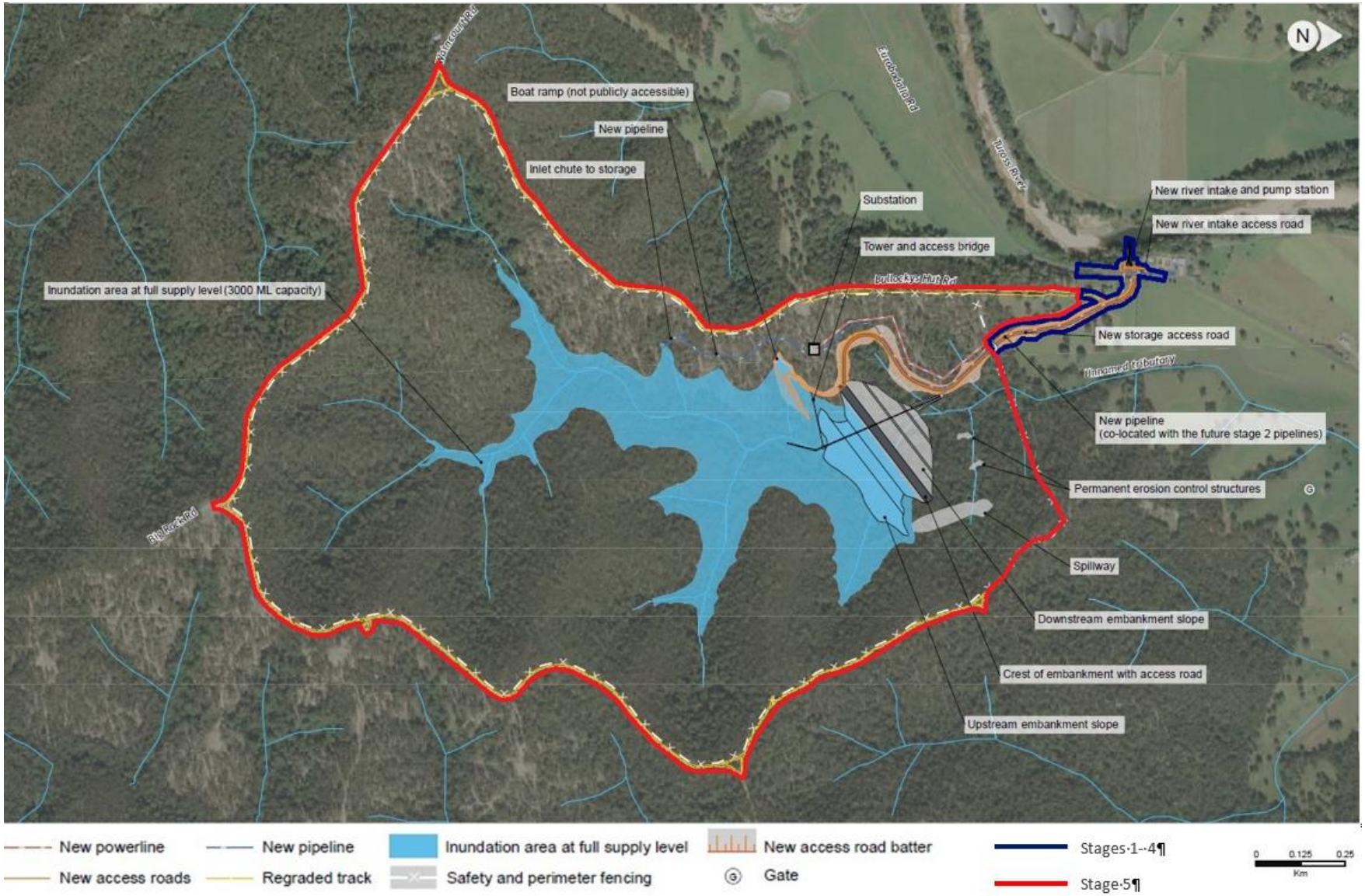


Figure 1: Project overview and scope of works covered by this plan (Stage 5)

2. Purpose and objectives

2.1 Purpose

The purpose of this Traffic Management Plan (TMP) is to describe how the Contractor will manage traffic during construction of the Project, including how to ensure compliance with the road management and safety requirements and provide for compliance obligations to the Technical Specification.

2.2 Objectives

The key objective of the TMP is to ensure all conditions of the Development Consent, environmental management measures, licence/permit and Technical Specification requirements relevant to traffic management are described, scheduled and assigned responsibility as outlined in:

- The Environmental Impact Assessment (EIA) prepared for Eurobodalla Southern Water Supply Storage (the Project)
- Submission Report for the Eurobodalla Southern Water Supply Storage Project
- Addendum Submissions Report for the Eurobodalla Southern Water Supply Storage Project
- Revised Secretary's Environmental Assessment Requirements (SEARs)
- Revised Management and Mitigation Measures
- Development Consent SSD 7089 (the Project) granted on 17 October 2019
- Technical Specification; Eurobodalla Southern Storage - Storage Construction

2.3 Targets

The following targets have been established for the management of traffic impacts during the project:

- ensure full compliance with the relevant legislative requirements, EIS, conditions of the Development Consent, and Technical Specification Section 1.6
- ensure safe and continuous traffic movement for construction workers and the general public
- maintain continuity of access to local roads and properties
- maintain the capacity of existing roads where possible
- implement traffic control operations to minimise delays to road users taking into consideration traffic volumes including peak times of the day and seasonal traffic
- avoid road occupancy where possible
- plan all construction vehicle movements to minimise disruption to traffic flow on roads within the Project area and surrounds
- minimise impacts on, and complaints from, the community and stakeholders.

2.4 Relationship to other Project Management Plans

The TMP governs how the Project will facilitate and manage traffic issues or concerns during the construction phase and is therefore an overarching document prescribing approach, protocol and execution of the overall planning function.

This TMP forms an attachment to the Project Management Plan.

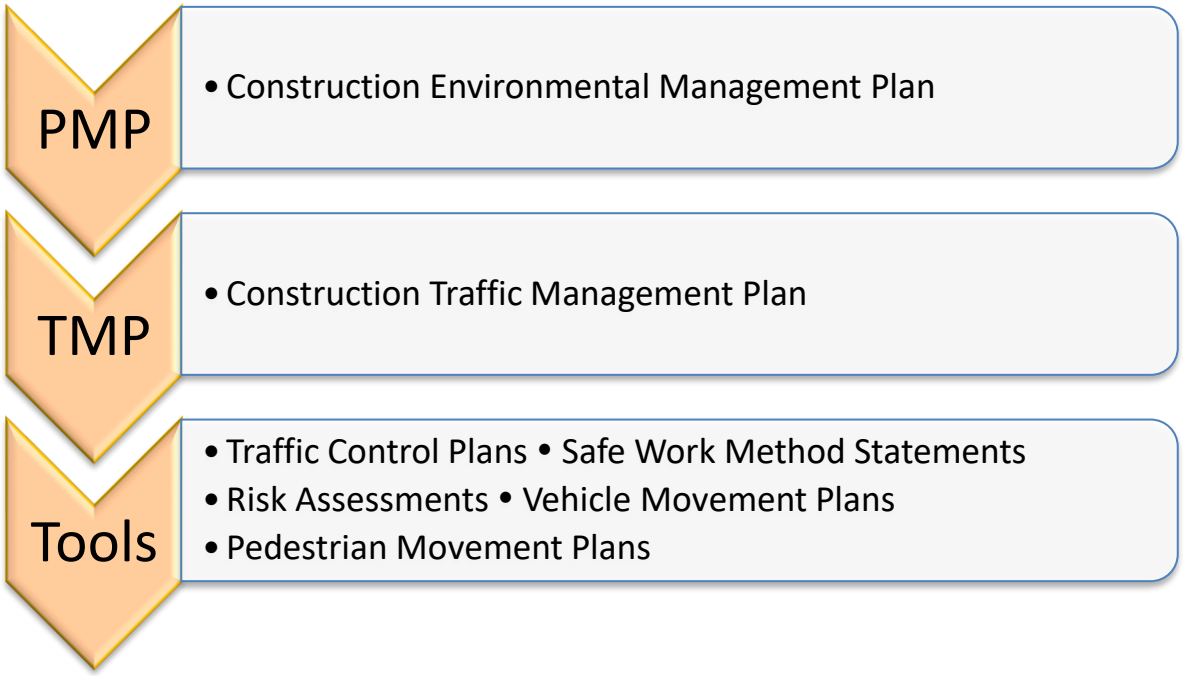


Figure 2: Traffic Management Documentation

2.5 Revision of the TMP

The processes described in the CEMP may result in the need to update or revise this TMP. This will occur as needed.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

The TMP may also be updated as a result of the following:

- changes to the proposed design or construction methodology
- contract variations
- changes in law
- if the TMP does not address an element of design or construction of the works
- to prevent the recurrence of any compromise to the safety of road users and the public
- in response to incidents and traffic disruptions arising from the works

3. Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation and regulatory requirements

Legislation relevant to traffic management also includes the *Environmental Planning and Assessment Act 1979* (EP&A Act), under which the project approval was granted. Relevant provisions of the EP&A Act are explained in the register of legal and other requirements included in Appendix A1 of the CEMP.

All legislation relevant to this TMP is included in Appendix A1 of the CEMP.

A Road Occupancy Licence (ROL) is unlikely to be required for the works. However, if a ROL is required, it would be prepared in accordance with the RMS Road Occupancy Licence Manual.

3.1.2 Guidelines and standards

The main guidelines, specifications, and policy documents relevant to this Plan include:

- Technical Specification Section 1.6
- Australian Road Rules.
- Roads and Maritime Traffic Control at Worksites Manual, Issue 6.0, Nov 2020.
- AUSTROADS Guide to Traffic Management 2020 – Parts 1-13
- AUSTROADS Guide to Road Design – Parts 1-7
- AUSTROADS Guide to Road Safety _ Parts 1-9

3.2 Conditions of Development Consent

The conditions relevant to this Plan are listed in Table A below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 1: Minister's Conditions of Development Consent relevant to the TMP

Condition No.	Condition Requirements	Document Reference
B28	Prior to commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the development. The plan must form part of the CEMP required by Condition C2 and must:	Entire
	(a) be prepared by a suitably qualified and experienced person	Ben Lyons – SPE CERTIFICATE NO: 0052198071
	(b) Include a Road Safety Audit for the Eurobodalla Road/Nerrigundah Mountain Road intersection in accordance with the relevant Austroads guidelines	Undertaken as part of the Stage 3 works
	(c) Detail the measures that are to be implemented to ensure road safety during construction	Sections 4, 6, 7 and Appendix B
	(d) Detail heavy vehicle routes, access and parking arrangements; and	Section 3, 5, 6 and Appendix C
	(e) Include procedures for notifying residents of the duration and times when heavy vehicles are accessing the site via routes and in particular Waincourt Road	Section 4 and 6.5

3.4 Environmental Management Measures

Relevant EMM are listed in Table B below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 2: Environmental management measures relevant to this TMP

Ref #	Commitment	TMP Reference
Appendix 2, Item 7.1	A Construction Traffic Management Plan (CTMP) would be prepared prior to construction and would be included in the CEMP. The CTMP would:	Entire
	identify the traffic management requirements during construction	Section 4
	describe the general approach and procedures to be adopted when producing specific traffic control plan	Section 6
	identify designated parking areas for construction workforce.	Section 5.2 and Appendix C
	determine temporary speed restrictions to ensure safe driving environment around work zones, including on unsealed roads, and at major intersections (e.g. Nerrigundah Mountain Road and Eurobodalla Road)	Section 6.1 and Appendix A
	identify any high-risk periods (such as during school bus operations), and whether delivery to site, and material haulage can be undertaken outside of these hours	Section 4.3, 6.4 and Appendix B
	identify opportunities to stagger heavy vehicle arrivals to site (e.g. use of minimum headways between arriving haul trucks), to avoid the potential for heavy vehicle convoys arriving on site	Section 4.3 and 6.4
	identify and provide temporary works, such as for site access, turn-around bays, parking areas for heavy vehicle dwelling, and minor site distance clearing around local road intersection sites (e.g. at the access points to the construction site)	Stage 3 of the project
	provide temporary warning and advisory signposting, such as during periods of material haulage, and at major intersections (e.g. Nerrigundah Mountain Road and Eurobodalla Road), where there will be increased traffic activity	Section 6.1 and Appendix A

Ref #	Commitment	TMP Reference
	where practicable, program deliveries of construction plant such as over-mass and over-dimension vehicles) outside peak traffic periods identify steps to minimise construction traffic, such as car-pooling by construction staff to site	Section 6.4
	regularly review and modify the CTMP (such as at changes of construction stages), to ensure the CTMP remains valid and appropriate	6.1
	document communication protocols amongst heavy vehicle operators, such as when approaching higher risk areas. This could be through the establishment of a call point system, whereby call point Signage is erected on the approach to higher risk areas, such as the intersection of Nerrigundah Mountain Road and Eurobodalla Road, or the single lane Tuross River (Tyrone) bridge, and access points to the construction site maintain access to private properties (and liaise with property owners), particularly that off Bullockys Hut Road, which may be used as a site access identify a contact person (and phone number) for liaison and complaints, by project stakeholders and the community.	Section 6.4 and Appendix C
	Consultation with various stakeholders will also be undertaken in the development and periodic review of the Construction CTMP, including: ensuring all relevant requirements from emergency service providers are included, including from NSW Rural Fire Service, NSW Ambulance Service and NSW Police	Section 6.5
	consultation with the respective road authorities including Roads and Maritime Services and Eurobodalla Shire Council	
	consultation with other relevant parties including school bus operators	
	periodic notification of construction activities and changes in traffic control arrangements would be publicly notified, including through local newspapers, community noticeboards, and through a letter box drop off for residents in proximity to the construction site as appropriate.	
	Detailed traffic control plans would be developed for each construction phase. These would include: provision for emergency services passage through construction zones	Section 6.1 and Appendix A

Ref #	Commitment	TMP Reference
	Only accredited traffic controllers would be permitted to prepare and implement traffic control plans.	Section 6.1 and Appendix A
Appendix 2, item 7.2	Impacts to local roads during construction	Section 5.1
	Periodic surveys will be undertaken during construction activities to identify any road damage, with road damage to local roads being repaired by Council as soon as practical.	Section 6.3
	The construction contractor will also monitor the incidence of mud tracking off the construction site and onto local roads and will sweep or clean local roads to minimise mud tracking. The contractor will preferably install controls to minimise the incidence of mud-tracking in the first instance, such as by use of by grids at site access points.	Section 6.3
	Construction personnel will also be encouraged to report road hazards and road damage.	Section 6.2 Section 7.3

3.5 Technical Specification Requirements

Table 3: Technical Specification requirements relevant to this TMP

Ref #	Commitment	TMP Reference
Section 1.6.3.1	The Contractor shall prepare and submit a project specific Traffic Management Plan that details all activities as outlined in this clause and per the requirements of the Principal, RMS and any other relevant authority	Entire
Section 1.6.3.2	The Traffic Management Plan shall contain details of all modifications required to existing roads, new roads, bypasses, signage, speed limits and any other works required to ensure the continuous operation of normal traffic along all roads and pedestrian and vehicular access to ESC operations and to properties impacted by the works under the Contract	Section 6.1 and Appendix A
Section 1.6.3.3.A	The Traffic Management Plan must: be prepared by a suitably qualified and experienced person(s)	Ben Lyons – SPE CERTIFICATE NO: 0052198071
Section 1.6.3.3.B	The Traffic Management Plan must: detail the measures that are to be implemented to ensure road safety during construction	Sections 4, 6, 7 and Appendix B
Section 1.6.3.3.C	The Traffic Management Plan must: detail heavy vehicle routes, access and parking arrangements	Section 3, 5, 6 and Appendix C
Section 1.6.3.3.D	The Traffic Management Plan must: include procedures for notifying residents of the duration and times when heavy vehicles are accessing the site via particular routes and in particular via Waincourt Road	Section 4 and 6.5
Section 1.6.3.4	The Contractor shall submit the Traffic Management Plan not less than twenty-one (21) days prior to commencing works at site. Acceptance of the Traffic Management Plan by the Principal shall constitute a HOLD POINT	Note

Ref #	Commitment	TMP Reference
Section 1.6.3.5	The Contractor shall be held entirely responsible for the safety of all pedestrian and vehicular traffic and shall provide all necessary watchmen, lights, barriers, notices and signs and shall provide and maintain the same to the satisfaction of the Principal and RMS where applicable	Section 7.1, Appendix A & B
Section 1.6.3.6	The number, type and location of signs and devices shall be not less than the standards set out in AS 1742.3 and current ESC and RMS requirements as is applicable. Should circumstances arise which are not adequately covered by AS 1742.3 or ESC and RMS requirements, submit alternative proposals to the Principal for review prior to works proceeding	Appendix A
Section 1.6.3.7	Work shall not commence or continue at any location until all appropriate signs, devices, traffic control apparatus and the like are in place, side tracks have been constructed where required, line marking completed where required	Section 6.1 and Appendix B

4. Existing Environment

4.1 Road network

The project construction site would be accessed from the Princes Highway via Eurobodalla Road. It is anticipated that delivery of all major plant and equipment would be from the Princes Highway and then along Eurobodalla Road, along the Storage Access Road into site. This route is also expected to be used by the construction workforce. The existing conditions of each key road in the area is summarised below:

- Princes Highway serves as the major arterial (State) road connecting Bodalla with Sydney and south to Victoria. Between the towns of Moga and Bodalla, the Princes Highway generally has one lane in each direction with overtaking permitted through some sections. The posted speed limit along the Princes Highway varies between 80 to 100 kilometres per hour through rural areas, and down to 50 kilometres per hour within townships.
- Eurobodalla Road is a local road which operates as a two-lane sealed carriageway connecting to the Princes Highway at Bodalla. The posted speed limit along Eurobodalla Road is generally 80 kilometres per hour. Through the township of Bodalla, the posted speed of Eurobodalla Road is 50 kilometres per hour. The road is typically seven metres wide (3.5 metre travel lanes), with no sealed shoulders, typical of rural roads.
- The newly constructed storage access road is a 6.5m sealed carriageway with 2m wide shoulder on the cut side and a 1.5m shoulder on the fill side

The existing conditions of each key road intersection in the area is summarised below:

- Princes Highway forms a T-intersection with Eurobodalla Road, with widened shoulders provided for turning vehicles.
- Eurobodalla Road forms a T-intersection with Nerrigundah Mountain Road, with turning vehicles along Eurobodalla Road required to store in the travel lane before turning into Nerrigundah Mountain Road.
- A BAL/BAR intersection treatment has been developed for the intersection of Eurobodalla Road and the Storage Access Road. The Storage Access Road / Eurobodalla Road intersection works are Stage 5 of the Project.

4.2 Existing traffic

Appendix J of the Environmental Impact Statement identified and described the traffic volumes on the road network around the project site.
Traffic along the existing road network within the study area comprises of:

- local residential traffic
- local farm traffic, including trucks servicing local dairy farms
- trucks transporting materials from the nearby Rewlee soil extraction operation, the Cadgee Quarry and other extractive operations in the area
- trucks transporting forestry timber
- a school bus route operates on both Eurobodalla Road and Nerrigundah Mountain Road
- light and heavy vehicle traffic associated with the Eurobodalla Quarry operations.

Traffic counts were previously undertaken in 2006 (Masson Wilson Twiney, 2006). These included counts east and west of the Tyrone Bridge (Nerrigundah Mountain Road) intersection. Traffic counts were also sourced for the Princes Highway south of Bodalla (sourced from NSW Roads and Maritime permanent count station).

To provide the most recent analysis of traffic in the study area, additional traffic count information was sourced, and where traffic counts were unavailable, informed assumptions were made, to bring traffic counts to a 2017 basis, as shown in Table 4-1.

Table 4: Traffic count data from the road network near the project site

Road	Location	Count Type	2006	2017
Princes Highway	South of Bodalla	Average annual daily traffic	3672	5191 (10.8% HV)
Eurobodalla Road	East of Nerrigundah Road	Manual daily count	328 (17% HV)	464 (17% HV)
Eurobodalla Road	West of Nerrigundah Road	Automatic daily count	142	214 (17%)
Nerrigundah Road	North of Eurobodalla Road	Average annual daily traffic	-	250 (17%)

The EIS noted that most heavy vehicles using Eurobodalla Road and Nerrigundah Mountain Road relate to the operation of the existing Eurobodalla Quarry. The Eurobodalla Quarry recently received project approval for the expansion of existing quarrying operations, which sought to increase the maximum annual extraction from 100,000 tonnes to 175,000 tonnes. The future (approved) average heavy vehicle movement associated with the quarry haulage increased from 23 movements per day (two-way), to peak demand of 94 movements per day (two-way).

4.3 School bus movements

Marshall's Bus and Coach Company operates the S402 school bus route along Eurobodalla Road and Nerrigundah Mountain Road. The route starts at Nerrigundah and travels along the River Road, Cadgee and Eurobodalla Road, Cadgee into Bodalla to interchange with Symons Bus then to Narooma and then back out the Eurobodalla Road to Nerrigundah and returns back to Bodalla Public School. This route interacts with worker and heavy vehicle routes that will be used for deliveries and spoil movements.

Table 5: School bus movements near the project site

Route Number	Location	Time
Nerrigundah / S402	Opposite Waincourt on Eurobodalla Rd, Opposite 882 Eurobodalla Rd, Opposite 758 Eurobodalla Rd AM Pump Station	7:30am – 7:45am 4:00pm – 4:15pm

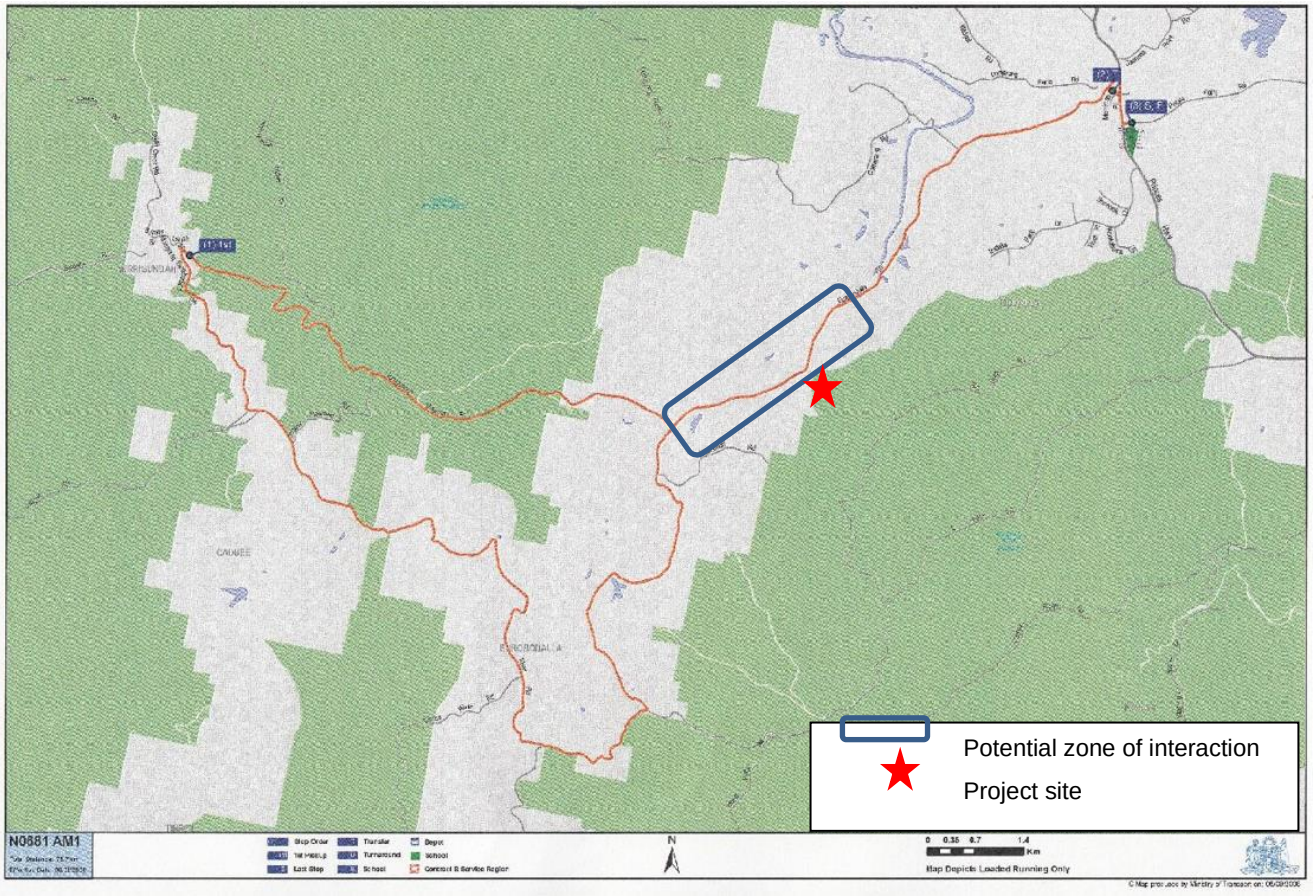


Figure 3: School bus route S402

4.4 Crash history

The five-year crash history (April 2012 to March 2017) for roads associated with access and haulage routes in the study area were sourced from NSW Roads and Maritime. Crash statistics included:

- Princes Highway (in vicinity of the Eurobodalla Road intersection): There were two crashes reported in the vicinity
- of Eurobodalla Road intersection, including a vehicle entering the highway from a driveway (non-casualty), and a loss of control (serious injury) crash
- Eurobodalla Road: There were two crashes (both casualty) involving a vehicle leaving the road, being one loss of control and one hit object
- Waincourt Road: no reported crashes along the length of the road
- Nerrigundah Mountain Road: no reported crashes along the length of the road
- Bullockys Hut Road: no reported crashes along the length of the road.

There were two left-road crashes reported on Eurobodalla Road. The locations of the reported run-off road crashes are included within the scope of works for a proposed upgrade of Eurobodalla Road, funded under the Federal Government's Blackspot program, where the road will be upgraded by 2018 to provide sealed shoulders, and protection (or removal) of roadside hazards

5. Construction traffic

The potential construction traffic routes, the number of construction traffic movements and potential impacts were identified in the EIS (technical paper Appendix J).

5.1 Construction traffic routes and volumes

Construction vehicles would generally access the proposal from the Princes Highway and then to Eurobodalla Road, and Nerrigundah Mountain Road from Eurobodalla Quarry, resulting in a temporary increase in construction movements along these routes during the construction phase. Construction traffic would include light and heavy vehicles (including for fill material haulage), concrete trucks and over-dimension vehicles.

Most of the imported material required for the construction of the storage would potentially be sourced from nearby quarries, with 177,000 cubic metres to be sourced from the Eurobodalla Quarry (located about five kilometres from the proposal site), and 24,500 cubic metres sourced from the Springwater Quarry (located about 42 kilometres north from the proposal). The haulage of materials is anticipated to be over a 12-month duration.

Eurobodalla Quarry is located close to the proposal site, requiring a reduced heavy vehicle fleet to undertake the bulk of the fill material haul. The peak haulage (delivery) rate is expected to be 10 vehicles per hour from Eurobodalla Quarry, and five vehicles per hour from Springwater Quarry.

Springwater Quarry

The haulage route from Springwater Quarry at Mogo would be along Princes Highway and then along Eurobodalla Road. These roads are considered adequate to provide for the additional haulage traffic in terms of traffic efficiency and safety.

The intersection of Eurobodalla Road and Princes Highway is a T intersection with priority to traffic on Princes Highway and give way on Eurobodalla Road, which is considered an appropriate means of control for the additional haulage traffic volumes.

Summary of truck movements to and from site include;

a) Quarry materials – approximate quantity of materials to be delivered for the project is 400,000 tonnes. Depending on availability quarry materials are to be sourced from locals quarries including Blue Ridge Quarry, South East Quarries & Landscaping, Coastal Concrete & Quarries. Local quarries will use both Northbound and Southbound roads to access the Eurobodalla Southern Storage Project with total volume from each quarry to be determined. Quarry materials are to be delivered using truck & dogs
b) Concrete – Approximately 7,500 cubic metres of concrete is to be supplied for the project with concrete trucks to access the site using the southbound lane on Eurobodalla Road via the Princess Highway
c) Clearing Materials – Approximately 10,000 tonnes of material are required to be removed from site and taken ESC waste management facility at Surf Beach.

Other construction traffic

During peak construction phases the site is expected to receive two to three oversized vehicle loads per day. This would be for delivery of plant. Delivery of other materials to site, such as pipes, concrete (via agitator trucks) and fencing materials are expected to be up to 20 one-way vehicle movements per day during peak periods.

A workforce program was prepared for each of the proposal's main activities. Two-way light vehicle traffic volumes would be 1.2 employees per arriving vehicle to site. Up to 200 daily heavy vehicle

traffic movements would be attributable to the haulage of materials from the Eurobodalla Quarry to the proposal site, a haul distance of about five kilometres, along Nerrigundah Mountain Road and west along Eurobodalla Road. Waincourt Road would be used occasionally during construction of the project for delivery of oversized plant. These peak haulages would only be expected to occur over an 18 month duration.

An estimate of the additional traffic associated with the proposal on roads in the study area is below, with a figure of current and project light and heavy vehicle movements shown included

Table 6: Total two-way traffic volumes, project traffic and total traffic peaks

Road	AM/PM	Current (2017)		Peak proposal traffic		Total future peak traffic (% increase on current)	
		Total	HVs	Total	HVs	Total	HVs
Princes Highway (north of Bodalla Road)	Daily	5,191	560	240	140	5,431 (5%)	700 (25%)
	Peak	357	39	65	15	422 (18%)	54 (38%)
Princes Highway (south of Bodalla Road)	Daily	5,191	560	60	10	5,251 (1%)	570 (2%)
	Peak	357	39	30	5	387 (8%)	44 (13%)
Eurobodalla Road (east of Bullockys Road)	Daily	464	78	300	150	764 (65%)	228 (192%)
	Peak	65	11	95	20	160 (146%)	31 (182%)
Eurobodalla Road (west of Nerrigundah Mountain Road)	Daily	280	53	200	200	480 (71%)	253 (376%)
	Peak	30	5	20	20	50 (67%)	25 (400%)
Nerrigundah Mountain Road	Daily	257	80	200	200	457 (78%)	280 (251%)
	Peak	20	5	20	20	40 (100%)	25 (400%)

The EIS noted that traffic volume increases (both total and heavy vehicles) vary across the local and state road network, with large increases (overall and as a percentage) anticipated on Eurobodalla Road and Nerrigundah Mountain Road as a result of the project. These traffic volume increases (particularly heavy vehicles) are associated with the peak haulage of fill materials from Eurobodalla Quarry and Springwater Quarry.

Despite the large increases in current traffic levels, the total peak projected traffic volumes, particularly on local roads remain relatively low, with no expected impacts on existing travel times or safety of the existing network. The standard of local roads would continue to be of a suitable standard for the increase in traffic associated with the proposal and is typical of local road standards in Eurobodalla Shire.

Where construction traffic turns to access the site, or at the intersection of Nerrigundah Mountain Road and Eurobodalla Road, there would be minor traffic flow impacts relating to turning construction vehicles, which may cause minor delays to existing road users.

The impact on the Princes Highway is less pronounced (due to the higher current traffic volumes including heavy vehicles). However, deliveries to site (including plant and materials) and the employment workforce are expected to travel along the Princes Highway to the site.

The increased number of vehicles (principally heavy vehicles) associated with construction of the proposal could have adverse impacts on road pavements on access routes. The magnitude and nature of these impacts would be influenced by the existing condition and standard of the road (including pavement design).

Construction compounds would be accessed by heavy vehicles, including oversized vehicles transporting plant and other large items. These movements would be conducted in a controlled manner with all necessary safety and traffic management measures in place. Planning for these movements would include consultation with Roads and Maritime and Council (as the respective road authorities) and preparation of a Construction Traffic Management Plan.

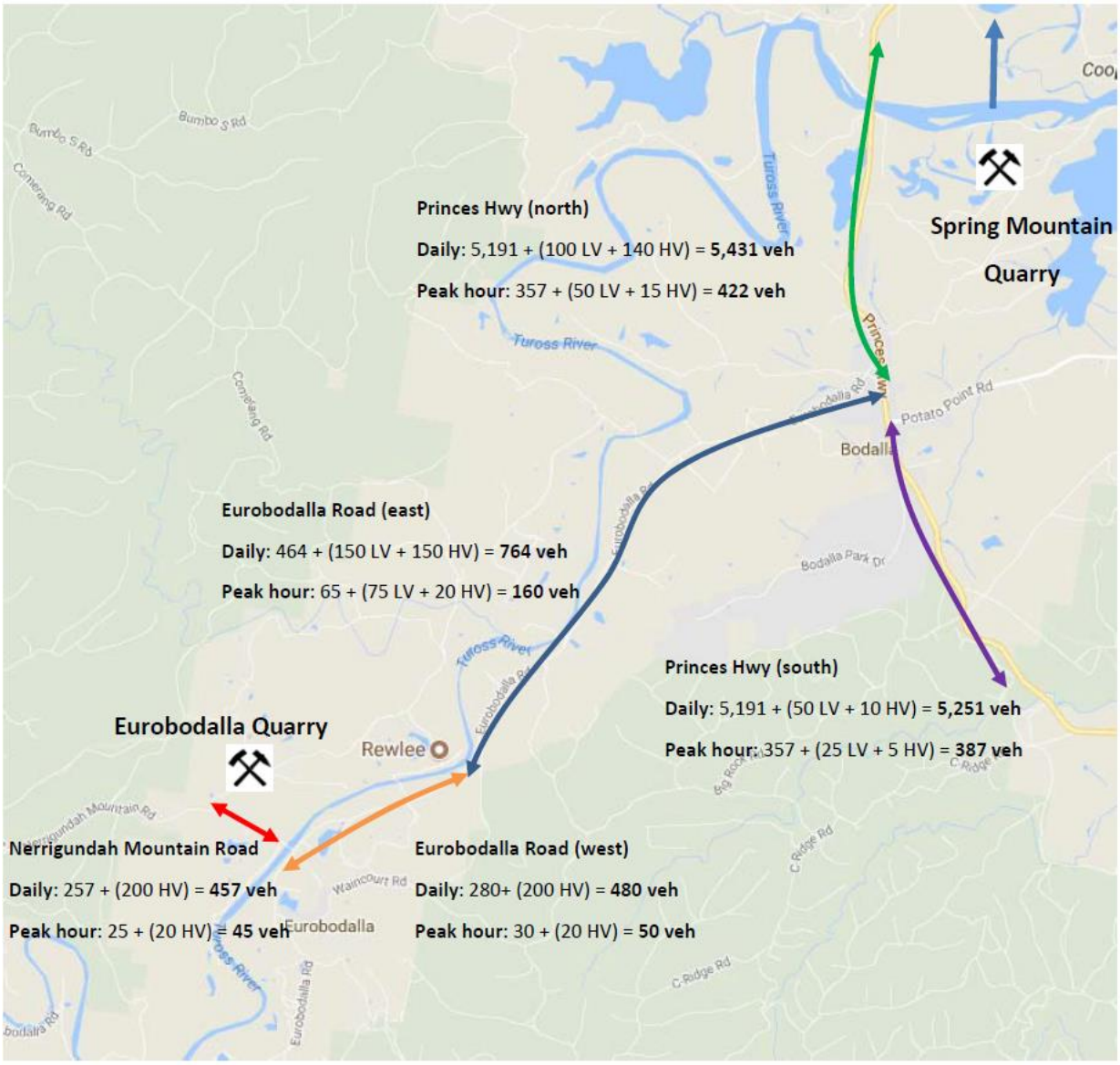


Figure 4: Existing and future estimated daily and peak hour traffic (additional construction traffic (in brackets))

5.2 Worker parking areas

The construction workforce is expected to peak at about 90 personnel per day. On either side of this peak period, daily workforce numbers would fluctuate between about 20 and 60 personnel at any given time during the construction period. The majority of the workforce are expected to travel to site from Tuross Head (~10km from site), Moruya (~22km) and Narooma (~20km from site) in their own vehicles. Car pooling would be encouraged and expected to occur for some of the workforce travelling from

Worker parking areas would all be contained within the boundary of the construction site, with the majority in the designated construction compounds identified. The number and timing of worker parking spaces in each compound would vary depending on the phase and sequencing of construction and the timing of the main construction compound establishment.

Where worker parking cannot be fully contained within the identified construction compounds, additional carparking would be nominated on site such as along the main storage access road or Bullockys Hut Rd.

5.3 Intersection / Early Works

The Eurobodalla Road roadworks (the Early Works) adjacent to the site access point will be managed by staging the activities to maintain the existing capacity of the network with minimal delays.

Impacted intersections will be managed through effective traffic control under TCP's and progressive monitoring of their implementation.

Work shall not commence or continue at any location until all appropriate signs, devices, traffic control apparatus and the like are in place, side tracks have been constructed where required, line marking completed where required

Site Access – Early Works

Access to site for the early works will be Bullockys Hut Road via Eurobodalla Road. Onsite parking will be available on the complete sections of access road. Access to and from site will be managed as per TCP's presented in Appendix A, with onsite vehicle movements illustrated in Appendix C.
The following items will be delivered to site for the site establishment for the Early Works:

- 1 x 12.0 m x 3.0 m lunch shed
- 1 x 12.0 m x 3.0 m office
- 1 x 6 m Dual Toilets / Shower
- 1 x Generator
- 2 x Site Container
- 300 tonne of imported unbound road base

Expected Impacts

Minor delays are expected during the intersection widening works with one-way alternate traffic flow in place. Traffic controllers will monitor queue lengths and proactively minimise delays where possible. Priority will be given to emergency services at all times.

After the intersection widening is completed there will be minimal impact to traffic on Eurobodalla Road during construction of the Project due to the relatively low volume of traffic including local residents and surrounding businesses. With a newly constructed widening as part of the Early Works facilitating more seamless traffic movements part the site access point if trucks are waiting to turn into the project site.

6. Key management strategies

The following sections outline the key management strategies that underpin this TMP:

- Development and implementation of Traffic Control Plans
- Competence, training and awareness
- Nominated worker parking areas
- Designated vehicle routes and speed limits
- Scheduling heavy vehicle movements
- Stakeholder consultation and notification

6.1 Development and implementation of Traffic Control Plans

Traffic Control Plans are diagrammatic plans describing the management of pedestrian, vehicle and local traffic required due to implementation of components of work where any of these are affected.

TCPs will be prepared to manage the Early Works, and to facilitate larger than expected Heavy Vehicle movements to and from the site.

Provision for emergency services passage through construction zones will be maintained, including manual override of traffic signal operations to facilitate emergency services movements.

TCPs shall be submitted to the Principal and other relevant authorities for review and approval, as applicable.

In relation to the Early Works, TCP's for the road widening works have been developed by Titanium Traffic Management and have been included in **Appendix A**.

A corresponding Risk Assessment is completed for a TCP, A Global Risk Assessment is included in **Appendix B**.

The Contractor is to regularly review and modify the CTMP (such as at changes of construction stages), to ensure the CTMP remains valid and appropriate to the works.

Quay Civil Pty Ltd are currently completing the pump station on Eurobodalla Road, who have been consulted during the planning and TCP development phase, and further coordination will be required during the implementation of TCP's for the road widening works.

6.2 Competence, training and awareness

An environmental/traffic induction as part of the main induction must be carried out by everyone working on the project site prior to works commencing. Details of the induction is discussed in Section 3.4.1 of the CEMP.

The induction will cover the following traffic management details:

- Roles and responsibilities for staff
- Nominated worker access routes for site
- Delivery times and scheduling considerations
- Site speed zones
- Identifying road hazards on site and on the adjoining local road network

- Identified worker parking areas
- Chain of Responsibility (CoR) requirements

6.3 Designated vehicle routes and speed limits

All worker access to and from the site would be via Eurobodalla Road and then either the Storage Access Road or Bullocky Hut Road to the nominated car parking areas.

All heavy vehicle movements to and from the site are identified in Figure 5-1. As per worker access routes, heavy vehicle access to the site would primarily be via the Storage Access Road, with Waincourt Road used for delivery of oversized plant.

Vehicle Movement Plans (VMP's)

Vehicle Movement Plans would be developed to safely manage vehicle movements on site and include details such as:

- how vehicles access and egress compounds,
- nominated heavy vehicle delivery routes or exclusions,
- car parking,
- designated hygiene areas
- vehicle washouts.

VMP's have been prepared to control the manner in which vehicles access and egress the Site. A driver induction will be prepared containing these plans that will be forwarded to all subcontractors and suppliers prior to their arrival at site.

These VMP's are attached in **Appendix C** of this TMP.

The Contractor will also monitor the incidence of mud tracking off the construction site and onto local roads and will sweep or clean local roads to minimise mud tracking. The Contractor will install controls to minimise the incidence of mud-tracking in the first instance, such as by use of grids and pollution rock at site access points.

Pre-condition dilapidation

A visual preconstruction condition survey will be undertaken by the Contractor, to include an assessment of the following roads;

- Eurobodalla Rd from Cpt 3007/3 Rd to Waincourt Road;
- Waincourt Road in its entirety;
- Bullockys Hut Road in its entirety
- Big Rock Road from Bullockys Hut Road to Cpt 3007/3 Road;
- Cpt 3007/3, 3007/6 and 3007/7 Roads in their entirety
- From contract pint of intersection of Cpt3007 and Eurobodalla Road to Princess Highway
- Eurobodalla Rd (over bridge on Tuross River to entrance of Blue Ridge Quarry)

The pre-condition dilapidation survey is to be submitted prior to commencement of major construction activities and at the conclusion of the Project as a post-condition dilapidation survey.

Periodic visual monitoring will be undertaken on the above roadways, to observe any effects during construction. An example of the Road Asset Inspection register is included in **Appendix B**.

6.4 Heavy vehicle movements and scheduling/timings

The following truck routes will be used for supply of major supplies of materials for the Project, including deliver of quarry materials and concrete. Alternative suppliers for supply of quarry products and concrete may be sourced throughout the lift of the project and not included in delivery routes reference below

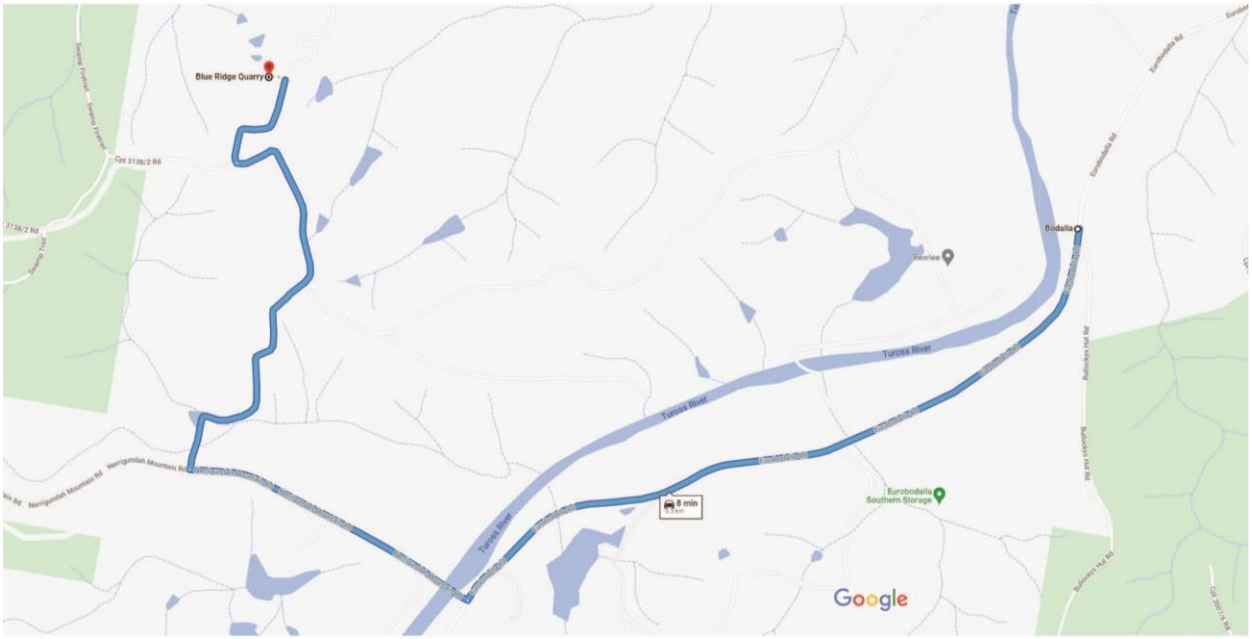


Figure 5: Northbound Delivery Route on Eurobodalla Road

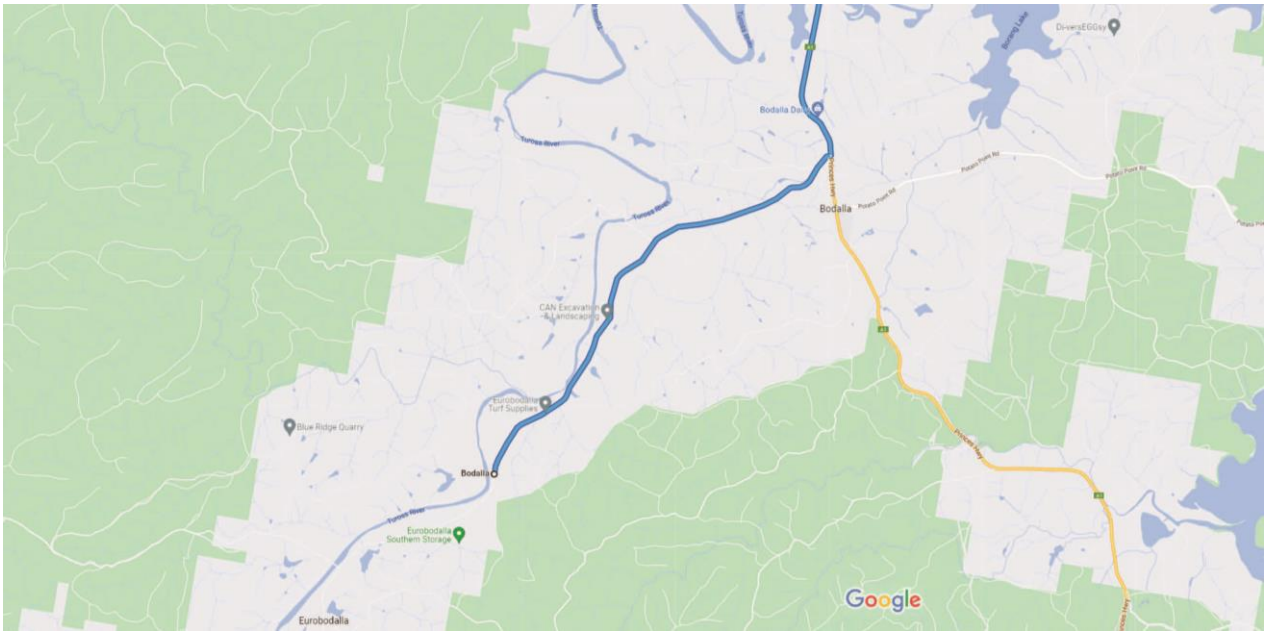


Figure 6: Southbound Delivery Route via Pacific Highway

Heavy vehicle movements to and from site would primarily occur between 7am to 6pm Monday to Friday, 8am to 1pm Saturday and not on public holidays or Sundays. If the TCP identifies the need for heavy vehicle movements to occur outside of this period (for example over mass vehicle deliveries) this would be subject to consultation with Eurobodalla Shire Council or the relevant roads authority.

Heavy vehicle movements would be scheduled to avoid convoys and to avoid the school bus route (S402) movements near the project site. The mechanisms to avoid conveys and the school bus would be developed by Haslin Constructions in consultation with the heavy vehicle and the bus operator (Marshall's) prior to commencing works on the project and documented in project vehicle movement plans.

Prior to commencing heavy vehicle movements under this TMP (Stage 5 of the project), the Contractor would engage with Marshall's Bus and Coach Company to understand the following:

- Processes to periodically update Marshall's Bus and Coach Company of the construction schedule, changes in traffic control arrangements and potential traffic implications
- Processes for Marshall's Bus and Coach to communicate changes or alterations to the bus school bus route or timetable
- Likely special events or specific considerations for safely managing school bus routes.

6.5 Stakeholder notification

Prior to commencing traffic movements under this TMP, the Contractor would notify the following stakeholders of expected traffic changes, heavy vehicle routes or speed zone adjustments:

- Rural Fire Service,
- NSW Ambulance Services,
- NSW Police
- Marshall's Bus and Coach Company / other relevant bus companies
- Eurobodalla Shire Council
- Transport for NSW
- Local State Emergency Services
- Blueridge Quarry

Consultation would include provision of information about traffic and transport activities which have potential to cause disruption, such as abnormal load deliveries or alterations to traffic control arrangements on Eurobodalla Road. The telephone number of the Site Supervisor or delegate will be made available during construction operational hours, and construction traffic movements to respond to calls and resolve any issues.

7. Compliance management

7.1 Roles and responsibilities

This TMP applies to all workers on the project. All workers will undertake a site induction, during which their responsibilities under this TMP will be explained.

The Project Team's organisational structure and overall roles and responsibilities are outlined in Section 3.3 of the CEMP. Specific responsibilities related to traffic management are identified below.

7.1.1 Senior Project Manager (SPM)

The Senior Project Manager is responsible for overall management of the Project, including traffic management.

7.1.2 Senior Project Engineer (SPE)

The Senior Project Engineer reports to the Senior Project Manager and has overall responsibility for planning and executing all construction activities, including traffic management. This includes;

- Maintaining current copies of the Traffic Management Plan, Traffic Control Plans, Vehicle Movement Plans, Pedestrian Movement Plans, Road Occupancy Licences (as required) and Speed Zone Authorisations (as required), and their controlled distribution
- Liaising with the Principal and other authorities such as ESC, TfNSW and New South Wales Police/Fire/Ambulance on traffic management matters for the Construction Site
- Facilitating traffic awareness and giving toolbox talks to site personnel
- Being able to stop work on any activity if it is considered to be necessary to prevent traffic accidents, or to comply with the directions of the Principal, ESC, TfNSW and/or NSW Police
- Report immediately to the Principal for the occurrence of unforeseen delays, including caused by incidents, to the free flow of traffic along Eurobodalla (or adjoining) Road
- Be contactable at all times (7 days per week and 24 hrs per day) during the construction phase of the Contractor's work to receive and answer traffic/incident related inquiries from the Principal or other interested parties
- Management of TMP Registers, including Key Personnel register, Incident register, variation register, complaints register and consultation register

7.1.3 Project Engineer (PE)

The Project Engineer reports to the Senior Project Engineer and has overall responsibility for planning and executing all traffic management activities. This includes;

- Ensuring that the approved traffic management measures are implemented and maintained in accordance with the approved TCP's
- Carrying out regular inspections of the traffic control measures to ensure that they are compliant and effective
- Amending and updating the plans, as required, to ensure that they remain current as the work progresses
- Identifying situations where traffic congestion, or unsafe conditions for vehicles, cyclists, pedestrians and workers, are occurring and providing recommendations for improvement
- Planning and Co-ordinating traffic staging and the associated works
- Organising temporary traffic control devices and traffic controllers to carry out approved TCP's
- Applying for and keeping current road occupancy licences and speed zone reductions, as required

- Monitoring and quantifying the durations of traffic delays unsafe conditions for vehicles, cyclists, pedestrians and workers
- Maintaining and adjusting traffic control measures and devices to assist prevailing traffic flows, minimise lane and shoulder occupancies and any lost traffic flow capacity and minimise traffic delay durations and queuing
- Monitoring of over-dimension heavy vehicle movements

7.1.4 The Site Manager (SM)

The Site Manager is responsible for identifying any specific and additional TCP needs and to inform the Site team accordingly. The SM is to further ensure all activities described on the TMP and in the TCPs are fully resourced and implemented.
All construction personnel will also be encouraged to report road hazards and road damage to the SM, as soon as items become apparent.

7.1.5 Traffic Control Supervisors (as required)

- Management of daily traffic control operations including coordination of staff and resources on site
- Ensure correct TCPs are available and implemented as applicable
- Ensure sufficient staff and equipment are available and utilised for each VMP and TCP
- Assist with all traffic management planning such as checking ROLs
- Manage daily prestart safety and site coordination briefings
- Coordinate with the construction team on site for both project works and deliveries
- Inspect and audit all traffic management plans, personnel and devices and
- Collect and maintain site records.

7.1.6 Traffic Controllers (as required)

- Hold current TfNSW accreditations (Blue and Yellow Card)
- Implement TCPs under the supervision of the Traffic Control Supervisor
- Maintain traffic control signs and devices
- Assist during attendance to site of external stakeholders for both planned and emergency situations.

7.2 Training

All employees and contractors working on site will undergo site induction training relating to traffic management considerations. Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in traffic management.

Further details regarding staff induction and training are outlined in Section 3.5 of the CEMP.

7.3 Monitoring and reporting schedule

Monitoring to ensure compliance with this plan will consist of regular inspections undertaken in accordance with section 3.8.1 and 3.8.3 of the CEMP.

All construction personnel will be encouraged to report road hazards on site and on the adjoining local road network to the Senior Project Manager.

It is the Senior Project Engineer or their delegate that is responsible for ensuring the scheduled monitoring is undertaken in accordance with this TMP.

Monitoring will involve the following:

- HV compliance with the nominated haul route
- Compliance with VMP
- Road damage to local roads
- Worker compliance of site speed limits
- Mud tracking onto local roads

7.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 3.9.3 of the CEMP.

7.5 Site Inductions and toolbox talks

All project construction personnel and contractors will an induction to the TMP. The induction will provide general awareness of the requirements and implementation of the TMP to ensure that personnel and contractors are aware of the need to comply with the TMP.

The induction would include an:

- overview of the permitted transport, access and egress routes for construction personnel, construction vehicles, construction deliveries
- adherence to local speed limits
- standard environmental, occupational health and safety driver protocols and emergency procedures.

Toolbox talks are to occur at the beginning of each day to highlight specific daily traffic and transport activities, and how these are to be managed. The toolbox talk would include a reminder of how drivers are to comply with TMP, provide details of TMP enforcement, and consequences for any breaches of the TMP or local traffic rules.

In addition, consultation with nearby construction sites and quarries has highlighted an opportunity to include the Project's specific daily traffic and transport activities within external toolbox talks, to ensure construction impacts disseminates to the local community and road users.

7.6 Chain of Responsibility (CoR) / NHVR

CoR shall be managed in accordance with the Chain of Responsibility Management Plan (SEQ-TP-089) that has been developed for the Project.

The Contractor recognises its safety duties under the Heavy Vehicle National Law (HVNL) and the Work Health and Safety Act, to ensure the safety and wellbeing of its employees and the safety of its transport activities so far as is reasonably practicable.

The Contractor values the benefits of promoting and maintaining a safe transport operation for its employees, contractors, customers and other road users. It is committed to undertaking all transport activities in a way that is as safe as reasonably practicable.

This Chain of Responsibility Management Plan (CoRMP) details the safety management and control measures that are to be implemented in association with construction activities associated with the Project.

The Contractor understands our shared responsibility to ensure, so far as reasonably practicable, that business practices, requests or demands, delivery requirements, schedules, packing goods, loading or unloading practices do not directly or indirectly cause or encourage the driver to contravene the HVNL.

Main activities under the HVNL are:

- **Loading Manager:** The person who supervises the loading or unloading of a heavy vehicle or the premises where this occurs
- **Consignor:** Person who engages a heavy vehicle operator (either directly or through an agent) to transport goods for the person by road for commercial purposes
- **Consignee:** The person who has been named as the intended consignee of the goods at the completion of their road transport but does not include a person who unloads the goods.
- **Loader:** The person that loads goods into or onto a heavy vehicle for the purpose of transport to another location via the roadway
- **Unloader:** The person that unloads the goods transported by road upon arrival at their destination.

The CoRMP specifies actions, responsibilities, and protocol, and conformance, verification activities, to be followed by the Contractor before, during and on completion of construction.

7.7 Incident Management - Accident and Emergency response

In the event of an onsite accident or emergency, it shall be managed in accordance with the Emergency Plan (SEQ-TP-037) that has been developed as part of the Safety Management Plan. Part of the emergency response temporary traffic control measures may need to be implemented in order to facilitate the access of emergency services and the egress of personnel from the site. In these circumstances the traffic control measures to be implemented shall be at the discretion of the site management team up until the time control can be handed over to appropriate emergency personnel (e.g. Police).

Traffic accidents occurring at or near locations where the Contractor has implemented approved traffic control measures, in the initial stage will be managed by the company's Traffic Control personnel. Should the accident be severe enough to constitute an emergency event (i.e. caused or likely to endanger life, cause significant property or environmental damage) the Emergency Plan procedure will be implemented.

All other traffic accidents will be managed by the Contractor's Traffic Control personnel up until police or other responsible authority arrive on the site. The prime objectives will be to prevent or minimise risk of further accidents or injury to road users and any other nearby personnel, get assistance for any injured people. The secondary objective will be to facilitate the removal of obstructions to traffic and return the road to normal use.

All actions must at no time further endanger the safety of site personnel or members of the public.

Approved traffic control measures implemented by the Contractor will be removed where directed by Police or other responsible authority to facilitate the movement of emergency vehicles or to enable road traffic to return to normal. Such removal will be dependent upon action required not endangering the safety of Haslin personnel or members of the public.

Where implemented traffic control measures cause or contribute to excessive disruption of traffic the measures will be reviewed and changed where feasible and practical.

8. Review and improvement

8.1 Continuous improvement

Continuous improvement of this Plan 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.
- 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.

8.2 TMP update and amendment

The processes described in Section 3.9 to Section 3.13 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Only the Environment Manager, or delegate, has the authority to change any of the environmental management documentation.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 3.11.2 of the CEMP.

9. Appendix A – Traffic Control Plans (TCP's)

Eurobodalla Road, Bodalla

Long-Term Signage (During Works)

www.invarion.com

NOTES:

- Relevant signage to be installed as per TCAWS/AS 1742.3 specification.
- Sign spacings may vary due to on-site constraints such as driveways and vegetation, etc.
  - Signage marked as * to be covered as construction site traffic aftercare

SIGN SPACINGS

SPEED LIMIT	TCAWS	AS 1742.3
40 km/H	40M	5-15M
50 km/H	50M	15M
60 km/H	60M	45M
70 km/H	70M	70M
80 km/H	80M	80M
90 km/H	90M	90M
100 km/H	100M	100M
110 km/H	110M	110M

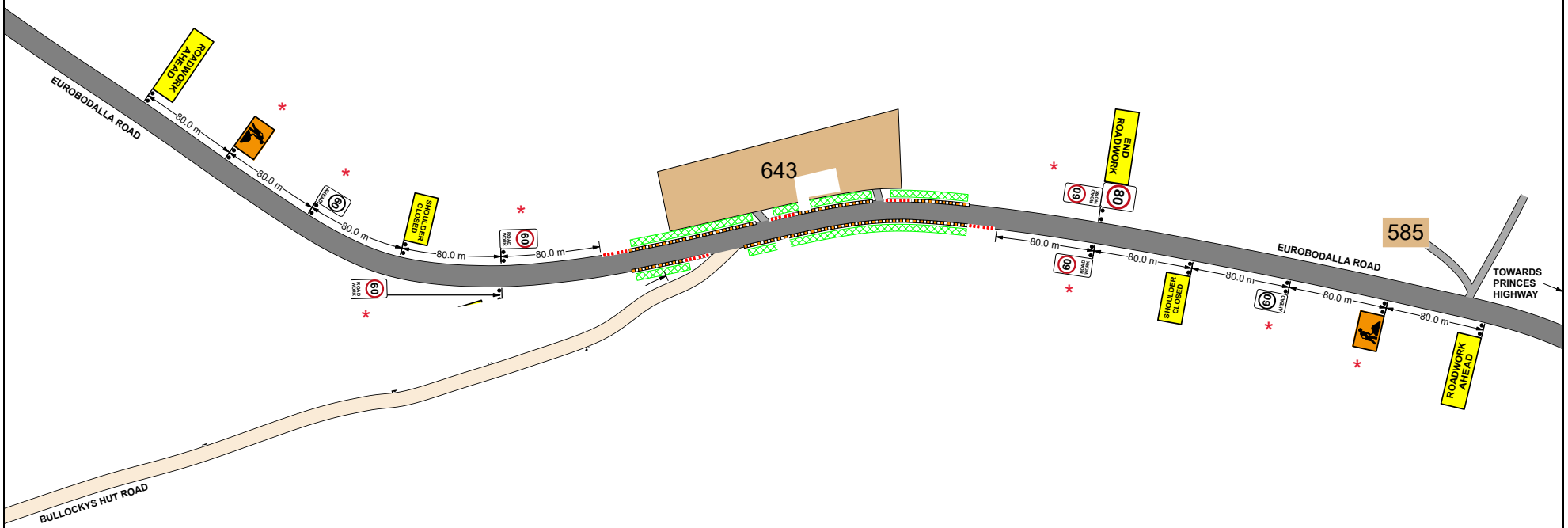
Existing permanent speed limit (km/h)	Recommended taper length (m)		
	Traffic control taper	Lateral shift taper	Merge taper
45 or less	15	15	15
46 to 55	15	15	30
56 to 65	30	30	60
66 to 75	N/A	70	115
76 to 85	N/A	80	130
86 to 95	N/A	90	145
96 to 105	N/A	100	160
Greater than 105	N/A	110	180

USE OTHER FOOTPATH	PEDESTRIANS WATCH YOUR STEP
FOOTPATH CLOSED	PEDESTRIANS ←
	PEDESTRIANS →

Pedestrian signage to be implemented to provide safe passage around worksite

Legend

- Barriers
- Work Area



Titanium TRAFFIC MANAGEMENT	PREPARED BY : Gregory Cocker SAFEWORK NSW CARD NO. : TCT0027509	WORK SCOPE - Long-Term Signage PLAN NUMBER - TGS-001 DATE DRAWN - 24/07/2022	TGS IMPLEMENTED/AMENDED BY : NAME - BEN LYONS CERT. NO. - 0052198071 DATE - 10/08/2022 SIGNED -
	ROAD SPEED - 80 km/H ROAD LAYOUT - 2-Lane, 2-Way Local Road	THIS TGS IS NOT DRAWN TO SCALE / TfNSW TGS' USED AS A GUIDE	

THIS TGS SHALL BE SET-UP IN ACCORDANCE WITH THE TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL V6 & AUSTRALIAN STANDARDS AS 1742.3-2019.

Eurobodalla Road, Bodalla

Day Works NB - Portable Traffic Signals

www.invarion.com

NOTES:

- Relevant signage to be installed as per TCAWS/AS 1742.3 specification.
- Sign spacings may vary due to on-site constraints such as driveways and vegetation, etc.

SIGN SPACINGS

SPEED LIMIT	TCAWS	AS 1742.3
40 km/H	40M	5-15M
50 km/H	50M	15M
60 km/H	60M	45M
70 km/H	70M	70M
80 km/H	80M	80M
90 km/H	90M	90M
100 km/H	100M	100M
110 km/H	110M	110M

Existing permanent speed limit (km/h)	Recommended taper length (m)		
	Traffic control taper	Lateral shift taper	Merge taper
45 or less	15	15	15
46 to 55	15	15	30
56 to 65	30	30	60
66 to 75	N/A	70	115
76 to 85	N/A	80	130
86 to 95	N/A	90	145
96 to 105	N/A	100	160
Greater than 105	N/A	110	180

USE OTHER FOOTPATH | PEDESTRIANS WATCH YOUR STEP

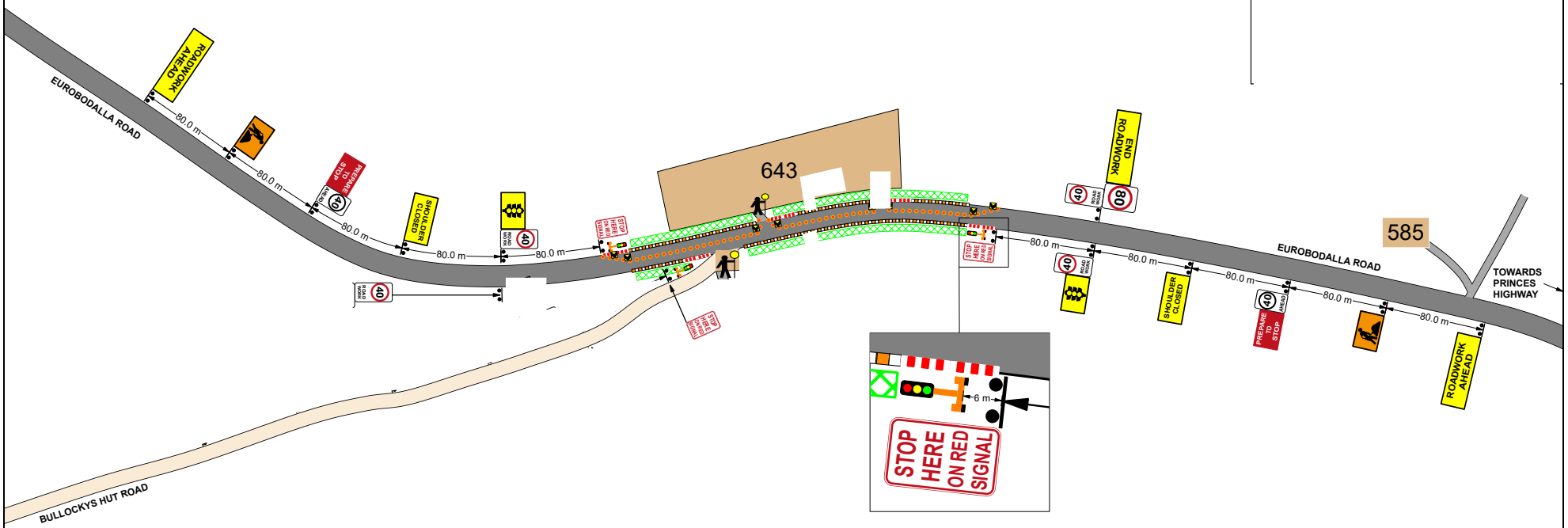
FOOTPATH CLOSED | PEDESTRIANS ←

PEDESTRIANS →

Pedestrian signage to be implemented to provide safe passage around worksite

Legend

- Portable Traffic Signals
- Barriers
- Traffic Cones
- Traffic Cones/Bollards
- Traffic Controllers
- Work Area



Titanium TRAFFIC MANAGEMENT	PREPARED BY : Gregory Cocker SAFEWORK NSW CARD NO. : TCT0027509	WORK SCOPE - Portable Signals NB PLAN NUMBER - TGS-002 DATE DRAWN - 24/07/2022	TGS IMPLEMENTED/AMENDED BY : NAME - BEN LYONS CERT. NO. - 0052198071 DATE - 10/08/2022 SIGNED -
	ROAD SPEED - 80 km/H ROAD LAYOUT - 2-Lane, 2-Way Local Road	THIS TGS IS NOT DRAWN TO SCALE	TfNSW TGS' USED AS A GUIDE

THIS TGS SHALL BE SET-UP IN ACCORDANCE WITH THE TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL V6 & AUSTRALIAN STANDARDS AS 1742.3-2019.

Eurobodalla Road, Bodalla

Day Works SB - Portable Traffic Signals

www.invarion.com

NOTES:

- Relevant signage to be installed as per TCAWS/AS 1742.3 specification.
- Sign spacings may vary due to on-site constraints such as driveways and vegetation, etc.

SIGN SPACINGS

SPEED LIMIT	TCAWS	AS 1742.3
40 km/H	40M	5-15M
50 km/H	50M	15M
60 km/H	60M	45M
70 km/H	70M	70M
80 km/H	80M	80M
90 km/H	90M	90M
100 km/H	100M	100M
110 km/H	110M	110M

Existing permanent speed limit (km/h)	Recommended taper length (m)		
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86 to 95	N/A	90	145
96 to 105	N/A	100	160
Greater than 105	N/A	110	180

USE OTHER FOOTPATH | PEDESTRIANS WATCH YOUR STEP

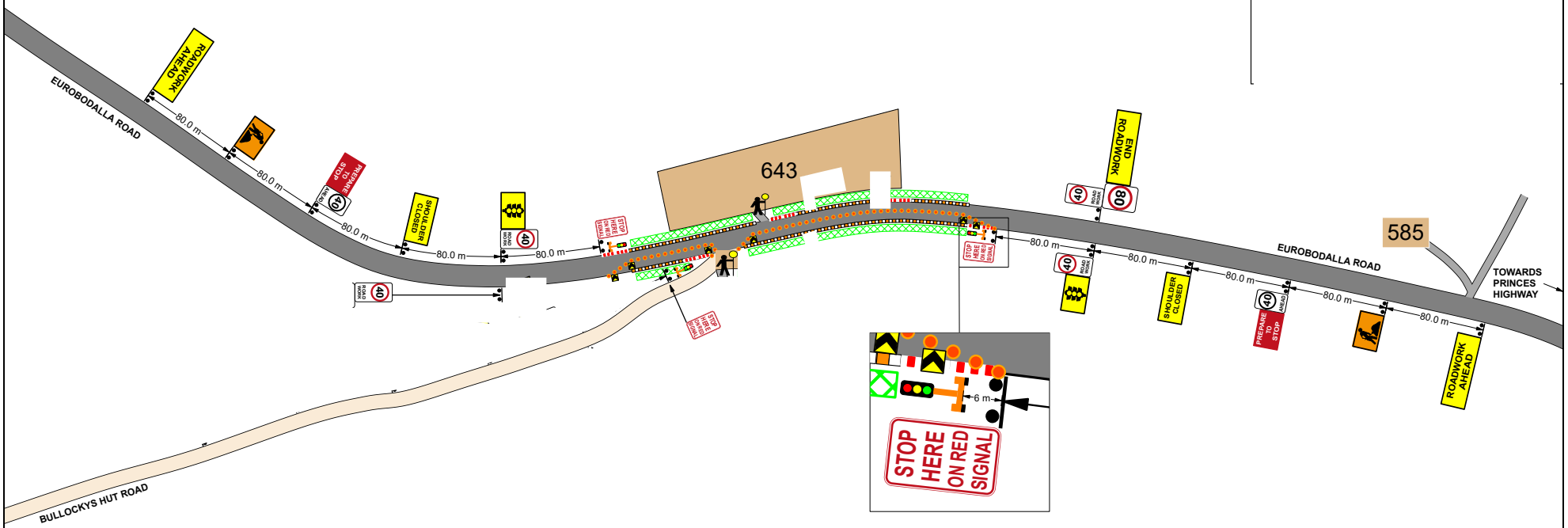
FOOTPATH CLOSED | PEDESTRIANS ←

PEDESTRIANS →

Pedestrian signage to be implemented to provide safe passage around worksite

Legend

- Portable Traffic Signals
- Barriers
- Traffic Cones
- Traffic Controllers
- Work Area



Titanium TRAFFIC MANAGEMENT	PREPARED BY : Gregory Cocker SAFEWORK NSW CARD NO. : TCT0027509	WORK SCOPE - Portable Signals SB PLAN NUMBER - TGS-002A DATE DRAWN - 24/07/2022	TGS IMPLEMENTED/AMENDED BY : NAME - BEN LYONS CERT. NO. - 0052198071 DATE - 10/08/2022 SIGNED -
	ROAD SPEED - 80 km/H ROAD LAYOUT - 2-Lane, 2-Way Local Road	THIS TGS IS NOT DRAWN TO SCALE	TfNSW TGS' USED AS A GUIDE

THIS TGS SHALL BE SET-UP IN ACCORDANCE WITH THE TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL V6 & AUSTRALIAN STANDARDS AS 1742.3-2019.

10. Appendix B – TCP Risk Assessment

Workplace Health and Safety Risk Assessment

Workplace Address:
Eurobodalla Southern Storage Construction (Bodalla Dam)

Location Assessed:
Intersection Works – Bodalla Dam

Activity:
Traffic Management for Intersection Roadworks

Participants:
B. Lyons, J McCarthy, A. Berick, C. Wheeler

Risk Assessment Date: 10/08/2022

Facilitator: Ben Lyons

Likelihood:		Maximum Reasonable Consequence: Catastrophic A	Major B	Significant C	Moderate D	Minor E
Almost Certain	1	A1 High	B1 High	C1 High	D1 Medium	E1 Medium
Likely	2	A2 High	B2 High	C2 Medium	D2 Medium	E2 Medium
Possible	3	A3 High	B3 Medium	C3 Medium	D3 Medium	E3 Low
Unlikely	4	A4 Medium	B4 Medium	C4 Medium	D4 Low	E4 Low
Highly Unlikely	5	A5 Medium	B5 Medium	C5 Low	D5 Low	E5 Low

Work Process	Describe Hazard	Risk Ranking	Agreed Controls / Actions	Risk Ranking with controls	Responsibility
Moving Traffic	Traffic controllers or workers being hit by passing traffic	High	• No unplanned movements, all movements are to be planned and communicated between TC and sub-contractors • Radio communication • Shoulder lane closures • Worker behind delineation or barriers • Speed reductions as required • All construction vehicles to enter through authorised gate locations • Soft barricading to delineate pedestrian path from live traffic, where required. • Traffic Signals or stop/slow traffic control	Low	All
Queued Traffic	Traffic backed up beyond signage	High	• Minimise road occupation during peak travel times • Ensure traffic stoppages do not exceed 4 minutes single road occupancy • Stop works and move plant and workers to clear traffic if build up occurs • Traffic must be monitored and queue length to be managed	Low	All
Length of delay for road users	Drivers become frustrated and disobey rules	High	• TC to monitor and assess when to stop traffic stopping works if needed to clear traffic impact to minimise traffic flow • TC to communicate with sub-contractors and stop work if traffic needs to released • Minimise stoppages wherever possible, especially during peak travel periods	Low	All

			• A minimum weekly checks of signage must be conducted by TC supervisor and or Contractor Supervisor		
Motorists non-compliance with TC Directions	Workers being struck by vehicles	High	• Delineation to define works zones • Advanced warning signage in place • Works to be behind physical barriers wherever possible	Medium	All
Setting up controls & advanced warning signs	TC being struck by motorists		• Beacons and vehicle mounted arrow board must be used • Use work vehicle to cover TC as they place signs and delineation • TC's are not exit work vehicle on live traffic side • Face traffic and have an escape route at all times • No reversing without a spotter		
Plant and work vehicles entering and exiting site	Traffic colliding with site vehicles as they enter/exit site		• Site vehicles to enter and exit with beacons lights on • No unplanned movements • No reversing without a spotter • Work Vehicles are to exit merging traffic only when it's safe to do so		
Long term site set up	Site becoming messy due to weather or vandalism		• Daily site check to be undertaken by Contractor supervisor and or TC supervisor • Signs to be weighted down or on posts		
Safety barriers lifts and placements (as required)	Motorist collision with safety barriers		• Cut excavation >0.5m deep and within 3m of the edge line require hard safety barriers • Move plant to dead lane to clear traffic if required TL to monitor and assess • Communications / radios • No unplanned movement and lifts • Barriers can only be moved under stop slow traffic control		
Safety barrier	Vehicle collision		• Edge clearance to be no less than 0.5m, unless risk assessed • Cut excavation >0.5m deep and within 3m of the edge line require hard safety barriers • Line marking or stick/stomps must used to maintain edge clearances • Barrier delineators or night tape flagging to be used for reflectivity for motorists		
Reduced lane width / pinch points	Vehicle collisions		• Low speed environment • Low traffic volumes • Good site distance in both directions		

Endorsed by: Ben Lyons Signature: Date: 10/08/2022

11. Appendix C – Site VMP

GLOBAL VEHICLE MOVEMENT PLAN
SITE ACCESS/EGRESS - REVISION 01

LEGEND

- COMPOUND / SITE PARKING
- EARLY WORK AREAS
- VEHICLE MOVEMENTS
- Visitor Parking
- Construction Laydown Area / Storage
- No-Go Zone
- X1 — Gate: Vehicle Access/Egress

ACCESS INSTRUCTION

- **Any visitors to use visitor car park shown Compound**
- **Ensure you site in on the Site upon arrival**
- **All delivery/pick up vehicles to call up Traffic Control or Supervisor when approaching compound on UHF 30**
- **Please contact the Site Supervisors if you have any queries.**

GENERAL INSTRUCTIONS :

- ALL DRIVERS MUST PROCEED WITH CAUTION AND ADHERE TO THE NSW ROAD RULES AT ALL TIMES
- ONLY USE THE DESIGNATED GATE ACCESS POINTS.
- ALL VEHICLE DRIVERS MUST FOLLOW THE INSTRUCTIONS OF THE SUPERVISORS.
- NO REVERSING OF VEHICLES ON ANY ROADS WITHOUT APPROPRIATE CONTROLS.
- NO PARKING OR STOPPING ON ANY ROADS UNLESS IN AN EMERGENCY OR UNDER TRAFFIC CONTROL.
- REFER TO SITE SPECIFIC VMPS FOR SITE VEHICLE MOVEMENTS
- SIGN ON TO PRESTART AT GATE
- DRIVERS MUST WEAR APPROPRIATE PPE
- DRIVERS TO CALL 24 HRS PRIOR TO DELIVERY
- COMPANY/DRIVER TO COMPLY WITH HV NATIONAL LAW REQUIREMENTS AT ALL TIMES

VMP TO BE ENFORCED BY:

- ALL PERSONNEL WORKING AT THE SITE AND DELIVERIES SCHEDULED TO COME TO THIS SITE

PERSONNEL RESPONSIBLE FOR ENFORCEMENT:

- MANAGERS
- ENGINEERS
- SUPERVISOR

MOBILE FIRST AID KITS ARE AVAILABLE IN ALL WORK LIGHT VEHICLES

CONTACTS:
Ben Lyons (SPE) – 0403 712 204
Andrew Berick (PE) – 0488 510 065
Chris Wheeler (Supervisor) – 0400 388 599

BEFORE ENTERING ANY GATE:
ANNOUNCE ON THE TWO WAY RADIO
YOU ARE APPROACHING THE GATE
AND TURN YOUR FLASHING LIGHT ON

NOT FOR CONSTRUCTION
INFORMATION DOCUMENT ONLY

DESCRIPTION OF WORKS: PERIOD OF OPERATION:

SITE ACCESS – EARLY WORKS	7:00 TO 18:00 WEEKDAYS
	8:00 TO 13:00 SATURDAYS

TYPE OF VEHICLES: (E.G. TRUCKS, PLANT)
LIGHT CONSTRUCTION VEHICLES, LIGHT CRANAGE, SEMI-TRAILERS, TRUCKS, HYDRO VAC TRUCKS, EXCAVATORS.

CREATED BY
NAME: Ben Lyons

SIGNED:

ISSUE DATE: 04/08/2022
REVISION: 01

VMP - 001

12. Appendix D – Road Asset Inspection Record

Week Beginning	Item No.	Location:	Specific item (infrastructure, assets, amenities)	Problem (Defect)	Description	Action	Image Ref. (Open)	Required Response Urgency based on Intervention assessment (High/Medium/Low)	Who	When	Status: Open/ Closed	Image Ref. (Closed)
02/08/22	1	Site entrance	Pavement	Pothole	10mm deep pothole approx. 1m2 formed in existing pavement	Repair	IMG_1	High	SPE	02/08/22	Closed	IMG_1-Cl