Lendlease Document Number:
WC2G-LLE-ENV-PLN-0101 - Revision B

RMS Alternate Document Number:
Appendix B1_CTAMP_WC2G_.docx - Revision 6

APPENDIX B1

Construction Traffic and Access Management Plan

Wells Crossing to Glenugie

Pacific Highway Upgrade

SEPTEMBER 2019

Document control

File name	Appendix B1_CTAMP_WC2G_.docx
Report name	Wells Crossing to Glenugie Construction Traffic and Access Management Plan
Revision number	6

Plan approved by:

RMS Project Manager	RMS Environment Manager	Lendlease Engineering Environment Manager
[signed]	[signed]	[signed]

Revision history

Revision	Date	Description	Approval
0			
4	18/6/19	Wells Crossing to Glenugie Updated	
5	30/7/19	Wells Crossing to Glenugie Updated to address Agency comments.	
6	16/09/2019	Wells Crossing to Glenugie – LLE Update	

Distribution of controlled copies

Copy no.	Issued to	Version
1		
2		
3		
4		
5		

Contents

Tables

Glossary / Abbreviations

Table 1-1 Definitions

CAP	Community Action Plan
CEMP	Construction Environmental Management Plan
CHMP	Construction Heritage Management Plan
CNVMP	Construction Noise and Vibration Management Plan
LLE	Lendlease Engineering
CoA	Condition of approval
CTAMP	Construction Traffic and Access Management Plan
DP&I	Former NSW Department of Planning and Infrastructure (now DP&E)
DP&E	NSW Department of Planning and Environment (now NSW Department of Planning, Industry and Environment)
EIS	Woolgoolga to Ballina Pacific Highway Upgrade Environmental Impact Statement (December, 2012)
EPA	NSW Environment Protection Authority
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
EPBC Act	*Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*
EWMS	Environmental Work Method Statements
HSMP	Health and Safety Management Plan
Minister, the	NSW Minister for Planning and Public Spaces
NPW Act	*NSW National Parks and Wildlife Act 1974*
OEH	NSW Office of Environment and Heritage
PoEO Act	*NSW Protection of the Environment Operations Act 1997*
Project, the	Wells Crossing to Glenugie Section 2A Woolgoolga to Ballina Pacific Highway Upgrade project
Roads and Maritime	NSW Roads and Maritime
Secretary	Secretary of the Department of Planning, Industry and Environment
SPIR	Woolgoolga to Ballina Pacific Highway Upgrade Submissions Preferred Infrastructure Report (November, 2013)
TMP	Traffic Management Plan
TCP	Traffic Control Plan
TCSM	Traffic Control Site Manager
VMP	Vehicle Management Plan
VMS	Variable Message Sign

1 Introduction

1.1 Purpose and Scope

This Construction Traffic and Access Management Plan (CTAMP) forms part of the Construction Environmental Management Plan (CEMP) for the upgrade of the northbound carriageway of the Pacific Highway from Wells Crossing to Glenugie (the Project). The Project is Section 2A of the Woolgoolga to Ballina (W2B) Pacific Highway upgrade project, approved by the Minister for Planning in 2014.

The purpose of this CTAMP is to describe how *Lendlease Engineering* will manage construction traffic associated with the Project to minimise adverse impacts, whilst ensuring compliance with the Minister's Conditions of Approval (CoA), updated mitigation and management measures listed in the Pacific Highway Upgrade Woolgoolga to Ballina Submissions / Preferred Infrastructure Report (Nov 2013) (SPIR) and all applicable legislation.

The existing Glenugie Upgrade Project ties into the northern extent of the Project. The Glenugie Project was approved separately by the Minister for Planning in 2009. Relevant conditions of this approval have been referenced in the CEMP and this plan as appropriate.

1.2 Objectives

The traffic objectives identified for this project are as follows-

- Minimise the risk of serious accidents to either the travelling public or construction workers.
- Minimise the number and extent of traffic switches, to encourage drivers to become familiar with the temporary traffic arrangements as per Roads and Maritime Traffic Management specification G10(G10) CI2.5.
- Safely control and provide for pedestrian and cyclist access where appropriate
- Safely control and provide for access to adjoining properties located within the limits of the contract.
- Minimise traffic disruption and delays during the construction phase. A global approach is to be taken for the entire project ie some short term delays may result in less delays at future stages.
- Maintain sufficient number of lanes / widths and traffic speeds in accordance with the G10 Annexures A2 and A3.
- Provide advance warning to motorists in an attempt to provide a controlled informed approach to the construction site.
- A target of zero complaints for the project duration.
- Timely and informed communication to all affected parties.
- Maintenance of traffic controls and equipment to be of a high standard with management strategies to track procedures put in place.
- To conform to the Traffic Control at Worksites Manual.
- Minimise construction trafficking of, and therefore damage to, the existing/retained road network during the construction period

2 Legislative and Other Requirements

2.1 Associated Documents

The main legislation relevant to traffic management for the Project is:

- Environmental Planning and Assessment Act 1979;
- Roads Act 1993;
- Road Transport (Safety and Traffic Management) Act 1999; and
- Roads Regulation 2008.

Other relevant policies/specifications include:

- RMS Specification G10;
- AS 1742.3-2009 Manual of uniform traffic control devices – Part 3: Traffic control for works on roads;
- Traffic Control at Work Sites (RMS, 2018);
- Austroads, Guide to Road Design Part 3: Geometric Design (2016);
- Austroads Guide to Road Design Part 4A: Un-signalised and signalised intersections (2017);
- Roads and Maritime Services Supplement to Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers (2009) Version 2.0; and
- Guide to Traffic Generating Developments (RTA, 2002).

2.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed in Table 2-1. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 2-1 Conditions of Approval relevant to the Construction Traffic and Access Management Plan

CoA No.	Condition Requirements	Document Reference
B56	The SSI shall be designed with the objective of minimising adverse changes to existing access arrangements and services for other transport modes and, where feasible and reasonable, facilitate an improved level of access and service to other transport modes comparable to or better than the existing situation. **Access**	Concept and detailed design
B57	Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a satisfactory alternate route shall be provided and signposted.	Section 4.4
B58	Construction vehicles (including staff vehicles) associated with the SSI shall be managed to: (a) Minimise parking or queuing on public roads; (b) Minimise idling and queuing in local residential streets where practicable; (c) Minimise the use of local roads (through residential streets and town centres) to gain access to construction sites and compounds; and	Section 3.2.2, 3.2.3

CoA No.	Condition Requirements	Document Reference
D19	(d) Adhere to the nominated haulage routes identified in the Construction Traffic Management Plan. **Road Dilapidation** Upon determining the haulage route(s) for construction vehicles associated with the SSI, and prior to construction, an independent and qualified expert shall prepare a Road Dilapidation Report. The Report shall assess the current condition of the road and describe the mechanisms to restore any damage that may result due to its use by traffic and transport related to the construction of the SSI. The Report shall be submitted to the relevant council for review prior to the commencement of haulage. Following completion of construction, a subsequent Report shall be prepared to assess any damage to the road that may have resulted from the construction of the SSI. Measures undertaken to restore or reinstate roads affected by the SSI shall be undertaken in a timely manner, in accordance with the reasonable requirements of the relevant council, and at the full expense of the Applicant.	Section 4.10
D26 (b)	a **Construction Traffic and Access Management Plan** to manage construction traffic and access impacts of the SSI. The Plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to: (i) identification of construction traffic routes and construction traffic volumes (including heavy vehicle/spoil haulage) on these routes; (ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points; (iii) identification of construction impacts that could result in disruption of traffic, public transport, pedestrian and cycle access, property access, including details of oversize load movements; (iv) details of management measures to minimise traffic impacts, including temporary road work traffic control measures, onsite vehicle queuing and parking areas and management measures to minimise peak time congestion and measures to ensure safe pedestrian and cycle access; (v) details of measures to manage traffic movements, parking, loading and unloading at ancillary facilities during out-of-hours work; (vi) a response plan which sets out a proposed response to any traffic, construction or other incident; and (vii) mechanisms for the monitoring, review and amendment of this plan.	Section 3.2.2 Section 3.2.3 Section 3 Section 4 Section 4.2 Section 6 Section 7

2.3 Licences and Permits

The project must be in accordance with the conditions of the following permits and licenses, as part of the management measures in this sub-Plan:

- Obtaining of Road Occupancy Approval from the Roads and Maritime Services (RMS) prior to conducting any work, occupying the road or installing traffic control devices within the road reserve of the Pacific Highway.
- Speed Zone authorisation complying with Section 8.2 of "Traffic Control at Work Sites Version 5.0 –RMS, July 2018" and 5.6 of "RTA's NSW Speed Zoning Guidelines 4.0, 2011"

3 Identify and Assess

Traffic Management Plan
This CTAMP should be read in conjunction with the Traffic Management Plan (TMP) for the project. The purpose of the TMP is to set out the requirements for the management of traffic past, through and/or around the work site. The TMP considers the restricted area available for construction, the types of vehicles, traffic volumes along HW10. It also includes the provision for the safe movement of traffic, the protection of workers from passing traffic and the provision for access to adjoining properties located within the limits of the Contract.

The TMP and associate documents have been prepared by persons suitably experienced in the design and implementation of TMPs of equivalent complexity to those required in this contract and holding suitable qualifications, including as a minimum, a qualification in the Roads and Maritime "Design and Inspect Traffic Control Plans" (Orange card).

3.1 Description and Staging

3.1.1 Description

The Pacific Highway is a major transport route along part of the east coast of Australia, with the majority being part of Australia's national route 1. It is 960 kilometres long and links Sydney to Brisbane along the coast. The southbound carriageway between Wells Crossing and Glenugie was completed and opened to traffic in 2017. The old Pacific Highway north of Wells Crossing was reconfigured to two northbound lanes as an interim traffic arrangement. The construction of the new northbound carriageway for this project will be undertaken between the completed southbound carriageway and current interim northbound carriageway. The area of construction will extend to the median edge of the completed southbound pavement.

Access to and from the new northbound construction requires right turn movements from either the existing interim northbound or southbound carriageways. For the existing southbound carriageway the speed will need to be reduced to 100km/h and the fast lane closed with steel barriers so that it can be utilised for deceleration & acceleration lanes for construction accesses. This is required to not further constrain the construction site by retaining the full median width for construction traffic, particularly during paving operations. It also increases the safety for construction traffic and the travelling public. Similarly the speed on the current interim northbound carriageway will need to be reduced to 80km/h at construction access gates, the new Parker Road connection and the northern tie-in works. The reduced speed limits will affect travel time through the work site.

Traffic switches will be communicated in accordance with the requirements of the Traffic Management Plan and the Community Action Plan, and will include VMS boards alerting

motorists to the upcoming changes, notification to motorists via the weekly traffic updates, the Roads and Maritime Website and Community Letter Box Drops.

The Pacific Highway is classified as a road controlled by Roads and Maritime, there are a number of local roads, shown in Table 3-1 and intersections shown in Table 3-2, that are affected by this Project. While the works are being undertaken *Lendlease Engineering* will be responsible for these roads including the maintenance as per the requirements of the G10 Specification. The existing serviceability of the intersections will be maintained during construction.

Table 3-1 Key roads in the Project Area

Road	Description
Pacific Highway	Is a major transport route along part of the east coast of Australia, with the majority part of Australia's national route 1
Kungala Road	Can be used as a link road between the Pacific Highway and Orara Way, an access to the town of Kungala and a potential auxillary site (compound, laydown area, batch plant) for the project.
Parker Road	Is a public road providing access to mainly private residences and a potential auxillary site (compound, laydown area, batch plant) for the project.
Bald Knob Tick Gate Road	Is a public road providing access to the State Forest as well as private residences
Franklins Road	Is a public road providing access to the State Forest as well as private residences

Table 3-2 Key intersections in the Project Area

Intersection	Description
Pacific Highway/Kungala Road	This intersection is a Give Way priority controlled T-junction. With a deceleration slip lane it provides for left turn movements off and onto the northbound carriageway. A turn lane is available to provide access to Kungala Road from the southbound carriageway. Access to the southbound carriageway from Kungala Road is provided via a u-turn facility at Luthers Road approximately 700m to the north.
Pacific Highway/Parker Road	This intersection is a Give Way priority controlled T-junction. With deceleration and acceleration slip lanes it provides for left turn movements off and onto the interim northbound carriageway. A temporary connection is provided to the southbound carriageway that includes a deceleration slip lane and provides access to and from the southbound carriageway to Parker Road.
Pacific Highway/Bald Knob Tick Gate Road	This intersection is a Give Way priority controlled T-junction. With a deceleration slip lane it provides for left turn movements off and onto the southbound carriageway. Access from the interim northbound carriageway is provided at a u-turn facility approximately 2.9km north of Bald Knob / Tick Gate Road. Access to the interim northbound carriageway from Bald Knob / Tick Gate Road is provided via the temporary Parker Road connection approximately 1.7km to the south.
Pacific Highway/ Franklins Road	This intersection is a Give Way priority controlled T-junction. With a deceleration slip lane it provides for left turn movements off and onto the southbound carriageway. Access from the interim

Intersection	Description
	northbound carriageway is provided a u-turn facility approximately 100m north of Franklins Road. Access to the interim northbound carriageway from Franklins Road is provided via a temporary u-turn connection approximately 500m to the south.

The responsible party from *Lendlease Engineering* for the traffic management on the project will be the Traffic Control Site Manager and the Site General Superintendent.

3.1.2 Staging

The construction of the northbound carriageway between Wells Crossing and Glenugie from Ch 23286 to Ch31213 will be undertaken in a single stage. Traffic will remain on the existing southbound (reduced to a single lane for approximately 16 months) and interim northbound carriageways until traffic is switched onto the completed northbound carriageway. Some minor linemarking adjustments will be required post switch at the northern tie-in.

Some internal staging of the construction of the northbound carriageway will be necessary to facilitate the construction of the new Parker Road connection while keeping the temporary connection open. Similar internal staging of the northbound construction will be required to maintain access to the temporary northbound and southbound u-turn facilities currently provided between the interim northbound carriageway and southbound carriageway. Appropriate traffic control measures will be implemented to provide access through the northbound construction at these locations as well as at new Parker Road connection.

3.2 Construction

The sequence of construction activities that are anticipated are shown in Table 3-3

Table 3-3 Construction Sequence

Construction Activity	Details	Impact on Traffic
Site establishment	Installing boundary fencing, construction facilities, environmental controls and carrying out pre-clearing vegetation fauna surveys	Early works to improve intersection and provide construction accesses to the standard noted in G10.
Installation of Traffic Controls (Barriers, Signage, Line marking)	Roads and Maritime Approved Barriers will be used to separate the workplace from the traffic lanes and close the southbound fast lane to allow the establishment of construction accesses.	Works will be undertaken under traffic control at an appropriate time to reduce the impact on traffic.
Ancillary Facilities	Installing boundary fencing, construction facilities, environmental controls and	Minimal impacts, minor increase in traffic to Kungala Road and Parker Road.

Construction Activity	Details	Impact on Traffic
	carrying out pre-clearing vegetation fauna surveys	
Site preparation	Removal of harvestable timber, clearing and grubbing, topsoil stripping and storage	Works primarily off the existing road alignment. Heavy truck movements through approved upgraded intersections / construction accesses
Traffic Switches (Parker Road)	Traffic switches will be planned well in advance and the community informed via VMS Boards, Traffic Alerts and Letter Box Drops to Residents	Works will be undertaken under the control of traffic mostly at night to reduce the impact on traffic.
Earthworks	Undertaking cut and fills works along the alignment to achieve desired levels, removal of unsuitable material, batter and embankment shaping.	Large earthworks contained behind precast concrete barriers off the existing alignment. Haulage will be managed through the construction site where ever possible otherwise truck access will be via the southbound carriageway
Drainage	Drainage will be installed progressively though out the duration of the works.	Drainage lines will be constructed off-line where possible or behind barriers when close to traffic.
Structures	Drainage and fauna underpass facilities.	Works taking place off the existing alignment behind barriers when close to traffic
Pavements	Forming sub and base layers and construction final pavement finishes	Works taking place off the existing alignment behind barriers when close to traffic
Road furniture	Installing signage, line marking, safety barriers and fauna overpass structures.	Lane closures will be used to undertake works under live traffic
Landscaping and restoration	Reuse of topsoil, planting of native plants and seeding disturbed areas with native and cover crops species (note this will take place throughout construction as elements of the Project are complete where ongoing disturbance is not anticipated).	Works taking place off the existing alignment behind barriers when close to traffic

Construction Activity	Details	Impact on Traffic
Open to traffic	Decommission construction facilities and commissioning new road and related infrastructure	Traffic control and lane closures required during switch over works

3.2.1 Construction Hours

Construction activities associated with the Project will be generally undertaken during the following standard construction hours:
• 7:00 am to 6:00 pm Mondays to Fridays, inclusive;
• 8:00 am to 5:00 pm Saturdays; and
• At no time on Sundays or public holidays.

Activities undertaken outside the standard construction hours must be consistent with CoA B16, or approved as Out of Hours Work in accordance with CoA B17 and the CNVMP. No other work is permitted outside the standard construction hours.

Only machinery fitted with reversing or other alarms which will adjust the alarm sound output to no more than 5dB above the surrounding noise level and an alarm sound output range of 85dB – 115dB will be permitted to work at night. Lighting Towers will be used to facilitate night works or otherwise where there is insufficient light and must conform to the following requirements:

- Trailer Mounted with a minimum of four 1500 watt flood lights on a 360 degree telescoping hydraulic mast extendable to 9 meters in height: and
- Noise rating of 83dB(A) at operators ear, 81dB(A) at 1 meter, 70dB(A) at 7 metres.

Any out of hours works will be undertaken in accordance with the requirements of the NVMP.

3.2.2 Material Haulage and Delivery

The effective management of haulage operations is necessary to minimise the impact on the road network. The construction methodology is to reuse suitable cut material for fill to reduce the need for transportation.

Material not suitable to be reused or oversupply will be removed and transported to approved facilities off-site. Where practicable, trees will be mulched and stockpiled on-site for landscaping works.

Accesses to site shall be designed and upgraded in accordance with G10 to provide safe access and egress in both directions.

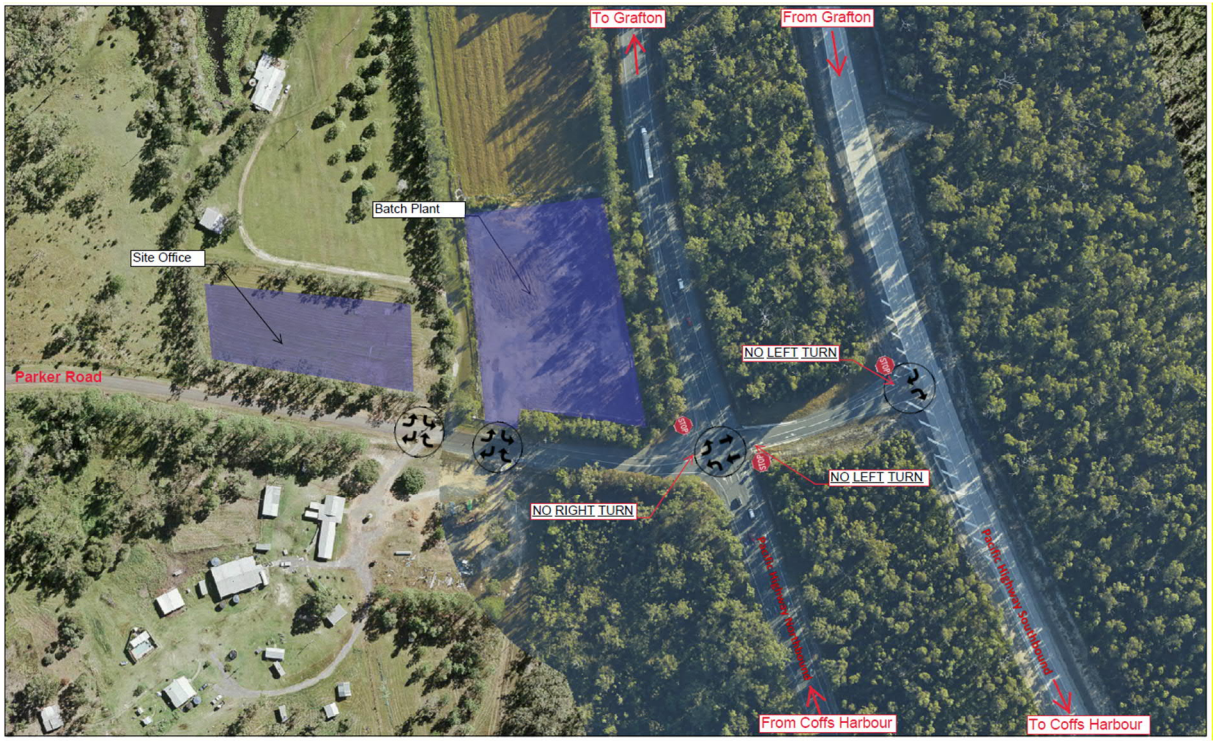
Indicative peak construction traffic volumes (during concrete paving) of 500 heavy vehicle movements per working day are expected, accessing Parker Rd batch plant and the construction site via the Pacific Highway.

Importation of drainage blanket materials, , scour protection rock, concrete mix consituents and pavement materials will be sourced from local quarries. Not all material will be supplied to the site at concurrent times due to the sequencing of works. Imported material shall be supplied from local quarries such as McLennan's Quarry west of Grafton on the Gwydir Highway. For material supplied from McClennan's Quarry haulage vehicles will exit the

quarry onto the Gwydir Highway and continue onto the Pacific Highway and access the work site from the north.

All other construction materials including concrete and culvert components will be transported along the Pacific Highway and will access the site form both the north and south. Designated access gates will be established at all ancillary sites as shown in Figure 1 below along with culvert sites to allow the safe access and egress of heavy vehicles.

Figure 1 Site Compound and Batch Plant VMP



The local roads that intersect the Pacific Highway throughout the project site are predominantly rural roads servicing rural residential allotments see Table 3-4. Two of these roads, namely Kungala Rd and Parker Rd link to the Orara Way to the west.

Prior to works commencing a dilapidation survey will be undertaken of the existing road network where construction traffic will be undertaking movements.

Internal off road haulage routes on site will be determined by the site management team and updated Vehicle Movement plan will be provided to all drivers with each change in route. The site haul roads shall be clearly demarcated on site with haulage speed limit of 40km per hour applying to all vehicles.

Table 3-4 Local Roads

Chainage	Road and Location	Town or location serviced	Population and/or number of dwellings	Traffic Volume	Seasonal Change
20350	Kungala Rd	Kungala and links to Orara Way	Less than 250 population	Low	No

23530	Parker Rd	Wells Crossing and Connect to Orara way	Less than 350 population	Low	No
25300	Bald Knob Tick Gate Rd	Private property & State Forest	2 Residences	Low	No
28000	Franklins Rd	Calamia and links to Wooli Rd	Less than 5 dwellings	Low	No

3.2.3 Access

All access to site will be designed and constructed to meet Roads and Maritime Specification G10 annexure A3. The noted acceleration and deceleration lengths are noted below

ACCELERATION AND DECELERATION LENGTHS

DESIGN SPEED	Level Grade		3% to 4% Upgrade		5% to 6% Upgrade		3% to 4% Downgrade		5% to 6% Downgrade	
	ACCEL	DECCEL	ACCEL	DECCEL	ACCEL	DECCEL	ACCEL	DECCEL	ACCEL	DECCEL
60km/h	125m	55m	165m	50m	190m	45m	90m	65m	75m	75m
80km/h	235m	100m	305m	90m	355m	80m	155m	120m	130m	135m
100km/h	450m	155m	585m	140m	720m	125m	270m	185m	225m	210m

Parker Rd has been identified as an auxillary site (satellite compound, crib facility, laydown area, batch plant). Construction accesses to Parker Rd will be provided from the southbound carriageway utilising the existing fast lane, and the interim northbound carriageway. The temporary Parker Road connection, northbound u-turn facility and southbound u-turn facility are also likely to be utilised as site access locations.

Construction access to the Parker Rd satellite compound is anticipated to generate approximately 240 light vehicle movements per working day, along with minimal (20) heavy vehicle movements. Anticipated traffic movements to the Parker Rd Batch Plant are stated in 3.2.2 Material Haulage and Delivery

The main project compound will be located at Rediger Close, Halfway Creek. Located here will be RMS and Lendlease site offices, refuelling bay, material testing facility and mechanical workshop. Access to Rediger Close will be provided by the southbound carriageway from the u-turn facility to the south of Rediger Close, northbound access will be via the existing northbound turn lane into Rediger Close.

Construction access to the Rediger Close compound is anticipated to generate 250 light vehicle movements per working day, along with minimal (10) heavy vehicle movements.

A site access plan will be provided to all delivery drivers prior to arrival on site and internal Vehicle movement plans will be communicated at site inductions and changes notified at each days pre-start. The site access locations will be constructed to minimise dust and dirt tracking onto public roads including the use of rumble grids and sweeper trucks.

3.3 Impact Assessment

Potential impacts associated with Project construction traffic include but are not limited to the following:

- Disruption to the operation and safety of the surrounding road network;
- Interruption of access to community facilities or private properties;
- Disruption to commercial properties
- Disruption to public transport, pedestrians and cyclists;
- Damage to road bridges;
- Noise;
- Congestion and delays; and
- Road safety issues.

These potential impacts are assessed in the following sections.

3.3.1 Environmental Risk Assessment

The identification of the significant environmental aspects and impacts that could eventuate during the Project is central to the selection of appropriate environmental management measures and safeguards.

A Project Environmental Aspects and Impacts Register has been developed in accordance with the risk assessment process detailed in Section 4.1 of the CEMP. It identifies Project construction environmental risks and provides each risk with a risk ranking (likelihood and consequence). For each risk, appropriate management and mitigation measures are then identified. Table 3-5 summarises the primary environmental risks associated with traffic during construction of the Project, and the residual risk ranking (after mitigation).

Table 3-5 Environmental Risks Associated With Traffic

Aspect	Risk Rating	Key Impact	Mitigation	Risk Rating (after mitigation)
Traffic entering / leaving site	High 12	Increased heavy vehicle movement impacting regional traffic network	Construction traffic addressed in VMP. Intersections upgraded and construction accesses provided as per G10	Low 3
Land use during construction and operation	High 17	Damage to private or public infrastructure	VMP to be clearly communicated to All drivers Dilapidation survey conducted prior to use Monitoring and maintenance as required Restoration to pre-construction condition at completion	Med 9

Aspect	Risk Rating	Key Impact	Mitigation	Risk Rating (after mitigation)
	Med 9	Access to private properties	Any requirements for amended access to premises will be included in the detailed temporary works design for each traffic stage	Low 3
Land lease and acquisition	Med 9	Use and access to land causing grievance to land owner.	Our community relations team will communicate all stages to affected residents	Low 3
Noise	High 13	Community complaints, nuisance	Community engagement and controls as per the CNVMP	Low 5
Unapproved access to private properties	High 11	Community Complaints	Rigorous enforcement of the site VMP by Construction team	Low 3
Changes to traffic and transport	High 13	Negative impact on road users, residents and businesses in the local area due to speed restrictions, lane closures, line marking alterations, intersection changes and other traffic impacts.	"*Lendlease Engineering*" operates with a 'no surprises' strategy and is committed to consulting and informing the community on the progress of construction works, traffic changes and environmental issues. "*Lendlease Engineering*" will follow the procedures for community information that are detailed within Community Action Plan.	Low 5
Oversize Vehicles	High 17	Temporary traffic arrangements not suitable for oversize vehicles to pass through site	Traffic management plans to take into account oversize vehicles. Haulage contractors to be notified of all changes and details of over size loads to be communicated to site team.	Med 10
Disruption to bus services and relocation of bus stops	High17	Community complaints, school children at risk	Early consultation with bus companies and schools, increased awareness of construction team Regular consultation with school bus operators Traffic alerts to be issued to emergency services and all school bus operators	Med 10

Note: Refer to CEMP for Risk Assessment details

4 Implement Controls and Mitigation Measures

For specific details of measures referenced in this section refer to the Traffic Management Plan. Where this section conflicts with the TMP, CAP and HSMP this section will be overwritten by that relevant document.

4.1 Road Network Impact

Construction traffic from workers and heavy vehicles associated with delivery of equipment and materials and the bulk haulage operation will access the site using the Pacific Highway. The traffic volumes and frequency of movements will vary with the time of day and the stage of construction. Most light vehicle trips will generally occur in the AM and PM peak periods. Bulk haulage operations will continue throughout the day. The peak intensity and number of movements will be managed to occur outside of the AM and PM peak periods.

4.2 Access to Ancillary Facilities

Access to ancillary facilities will be via dedicated access points which shall be identified in the Ancillary Facility Management Sub-Plan. Any after hour works or deliveries to these sites will be in accordance with the CNVMP and appropriate Traffic Control Plan.
Traffic movements, parking, deliveries, unloading and loading associated with ancillary facilities would be managed in accordance with the CNVMP, and Appendix D OOHW Procedure. This process ensures that Traffic movements, parking, deliveries, unloading and loading associated with ancillary facilities are compliant with MCoA B16 and B17.

Delivery drivers and haulage contractors will be informed of the need to minimise impacts to residents and road users.

4.3 Access to Utilities, Community Facilities and Private Properties

Lendlease Engineering will ensure that access to properties will be maintained except by prior agreement with the residents or businesses. This shall be facilitated by means of design of access changes as part of the Temporary Works Design as required, and onsite controls such as enhanced delineation, traffic control and/or worksite staff to escort vehicles through the works during the day and a clearly delineated travel path outside of works hours.

Works which will affect property access will not proceed until adequate alternative access is provided to the satisfaction of the Principal. The residents or businesses whose property access is affected by the works will be notified at least 48 hours in writing prior to commencing work which affects the use of property accesses. The notification will contain information on their concurrence for the alternative access arrangements.

4.4 Public Transport, Pedestrians and Cyclists

This project is not expected to have any significant impact on public transport, pedestrians and cyclists. Existing access arrangements and services to other transport modes will be maintained comparable to the existing situation. Continual consultation with bus companies will be undertaken as a minimum every 2 months.

Adequate provision for pedestrians and cyclists will be made for current movements along the Pacific Highway and intersecting streets. Safe Pedestrian and cyclist movements will be included on the Traffic Control Plans and the Vehicle Movement Plans (VMP). Alternative routes are not anticipated to be required for safe pedestrian or cyclist provisions during construction.

Where a temporary relocation of a bus stop is required, the bus operators will be contacted and consulted on the new location at least two months prior to provide information and notice as to when and where the bus stop will be relocated prior to any bus stops being . *Lendlease Engineering* shall also provide safe access for passengers to and from the bus stop, safe standing areas and provisions for parked cars near temporary bus stop.

The expected locations for which minimal impact may be had on school bus stop locations are for Parker Road. The relocation of bus stops will be communicated to the Schools and all stakeholders.

Construction staff will be reminded at morning pre-starts to avoid where possible and be vigilant when operating in the area.

4.5 Road Safety

An assessment of the safety of the road network to be used during construction will be undertaken, and the existing network is able to ensure adequate levels of safety are maintained during construction. Consultation with Roads and Maritime and Council will be undertaken to ensure road safety has been addressed. Prior to the implementation of long-term TCP's for temporary work, arrangements will be made for the Road Safety Auditor to carry out an inspection of the traffic control measures in both daytime and night time conditions within 24hours of the TCP being implemented. If measures prove not to be fully effective, then in consultation with the Road Safety Auditor and the Principal the TCP will be revised without delay and the changes implemented. A report from the Road Safety Auditor will be submitted to the Principal with 7 days of the implementation of the TCP. This report must also include findings from the Road Safety Auditors inspections, and any changes implemented to long-term work TCP's.

4.6 Traffic Management Measures

Where not outlined in the TMP, Project management and mitigation measures for traffic impacts during construction are outlined in this Plan. These management and mitigation measures have been developed to ensure compliance with the relevant EIS commitments, legislation and due diligence requirements.

An overview of the approach to traffic management for the Project is provided in the following sections of this Plan.

4.6.1 Traffic Control Plans and Vehicle Movement Plans

Traffic Control Plans (TCPs) will be developed for all work locations where there is any impact on the road network and road related areas and it is necessary to provide traffic control for either vehicles or pedestrians on the road network. The TCPs will illustrate the signs and devices that will be installed to warn traffic, pedestrians and cyclist around or past, or if necessary through, the work site.

A TCP will only be prepared by a person qualified in the "Design & Inspect Traffic Control

Plans" course (i.e. holds a current Orange Card). All TCP's will be submitted to the Principal in accordance with Roads and Maritime Specification G10.
Within 24 hours of TCP being implemented, an inspection of the traffic control measures will be undertaken by a qualified Road Safety Auditor. Ineffective measures will be redesigned to provide optimum performance. A report will be submitted to the principal within 7 days of the implementation.

Vehicle Management Plans (VMPs) will be developed to manage all construction and visitor traffic movements within actual construction zone, including access and egress form this area..

4.6.2 Traffic Management

The Project will be constructed with the aim of ensuring that the performance of intersections during construction operate as a minimum to the levels that existed prior to the commencement of construction for the duration of the works.
Traffic signage will be provided for the duration of the construction period, as follows:

- Warning signs to advise road users in advance of work zones and surrounding intersections; and
- Safety signage to warn construction vehicle drivers of the potential presence of cyclists and pedestrians. Speed reduction measures (including speed limits) will be installed in the construction compound areas and along the internal access/haul road Appropriate temporary traffic controls will be installed at access points, and may include:
    - Truck turning ahead signs in advance of access points;
    - Reduced speed zones on the approaches to access points and turning locations;
    - Traffic Controllers at access points to facilitate entry and exit movements;
    - Road shoulder closures to provide deceleration and acceleration lanes;
    - RMS approved safety barrier systems with approved end treatments;
    - "No Entry" and "Construction Vehicles Only" at site entry and exit points; and
    - Out of hours closures for line marking, tie-ins etc.

Vehicles to be used during construction will be parked within the Project area. No parking will occur outside designated areas unless the area is approved for use.

4.7 Road Safety

A safety assessment of the road network to be used during construction will be been undertaken by a suitably qualified person in accordance with G10 and safety deficiencies identified. The existing road network is able to ensure adequate levels of safety are maintained during construction.

Typically the most hazardous movement for construction vehicles occurs when vehicles are entering or exiting the construction site to and from the external road network. The management of construction access will include the following:

- Installation of truck warning signs on temporary construction access road;
- During busy construction periods, traffic Controllers may be required at access points to facilitate entry and exit movements;
- Where practicable, heavy vehicles will avoid using local roads;
- Rolling Blocks may be utilised to assist heavy vehicles entering/exiting the site or if a hazard exists on the Highway and needs to be removed;
- All construction access designed to meet acceleration and deceleration lane requirements outline in G10, and

- The above measures will be undertaken in accordance with Roads and Maritime requirements.

4.8 Parking

Construction and staff vehicles will predominantly be parked within the worksite. There will be 40 allocated light vehicle parking spaces available at the Main Compound Site and allocated parking spaces will be established at each ancillary facility as they are developed. Parking will be clearly signed and a reverse parking only policy in operation. Area for parking up of machinery overnight/weekends will be designated in a suitable location away from any drainage lines. The areas will also be made secure. A vehicle speed of 10km/hr will be adopted in parking areas

Exceptions to this rule include traffic control vehicles, survey vehicles, maintenance vehicles. Where a vehicle is parked adjacent to the highway a risk assessment must have been performed. Any parking must not impact the trafficable lanes. Flashing lights will be deployed at all times.

Parking on roadside on minor roads will be addressed in each days prestart and will be minimised wherever possible. Parked vehicle are again not permitted to impact trafficable lanes and must have flashing lights deployed.

4.9 Road Occupancy Approvals

Any works requiring access to the Roads and Maritime network will be undertaken in accordance with all Roads and Maritime requirements. Road Occupancy Licences (ROLs) will be approved by Roads and Maritime to specify TCP requirements. This includes approval for times and days when each TCP can be operated. Approved ROLs will accompany the TCP for which it applies to during the operation of each TCP, therefore avoiding any confusion around implementation of TCPs.

4.10 Road Monitoring and Maintenance

Road Dilapidation Reports will be prepared for any roads that do not form part of the contract prior to commencement of construction. A copy of the relevant report will be provided to Council or Roads and Maritime as relevant.

The report will assess the current condition of the road and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the Project. The report will be submitted to the relevant road authority(ies) for review prior to use of the roads for construction.

Following completion of construction, a subsequent report will be prepared to assess any damage caused by the construction of the Project.

Lendlease Engineering will ensure that any measures to restore or reinstate roads affected by the construction of the Project are undertaken in a timely manner at the full expense of *Lendlease Engineering*. Pavement failures arising from construction traffic that result in safety concerns for other road users, will be repaired in accordance with the relevant road authority's specifications no later than the times stipulated in G10/D

4.11 Driver Safety

All drivers employed on the Project, whether direct employees or subcontractors have a

responsibility to drive safely, in accordance with the Australian Road Rules and any other directives issued on the Project. Drivers will exercise care at all times. Special care will be taken when exiting and entering traffic flows and whilst travelling within the construction site. Drivers associated with the Project will be briefed on the Driver Code of Conduct

A Vehicle Movement Plan will be developed and updated as required for the construction of the worksite. The VMP will identify the heavy vehicle and light vehicle entry/exit points, UHF frequency and gate numbers. The detailed temporary works design for the works will include the following items (as required) to ensure the safe and effective operation of the VMP:

- Detailed design of temporary construction entry and exit intersections in accordance with the Road Design Guide
- To mitigate any queuing onto public roads, designated construction accesses will allow all construction turning movements from the highway to have priority, be unopposed by public or construction traffic and be free flowing given the existing highway is in a separated carriageway configuration
- TCPs, to ensure the safe and effective operation of the VMP

For specific aspects of the construction works, VMPs may also be generated e.g. for the arrival of a specific large item of plant or equipment that requires a much larger access. The following generic hazards, along with the hazards identified in the Risk Assessment Workshop will be consider when preparing the VMPs:

- Queued Traffic
- Speeding Traffic
- Poor visibility
- Pedestrians and cyclists
- Bus Stops
- Traffic management devices

Communication of the VMP for the daily construction activities will be included in the daily Pre-starts. VMPs will also be communicated to all supplier delivery drivers e.g. concrete or quarry delivery trucks, to ensure the safe entry and exit from the site of all delivery vehicles.

5 Consult and Communicate

5.1 Stakeholder Consultation

A Community Communication Strategy has been developed to address Project specific process and controls. Additionally a Community Action Plan will be implemented on the project. Where this section conflicts with the TMP, Community Action Plan (CAP) and Health and Safety Management Plan this section will be overwritten by that relevant document.

5.2 Stakeholder Engagement

The relevant stakeholders will be consulted at appropriate times during construction of the Project. Any feedback from stakeholders will be taken into consideration in the development and implementation of Traffic Control Plans.

An important aspect of this plan will be the consultation and community strategies to be applied for managing traffic. The main objectives of the traffic communications strategies will be to:

- Provide timely, accurate and comprehensive traffic and transport information to potentially affected road users;
- Influence road users to abide by reduced speed limits, if any, through construction areas;
- Allow for and accommodate community feedback regarding traffic and transport management issues;
- Minimise and manage traffic impacts to protect local residential and business amenity; and
- The community consultation will include the following traffic management related consultation:
    - Signposting and advertising to warn motorists of proposed road closures, traffic diversions and other temporary traffic arrangements;
    - Project newsletters will be distributed to the local residents notifying of any changes in traffic conditions including temporary road/lane closures, changes in speed limits and where heavy vehicles will be turning. Notifications will be developed in consultation with Roads and Maritime;
    - Letterbox drops to local residents if they will be impacted by any property access restrictions; and
    - Residents identified as potentially impacted by property access restrictions will also be consulted on a one-on-one basis through face to face meetings, letters and general notifications.

5.3 Notification to Emergency Services

Emergency services need to have up to date information about changed traffic conditions and potential delays they may experience when travelling around the construction work areas. Emergency services will be regularly consulted about proposed changed traffic conditions.

Emergency services will be notified as per the TMP and CAP prior to implementing any Traffic Control Plans. Consultation will include letters notifying of the potential changes in traffic conditions and the offering of a briefing meeting with key project team members. Ongoing consultation will include but is not limited to, notification letters and newsletters, Key contacts for the project are identified in Table 5-1.

Table 5-1 Key Contacts

Position	Company	Name	Phone	Email
Project Manager	*Lendlease Engineering*	Mike Curry	0419 714 448	mike.curry@lendlease.com
Traffic Control Site Manager / Senior Project Engineer	*Lendlease Engineering*	Greg Lowcock	0414 210 465	Greg.lowcock@lendlease.com
General Superintendent	*Lendlease Engineering*	Daryl Faithful	0424 019 193	daryl.faithful@lendlease.com
Alternate contact as Traffic Control Site Manager (Project Engineer)	*Lendlease Engineering*	Adam Schubert	0417 414 349	adam.schubert@lendlease.com
Authorised Delegate	RMS	Luke Fluetcher	0408 612 469	luke.fluetcher@rms.nsw.gov.au
Surveillance Officer	RMS	tba		
Transport Management Centre	RMS	-	131 500 1800 637 5000	-
Clarence Valley Council	-	-	02 66430200	
RMS Traffic Manager	RMS	Dan Wills	0428 071 882	-
Police	-	-	Emergency: 000	-
Ambulance	-	-	Emergency: 000	-
Fire brigade	-	-	Emergency: 000	-

5.4 Training and Awareness

As stated in the CEMP, all Project personnel, subcontractors and visitors will receive training into *Lendlease Engineering* environmental obligations during the Project induction, toolbox talks and specific training.

All Project personnel will undergo a general Project induction prior to commencing work with *Lendlease Engineering*. This will include a traffic management component to reinforce the importance of traffic management issues and the measures that will be implemented to protect the environment and community.

All Project personnel will be briefed and provided information on the preferred haulage routes including U-turn facilities and access to and from the Project site. This will include those intersections where vehicle movement restrictions will be applied to specific movements or vehicles types.

Site inductions and toolbox talks will highlight the specific environmental requirements for activities being undertaken at each worksite, which will include relevant traffic management matters and out of hours works.

All Project personnel and sub-contractors will be briefed on applicable speed limits and signage throughout the site in morning pre-start meetings with all Project personnel and subcontractors before construction commences. Furthermore, this information is included in the *Lendlease Engineering* induction, which is a pre-requisite for all persons entering site.

In the event that Project personnel or sub-contractors are observed to ignore permitted and sign-posted speed limits, or a complaint is received in relation to a speeding issue, a Hazard Report is raised and the matter is investigated. Should the investigation determine that speed limits were not adhered to, the responsible persons (or sub-contractor) will be subject to a disciplinary process.

6 Manage Incident

6.1 Incident Management Framework

The General Superintendent and Traffic Control Site Manager (TCSM), identified in Table 7 are the nominated contact persons for after hours maintenance/emergency callout 7 days per week. The TCSM and the General Superintendent will co-ordinate the works to:

- Rectify any damage to safety barriers, signs, delineation etc, to make the roadway safe following a traffic accident
- Promptly remove/reposition traffic control devices and/or remove debris that interferes with traffic flow (under the direction of Roads and Maritime traffic commander, Police or the Principal)

Prior to taking possession of site *Lendlease Engineering* will prepare the Traffic Incident Management Plan in consultation with the Roads and Maritime TMC and the Clarence Valley Council, and emergency services Police, Ambulance, Fire. This plan will contain:

- The process to be followed in the event of a Traffic Incident
- Details of the Site Contacts available 24/7 in the event of a Traffic Incident
- Details of the site specific person to deal with issues related to clearing the Pacific Highway or side roads
- List of the plant that will remain available onsite at all times for moving portable concrete safety barriers
- Nominate a number of barriers, signs etc. and their storage location/s that will be held spare onsite to allow quick replacement in case of traffic accident damages of such.
- Contact details of the Roads and Maritime TMCs Operation Room so the site person has details on hand to contact the TMC immediately if a traffic incident occurs during working hours.
- Contact details of the Principal, Emergency Services Police, Ambulance, Fire, and Clarence Valley Council.

A register of records of communication with the Roads and Maritime TMC and Police of all traffic incidents attended.

In the event of a traffic incident occurring within the limits of work, after notifying RMS, *Lendlease Engineering* will record our knowledge of the facts, provide photographs in accordance with G10 and forward a report to the principal with 2 days of the occurrence. An Traffic Incident Management Sub-Plan will be developed and form part of the Traffic Management Plan.

7 Review and Monitor

The Environment, Community and Traffic Control Managers will be responsible for initiating any required change to this Plan.

Where this section conflicts with the TMP, CAP(Community Action Plan), CEMP and HSMP this section will be overwritten by that relevant document. This document will be reviewed and monitored in accordance with the Traffic Management Plan.

7.1 Traffic Management Monitoring, Inspection and Reporting

Inspections and associated records of activities and areas with the potential to impact traffic will occur for the duration of the Project in accordance with Section 6 of the Traffic Control at Work Sites Manual (RMS, 2018) and as detailed in Table 7-1.

The Foreman will inspect traffic routes and protection measures on a daily basis and report any issues. Monitoring of traffic activity associated with the Project will also be undertaken on an ongoing basis and as required.

Targeted inspections will take place during substantial construction activities, if deemed necessary. These will be documented through the weekly environmental inspection.

Table 7-1 Traffic Management Monitoring, Inspection and reporting program

Activity	Area	Resources	Responsibility	Frequency	Report to
Routine Monitoring of Existing Highways	Within Project Boundaries defined by extent of works	Site Report/Traffic Inspection	TCSM/Delegate	Daily/ Weekly	Project Manager
Inspect traffic routes and protection measures within the Project Area	At interface with public roads	Site Report / Diary	Foreman (or delegate)	Daily	Project Manager / Site Environmental Coordinator
Effectiveness of speed reductions	At areas suitable for influencing speed of motorists entering the reduced speed zone	Radar Activated Speed Sign (RASS)	TCSM/Delegate	Weekly	Principal

7.2 General Monitoring, Inspection and Reporting

General site environmental monitoring will be undertaken on a regular basis in accordance with the process outlined in the CEMP and the monitoring program outlined in the CEMP.

7.3 Non-Conformances

Any environmental non-conformances (i.e. not meeting nominated environmental objectives or targets; not complying with environmental legislation or other requirements; and/or not complying with any Environmental Management System requirements) will have corrective and/or preventative actions identified and implemented, as described in the CEMP. Any identified non-conformances will be recorded through the projects non-conformance reporting process.

7.4 Auditing

The implementation of this CTAMP will be audited in accordance with the Quality Management Plan and CEMP.

7.5 Review and Update to this Plan

The Environment Manager, or delegate, will be responsible for initiating any required changes and updates to this Plan in accordance with the QMP and CEMP.

Updates to this plan may be necessitated as a result of changes to legislative requirements, new or revised permits or licences, scope or methodology changes, audits/inspection results, client requirements, revised risk profiles, complaints or requests from the client/community or stakeholders, changing business objectives and targets and/or changing community perceptions and values.

Any modifications to this plan that affect the implementation of mitigation measures on-site will be communicated to the construction team via toolbox talks.
The following will be used to trigger review of the CTMP specifically:

- A request from the principal to review traffic measures
- Feedback provided though our community liaison representatives during standard consultation process.
- Where a request is made from the public to make available pedestrian access across the site, in which case, an access plan may be required to address this.