Lend Lease

Traffic Management & Safety Plan

Pacific Highway Upgrade – Oxley Highway to Kundabung

23 September 2014

Document Control

Title:	Traffic Management & Safety Plan		Document No/Ref:	
General Description:	Traffic Management and Safety Plan			
Document Path:				
Design Lots/ Disciplines	n/a			
	Name	**Position**	**Date**	**Signed/Approved**
Originator(s)	Nick Sarraf	Project Manager	11/09/13	
Review	Ian Old	Safety & Traffic Manager	23/09/14	
Approval	Mark Vella	Project Director	25/09/14	

Document Revisions

Rev No	Date	Issue/Description	Approved
1	11/9/13	Prepared for Tender submission	
2	18/3/14	Updated for post award submission incorporating SWTC Appendix 43.2 requirements	
3	28/3/14	Updated following internal review for issue to RMS and PV	
4	02/06/14	Revisions sent to agencies and Councils	
5	17/07/14	Updated with Council comments	
6	14/08/14	Incorporation of RMS feedback and consultation arrangements with Hastings Council	
6b	15/08/14	Impacts on two local roads added	

Contents

Appendices

Acronyms used in this Plan

The following is a list of acronyms commonly used throughout this Plan:

Acronym	Detail
AS	Australian Standard
CEMP	Construction Environmental Management Plan
Ch	Chainage
D&C	Design and Construct
DP&I	Department of Planning and Infrastructure
ER	Environmental Representative
G10	RMS D&C Specification G10 “Traffic Management”
JV	Joint Venture
KPI	Key Performance Indicator
KRA	Key Result Area
LoW	Limit of Works
MCoA	Minister’s Conditions of Approval
OH2K	Oxley Highway to Kundabung
PM	Project Manager
PMP	Project Management Plan
PV	Project Verifier
RMS	Roads and Maritime Services
ROL	Road Occupancy Licence
SMZ	Select Material Zone
SWMs	Safe Work Method Statement
SWTC	Scope of Works and Technical Criteria
SZA	Speed Zone Authorisation
TCAW	RMS Traffic Control at Worksites Manual
TCP	Traffic Control Plan
TMC	Traffic Management Centre
TMP	Traffic Management Plan
TMSP	Traffic Management and Safety Plan
VMP	Vehicle Movement Plan
VMS	Variable Message Sign

1.0 Introduction

1.1 Purpose & Application

The purpose of this Traffic Management and Safety Plan (TMSP) is to demonstrate how Lend Lease will comply with the traffic management and safety requirements of the Deed to the satisfaction of the NSW Roads and Maritime Services (RMS) and all other relevant stakeholders and authorities.

In addition, this plan provides information on how the project will be constructed around traffic through the staging methodology described in Section 3. The traffic staging methodology has been developed to achieve three key objectives during the project delivery phase. These are:

- Minimise the impact of construction works on the road user;
- Early completion of local road improvements; and
- Simplicity and flexibility of traffic/construction staging.

This TMSP has been prepared as a requirement of, and in accordance with Appendix 21section 21.9 of the SWTC and is consistent with the requirements set out in the Minister's Condition of Approval (MCoA) B31(a). This condition establishes the requirements for the development of the Construction Traffic Management Plan to manage disruptions to the highway and local traffic movements as a result of construction traffic associated with the project.

The traffic staging descriptions and drawings attached to this TMSP detail the sequence and extent of temporary traffic diversions and intersection layouts planned for the construction of the Works from start to completion.

1.2 Plan Objectives

The traffic management objectives of Lend Lease Engineering (Lend Lease) is to minimise disruption to road users as well as aiming to maintain incident-free access to the state and local road network for businesses, commuters and residents while enabling the works to be constructed in a safe manner by Lend Lease.

Lend Lease will undertake all works in strict accordance with the requirements of all RMS approved traffic management plans as per the obligations under the Deed, in particular, RMS Specification G10. Lend Lease will keep all affected stakeholders informed of all intended changes to traffic conditions as per its requirements under the provisions of SWTC Appendix 21.7 – Community Involvement Plan.

The TMSP will ensure that:

- There is continuous, safe and efficient traffic movement;
- The traffic capacity of the state and local road network is maintained;
- Pacific Highway delay management strategies are met;
- There is timely, comprehensive dissemination of information to the community;
- Construction staging and changes to traffic management are seamless;
- Lend Lease operates a traffic operations, maintenance and incident management capability to ensure compliance with the Deed requirements; and
- Lend Lease adopts a cooperative and client-focused approach to its resources.

1.3 Overview & Contractual Requirements

The TMSP has been developed to address the minimum requirements of Appendix 21.9 of the SWTC and its application. Lend Lease will comply with the TMSP to enable it to fulfil its traffic management and safety obligations under the Deed. The TMSP is also structured to satisfy those planning requirements emanating from:

- Representation reports from environmental planning submissions;
- Minister's Conditions of Approvals (MCoA) pertaining to traffic management (B21, B22, B31 and C23);
- RMS Statement of Commitments pertaining to Traffic Management (T1 to T7);

- RMS D&C General and Technical Specifications (particularly G10);
- Relevant Australian Standards;
- NSW Roads Regulations:
- Speed Zone Authorisation (SZA) conditions of approval;
- Road Occupancy Licence (ROL) conditions of approval; and
- RMS Traffic Control at Worksites Manual (June 2010).

Legislation relevant to traffic management also includes the Environmental Planning and Assessment Act 1979 (EP&A Act), under which this project approval was granted. Relevant provisions of the EP&A Act are explained in the register of legal and other requirements included in Appendix A2 of the CEMP.

The TMSP will be further developed and updated with any relevant changes which may occur during the design process as well as any subsequent amendments which may occur during the process of construction. It will also be updated to address any issues that the currently approved document revision does not address and also to avoid the recurrence of any compromise to the safety of road users and the public.

Lend Lease acknowledges that it must not commence any work on the Construction Site until the revised TMSP has been submitted to the RMS Representative and the time specified in clause 3.8 (d) (ii) of the Deed has expired without the RMS Representative having issued notice under that clause during that time.

Table 1-1 below shows how this TMSP addresses the minimum requirements of the Scope of Works and Technical Criteria (SWTC) Appendix 21 section 21.9.

Table 1-1: RMS SWTC Requirements

RMS Reference	Requirement	TMSP Reference
SWTC App. 21.9 (e) (i)	The Traffic Management and Safety Plan must address, as a minimum, the key traffic management and safety issues, including: Safety and amenity of road users and the public;	1.3.1, 3.1, 4.7, 4.8, 5.0
SWTC App. 21.9 (e) (ii)	Site security, site access and signage;	4.1, 4.4, 4.10
SWTC App. 21.9 (e) (iii)	Project identification, including signs to acknowledge government funding and management;	4.9
SWTC App. 21.9 (e) (iv)	Traffic and road user delay management;	2.5, 4.3, 4.11, 5.0
SWTC App. 21.9 (e) (v)	Watercourse and road overpass naming;	4.4.1
SWTC App. 21.9 (e) (vi)	Numerical identification of structures;	4.4.1
SWTC App. 21.9 (e) (vii)	Information signage, distance information and advance warning signs;	4.4.1
SWTC App. 21.9 (e) (viii)	Speed limit signage;	4.4.1, Appendix B
SWTC App. 21.9 (e) (ix)	Lighting;	3.1, 4.7
SWTC App. 21.9 (e) (x)	Traffic switching arrangements and procedures;	3.1, 3.2, 3.3, Appendix F
SWTC App. 21.9 (e) (xi)	Provisions for special events;	4.11
SWTC App. 21.9 (e) (xii)	Provisions for maintenance;	2.2, 4.2
SWTC App. 21.9 (e) (xiii)	Frequency of inspections;	2.4, 2.7, 3.3, 4.6, Appendix F
SWTC App. 21.9 (e) (xiv)	Implementation and permanent removal of all temporary traffic control arrangements including redundant pavement markings;	4.6
SWTC App. 21.9 (e) (xv)	Emergency and Incident Response Plans.	2.2, 2.3, 4.3, Appendix E

RMS Reference	Requirement	TMSP Reference
SWTC App. 21.9 (f)	The Traffic Management and Safety Plan must address the construction staging for intersections. The construction staging must detail for each and every construction stage the intersection layouts and capacities, minimum design standards, lighting and road safety audit requirements.	2.4, 2.7, 3.1, 3.2, 3.3, Appendix A, B and C
SWTC App. 21.9 (g)	The Traffic Management and Safety Plan **must** contain a summary of traffic management responsibilities of all relevant construction and maintenance staff relating to **all** aspects of construction and maintenance at all stages of the Contractor's Work, including Landscaping Maintenance.	2.4, 2.7, 3.0, 3.1, 3.2, 3.3, Appendix A, B and C
SWTC App. 21.9 (h)	The Traffic Management and Safety Plan must address proposed changes to traffic flow arrangements, road or property access temporary closures, capacities, and facilities such as over taking lanes, rest areas, shoulders and parking areas on the existing, local and regional roads, notification requirements for various Authorities and advance signposting and advertising notification requirements that would be undertaken by the Contractor.	2.2
SWTC App. 21.9 (k)	The Traffic Management and Safety Plan must identify the methodology for minimising traffic and transport impacts on Local Roads, villages and towns.	3.2, 4.4, 4.5, 4.7, 4.8, 4.10, 4.11, 5.0 and Appendix C

1.3.1 Key Issues

The key elements of Lend Lease's staging proposal involve:

1. The businesses and properties within the Sancrox estate will always have access off the Pacific Highway throughout the works although at some stages this will be either directly via the Pacific Highway, via the Oxley Highway or via the new overbridge at Sancrox Road from either the eastern or western sides (but not both at all times). Staging of the works at the Sancrox Road area is dependent on access constraints as stipulated in Exhibit B of the Project Deed. The construction programme reflects these dates;
2. Early construction of a median crossover at approximately Ch 600-Ch750 to switch the northbound (NB) traffic onto the existing southbound (SB) carriageway in a contraflow arrangement at the southern tie-in is integral to the staging of the works. Similarly the cross over and switch at Ch 4400 is integral to completing the Stage 2 portion of the works in this area south of Fernbank Creek. This will be a 60 km/h crossing due to adverse cambers;
3. Where practical, access from the main alignment at Fernbank Creek will be used. Where this is not practical access to the south of the Hastings River will be from Glen Ewan Road and may include:
    - Haulage of fill with truck & dogs
    - General site access, as well as direct access to the Hastings River bridge site compound/laydown area.
    - Deliveries
    - Heavy oversize deliveries such as steel casings for bridge piles, super-T's and other precast concrete elements
    - Delivery of heavy earthmoving plant and cranes

    Glen Ewan Road is a gravel road for local properties and as such is not heavily used. After consultation with the local Council Lend Lease are submitting a proposal to bitumen spray seal Glen Ewan Road to 5 – 6m width up to the construction site entry. This will likely involve reworking the shoulders and topping them up as well as fixing existing potholes where required.

    Negotiations are continuing with Council on this proposal.

    Temporary work signs, truck entry/exit signs will be placed at the intersection, consideration will also be given to use a water cart to suppress any dust issues. The intention is to start as early as practicable to enable commencement of soft soil treatments within the flood plain areas and construction of bridgeworks;

4. Access on the northern side of the Hastings River will be via the main compound based at the Sancrox stockpile site as described in Exhibit B of the Deed (the Site Access Schedule) as Sancrox Work Zones 2 and 3. The proposed main site compound, workshop area and one of the batch plant sites (more than one will be required for the project) is located at this point as it is relatively central being about one third the way along the project making it practical for concrete haulage. This is RMS owned land and will have suitable access constructed by the Sancrox Early Works Contractor. It has direct access to both the new carriageways and the existing highway. It is also well situated near Port Macquarie for access to services available facilities (i.e. local businesses, hotels, airport and medical).
5. At Blackman Point Interchange, a key to the traffic staging will be the construction of a temporary side track for the Pacific Highway traffic. The side track has a design speed of 60km/hr, starts from a point just south of the new Blackmans Point Interchange at Ch7800 on the existing highway, bypasses the new interchange site on the western side and ties in to the new permanent Service Road C clear of the interchange. This bypass allows the full construction of the interchange including the main carriageways and local roads and ramps without any significant impact on the existing traffic. In addition the new side track will include a temporary bridge located in the median of the new alignment carriageways which will allow off road trucks to haul through beneath the Pacific Highway and greatly improve the efficiency of the works and safety for road users and construction personnel. To complete the section of the new carriageways that the side track utilises requires that the Pacific Highway traffic then be switched onto the constructed elevated interchange as two way traffic at a reduced 60 km/h speed limit. This allows completion works on the main carriageway to continue underneath the highway without any impact on the traffic;
6. Construction access from the Hastings River to the Wilsons River will be essentially via the main alignment carriageway. Access points to the site are available at the main compound, Blackmans Point Road and at Bill Hill Road with another entry possible at Ch 9900 if needed.
7. Hacks Ferry Road from the Pacific Highway is proposed to be utilised for:
    - General site access, as well as direct access to the Wilson River bridge site compound/laydown area.
    - Deliveries of bridge materials and bulk earthworks materials such as drainage rock for wick drain areas and crushed rock for pavements.
    - Heavy oversize deliveries such as steel casings for bridge piles, super-T's, temporary access bridge elements and other precast concrete elements
    - Delivery of heavy earthmoving plant and cranes.

    Council have been consulted to use Hacks Ferry Road for the above construction works. Lend Lease proposes to maintain the existing unsealed road, however discussions are underway with Hastings council to upgrade the road surface if it is not able to be maintained to the existing standard due to construction traffic.

    Negotiations are continuing with Council on this proposal.

    The intention is to commence using Hacks Ferry Road as early as practicable to enable commencement of soft soil treatments within the flood plain areas and construction of flood relief structures.
8. Access to the northern side of Wilson River will be from an upgraded intersection at Wilmaria Road off the existing Highway. This intersection will be upgraded as per SWTC Appendix 9, Figure 9.23. Use of this upgraded intersection is essential for the project as it will cater for heavy vehicles and batch plant required raw material deliveries to the northern batch plant which will be located on RMS owned land at Ch 17300. This batch plant will service the northern section of the project. The access point also provides access to the North Coast Rail Line level crossing (refer Item 8 below) and bridge works on the northern side of the Wilson River. The gravel track inside the property will be widened to accommodate heavy vehicle usage. Access to the north side of Wilsons River will also be available using Haydons Wharf Road from the existing turning lanes off the highway. However this access will be limited due to the potential blasting and heavy haulage of the rock material from the cut at Ch 18000 to the nearby material processing area on the northern side of Haydons Wharf Road;
9. For construction access across the North Coast rail line suitable for heavy haulage off road plant, a 4.8m long temporary prefabricated steel Rail Level Crossing with signage and gates on either side of the tracks will be built at approximately Ch 17230. The works will commence after consultation and approval from ARTC of the crossing arrangements. The level crossing will be fenced off with lockable

gates at the boundary fences. An ARTC accredited protection officer will be appointed during the course of the works to control the traffic movements across the level crossing. The Protection Officer will be responsible for all movements across the rail track and will have the only keys to gates. The gates will only be authorised to be opened by the Protection Officer for safety purposes and they will be the central contact for all movements across the tracks. Access to the rail tracks will either be along the alignment from Haydons Wharf Rd or from Wilmaria Road through the Batch Plant site. The level crossing will be constructed on the eastern side of alignment due to its flatter topography. While it is possible to gain access to the river off the highway onto the land south of the railway corridor, it is via an old timber bridge rail bridge crossing and through a right of way on private property. This access route may be used by light vehicles but is not suitable for heavy vehicles;

10. To maintain local road access across the alignment during the construction side tracks will be built to accommodate the local traffic until the new permanent bridges and associated access roads are constructed. This occurs at Bill Hill Road and Haydons Wharf Road And, subject to approval from the relevant authorities, these sidetracks will be designed for a 40km/hr design speed. Blackmans Point Road crosses the alignment close to grade and this local road access will be maintained until the new Blackmans Point Rd and Interchange are completed and opened to traffic. New bridges pass over the local roads at Glen Ewan Road and Hacks Ferry Road and access along these roads will be maintained;
11. Work on the existing Pacific Highway at the Haydons Wharf Road northbound on ramp cannot be completed until after traffic is switched onto the new alignment due to the high traffic volumes involved. Similarly the final pavement at Ch 18500 just north of Haydons Wharf Road where the old highway crosses the new northbound carriageway is also unable to be completed until late in the project;
12. The key works relating to the remainder of the project to the north include the main cuttings at Cooperabung and Yarrabee Cut and will require blasting at the base of the cuts. This will be directly adjacent to live traffic lanes and as such a blasting protocol will need to be developed for these activities. This will be detailed elsewhere in the project plans but will include traffic stoppages in both directions at a designated time each day for blasting to occur. To enable this to be done safely a sweep of the road before and after the blast will occur to ensure no vehicle or person is at risk in the blast zone. Following blasting, the site will be inspected to ensure that no unexpected damage has occurred to the road and that the area is safe prior to reopening the road to traffic;
13. As the main source for SMZ material on the project is located in the northern section around Cooperabung and Yarrabee Cuts, there will be significant road trucks haulage along the Pacific Highway to the southern parts of the project. Where possible, works have been planned with off road haulage plant to minimise traffic movements on the highway. The intention is to haul rock material from Cooperabung and Yarrabee Cuts to a processing area located on RMS land at Ch 19800 with off road vehicles. Following processing, the material will be hauled via road trucks to other locations on the project on an as needs basis. The heavy haulage access road from the cuts to the processing area crosses Cooperabung Drive which provides a northern connection from Telegraph Point to connect with the existing Highway. Following community consultation and Council approval we propose to close this access to the highway at Cooperabung Close. Access to the highway for affected residents will be available at Telegraph Point. In the unlikely event that we are unable to gain permission to temporarily close this road, traffic control will be utilised to ensure the safety of road users on the local road and of the construction personnel utilising this major haul road;
14. Site accesses will be constructed off the highway either by closing existing overtaking lanes within the Site and utilising them for dedicated acceleration and deceleration lanes or by constructing pavement widening. The traffic staging drawings indicate the overtaking lanes that Lend Lease intends to close and utilise during the construction of the project. Temporary intersections will be constructed in accordance with the principles in SWTC Appendix 9 Figure 9.23 to allow direct access to the construction site;
15. Another key to works at the northern end is the cross over and tie in at Ch 24100 which must occur as early as possible so that the Barrys Creek Bridge can be completed. The additional cross over at Ch 22700 is important as this completes the works on the project and enables all carriageways to be opened;
16. Maintaining access to all local roads and properties is important to the success of the project and has been considered in the planning of the works; and

17. Use of the Lend Lease's wholly-owned subsidiary, Australian Precast Solutions located at Macksville approximately 80km north of the project, to manufacture and supply all major precast elements such as bridge beams and other components for the project. Utilising a precast facility close to the project will minimise the impact on road users which result from transport of over dimension loads.

Lend Lease's solution aims to facilitate construction of the new alignment clear of traffic where possible by minimising the interface with the travelling public and constructing side tracks and cross overs as necessary.

This proposal has significant safety and programme benefits such as:

- It clearly delineates the works from the existing traffic providing increased separation, increasing the safety of both the travelling public and construction staff;
- It significantly reduces the requirement for construction traffic to interact with Pacific Highway traffic significantly reducing the potential for delay to the travelling public;
- It significantly improves the construction traffic staging and avoids short diversions for motorists on the Pacific Highway;
- It provides increased working width for construction staff significantly increasing worker safety around heavy plant, especially paving equipment; and.
- It provides an opportunity to use the existing material where applicable for SMZ, so that the overall mass volume of haulage on public roads can be minimised across the project which will reduce the associated hazards/impacts.

Lend Lease believes its proposed staging incorporates significant safety in design innovation and demonstrates a genuine commitment to eliminating safety risks in the design stage of the project and provides a clear and robust outcome for all Stakeholders.

1.3.2 TMSP Inclusions

In addition to the above, the TMSP addresses and deals with the following issues:

- Safety and amenity of road users and the public;
- Site security, site access and signage;
- Project identification including signs to acknowledge government funding and management;
- Road Occupancy Licence conditions of approval to comply with traffic (or road user) delay management strategy;
- Watercourse and road overpass naming;
- Numerical identification of structures;
- Information signage, distance information and advance warning signs;
- Speed limit signage;
- Lighting;
- Traffic transfer/switching arrangements and procedures;
- Provisions for special events and holidays;
- Provision for local bus routes which may get affected;
- Provisions for maintenance;
- Frequency of inspections;
- Removal of temporary traffic control arrangements; and
- Emergency and Incident Response Plans.

2.0 Management Strategy

The personnel, plant and equipment required for traffic management during the construction of the Works are detailed within this section. Lend Lease will adopt experiences from previous projects and innovations on existing projects to achieve industry best practice for all traffic management activities on the project.

To facilitate best practice traffic management and to raise general site awareness of good traffic management practices, a Traffic Management Risk Assessment Workshop will be undertaken on-site prior to the commencement of any traffic management works. The content of the workshop and attendees will be in accordance with RMS Specification G10.2.9.

Training and development initiatives from previous and existing projects will be brought to the Pacific Highway Upgrade from Oxley Highway to Kundabung D&C Project to ensure continuing development and advancement of personnel with careers in the construction industry. Succession planning and knowledge transfer also enables opportunities for new starters in the industry to enter with experienced supervision and direction.

2.1 Document Descriptions

The TMSP is the overarching guidance document for all traffic management issues associated with the Project and sets out the broad level principles and procedures for other more specific traffic management activities such as preparing Traffic Control Plans (TCP), obtaining Road Occupancy Licences (ROL), maintaining records etc. In accordance with RMS Specification G10.2.5, this TMSP functions as the TMP for the whole Project with more specific construction activities and traffic staging requirements being controlled through individual TCPs and ROLs. There is no need for other Traffic Management Plans (TMP) for individual works/ construction activities.

The TMSP is authorised by the Project Director. All revisions to the TMSP shall be coordinated by the Traffic Manager and authorised by the Project Director in consultation with RMS Representative and other relevant stakeholders. Proposed revisions to the TMSP shall be forwarded to RMS for consideration and approval in all cases.

There will be a number of Appendices attached to the TMSP which will continue to evolve as work in progress such as:

- Appendix A: Traffic Management Staging Drawings;
- Appendix A1: Traffic Staging Arrangement Plans;
- Appendix A2: Detailed Intersection Design ;
- Appendix B: Traffic Barrier Locations, Speed Zones and Site Access Points;
- Appendix C: Construction Traffic Intersections Analysis Report;
- Appendix D: Traffic Control Plans – Traffic/Construction Staging;
- Appendix E: Traffic Incident Response Plan;
- Appendix F: Traffic Management Procedures;
- Appendix G: Traffic Control Risk Management; and.
- Appendix H: Construction Traffic and Safety Management Sub-Plan MCoA Compliance.

Section 2.1.1 depicts the framework of documentation associated with the TMSP.

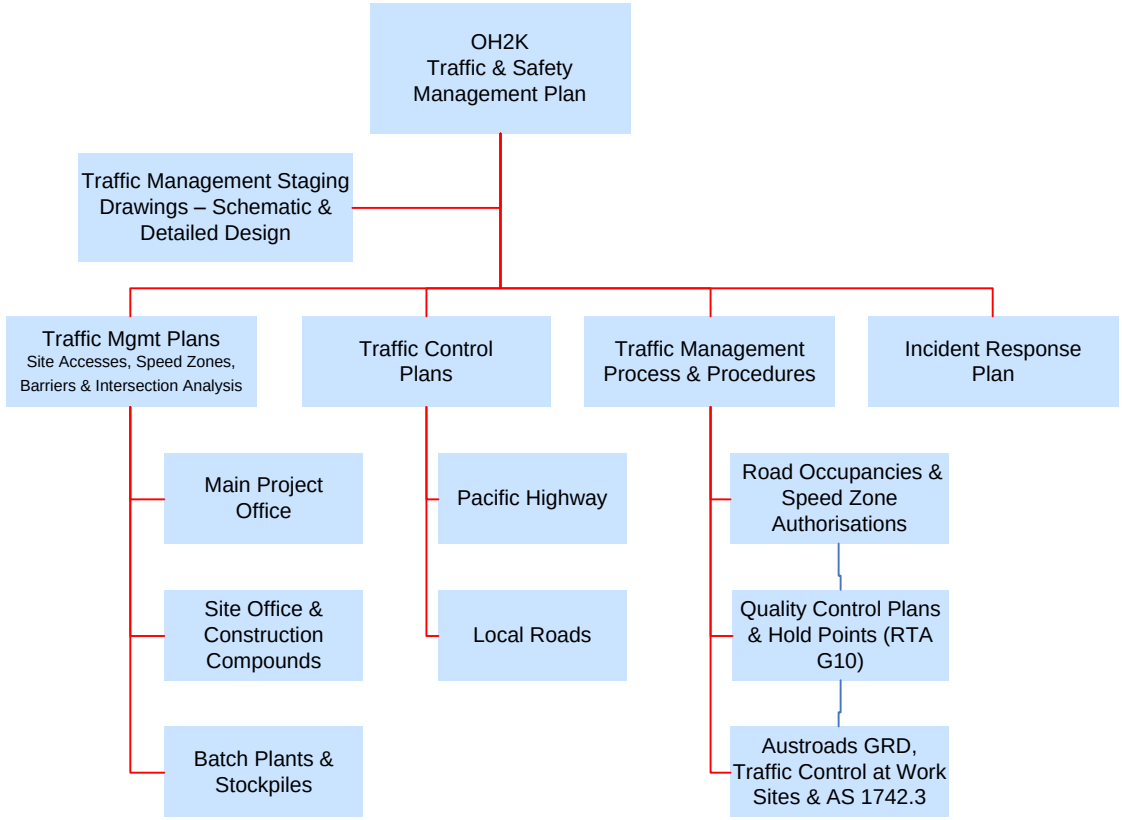
Sections 2.1.2 to 2.1.9 briefly describe the purpose and context of each of the Appendices.

2.1.1 Documentation Framework

Figure 2-1 is a diagrammatic representation of the hierarchy of documents that form the TMSP.

The TMSP is structured to satisfy those planning elements described in Section 1.3 – Overview and Contractual Requirements.

Figure 2-1: Documentation Framework



Appendix A: Traffic & Construction Staging Drawings

This is a detailed set of drawings describing the overall details for traffic management and staging during construction. They describe the planning and sequencing of the construction activities, intersection capacity and layouts. For this submission they focus on the staging of traffic on the Pacific Highway and with key local roads. These drawings set the foundation for the development of detailed Traffic Control Plans which will be submitted to the RMS Representative for consideration and approval. Copies of the design for the Pacific Highway interface staging can be found in Appendix A of this Plan with the description of each relevant staging section to which the plans refer being included in Section 3.2.

Appendix A1 covers the traffic and staging arrangements for all stages of the project.

Appendix A2 covers the specific intersection detailed design.

2.1.2 Appendix B: Traffic Barrier Locations, Speed Zones & Site Access Points

Locations of site access points, work areas and associated traffic barriers and speed reduction zones (to 80km/hr) for most construction zones and 60 km/h in certain locations on the existing highway are detailed in plans within this appendix.

Site-specific Traffic Control Plans will be developed for the Works in the context of support facilities that have significant traffic-generating potential. There will be a Traffic Control Plan that contains traffic management details on key facilities and support compounds such as:

- Area Site offices;
- Batching plants and rock processing areas;
- Logistics compounds;
- Workshop plus amenities, parking, stockpiles, laydowns; and
- Site accesses.

The Traffic Control Plans will provide detail on site entry and egress locations, signage and any temporary intersection upgrade or treatments.

2.1.3 Appendix C: Construction Traffic Intersections Analysis Report

This Appendix provides the traffic report associated with the site access points shown in Appendix B based on the forecast peak traffic volumes for light and heavy vehicle classifications using the intersection. Schematics of details on expected intersection upgrades are contained as part of the Traffic Intersection report.

2.1.4 Appendix D: Traffic Control Plans – Traffic/Construction Staging

Specific Traffic Control Plans will be developed for construction and traffic staging on the Pacific Highway and Local Road works. Each area will have a Traffic Control Plan that contains detailed construction information and traffic management detail on how the roadwork will be staged or sequenced in accordance with the overall Traffic Management Plans contained in Appendix A. It is important to note that these plans contain only those construction stages/sequences that are known to result in significant changes to the prevailing traffic conditions.

It is expected that within each construction stage, some minor switches may need to occur that would be considered inconspicuous to the road user – for example, a minor longitudinal line-marking change to affect a one to two metre lateral shift over 200 metres. These types of minor or insignificant changes are not detailed here as they will only become known as construction proceeds.

These Traffic Management Plans are directly linked to the staging described in Section 3 and are provided in Appendix A.

2.1.5 Appendix E:Traffic Incident Response Plan

The Traffic Incident Response Plan provides standard procedures for managing incidents affecting the road network and traffic systems as an integral part of the Pacific Highway and Local Road route management strategy.

2.1.6 Appendix F: Traffic Management Approval Procedures

Traffic management approval procedures are those documents developed to assist Lend Lease with planning activities that relate to traffic management. These include:

- Checklist and approval for major traffic changes/switches;
- RMS Traffic Control at Worksites manual;
- Procedures for short-term lane closures/mobile works;
- Incident Report Form for unplanned traffic incidents;
- Quality control and compliance – RMS G10 specification;
- Installation and removal of Traffic Control Plans;
- Traffic controller induction pro-forma;
- Auditing Traffic Control Plans for long-term and short-term works;
- Australian Standard 1742.3;
- Austroads' Guide To Traffic Engineering Practice; and
- Austroads Guide to Road Design.

2.1.7 Appendix G: Traffic Control Risk Management

This Appendix provides a preliminary SWMS which is to be considered in the development of the Traffic Control SWMS in conjunction with the traffic control workforce.

2.1.8 Appendix H: Construction Traffic & Safety Management Sub-Plan MCoA Compliance

This Appendix addresses the minimum requirements of Appendix 21.9, 27 and 43 of the NSW Roads and Maritime Services (RMS) Scope of Works Technical Criteria (SWTC) and Minister's Conditions of Approval B31(a) for the Design and Construct section of the Pacific Highway Upgrade from Oxley Highway to Kundabung.

2.2 Traffic Management Responsibilities

The main role of the traffic management team is to implement the requirements of the TMSP to the satisfaction of RMS and other stakeholders as well as the requirements of the Lend Lease construction program. This includes ensuring the requirements of this plan are adhered to during the construction and Landscaping Maintenance phases of the project. Additionally, the team is to provide planning and additional support to the site personnel who will be responsible for the execution of the traffic management work in the field. The roles nominated in the Organisation Chart may not be fulltime positions. Staff will have combined responsibilities with other aspects of the project depending on the stage of the works.

Figure 2-2 is an extract from the project organisational chart for the traffic management hierarchy.

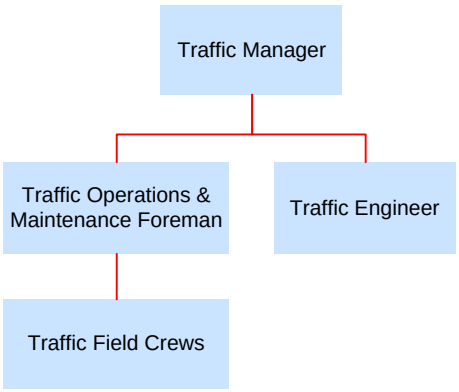


Figure 2-2: Extract from Organisational Structure

2.2.1 Traffic Manager

An experienced Traffic Manager has been appointed to advise on key traffic planning, traffic implementation issues and amendments and as a key contact for the relevant local councils, state government stakeholders and traffic authorities.

The Traffic Manager as at the date of this revision is Ian Old.

The Traffic Manager's responsibilities are as follows:

- Report to the Project Director;
- Ensure that the policy and objectives of this TMSP, RMS D&C Specification G10, and SWTC Appendix 21 Section 21.9 are achieved;
- Review and update the TMSP as required;
- Ensure that the performance of the TMSP is reviewed and suitable corrective and preventative action is carried out as required;
- To be familiar with the requirements of the TMSP, the Incident Response Plan (which the Traffic Manager will help to develop), the emergency response procedure. The Traffic Manager is the interface with all emergency services;
- Maintain an updated listing of personnel, both on and off site who are suitably trained to provide an incident callout service;
- Maintain an updated listing of equipment available both on and off site which would be available and appropriate for varying incidents;
- Ensure the relevant agencies and stakeholders are continually advised as to the progress of the work and any changes to the TMSP;
- Be involved in regular meetings with the Project Director and construction staff to obtain road occupancy licence forecasts and ensure the requirements of the TMSP are implemented;
- Establish a program for suitable training of personnel in traffic management procedures as well as ensuring key issues are addressed at Site inductions and toolbox meetings;
- Be responsible for the establishment and operation of the team charged with implementation of the TMSP with respect to incident management and response;
- Respond to all complaints received, recording action taken to address each. A similar register will be maintained outlining requests for information from the public;

- Coordinate all the reporting functions relating to traffic management as required by the TMSP;
- Develop and maintain positive communication links with the RMS Representative, Transport Management Centre and RMS traffic impacts coordinator;
- Be responsible for the provision of all project maintenance requirements and resources required for the field crews for performance of their duties;
- Be accountable for the effectiveness of all traffic control devices used by Lend Lease in undertaking its works;
- Undertake traffic management quality audits and road occupancy licence compliance investigations for all the activities undertaken in the delivery of the project;
- Provide a schedule of road occupancy activities to the RMS Representative on a weekly basis running from Monday to the following Sunday. The forecast schedule will contain full details on locations and timings of all proposed road occupancies for the following week and be submitted by 9.00 a.m. on the Thursday of the week preceding the week being forecast;
- Maintain records of all road occupancies and forward records of all traffic delays and durations, queue lengths and ROL related matters to the RMS Representative by 9.00 a.m. on the Thursday following the week being recorded;
- Monitor short-term road occupancy licence conditions daily for compliance including:
- Monitoring and quantifying traffic delays and general conditions;
- Monitoring, measurement and recording of traffic queue lengths and total stoppage times;
- Maintaining and adjusting traffic control measures to assist prevailing traffic flows; and
- Monitoring of over-dimensional heavy vehicle movements;
- Develop solutions to traffic management arrangements to avoid interruptions to traffic flow, lane/shoulder closures and alternating traffic flow conditions;
- Coordinate traffic control operations with other roadwork sites between Oxley Highway to Kempsey to minimise the frequency and cumulative length of traffic delays.
- Report immediately to RMS Representative the occurrence of all delays to the free flow of traffic of greater than 10 minutes or queue lengths of greater than 500 metres;
- Report any traffic accident occurring within the Construction Site or at other locations affected by Work immediately to the RMS Representative after becoming aware of the occurrence of the accident and record the facts and photograph the approach to the accident site, including the location of all safety devices and signs, as soon as possible after the accident and forward a report with this information to the RMS Representative within two days of the occurrence of the accident; and
- Be contactable at all times including seven days per week, 24 hours per day during the construction phase to answer traffic/incident related inquiries from the relevant authorities.

Lend Lease's Traffic Manager is responsible for the monitoring and review of the Project Works for compliance with the TMSP. This responsibility extends to the delivery and maintenance of the TMSP and its application to the Oxley Highway to Kundabung Project.

2.2.2 Traffic Engineer

Two Engineers will be appointed as Traffic Engineers on commencement of construction works. Their name and contact details will be provided in subsequent updates to this TMSP.

The Traffic Engineer's responsibilities during construction are as follows:

- Assist the Traffic Manager with TCP development, implementation and review within their work areas;
- Be fully qualified and experienced in this role including holding the required licences for TCP design and approval;
- Prepare TCPs, VMPs, ROLs, SZAs and associated Hold Points for approval;
- Direct and assist the field staff in the application of the TMSP;
- Ensure that only adequately trained and qualified personnel are engaged or are available to undertake operations and maintenance duties;
- Be familiar with and have access to the lists prepared by the Traffic Manager of personnel, equipment and emergency service representatives;

- Be familiar with and undertake the instruction of personnel in the operational aspects of the TMSP and the Incident Response Plan;
- Ensure all traffic management personnel, plant and equipment are available in a timely manner to meet the requirements of the construction program;
- Develop work procedures to ensure utmost consideration is given to providing a safe working environment for employees as well as addressing the safety of road users and the general public;
- Undertake briefing of field staff responsible for the carrying out of traffic management and emergency response activities;
- Investigate with the Traffic Manager, all traffic incidents and community concerns which relate to traffic matters; and
- Prepare reports for the Traffic Manager as required.

2.2.3 Traffic Foreman (Operation & Maintenance)

Lend Lease will appoint a Traffic Operations & Maintenance Foreman on commencement of construction works to provide the resource requirements relating to the traffic management field crews (including incident response). The Traffic Foreman will also provide the resource requirements relating to the routine management of traffic control facilities and maintenance of Temporary Works. Their name and contact details will be provided in subsequent updates to this TMSP.

The Traffic Foreman's responsibilities during construction are as follows:

- Report to the Traffic Manager and liaise with the traffic engineer and be responsible for operational and traffic maintenance field resources and crews;
- Undertake training appropriate to the duties described in Section 6 of RMS Traffic Control at Worksites – Record Keeping and Reporting;
- Ensure that traffic control facilities are maintained and monitored throughout the Works;
- Provide after-hours contact details to local police for the duration of the Works;
- Work cooperatively with other incident response or emergency services when required;
- Ensure all appropriate procedures are implemented during a planned traffic switch;
- Hold appropriate certification to undertake traffic management duties;
- Be available to receive regular briefings on the implementation of the TMSP and conduct inductions and toolbox meetings;
- Participate in the development of work procedures relating to Traffic Management and Incident Response Plans;
- Respond to incidents on the road network affected by the construction Works taking advice from the traffic management and construction team and RMS;
- Implement traffic facility maintenance procedures in the field, always respecting the issue of road user safety;
- In conjunction with Site Foremen, ensure adequate resources are available and used to carry out Temporary Works in accordance with the program; and
- Provide traffic management support services to the construction Project Managers where required.

2.2.4 Traffic Field Crews

A crew will be established to provide the following functions during the construction period:

- Project-wide traffic control duties (not related to a specific area or zone);
- Periodic relief breaks for all Traffic Controllers under contract to Lend Lease as required by RMS Traffic Control at Worksites;
- Assist the Traffic Foreman to undertake their duties to the satisfaction of the TMSP;
- Utilise resources provided by the Traffic Foreman to undertake routine and periodic maintenance of traffic management and control facilities;
- Undertake the reporting and auditing requirements of Section 6 of RMS Traffic Control at Worksites manual; and
- Respond and attend to unplanned incidents across the project.

2.3 Traffic Management Resources

A list of the personnel and equipment available to respond to an incident will be established as part of the Incident Response Plan.

The field crews will have specific traffic management and control facilities to ensure appropriate responses may be implemented without external assistance in most cases.

Examples include:

- Dedicated traffic management vehicle;
- Dedicated compound area and container;
- Standard signage, traffic cones, flares, first aid equipment, fire extinguishers and personal protective equipment necessary to attend to unplanned traffic management issues and incidents;
- Brooms, containers and 'kitty litter' to clean up minor accident debris and oil spill kits;
- Trailer mounted VMSs and speed monitoring VMSs
- Communications equipment between field response crews; and
- Procedures for incident escalation involving the request for emergency services intervention in consultation with RMS Transport Management Centre.

These resources will be held in a dedicated, clearly identifiable vehicle for traffic management. Items that cannot be readily carried in the course of a normal working day will be held in dedicated storage areas in close proximity to the Site, preferably the main office compound.

2.4 Audit & Review

This TMSP will be subject to audit and review at various stages throughout the course of the Project Works. This requires that the plan be audited internally within three months of commencement of substantial construction, then again as required.

In addition, in accordance with RMS Specification G10.2.10, all Traffic Control Plans (TCP) will be independently audited by a qualified Road Safety Auditor prior to implementation of the TCP. Within 24hrs of implementation of any TCP for long-term temporary work, a Road Safety Auditor will carry out an inspection of the traffic control measures during both day time and night time and issue a report with findings and recommendations.

2.5 Reporting on Traffic Management

Lend Lease must report to RMS, the Traffic and Transport Liaison Group, and other stakeholders on all traffic and transport management issues as they relate to the Contractor's work, including performance measured against specified targets and objectives. The reports will be issued on a monthly, weekly and immediate basis as noted below.

Traffic issues or non-compliances with the TMSP will be reported to DP&I through the Construction Compliance reports, further detailed in Section 8.4 of the CEMP.

2.5.1 Monthly Reporting

Lend Lease will report to RMS and other relevant stakeholders on all traffic and transport management issues on the road networks and traffic and transport operations that relate to the Works including performance measured against specified targets and objectives.

A monthly report will be submitted to RMS that includes a summary of:

- Current and upcoming key issues, including those identified by RMS and other relevant stakeholders, and the proposed measures to address these issues;
- Recent and proposed changes to traffic management and their impacts on the operation of the road network and traffic systems;
- Media or community information released and proposed to be released;
- A log of traffic incidents and type on and in the vicinity of the construction site and traffic management works, including cumulative totals;

- Traffic staging program/scheduling for the Works, including the current status of all construction stages and impacts on traffic management and approved road occupancy licences;
- Comparisons of base-case travel time performance indicators with those for the current and proposed traffic conditions and the achievement of the specified targets;
- Comparisons of current and modelled traffic volumes at intersections compared with the base-case volumes;
- Results of both internal and external independent quality audits of traffic management and control devices; and
- Community and media comments and complaints and Lend Lease's response to these comments and complaints.

2.5.2 Weekly Reporting

Lend Lease's Traffic Manager will provide a schedule of road occupancy activities to the RMS Representative on a weekly basis running from Monday to Sunday. The forecast schedule will contain full details on locations and timing of all proposed road occupancies for the following week and be submitted by 9.00 am each Thursday of the preceding week.

In addition, records of all road occupancies including traffic delays and durations, traffic queue lengths and other ROL related matters will be forwarded to the RMS Representative by 9.00 am on the Thursday following the week being recorded.

2.5.3 Immediate Reporting

Lend Lease's Traffic Manager will immediately report to the RMS Representative and the Transport Management Centre on any unplanned incidents having a negative impact of the regular flow of traffic on the Pacific Highway. This includes those incident categories defined within the Incident Response Plan detailed in Appendix E Table E1. Examples include but are not limited to the following:

- Motor vehicle accidents (including a report and photos within two days);
- Breaches of any road occupancy licence conditions of approval;
- Excessive traffic delays not related to construction activities;
- Impacts to the regular operation of public passenger vehicles; and
- Any unplanned incident defined by the categories in Table E1 of the Incident Response Plan.

2.5.4 KRAs/KPIs

Lend Lease recognises that traffic management is of prime importance. It not only sets the right framework for safety on-site by separating workers and traffic, it is also the travelling public's interface with the project and has the potential for significant impact on road users. Lend Lease's Project Management Plan will nominate a number of potential KRAs for this project, of which Traffic Management will be one. Also contained within the PMP will be suggested potential KPIs under a Traffic Management KRA, these being:

- Delay Management – Accuracy of Weekly Traffic Impact forecasts, Delay forecast, ROL Compliance;
- Complaints; and
- Incentives for early commissioning of service roads;

These KRAs will be finalised in conjunction with RMS.

2.6 Document Control

This document is a sub-plan of the CEMP and is subject to periodic review and update as per the requirements of Chapter 9 of the CEMP.

The minimum requirements of the CEMP will be implemented for the control of this document including consultation with, approval by and distribution to relevant stakeholders.

The quality control of this document is as per the Project Quality Plan and the Project Management Plan.

This document will be amended and updated throughout the duration of the Work by the Traffic Manager to account for:

- Requirements under the CEMP;

- Changes in the design and construction process;
- Any improvements noted during audits and regular reviews;
- The need to prevent the recurrence of any compromise to the safety of road users and the public; and
- Any incidents arising from the Work including Landscaping Maintenance which may necessitate amendments to this Plan.

2.7 Risk Management

Lend Lease will manage the risks associated with traffic management by ensuring that no activity commences on site that has an effect on traffic without an approved Road Occupancy Licence. The Traffic Manager will ensure that all project management staff are aware of the requirements of the Traffic Management & Safety Plan (TMSP) and that work on site occurs as per the Traffic Management Plans, Traffic Control Plans and associated Road Occupancy Licences. The Traffic Manager will certify each Traffic Control Plan only if considered satisfactory and the relevant independent road safety audit required by RMS Specification G10.2.10 has been completed and closed out. In an emergency, the protocols detailed in the Incident Management Plan will be followed.

To facilitate best practice traffic management, Traffic Management Risk Assessment Workshops in accordance with RMS Specification G10.2.9 will be held on-site to raise awareness of good traffic management practices, identify network planning provisions and to train site personnel. A preliminary SWMS is attached in Appendix G for consideration during development of the Traffic Control SWMS in consultation with the Traffic Control Workforce.

The Traffic Manager and Safety Manager will identify the traffic safety and management risks and develop rectification strategies (if required) which, depending on the identified risk, may include some of the following measures:

- Surveillance and monitoring of processes (confirming safety assessments and plans);
- Holding Traffic Management Risk Assessment Workshops;
- Training and evaluation of competency of personnel (including inductions);
- Assessment and inspection of equipment or controls (i.e. field safety audits);
- Introduction of additional Hold or Witness points;
- Auditing of system and process (i.e. document and process audits);
- Independent audit, review or verification by third party; and
- Safety auditing of Traffic Control Plan proposals and Temporary Works.

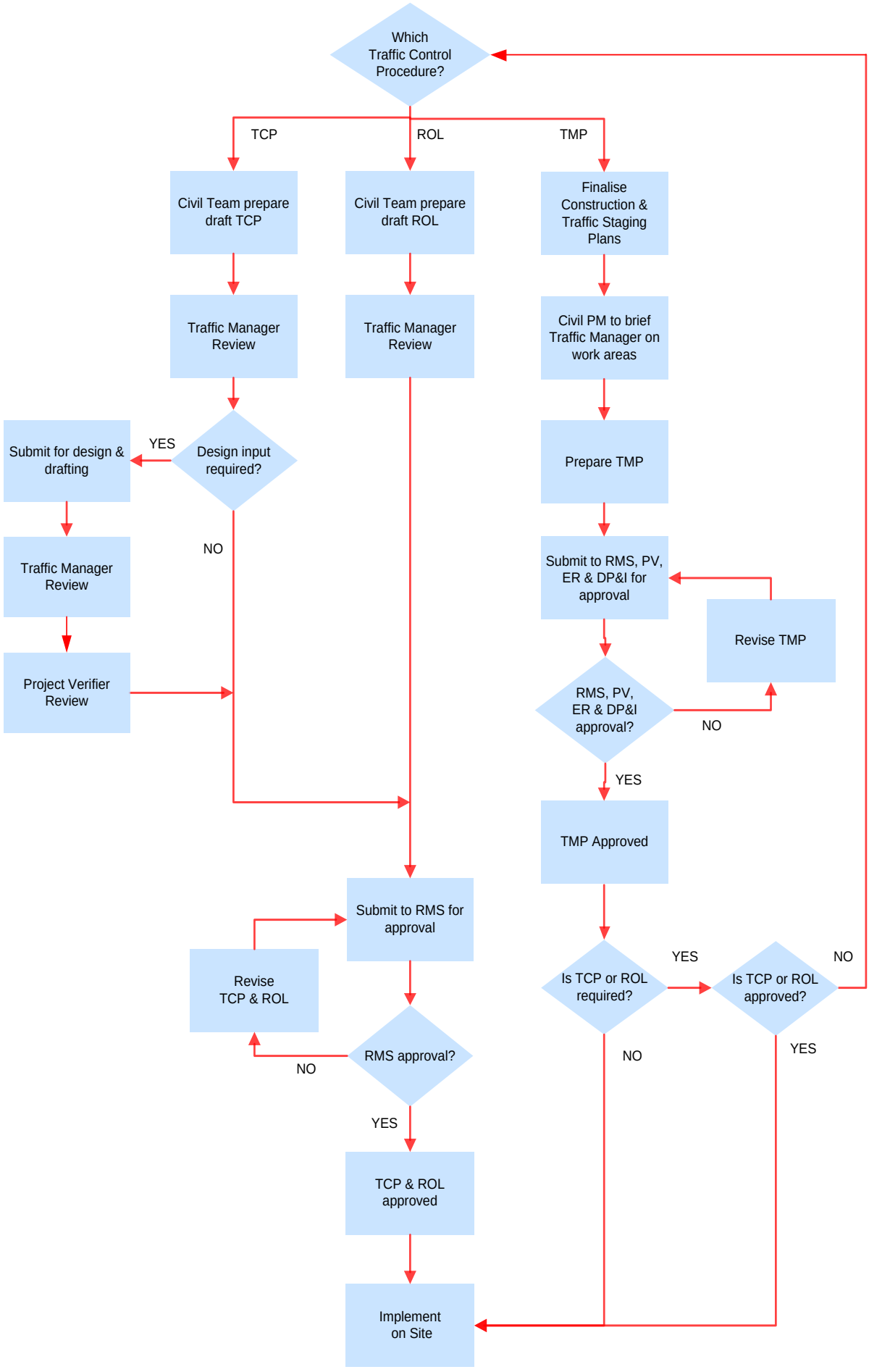
The issues and control measures nominated by the Traffic Manager will be periodically reviewed and updated to ensure that the nominated risk controls are implemented.

2.8 Approval Process

The following flow chart applies to the process for the submission of Traffic Control Plans and applications for road occupancy licences by Lend Lease to RMS. In all cases, these plans are submitted to RMS for consideration and review prior to approval.

Where Traffic Control Plans are submitted for consideration and approval on local roads and forestry accesses/tracks, they will also be submitted to the relevant local government body (council) and DPI for their consideration through the local or regional traffic committee or other appropriate forum. Figure 2-3 details the process for effective management of the Traffic Management Plan and Road Occupancy Licence approval process.

Figure 2-3: Approval Process Flow Chart



3.0 Traffic & Construction Staging

3.1 Staging Methodology – Overview

The Traffic Management and Staging Plans are the basis for the overall traffic management on the project and from these the various detailed site-specific Traffic Control Plans will be developed. As required by RMS Specification G10.2.8.3(k), lighting of temporary intersections will be considered in the detailed Traffic Control Plans and will generally only be provided if existing intersections which are being replaced are lit or if considered necessary for the safe passage of traffic as determined by the road safety audit requirements. Temporary lighting will be provided at the Blackmans Point Interchange when the existing highway traffic is diverted onto the interchange as part of the traffic staging arrangements in accordance with section 7.15.1(u) of the SWTC.

In order to maintain safety and amenity of road users and the public and safety of the construction team, the traffic staging has been developed to achieve four key objectives during the project delivery phase. These are:

- Minimal interaction with existing highway traffic to maintain continuous, safe and efficient movement of traffic;
- Maintain the traffic carrying capacity of Local Roads and not divert traffic onto or increase the traffic volume on the Old Pacific Highway;
- Early completion of local road improvements; and
- Simplicity and flexibility of traffic/construction staging.

These are further described in Sections 3.1.1 to 3.1.4 below.

Detailed traffic management requirements for the Landscaping Maintenance phase will be further developed during the construction phase and the TMSP will be updated accordingly. This update will set out the requirements of the selected maintenance subcontractor and vehicle type and number of traffic arrangements expected. This document will be agreed and formalised in a revision of the detailed Traffic Management Plan.

3.1.1 Minimising Interaction with the existing Pacific Highway Traffic

Lend Lease has optimised the alignment of the new highway and planned the temporary works such that the construction works can take place with the least possible interaction with the existing Pacific Highway traffic. This has a number of key advantages:

- Increased constructability and efficiency;
- Increased safety for road users and construction workers;
- Delays and disruptions to traffic movement, if any, are kept to an absolute minimum;
- Minimised cost in traffic control and switch works; and
- Minimised impact on existing Pacific Highway traffic flow to maintain continuous, safe and efficient movement of traffic.

Since the Project is around 50% brownfield and 50% greenfield, Lend Lease will construct the Project by adopting a traffic staging methodology that will minimise the traffic impact on the existing Pacific Highway. Where applicable, site accesses will be off the existing highway via dedicated turning lanes to minimise disruption to existing traffic. There are several locations where traffic on the existing Pacific Highway will be affected, namely; at the Southern tie in to the existing highway, the northern connection (Northern Limit of Works) near Barrys Creek, the existing highway realignment at Blackmans Point Road Interchange, and interfaces with existing highway between Haydons Wharf Road, Yarrabee Road and other dedicated temporary crossovers along the project.

There will also be an ARTC approved temporary works traffic arrangement for a level crossing for construction vehicles to cross the North Coast Rail during the course of construction.

The impacts on the existing highway traffic at these locations will be minimised through compliance with approved ROLs. Note that as the long-term work area will be closer than six metres to the edge of the traffic lane in many locations, it is expected that for the safety of both road users and construction workers, it will be necessary to install temporary safety barriers along the shoulder of the existing highway in some of these locations in accordance with RMS Traffic Control at Worksites (TCAW) Manual Section 3.6.2 and

3.6.3 and restrict the traffic speed to 80km/hr using approved Speed Zone Authorisations. Any speed zone restriction will be in accordance with the minimum requirements of RMS TCAW Manual Section 8.2. Activities at these locations are detailed in Section 3.2 of this TMSP. Where appropriate, temporary safety barriers will have drainage slots in the base to prevent nuisance flooding of the roadway. Locations of proposed safety barriers and 80km/hr speed zones are shown in Appendix B. More detailed construction staging layouts and intersection designs are provided in Appendix A.

Note that in accordance with RMS D&C Specification G10 A1 and A3 a maximum of two locations with a maximum length of 500m each will have signposted speeds of 60km/hr. These locations are detailed in Appendix B and are summarised as follows:

- A 500m long, 60km/hr speed zone will be implemented at Blackmans Point Interchange throughout the course of the works. This speed zone will apply to the initial side track and then to the subsequent stage where the highway will be diverted through the permanent Blackmans Point Interchange aerial roundabout;
- A 500m long, 60km/hr side track will be implemented at Barrys Creek to divert the highway over the newly constructed southbound Barrys Creek Bridge. This is necessary due to the constraints imposed by the late possession of site associated with the Kundabung Work Zone (refer Item 24 in Deed Exhibit B);
- Following access to the Kundabung Work Zone, the southbound carriageway in this area will be completed which will permit the side track here to be upgraded to 80km/hr. Only after the 80km/hr side track is implemented, will the 500m long, 60km/hr side track be relocated to Fernbank Creek which will allow the new northbound carriageway from Ch750 to Ch4400 to be opened to traffic; and
- On opening of the main carriageway, side tracks 500m long with 60km/hr design speeds will be established around the existing Pacific Highway crossover areas at Ch18600 NB and Ch 22800 both bounds to enable construction of new permanent pavement.

In order to maintain the safety and amenity of road users and the public, dedicated site access points will be used and the intersections of these dedicated site access points on to the Pacific Highway will be upgraded to provide turning, acceleration and deceleration lanes. Sufficient lane length storage capacity will be provided to ensure that construction traffic entering or exiting the site does not impede the safe flow of highway traffic. To this end several Pacific Highway overtaking lanes will be closed and will be utilised during the construction period to allow for a safe entry and egress to site along the project. Section 4.1 details the locations of these site access points.

3.1.2 Maintain the Traffic Carrying Capacity of Local Roads

The Lend Lease traffic staging has been designed to:

- Maintain the traffic carrying capacity of all local roads at all times including Sancrox Road, Glen Ewan Road, Wharf Road, Bill Hill Road, Hacks Ferry Road, Haydons Wharf Road, Yarrabee Road and Blackmans Point Road via temporary side tracks when needed with the exception being those roads which are identified for closure under the Project Deed;
- Maintain the capacity of all intersections with the Existing Highway where the traffic volumes are increased as a result of Lend Lease's works;
- Maintain access to the state forests and wildlife reserves where required by the SWTC in the ultimate arrangement, by providing approved temporary alternative routes where construction makes it unsafe to use the existing road (e.g. at Cooperabung Range Drive which passes through the main fill and cut at that location) until the works are completed; and
- Implement permanent closures of the existing forest tracks such as at Swamp, Mahogany, Passionfruit and Barrys Creek Roads, which will lose access to the future Pacific Highway once it is upgraded, prior to clearing works commencing within that area.
- Install a site gate at Ch 10,300 to divert construction traffic away from Bill Hill Rd and safely allow all four entry/ exit movements.

  At locations nominated in the SWTC, State Forest access will be maintained through use of the local road network identified above and implementation of the detailed staging strategy outlined in Section 3.2. In accordance with MCoA B21, RMS has consulted with DPI (Forests NSW) to ensure that access of a standard that is at least equivalent to that currently existing and which meets relevant road safety

standards is maintained within state forests to enable continued forestry operations, fire management and recreation during construction and operation. These requirements are detailed in the SWTC.

3.1.3 Early Completion of Local Road Improvements

A key objective and measure of success of the project will be the way in which the local community embraces the project as a whole. In many highway upgrade projects, the focus has been on the completion of the mainline carriageway alignments while leaving much-awaited local road improvements to the end as Post-Completion Works.

Lend Lease will be looking to complete the required local road upgrades early in the program which will benefit the community, RMS and Contractor. By removing local traffic from existing roads which pass through the construction corridor and placing them on newly constructed overpass bridges and roads, there will be improved safety for road users and construction personnel and at least a maintained or better level of amenity than existed prior to the upgrade. Such arrangements will also allow uninterrupted access for earthworks, paving and finishing operations along the project. In this way, Lend Lease will seek to embrace community confidence and deliver on local amenity outcomes for the project as a whole and at an early stage of the program duration. Locations where this occurs are at Blackmans Point Rd, Bill Hill Rd and Haydons Wharf Road.

Activities at these locations are detailed in Section 3.2. Schematic plans of the local road works traffic staging are referenced in Section 3.2 where each traffic stage for an area is discussed. Copies of these plans are included in Appendix A.

3.1.4 Simplicity & Flexibility of Traffic/Construction Staging

Another objective of the staging of the Works is to keep the sequence of traffic switches as simple as possible while maintaining flexibility to adapt to unforeseen circumstances during the course of the construction program. Experience has shown that complex infrastructure projects contain many unknown factors and variability including some of the following:

- Utility works dependant on external authorities requirements;
- Community issues;
- Adverse weather and flood events;
- Design limitations;
- Production rates; and
- Supply agreements.

The traffic staging methodology will mitigate these variables by allowing construction to be tailored to meet changing demands in time and location.

3.2 Detailed Traffic & Construction Staging

About one half of the project will be built as a greenfield site through forests and farmland. However the other half will be constructed as a brownfield project adjacent to and through the existing road networks around the Sancrox Estate, Blackmans Point Road and regions between Haydons Wharf Road and the northern end of the project where the existing Highway is incorporated into the new carriageways. There are numerous interactions with live traffic including the existing Pacific Highway adjacent to the works and various other local roads which cross the main alignment along the Project.

For each location where traffic is affected, Lend Lease have examined and detailed in this Plan the following items:

- Works description;
- Constraints;
- Programming and traffic staging;
- Management of impacts on existing roads and accesses; and
- Considerations, Options and Observations.

The main sections of the Pacific Highway and Local Roads considered in this section are listed below. Refer to Figure 3-1 for a plan detailing the locations referenced.

- **South of Fernbank Creek (Ch 600 at southern extent of crossover pavement work to Ch 4400)**
  - Southern Tie-in & Crossover;
  - Sancrox Road & Fernbank Creek Road intersection (Ch 2500);
  - The Sancrox Road traffic management and overbridge has been utilised to accommodate the local traffic on Sancrox Road and Fernbank Creek Road in the staging in this area during construction of the main carriageways;
  - Sancrox Service Road to the Cassegrain Winery;
  - Fernbank Creek temporary switch at Ch 4400; and
  - Construction site access/exit locations
- **Fernbank Creek to the Blackmans Point Road Interchange (Ch 4400 to 8900)**
  - Glen Ewan Road (Ch 5550);
  - The closure of the minor bush track, Swamp Road at Ch 7000;
  - A major side-track diverting the Pacific Highway traffic around the future interchange;
  - Wharf Road (Ch 8500 north of the new Blackmans Point Interchange);
  - Blackmans Point Road (initially at Ch 8900);
  - Junction Road (Ch 9000 west of the existing Blackmans Point Road);
  - Site office, Workshop, Batch Plant and stockpile accesses at RMS nominated site near Ch 6900; and
  - Potential widening & re-line marking of Glen Ewan Road intersection for bridge deliveries.
- **Blackmans Point Road Interchange to the Haydons Wharf Road ramps (Ch 8900 to 18500)**
  - The closure of Mahogany Road at Ch 10000 early in the works;
  - A minor side-track at Bill Hill Road (Ch 11450) and intersection upgrade at existing Highway;
  - Access via Hacks Ferry Road (Ch 16500 via Mooney Street, off the existing Pacific Highway);
  - Access over North Coast Rail Line on a temporary rail level crossing;
  - Wyndell Close (between the Pacific Highway and Cooperabung Drive at Ch 18000);
  - Haydons Wharf Road Ch 18050 and ramps up to Ch 18500;
  - Upgrading of Wilmaria Road for Batch Plant access at Ch 17300;
  - Temporary widening works for Stage 3 and 4 switches; and
  - Temporary crossover at Ch 18650.
- **North of the Haydons Wharf Road ramps (Ch 18500 to 24100)**
  - Connection to Cooperabung Drive at Ch 20500 including access to the northern material processing area which includes a reduction in public access;
  - Cooperabung Close upgrade at Ch 19300;
  - Temporary intersection access for the Material processing area at Ch 20000;
  - Closure of the minor forest tracks, Passionfruit Road opposite Yarrabee Road and Barrys Creek Road at Ch 22000;
  - Temporary crossover at Ch 22700;
  - Yarrabee Road at Ch 21600; and
  - Northern Tie-in north of Barrys Creek at Ch 24100

Lend Lease has developed detailed staging plans for these areas which for ease of reference have been included in Appendix A of this report.

To assist in understanding the Traffic Staging Plans, a Key Plan has been developed which has been included overleaf as Fig 3-1. The project has been split into the above key traffic zones. A number of sheets cover each traffic zone with the various traffic stages then provided for each sheet. In order to maintain the context for the area, the traffic and staging arrangements (referred to in this report as staging plans) are presented with the traffic staging sheets for each zone. The traffic staging plans have been included in Appendix A of this Report and printed single sided to enable them to be removed from the report and

reviewed together with the detailed staging descriptions. The following Table 3-1 summarises the traffic staging plans included in Appendix A and the relevant sections of the report detailing the staging referenced in the staging key plans shown as Fig 3-1.

Table 3-1: Staging Plan Breakdown

Traffic Zone	Zone Description	Sheet Number	Stages	Report Section	Key Staging Feature
1	**Ch 600 to 4400** South of Fernbank Creek	1,2,3,4	1, 2, 3, 4	3.2.1	Southern Tie-in, Sancrox Road and Fernbank Creek Road with interaction with Sancrox road works and Cassegrain Winery
2	**Ch 4400 to 8900** Fernbank Creek to Blackmans Point Road	4,5,6,7	1, 2, 3, 4	3.2.2	Cross over at Fernbank Creek, Wharf Road, Blackmans Point Interchange, Access to Site & batch plant at Ch 6900
3	**Ch 8900 to 18500** Blackmans Point Road to Haydons Wharf Road ramps	7,8,9,10,11,12,13,14	1, 2, 3, 3A, 4	3.2.3	Bill Hill Road, Hacks Ferry Road, Wilmaria Road, Wyndell Close, Haydons Wharf Road and ramps, access to material processing area and the connection with the old Pacific Highway.
4	**Ch 18500 to 24100** North of the Haydons Wharf Road ramps	14,15,16,17,18	1, 2, 3, 3A, 4	3.2.4	Cooperabung Drive, Cooperabung Close, Material processing area access at Ch 20000, Yarrabee Road, the Northern tie-in and completion of pavement at Ch 22900 – 24050 and Ch 18500 - 18600

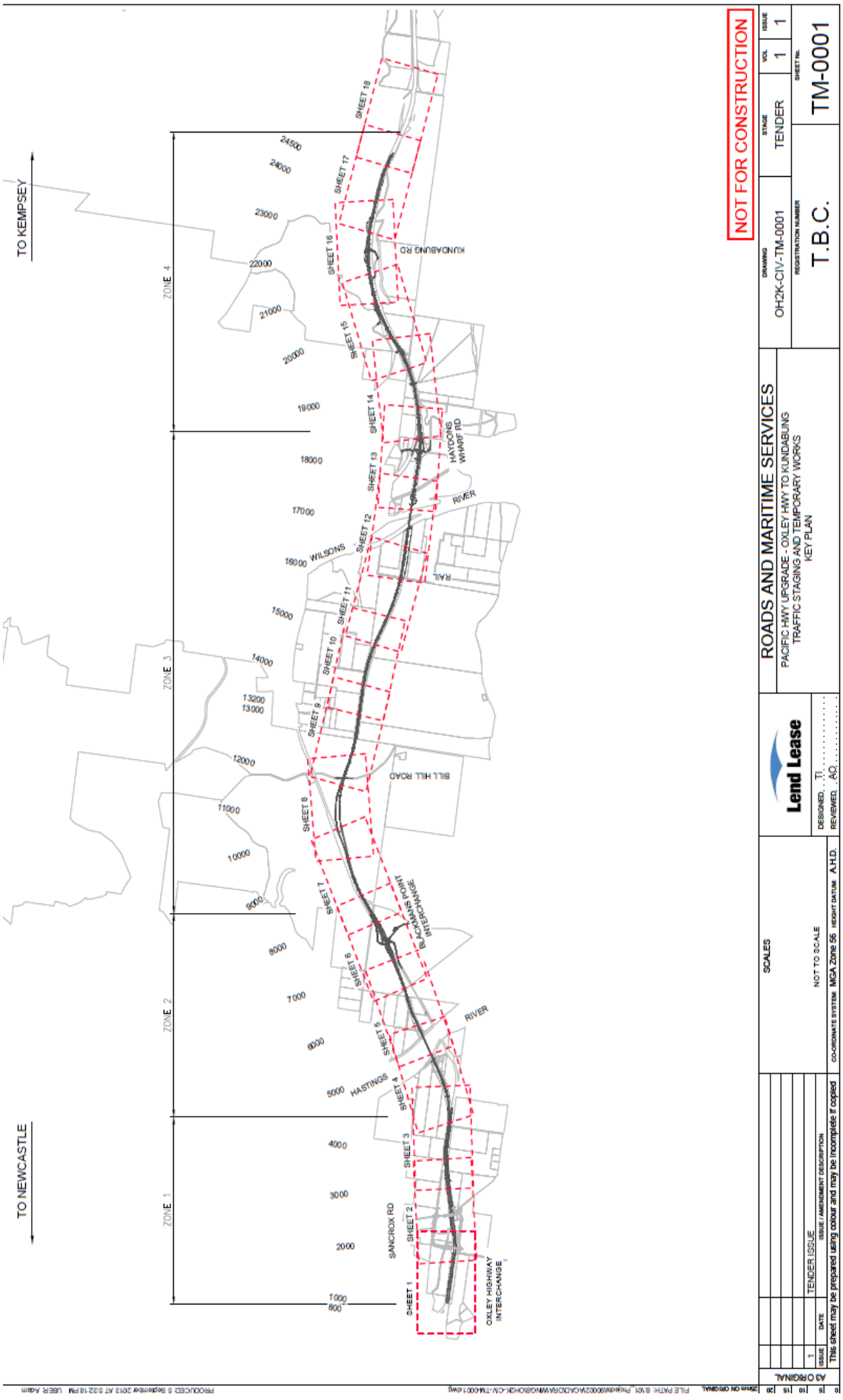


Figure 3-1: Staging Plan Key Plan

3.2.1 South of Fernbank Creek (Traffic Zone 1) Ch 600 to 4400

Works Description

- The first operation will be to construct a new two way cross-over, just south of the Limit of Works (LoW) between Ch 600 and 750. This will enable the traffic in both directions on the existing Pacific Highway to be moved on to the existing Southbound (SB) carriageway at our southern LoW. The existing Pacific Highway at this point already has divided carriageways but joins up at Ch 1000 to be a single two way carriageway. This existing cross over is therefore in the wrong place and will have to be pulled up and revegetated as part of the new median;
- To construct the new Northbound (NB) carriageway from the southern limit of works up to Fernbank Creek at Ch 4400 all traffic will be switched to the existing highway. This is not dissimilar to its existing arrangements. Once the new NB carriageway is completed all the traffic will be switched onto the newly completed NB carriageway so that the old highway can be closed and the new SB carriageway can be completed up to Ch 4400;
- In order to construct the new NB carriageway, concrete barriers (Type – F) will need to be installed on the western edge of the existing highway. The Type-F barriers will cover the whole length of the existing highway up to Ch 4500 leaving a gap at Ch 2500 for the Sancrox Road access. This is needed in order to complete the permanent works behind the barriers for the NB carriageway and parts of the median. The median shoulder of the existing highway will be closed temporarily and progressively during the barrier installation;
- Once the switch at the southern LoW is completed, clearing and grubbing of the alignment can be conducted followed by the setup of stockpile locations, earthworks, transverse drainage and pavements. Fencing and environmental controls will have already been completed as part of an earlier operation. Hauls will be via off highway plant within this zone however UZ and SMZ will need to be imported with road trucks from local quarries or from northern cuts transported along the highway.
- Bypass tracks will be constructed around the transverse drainage on an as needs basis to allow road work to continue while drainage is being installed. The existing drains across the Pacific Highway will be utilised with temporary connections while the NB carriageway is being completed to prevent flooding.
- Access will always be maintained for local traffic and businesses in the Sancrox Estate from either direction by utilising the new overbridge and by staging the Sancrox / Fernbank Road intersection;
- A Stockpile & Laydown area will be located at Sancrox Road opposite Expressway Spares once access is available and the Sancrox contractor has demobilised and agreement obtained with the land owner and RMS;
- The existing overtaking lane between Ch 3300 and 4400 will be closed and will be utilised as construction access; and
- Temporary emergency breakdown bays and fast lane shoulder widening in this zone will be done during Stage 2 works in accordance with the SWTC requirements to enable use of the new northbound carriageway during Stage 3.

Constraints

- Construction of Southern tie-in median under traffic;
- Working under traffic for the closure of overtaking lanes on the existing highway between Ch 3300 to Ch 4400;
- Working under traffic for the installation of concrete barriers;
- Construction access points;
- Maintaining a clear access for the Sancrox Road Estate businesses on both the eastern and western side of the highway;
- Closure of existing lane and re-line marking for the temporary switch under traffic; and
- Material haulage on the existing highway from the northern end of the project in Stages 2 and 3.

Programming, Traffic Staging & Construction Sequence

Stage 1

- Construction of a temporary median crossover at the southern tie-in to accommodate traffic onto the existing highway at 80 km/h in order to build the NB carriageway. The temporary cross over pavement will be constructed to take not only the Stage 1 switch on the SB carriageway but also the Stage 2 switch onto the NB carriageway. Type F barriers will be installed on the western edge of the crossover to direct traffic on the existing highway and to commence new works behind the barriers. A NB site access point will also be incorporated at this point;
- Establish site accesses, including access to accommodate haulage trucks. A stockpile site will be located opposite the Expressway spares to the west of the works on private land (agreement to be negotiated);
- Once traffic is switched onto the new crossover at Ch 700, the old cross over can be utilised for temporary stockpiling purposes between stages;
- Closure of the overtaking lane on the existing highway between Ch 3300 to Ch 4400 in order to provide dedicated turning lanes for construction access. Installation of Type F-barriers on the shoulder edge of the existing highway along the length due to proximity of the work area; and
- Construction of a temporary crossover at approximately Ch 4400 with a design speed of 60km/hr for the Stage 3 traffic switch from the existing highway onto the new NB carriageway.

Stage 2

- Construction of the new NB carriageway including all transverse drainage structures from Ch 750 to Ch 4400;
- Divert the local traffic for Sancrox Road west onto Billabong Drive/ Bushland Drive from the Oxley Highway Interchange. Establish signs as required. Similarly, when able, divert the traffic heading to the western side of the Estate onto the eastern side and over the new over bridge;
- Specific detailed traffic management for both cars and pedestrians will be required at the front of Expressway Spares to complete both the Sancrox Road intersection and the laneway at that location. This will occur during detailed design in consultation with the owners of Expressway Spare and other stakeholders in the area utilising Sancrox Road e.g. quarry access. Note that Sancrox Rd will require localised lateral migration during this stage to allow new pavement on the NB carriageway underneath the existing road to be constructed;
- Heavy haulage from Sancrox Quarry will also be maintained onto the highway either via Sancrox Road or the new overbridge;
- Current access to Cassegrain Winery and Fernbank Road will remain unchanged during this stage;
- Construction site accesses will be via the Sancrox Estate, an entry at the southern LoW and at the Gates between Ch 3300 - Ch 4100 (in a staggered SWTC Appendix 9 Fig 9.23 configuration) or via haul roads over Fernbank Creek;
- A temporary intersection to enter Stage 3 works as per SWTC Appendix 9 Fig 9.23 will be constructed at Ch 3200 during this stage; and
- Construction of temporary pavement widening on the fast lane shoulder and associated breakdown bays per SWTC Section 7.15.1(t) requirements from Ch 750 to Ch 4250 to allow for traffic staging in a contraflow arrangement on the new carriageway in Stage 3.

Stage 3

- Switch traffic onto the new NB carriageway in two way directions at 80 km/h speed limit all the way from Ch 700 to Ch 4400 and switch back onto the existing via a 60km/hr temporary crossover at approximately Ch 4400. Temporary widening will be required on the median shoulder to maintain the required traffic lane widths during the contra flow arrangements on the new concrete pavement;
- Once the switch is completed onto the new NB carriageway, construction of the new SB carriageway will commence from Ch700 to Ch 4400. Type F barriers will be installed on the eastern edge of the new NB carriageway along the length to accommodate construction works behind it;
- By the time these Stage 3 works are commenced, the Sancrox Road will be laterally shifted to allow the pavement construction to be completed while maintaining access to the adjacent properties and

businesses. The traffic to & from the eastern side of the Estate will be able to use the new overbridge and the turn to the east off the NB carriageway will not be required;

- Construction of Sancrox Service Road A and local access to Cassegrain Winery will also be completed along with the connection to Fernbank Creek Road while maintaining access via alternate temporary entrances; and
- Construction site accesses will be via the Sancrox Estate using the Sancrox Bridge from the west, an exit at the southern LoW, and side entry from the location of the Stage 3 crossover at approx. Ch 4400 and from the temporary intersection as per SWTC Appendix 9 Fig 9.23 provided at Ch 2500, and possibly an exit to the south only from the permanent cross over at Ch 4100 (TBC in detailed design).

Stage 4

- Switch all traffic onto the new NB & SB carriageways in both final directions at 80 km/h speed limit all the way from Ch 700 to Ch 4400;
- Once the final switch is completed the rehabilitation works will commence by removing the temporary pavements widenings, batter shaping at temporary sections and landscaping to the rehabilitated areas and any remaining works.; and
- Following completion of rehabilitation and landscaping works, the 80km/hr speed restriction will be removed.

Management of Impacts on Existing Roads & Access

- Median crossovers will be signposted as per RMS Traffic Control at Worksites to alert the travelling public of route changes. Speed rezoning at 80 km/h will be required on the existing Pacific Highway for two way traffic due to close proximity of work areas;
- A 60km/hr speed zone will be applied on the side track design at Ch 4400 in accordance with G10 A requirements;
- The access to the businesses on either side of the Pacific Highway will always be accessible either from the Oxley Highway Interchange or via the Sancrox Works overbridge. Roads will be signposted as per RMS Traffic Control at Worksites; and
- Some widening works will impact local traffic. This will be managed with early warning signs and traffic management to formalise it.

Considerations, Options & Observations

- There is an opportunity to retain existing material as pavement (top of SMZ) on the SB carriageway with proper consultation to reduce excavation and embankment fill in the area which will minimise the material haulage on the existing highway. Similarly, material which must be removed can be reused elsewhere on the project at least as UZ if not SMZ or verge material. This opportunity will be reviewed in the detailed design stage;
- Also there is an opportunity to stabilise the existing material to meet the UZ criteria and re-use, if a short fall occurs in the section. This will minimise the haulage of imported material on public roads and improve the overall mass haul efficiency of the localised material;
- During detail design consideration will be given to use of the Sancrox intersection for access from west to east for Stage 3 works only for construction vehicles. A detailed TCP will be required and options can be considered in the detail design stage;
- Rehabilitation & landscaping will commence progressively as soon as the areas are available to protect them from erosion and to have suitable vegetation growth prior to opening.

3.2.2 Fernbank Creek to the Blackmans Point Road Interchange (Traffic Zone 2) Ch 4400 to 8900

Works Description

- Construction of the new NB and SB carriageways to the west of the existing Pacific Highway from Fernbank Creek to Blackmans Point Road will be conducted primarily in a Greenfield environment with most works being across the flood plain either side of the Hastings River. The existing configuration on the highway onto Glen Ewan Road will be upgraded for access to the southern side of the Hastings River;
- Upgrade Glen Ewan Road to accommodate delivery of large bridge components;

- RMS has arranged for the Sancrox Works contractor to construct a truck entry and exit point at around Ch 6900 off the existing Pacific Highway for their excess material stockpile site. This same location will be used as the Contractor's main office compound including RMS' office and workshop for this contract. Once the stockpile material has been incorporated into the permanent works on the north side of the Hastings River it will also be the site for one of the batch plants;
- Construction of the twin bridges over Fernbank Creek;
- Construction of flood relief structures along the Hastings River floodplain;
- Construction of a new bridge over the Hastings River. The bridge included in the proposal for the Hastings River crossings will include the navigation clearance required by the NSW Maritime (section 6.4.6 of environmental assessment). Section 6.4.6 states vertical clearance to be 8 m for navigation. This forms the basis of the SoC T4. The proposed bridge will have a centre span height of 8 metres;
- Construction of new overbridges at Blackmans Point Road and associated ramps. To facilitate these works, the Pacific Highway traffic will be temporarily diverted onto a purpose built 60km/hr side track at around Ch 7900, just south of the new interchange location. The route of this side track will then divert the Pacific Highway traffic to the west of the new works and then back onto the existing highway at about Ch 8500, incorporating as much of the permanent Service Road C pavement as feasible. This diversion will enable the new interchange to be fully constructed without multiple traffic switching and staging of the bridge structures. The new side track will also incorporate a temporary bridge structure that will allow off road haul trucks to pass underneath the highway and thus create a single haul zone between the Hastings and Wilson Rivers. Once the new interchange is completed, the Pacific Highway traffic can then be diverted onto the elevated interchange which will have been designed for this occurrence with a 60km/hr reduced speed limit through the roundabout area and approaches. Work on the new carriageway can then be completed at the remaining sections such as at the old Blackmans Point Road intersection with the new alignment and along the route of the temporary side track;
- Installation of Type-F barriers in Stage 1 and 2 respectively at Blackmans Point interchange for the relevant works to commence behind the barriers. Stage 2 diversion will require Type-F barriers on both sides of the pavement to allow traffic to safely use the new diversion at 60km/h speed;
- Construction and installation of new transverse drainage structures at Ch 4450, Ch 4550, Ch 5100, Ch 6720 and Ch 7260;
- Soft soils investigation, identification and treatment adjacent to the Hastings River on both river banks and the floodplain; and
- Closure of the existing overtaking lane between Ch 6500 and Ch 8400 to enable it to be utilised as construction access.

Constraints

- Ensuring as a minimum the same level of access can be maintained for local road users on Glen Ewan Road, Wharf Road and Blackmans Point Road;
- Maintaining an acceptable level of service on the Pacific Highway while constructing the new Blackmans Point Interchange and avoiding the need to haul across or along the Pacific Highway while conducting the earthworks in the most efficient manner possible;
- Treatments of soft soils and embankment construction over flood areas causing delays;
- Maintaining property accesses while bridge construction works at Hastings River is occurring;
- Maintaining a 30m wide by 6m high navigation channel on Hastings River while bridge construction is occurring;
- Maintaining accessibility to the forest tracks via alternate routes following consultation with DPI and RMS;
- Construction of Hastings River Bridges with a minimum required clearance over local roads; and
- Removal of the Sancrox General Fill stockpile from the main compound site to incorporate into the permanent works at an early stage in order to establish the batch plant site and extend the main site compound.

Programming, Traffic Staging & Construction Sequence

Stage 1

- Establishment of main site compound and RMS facilities at Ch 6900 with a view to further expansion once the stockpile materials from the Sancrox works is incorporated into the Contractor's works;
- Construction of a 60km/hr design speed side track from Ch 7900 to 8500 to the west of the new interchange utilising portions of the new service road connection ramp to the old Pacific Highway. This will include a new temporary overbridge to allow construction plant to pass underneath;
- A construction access to be constructed at Ch 4400 to the west of the works across Fernbank Creek to allow structures construction and earthworks access towards the Hastings River south abutment;
- Establishment of site access off Glen Ewan Road for the construction of embankment fill, flood relief structures and Hastings River Bridge. This will be primarily for the bridge works. Negotiations are continuing with Hastings Council on use of Glen Ewan Road for material delivery which may involve some road upgrade works. A minor waterway crossing will be constructed to the west of Fernbank Creek to allow construction traffic to cross the watercourse;
- Access to Swamp Road will be closed off the Pacific Highway as it does not connect in the permanent arrangement although alternate access is still possible from the west of that road for forestry vehicles;
- Hastings River Drive on the east of new alignment will not be impacted from the road works. An early assessment will be conducted prior to commencing works to review the need for signage at Glen Ewan Road for truck turning movements; and
- If required, additional signage at Wharf Road and Blackmans Point Road for driver guidance will be installed.

Stage 2

- Once the Sancrox stockpile has been removed from the site compound then the main office will be expanded to allow for the peak usage and will include the establishment of a batch plant, workshop and aggregate stockpiles. This site meets the MCoA and is located at about the one third point along the route making it well placed for transit mixer or tipper haulage along the alignment and the existing Pacific Highway;
- Embankment and cutting construction from Ch 4400 to the Hastings River and from the Hastings River to Ch 8900 including fill on soft soils at the flood plains on either side of the Hastings River. Haul activities will pass beyond Ch 8900 (Blackmans Point Road intersection) via a manned crossing all the way to the Wilsons River. This crossing will give priority to the local traffic along the road (the Pacific Highway traffic is not affected) with haul vehicles crossing only when safe. During detailed design, consideration will be given to using temporary traffic signals at this location;
- Construction of the new overbridges for the Blackmans Point Road Interchange with the associated ramps and service roads can commence once the Pacific Highway traffic is diverted onto the new temporary side track between Ch 7900 to 8500 at 60 km/h speeds in Stage 2. Roadwork can also commence from this interchange to the connection point at Blackmans Point Road including the bus interchange as well as the future NB ramp off the existing highway;
- New fences with lockable gates will be installed for the construction access from Glen Ewan Road at the abutment fill to separate local traffic from work areas under the bridge;
- Construction & installation of various transverse drainage structures across the length of highway from Ch 4400 to 8900;
- Pavement construction from Ch 4400 to Ch 8900 on both the NB and SB carriageways on the main alignment. This includes the construction of the major bridge over the Hastings River;
- Construction of Flood relief structures across the Hastings Floodplains;
- Temporary side tracks will be installed around each bridge to maintain access with access road fingers constructed every second span to provide for bridge pier construction and accommodate craneage for the structures; and
- Access to the Hastings River Bridge works on the southern side of the river will be via Glen Ewan Road.

Stage 3

- Once the permanent Blackmans Point Interchange and associated ramps and service roads have been completed, the Pacific Highway traffic can then be diverted a second time onto the new elevated roundabout style interchange. These works will be signposted to carry two way traffic at 60 km/h speeds on the diversion in accordance with the requirements of RMS D&C Specification G10 A;

- The sections of the local roads and roundabout ramps of the Blackmans Point Interchange and Blackmans Point Road itself that were not able to be constructed in Stage 2 will now be completed. The old intersection between Blackmans Point Road and the new Pacific Highway will be closed permanently allowing this section of new carriageway to also be completed;
- Demolition and removal of the temporary bridge at Blackmans Interchange and pavement plug works will be completed, which can start only once the new permanent Blackmans Point Interchange roundabout and approaches are open to traffic and the diversion road is no longer needed; and
- The original side track area around Blackmans Point interchange can be rehabilitated.

Stage 4

- Once the new alignment (including the Hastings River bridge) are completed from Ch 700 including the Hastings River Bridge and floodplains, Wilson River bridge and floodplains and also including the works up to Ch 18600, the existing highway traffic will be switched on to the new NB and SB carriageways from the southern tie-in at Ch 700;
- Any remaining side tracks can now be removed and the area rehabilitated including the side-track at Ch 4400; and
- The existing Pacific Highway will then be used for local traffic as a service road only.

Management of Impacts on Existing Roads & Access

- At the interface with existing highway, speed will be reduced to 80km/hr in accordance with RMS Traffic Control at Work Sites Manual due to proximity of the work zones to the existing highway;
- The construction site access via Glen Ewan Road off the existing highway will require certain construction signs, truck movement signs and speed limit signs and any enhancement of the turning lanes to comply with Figure 9.23 of Appendix 9 of the SWTC and will be undertaken during Stage 1 works;
- Type F barriers will be installed along the shoulder of the existing highway or at tie-ins/selected entry/exit points (maintaining the 1.2m minimum shoulder width required by G10) where the clearance between the works and the existing highway is less than 3m or the new alignment cut batters are within 6m of the existing highway;
- Re-routing of traffic from the existing highway onto the new overbridges on the Blackmans Point Interchange will be setup for two way traffic at 60 km/h. Ramps connecting with the overbridge roundabout will be temporarily blocked with Type-F barriers and will only be open once traffic is in its final arrangement on new carriageways; and
- The low traffic volumes on the existing Blackmans Point Road will not be greatly affected by the haulage across this road just to the east of the Pacific Highway. However traffic control or temporary traffic signals will be implemented during the haulage periods.

Considerations, Options & Observations

- For the diversion of the Pacific Highway traffic onto the elevated Blackmans Point Interchange temporary lighting will be required at the approaches to the roundabout as per section 7.15.1(u) of the SWTC. This need will be reviewed at detail design and incorporated where required;
- The temporary bridge structure will be designed in accordance with SWTC requirements; and
- Rehabilitation and landscaping will commence as soon as the areas are available to protect them from erosion and to have suitable vegetation growth prior to opening.

3.2.3 Blackmans Point Interchange to Haydons Wharf Rd Ramps (Traffic Zone 3) Ch 8900 to 18500

Works Description

- Construction of main carriageways from Blackmans Point Road to Haydons Wharf Road with all transverse drainage structures and local accesses;
- Construction of local road work such as the Bill Hill Road overbridge and the connection to Wyndell Close for local properties;
- Construction of side track at Bill Hill Road and Haydons Wharf Road to accommodate local traffic;
- Closure of Mahogany Road connection to the Pacific Highway (it is not part of the final carriageway arrangements) while maintaining alternate access from the east and west for forestry vehicles;

- Construction of the new major bridge over Wilson River and Hacks Ferry Road. The bridges included in the proposal for the Wilson River crossings include the navigation clearance required by NSW Maritime (section 6.4.6 of environmental assessment). Section 6.4.6 states vertical clearance to be 8 m for navigation and 4.6m for Hacks Ferry Road. This forms the basis of the SoC T4. SB 09 package shows we have the 8m clearance between Pier 9 and 10. Hacks Ferry Road clearance is also met;
- Negotiations are underway with Hastings Council for the upgrading of Hacks Ferry Road to allow access for construction traffic, primarily for bridges material deliveries;
- Construction of flood relief structures on the south side of Wilson River;
- Construction of a new bridge over the North Coast Rail Line at Ch 17230 including construction of a temporary level crossing over the rail tracks;
- Upgrading of Wilmaria Road access as per SWTC Appendix 9 Fig 9.23 to allow access for construction traffic as well as for local properties, including upgrading of the gravel track as required to make it suitable for the batch plant works;
- Establishment of a second batch plant, laboratory and crib sheds on RMS land at Ch 17300;
- Construction of new culverts at various locations as required by the drainage design;
- Constructions of the Haydons Wharf Road overbridge and associated ramps;
- Establishment of a material processing and stockpiling area for the material from the cut at Ch 17800-18100 on the north east side of Haydons Wharf Road;
- Access to the Wilson bridge works on the northern side of the river will be via new alignment. However, access for light vehicles may be able to be established via the existing timber bridge crossing the rail line approximately 500m south of the site;
- Soft soils investigation, identification and treatments adjacent to Wilson River and on the southern flood plain;
- Closure of existing Overtaking lane between Ch 9750 to Ch 11650, Ch 12900 to Ch 13750 and Ch 17350 to Ch 18500 which are to be utilised for construction accesses;
- Blasting, haulage and stockpiling of material at the processing area at Ch 18100 will involve crossing Haydons Wharf Rd under localised traffic control; and
- Construction of permanent farm access between Ch 15500 and Ch16500.

Constraints

- The existing Pacific Highway is adjacent to the new alignment from Ch 8080 to Ch 9000 and will require Type-F barriers along the length of work;
- Local road access to properties must be maintained and as such side tracks will be built as required to accommodate traffic unless the works are deemed minor enough to be able to be constructed under traffic control;
- Construction of embankment over flood plains and soft soils treatments on the southern side of Wilson River and the flood plain;
- Maintain construction access over the Rail Line for construction vehicles while new bridge is constructed via an ARTC approved level crossing supervised by an ARTC accredited Protection Officer whenever it is in use;
- Maintain local traffic on Hacks Ferry Road during the construction of the bridge over the Wilson River. New fences with lockable gates will be installed at the construction access at the abutment fill to separate local traffic from the work area ;
- General construction access will also be within the work zone via Bill Hill Road to minimise heavy traffic movement onto Hacks Ferry Road. This may require an upgrade of the Bill Hill intersection at the Pacific Highway;
- Access to Bill Hill Road will be maintained during construction via a side track and localised traffic management;
- Maintaining access for Haydons Wharf Road onto the existing highway and upgrading the intersection of Wilmaria Road and the existing highway to enable truck movements into RMS owned properties adjacent the works which will house the northern batch plant;
- Maintain access for the residents from Wyndell Close to Cooperabung Drive although access directly to the Pacific Highway will only be available on completion of the works; and

- Traffic switch from Ch 18500 to Ch 18740 in order to keep the traffic on the existing highway while constructing the temporary widening for Stage 3 switch. The road works must be staged at Ch 18500 with the final connection occurring near the programmed completion of the works.

Programming, Traffic Staging & Construction Sequence

Stage 1

- Close Mahogany Road east of new works as it is not part of final arrangements. Access into Mahogany Road is still available from Blackmans Point Road and East Road;
- Construct the side track at Bill Hill Road to enable the bridge to be constructed and allow site access. Subject to authority approval, the sidetrack will be designed for a maximum design speed of 40 km/hr.
- Upgrade the intersection of the Pacific Highway with Bill Hill Road (if required) for use by construction traffic;
- Undertake any work on Hacks Ferry Road to allow access for bridge materials and construction traffic.
- Construct the new permanent farm track adjacent to the works between Ch 15550 and 16500 and widen it to make it suitable for construction use off Hacks Ferry Road. Consideration will be given during the detail design phase, in consultation with the property owner, to maintaining the existing access (and ramping over the new alignment where necessary) to enable this track to be constructed later in the programme utilising surplus bridge side track material;
- Construct side tracks at Haydons Wharf Road to enable local property accesses to be maintained while the new works are being completed. Subject to authority approval, the sidetrack will be designed for a maximum design speed of 40km/hr;
- Construct an ARTC approved side-track and temporary level crossing over the North Coast Rail line to enable heavy vehicles to haul from Haydons Wharf Road across the Rail line to the embankment on the northern side of the Wilson River;
- Widen the access at Wilmaria Road as per SWTC Appendix 9 Figure 9.23 to suit construction traffic for the batch plant works including up-grading the gravel track within the property to a suitable standard for heavy vehicles;
- Provide temporary access from Haydons Wharf Road for the material processing area in that vicinity for haulage to and from that site including traffic control measures when crossing Haydons Wharf Rd;
- Establish access to the south of Wilson River with the closure of the SB overtaking lanes of the existing highway from Ch 9750 to Ch 10500 and providing dedicated turning lanes as per SWTC Appendix 9 Figure 9.23. This will be confirmed during detailed design with the possibility of using a location at Blackmans Point Road near Ch 8900 following closure of Blackmans Point Rd;
- The Haydons Wharf Road intersection from the existing Pacific Highway will be established. This will be the main access/egress point for construction traffic entering this area of the site;
- Installation of Type-F barriers from approximately Ch 8000 to Ch 9000 due to the proximity of the work site adjacent to the existing highway;
- There will be no access to the site off Moorside Drive;
- Consultation with the property owner on the south eastern side of the corner of Haydons Wharf Road and the Pacific Highway will decide how best to temporarily reroute access to that property while road work is underway at the earliest possible time;
- Construction of the main carriageways and the Wilsons Rivers Bridge will commence; and
- At Haydons Wharf Road, it is assessed that the existing highway pavement has enough pavement widening available to laterally move the traffic slightly east in order to create room for the construction of the Stage 3 cross over on the western side while keeping traffic on the existing highway. This will be followed by moving the highway traffic onto this new pavement and completing the new work to the east in the next stage. Concrete barriers will be installed on each side for traffic safety and to delineate the work zone.

Stage 2

- Access between Blackmans Point Road and the Wilson River will be generally along the main alignment although access will also be available at Bill Hill Road and also at Ch 9900 if deemed necessary. Side tracks will be in place at all bridge structures for construction traffic;
- Haydons Wharf Road side track will enable the new road and bridge works to be completed clear of local traffic. This will also be an access point onto the site either directly onto the main alignment or from the east abutment south towards the rail crossing. Bridgeworks and earthworks will be managed to ensure construction access is maintained;

- Haydons Wharf Road upgrade and bridge work to be completed as early as possible to maintain local traffic as well as site access to the north of the Wilson River;
- Level crossing over the Rail tracks to be commissioned for construction purposes in consultation with ARTC. An ARTC accredited rail access Protection Officer will be in place when the crossing is utilised and will be fenced off with lockable gates at all other times. The accredited protection officer will be in charge of all movements across the rail tracks. Haulage will be generally along the main alignment from Haydons Wharf Road or from the batch plant site at Ch 17300;
- A rock processing plant will be situated near the new SB off ramp at Haydons Wharf Road to manufacture select material from the rock cutting near that location;
- Management of local traffic and construction traffic along Hacks Ferry Road during the construction of the bridge over the Wilson River and concrete paving; and
- Construction of the temporary Stage 3 crossover will be completed during this stage to enable the existing Pacific Highway to be switched onto the new NB carriageway at Ch18700.

Stage 3

- The new carriageways in this section are on the east of the existing highway and will be constructed as a greenfield site between Blackmans Point Road and Ch 18500. There is only limited interaction with local roads and the existing highway;
- Traffic on Wyndell Close can also be switched onto the new works although the connection to the Pacific Highway, although complete, will be kept shut while the Pacific Highway modifications are being made. The Wyndell Close traffic can access Cooperabung Drive as per usual;
- Once the road work and bridge work on Haydons Wharf Road has been completed, the traffic will be relocated onto the new works and the temporary side track removed. This will involve some minor staging at the eastern abutment to complete this section as well as completing any drainage works and property accesses;
- Traffic will now be switched from the existing highway to the new NB carriageway, which will enable the construction of main line pavements to be completed as far as possible. The NB carriageway will be constructed up to approximately Ch18480 and the SB carriageway will be constructed up to Ch18660 together with the median works; and
- Temporary crossovers in the median at approximately Ch 18400 and Ch18750 for the Stage 3A switch will also be constructed in this stage with the permanent works. These crossovers will be built to suit a 60 km/hr design speed.

Stage 3A

- The work to remove the old pavement at Ch 18500 to 18700 including ramp can only occur at this stage of the project. In order to remove the existing pavement and complete permanent ramp works and the plug on the new NB carriageway, temporary median crossovers built in the median in the previous stage will now be used to switch the traffic from new NB carriageway onto the new SB carriageway in a contraflow arrangement and back onto the new NB carriageway via these crossovers. The switch from NB to SB and back will be no longer than 500m to comply with RMS Specification G10 A. This will allow the ramp works at Haydons Wharf Road and plug to be completed in that 500m section, while traffic is switched. The switch will be designed for two way traffic at 60 km/h speed within the 500m section and outside that it will be at 80 km/h;
- The switch will need a combination of concrete barriers and water filled barriers (for delineation purposes only) in this 500m section for the protection of workers for the duration of permanent ramp works. A TCP will be created for the traffic arrangement;
- Traffic on Wyndell Close can also be switched onto the new works although the connection from Wyndell Close to the Pacific Highway, while complete, will be kept temporarily shut while the Pacific Highway modifications are being made. The Wyndell Close traffic can access Cooperabung Drive as per usual. During detail design, while reconstruction of the Haydons Wharf Rd NB on ramp is occurring, approval will be sought from the relevant authorities and consideration will be given to opening Wyndell Close for local traffic to enable a detour to be available for NB traffic onto the new highway via Wyndell Close and Cooperabung Drive to re-enter the new highway at Ch20050 via the permanent left turn arrangement;
- The section of the old Pacific Highway between Haydons Wharf Road and Ch 18500 including any intersection work can only be completed once traffic has been switched onto the new carriageways

and bridgework at the Wilson River is complete. Once this switch has occurred, the traffic volumes will have reduced sufficiently to allow the new NB on ramp to be closed to enable work to be completed. Local traffic can use the other completed road work but any traffic from Telegraph Point wishing to head north along the highway must enter at the Blackmans Point Interchange via the completed ramps at the interchange. As an alternative the local traffic may head north via Cooperabung Drive and onto the new carriageway at Ch20050, however this will only be a standard T intersection rather than the full interchange as at Blackmans Point. Advance road closure signs will be in place at Blackmans Point Interchange to direct local traffic. The final solution adopted will require consultation with the community and approval from the relevant authorities;

- After the traffic is switched onto the new carriageways, the existing highway will also be shut for local traffic north of Wilmaria Road and will only be accessible by construction traffic entering from the compound & batch Plant site at Ch17300 off Wilmaria Road. Access for the property located at Ch 16900 east of the existing highway will be maintained by using Cooperabung Drive from Telegraph Point in order to head north on the Pacific Highway; and
- During the construction of the permanent NB on ramp works on the existing highway, access for the local traffic on Haydons Wharf Road and the property located on the south east corner of Haydons Wharf Road identified as Lot 13 DP246715 will be maintained at all times under traffic control. It has been assumed that the property will also use occasional semi-trailers into the property and as such the access to this property will be maintained from Cooperabung Drive/Wyndell Close to provide as much straight access as possible. Works on the Haydons Wharf Road/Wyndell Close intersection will be done under traffic control as required.

Stage 4

- Once the old redundant pavement is removed and the crossover pavement reinstatement works completed, traffic will be switched onto its final configuration on both the SB and NB carriageway and the ramp will be opened. However the fast lanes of both carriageways will be temporarily closed for approximately 500m (under traffic control) to allow for the removal of the temporary crossovers at Ch 18400 and 18750 respectively and any redundant pavement left in the median. The speed limit will be reduced temporarily to 60 km/h within this section during the removal period. Shutting down of the fast lanes will be temporary and rehabilitation works will be completed with traffic management in place for the duration of the removal and rehabilitation;
- Once the rehabilitation works are completed, traffic will be switched to its final configuration in both lanes and speed restrictions removed; and
- De-commissioning of the batch plant and other facilities used for works will also take place in this final stage and areas will be rehabilitated.

Management of Impacts on Existing Roads & Access

- Existing highway speed through the work area to be reduced to 80km/hr in accordance with RMS Traffic Control at Work Sites Manual due to proximity of work zones which will be within 6m of the existing highway;
- Type F barriers will be installed along the shoulder of the existing highway (maintaining the 1.2m minimum shoulder width required by RMS Specification G10) where the clearance between the works and the existing highway is less than 3m or the new alignment cut batters are within 6m of the existing highway;
- The existing highway at Haydons Wharf Road and Blackmans Point Road will require signage for construction access as well as for local traffic;
- Construction signs and revised speed limits to be enforced for Bill Hill Road for local traffic; and
- The impact on the access for the property owners at Wyndell Close, while the construction works at Haydons Wharf Road ramps are being conducted will be minimal. Notwithstanding, extensive consultation will be adopted to keep them informed of upcoming works and proposed changes to access arrangements. Directional signage for the locals to use Blackmans Point Interchange or detours to the north during the works will be required together with approval from the relevant authorities.

Considerations, Options & Observations

- Rehabilitation & landscaping will commence as soon as the areas are available to protect them from erosion and to have suitable vegetation growth prior to opening; and

- Timing of the overall opening and switching of traffic lanes on the main carriageways will be co-ordinated globally and is reflected in the construction programme. The descriptions of the traffic changes in each zone described here will be integrated with this overall traffic management.

3.2.4 North of the Haydons Wharf Road Ramps (Traffic Zone 4) Ch 18500 to 24100

Works Description

- Construction of main carriageways from just north of Haydons Wharf Road at Ch 18500 to the northern tie-in at Ch 24100 (SB) and Ch 24040 (NB), including all associated local road intersection upgrades and track closures;
- Completing the temporary cross over at Ch 22800 for the Stage 3 traffic switch allowing the works to be completed where the route of the old highway crosses from the SB carriageway to the NB carriageway as well as removal on completion. The works at the northern tie in must also be completed using a temporary crossover at Ch 24100;
- Temporarily closing Cooperabung Range Road at around Ch 20600 and Ch 21000 to allow the main cutting at Cooperabung Hill to be completed;
- Existing traffic at Ch 18500 remains on the existing Pacific Highway while the Stage 3 crossover and two median crossovers for stage 3A are constructed;
- Upgrading of Yarrabee Road intersection with future provision to Class M standard;
- Construction of the Cooperabung Creek Bridges and the access road bridge at Yarrabee Road;
- Removal of existing culverts from Barrys Creek and construction of the new bridges;
- Permanent closure of Passionfruit Road and Barrys Creek Road which are minor forestry access tracks that can be still accessed from the west with no provision for future connections to the new carriageway;
- Establishment of a material processing area on RMS owned land at Ch 19800 – 20000. This site will include site sheds as required;
- Establishment of an exclusion zone around the identified potential ‘Archaeological site’ at the processing area prior to any work commencement;
- Construction of a temporary intersection at Ch 20000 (for Stages 1 & 2) and Ch 19400 (for Stage 3) as per SWTC Appendix 9 Figure 9.23 to accommodate construction traffic and local traffic into the area while the permanent works are being constructed;
- Construction of a haul road from the northern cut to the processing area suitable to carry heavy traffic with traffic management (as required) when crossing the local road access at Ch 20000 or possible temporary closure of this local road, subject to relevant authority approvals;
- Closure of existing overtaking lanes from Ch 19750 to Ch 20500, Ch 21300 to Ch 22150, Ch 21950 to Ch 23000 and Ch 20300 to Ch 21200 to provide a staggered Figure 9.23 access to the northern cuts for Stages 1, 2 and 3;
- Construction of a temporary pavement widening at Ch 22850 to provide access as per SWTC Appendix 9 Figure 9.23 for the northern-most cut for Stages 1 and 2;
- Pavement widening from Ch 23400 to Ch 23800 from the SB carriageway to provide access to Stage 3 works on the NB carriageway in this section;
- Construction of a temporary intersection for use as site access as per Figure 9.23 for Stage 1 to 3 works at approximately Ch 23600; and
- Construction of temporary emergency breakdown bays in this zone in accordance with the SWTC requirements when switching traffic from the existing highway to the new carriageway (refer SWTC Section 7.15.1(t)).

Yarrabee Road Intersection

- Upgrade & maintain access at Yarrabee Road intersection and construction of a new underbridge for Yarrabee Road across the new highway at Ch 22100. Access to be maintained from both the NB carriageway and SB carriageways during the course of construction for Yarrabee Quarry.

Cooperabung Access Road & Creek Works

- Closure of Cooperabung Drive (subject to the necessary authority approvals) from Ch 20600 – 21000 in order to complete the cut; and

- Construction of new bridges over Cooperabung Creek at Ch 19700.

Barrys Creek

- Removal of existing culverts and construction of new bridges over Barrys Creek at Ch 23950. The SB Bridge will be completed first while traffic is on existing highway (future NB carriageway) and works will commence on the NB carriageway once traffic is switched onto the new SB carriageway.

Constraints

- Local road access requires an alternative track or access to be provided;
- A rock processing plant will be established for the Cooperabung cuts and the manufacture of select material which will be transported with road trucks to all parts of the project. As this is the area where most of the select material will be sourced, an off road haul route will be established from the cuts to this area while the NB works are being constructed. Road trucks may be required when processing the rock from the SB works. The processing site will be on RMS owned lands adjacent the site near Ch 20000 and may involve shutting the connection road to the highway, subject to the approval of the relevant authorities, when off road haulage is in place (note that access along Cooperabung Road is available from the south). Safe access for construction plant will always be in place onto the highway via suitably designed entries conforming to SWTC Appendix 9 Figure 9.23;
- Accessibility and excavation works in the cut zones of Cooperabung Hill while traffic flow is maintained on the existing highway. Will need dedicated turning lanes to the cut for site access and a procedure to stop traffic entirely while blasting in the large cuts;
- Construction of Yarrabee Intersection on the existing highway. This will require a temporary crossover in the median at Ch 21550 to maintain traffic access from the new NB carriageway for the Quarry as well as a similar temporary crossing arrangement at each local road intersection;
- Removal of existing culvert from Barrys Creek and replace with new twin bridges. Needs to be done in two parts being firstly the SB carriageway to be removed and built in order to keep the traffic on existing highway; and
- Complete closure of the local road connection at Ch 20000 to allow the haulage trucks to run freely and safely. The arrangement is subject to Council approval and community consultation.

Programming, Traffic Staging & Construction Sequence

Stage 1

- Hauling of any SMZ/UZ material from Cooperabung Hill to the flood plains of the Wilson River and Hastings River for embankment fills on the public roads. This will require a TCP for truck movements onto the existing highway. Type F-barriers with screens will be installed on the shoulder edge of the existing highway in the cut zones;
- Cutting & haulage of materials from northern cuts to the processing area in order to be crushed, graded, stockpiled and tested for import to the southern section;
- Closures of existing overtaking lanes to provide dedicated entry/exit points for the Cooperabung Cut. This will also require some pavement widening for the northern-most cut, which is to be constructed in this stage;
- Cooperabung Cut is a major source of potential SMZ material for the project and as such access arrangements from the existing Pacific Highway will be upgraded as part of the pre-construction works to ensure that excavation and material stockpiling can occur at an early stage of the project. The cut will be up to 20-30m deep and may require blasting, with the works to be conducted in two halves. The exposed batter on the traffic side will require benching to allow for excavation to proceed safely. It is expected that there is sufficient pavement width in this area to move traffic to the east and provide G10 complying lanes widths and site entry arrangements conforming with SWTC Appendix 9 Figure 9.23 with re-line marking works only required. This line marking work would be done with appropriate TCPs, traffic control and ROLs;
- Local road accesses and property accesses will be maintained at all times by providing side tracks, alternate routes or by managing on-site. The minor forest tracks known as Passionfruit Road and Barrys Creek Road will be closed as these are not integrated into the final works and have alternate access available. Cooperabung Range Road will be temporarily closed, subject to approval from the relevant authorities, at Ch 20700 and 21000 so that the works can commence and be reopened on

completion of the new NB carriageway. The closure is at a location where local properties are not required to use this road for direct access to the highway; and

- A temporary crossing will be constructed at Cooperabung Close, Cooperabung Range Road and Yarrabee Road to allow access from these roads to both carriageways during construction for residents and construction traffic.

Stage 2

- Construction of the NB carriageway will continue between Ch 18500 and Ch 22900 including the new Yarrabee Road underpass ramps to the west of the highway while maintaining access to Yarrabee Road from the existing Highway;
- Construct the fast lane shoulder pavement widening on the NB carriageway from Ch 18500 to Ch 22900 on the median side to allow for the traffic staging in a contraflow arrangement for the next stage including construction of breakdown bays as required by SWTC Section 7.15.1(t);
- Local road accesses at Cooperabung Close and Cooperabung Range Road will be completed utilising suitable lateral shifts and side tracks to maintain access and complete the NB carriageway;
- The SB carriageway will also be completed between Ch 23000 and 24100 including temporary cross overs at Ch 24000 and Ch 22800 and pavement widening from Ch 23000 to Ch 24100 to enable the traffic staging in a contraflow arrangement for the next stage. These are required for the final completion works;
- Note that as per the southern works, temporary pavement must be constructed on the median shoulder to allow sufficient width for the new concrete pavement to take traffic in both directions while the original highway pavement is being reconstructed. This includes the allowance for temporary breakdown bays as per RMS requirements of G10 and SWTC Section 7.15.1(t).
- Temporary intersections as per SWTC Appendix 9 Figure 9.23 will also be required at approximately Ch 23600 to provide access for the SB carriageway in Stage 1. This will be critical to construct in order to haul processed SMZ material from the processing area onto the new SB carriageway for completion of Stage 1.

Stage 3

- Highway traffic will be switched onto the new NB carriageway at Ch 18500 from the existing highway such that by Ch 18700 the highway traffic will be on the new NB carriageway until Ch 22700, from where it will switch onto new SB carriageway via temporary median pavement. This enables the construction of the SB carriageway from Ch 18600 to 22900;
- Traffic will continue north via a new median cross over at Ch 22700 to then travel on the new SB carriageway until Ch 24000 where it will be switched back again onto the existing highway at the limit of works. This will enable the construction of the new NB carriageway up to the northern tie-in just north of Barrys Creek;
- Once the traffic has been switched, the new road works on Yarrabee Road can be constructed. Local traffic will be able to access the highway via side tracks and crossing points. Local property accesses on the eastern side will be maintained from a temporary intersection arrangement constructed at Ch 19400 with a temporary side track during the construction of the permanent access. The same intersection will also provide access for Stage 3 works in the area. Properties on the eastern side at approximately Ch 20000 and one at Ch 20800 will use the existing gravel track to get to the temporary intersection at Ch 19400. The Yarrabee underpass bridge and associated road works on the eastern side of the road can now also be completed;
- Similar to Stage 1, a temporary intersection will be required to enable the Stage 3 works on the NB carriageway to be constructed and provide dedicated access for the site. This will be constructed at approximately Ch 23600 by utilising some of the permanent crossover works and adding temporary widenings as required for acceleration and deceleration lanes;
- Once the traffic is switched from the temporary cross over at Ch 22800, the SB carriageway will be built from approximately Ch 18600 and joined with the pavement at approximately Ch 22900 which was completed in Stage 2. This then enables the traffic to use the new SB carriageway all the way from Ch 18600 to the limit of works at Ch 24100 in Stage 4;
- The new NB carriageway will also be built from Ch 22900 to the northern tie-in without doing any more traffic diversions on the existing highway;

- Completion of the Yarrabee Road Intersection at 21600 in the permanent left in/left out configuration in order to provide direct access to the Yarrabee Quarry. Localised lateral shifting of the temporary intersection will be required in order to construct the new highway pavement; and
- Construction of a temporary crossover in the median at Ch 18800 will also be built in this stage for Stage 3A works.

Stage 3A

- The work to remove the old pavement at Ch 18500 to Ch 18700, including the ramp, can only occur at this stage of the project. In order to remove the existing pavement and complete permanent ramp works and the plug on new NB carriageway, the temporary median crossover in the median will now be used to switch the traffic from the new NB carriageway from Ch18400 onto the new SB carriageway and back onto the new NB carriageway at Ch18750 via these crossovers. The switch from NB to SB and back will be no longer than 500m and will be designed for 60km/hr. This section will be a contraflow arrangement. This will allow the ramp works at Haydons Wharf Road and the crossover pavement plug to be completed within that 500m section, while traffic is switched. The switch will be designed for two way traffic at 60 km/h speed within the 500m section and for 80 km/h outside this zone;
- The switch will need a combination of concrete barriers and water filled barriers (for delineation purposes only) in this 500m section to protect the workers from the contraflow traffic for the duration of permanent ramp works.

Stage 4

- Once the old redundant pavement is removed and the crossover pavement plug works are completed, traffic will be switched into its final configuration on both the SB & NB carriageways and the ramp will be opened. However the fast lanes of both carriageways will be temporarily shut for approximately 500m (under traffic control) to allow for the removal of the temporary crossovers at Ch 18400 and Ch 18750 respectively and any redundant pavement left in the median. The speed limit will be reduced to 60 km/h within this section during the removal period. Shutting down of the fast lanes will be temporary and rehabilitation works will be completed with traffic management in place for the duration of removal & rehabilitation;
- Once the temporary pavement rehabilitation works are completed, traffic will be switched to its final configuration in both lanes, including final traffic arrangement on local roads and property accesses;
- Redundant pavements including emergency breakdown bays will be removed and the areas rehabilitated progressively with traffic control as required;
- The Project Site including main compound demobilisation can now be completed.

Management of Impacts on Existing Roads & Access

- The existing highway speed through the work area will be reduced to 60km/hr between Ch 18300 and Ch 18750 in accordance with RMS Traffic Control at Work Sites Manual due to the proximity of work zones within 6m of the existing highway;
- Type F barriers will be installed along the shoulder of the existing highway (maintaining the 1.2m minimum shoulder width required by RMS Specification G10) where the clearance between the works and the existing highway is less than 3m or the new alignment cut batters are within 6m of the existing highway; and
- The existing highway at Haydons Wharf Road and new main line carriageways will require signage for construction work.

Considerations, Options & Observations

- Rehabilitation and landscaping will commence as soon as the areas are available to protect them from erosion and have suitable vegetation growth prior to opening; and
- At the conclusion of Stage 4, all works on the project have been completed from Ch 750 to 24100.

3.3 Traffic Switching Procedures

Prior to any traffic being switched the following procedures will be adopted:

- A Traffic Control Plan will be developed addressing all requirements outlined in RMS D&C Specification G10.2.8.3 and submitted to the RMS Representative for approval as a Hold Point per G10.2.8.3;
- Prior to implementation, the Traffic Control Plan will be audited by an independent Level 2 Road Safety Auditor per G10.2.10;
- Prior to switching any traffic on to a temporary roadway or detour, a joint inspection will be undertaken by the Traffic Manager with the RMS Representative. This inspection will be a Hold Point per G10.3.3.;
- Within 24hrs of the implementation of a TCP for long term temporary work, an inspection will be carried out by a Road Safety Auditor during both daytime and night time and a report will be submitted to RMS detailing the findings; and
- Following completion of any temporary traffic arrangements, temporary arrangements will be removed and the area will be restored to a condition equivalent to that which existed prior to the commencement of the work.

3.4 Traffic Staging Programme

The main contract programme provides the detailed programming for the traffic staging. Dates for all traffic switches need to be obtained from the latest construction programme which is updated monthly.

4.0 Traffic & Transport Operations

4.1 Site Safety & Security, Site Access & Signage

Fencing and other methods of securing the compounds and work areas will be carried out as an early start activity when each Site is established. Access to and from compounds and worksites for construction staff will be established as a pre-construction activity with approval from the Environmental Representative. Appropriate Australian Standard safety signage will be used to reinforce Site security requirements.

Vehicle Movement Plans will be in place for all compounds and will include site access points, traffic flow arrangements within the compound (preferably one way), parking areas and type of parking (preferably reverse parking) and designated pedestrian walkways.

Prevention of public access to Site compounds and selected work areas will have a high priority, with conventional mesh fencing being used for this purpose. RMS approved concrete barriers will be used to delineate worksites adjacent to live traffic including anti-gawk screens in nominated areas where appropriate.

Variations to the posted speed limits will be implemented as part of the traffic management strategy at those times where construction activity is taking place or the road alignment is affected and warrants a general speed reduction no lower than 80 km/hr for long-term works on the Pacific Highway (except for two locations each 500m long which will be reduced to 60km/hr as permitted by RMS D&C Specification G10 A), 60km/hr for long-term works on local roads and 40 km/hr for short-term Works subject to road occupancy licence conditions of approval. These will be determined by the Traffic Manager and incorporated in the traffic control plans that form part of the applications for road occupancy licences and speed zoning authorisations (SZA). These TCPs will be based on TCP57 in RMS Traffic Control at Worksites Manual. Signage, barriers and speed limits will constantly be under review by the Traffic Manager and will be modified as required, subject to the approval of RMS Representative.

Details for the location of traffic speed zones, barriers and site accesses are shown on the staging plans in Appendix B and signage will be shown on the traffic control plans developed during the course of the Works and contained in Appendix D. Signage will typically be as per TCP195 and TCP57 in RMS Traffic Control at Worksites Manual.

Safe access points will be provided to the construction site. Where access is off the existing highway, construction site access points will be designed in accordance with Austroads Guide to Road Design – Part 4 and dedicated right hand turning lanes and deceleration and acceleration lanes will be provided in accordance with Figure 9.23 of SWTC Appendix 9. In addition, the intersection from the existing highway to the main site compound will also provide a dedicated right turn lane and acceleration and deceleration lanes in accordance with Figure 9.23 of SWTC Appendix 9. All site access points and gates will be numbered and signposted with the relevant gate number, the appropriate UHF Radio contact channel to call up on entry and the relevant site safety signage. Capacities of existing intersections used to access the Construction Site will be maintained as a minimum at the levels that existed prior to the commencement of construction in accordance with SWTC Section 7.15.1(s).

Site accesses are shown in Appendix B and detailed in Appendix A2 and will be provided at the following locations:

- Sancrox Road for access to the western alignment from the southern limit of works to Fernbank Creek;
- Adjacent to the new NB carriageway by providing a temporary intersection arrangement as per SWTC Appendix 9 Figure 9.23 at Ch 3200 for access to the Stage 3 works at the southern end;
- On the existing highway utilising existing overtaking lanes as described in this document along the project corridor for site accesses;
- On the existing Pacific Highway from Ch 3300 to Ch 4400 to provide dedicated turning lanes for the Stage 1 works (new NB carriageway);
- Site access from Ch 750 for Stage 1 works by utilising an existing lane;
- On the existing Pacific Highway for entry into Glen Ewan Road;
- On the existing Pacific Highway between Ch 6500 to Ch 8400 for access between Hastings River and Blackmans Point Road. This also includes the access to the main site compound and batch plant site;

- From Bill Hill Road for access to the site between Bill Hill Road and Blackmans Point Road and Bill Hill Road and the Wilson River floodplain;
- An access as per SWTC Appendix 9 Figure 9.23 at Ch 9900 to provide construction access;
- Upgrading of Wilmaria Rd intersection to be SWTC Appendix 9 Figure 9.23 compliant and to provide dedicated access to site;
- On the existing highway at Haydons Wharf Road for access to north of the Wilson River;
- Access from Wilmaria Road to the batch plant and Rail Line crossing;
- On the existing highway at Ch 20050 for access to Cooperabung Hill;
- On the existing highway utilising overtaking lanes between Ch 20300 and Ch 21200 for a staggered SWTC Appendix 9 Figure 9.23 intersection for access to Cooperabung Cut;
- On the existing highway by constructing additional pavement widening and providing a temporary intersection as per SWTC Appendix 9 Figure 9.23 at Ch 22850 for access to the northern-most cut;
- On the existing highway by constructing additional pavement widening and providing a temporary intersection as per Figure 9.23 at Ch 23600 for access to new SB carriageway for Stage 1 works;
- Adjacent to the new SB carriageway by constructing additional pavement widening and providing a temporary intersection as per Figure 9.23 at Ch 23600 for access to new NB carriageway for Stage 3 works;
- Access from Yarrabee Road for overbridges at Ch 22100; and
- Quarry access from Yarrabee Road at Ch 21600.

A preliminary construction traffic intersection analysis is contained in Appendix C for these site accesses together with preliminary intersection arrangements which will be further developed during the detailed design phase.

As part of the signage requirements for the project, portable variable message signs will be employed to provide advance warning to the travelling public of proposed changes to traffic movements, traffic incidents and other real time traffic advice as required.

4.2 Consultation

An essential component of this Traffic Management and Safety Plan is consultation with affected stakeholders to ensure all parties have a common understanding of the potential impacts of the construction project on the local road network and the Pacific Highway.

In particular, the use of local roads for project haulage requires:

- consultation with affected residents.
- consultation with council.
- approval by the council for design relating to any works that are required to be undertaken on the local road.
- release of any contractual hold points that relate to this work.

Lend Lease has commenced consultation with all parties affected by the construction project.

As required by SWTC Clause 7.12(c), preconstruction road surveys will be undertaken with RMS and the road's owner of all roads likely to be affected by construction of the Project Works to record the condition of the existing road and bridge infrastructure. This will include the Pacific Highway adjacent to the works area and local roads including Glen Ewan Rd, Blackmans Point Rd, Bill Hill Rd, Hacks Ferry Rd, Wilmaria Rd, Haydons Wharf Rd, Wyndell Close, Cooperabung Drive, Cooperabung Range Rd and Yarrabee Rd. A copy of the survey will be provided to the relevant road owner.

4.3 Maintenance during Construction

Maintenance during construction will be as per the requirements of Appendix 25 of the Scope of Works and Technical Criteria (SWTC) and SWTC 7.12 with records and reports documented in accordance with Appendix 24 of the SWTC.

As part of Lend Lease's work, it will maintain and repair, from the commencement of substantial construction until the date of construction completion:

- The Project Works;
- The Temporary Works;
- All existing highway within the maintenance site boundaries as defined in SWTC Section 7.12(a)(iii); and
- All other areas affected by Lend Lease's construction works.

Lend Lease will assign a Traffic Operations & Maintenance Foreman to manage, undertake a preconstruction dilapidation survey, audit, maintain and modify (where required) the road asset as defined in SWTC Appendix 25. This position will also fulfil the role of an additional field resource for responding to unplanned incidents should they occur. The responsibilities of this Foreman are detailed in Section 2.2.3 of this Plan.

The Traffic Operations & Maintenance Foreman will have available for use the resources noted in Section 2.3 of this TMSP which will be supplemented with typical maintenance resource items such as:

- Guide posts;
- Small signs and posts;
- Cold mix for emergency pot hole repair;
- Chainsaws; and
- Litter collection bags and bins.

The activities required for maintenance during construction are listed in Table 4-1.

Table 4-1: Lend Lease's Maintenance Activities

Activity No.	Description	Activity No.	Description
100	Asset inspection	**120**	Repair pothole
121	Correct surface shape	**131**	Control tree and/or bush
132	Control ground vegetation	**141**	Remove detritus and litter
161	Service small sign	**162**	Replace small sign (reactive)
163	Maintain guide post		

In addition to the above, Lend Lease will ensure that any road, footpath or cycle way which is open to the public is at all times kept free of mud, dirt, deleterious material or debris arising from Lend Lease's work.

During site shutdown periods (e.g. Christmas, Easter and long weekends associated with public holidays and RDOs), the Project Director, with input from the General Superintendent, will develop an inspection and emergency response callout protocol with contact names and telephone numbers to ensure that any safety, environmental and maintenance issues can be actioned during these periods. This protocol will be issued to the RMS Representative at least the day prior to the holiday period.

4.4 Traffic Incident & Delay Management & Response

In accordance with the Project Deed, Lend Lease will provide an incident and delay management response capability to manage unplanned incidents on the road network. This capability will:

- Be available for shift work where required, ensuring that resources are available for incident response during construction hours;
- Undertake training appropriate to the duties of working in an incident response crew;
- Ensure that traffic control vehicles are fully equipped and are ready to attend incidents when called out;
- Provide assistance to other RMS Traffic Commanders or emergency services when required;
- Ensure all appropriate procedures are implemented during an incident or traffic control activity to provide for the safety of the public and workforce; and
- Utilise trailer mounted variable message signs (VMS) to advise road users of incidents or delays.

Lend Lease will provide and operate the necessary infrastructure, services, resources and systems to monitor, manage and control traffic flow on the affected maintenance areas of the road network. It should be noted that the management of traffic incidents requires a formal delegation of powers from the TMC and relevant emergency services (NSW Police). As Lend Lease has not been delegated this authority, Lend Lease will only provide assistance to other RMS traffic commanders or emergency services. The Traffic Manager is the interface with all emergency services.

Responses to incidents will be managed in accordance with the incident management plan developed by the Traffic Manager and in line with RMS policy as it applies to the use of incident and delay management and traffic monitoring applications and protocols.

For the avoidance of doubt, this section details responses to traffic incidents on public roads impacted by the Works. Management of emergency response for incidents within the Site are covered under the Emergency Response Plan contained within the Project WHS Management Plan.

4.4.1 Traffic Incident Detection & Management System

Traffic incident detection and management will occur using the following systems and resources that may be available to Lend Lease:

- Transport Management Centre software applications, CMCS, IRIS, RMS Intranet, etc.;
- Transport Management Centre;
- NSW Police and Emergency Services; and
- Regular audits and surveillance.

When an incident has been detected by Lend Lease, a resource will be used to validate the incident. This may involve measuring queue lengths and travel/delay times to ensure that they are within acceptable limits. Once validated the Traffic Manager will inform RMS and the Community Manager of the incident and follow the procedures contained in the Incident Response Plan.

The Traffic Manager will log all detected traffic incidents and initiate the pre-planned traffic incident response plans once the incidents are logged. These may also call for a predetermined variable message sign strategy to be activated depending on the nature and magnitude of the incident.

The RMS Representative and Community Relations Manager will be immediately informed of all incidents that will affect the free-flow of traffic. During the incident the Traffic Manager will keep the RMS Representative informed on the timing and progress in rectifying the incident.

The RMS Representative can advise the Traffic Manager of any incidents in the area that have been detected or reported through the existing 131700 public reporting number. This information may also be obtained through the use of the CMCS and IRIS system.

All reported and detected incidents will be logged and stored in a database. Details of all incidents will be taken by the Traffic Manager to coordinate the correct resources to respond to the incident. A report will be filed within two days with the incident details, including the response times to attend and rectify the minor incidents. The reported incident details will be submitted to RMS in the format acceptable to the RMS Representative.

The Traffic Manager will ensure that all incidents are logged, investigated and reported to both RMS and Lend Lease management for action as required. The Traffic Manager will modify procedures or controls to ensure the causes of these incidents are rectified and amend the TMSP if needed.

In the event of a traffic accident occurring within the Construction Site or at other locations affected by Lend Lease's work, the Traffic Manager will immediately notify RMS Representative of the occurrence of the accident, record the facts and photograph the approach to the accident site, including the location of all safety devices and signs, as soon as possible after the accident. A report with this information will be forwarded to RMS Representative within two days of the occurrence of the accident.

4.4.2 Traffic Incident Response Resources (Field Crews)

Lend Lease will have all the necessary incident response plans and physical resources available to manage minor road incidents that may occur during construction. A response vehicle and other plant such as a contract towing resource will be managed by Lend Lease and be available to the traffic management team and be located at the main project office. The response vehicle will be fitted out with personal protective

equipment, signs, lights, traffic cones, barricades, fire extinguishers, spare fuel, environmental spill kits and sand to cater for oil spills etc.

4.4.3 Traffic Incident Response Plan (attached in Appendix E)

The incident management strategy, as it relates to traffic management, is based on the following principles:

- Incident detection;
- Incident verification;
- Incident response;
- Incident recovery; and
- Incident review (post-recovery).

The Incident Response Plan, as it relates to traffic management, is attached in Appendix E and has been developed to ensure the following outcomes:

- Mitigate the effect of the incident;
- Clear the incident as soon as practicable and safe to do so;
- Return the site and adjacent roads to normal conditions as soon as possible;
- Investigate and report on the incident together with recommendations for avoidance of similar incidents; and
- Review the effectiveness of the responses and recommending improvements if necessary to the Plan.

4.5 Signposting & Delineation

4.5.1 Signposting

The design, manufacture and installation of the signs and sign structures will be in accordance with the requirements of Appendix 16 of the SWTC (Delineation and Signposting Performance and Design Requirements) and relevant RMS and Australian Standards (nominally AS 1742).

The installation of directional, information and regulatory signposting will accompany any changes to the existing road networks during construction and will be shown in the detailed TCPs described in Section 2.1 which will be progressively submitted to RMS Representative for approval. Lend Lease will manage and maintain all permanent and temporary directional, service, tourist, information, warning and regulatory signs required for construction, including any modifications that are required to existing signs and sign structures as approved in relevant TCPs.

Final sign designs will be submitted to RMS for approval.

As part of this process, Lend Lease will:

- Integrate the signage changes into the existing road network;
- Liaise with all appropriate local authorities and agencies to determine final arrangements for water course and road overpass naming and incorporate final street name plates into sign designs;
- Determine the need for and, if necessary, carry out reviews of environmental factors for the signs and sign structures in consultation with all affected parties;
- Submit details on any installation or changes to temporary signposting with the relevant road occupancy licence applications. This includes showing plans of new or modified signposting;
- Submit documentation to RMS for the consideration and approval of any speed zone authorisations in support of worksites;
- Where possible, install and cover all new directional signs a minimum of one week prior to opening of a new construction phase;
- Cover or change existing signposting as detailed in Appendix 23 of the SWTC that shows incorrect information during or immediately following the introduction of the new traffic arrangements;
- Remove any signs as detailed in Appendix 23 of the SWTC that are superseded as a consequence of the Work; and
- Reinstate all relevant directional signposting at the completion of the Work.

All signposting and associated signage infrastructure must be located to comply with the clear zone requirements detailed in the RTA's Road Design Guide. Signposting will comply with the following RMS standards and technical specifications:

- RMS D&C Specification R143 – Signposting; and
- RMS D&C Specification R3400 – Manufacture and Delivery of Road Signs.

Directional Signposting (including information, distance & advance warning signs)

The manufacture, supply and installation of directional signposting for the project will be in accordance with the provisions of SWTC Appendix 16 – Signposting Performance and Design Requirements.

In accordance with MCoA B22, Lend Lease will ensure that the project is designed to incorporate appropriate signage for townships along the project alignment, in consultation with the relevant Council and businesses policy, and provide information on the range of services available within the towns including advice that the route through the towns may be taken as an alternative route to the bypass.

Directional signposting will be provided by Lend Lease in accordance with the directional signposting scheme in SWTC Appendix 16, section 16.3 and the sign designs in section 16.4 of that appendix. The signs will be designed using TraSiCAD (NSW Version 2.6 or later) software.

Lend Lease will confirm all sign face details with RMS as part of the signposting design process, including the 'new road name' and the road number(s) on the signs. The road numbering will comply with the MAB route guidance system. Signs shall be manufactured with the MAB route guidance system road numbers. RMS will provide the required sign face design templates.

Lend Lease will determine the sign locations of all directional signposting.

Guide/Regulatory/Warning Signposting

Guide, regulatory and warning signs will be provided in accordance with Australian Standard 1742 and RMS Sign Register September 2002 and provide clear delineation of intersections, curves, manoeuvres and one way networks. Exit ramp speed and advisory speed signs will also be installed in accordance with Australian Standard 1742 and RMS Sign Register September 2002.

Speed Limits

R4-1 type speed limit signs (and pavement numerals) will be provided at all changes in speed limit on road carriageways on all entry ramps. The speed limit signs will be C size and will be placed on both sides of the carriageways and ramps. R4-1B reminder signs will be provided after major intersections and at regular intervals of no more than five kilometres along the main carriageways and connections. The reminder signs will be placed only on the left side of carriageways. In addition, R4-1C speed limit signs and pavement numerals will be provided on all exit ramps on both sides of the ramp carriageway to designate the speed of the adjoining road.

During construction of the new works, Lend Lease proposes to signpost the upgrade section of Pacific Highway from Ch600 to Ch4000 and from Ch 4500 to Ch 7500, Ch 8500 to Ch 10500 and again around Ch 16750 to 24000 as an 80km/hr long term road work speed limit. This will be established progressively as the construction footprint evolves. The proposed speed limit signage areas are shown on the drawings included in Appendix B. These speed zones will be long term speed zones as traffic barriers will be in place adjacent to the carriageways and side-tracks will only be designed for the relevant speed zone as required by RMS Specification G10.A3.

During construction of the new works, Lend Lease proposes to signpost the upgrade section of the Pacific Highway from Ch4000 to Ch 4500 and from Ch 7500 to Ch 8500 and again around Ch 24000 to 24100 as a 60km/hr long term road work speed limit. This will be established progressively as the construction footprint evolves. The proposed speed limit signage areas are shown on the drawings included in Appendix B.

Where traffic controllers are required to be on the highway for short-term works (e.g. for installation of safety barriers, signage etc. immediately adjacent to the highway), an appropriate ROL and SZA will be obtained and the speed will be temporarily reduced to a maximum of 60km/hr while the traffic controllers are on duty. At the conclusion of each day's work, the signage will be either covered up or removed.

Overbridges/Underpasses

All overbridges and underpasses will be signposted in accordance with the directional signposting scheme SWTC Appendix 16 Section 16.2.4 and the sign designs in Section 16.4 of that appendix.

Structures

All structures will be assigned a numerical identification number for ease of reference.

Creeks & Rivers

All creeks and rivers will be signposted in accordance with the directional signposting scheme in SWTC Appendix 16 Section 16.2.5 and the sign designs in Section 16.4 of that appendix.

Median Crossovers

Median crossovers will be signposted in accordance with Figure 9.16 of SWTC Appendix 9.

Stopping Bays

Stopping bays will be signposted in accordance with Figure 9.15 of SWTC Appendix 9.

Contractor's Record Management Signs

Signs will be provided for record management and will be a maximum size of 160mm x 260mm. The sign faces will be located parallel to the main carriageways. Contractor logos will not be shown on these signs.

Carriageway Transitions

Any temporary or staged crossovers will be signposted and delineated in accordance with Section 16.2.8 of SWTC Appendix 16 and in accordance with Australian Standard 1742 and RMS regulatory signs.

Shared Path Signposting

Signposting of any shared paths for cyclists and pedestrians will be provided in accordance with RTA Technical Direction TDT 2001/07a.

4.5.2 Delineation

Road Markings

Line marking will be provided on pavement surfaces as follows:

- Temporary roadworks – waterborne paint line marking;
- Local roadworks – waterborne paint line marking; and
- Main carriageway and ramps – thermoplastic line marking on asphalt surfaces and waterborne paint line marking on concrete surfaces.

Profile line marking will not be installed on low noise pavements. All line marking will comply with the following RMS standards and RMS D&C Specifications including test plates for all permanent Works:

- R141 Pavement marking;
- R142 Retro reflective raised pavement markers;
- R3351 Road marking paint;
- R3353 Glass beads;
- R3354 Adhesives for RPM installation;
- R3357 Thermoplastic road marking material;
- R3359 Profile thermoplastic road marking material; and
- Mar 09 RTA Delineation Guidelines.

Guideposts

- Guideposts will be provided in accordance with Australian Standard 1742.2 on the nearside and offside of carriageways. Supply and installation will be compliant with RMS D&C Specification R131;
- Guidepost reflectors will be red on the nearside and yellow on the outside of the carriageways. The reflector pattern will be integrated so that there is consistent guidance provided throughout cuttings and across embankments, especially in the vicinity of safety barriers and on bridges;

- Longitudinal spacing of guideposts will comply with the requirements of fog prone areas (60-metre spacing); and
- Where there is no safety barrier adjacent to the shoulders of main carriageway pavements, the guideposts will be located 0.5 metres off the edge of pavement or SO gutter, whichever is applicable.

4.6 Road Occupancy Licences

After the granting of the road occupancy licence, it will be the responsibility of Lend Lease to ensure that the Works are carried out safely and in accordance with the road occupancy licence conditions of approval and accompanying TCP and SZA.

Lend Lease will not vary the conditions nominated on the road occupancy licence, except as identified in the Incident Response Plan for emergencies, without the approval of the RMS Representative.

Implementation of an approved Traffic Control Plan submitted with the Road Occupancy Licence will be the responsibility of the section manager or delegate. Prior to the commencement of any changes to the existing traffic arrangements, a toolbox/pre-start meeting of all involved is to be held, with the nature of the changed arrangements and procedures for their implementation being discussed. For major traffic switches, RMS Traffic and Safety Manager will be briefed on-site by the Traffic Manager and Section Manager prior to implementation. All traffic switches will firstly be recommended by the Traffic Manager and approved by the section manager.

All Traffic Controllers including subcontract Traffic Controllers must have undertaken appropriate training and be in possession of an RMS recognised certification as to their competency to perform the duties of a Traffic Controller. Key elements of this TMSP will be included in the site induction for all employees, subcontractors and staff working on this project.

Lend Lease will monitor the effectiveness of each individual Traffic Control Plan during the Works and if necessary, revise and update subsequent plans to reflect lessons learnt. Additional phasing may be required other than shown in the Appendix to this TMSP. This phasing may require the production of additional Traffic Control Plans depending on construction and design challenges that may eventuate during the job.

Where required, Traffic Control Plans and supporting road occupancy licences will also include applications to RMS for consideration and approval for any speed zoning authorisation.

Details and conditions required for Road Occupancy Licenses applications and ongoing monitoring are contained in SWTC Appendix 27. Note that in accordance with G10.2.4, Road Occupancy Licence applications are to be submitted to the RMS Representative at least 10 working days prior to the planned commencement of the activity requiring the road occupancy.

4.7 Control of Traffic – RMS D&C G10 Specification

Works to be executed under this specification consist of all work necessary to provide for the safe movement of traffic and the protection of persons and property through and/or around the worksite.

The extent of work includes the design, construction, maintenance and removal of temporary roadways and detours, the provision of traffic controllers, signposting road markings, raised pavement markers, light, barriers, and any other items required. Temporary requirements pertaining to cyclists and pedestrians are noted in section 4.8.

Design standards and temporary speed zoning will be compliant with Annexure G10 A1 and A2 respectively.

- Schedule of Hold Points include:
  - Submission of traffic control personnel details;
  - Submission of the Traffic Management Plan (this document) and traffic control plans; and
  - Opening to traffic.
- Schedule of Identified Records include:
  - Traffic Controller's qualification details;
  - Traffic Management and Staging Plans;
  - Road Occupancy Licences obtained;

- Full details of the Traffic Control Plan, temporary signposting, traffic control devices and traffic control methods;
- Road safety audits of TCPs and associated documentation;
- Daily inspection records of traffic control measures in place;
- Design drawings for temporary roadways and detours; and
- Notice that temporary roadways and detours to traffic (including portable or temporary traffic signals Sites) are conforming.

Reference documents include as a minimum, the following:

- Australian Standards:
  - AS 1742.3 Traffic Control Devices for Works on Roads;
  - AS 4852.2 Variable Message Signs – Part 2: Portable Signs; and
  - AS 4602 High Visibility Safety Garments

Table 4-2: RMS Specifications

RMS Specification	Description
RMS D&C R132	Safety barrier systems
RMS D&C R141	Pavement marking
RMS D&C R11	Stormwater drainage
RMS D&C R44	Earthworks
RMS D&C R106	Sprayed bituminous surfacing (with cutback bitumen)
RMS D&C R107	Sprayed bituminous surfacing (with polymer modified binder)
RMS D&C R116	Asphalt
RMS D&C R142	Retro-reflective Raised Pavement Markers
RMS D&C R143	Signposting
RMS D&C Q6	Quality Management System

- RMS Traffic Signals Equipment Specification:
  - SI/TCS/8 – Installation of Traffic Light Signals;
- RMS Publications:
  - RMS Supplements
  - Traffic Control at Worksites;
  - Supplement to the Austroads Guide to the Structural Design of Pavements;
- Austroads Publications:
  - Guide to Pavement Technology – Part 2: Pavement Structural Design;
  - Guide to Road Safety Part 6: Road Safety Audit.
- NSW Government:
  - Roads Regulation 2008

4.8 Facilities for Pedal Cyclists & Pedestrians including Bus Stops

Within each phase of the construction works, provision will be made for the safe ongoing access by pedestrians and pedal cyclists along comparable or higher standard paths. To implement this requirement the following items will be addressed:

- Any revised locations of pedestrian and cycle routes will have appropriate signage and equivalent lighting;
- The revised location of these routes will be developed in consultation with RMS and forwarded to the local council for review and acceptance if it applies to a local road;

- Advice of pending changes to the routes will be provided to the users, together with signage detailing the changes when implemented;
- All Construction Work Method Statements will ensure safe passage on existing or alternative (temporary) pedestrian and cycle routes;
- Where pedestrian and cyclist flow is in a direction that may not satisfy a clear desire line, special provisions for notification will be made;
- In general, there are minimal pedestrian and cyclist facilities on Pacific Highway except where it travels through townships; and
- During the course of the works, it is likely that existing bus stops may be impacted. Any existing bus stops impacted by the works will be relocated in consultation with the relevant bus companies.
- For cyclist crossing past ramps during the operation of the project, signposting and crossing points are provided in accordance with section 7.5 of the "NSW Bicycle Guidelines – RTA Version 1.2 July 2005".

4.9 Provision for Private Property Access

During construction, this TMSP will ensure that existing entrances to private property, whether homes or businesses, affected by the work are maintained in a useable condition or alternative arrangements are made, unless otherwise mentioned in this document as being temporarily closed. The following guidelines are to apply to this requirement:

- Subject to safety considerations and physical constraints, the location of the entry is to be as close as practicable to the existing entrance;
- Where it is not possible to maintain the entry close to the existing, alternative arrangements that are mutually acceptable to the property owner and Lend Lease will be made;
- Entries to businesses are to be signposted and if considered necessary have advance signage to warn of changed conditions;
- Free movement in and out of properties will be maintained at all times. Should temporary restrictions have to be applied for construction reasons this may only be done with the property owner's consent; and
- All arrangements made for entry to private property are to be approved by the Owner and RMS.

4.10 Project Identification Signs

Project identification signs will be posted to provide details of the project to the public and acknowledge the government's initiatives. The project identification signage location and design will be as approved by RMS and in accordance with SWTC Clause 7.5 and Appendix 26 and will typically be located at the approach to, and the departure from, the project. This is anticipated to be on the existing highway near Fernbank Creek at the Southern end of the project and near the Barry's Creek at the Northern end.

4.11 Construction Access Routes

4.11.1 Worksite Access

Vehicle and pedestrian access to and from each compound and worksite, including the locations of entries, exits, turning restrictions, slip lanes, traffic lights (if required), signage and the like will be established in consultation with the RMS Representative. All permanent/long-term construction access gate locations will be designed in accordance with Austroads Guide to Road Design – Part 4.

The risk of construction vehicles queuing outside work sites prior to commencement of work will be addressed by a site-specific Vehicle Management Plan which will consider such things as staggered commencement of haulage times and the prohibition of parking within certain sensitive areas. Furthermore, vehicle layover areas will be identified with RMS as suitable locations prior to arriving on-site. (Refer to individual Traffic Control Plans for more detail.)

All vehicle exit points will be stabilised with rumble grids and rock or hardstand material and consideration will be given to sealing main exit points and compound areas. Consideration will also be given to installing wheel washes at main exit points if they cannot be sealed. A street sweeper will be used when necessary to

service public roads throughout the day and at the end of each shift should it be discovered that, despite other controls being implemented, any mud or dirt is trafficked onto public roads.

4.11.2 Haulage Routes

Designated access routes for construction and spoil vehicles will be along the existing classified road network wherever practicable or contained within the construction site.

Haulage routes will be nominated as either:

- **On road** – These are existing routes currently operating in service to general traffic and road users. The delivery of raw materials, plant and equipment, and daily arrival and departure of staff is primarily going to be occurring on road; and
- **Off road** – These are haul routes used for the movement of earth, delivery of materials such as concrete during paving operations that are contained within the construction site and do not form part of the existing road network.

It is Lend Lease's goal to maximise the use of the off-road routes during bulk earthworks operations and concrete paving to ensure it maximises the consistency of vehicle turn around and headway supplying the earthworks and paving operation.

Due to the site topography and staged construction, there are natural boundaries which prevent the movement of all materials along the new alignment. This means to balance the material demand, material must be moved from one zone to another using the existing road network of the Pacific Highway and associated local roads. The natural boundaries are the Hastings and Wilson Rivers. The North Coast Railway and the two points where the new alignment crosses the existing Pacific Highway at Blackmans Point and the Pacific Highway between Haydon's Wharf and Cooperabung Drive.Where on-road haulage routes are used, a suite of instructions and maps are provided or tool boxed to operators for all point destinations nominated as construction access points. In addition, layover areas will be nominated should vehicles need to 'store' prior to arriving at construction sites where capacity is limited. Approximate travel times will be developed for each route as a guide to operators and also to assist in more consistent and uniform arrival rates at each site. For any on road haulage, all loads will be covered to prevent loss of materials and nuisance dust.

Loads on all vehicles using public roads will be in accordance with the Roads Act 1993 (NSW). Typically, the load is determined using experienced excavator operators loading the trucks to ensure even load distribution and counting bucket loads being deposited in the trucks. These bucket-loaded trucks are typically calibrated using either nearby public weigh bridges or a truck with scales within the fleet to ensure that the trucks are legally loaded. For intensive on road haulage operations, consideration will be given to utilisation of either on-site load cells to calibrate the bucket loads with actual measured axle loads prior to the trucks entering the public road or, when loading processed material such as SMZ, the use of a loader with scales.

Spoil haulage will occur during the approved construction hours. The impact of either a planned or unplanned incident on an approved haulage route will be assessed by the Traffic Manager in consultation with the RMS Representative.

All construction vehicles will be well maintained to prevent loss of fuels and lubricants.

A table has been added in Appendix J to provide an overview of the likely impact of traffic on Hacks Ferry Road and Glen Ewan Road if the proposal before Council is accepted. These are provided as a guide and may fluctuate due to weather, construction program, environment approvals or Roads and Maritime Services requirements.

An indicative summary of material movements for the project is provided below based on preliminary mass haul calculations. Construction routes used to transport this material is as outlined above and indicative access gates to be used for the transport of this material outlined below.

Table 4-3 Site Won Materials Movements

ACCESS GATE (potential)	SITE WON MATERIAL - Truck and Dog Volume Through Gate (approx. m^3)					
	General Fill	**Upper Zone**	**SMZ**	**Rock**	**Topsoil**	**Mulch**
Start	16,875	2,063	10,313	5,250	-	5,500
Sancrox Rd	36,563	4,469	22,344	11,375	8,630	
Fernbank Creek	28,125	3,438	17,188	8,750	-	
Glen Ewan Rd	8,438	1,031	5,156	2,625	-	
Main Compound	19,920	-	12,000	6,240	-	11,000
Wharf Rd	29,050	-	17,500	9,100	-	
Widened Median	24,070	-	14,500	7,540	-	
Bill Hill Rd	50,630	-	30,500	15,860	25,000	
Hacks Ferry Rd	42,330	-	25,500	13,260	-	
Wilmaria Rd	-	797	-	-	-	5,500
Haydons Wharf Rd	-	1,957	-	-	-	
Cooperabung Dr	-	2,681	-	-	-	
Yarrabee Rd	-	2,899	-	-	-	
Barrys Creek	-	1,667	-	-	-	
Excess	-	-	-	-	33,630	79,173

Table 4-4 Imported Materials Movements

ACCESS GATE (potential)	IMPORTED MATERIALS - Truck and Dog Volume Through Gate (approx. tonne)																
	Fine / Conc Sand	Bedding & Haunch Sand	Side and Overlay Sand	Arch Rock Face Pitching	350mm Minus	Select Material	20mm Filter Agg	Import Rock for Drainage Blanket	Graded Rock D50 = 150mm - 500mm	20mm Agg	Rip Rap Rock	Bridge Access Fine Crush Rock	E2 Rock	DGB/DGS 20	RSW Select Fill	Stab DGB	Agg 20/14mm, 28/20mm, 10/7mm
Sancrox Rd	-	6,232	28,693	-	-	15,465	15,770	749	10,183	-	-	-	-	28,325	-	-	-
Fernbank Creek	-	-	-	-	-	-	15,770	-	-	-	-	-	-	-	-	-	-
Glen Ewan Rd	-	-	-	173	2,382	-	-	-	1,033	497	5,414	4,402	4,003	-	-	-	-
Main Compound	147,474	-	-	173	2,382	-	-	-	1,033	497	5,414	4,402	4,003	-	-	-	354,241
Bill Hill Rd	-	6,232	28,693	-	-	15,465	15,770	749	10,183	-	-	-	-	28,325	-	-	-
Hacks Ferry Rd	-	-	-	173	2,382	-	-	-	1,033	497	5,414	4,402	4,003	-	-	-	-
Haydons Wharf Rd	-	-	-	173	2,382	-	-	-	1,033	497	5,414	4,402	4,003	-	13,907	51,978	-
Cooperabung Dr	-	6,232	28,693	-	-	15,465	15,770	749	10,183	-	-	-	-	28,325	-	-	-

4.11.3 Over-dimensional Load Transport

All precast concrete bridge planks or girders will be manufactured at Lend Lease's wholly-owned subsidiary, Australian Precast Solutions (APS), whose precast facility is located at Macksville, some 80km north of Port Macquarie. An oversize vehicle permit will be required for transport of these bridge girders. The delivery strategy for the bridge girders associated with this project will be developed in conjunction with RMS and local Authorities (NSW Police in particular) to ensure minimal impacts on local communities and road users. It is expected that a similar delivery strategy will be adopted for this project that was successfully utilised on Lend Lease's recent projects completed by Abigroup at Macleay River and Floodplain Bridge Project and the Banora Point Upgrade Project.

All road occupancies will be designed and implemented to allow for the passage of over-dimension heavy vehicles through the road occupancy area. Lend Lease will liaise with the RMS Representative to establish communication protocols for the passage of over-dimension heavy vehicles through all road occupancies.

4.12 Special Events

Lend Lease will work cooperatively with the RMS Representative and RMS Traffic and Safety Manager to manage the Project Works around known special/major events. These include:

- Local festivals and celebrations;
- Daylight savings changes;
- Public Holidays;
- Seasonal variations in traffic volumes;
- Holiday periods for New South Wales and Queensland; and
- Opening of this Project.

To ensure the objectives of the Pacific Highway delay management strategies are met, in all cases Lend Lease will refer to and comply with the RMS annual calendar of road occupancy licence restrictions and special conditions relating to special events.

From Lend Lease's extensive work on the Pacific Highway, we are aware of the increased traffic volumes associated with both the Queensland and New South Wales holiday traffic over the Easter and Christmas periods and the importance of planning work to minimise delays to road users during these periods in particular.

5.0 Communication & Consultation

5.1 Planning

Construction activities have the potential to disrupt existing traffic patterns in the surrounding areas. Minimisation, and where possible, elimination of disruption through effective traffic management solutions is fundamental to the overall success of the project.

Priority will be given to providing clear guidance to drivers, pedestrians and cyclists, consulting authorities and the community prior to commencement of the work. Priority will also be given to responding appropriately to issues and events as they arise during the construction Works – particularly road user safety, traffic efficiency, local access and amenity, and incident response.

The actions for traffic management during construction will include:

- Directional signage and line marking to direct and guide drivers and pedestrians past worksites and on the surrounding network. This will be supplemented by variable message signs to advise drivers of potential delays, traffic diversion, speed restrictions, alternate routes, etc.;
- Public notification of proposed traffic changes by newspaper, radio and internet site, community liaison;
- Co-ordination with RMS in the event of incidents or undue congestion;
- A mobile incident management and response capability to ensure a quick response to minor incidents affecting road users travel time or safety;
- Management of pedestrian and vehicular access to worksites to ensure safe entry and exit procedures. Depending on the location, this could require manual supervision, physical barriers or temporary traffic signals; and
- Maintenance of access to existing business premises and residents for pedestrians, servicing and parking needs.

5.2 Consultation

The main objective of traffic and transport communication is to:

- Provide timely, accurate and comprehensive traffic information to the road user;
- Influence road users to adopt different travel patterns during periods of change;
- Allow and accommodate community feedback regarding traffic issues;
- Manage traffic impacts to protect affected residential and business amenity; and
- Ensure media are well informed and aid in traffic impact mitigation.

As required by MCoA B31a, Lend Lease will develop this TMSP in consultation with Port Macquarie-Hastings Council and Roads and Maritime Services prior to the approval from the Director General, and subsequent construction commencement.

The March 2014 version of this plan was provided to Hastings Council and the Roads and Maritime Services and their feedback has been considered in all later versions of this plan.

Consultation with Hastings Council has also been undertaken to utilise two local roads to a greater degree than initially forecast. Consultation with Hastings Council is continuing on the proposals to use Hacks Ferry Road and Glen Ewan Road. A copy of the meeting minutes is provided as Appendix I for reference.

General consultation, communications and information distribution will be undertaken in accordance with the requirements detailed in Sections 5.3 to 5.5 below. Comprehensive details of Lend Lease's commitment to community consultation can be obtained from the Community Involvement Plan.

Lend Lease will undertake ongoing consultation with stakeholders (including Emergency Services) to ensure that information is provided that assists in minimising disruption or inconvenience. This will be a key message of traffic and transport communications.

All information to be released to the community in relation to Lend Lease's management of road networks and traffic systems will be submitted to RMS for approval before it is distributed.

5.3 Traffic & Transport Liaison Group

Lend Lease will establish a contact list of traffic and transport stakeholder groups that are eligible to participate in the consultation process for technical traffic and transport-related matters associated with the project. This group may meet periodically where required to discuss issues and provide updates on forthcoming activities involving changes to the operation of existing traffic and transport networks.

Matters for group discussion will include:

- Construction staging (existing or proposed);
- Traffic operations, including changes in regulatory traffic controls;
- Community concerns and comments/feedback;
- Impacts on road-based transport operations;
- Issues related to pedestrians and cyclists or mobility impaired road users; and
- Communication strategies and actions to be taken.

Any traffic and transport liaison group meetings will be chaired by Lend Lease and may consist of representatives from the following groups:

- Lend Lease (Traffic Manager, Project Director, Community Manager);
- RMS (Traffic Impact Coordinator, Interface Manager);
- NSW Police Service;
- Local Council (including Port Macquarie – Hastings Council);
- NSW Bus and Coach Association;
- NSW Fire Brigade;
- NSW Ambulance Service;
- Transport NSW (NSW Department of Transport);
- NRMA; and
- Bicycle NSW.

Lend Lease's Community Manager or nominee will also be present in this forum. After an initial meeting a core committee will be formed to meet as required to deal with the detail of traffic management planning. The meeting frequency will be varied, as agreed by the group, during the course of the project.

Representatives of the traffic and transport liaison group will receive minutes of the meetings. Operators of transport services will be consulted on management of traffic-related impacts to their services via the Bus and Coach Association, the agency liaison or government liaison groups outlined in the Community Involvement Plan.

Outcomes from traffic and transport liaison group meetings will be communicated to the community liaison groups and other key stakeholders affected by the changes. The Community Relations Manager will work closely with local businesses to develop appropriate and effective strategies that will minimise any impacts and enable businesses to continue to function effectively.

5.4 Dissemination of Information to the Community

The table below sets out the tools to be used for information dissemination, the proposed frequency and the key content or purpose. (Refer also to the Community Involvement Plan.)

Table 5-1: Minimum Requirements for the Dissemination of Information to the Community

Tool	Purpose	Frequency
Website	• Full details of impacts on the road network and traffic systems ; • Details alternative transport options (as approved by RMS); • Contact details and feedback options; • Monthly traffic update ; • Minutes of consultation meetings; and	Updated monthly

Tool	Purpose	Frequency
	• Link to RMS websites	
Signposting of at least 1,800 x 1,200mm with the design to satisfy AS 1743	• Provide drivers with advance notice of traffic changes on roads approaching the construction site.	At least three weeks prior to change
Directional Signposting of minimum size 1,800 x 1,200mm with design to satisfy AS1743	• Direct road users affected by construction activities.	As needed
Variable Message Signs	• Advance information on planned changes; • Information on emergencies, incidents and traffic delays.	At least 10 days prior to traffic changes or as required in emergencies
Radio Traffic Reporters	• Publicise planned traffic changes using pre-negotiated protocols; and • Information on emergencies, incidents and traffic delays.	As required
Community Update Newsletter	• Full details of impacts on the road network and traffic system; and • Contact details and feedback options • Construction updates.	As required
Letterbox Drops	• Inform local residents and businesses directly affected by changes to road network and traffic systems; and • Information includes project details, current and next phase of construction, changes and impact on traffic conditions including parking, number of traffic lanes and turn movements, changes to cyclist and pedestrian crossings and access routes and changes to bus routes.	Distributed two weeks prior to start of every construction activity that involves a significant change to road networks of three or more days' duration
Project Display Centres	• Details of construction and changes to road network and traffic systems	As for letterbox information
Contact Points	• Provide community with 24-hour access via 24-hour contact line, fax and e-mail; and • Details to appear on all project/company stationery, website, newsletters, and publications.	Each release of information
Register & Report of Community Issues	• Database to register all views, complaints and comments received from the community, including date received, location, subject matter, name and address of community member, actions taken, responses given and other information; and • Summary report on the contents and status of register to inform RMS and management of issues and performance in relation to actions taken	Maintain register continuously Provide RMS report monthly
Taxi Council Publications (editorial in Meter, Taxi, www.nswtaxi.org.au)	• Information to taxi drivers and owners on planned traffic changes and incident/traffic delay information.	Monthly and quarterly
Local Government Publications (editorial) & information to Local Government Call Centres &	• Information on project details, stages of construction, changes and impact on traffic conditions including on-street parking, number of traffic lanes and turn movements.	As per editorial deadlines

Tool	Purpose	Frequency
Switchboards		
Editorial News Releases to 'Open Road' & Motoring Supplements	• Information on project details, stages of construction, changes and impact on traffic conditions including on-street parking, number of traffic lanes and turn movement information	Program of regular releases to meet editorial deadlines
Temporary Notices & Signposting	• At pedestrian and cyclist crossings of construction site and routes around construction detailing changes due to Works	10 days prior change to pedestrian or cyclist route
Information to Bicycle NSW & User Groups	• Information on cyclist routes affected by construction and alternative routes.	As needed, at least 10 days prior to change
Email Updates	• Updates to courier companies, NSW Bus and Coach Association members, hire car operators, transport workers union, others who register on website	Seven days ahead of planned changes
General Media Release to Metro Media & Interviews	• Publicise major changes resulting from construction, milestones, commissioning, tolling arrangements; and • In consultation with RMS	One week prior to changes
Radio Advertising &Traffic Reports	• For use when unpaid editorial is not publicised by outlets with large target audiences; and • Undertaken through Australian Traffic network.	As per media schedule
Temporary Notices & Signs for Bus Users	• Information on changes to bus stops, routes, timetable and service frequency introduced as a result of Works.	10 days prior to change in bus service
Press Advertising in Local Newspapers	• Provide information on changed traffic conditions likely to result in traffic delays and congestion in the distribution areas of the newspapers • Placed with information on the nature of construction work proposed for the forthcoming three months; • Areas in which the Works are proposed to occur; and • Hours of operation	Quarterly, and prior to every construction activity that involves a change to the road networks and systems of three or more days' duration

5.5 Community Display Centre

A Community Display Centre will be located at the main construction site compound and will provide the community with project information including updated information on traffic staging and temporary traffic and access arrangements. The Community Display Centre will be the focal point for dissemination of information to the community and will be staffed during business hours. Please refer to the Community Involvement Plan for detailed information on the community management strategies which will be used on the Project.

As the Community Display Centre is located in the main Construction Compound, it will have safe access off the existing highway with direct access off a sealed public road.

5.6 Release of Information to the Public

A cooperative and coordinated approach between Lend Lease and the Traffic and Transport Liaison Group will enable the public to receive timely and accurate information. In consultation with RMS, the Traffic Manager and the community relations team will develop protocols, procedures, processes and systems in accordance with mutually agreed objectives.

All information to be released to the community must be approved by RMS prior to its distribution or publication in accordance with the timeframes for review and approval as outlined in the Community

Involvement Plan. RMS will be informed immediately of any changes to information previously provided to the public.