Appendix B1

CONSTRUCTION TRAFFIC MANAGEMENT SUB PLAN

SANCROX TRAFFIC ARRANGEMENT
June 2014

Document control

File name	Construction Traffic Management Sub-Plan
Report name	Construction Traffic Management Sub-Plan
Revision number	1.5

Plan approved by:

Manuel de Miguel Project Manager	Cliff Bromiley HSEQ Director	Jordi Via Q&E Manager

Revision history

Revision	Date	Description	Approval
1.0	26/02/2014	Initial Post-Tender Version – For Roads and Maritime Services Formal Review	
1.1	03/04/2014	Updated following comments from Roads and Maritime (16/03/2014)	
1.2	24/04/2014	Updated following comments by Roads and Maritime. Addition of Consultation.	
1.3	02/05/2014	Updated 02/05/2014 following Roads and Maritime comments	
1.4	19/05/2014	Resubmission to Roads and Maritime	
1.5	25/06/2014	Revision following DP & E comments	

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1	Roads and Maritime	1.5
2	Port Macquarie Hastings Council	1.5
3	Ferrovial Agroman Australia	1.5
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Contents

Definitions

Term	Definition
Road Occupancy	An activity, including maintenance, that is likely to delay, obstruct, restrict, close, interfere with, slow or stop, the free flow of traffic on any lane or shoulder of the road network, and may involve the closure of the traffic lane(s).
Road Occupancy Licence (ROL)	A Road Occupancy Licence allows the applicant to use or occupy a specified road space at approved times, provided that certain conditions are met.
Traffic Management Plan (TMP)	A plan showing how traffic is to be managed when construction works are being carried out. A TMP describes the work activities being proposed, their impact on the roadway and or road users, and how these impacts are being addressed.
Traffic Staging Plans	Road design drawings showing lane configurations to be provided for traffic passing through or around the construction site during the various constructions stages, including details of road alignment and geometry, intersections layouts, provision for buses and cyclists, working areas and pedestrian areas, drainage, signs and pavement markings, etc.
Traffic Control Plan (TCP)	A diagram showing signs and services arranged to warm traffic and to guide it around, past or if necessary through a work site or temporary hazard.
Vehicle Movement Plan (VMP)	A diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream.
Rigid Safety Barrier	A physical barrier, separating traffic from work areas, which has little or no deflection when impacted by a vehicle. Examples of rigid barrier systems are given in Roads and Maritime Road Design Guide Table 6.2. Concrete barriers such as Type F units are only considered to be a rigid barrier system if the series of barriers are fixed to the pavement.
Non-rigid safety barrier	Barriers, including approved water filled units, wire rope barriers and metal guard rail which have lateral deflection of varying amounts when impacted by a vehicle.
Long-term temporary work	Works requiring traffic control for duration longer than one work shift and where some form of traffic control must be maintained when the site is left unattended and may need to operate both day and night.
Short-term temporary work	Work requiring traffic control for duration not longer than one work shift and where traffic control is not required when the work is completed and road conditions are returned to normal at the end of the shift.
Traffic Delay Duration	The duration of a traffic delay is the total period of time during which the free flow of traffic is obstructed, restricted, closed, interfered with, slowed or stopped and includes the time taken to clear all stopped, slowed and queued traffic and return to free traffic free flow of traffic conditions.
Free flow of traffic	Unimpeded traffic flow conditions on the existing highway prior to commencement of any of your work.

Glossary/Abbreviations

Term	Definition
Site	Sancrox Traffic Arrangement (The Project) HW10 Pacific Highway Upgrade, Oxley Highway to Kempsey
Site Compound	The area within the Site where the Site Offices are located – as shown on the Site Layout Plan.
Worksite	Areas within the Site where construction of the Works is taking place. The Worksite locations are shown on the Site Layout Plan and Disposal Site (fill).
Public Traffic	Pedestrians, cyclists and vehicular traffic within public roads, footpaths, tracks and other access ways accessible to the public.
Construction Traffic	Movement of vehicular, plant and workers within the site construction area. Movement of construction plant, vehicles, delivery trucks and pedestrians at roads located adjacent to or within the vicinity of the construction site's main entry / exit points.
Works	The total Scope of Works as defined in the Contract.
Road Occupancy	An activity that is likely to impact on the traffic flow of the road network, and may involve the closure of traffic lane(s).
Road Occupancy Licence (ROL)	A Road Occupancy Licence allows the applicant to use or occupy a specified road space at approved times, provided that certain conditions are met.
Traffic Management Plan (TMP)	A plan showing how traffic is to be managed when construction works are being carried out. A TMP describes the work activities being proposed, their impact on the roadway and on road users, and how these impacts are being addressed.
Traffic Staging Plans (TSPs)	Road design drawings showing lane configurations to be provided for traffic passing through or around the construction site during the various construction stages, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, working areas and pedestrian areas, drainage, signs and pavement markings, etc.
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Non-rigid safety barrier	Barriers, including approved water filled units, wire rope barriers and metal guard rail which have lateral deflections of varying amounts when impacted by an out-of-control vehicle.
Long-term temporary work	Work requiring traffic control for duration longer than one work shift and where some form of traffic control must be maintained when the site is left unattended and may need to operate both day and night.
Short-term temporary work	Work requiring traffic control for duration not longer than one work shift and where traffic control is not required when the work is completed and road conditions are returned to normal at the end of the shift.
Principal	Road and Maritime Services (Roads and Maritime)

References

- AS 1742:2009 – Manual of uniform traffic control devices
- Roads and Maritime Traffic Control at Work Sites Manual(TCWS)
- Project Specification G10 Traffic Management
- Roads and Maritime Services Interim Guide to Signs and Markings
- AUSTROADS Guide to Traffic Engineering Practice, Part 8 – Traffic Control Devices
- AUSTROADS Road Safety Audit Guide (2nd edition 2002)

1. Project Description

1.1 Context

Roads and Maritime Services (Roads and Maritime) is continuing to upgrade the Pacific Highway to dual carriageway between the Oxley Highway and Kempsey. Planning for this projects jointly funded by the Australian and NSW governments.

The project involves an upgrade of about 37 kilometres of the Pacific Highway to four lane divided highway from north of the Oxley Highway interchange to south of Kempsey.

Sancrox traffic arrangement was proposed as early works to minimize disturbance to traffic during the construction process.

1.2 Location

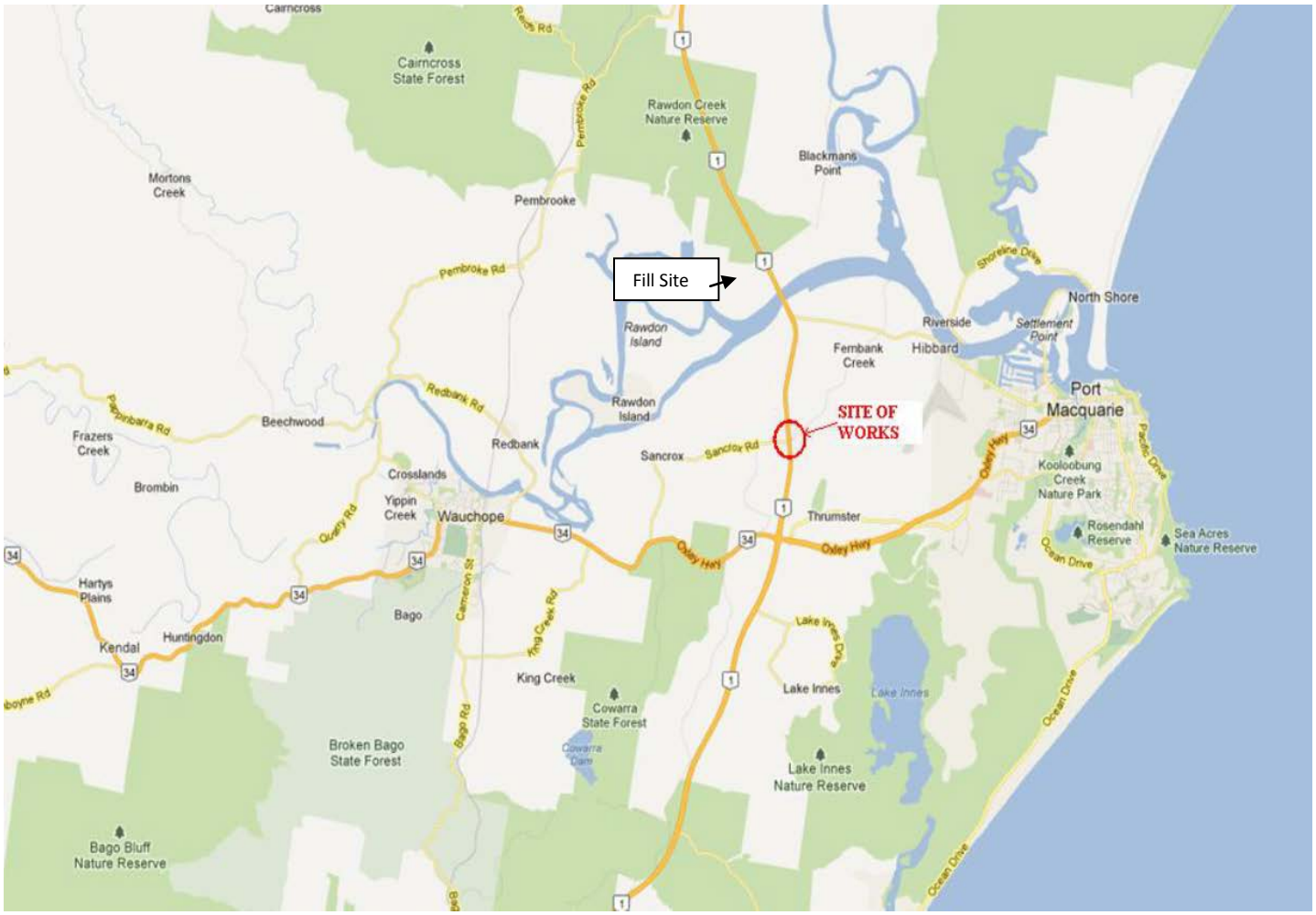

Figure 1 Site of the Works

1.3 Scope of works

Activities to be undertaken during construction include:

- site establishment;
- traffic management including the provision of approved Traffic Management Plans, to facilitate the construction of the works and ancillary stockpile site;
- provision of site accommodation for FAA and the Principal (Figure 3);
- environmental management;
- locating and protecting public utility services;
- adjustment/construction of Port Macquarie-Hastings Council Water and Sewer Infrastructure assets;
- adjustment of Essential Energy Infrastructure assets;
- adjustment of Telstra assets
- maintenance of existing roadway as specified;
- provision of permanent and temporary erosion and sedimentation controls;
- provision for cyclists;
- earthworks, including clearing and grubbing, removal and stockpiling of topsoil, excavation and haulage of material for reuse (including stockpiling as required) or off site removal as required, foundation treatments, placing of general fill and upper zone material and construction of the

Selected Material Zone;

- construction of a 2 span Super T bridge over HW10, Pacific Highway;
- removal, processing, re-use and/or disposal of pavement materials from the existing roads;
- removal and disposal of contaminated materials;
- identification and treatment of Acid Sulphate Rock (ASR) and Acidic Soils;
- provision of asphalt and spray seals;
- provision of flexible pavements;
- provision of rigid (SFCP) pavements for roundabouts;
- ancillary works, including safety barriers and new kerbs and/or gutters;
- drainage works (both surface and subsurface);
- provision of street lighting;
- property adjustments;
- provision of road furniture;
- provision of pavement marking and raised pavement markers;
- provision of signposting;
- opening to traffic;
- revegetation and landscaping of exposed new works and of areas disturbed by construction activities;
- clean up and restoration of work areas and the areas disturbed by utility authorities in carrying out adjustments within the site;
- preparation of “work-as-executed” drawings; and
- all other work which you are or may be obliged by the terms of the Contract to undertake together with any work which is necessary or incidental to the work and all associated coordination and supervision of such work.

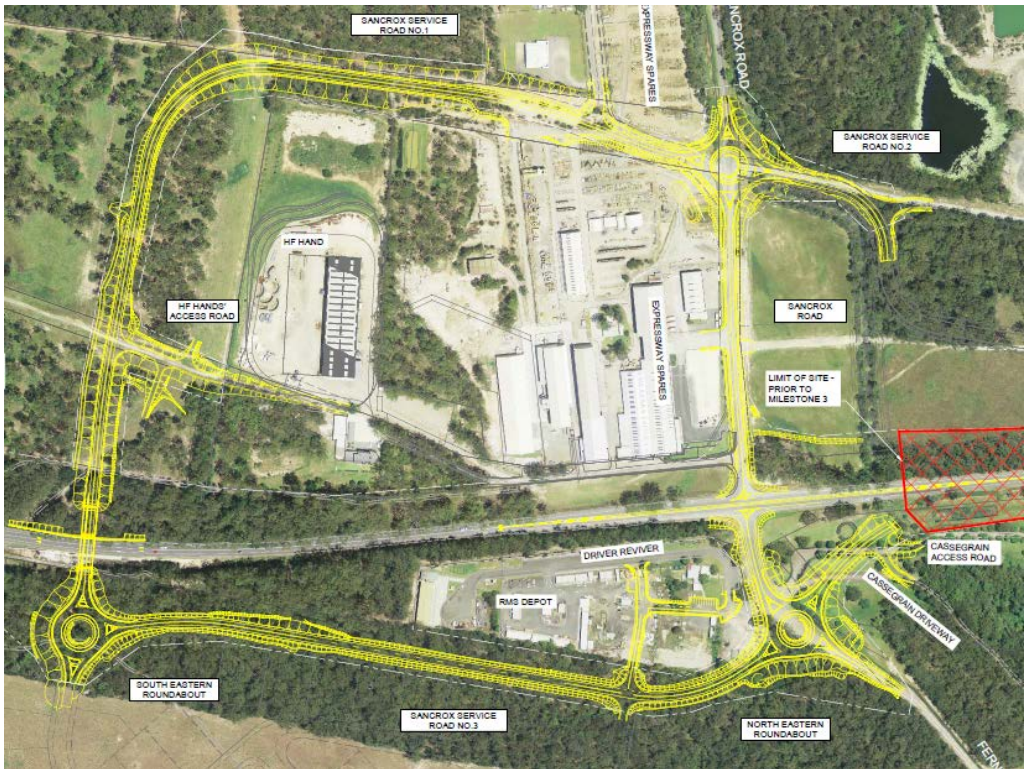

Figure 2 Proposed design of the project

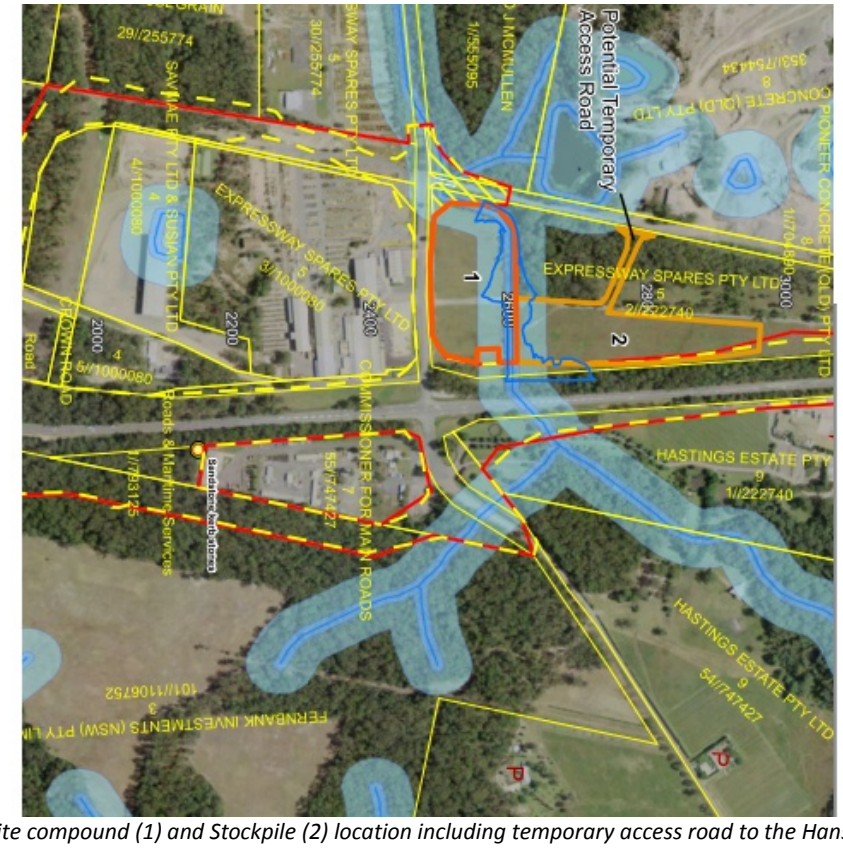

Figure 3 Site compound (1) and Stockpile (2) location including temporary access road to the Hanson Quarry.

1.4 Scope of Plan

This Plan sets out the requirements for the management of traffic past, through and/or around the projects various work sites. It includes the provision for the safe movement of traffic, the protection of workers from passing traffic and the provision for access to adjoining properties located within the limits of the Contract.

The scope includes the construction, maintenance, upgrading and removal of any necessary temporary roadways and detours, the provision of Traffic Controllers to direct and control traffic, and the installation of temporary and permanent signs, road markings, lighting and safety barriers

1.5 CoA Requirements of this TMP

CoA no.	Requirement	Reference
	Traffic and Access	
B21	The Proponent shall ensure that the project is designed in consultation with DPI (Forests) 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 unless otherwise agreed with DPI (Forests).	No State Forest Access or Egress is located or impacted by the Sancrox Traffic Arrangement Project.
B22.	The Proponent shall ensure that the project is designed to incorporate appropriate signage for townships along the existing highway that are bypassed by the project, in consultation with the relevant council and community. The signage policy shall be consistent with the Roads and Maritime Service's standard signposting 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 to the highway.	No impact to signage for townships are relevant for the Sancrox Traffic Arrangement Project. Signage shall be provided for new Service Roads as per applicable Drawings.
	Traffic Impacts	
C23.	The roads likely to be used by the project's heavy construction vehicles shall be identified in the Traffic Management Sub-plan required under condition B31(a). Road dilapidation reports shall be prepared for local roads likely to be used by the project's construction traffic, and a copy of the report(s) shall be provided to the relevant council, prior to use by the project's heavy construction vehicles. Any damage resulting from the use of the identified local roads by the project's heavy construction vehicles, aside from that resulting from normal wear and tear, shall be repaired at the cost of the Proponent, unless otherwise agreed by the relevant council.	Clause 11.1 Dilapidation Reports shall be prepared in consultation with PMHC and a copy provided at the completion of the report. Note that both local Roads impacted by the development are resurfaced as part of the Scope of Works and are subject to audit and inspection by PMHC at completion.
	Construction Environmental Management Plan	

B31.	As part of the Construction Environment Management Plan for the project required under condition B30, the Proponent shall prepare and implement the following sub plan(s): NSW Government 17 Department of Planning and Infrastructure Modification 1 Approval dated 20 November 2012 Modification 2 Approval dated 15 November 2013 (a) a Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service's QA Specification G10 – Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to: (i) identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes; (ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points; (iii) details of potential impacts to traffic on the existing highway and associated local roads, including intersection level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access; (iv) details of temporary and interim traffic arrangements to address potential impacts; (v) a response procedure for dealing with traffic incidents; and (vi) mechanism for the monitoring, review and amendment of this sub-plan;	Section 8.10 Appendix 12. Section 8.10. There is no expected impact to Levels of Service to Cassegrain and Expressway Spares. Section 8.10 Section 9 of this document. This is described in Section 8 and 9 of the Construction Environmental Management Plan.

1.6 Construction Staging and Key Dates

Stage	Start	Completion	Related Works
Establishment	Feb 2014	Apr 2014	Setting out the Compound
Site clearance	May 2014	May 2014	Clearing and grubbing and fencing
Preliminary work	Apr 2014	Apr 2014	Preparation disposal site: Access
Stage 1A	May 2014	Jul 2014	Bridge construction: - Pacific Highway East shoulder temporary widening - Working platform west span - Foundations - Abutments - Centre piers - Girders - Deck - Railing
Stage 1B	May 2014	Aug 2014	Roadwork's off road west of Pacific Highway • Deep Drainage Installation • Earthworks • Pavement base
Stage 1C	May 2014	Aug 2014	Sancrox Road Southern half including NW roundabout: • Utilities • Deep Drainage Installation • Earthworks • Pavement base
Stage 2A	Sep 2014	Dec 2014	Fernbank Creek Road East of Pacific Highway including SE and NE southern half roundabout • Deep Drainage Installation • Earthworks • Pavement base
Stage 2B	Sep 2014	Dec 2014	Sancrox Road Northern half including NW roundabout: • Utilities • Deep Drainage Installation • Earthworks • Pavement base
Stage 3A	Nov 2014	Dec 2014	Fernbank Creek Road NE roundabout northern half including Cassegrains Driveway • Roadwork's and Asphalt
Stage 4	Jan 2015	Jun 2015	Curing period pavement base

Stage 5	Jul 2015	Jul 2015	Asphalt: • Intermediate course • Wearing course • Riding Quality Test Road furniture, barriers, temporary signs and marking
Open to public	Aug 2015	Aug 2015	

Figure 4 Construction staging (Refer to Appendix 1 – Traffic Staging Drawings)

1.7 Sequence of the work

Works will start setting up the compound including the platform preparation, sheds installation, utilities supplies, amenities and furniture.

Once the compound is set up, the ancillary stockpile 3 site will be prepared including the provision of an adequate access.

Site clearance will follow for the whole site. The plan is to completed vegetation removal on the Western side of the Pacific Highway (currently bushland) before relocating the plant and equipment to the Eastern side. Traffic Control shall be in place to move the plant across the Pacific Highway to complete clearing of the new roadway.

Stage 1A
As soon as the area is cleared, the bridge construction will start. The Pacific Highway will be widened on the east side where there is more room and traffic moved slightly to the east to allow the construction of the central piers. Additionally, a working platform will be created on the west span by excavating the excess material and provision of a site access and egress to the working area. This will allow to build appropriately the west span including the beams and the deck.

A temporary detour below the west span will be built to divert the Pacific Highway traffic for the beams installation, deck pours and some miscellaneous works on the east span. Approval will be sort for revised ROL and Speed Zone Applications, including out of hours work permits if required for craning beams and clearing trees that may impact road corridor traffic.

Early construction of the bridge will allow the haulage of earth fill and other plant and equipment to avoid /minimize vehicles crossing the Pacific Highway at the Sancrox intersection this shall also minimize disruption to Pacific Highway traffic considering the high number of vehicle movements expected per day...

Stage 1B
While the bridge is constructed, road works on the western side of the Pacific Highway south of Sancrox Road (off road) will commence with clearing followed by excavating the large cut and transporting the excess material to the disposal site.

Stage 1C
Since the new Sancrox Road is built on top of the existing, it will be constructed in two halves/stages. Commencing with a temporary widening to allow two lanes per direction. Works will commence on the southern side including the Northeast roundabout, once completed it will be follow by the northern side.

Stage 2A
Once the bridge is completed, road works on the east side of the Pacific Highway (off road) will commence this includes the South East roundabout and the south side of the north east roundabout.

Stage 2B
The second half of the Sancrox Road (Northern Side) will follow changing the traffic from the north side into the

newly constructed southern side. The completion of the North West roundabout will require the temporary closure of the existing Sancrox service road 2 that provides access to the quarry as the new one is designed on top of the existing, therefore, a temporary suitable alternative route will be provided to the quarry (agreed with the owner) to provide access to their property at all times.

Stage 3

Once all the off road works on the North east roundabout are completed, the northern works will begin. The new Cassegrains driveway is designed on top of the existing one and therefore, a temporary suitable alternative route will be provided to the Cassegrains property (agreed with the owner) to allow access to their property at all times.

Stage 4

Once the road works have been completed up to heavily bound base (HBB) with sealant on service roads 1 and 3 and the product is defect free, a road safety audit and the required inspections will be completed to allow opening to the traffic.

Stage 5

After a curing period of 6 months, the asphalt will be placed as per the project specifications followed by the road furniture and markings and the road reopened to traffic.

2. Traffic Management Overview

2.1 Statement of Commitments

Ferrovial Agroman Australia (FAA) is responsible for the management of all traffic in connection with its activities and the Works on the Site. FAA will provide all traffic management, safety warnings and signage including such persons as necessary to direct traffic, as required by AS 1742:2009 – Manual of uniform traffic control devices and the RMS Traffic Control at Worksites Manual

FAA will:

- Ensure traffic management controls are established, maintained and monitored to underpin the safety of workers, other personnel and the general public.
- Establish traffic management controls in consultation with relevant stakeholders.
- Ensure traffic management controls comply with regulatory and legislative requirements.
- Ensure traffic management controls comply with the Contract.
- Ensure traffic management controls maintain the flow of traffic within the Site and on surrounding public roads.
- Reinstate any areas affected by the temporary construction access requirements to their original condition.
- Ensure that approved RCP, ROL and SPA are in place for the duration of the works.
- Ensure the RMS Traffic Commander is kept updated of activities likely to affect traffic flows

FAA shall ensure pedestrians safety is provided for on relevant TMP's in line with current access and egress provisions. Where possible segregation shall be provided for persons on foot and traffic.

2.2 Objectives

FAA has established this Traffic Management Plan (TMP) to support the effective management of traffic and the safety of road users and pedestrians within the site and the surrounding precinct during the construction phase of the Sancrox Traffic Arrangement. The Plan details specific controls that FAA proposes to implement during the project. The Plan contributes to improved safety, communication, stakeholder relationships and efficient construction activity.

The key road safety and traffic management objectives to be applied are as follows:

- Ensuring road users are given consideration and their safety assured during all phases of the Project works;
- Maximise the safety for the workers, by isolating work areas from traffic flows, applying low exposure work methods, training and the installation of appropriate traffic control;
- Provision of a safe environment for road users through the installation of an appropriate traffic control, which effectively warn, inform, guide; and comply with the best practice, Roads and Maritime Services and WorkCover requirements and Australian Standards;
- Minimise disruption to traffic operation, road users, pedestrians and access to adjoining properties;
- Maintain the road network functionality;
- Minimise construction activities, plant and vehicles on local roads and residential areas wherever possible;
- Minimise heavy vehicle movements during peak traffic times that impact on public roads and business/private property access;
- Plan and phase all works to effectively minimise road occupancy, avoid potential impacts and minimise conflict points on the existing road network;
- Conduct analysis of traffic volumes data to identify peak periods and assist with the planning of road occupancies;
- Implement traffic control operations that minimise delays to road users;
- Only undertake construction work during approved site hours or when application and approvals are received to operate outside of these times.

- Limit obstructions and restrictions, and when required provide alternatives to maintain access for local community, transport operators (buses) including over-dimension load movements and commercial developments;
- Support the Roads and Maritime's coordination of over dimension heavy vehicle movements;
- Implement and maintain environmental controls (wash bays, rumble grates, load covers, etc.) to suppress dust and prevent debris deposits on the road network;
- Actively liaise with key stakeholders including Roads and Maritime, Police, Local Councils, emergency service agencies and transport operators to ensure they are informed about proposed changes to the road network;
- Enable road users, transport operators and local communities to plan their journeys by providing them with timely and accurate changed traffic condition information;
- Plan works to allow for effective emergency response; and
- Manage complaints in accordance with the Community and Stakeholder Engagement Strategy (CSES).
- Routinely check traffic controls remain effective through site inspections and audits
- Ensure temporary traffic diversions controls are clear and visible in all weather conditions e.g. night, fog and heavy rain.
- Where possible plan to avoid traffic impacts during major traffic movements e.g. large public events at the local vineyard

The Traffic Management Plan (TMP) addresses the overarching vehicle movement planning requirements in accordance with the contract, relevant standards and Management Procedures. This plan will ensure vehicular, cycle and pedestrian traffic is not exposed to any additional hazards as a result of construction works and associated construction traffic. It will also ensure that construction workers are not exposed to hazards associated with construction traffic and public vehicular traffic.

FAA acknowledges the safety of road users and the effective management of traffic is paramount to the successful day-to-day activities during the construction phase of this project.

2.3 Targets

The Targets of the Traffic Management Plan are:

- No road accidents attributable to FAA's activities
- Minimise impact to effective and efficient operation of the local businesses and residences by providing suitable safe access and egress during road construction that includes the Pacific Highway, Sancrox Road and other local roads
- Achieve an high standard in road construction and supporting activities
- Implement traffic management which minimises disruption to road users and businesses whilst providing safe transit and a safe working environment

2.4 Plan Relationship

2.4.1 Overview

This TMP operates as the master document (forming part of the Project Quality Plan and it is included as Appendix B1 in the CEMP)) in a set of plans, drawings and topic instruction dealing with the safe and effective management of traffic during the construction phase of the project. This plan is further supported by the WHS Plan and relevant SWMS.

The following documents and associated operational procedures are attached as apprentices as referenced in the TMP:

Appendix 1- Staging Plans
Appendix 2- Road Occupancy Licence (ROLs) register
Appendix 3- Speed Zone Authority (SZA) register
Appendix 4- Traffic Control Plans (TCPs) register

Appendix 5- Vehicle Movement Plan (VMPs) register
Appendix 6- Traffic control certificates register
Appendix 7- Checklists
Appendix 8- Preliminary Traffic control plans
Appendix 9- Project Specific Requirements
Appendix 10- Project Specific Requirements Design standards for temporary Roadways
Appendix 11- TRAFFIC MANAGEMENT RISK ASSESSMENT WORKSHOP

Supporting documents included with other plans include:

- Safe Work Method Statements (SWMS) – refer to WHS Management Plan
- Inspection & Test Plan (ITPs) – refer to Quality Management Plan
- Environmental Work Methods Statements (EWMS) – refer to Environmental Management Plan

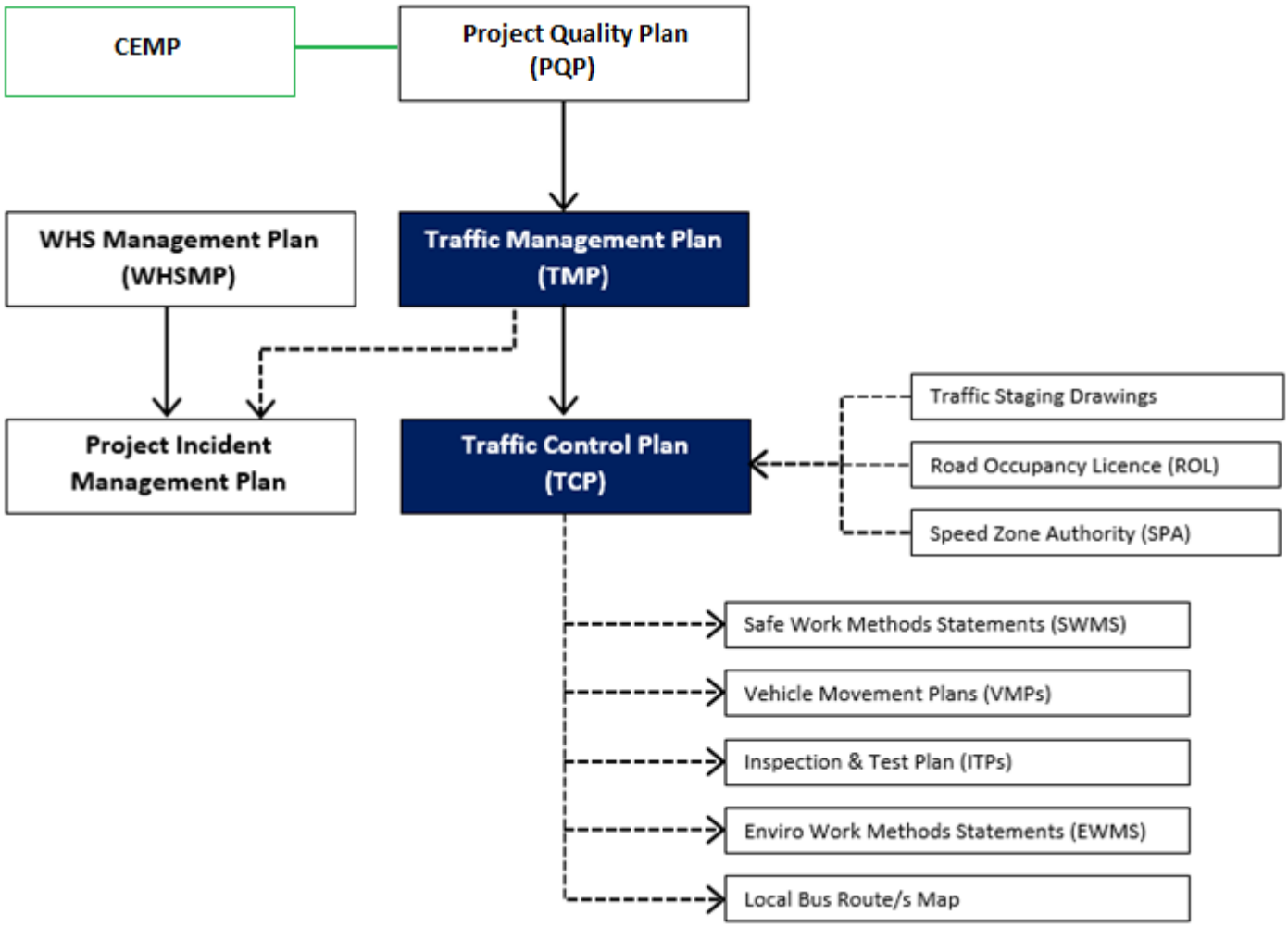

Figure 4: relationship between the various traffic management documents

2.4.2 Traffic Staging Drawings

Traffic Staging Drawings (refer Appendix 8) illustrate the proposed traffic staging to be implemented during the construction of the Project. These drawings detail for each stage the following:

- Lane configurations on existing and new (temporary and permanent) pavements, indicating any departures from existing traffic lanes
- Intersection layouts and temporary traffic signals arrangements
- Working areas, and pedestrian and cyclist paths
- Access to residential properties, local businesses, the site and community facilities

- Pavement markings and signage including advance warning signs
- Drainage systems, both temporary and permanent, including pollution control measures
- Utilities and their impact on the works
- Location of any required temporary structures such as retaining walls or the like
- Bus stopping requirements
- Details of the proposed methods for pavement marking removals, the estimated durations to carry out the removal and any proposed measures to restore the road surface

Stakeholders will be advised of approved traffic and pedestrian management arrangement in accordance with Specification G36 Clause 4.8

2.4.3 Traffic Control Plans (TCPs)

Traffic Control Plans (refer Appendix 4) are diagrams that illustrate the signs, road markings and devices that will be installed to warn traffic, and guide it around past, or if necessary through the work site. These plans will address the specific measures stipulated within the ROLs, SZAs and will comply with the requirements of *Roads and Maritime Services Traffic Control at Worksites Manual*. TCPs shall be approved for use by the accredited person before being implemented.

The project specific TCPs shall show the following:

- Types and locations of permanent regulatory and advisory signs
- Types and locations of temporary signs, including advance warning signs, Variable Message Signs (VMS), Radar-activated speed signs and speed zone signs
- Pavement marking details, including types of delineation required, turning arrows, stop/holding lines and other road markings, types and positions of raised pavement markers and other delineation devices
- Locations of permanent and temporary traffic signals
- Locations and lengths of tappers and buffer zones
- Location of any required Traffic Controllers
- Location of entry and exit gates to the working areas, individually numbered and signposted
- Pedestrians and cyclists paths
- Details of side roads and access for adjoining properties and parking
- Locations of any safety barriers, barrier systems and end terminals
- Location of temporary lighting

2.4.4 *Preliminary* Staging Drawings

Preliminary Staging Drawings for the different stages are provided on **Appendix 8**. These will be completely finalized, detailed and updated along the project to match existing traffic conditions and the requirements above. These Preliminary TCPs can be summarized as follows:

- Overall Speed reduction to 80 km/h on the Pacific Highway, and 60km on Sancrox Road and Fernbank Creek Road.
- Offsite disposal area access and egress controls.
- Sancrox Road and northwest roundabout southern part construction. 3.25 m width lanes. 0.5 m wide shoulders. Temporary widening required.
- Sancrox Road and northwest roundabout northern part construction. 3.25 m width lanes. 0.5 m wide shoulders. 40km/h speed reduction on roundabout. Alternative route to be agreed with Quarry during construction. Temporary widening required. Access road to compound to be kept at all times.
- North east roundabout southern half. 40 km/h on roundabout. Temporary widening required.
- North east roundabout northern half. 40 km/h on roundabout. Alternative route to be agreed with Cassegrains owners during construction.
- Bridge construction: Approach embankments and abutments, central piers, beams and deck pour west span. Beams and deck pour east span: Alternative route to be defined and agreed. 3.5 m width lanes. 1 m wide

shoulders. No right turn allowed on egress from site

- Bridge construction: Beams and deck pour east span. Temporary detour on west side. 3.5 m width lanes. 1 m wide shoulders. No right turn allowed on egress from site.

2.4.5 Vehicle Movement Plans

Vehicle Movement Plans (VMPs) shall be provide for traffic associated with the Works, such as trucks delivering materials and equipment and work supervisors' vehicles, to safely maneuver into and out of traffic streams, and turn at work areas, depots, stockpile sites, etc. and turn around.

The VMP shall show the vehicle entry and exit points to the worksite and indicate clearly that these are the only points where interface with the road traffic is permitted.

A VMP may be combined with or superimposed on a TCP.

3. Road Occupancy Licence

3.1 Road Occupancy conditions

Generally the Roads and Maritime will apply conditions to the approval, which include:

- Maximum traffic stoppage times and maximum queue lengths
- Maximum travel time delays
- Measures to provide information to road users
- Records detailing the date and time of the road occupancy, and the location of all signs, and any other relevant information associated with the traffic control must be kept.

The Roads and Maritime has the power to revoke the approvals at anytime for breaches of the associated conditions.

When FAA planned activities requires an existing road to be used in such a way as to affect **the free flow of** traffic, FAA shall obtain a Road Occupancy License (ROL). The license applies to the occupation of the road space only and does not grant permission for or approval to the actual/physical work being undertaken.

Road occupancies include:

(i) shoulder occupancies and/or closures;

(ii) lane occupancies and/or closures;

(iii) any occupation of the Construction Site by your labour, sub-contractors, equipment or plant that requires a traffic control plan under the provisions of this Specification; and

(iv) Any other event that causes delays to the free traffic flows.

The FAA shall lodge with the Principal, an application in the form set out in Annexure G10/D – Road Occupancy Licence Application Form, for a Road Occupancy Licence, providing all relevant details of your proposed Work. (Or the current version of this form from the Roads and Maritime web site)

Road Occupancy Fees for occupancy of RMS roads may be payable under the contract, notwithstanding anything to the contrary stated in the Road Occupancy Manual. Where such fees are applicable, it will be indicated in Annexure G10/A1, and their costs must be borne by FAA.

FAA shall submit all applications for ROLs to the ***Principal*** at least ten (10) working days prior to the planned commencement of the activities requiring the road occupancy. The activity must not commence until the ROL is obtained.

FAA shall manage its work activities to comply at all times with the lane occupancy hours granted in the ROLs. The lane occupancy hours granted in the ROL may be less than, and will override, the working hours stated in the Contract, for any work that requires lane occupancy.

The ROL must be available to RMS Representatives:

(i) *At the location of the relevant road occupancy; and*

(ii) ***At all times when any activity associated with the ROL is taking place.***

Notwithstanding any ROLs granted by the RM for any lane or shoulder closure, you must co-operate with RM and other authorities, such as the Police or State Emergency Services, to facilitate traffic flows on the roadway through the work site. In this regard, the Principal may at any time direct you to temporarily cease any work and re-open any closed lane or shoulder.

FAA shall provide the Principal each week a forecast of the proposed road occupancies for the following week. The forecast must be in the form of a schedule running from Monday to the following Sunday and contain full details on

the locations and timing of all proposed road occupancies. The forecast must be provided to Principal by 9.00am on the Thursday proceeding the week being forecast.

All your personnel involved in Work associated with the ROL must be:

(i) inducted in and made familiar with the ROL terms, conditions and requirements prior to the implementation of the road occupancy or their deployment in this element of the Contractor's Work; and

(ii) Re-trained staff on the ROL terms, conditions and requirements throughout the period of the road occupancy.

3.2 Lane closure & road occupancy submission procedure

The ROL Application must be forwarded to the Roads and Maritime TMC, who has responsibility for processing and approving ROLs. The Roads and Maritime generally requires at least 10 working days to process the application and will either grant or reject application within this period.
It should be noted the road occupancy requests must comply with the various road safety and traffic management principles, objectives and targets outlined in this TMP and all requirements as stated on RMS project specification G10.

To obtain extension, FAA will be required to re-submit a completed ROL application form with a copy of original TCP, quoting the previous ROL number. If the original lane closure & road occupancy submission is to be altered or changed, a new ROL submission needs to be prepared. It is the responsibility of FAA to ensure the validity of each approved lane closure and road occupancy, thus regular monitoring of approval expiry dates is essential. The Site Traffic Control Manager (FAA Site Engineer) shall maintain a database, which will contain details of road occupancy approvals to assist with this process.

3.3 Temporary Speed Zoning and Speed Zone Authority (SZA)

Roadwork speed limits and zoning in road occupancies must;

I. comply with section 8.2 of "Traffic Control at Work Sites Version 4.0 – RTA, June 2010" and section 5.6 of the "RTA's NSW Speed Zoning Guidelines – RTA Version 3 April 2009"; and

II. Not be less than 80km/hour at all times, except where approved by an ROL.

Copies of speed zone authorisations applicable to any road occupancies must be available at the road occupancies for the duration of the road occupancies.

Roadwork speed limit signs must be a minimum Type 'C' size signs duplicated on both sides of the carriageway at any changes in posted speed limits. The signs must be supported on two posts.

FAA shall obtain the necessary approvals from the Roads and Maritime prior to reduce the speed limit on the roads and a temporary Speed Zone Authorisation (SZA) issued. FAA shall notify the Police of roadwork speed limits as part of the Roads and Maritime's Delegation to Councils Regulation of Traffic.

All non-applicable speed limits signs shall be removed during any period for which the roadwork speed limit applies. At the end of roadwork speed limit zone, which should be established as closed to the worksite as is reasonable, the regular speed limit shall be clearly signposted.
FAA shall place ***two (2)*** variable message signs (VMS) at prominent locations***,*** on***e at*** each end of the site ***on the Pacific Highway*** as agreed with the Roads and Maritime, to keep road users informed of changes to road conditions and of possible delays as a result of construction work.

The VMS must be portable, Type C size, and solar powered, complying with AS 4852.2.
FAA shall ensure that the messages displayed on the VMS remain current over the duration of the Contract. Move the locations of the VMS, as needed, during the progress of the Works. The locations of the signs and the messages displayed must be approved by the Principal.
VMS shall also be used to publicise any pending changes in traffic arrangements for five days prior to those changes, and for changed traffic arrangements for five days after making those changes.

4. Signage- general

All signage on the Pacific Highway shall be duplicated on both sides of the highway. You must ensure that when changing speed zones on the Pacific Highway that the speed signs on both sides of the highway are changed simultaneously to ensure that conflicting speed zone signs at the same location are not visible to the travelling public.

4.1 Traffic Control Devices

4.1.1 PORTABLE VARIABLE MESSAGE SIGNS

As nominated in Annexure G10/A1, FAA must place two (2) variable message signs (VMS) at prominent locations, one at each end of the site on the Pacific Highway as agreed with the Principal, to keep road users informed of changes to road conditions and of possible delays as a result of construction work.

The VMS must be portable, Type C size, and solar powered, complying with AS 4852.2.

Ensure that the messages displayed on the VMS remain current over the duration of the Contract. Move the locations of the VMS, as needed, during the progress of the Works. The locations of the signs and the messages displayed must be approved by the Principal.

Use the VMS to publicise any pending changes in traffic arrangements for five days prior to those changes, and for changed traffic arrangements for five days after making those changes.

Where required by the conditions of an ROL, a minimum of one additional variable message sign (VMS) must be provided and installed on the existing highway and/or on each approach to each road occupancy which involves approved traffic stoppages. During the period of operation of the road occupancy, the VMS must be operated continuously to notify all road users of the road occupancy and its effects. The VMS must have, and you must operate continuously, a remotely controlled twenty-four hour message change facility to make immediate changes to the messages on the VMS. The VMS must be installed at least one week prior to the day of the implementation of the road occupancy to provide advance notification to all road users of the future road occupancy.

Maintain and make secure the VMS. Clean the VMS Perspex face and solar panels and check the battery distilled water levels at least once each month.

4.1.2 RADAR ACTIVATED SPEED SIGNS

As required in Annexure G10/A1, provide trailer mounted Radar Activated Speed Signs (RASS) for use during the construction period.

Locate the RASS in positions suitable for influencing the speed of motorists entering the reduced speed zone. The locations of the RASS and the message displayed must be as agreed with the Principal.

FAA must obtain calibration details from the RASS supplier(s) to confirm that each RASS is accurately calibrated within the manufacturer's specified tolerances. Periodically check each RASS for accuracy and carry out recalibration to within the manufacturer's specified tolerances promptly as needed.

Monitor the effectiveness of the speed limit reductions and furnish a detailed log of the speeds each week to the Principal.

4.1.3 TEMPORARY TRAFFIC SIGNALS

As required in Annexure G10/A1 and as if required by FAA's TCP, install portable traffic signals complying with the TCWS or temporary fixed traffic signals complying with the RMS Traffic Signals Equipment Specification No SI/TCS/8 and associated Drawings.

5. Safe Work Method Statement (SWMS)

Site specific Safe Work Method Statements (SWMSs) will be prepared and implemented for all work activities to assure the safety of workers and members of the public.
FAA will prepare Safe Work Method Statements in consultation with workers, subcontractors and relevant functional managers for implementation before the related work starts.
The provisions for working on or adjacent to roadways, and the traffic control measures to be applied will be incorporated where necessary within the SWMS.

5.1 Safety Vests and Logos

FAA shall ensure nominated Traffic Controllers high visibility fluorescent safety vests complying with AS/NZS 4602, clearly bearing the letters “RMS”, and the words “Authorised Traffic Controller”

Traffic Controllers must wear the vest as an outer garment only when controlling traffic for the purposes of the Contract, and not at other times.

5.2 Registration of Traffic Control Organisations

FAA shall ensure that any Subcontractor undertaking traffic control shall be registered under the RMS Registration Scheme Category G “Traffic Control”.

5.3 Proposed Traffic Controllers

Prior to the commencement of any work on the Site involving controlling and directing traffic, FAA shall submit to the Roads and Maritime the names of proposed Traffic Controllers, and the registration numbers and expiry dates of their Cards. Submission of these details constitute a Hold Point. Refer to Appendix 6 Traffic Control Certificates Register.

HOLD POINT
Process Held: Any work controlling and directing traffic on the Site.
Submission Details: The names of your proposed Traffic Controllers, and the registration numbers and expiry dates of their Cards.
Release of Hold Point: The Roads and Maritime will consider your proposed personnel, prior to authorising the release of the Hold Point.
Where there is a change of personnel, submit the names and Card details of the new Traffic Controllers, and the Hold Point will apply to these new personnel. Road Occupancy Licence (ROLs)

FAA shall obtain the necessary approvals from the TMC prior to conducting any works on public roads. The three specific areas of approval will includes:

- All development works and/or any changes to existing infrastructure
- The temporary or permanent installation and/or changes of any regulatory traffic control device
- Land & road closure, occupation of the any road networks, and the associated installation of temporary traffic control devices

FAA will obtain the concurrence of the Roads and Maritime requirements prior to the installation of temporary traffic controls or devices and occupying the road networks. FAA acknowledges that a Road Occupancy Licence (ROL) scheme applies on road networks and understands the benefits of coordinating the occurrence of delays at separate work sites.
Consequently, except in the case of an emergency, or when directed by Police or Emergency Services, FAA will obtain an ROL prior to the commencement of any works which:

- Slows, stops or otherwise delays traffic

- Diverts traffic from its normal course along the road carriageways, including lane closures, turning restrictions, side-tracks, detours and diversions
- Occupies any portion of a road that is normally available for traffic, including road shoulders

FAA acknowledges all road occupancies will be subject to the specific period of operation.

5.4 Plant and Equipment used for work adjacent to traffic

Equip all vehicles used in traffic control operations with the appropriate vehicle mounted warning devices in accordance with the TCWS.

During daytime, plant and equipment working in a position adjacent to traffic and having a projection beyond the normal width of the item, for example, a grader blade, must have a fluorescent red flag attached to the outer end of the projection.

During poor light conditions or at night, an additional Traffic Controller with an illuminated red wand must direct traffic around such plant and equipment.

During night time, where traffic is permitted to use the whole or portion of the existing road, remove all plant items and similar obstructions from the normal path of vehicles, to provide a lateral clearance of at least 6 m where practicable, with a minimum clearance of 1.2 m.

Illuminate any plant and equipment which are within 6 m of the normal path of vehicles with not less than two yellow steady lamps suspended vertically from the point of the obstruction nearest to a traffic lane, and one yellow steady lamp at each end of the obstruction on the side furthest away from the traffic lane.

6. Management Responsibilities

6.1 Project Manager

The Project Manager is responsible to:

- Support the delivery of the road safety and traffic management objectives
- Implements the principles and requirements of the TMP
- Ensure the effective traffic management controls are planned, reviewed, approved and established for pubic and construction traffic in accordance with the Contract
- Ensure the TCPs, VMPs, ROLs and SZAs are submitted to the Client and/or relevant authority for review and/or approval
- liaise with stake holders to minimise impacts during construction
- Ensure all construction team members receive the appropriate training
- Ensure audits are undertaken and any corrective actions are implemented

6.2 Traffic Control Site Manager (TCSM) (FAA Site Engineer)

The TCSM is responsible for:

- Ensuring that the approved traffic control measures are established, implemented and maintained in accordance with the approved plans
- Carry out regular inspections and auditing of the traffic control measures to ensure that they are effective and are being followed
  - Particular attention shall be paid to prior to start and the conclusion of work each day and changing environmental conditions e.g. low light, high wind and heavy rain.
  - Revise the traffic control measures if observations show that the works impact on peak hour traffic flow or to address any other corrective actions
- Ensuring construction workers only use approved Designated Parking Areas
- Ensuring only appropriately trained (ticketed) and experienced personnel are assigned to prepare, implement, audit and maintain the traffic management controls
- Ensuring any traffic management issue or incident is notified immediately to the Project Manager and reported at the project meeting
- Amending and updating the plans, as required, to ensure that they remain current as the work progresses
- Identifying locations and times where traffic congestion or unsafe conditions for vehicles, cyclists, pedestrians and workers are occurring, and providing recommendations for improvement
- Maintaining current copies of the Traffic Management Plan, Traffic Staging Plans, Traffic Control Plans, Vehicle Movement Plans, Road Occupancy Licences and Speed Zone Authorisations, and their controlled distribution
- Liaising with the Principal and other authorities such as Transport Management Centre (TMC), New South Wales Police and local Councils on traffic management matters for the construction site
- facilitating traffic awareness and giving toolbox talks to site personnel

The TCSM has the authority to stop work on any activity if it is considered to be necessary to prevent traffic accidents, or to comply with the directions of the Principal, TMS or Police.
Reference requirement for TCSM to hold, as minimum, a red card.

6.3 Traffic Control Team

The Traffic Control Team is responsible for:

- Install and remove traffic control including speed zones, in strict accordance with a Traffic Control Plan and all relevant Guides and Manuals
- Carry out maintenance of all traffic control devices, line marking, signage, delineation and other equipment or areas as required
- Provide assistance as directed, as incident sites, including direction from emergency services, e.g. Police

- Install and maintain long term signage
- Relocate, repair and maintain traffic control plant, such as but not limited to: portable VMS, trailer mounted arrow boards, vehicle mounted arrow boards, crash cushions, flashing beacons and vehicle mounted attenuators
- Organise and maintain the yard, workshops and associated deports and storage areas/containers to a high standard of cleanliness and safety
- Support construction staff in the planning, coordinating and monitoring of traffic management activities in timely and efficient manner
- Implement corrective actions and undertake duties as directed by the Traffic Control Site Manager
- Conduct field surveillance of the road network, with the aim to identify unusual congestion, incidents, non-conforming traffic control and unsafe road conditions
- Prepare necessary reports, and maintain incident records and inspection logs
- Action items raise at Safety, Construction and other relevant Team Meetings in a timely manner
- Manage, maintain and ensure the safe and clean implementation of contra-flow operation

6.4 Environmental Site Representative (ESR)

The ESR is responsible for:

- Representing the project for all community and stakeholders issues
- Conduct consultation with stakeholders for traffic planning, and provide an ongoing liaison role
- Prepare and distribute changed traffic condition information to road users, transport operators and local communities.

7. Project Contacts

Organisation	Name	Position	Phone Number
Ferrovial Agroman Australia	Manuel de Miguel	Project Manager	0448956114
	Manuel de Miguel (Acting)	Traffic Control Site Manager (FAA Site Engineer)	0448956114
	Brendan Bale	Environmental Site Rep	0409 753 905
	Adele Graham	WHS Advisor	0437339014
	Blake Rosenbaum	Site Supervisor- pavements	0437332451
	Greg Croaker	Site Supervisor- Bridge Works	0437591486
ROADS AND MARITIME	Todd Lyall	Project Manager	T 02 4924 0463 M 0437 973 866
	Robert Ausling		
Port Macquarie Police			65830 199
Police, Fire, Ambulance			000
Traffic Management Centre (for any incident)			131 700

Figure 5 Project Traffic Management main contacts

8. Traffic Management and Control

8.1 Overview

The primary objectives and impacts for determining the traffic management controls during the construction period are: (Note controls are further detailed in 8.2-8.10 below)

Objective	Impact	Control
Safety of people, road users, the general public and construction workers	This TMP has been developed to define the controls required to protect those whom the project impacts. Impacts include increased travel times, vehicle accidents, injury to persons and plan and delays.	TCP's, ROL's, VMP and SZA This plan also provides for inspections and audits, training and qualifications of those involved in the activity
Minimising the impact of the works on road users , local businesses and community in the affected area	Potential reduction of trading to businesses, delays in entering/exiting properties, changing access arrangements disrupts the local businesses and community.	Consultation and advertising shall be undertaken as required by this plan and in accordance with the Community Liaison Plan. Variable message boards may be used to communicate to business customers and deliveries regarding temporary access changes. All work shall be planned to ensure access to businesses and road users are maintained
Contractual requirements in particular G1, G10, G22 (including Site and Worksite access)	Requirements for G1, G10 and G22 and the CoA have not been addressed- breach of contract- unsafe access.	Vehicle Movement Plans have been prepared and shall be included in Project and task inductions. Preliminary TCP's have been prepared and ROL, SZR shall be submitted progressively as required.
Road traffic authority and Local Government requirements	Failure to comply with contract, RMS requirements and Local Government requirements. Delays due to lack of communication.	Consultation with local PMHC and Roads and Maritime (as both principal and regulator)
WHS requirements in relation to the movement of all vehicular traffic, plant and pedestrians either within or adjacent to Worksites	Accidents and incidents involving construction traffic/workers, pedestrians.	Risk assessment completed that included identification of VMP, TCP's and supporting documents to ensure all safety aspects are addressed. Specific controls work segregating workers on foot and pedestrian access.
Environmental Management requirements	Impacts from Construction Traffic effecting sensitive receivers, local businesses	Controls included for minimising impacts such as controlling access and egress points, hours of work and noise/vibration mitigation measures
Avoidance/Minimization of adverse impacts construction traffic has on the local community in the surrounding area, and	Construction vehicles may inhibit traffic flow and have the potential to cause accidents and delay/obstruct traffic movements including access to properties.	Clause 8.10 addresses the requirements of traffic volumes and the relative impacts of the increased volume relative to current traffic flows.

The need to meet construction requirements (including scheduling and cost effectiveness).	Delays to construction caused by failures of the Traffic Management Plan. Delays may also lead to increased costs.	Traffic Movement Plans prepared with supporting TCP's ROLs & SZR to ensure efficient movements of construction traffic. These plans minimise crossing of the Pacific Highway and include left in left out with acceleration and deceleration zones for traffic to re-join the road network
Compliance with Roads and Maritime Traffic Control at Worksites Manual	Delays to approvals due to unqualified staff performing work. Incidents resulting for lack of training, qualifications and experience.	Appropriately qualified personnel to undertake the preparation of this TMP and associated TCP's, SZA and ROL and the implementation of traffic control plans.

FAA has developed a Traffic Staging plans (Appendix 1) and will finalise this Layout during Site establishment. The Traffic Control Layout will include specific traffic management controls to mitigate risks; and will be finalised to meet Roads and Maritime requirements.

The TMP, specifically the TCPs, VMPs, ROLs and SZAs, shall be submitted in stages in accordance with the requirements of Roads and Maritime Q6 for the staged submission of the Project Quality Management Plan. Staged submission of the Traffic Management Plans shall align with the staging of the Works considering, lead times for approval.

Approved Traffic and Pedestrian Management arrangements shall be advised to appropriate stakeholders in accordance with Specification G36 Clause 4.8. Vehicle and Traffic Management Procedures briefing shall be included in the Site Induction program following development in consultation with the stakeholders.

8.2 Public Roads - General

FAA will ensure:

- Controls are in place to minimise soil and debris from being tracked onto public roads- refer to EWMS
- Roads are cleaned from construction debris including dirt at all stages promptly.
- Suitable precautions are taken to ensure no materials such as rocks are dislodged onto any roadway from construction vehicles
- Construction plant and equipment do not park on or within the pavement or shoulders of any existing trafficked roadway or obstructing and private access
- Construction Vehicles (when loaded) comply with the mass, loading and access requirements of the road traffic authority
- Construction Traffic will cause the least possible disruption to Public and other Traffic.

Vehicle Movement Plans (VMPs) will be developed to reduce the impact on roads arising from additional construction traffic. The Vehicle Movement Plans details measures to minimise the impact to traffic through restricting the direction of flow and/or time of day movements.
FAA will comply with any Roads and Maritime signage requirements for traffic control. Where construction work is to be undertaken either on or adjacent to a public roadway that is open to traffic, the work must be undertaken in

accordance with all regulatory and legislative requirements that govern the movement of vehicles and pedestrians on any public roadway.

Traffic Control Plans and Traffic Staging plans will be developed for the works that impact on the existing traffic conditions. These will be reviewed and audited by TCSM. Major switches are required to be audited prior to implementation.

8.3 Site Construction Traffic

Traffic within the Construction Site will be managed in accordance with Vehicle Management Plan (refer Appendix 5). The VMPs will indicate site access and egress points and detail any required separation of construction plant and personnel. These plans will be communicated during Tool Box Meetings and/or daily pre-start briefings.

Traffic Control Plans and Vehicle Management Plans will incorporate details of parking arrangements for the site construction workers, speed limits within the construction works or through access roads established for vehicular and plant construction traffic.

The VMPs will detail traffic management controls that are appropriate within each Worksite. FAA will establish a Site Office and Designated Parking Area in accordance with the Roads and Maritime specification G2.

8.4 Traffic on HW10 Pacific Highway

(a) The traffic capacity of the Pacific Highway existing at the Site at the Date of Contract must be maintained, except as provided elsewhere under this clause. Any delays to traffic must be kept to a minimum and kept to off-peak periods.

(b) No work that will affect the capacity of the Pacific Highway during long weekends, public holidays and school holidays as detailed below will be undertaken:

i. From 6.00am on the Friday prior to the commencement of a State School holiday period until 6.00am on the first Monday of the State School holiday period.

ii. From 6.00am on the last Friday of a State School holiday period until 6.00am on the first day of the new State School term.

iii. From 6.00am on the day prior to a public holiday to 6.00pm on the day following the public holiday.

iv. From 6.00am on the Friday prior to a public holiday Monday, to 6.00am on the Tuesday following the public holiday.

v. From 6.00am on the Thursday prior to a public holiday Friday to 6.00am on the Monday following the public holiday.

Note: State school holiday period includes both NSW and QLD

(c) Subject to lane occupancy conditions as listed in the Road Occupancy Licence, restriction of traffic to a single lane traffic flow or short term complete stoppages using Traffic Controllers will be permitted only for off peak periods with the following conditions:

- Short term lane closures / complete stoppages shall not take place due to construction activities which delay the free flow of traffic for longer than five (5) minutes including the time taken to clear the queue of traffic. You will only be permitted 1 lane closure or 1 complete stoppage at any time.
- Short term lane closures / complete stoppages will not be permitted during long weekends, public holidays and school holidays as per (b) above.
- The worksite length must not exceed 400m.
- Traffic queues caused by construction activities measured along a single lane must not exceed 250m. If traffic queues exceeding 250m, the obstruction must be removed until traffic returns to free flow conditions.
- Short term lane closures / complete stoppages will not be permitted during the following peak traffic volume periods:
- From 7.00am – 9.00am Monday to Friday;
- From 3.00pm – 6.00pm Monday to Friday.

- Short term lane closures / complete stoppages will be programed on a weekly basis and prior approval for the closures will be obtained from the Principal. The forecast must be forwarded to the Principal by 4pm on the Thursday of the preceding week.
- Any non-compliance with the above conditions must be reported immediately to the Roads and Maritime Transport Management Centre and a non-conformance raised to prevent re-occurrence.

- Provide appropriate delineation, advance warning signs and speed zoning at all times; cater for foggy conditions and provide lighting if night vision is poor.
- Minimise the number and extent of traffic switches so that drivers may become familiar with the temporary arrangements.
- All aspects of traffic management will be planned in coordination and consultation with the Pacific Highway Traffic Safety Manager.
- Road occupancies must be designed and implemented to allow for and accommodate the passage of over-dimension heavy vehicles through all the road occupancies. The Contractor must liaise with Roads and Maritime Representative to establish communication protocols for the passage of over-dimension heavy vehicles through all road occupancies.

- Temporary lighting will be provided as required.

    (i) Traffic controllers located on each of the approaches to the road occupancy closest to the road occupancy, and within the road occupancy itself, must be positioned no greater than 400 metres apart.

8.5 Traffic on Local Roads

(a) Current turning movements into and out of local roads must be maintained during construction except as provided under (c) below.

(b) Traffic along Pacific Highway must not be diverted on to local streets unless prior written approval has been obtained from Port Macquarie - Hastings Council.

(c) Heavy vehicles must not use Sancrox Road west of the Limit of Works or Fernbank Creek Road east of the Limit of Works unless prior written approval has been obtained from Port Macquarie - Hastings Council.

(d) Requirements of the Roads Act 1993 will be followed and written approval from Port Macquarie - Hastings Council for closure of side roads or prevention of turning movements into or out of side roads obtained.

8.6 Existing Accesses

(a) FAA shall maintain all existing accesses. This includes access to properties, pedestrian access, cyclist access and emergency services access. Private vehicles may be required to cross the “work zone” in order to access properties including the access driveway between the Site Compound and Adjacent Parking/Ancillary area which provides access to the property located at the rear.

(b) Attention is drawn to the fact that “Expressway Spares” has oversize vehicles that require access to the premises. FAA shall liaise with Expressway Spares to ensure that oversize vehicles can access the premises as required.

8.7 Pedestrians and Cyclists

(a) Adequate provision will be made for current pedestrian and cyclist movements along the Pacific Highway and all intersecting streets.

(b) Cyclist movements will be included on the Traffic Control Plans as required.

FAA may encounter pedestrian traffic at the Site and near Worksites. If pedestrians enter, FAA will ensure that Worksites are appropriately isolated and secured from unauthorised entry; and that the Site is appropriately sign-posted and controlled.

The following actions will help keep pedestrians and vehicles apart both on site and when vehicles enter or exit the workplace:

- provide separate traffic routes for pedestrians/cyclists and vehicles
- secure the areas where vehicles and powered mobile plant are being used, for example pedestrian barriers or traffic control barricades
- provide separate clearly marked pedestrian walkways/cycle ways that take a direct route where possible
- where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians/cyclists can see each other clearly
- when exiting the site, make sure drivers driving out onto public roads can see both ways along the footway before they move on to it
- do not block walkways so that pedestrians have to step onto the vehicle route

8.8 Site Access

FAA shall provide suitable intersections for vehicles entering or leaving the Construction Site, areas provided for Local Road Works and at junctions where the traffic volumes are increased as a result of our work. The capacities of all intersections with the existing Highway and any replacement intersections that are a part of Temporary Works being used by Existing Highway traffic must be maintained, as a minimum, at the levels that existed at the original intersection prior to the commencement of Construction for the duration of the Work.

Unless otherwise approved by the Principal, FAA must provide dedicated right hand turning lanes, deceleration and acceleration lanes at construction access points to maintain appropriate and safe access for all construction vehicles entering or leaving the Existing Highway.

FAA shall provide safe access points to the Construction Site which shall meet the following criteria:

(a) Turning lanes must have sufficient storage length for all construction vehicles likely to use the access point at a given time;

(b) Where there is an exit from the Construction Site onto the Existing Highway then acceleration lanes must be provided.

Unless dedicated turning lanes have been installed as per this Clause, access to the Site must be left in / left out only.

8.9 Material Haulage and Management- Environmental Considerations.

The construction project will involve the generation of excess fill material and the importing of road base materials.
To minimise the transport of excess fill material Roads and Maritime have identified and ancillary stockpile location approximately 4km north of the main project for the storage of this material. This excess material shall be reused by the D & C contractor on the Oxley Highway to Kundabung stage of the project. There is no need identified for the project to import any fill material. Road Base and concrete shall be sourced from local suppliers with preference give to the quarry adjoining the site in order to minimise transport.

FAA have also proposed to construct the bridge over the Pacific Highway as early works to enable construction vehicles to use the bridge to complete the works on the Eastern side of the Highway. This plan shall minimise construction vehicles crossing the Pacific Highway- avoiding both risk of accidents and traffic delays.

8.10 Traffic Movement Volumes

The table below provides predicted traffic movements and is supported by Vehicle movement plans included in

the appendix. With the exception of Clearing and Grubbing for Service Road 3 which indicates 5-10 movements per day there is no planned direct crossings of the Pacific Highway- a TCP shall be prepared for these crossings which are expected to commence in mid-July'14 an last for 2-3 weeks .

Based on the attached information

- traffic turning onto the Pacific Highway shall be normally out of peak hours,
- the gap distances is currently sufficient not to impede existing traffic flows
- reduction in speed at the intersection to 80km/hr shall further improve safety
- Sighting distance is high- 500m in both directions
- Current peak turning volumes (53/hr) Construction traffic (based on predicted volumes below) will not be significantly increase.

On completion of the bridge works in late September- early October'14 construction traffic wishing to travel south on the Pacific Highway shall be directed to cross the Bridge and then turn left onto the Pacific Highway to minimise traffic delays and risks associated with right turns, given the lack of an acceleration lane.

All work areas shall be designed to provide left in left out- with the exception of Service Road 1 that is accessed from gate 4 of Expressway Spares. Traffic exiting this work area shall turn right onto Sancrox Road (left turns prohibited). A Traffic Control Plan will be prepared for this work area and will be supported by a Road Occupancy and Speed Zone Reduction Application.

Traffic leaving Ancillary Site 3- Stockpile during construction shall head north approximately 2km- the nearest recommended turning shall be the entrance to Cairncross Waste Management Facility on Forrest Hut Road West where they can turn and return south on the Pacific Highway- if required.

PREDICTED TRAFFIC MOVEMENT VOLUMES

		ACTIVITY- MOVEMENTS PER DAY		
		Clearing Grubbing Establishment	Earth Works	Pavement Bridges
CONSTRUCTIONN TRAFFIC WORK AREAS	Site compound	10 - 20	35 - 50 Parking for workforce	20 - 40 Parking for workforce
	Ancillary site 3	5 - 10	10 - 20	5 - 10
	Service Road 1 west	5 - 10	20 - 60	30 - 40
	Service Road 3 east	5 - 10	Access via bridge to service road 1	Access via bridge to service road 1
	Bridge east	5 - 10	10 - 20	10 - 20
	Bridge west	5 - 10	10 - 30	10 - 15
	Sancrox East Fernbank	Access via bridge	Access via bridge	Access via bridge
	Sancrox west	2 - 5	10 - 20	10 - 15
Public traffic	Quarry traffic	80	80	80
	Through Traffic Sancrox	200 - 300	200 - 300	200 - 300
	Through Traffic Fernbank	20 - 50	20 - 50	20 - 50
	Pacific Highway Traffic	374/hr peak	374/hr peak	374/hr

The information below is an extract from the PMHC
DEVELOPMENT ASSESSMENT PANEL 12/03/2014

Item: 06

Subject: DA 1995 - 193 - SECTION 96 MODIFICATION TO EXTRACTIVE INDUSTRY (HANSON QUARRY) - LOT 1 DP 720807 & LOT 353 DP 754434, SANCROX ROAD, SANCROX
Report Author: Clint Tink

Property: Lot 1 DP 720807 & Lot 353 DP 754434, Sancrox Road, Sancrox
Applicant: Hanson Construction Materials Pty Ltd Owner: Hanson Construction Materials Pty Ltd Application Date: 28 January 2014
Estimated Cost: N/A Location: Sancrox
File no: DA1995 - 193
Parcel no: 18314 & 28897

	Haulage by 30T Truck and Dogs	Haulage by 50T B-Doubles
Existing trips per year	**6,167** return trips / year	**3,700** return trips / year
Post-development trips per year	**15,167** return trips / year	**9,100** return trips / year
Existing trips per business day (Mon - Sat, 302 days per year)	**20** return trips / day	**12** return trips / day
Post-dev. trips per business day	**50** return trips / day	**30** return trips / day

The final response from RMS raised several matters for Council consideration and these are addressed below:

- *Consideration of AUSTROADS warrants for a LH turn acceleration lane at the intersection.*

The criteria from AUSTROADS guide Part 4A Section 5.2.2 are:

AUSTROADS warrants for a LH acceleration lane	**Council engineering comment**
If an insufficient gap exists to enter traffic stream	The number of vehicles per hour heading northbound through the Pacific Highway at the peak time was 374 (from TTM traffic study). This suggests an average gap of 9.6 seconds in the existing situation. AUSTROADS states that the minimum safe gap a car requires is 5 seconds. The gap distance to not interfere with traffic (causing it to slow) ranges from 14 - 40 seconds.
If turning volumes are high (e.g. 300 to 500 vph)	The number of vehicles turning left from Sancrox Rd at peak times is 53.
If the observation angle falls below requirements for min gap sight distance	The sight distance southwards from Sancrox Rd exceeds 500m. Min Gap Sight Dist (Table 3.5) at 100km/h is 139m.
If heavy vehicles pulling into traffic would cause excessive slowing of major road vehicles	If an appropriate gap is selected, adequate sight distance is available for major vehicles to slow. Driver behavior is to be enforced by site management, with a management plan to be submitted as required below.

Traffic delay analysis (intersection performance) by TTM shows the worst average intersection delay is currently 4.3s and the worst queue distance 7.9m. Additionally, TTM has stated that historic crash data shows no accidents have occurred on record involving a heavy vehicle turning left or right out of Sancrox Road.

FAA do not expect to significantly impact on the intersection with the Pacific Highway given the existing traffic volumes and predicted construction traffic movements. This intersection shall be monitored weekly as part of the Environmental Site Inspections to ensure compliance with the Projects TCPall be monitored weekly as par

9. Unplanned Incidents

9.1 Overview

An emergency is defined as an unforeseen event, which requires urgent attention to protect life or property or an occasion when emergency services (Police, Fire Brigade, Ambulance or State Emergency Services) take control of a portion of the road networks

The types of emergencies/unplanned incidents that may occur include, but not limited to:

- Motor vehicle crashes
- Bush fires
- Environmental spills
- Terrorist attacks and bomb threats
- Construction type incidents
- Structural/catastrophic failures
- Inclement weather conditions, including flooding
- Anti-social behavior.

9.2 Manage Unplanned Incidents on the road networks

The occurrence of unplanned incidents within the construction site may have negative impacts on the operation of the road network. Similarly incidents that occur on the surrounding road network can temporarily restrict construction activities. The management and response to unplanned incidents on the Sancrox traffic arrangement and surrounding road network is not the responsibility of FAA, but where possible, FAA will:

- Contact Transport Management Centre's Operation Room immediately if a traffic incident occurs during working hours;
- Promptly remove/reposition traffic control devices and/or remove debris that interferes with traffic flow (under direction of the Roads and Maritime Traffic Commander, Police or the Principal).
- Where ever possible provide access for emergency vehicles to travel through the work zone if required
- Prepare a Traffic Incident Management Plan, in consultation with the Transport Management Centre and having regard to coordination with Port Macquarie Hasting Council;
- Specific site contact person shall be nominated to deal with issues related to clearing Sancrox traffic arrangement when notified by the Roads and Maritime Traffic Commander or Police;
- Provide capacity on site for basic early traffic control that may be required at an incident, such as cones, signs, clearing debris;
- Keep suitable plant available on site during construction for moving temporary concrete safety barriers;
- Hold spare safety barriers/ signs or the like on site to allow quick replacement in case of a traffic accident which damages the safety barriers/ signs or the like;
- Respond within 1 hour to after-hours callouts from the Traffic Management Centre or Police; and
- Keep records of communications with the Transport Management Centre and Police as well as of all traffic accidents attended.

9.3 Manage Construction Site Emergencies

A Project Incident Management Plan is included as part of the WHS Management Plan, which incorporates standard operating procedures for managing construction site emergencies/incidents. This plan:

- Defines FAA's roles and responsibilities in the event of incident and emergencies;
- Establishes and define FAA's roles and emergency response procedures for dealing with different category of emergency arising from construction, traffic, environmental incidents;
- Identifies and define the roles and responsibilities of project personnel during emergencies and incidents;

- Defines the Roads and Maritime and emergency services roles and responsibilities in the event of an incident or emergency;
- Outlines the communication protocols and systems;
- Establishes formal arrangements for the review and maintenance of the plan.

All construction or construction related incidents shall be entered into an incident register by the project WHS manager.

9.4 Extreme Weather Events and Bush Fires

The Project Engineer shall review weather forecasts weekly to avoid undertaking specific work activities immediately prior to or during extreme weather events refer to Project Risk Assessment- e.g. high rainfall, temperature extremes, bush fires and wind. The ESR shall monitor weather on a daily basis and update the Project Team on any severe weather events e.g. hail storms, localised flooding and bush fires for the implementation of emergency protocols outlined in the risk assessment plan for implementation to protect all impacted by the project activities including site works, motorists, road users and emergency services.

The consultation plan outlines communication protocols with emergency services including the Sancrox Bush Fire Brigade, Police, Ambulance, Fire Brigade and SES.

There Sancrox Traffic Arrangement is above the 1/20 flood levels however adjoining local roads- Sancrox Road and Fernbank Creek are subject to flooding more frequently, as such access by emergency services and exit by residents must be available to be provided at short in an emergency where there is no alternative access. Similarly both roads have large trees that in high wind/prolonged heavy rain may also obstruct egress (fall across the road), FAA shall work with emergency services to clear obstruction to provide safe access to those whose access is impacted by the Project.

10. Monitoring, Reporting, Review and Improvement

10.1 Traffic Control Inspection

10.1.1 Overview

This process focuses on the continuous monitoring of temporary traffic controls at work sites within the Sancrox traffic arrangement during the construction phase. The aim of this process is to provide a safe environment for workers and road users, monitor compliance against the Traffic Control Plans and identify safety hazards in order to implement corrective solutions. This process details the type, frequency, responsibility and checklists for inspections.

Inspections of the temporary traffic controls will be conducted during the construction phase, focusing on monitoring compliance against the TCPs and identifying safety hazards, to enable implementation of corrective solutions. FAA will conduct four main types of inspections on the project: pre-start and pre-close down inspections of short-term traffic control; weekly inspections of long-term traffic control; night inspections of long-term traffic control and pre-opening inspections of minor temporary traffic switches, inspections following any major environmental events. These inspections will be carried out in accordance with Appendix A of Australian Standard 1742.3.

10.1.2 Inspection checklist

FAA will apply comprehensive checklist to assist the inspection process (refer to Appendix 7 Checklists).
The short-term, long-term, or night inspection checklist is based on the Appendix E of the Roads and Maritime Traffic Control Manual
FAA shall check at the commencement and conclusion of each day's work that all required traffic control measures and signs are in place as detailed on the TCP for each stage.

Record the details of this inspection daily.

The person conducting this check must be qualified in RMS "Apply Traffic Control Plans" course (i.e. hold a current Yellow Card).

10.1.3 Inspection- Opening temporary roadways and detours to traffic

Following the completion all pavement markings, retro-reflective raised pavement markers, signposting and safety barriers and installation of portable or temporary traffic signals, before opening the temporary roadways to traffic.

FAA shall arrange for an inspection by a person qualified in RMS "Design and Inspect Traffic Control Plans" course (i.e. hold a current Orange Card) to verify that regulatory signs, warning signs and traffic control devices have been suitably located to be visible and effective under the site conditions and expected traffic speeds before opening the temporary roadways to traffic. The pre-opening inspection of minor temporary traffic switches is based on checklist 4 of the AUSTROADS, Road Safety Audit guide.

HOLD POINT

Process Held:	Implementation of traffic switch or opening of temporary roadways and detours to traffic.
Submission Details:	At least one day prior to the intended date of opening the temporary roadways to traffic, notify the Principal in writing that the work, including pavement markings, is conforming and ready for inspection by the Principal.
Release of Hold Point:	The Principal will undertake a joint inspection of the site for compliance with this specification prior to giving approval and authorising the release of the Hold Point.

If either FAA's inspection or the Principal's inspection identifies a need for adjustments to any signs or traffic control devices or the provision of additional signs or traffic control devices, amend the applicable TCPs as needed, to show the final traffic control arrangement in place.

Unless otherwise approved by the Principal, traffic may only be switched to a temporary roadway or detour where FAA's usual workforce will be on site for a minimum of two successive days thereafter.

Unless otherwise approved by the Principal, do not disturb sections of existing roadway being replaced for at least two days after opening a temporary roadway or detour to traffic, to provide for the event where failure of the temporary roadway or detour occurs and there is a need to redirect traffic back onto the existing roadway.

The need to redirect traffic back onto the existing roadway will determined by the Principal, and any costs associated with the redirection of traffic back will be borne by you.

10.1.4 Inspection- Maintenance of Existing Roadways

As required in Annexure G10/A1, FAA shall carry out routine maintenance of the pavement and drainage on existing roads (including shoulders and kerb and gutter) within the Limits of the Contract. FAA's obligations under this Clause will start when you commence any work on site other than site establishment.

This maintenance work includes repairing potholes, cleaning kerbs and gutters, clearing drainage blockages, removal of debris from roadway, straightening and cleaning roadside furnishings, grass mowing and trimming of vegetation, as needed.
Within the area defined by the boundaries of the extent of work, you must:

- Regularly monitor the condition of any existing trafficked pavement and identify any defect or hazard.
- Regularly monitor the condition of any footpaths or walkways and identify any hazard to pedestrians.
- Regularly monitor the condition of the corridor and identify vegetation that requires maintenance any debris, litter, graffiti and posters to be controlled.
- Regularly monitor the condition of any signs and identify any defects or repairs.

In the event that FAA identify any such defect, repairs required or hazard, you must repair the defect as soon as practicable.

Maintenance of existing roads outside the Limits of the Contract will be undertaken by others. You must co-

operate with the RMS, local Councils or their agents in carrying out their maintenance responsibilities.

10.1.5 Inspection- Opening to traffic on completion

On completion all relevant permanent signposting, pavement markings, safety barriers and traffic signals required under the Contract prior to opening of the whole of the Works or any part of the Works to traffic must be installed.

All temporary traffic control devices no longer required for the safety of traffic, when the whole of the Works or part of the Works are opened to traffic must be removed.

Give the Principal at least ten working days written notice of the date of opening the whole of the Works or part of the Works to traffic. Determine the procedure for opening through consultation between you, the Principal and the Police.

10.2 Traffic Control Road Safety Audits

10.2.1 Overview

AUSTROADS defines a road safety audit as a formal examination of a future road or traffic project or an existing road, in which an independent, qualified auditor(s) reports on the roads crash potential and safety performance. There are various types of audits conducted on new road projects from feasibility audits through to pre-opening audits. Audits are also conducted to assess the safety of existing roads and temporary traffic arrangements implemented for roadwork. These audits will be conducted in accordance with the AUSTROADS Road Safety Audit Guide (2nd edition 2002).

As required by G10- TCPs must be independently audited, prior to implementation, by a Road Safety Auditor, who must as a minimum be certified to Level 2 in the Institute of Public Works Engineering Australia (IPWEA) Road Safety Auditor Register.

FAA will be conducting internal audit every month by the TCSM. The frequency of the audits will be determined by the scale of the project, outcomes from risk assessments, and the contract requirements.

10.2.2 Audit Checklist

FAA will apply comprehensive checklist to assist the auditing process. The internal audit checklist is based on AS 1742. and the Appendix E of the Roads and Maritime's Traffic Control at Work Sites Manual.

10.3 Reporting

10.3.1 Frequency of reporting

The frequency of reports provided by FAA will be in the following four categories:

- Immediate - reporting of major construction related incidents and critical issues;
- Within 1 working day - formal reports of major construction related incidents;
- Weekly reports - on planned lane closures / road occupancies and the performance results of recently implemented changed traffic conditions / operations;
- Monthly reports - summarising: construction activities; proposed major traffic changes; upcoming media releases; incidents;

10.3.2 Methods of reporting

The methods of reporting to be applied by FAA will includes:

- Verbal reports on issues of an urgent nature
- Safety incidents will be recorded in the incident register, as per WHS reporting process

- Formal written reports in a format subject to client and stakeholder needs
- Presentations to consultative and stakeholder forums

Table - Reporting matrix

When	Reporting Periods	To	Reporting Methods
Major construction related accident and Critical issues	Immediate	Roads and Maritime, TMC, Police	Verbal, Formal Written Report
Major construction related incidents	Immediate	Roads and Maritime	Verbal, Safety Incident Report
Minor construction related incidents	24 hours	Roads and Maritime	Verbal, Safety Incident Report
Performance results and upcoming plans	Weekly	Roads and Maritime	Formal written report
Major Traffic Changes	Monthly	Roads and Maritime	Formal written report, Presentation

11. Training, Communication and Consultation

11.1 Consultation

B31. As part of the Construction Environment Management Plan for the project required under condition B30, the Proponent shall prepare and implement the following sub plan(s):

A Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service's QA Specification G10 – Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:

- *Identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes;*
- *details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points;*
- *details of potential impacts to traffic on the existing highway and associated local roads, including intersection level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access;*
- *Details of temporary and interim traffic arrangements to address potential impacts;*
- *a response procedure for dealing with traffic incidents; and*
- *mechanism for the monitoring, review and amendment of this sub-plan;*

In accordance with the requirements of B31, PMHC has undertaken a review of the draft of this Traffic Management Plan in consultation with FAA- Minutes of this meeting are maintained according to the Community Liaison Management Plan. This review included:

- Joint dilapidation of Sancrox Rd and Fernbank Creek Road within the confines of the Project Boundary.
- Addition of PMHC as holder of a controlled copy of this TMP
- Construction Hours- the TMP included approved construction hours.
- PMHC requested notification of OOW- this shall be added to the Noise and Vibration OOW Procedure or Community Liaison Plan as applicable
- PMHC shall be added to the Monthly look ahead forecast prepared by the Project Manager, which shall provide details of the works as they progress to allow for regular updates and provide for periodic targeted meetings based on current project activities.
- Clarification of restrictions of construction vehicles not travelling East of new roundabout on Fernbank Creek Road and West of new Roundabout on the intersection of the Quarry Road and Sancrox Road.
- Vehicle Movements directly across the Pacific Highway shall be avoided- work east of the Pacific Highway with the exception of Clearing and Grubbing shall be scheduled to be undertaken following completion of the bridge over the highway.
- Work areas including the Ancillary Stockpile 3, East and West Bridge works shall be done behind traffic Barriers- with vehicle movements left in left out to minimise traffic disruption.
- Access to Service Road 1 shall be via Gate 4- to the current Expressway Spares yard – this gate shall be moved east approximately 50m to continue to provide access to Expressway Spares Heavy and Wide loads, whilst shifting traffic away from the roundabout that is to be conducted. Note is made that services that are to be relocated in the area may be less than required depth pending final levels being achieved on completion of the project- protection of these services may be achieved by trafficable steel plate or additional fill- subject to levels on relocation of services.
- It shall be necessary for vehicles to turn right out of Service Road 1 on to Sancrox Road- for this purpose the reduction of through traffic speed to 40km during the works was proposed- along with signage for trucks turning.
- The upgrade of Sancrox Road and Fernbank Creek Roads shall be divided into two halves- initially the road will be temporarily widened and traffic shifted onto the northern/southern half whilst the opposite is upgraded and then reversed. Allowances will be made for residences and businesses to have continuous access- any changes will be done in consultation with the respective occupants- variable message boards shall also be used to communicate applicable messages to the visiting public and delivery vehicles to assist with minimising the impact or temporary access adjustments.

- Site compound-egress. The site compound is segregated by a private driveway to the property at the rear, this drive way shall also a temporary access road for quarry traffic to allow for widening, culvert installation and the quarry road upgrade. It was noted that the DA recently approved by council will treble heavy vehicle traffic both on this access road and at the Pacific Highway intersection- the DA provided for road signage- Council suggested FAA liaise directly with the quarry given the 80+ B Double return movements per day for the next 3 years.

11.2 Traffic Management Risk Assessment Workshops

FAA shall undertake a Traffic Management Risk Assessment Workshop to identify and address the risks associated with road safety, traffic management and road network issues specific to the site. Use the workshop to raise awareness of good traffic management practices and for network planning provisions to be made known to site management personnel. Refer to Appendix 11 Traffic Risk Management Workshops.

The content of the workshop will be specific for each activity. However, it shall include at least the following:

- Training and knowledge requirements
- Planning for traffic switches
- Traffic control plans
- Contract requirements relating to traffic management
- Safety barriers systems
- Delineation, signage and guidance to motorists
- Road safety auditing requirements

Required participants are include site management staff, road designer, personnel responsible for preparing TCP, any other personnel involved in reviewing/road safety auditing of TCP, and Police and local Council representatives, as appropriate. Roads and Maritime shall be advised for the Workshop so that representatives of the Roads and Maritime may also attend the workshop.

Record of the identified risk issues shall be incorporated to TMP and TSP. FAA shall undertake additional workshops as appropriate to train project personnel regarding implementation of the TMP and TCPs and when traffic issues need to be reinforced or reviewed.

11.3 Training and awareness

All construction personnel, sub-contractors and consultants will receive training and be informed of their personal obligation during the induction, toolbox talks and specific training.

All construction personnel will undergo a Project Induction prior to commencing work with the Project. This will include a traffic component to reinforce potential impacts and responsibilities relating to traffic management.

This induction will also incorporate the requirements of the project operation activities including but not limited to site Traffic rules and VMPs. Ongoing toolbox talks will highlight the specific mitigation measures for activities being undertaken in each work area. These will include site-specific briefings for relevant personnel and will cover all measures outlined in the relevant SWMS, VMPs, TCPs and environmental sub-plans. (Refer to Workplace Health and Safety Management Plan for details)

11.4 Qualifications of Traffic Control Personnel

Personnel in traffic control roles must have attended and be qualified in the traffic control training courses relevant to their roles, as follows Noting Blue Cards must be carried when controlling traffic

Traffic Control Roles	**RMS Traffic Control Training Course**
Control traffic using “Stop/Slow” bat	Traffic Controllers (Blue Card)
Traffic Control Roles	**RMS Traffic Control Training Course**
Set up and work with Traffic Control Plans drawn up	Apply Traffic Control Plans (Yellow Card)
Select and make minor modifications to standard RMS Traffic Control Plans to suit work locations	Select/Modify Traffic Control Plans (Red Card)
Design new Traffic Control Plans and inspect setting out of traffic controls at work sites	Design & Inspect Traffic Control Plans (Orange Card)

11.5 APPROVED CLOTHING FOR WORKERS WORKING ADJACENT TO TRAFFIC

All personnel working in close proximity to traffic must wear high visibility fluorescent safety clothing complying with AS/NZS 4602 which are suitable for daytime, night time and/or wet weather conditions, as applicable.

Appendix 1- Staging Plans

Stage	Start	Completion	Related Works	Staging Drawings
Establishment	Feb 2014	Mar 2014	Setting out the Compound	
Site clearance	Apr 2014	May 2014	Clearing and grubbing and fencing	
Preliminary work	Apr 2014	Apr 2014	Preparation disposal site: Access	
Stage 1A	May 2014	Jul 2014	Bridge construction: - Pacific Highway East shoulder temporary widening - Working platform west span - Foundations - Abutments - Centre piers - Girders - Deck - Railing	Staging Drawing-preliminary GTS-TCP-001- under review- (traffic barriers to be added
Stage 1B	Mar 2014	Aug 2014	Road works off road west of Pacific Highway • Deep Drainage Installation • Earthworks • Pavement base	Staging Drawing-preliminary GTS-TCP-00-4 under review
Stage 1C	Mar 2014	Aug 2014	Sancrox Road Southern half including NW roundabout: • Utilities • Deep Drainage Installation • Earthworks • Pavement base	Staging Drawing-preliminary GTS-TCP-00-3 under review
Stage 2A	Sep 2014	Dec 2014	Fernbank Creek Road East of Pacific Highway including SE and NE, southern half roundabout • Deep Drainage Installation • Earthworks • Pavement base	Staging Drawing-preliminary GTS-TCP-00-5 under review
Stage 2B	Sep 2014	Dec 2014	Sancrox Road Northern half including NW roundabout: • Utilities • Deep Drainage Installation • Earthworks	Staging Drawing-preliminary GTS-TCP-00-4 under review

Stage	Start	Completion	Related Works	Staging Drawings
			• Pavement base	
Stage 3A	Nov 2014	Dec 2014	Fernbank Creek Road NE roundabout northern half including Cassegrains Driveway • Road works and Asphalt	Staging Drawing- preliminary GTS-TCP-00-6 under review
Stage 4	Jan 2015	Jun 2015	Curing period pavement base	
Stage 5	Jul 2015	Jul 2015	Asphalt: • Intermediate course • Wearing course • Riding Quality Test Road furniture, barriers, temporary signs and marking	
Open to public	Aug 2015	Aug 2015		

Appendix 2- Road Occupancy Licence (ROLs) register

Road Occupancy Licence Register

#	Description of Work	Start Date	End Date	Licence No.	Req. Activity	Extended ?	Extended Date	Comment
1								
2								
3								
4								
5								
6								
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11								
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15								
16								
17								
18								
19								
20								
21								

Appendix 3- Speed Zone Authority (SZA) register

Speed Zone Authority Register

#	Description of Work	Start Date	End Date	Licence No.	Req. Activity	TCP if it is short term
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
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19						

Appendix 4- Traffic Control Plans (TCPs) register

Traffic Control Plan Register

#	Doc No.	Description of Work	HP	Start Date	Rev #	Revised Date	End Date	ROL	Req. Activity	Comments

Appendix 5- Vehicle Movement Plan (VMPs) register

Vehicle Movement Plan Register

#	Doc No.	Description of Work	HP	Start Date	Rev #	Revised Date	End Date	ROL	Req. Activity	Comments

Appendix 6 - Traffic Control Certificates Register

Name	OH&S General Induction - White Card	Traffic Controller - Blue Card, Expiry & No	Apply Traffic Control Plans- Yellow Card Expiry & No	Select & Modify - Red Card Expiry & No	Design & Audit - Orange Card Expiry & No	Drivers Licence expiry & No.
Dawson, Mark	CGI01390322SEQ1	07/09/2016 3134094604	23/08/2016 3131075426	02/09/2014 3132020725	02/10/2015 3133014472	24/12/2015 07532727 C
Hugo, Chris	CGI00921192SEQ1	21/10/2016 2864096115	22/10/2016 2861077481	N/A	N/A	07/06/2014 3284CW C
Masters, Ray	CGI01052594SEQ1	02/03/2016 3134084450	17/05/2015 5291056334	19/06/2015 5292046727	N/A	8/2016 3422YN C
Murphy, Deanne	CGI01089087SEQ1	09/03/2016 3134085291	08/03/2014 3131018077	15/03/2016 3132050033	23/05/2016 3133015168	19/08/2018 8001ED C
Pickering, Glenn	CGI01329535SEQ1	13/10/2015 3134078484	17/10/2015 3131063519	16/03/2015 3132020754	N/A	24/11/2015 13320544 C
Priestly, Michael	CGI0244518SEQ01	22/01/2015 3364081533	30/01/2016 3371066064	N/A	N/A	11/06/2018 4828WH HC,R
Priestly, Jia	CGI00572421SEQ1	08/02/2017 TC32162	07/02/2017 AP27314	N/A	N/A	17/12/2014 13360857 C
Ralphs, Renn	CGIO1187331SEQ2	21/10/2016 2864096113	22/10/2016 2861077479	N/A	N/A	23/08/2015 15438025 HR
Robertson, Gary	CGI00841018SEQ1	09/03/2016 3134085294	28/06/2014 3131018178	15/03/2016 3132050038	02/10/15 3133014471	22/02/2015 3907NV MR, R
Robertson, David	CGI00982988SEQ1	04/08/.2015 3134074501	07/06/2016 3131071755	01/06/2014 7222038622	N/A	22/03/2016 7184TB LR
Rokicinski, Anne	CGI0218559SEQ01	14/07/2015 3134073277	10/08/2015 3131060478	N/A	N/A	20/10/2017 6347FP C

Wotton, Dione	CGI0199255SEQ01	15/11/2015 3134079948	16/11/2015 3131064578	N/A	N/A	19/06/2018 13902887 C
Welch, Terri	CGI01307117SEQ1	11/08/2015 3134074907	24/08/2015 3131061111	01/06/2014 7222038635	02/10/2015 3133014470	23/033/2016 11393195 MR
Ure, Peter	CGI00562136SEQ1	03/08/2016 3134092700	07/03/2017 3131018033	02/09/2014 3132020720	18/07/2016 3133015413	23/08/2017 11990380 HC, R

Appendix 7- Traffic Control Checklists

Appendix 8- Preliminary Staging Drawings (Draft traffic control plans)

Appendix 9- Project Specific Requirements

G10 Cross Reference Table **Plan Reference**

Clause 2.5 TRAFFIC MANAGEMENT PLAN	Clause reference	Action
(a) Details of any traffic staging arrangements associated with each proposed construction stage, including Traffic Staging Plans (refer Clause 2.6), and the time periods during which each stage will be in operation;	Clause 2.4.2 and 2.4.3 defines outline traffic staging- refer to Appendix for register of staging plans	Prepare staging plans for each work areas - Ancillary stock pile 3, Sancrox Road, Fernbank Creek Road and Bridge Works- Pacific Highway
(b) Copies of any ROLs (refer Clause 2.4) and approvals from other relevant authorities obtained;	Refer to Clause 3 Register attached as appendix 2.	ROL's shall be provided progressively as required by the construction program
(c) Traffic Control Plans (refer Clause 2.8), including the specific traffic control arrangements associated with obtaining a ROL;	Refer to Clause 2.4.3 A register is provided in Appendix 4	Site Engineer to Submit
(d) Vehicle Movement Plan(s) showing the preferred travel paths for vehicles to enter, leave or cross the through traffic stream;	Refer to Clause 2.4.4. A register of Vehicle Movement Plans is provided for in Appendix 5.	Site Engineer to submit
(e) Provision for access to adjoining properties affected by the construction;	Refer to Clause 8.6 Existing Accesses	Community Liaison Plan for consultation to modifications to existing access
(f) Provision for the safe passage of cyclists and pedestrians;	Refer to Clause 8.7 Pedestrians and Cyclists	
(g) Design drawings for any temporary roadways and detours, including alignment and surface levels, lane configurations / geometry, pavement widths, pavement cross-sections, pavement markings, signage and drainage (refer Clause 2.7);	Provided as required- refer to Section 8.4	Submission by Project Engineer
(h) Names and contact details of nominated personnel (including the TCSM if applicable) responsible for maintenance of traffic control devices and temporary roadways outside normal working hours, together with confirmation that these details have been provided to the Police.	Clause 7 Details Project Contact Details	Details to be provided to police on possession of Site and updated progressively
(i) Provisions for climatic / seasonal conditions such as flooding and bushfires causing traffic disruption.	Refer to Clause 9.4	Site Engineer and ESR to monitor

Clause	Description	Required (Yes/No)?
1.5.6	Nomination of a person as **Traffic Control Site Manager** required?	Yes / ~~No~~
2.3	**Temporary speed zoning** available for implementation? (*If yes, insert details below)*	Yes / ~~No~~
Pacific Highway Temporary speed zone speed limit: ***80*** km/hr. ***However, a lower speed zone limit may be permitted for short term temporary works in consultation with the Pacific Highway Traffic Impact Coordinator and as approved on an ROL.*** ***Local Roads*** Temporary speed zone speed limit: ***40*** km/hr		
2.4	**Road Occupancy Fee** payable? (*If yes, attach a Schedule of Road Occupancy Fees in Annexure G10/A4)*	~~Yes~~ / No
2.6	**Traffic Staging Plans** required?	Yes / ~~No~~
2.8.3	**Traffic Control Plans** to be designed specifically for project?	Yes / ~~No~~
2.9	Traffic Management **Risk Assessment Workshop** required?	Yes / ~~No~~
2.10	**Road Safety Audit** of Traffic Control Plans required?	Yes / ~~No~~
4 Traffic Control Devices:		
4.3	Portable variable message signs required?	Yes / ~~No~~
4.4	Radar activated speed signs required?	Yes / ~~No~~
4.5	Temporary traffic signals ***as*** required ***by your TCP.***	Yes / ~~No~~
7 Maintenance of Roadways:		
7.1	Contractor required to maintain existing roadway?	Yes / ~~No~~
7.3	Contractor required to maintain sections of newly completed roadway after opening until Completion?	~~Yes~~ / No

Appendix 10- Project Specific Requirements Design standards for temporary Roadways

Design parameters (values stated below are minimum values) *unless otherwise approved by the Principal*:

For Pacific Highway Traffic Design travel speed:	80	kilometres per hour
Traffic lane widths:	3.5	metres
Shoulder widths:	1.0	metres
Sealing of shoulders required?	Yes / ~~No~~	(delete as applicable)
Wearing surface Type:	AC14 (AR450 Binder)	
Thickness:	45	Millimetres
Spray Seal	7mm Spray Seal (C170); Prime (AMC00)	
Base Type:	Heavily Bound Base	
Thickness:	305	millimetres
Sub base Type:	Selected Material Zone	
Thickness:	300	millimetres
Primer seal	7mm Primer seal (C170)	
Upper Zone Formation	300mm Upper Zone Formation Material	
For Local Roads Traffic Design travel speed:	40	kilometres per hour
Traffic lane widths:	3.0	metres
Shoulder widths:	0.5	metres
Sealing of shoulders required?	Yes / No	(delete as applicable)
Wearing surface Type:	10mm Primer Seal (C170)	
Thickness:	-	Millimetres
Base Type:	Granular Base (DGB20)	
Thickness:	150	millimetres
Sub base Type:	Granular Sub-Base (DGS20)	
Thickness:	150	millimetres
SMZ Type:	Selected Material Zone	
Thickness:	300mm	

Appendix 11 - Traffic Management Risk Assessment Workshop

As required in Annexure G10/A1, FAA shall undertake a Traffic Management Risk Assessment Workshop to identify and address the risks associated with road safety, traffic management and road network issues specific to the site. Use the workshop to raise awareness of good traffic management practices and for network planning provisions to be made known to site management personnel.

The content of the workshop will be specific for each project. However, it must include at least the following:

(a) Training and knowledge requirements;

(b) Planning for traffic switches;

(c) Traffic Control Plans;

(d) Contract requirements relating to traffic management;

(e) Safety barriers systems;

(f) Delineation, signage and guidance to motorists;

(g) Road safety auditing requirements.

Participants will include your site management staff, road designer (refer Clause 2.7.1), personnel responsible for preparing your Traffic Control Plans (refer Clause 2.8), any other personnel involved in reviewing/road safety auditing of Traffic Control Plans, and Police and local Council representatives, as appropriate. Advise the Principal of the Workshop so that representatives of the Principal may also attend the workshop.

Record the identified risk issues and close them out when finalising your Traffic Management Plan and Traffic Staging Plans.

Undertake additional workshops as appropriate to train your site personnel regarding implementation of the TMP and TCPs and when traffic management issues need to be reinforced or reviewed.

Appendix 12 - Preliminary Vehicle Movement Plan

Note: To be updated progressively