Epping to Thornleigh Third Track Alliance

Traffic Management and Access Plan (TMAP)
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Document Control

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<th>Task</th>
<th>Name</th>
<th>Position</th>
<th>Signed/Approved</th>
<th>Date</th>
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<td>ORIGINATOR</td>
<td>Reece Wilkie</td>
<td>Environment Manager</td>
<td></td>
<td>03/03/16</td>
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<tr>
<td>REVIEW</td>
<td>Andrew Naylor</td>
<td>Construction Manager</td>
<td></td>
<td>03/03/16</td>
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<td>APPROVAL</td>
<td>Scott Hunter</td>
<td>Alliance Manager</td>
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Details of Revisions

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<td>0 - 4</td>
<td>04/05/13 - 28/8/14</td>
<td>Internal Review</td>
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<td>4</td>
<td>9/09/13</td>
<td>Compiled for DP&amp;I Review and Approval</td>
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<tr>
<td>5</td>
<td>25/10/13</td>
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<td>6</td>
<td>8/11/13</td>
<td>Typo’s corrected to VMPs</td>
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<td>7</td>
<td>24/02/14</td>
<td>VMPs for Wicks Rd Compound, Talavera Rd Compound added</td>
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<tr>
<td></td>
<td></td>
<td>VMPs modified for Wongala Crescent</td>
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<tr>
<td></td>
<td></td>
<td>TCPs removed</td>
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<td></td>
<td></td>
<td>Edits to Cover Page</td>
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<tr>
<td>8</td>
<td>14/02/14</td>
<td>VMPs modified</td>
</tr>
<tr>
<td>9</td>
<td>10/07/14</td>
<td>VMPs modified – Format amended for readability purposes. Several VMPs</td>
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<tr>
<td></td>
<td></td>
<td>combined to reduce confusion. Access to Epping Rd from Epping Office</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Blaxland Rd Compound) amended to include Maida Rd, Epping.</td>
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<td></td>
<td></td>
<td>ETTT-VMP-0006 added to illustrate access route to Gate E31.</td>
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<td></td>
<td></td>
<td>ETTT-VMP-General Notes added so that important notes are available in one</td>
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<tr>
<td></td>
<td></td>
<td>location. Repeated notes from each VMP are collated in this General Notes</td>
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<td>10</td>
<td>14/10/2014</td>
<td>Amendment to Table 3 to include Gate E31.</td>
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<td></td>
<td>10/09/2014</td>
<td>ETTT-VMP-001 modified to include access to Talavera Rd Compound via Pittwater Rd</td>
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<tr>
<td>12</td>
<td>14/10/2014</td>
<td>ETTT-VMP-008 added to include access into the rail corridor via Phyllis Ave</td>
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<td>Thornleigh</td>
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<tr>
<td>13</td>
<td>15/03/2015</td>
<td>Annual review, VMPs modified, updated for Organisation Chart. Incorporate</td>
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<tr>
<td></td>
<td></td>
<td>document design changes in-line with Web Content Accessibility Guidelines</td>
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<td>(WCAG)</td>
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<tr>
<td>14</td>
<td>19/10/2015</td>
<td>ETTT-VMP-0002 added to include a designated Temporary Waiting Bay away from</td>
</tr>
<tr>
<td></td>
<td></td>
<td>residential areas</td>
</tr>
<tr>
<td>15</td>
<td>03/03/2016</td>
<td>Annual review, updated for Organisation Chart. Finalised for document design</td>
</tr>
<tr>
<td></td>
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<td>changes in-line with Web Content Accessibility Guidelines (WCAG)</td>
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Figure 1 – Hierarchy of Traffic Management Plans

DEPT. OF PLANNING & INFRASTRUCTURE APPROVAL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

TRAFFIC MANAGEMENT AND ACCESS PLAN (TMAP)

INTERNAL / SITE LEVEL APPROVAL

Traffic Management Plans (TMP)

Traffic Control Plans (TCP)

Vehicle Movement Plans (VMP)

Pedestrian Movement Plans (PMP)
1 Objective

To manage traffic (vehicles, pedestrians and commuters) and transport for the construction works to ensure any potential impacts on the public or environment are minimised and to comply with the Epping to Thornleigh Third Track Project (ETTT) Condition of Approval (CoA) E34 c), TfNSW Standard Requirements and the Environmental Impact Statement (EIS).
## 2 Legislation / Standards / Guidelines

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Standards</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NSW Ministers Conditions of Approval (MCoA) SSI-5132</td>
<td>• TfNSW Standard Requirements – TSR Prelude A8 and C18</td>
<td>• Epping to Thornleigh Environmental Impact Statement – Access, Traffic and Transport Mitigation and Management Measures</td>
</tr>
<tr>
<td>• Roads Act 1993</td>
<td>• TfNSW Standard Requirements – TSR Prelude C4</td>
<td>• Revised Environmental Mitigation Measures</td>
</tr>
<tr>
<td>• Transport (Safety and Traffic Management) Act 1999</td>
<td>• TfNSW Standard Requirements – TSR S1 Clause 7.18</td>
<td>• Austroads Guide</td>
</tr>
<tr>
<td>• Project EPL 20287</td>
<td>• TfNSW Standard Requirements – TSR T1 Clause 3.4</td>
<td>• RMS Traffic Control at Worksite (TCWS) Manual</td>
</tr>
<tr>
<td></td>
<td>• ASI742.3-2009 Traffic Control for Works on Roads</td>
<td></td>
</tr>
</tbody>
</table>
3 Supporting Procedures, Forms, Checklists and Registers

Tools that are used to support the implementation of this Plan include:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Form</th>
<th>Checklist</th>
<th>Register</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Traffic Control Checklist</td>
<td></td>
<td>• Daily Traffic Control Checklist</td>
<td>• TMP Register</td>
</tr>
<tr>
<td>Weekly Traffic Control inspection Checklist</td>
<td></td>
<td>• Weekly Traffic Control inspection Checklist</td>
<td>• CoMP Register</td>
</tr>
<tr>
<td>External Safety Audit (when necessary)</td>
<td></td>
<td>• External Safety Audit (when necessary)</td>
<td>• TCP Register</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• VMP Register</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ROL Register</td>
</tr>
</tbody>
</table>
4 Management Process Tools

This Traffic Management and Access Plan (TMAP) operates as the master document in a set of plans and drawings dealing with the safe and effective management of traffic during the design and construction phase of the project. It prescribes the traffic management strategies to be implemented as part of the works.

The strategy for the TMAP is to ensure that the ETTT project:

• maintain safe and reliable traffic flow during construction on the road network (i.e. motorway, arterial and local roads);
• provide safe access and egress points between the various worksites on the project and the existing road network;
• maximise the safety for the workers and general public by isolating work areas including those in and around station buildings from traffic, cyclists and pedestrians flows, applying low exposure work methods, education and the installation of appropriate traffic control;
• minimise construction activities on local roads and residential areas wherever possible;
• minimise heavy vehicle movements in peak traffic and out of hours;
• plan and phase all works to effectively minimise road occupancy, avoid potential impacts and minimise conflict points on the existing network;
• use current analysis of traffic volume data to identify peak periods and assist with the planning of road occupancies;
• implement traffic control operations that minimise delay to road users;
• limit obstructions and restrictions, and when required provide alternatives to maintain access for local community and transport operators;
• plan works to allow for effective emergency response; and
• actively liaise with key stakeholders including RMS, police, local councils, transport operators, Station Liaison Group and local businesses to ensure they are informed about proposed changes to the road network.

• Driver training in regards to minimising traffic impact on the community will be covered in the site induction for all ETTT personnel and subcontractors.

A review of the TMAP will be undertaken yearly to ensure the document remains up to date and reflects the status of progress and any changes made to the traffic management process. The TMAP will also be updated accordingly based on consultation and debriefs from relevant stakeholders i.e. RailCorp, emergency services, local council, RMS and Transurban.
Appropriate Training

All personnel are to receive site specific inductions and ongoing training via toolbox talks. Emergency response plan to be provided in induction.

Define your work scope and area.

Does it take place within or adjacent to a road?

Will the work impact the road network (including pedestrian and cyclist access)?

Prepare site specific traffic control (TCP) and/or management plan (TMP)

Is the work on state road, 100m of traffic signals or likely to have an impact on the state road network?

Obtain Road Occupancy Licence from Hornsby Shire Council (full road closure or detour require 28 days for approval)

Establish work site in accordance with TCP and TMP
- Conduct inspection on initial setup
- Conduct weekly inspection on long term setup
- Amend TCP and TMP as necessary

Obtain Road Occupancy Licence and as necessary, Speed Zone Authorisation from TMC (10 working days for approval)

Actions to be taken

Responsibility

Safety Manager
Project Engineer
Site Foreman

Site Foreman
Project Engineer

Traffic Engineer

Interface Manager

Submit to Area Manager for approval

Consult with relevant stakeholder/s (i.e. Transurban, Council, RailCorp, bus services, etc...) and obtain relevant permission.

END
No further action required

Figure 2 – TCP Procedure
5 Traffic Management Plan (TMP)

This TMAP will specify what TMPs require approval by the Project Manager. TMPs will be developed where the project will have a major impact on the arterial road network and require consultation with RMS, Traffic Management Centre, Council and Hills M2 Motorway. Planning for the project has identified that a TMP will be developed for the overbridge works at the M2 and full directional closures of Beecroft Road. TMP and VMPs generally will be developed at least one month prior to the commencement of works. Investigations by the construction team have identified TMPs will be required for the M2 Motorway, Beecroft Road complete closure. TMP’s will generally include:

- An overview of the construction activities and traffic management requirements including;
  - Program (commencement and completion dates) and hours of work
  - Current and anticipated traffic usage patterns during implementation (i.e. average, low and peak flows, school holidays, traffic embargoes, etc.)
  - Traffic staging drawings and if necessary temporary works design detailing any modifications to existing roads, parking (including both construction and public), pathways and changes to public transport access and routes.

- Traffic Control Plans (TCP) detailing work area and any modification to traffic patterns, property access and parking facilities.

- Vehicle Movement Plans (VMP) detailing frequency, route and procedure for site access.

- Pedestrians Movement Plans (PMP) detailing route, procedure and control measure to ensure safety of commuters, pedestrians, cyclists and site personnel.

- Details on stakeholder consultation

- Details on relevant permits and licences required prior to implementation of TMP

- Details on frequency of site inspection and audits as per TABLE 7 –TCP INSPECTION REQUIREMENT

- Detail the site specific emergency response plan

- Local bus operators would be consulted to ensure that the timing of short term road or kerb closures minimise impacts to bus services.

- Coordination of proposal staging, vehicle movement and scheduling, equipment and resourcing, joint use of access points and regular project liaison between the NWRL and other projects interfacing with ETTT.

Consultation with relevant stakeholder/s will be conducted during the planning stages and as part of the TMP process to identify and minimise the impacts on the road network, pedestrians and cyclists access and modification to the public transport system (i.e. car parking, train station access, bus routes, etc...) Notification of these changes will be conducted as per the Community and Liaison Management Plan prior to implementation of the TMP. Emergency services (police, fire and ambulance) will be notified as part of this consultation process. The TMP will be submitted to the relevant Road Authority i.e. Hornsby/Parramatta Council, RMS, Transport Management Centre and/or The Hills Motorway.

The construction of the project will be undertaken and staged so that it does not affect timetabled passenger and freight operations other than during scheduled track closedowns or as otherwise agreed with Sydney Trains and Transport for NSW.
6 Traffic Control Plan (TCP)

TCP will be developed in accordance with the RMS Traffic Control at Worksite Manual. The main objective for the TCP is to provide a safe work area for both workers and general public while maintaining the road network operational capacity by minimising lane closures and traffic stoppage during peak traffic periods. The TCP is to operate within the Road Occupancy Licence (ROL) conditions. The TCP will detail the following:

- Traffic control signage and traffic flow arrangement
- Work area
- Speed limits
- Direction of construction traffic and if necessary reversing arrangements (spotter to be utilised for all heavy vehicle and plant reversing movements)
- Parking locations (both construction and public)

The VMP and PMP can be incorporated into the TCP or developed as stand-a-lone plans if necessary. Plans will be available to any relevant road authority if requested.

Table 1 – Traffic Control Plans required

<table>
<thead>
<tr>
<th>Location</th>
<th>Location</th>
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<tbody>
<tr>
<td>Epping Bowling Club</td>
<td>Cambridge Street</td>
</tr>
<tr>
<td>Access gates E1, E2 and E3 without lane closure</td>
<td>Access gates E1, E2 and E3 with lane closure</td>
</tr>
<tr>
<td>Full lane closure, Beecroft Road</td>
<td>M2 Bridge abutment off Beecroft Road</td>
</tr>
<tr>
<td>Sydney Water main relocation, barrier installation</td>
<td>Ausgrid western side of Beecroft Road</td>
</tr>
<tr>
<td>Access gates between M2 Motorway and Cheltenham</td>
<td>Cheltenham Station works (west side)</td>
</tr>
<tr>
<td>M2 overbridge beams</td>
<td>M2 overbridge launch</td>
</tr>
<tr>
<td>Cheltenham Station works (east side)</td>
<td>Day Street access gate</td>
</tr>
<tr>
<td>Beecroft Station works</td>
<td>Cheltenham Station to Beecroft Scout Hall (Sutherland Road)</td>
</tr>
<tr>
<td>Chapman Avenue bridgeworks</td>
<td>Access gates Beecroft Station to Boundary Road</td>
</tr>
<tr>
<td>Ausgrid works Wongala Crescent</td>
<td>Yarrara Road works</td>
</tr>
<tr>
<td>Pennant Hills Station works</td>
<td>Railway Street service relocations</td>
</tr>
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<td>Railway Street piling</td>
<td>Ramsay Street electrical works</td>
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### Table 2 – Nominated Site Compounds and Stockpile Sites

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<tr>
<th>ID</th>
<th>COMPOUND</th>
<th>LOCATION</th>
<th>USE OF SITE</th>
<th>ACCESS</th>
</tr>
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<tbody>
<tr>
<td>EIS S1</td>
<td>M2 Southern Compound</td>
<td>Existing bus flyover roadway to the south of the M2 within the rail corridor approx.</td>
<td>Crib sheds, toilet facilities and storage</td>
<td>M2 bus under pass and Cambridge St to Epping Rd. Left-in and left-out only</td>
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<tr>
<td>EIS S2</td>
<td>M2 Northern Compound</td>
<td>South of Old Beecroft Rd within the rail corridor approx.</td>
<td>Crib sheds, toilet facilities and storage</td>
<td>Existing rail corridor access on Old Beecroft Rd</td>
</tr>
<tr>
<td>EIS S3</td>
<td>Cheltenham Station Compound</td>
<td>Cheltenham Station in the vicinity of the existing car park</td>
<td>Site office, crib sheds, parking and toilet facilities</td>
<td>The Crescent, Cheltenham</td>
</tr>
<tr>
<td>EIS S4</td>
<td>Beecroft Scout Hall Compound</td>
<td>North of The Crescent, East of the scout hall within the rail corridor approx.</td>
<td>Crib sheds parking and toilet facilities</td>
<td>The Crescent, Beecroft</td>
</tr>
<tr>
<td>EIS S5</td>
<td>Beecroft Station Compound</td>
<td>Beecroft Station in the vicinity of the existing car park</td>
<td>Not nominated yet</td>
<td>Wongala Crescent. Left-in and left-out only</td>
</tr>
<tr>
<td>EIS S6</td>
<td>Pennant Hills Station West Compound</td>
<td>Within rail corridor west of Pennant Hills Station approx.</td>
<td>Crib sheds and toilet facilities</td>
<td>Yarrara Rd, Pennant Hills. Left-in and left-out only</td>
</tr>
<tr>
<td>MAIN 1</td>
<td>Pennant Hills Main Office</td>
<td>423 Pennant Hills Road Pennant Hills</td>
<td>Main project office</td>
<td>City View Rd, Pennant Hills</td>
</tr>
<tr>
<td>MAIN 3</td>
<td>Epping Site Office</td>
<td>South of Epping Station</td>
<td>Site office, crib sheds, storage, parking and toilet facilities</td>
<td>Blaxland Rd southbound. Left-in and left-out only</td>
</tr>
</tbody>
</table>
7 Road Occupancy Licence (ROL)

The Alliance will obtain ROL or concurrence from the relevant road authority prior to installation of temporary traffic control and occupying the road, except in the case of an emergency, or when directed by Police or Emergency Services. The Alliance will adhered to the ROL conditions and approved period of operation. All ROL application will be accompanied by the relevant TCPs. The relevant road authorities are as follows:

- Hornsby/Parramatta Council - for all local roads (i.e. non-state road) in the relevant Council boundaries.
- Transport Management Centre (TMC) – for all state road including any activity that may have impact on the road network and infrastructure (i.e. traffic signals)
- The Hills Motorway Limited (THML) – for any activity on the M2 motorway
8 Construction Site Compounds

The primary and satellite construction compound locations have been identified in the CCAFMP and are identified in Table 2. The identified sites have generally been selected based on:

- Practically: the required space for heavy vehicle movements and ready access to rail corridor and public road system
- Environmental Impacts: positioned within cleared land where possible, non-indigenous landscaped areas or within other areas dominated by exotic vegetation
- Useability: located within a proposed construction zone and near major components of works and would make the best use of existing and available hardstand areas.
- All designated site compounds will provide onsite parking for staff where possible, visitors and minor plant as required. In additional this will be supplemented by a remote parking facility and project shuttle bus arrangements.

All site compound plans will detail the following:

- Gate and access routes including pedestrian marked walkway
- Speed limits and direction of travel
- Site safety requirement and emergency procedure
- Emergency assembly point, route and vehicle access
- Location of first aid facilities and fire fighting equipments
- Location of hazardous materials
- Major and significant offices and compounds are to be sign posted to assist in deliveries.

If there are no existing right hand turn facilities (i.e. seagull, right hand turn bay, passing lane, etc…) access to all site compounds would be left-in and left-out movements with movements that do not encroach onto the wrong side of the road when entering or leaving the sites and all vehicles can enter and exits the sites in a forward direction. If this is not feasible consultation would be undertaken with Hornsby and/or Parramatta Council and/or RMS and TMC. If necessary a TMP and TCP will be developed as per the procedure outlined in FIGURE 2 – TCP PROCEDURE

Additional minor facilities approved under MCoA E31 may also require a TCP and or VMP to be prepared.
9 Access Gates

A number of gates, existing and new are proposed for to construct and operate the project. The majority of the construction accesses would be located on local roads. The volume of construction vehicle movements to and from each of these accesses was considered in the EIS and resultant noise levels considered as part of the noise sub plan for the project. On balance, levels were considered to be minor due to the existing traffic volumes on the surrounding arterial network. Where required, improvements to the existing access tracks within the rail corridor would be provided to facilitate safe construction vehicles access into / out of the construction compounds. The driveway for all gates (i.e. area between the gate and the road) must be pedestrian and where applicable bicycle safe. All gates are to be signposted stating construction site and no access to the public. Refer to the section “Construction Routes and Vehicle Movement Plans” for the nominated routes to access these gates.

Access to private property shall be maintained during construction unless otherwise agreed with the property owner in advance. A landowner’s access that is physically affected by the Alliance shall be reinstated to at least an equivalent standard, in consultation with the property owner.

Table 3 – Location of access gates nominated in the EIS

<table>
<thead>
<tr>
<th>GATE</th>
<th>TYPE</th>
<th>SIDE OF CORRIDOR</th>
<th>PROVIDE ACCESS FROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Existing</td>
<td>West</td>
<td>Access from Beecroft Rd, south of Carlingford Rd exit</td>
</tr>
<tr>
<td>E2</td>
<td>Existing</td>
<td>West</td>
<td>Access from Beecroft Rd, north of Carlingford Rd</td>
</tr>
<tr>
<td>E3</td>
<td>Existing</td>
<td>West</td>
<td>Access from Beecroft Rd, north of Carlingford Rd</td>
</tr>
<tr>
<td>N1</td>
<td>New</td>
<td>West</td>
<td>Access from Beecroft Rd, south of Kandy Avenue</td>
</tr>
<tr>
<td>E4</td>
<td>Existing</td>
<td>West</td>
<td>Access from Old Beecroft Rd, immediate north of M2</td>
</tr>
<tr>
<td>E5</td>
<td>Existing</td>
<td>West</td>
<td>Access from The Crescent, South of Lyne Rd</td>
</tr>
<tr>
<td>E6</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, South of Cobran Rd</td>
</tr>
<tr>
<td>N2</td>
<td>New</td>
<td>West</td>
<td>Access from The Crescent, opposite of Lyne Rd</td>
</tr>
<tr>
<td>E7</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, opposite of Day Rd</td>
</tr>
<tr>
<td>E8</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, north of Cheltenham Rd</td>
</tr>
<tr>
<td>E9</td>
<td>Existing</td>
<td>East</td>
<td>Access from The Crescent, opposite of The Promenade</td>
</tr>
<tr>
<td>E10</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, btw Chorley Ave and Summerwood Way</td>
</tr>
<tr>
<td>N3</td>
<td>New</td>
<td>West</td>
<td>Access from The Crescent, immediately north of Beecroft Substation</td>
</tr>
<tr>
<td>E11</td>
<td>Existing</td>
<td>West</td>
<td>Access from The Crescent, opposite Murray Rd</td>
</tr>
<tr>
<td>E12</td>
<td>Existing</td>
<td>West</td>
<td>Access from The Crescent, south of Kirkham St</td>
</tr>
<tr>
<td>E13</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, north of Glenelg Place</td>
</tr>
<tr>
<td>E14</td>
<td>Existing</td>
<td>West</td>
<td>Access from The Crescent, north of the Scout Hall</td>
</tr>
<tr>
<td>N4</td>
<td>New</td>
<td>West</td>
<td>Access from The Crescent, south of the Scout Hall</td>
</tr>
<tr>
<td>E15</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, south of Copeland Rd</td>
</tr>
<tr>
<td>E16</td>
<td>Existing</td>
<td>West</td>
<td>Access from Wongala Cres, opposite of Hannah St</td>
</tr>
<tr>
<td>E17</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, opposite of Wandeene Ave</td>
</tr>
<tr>
<td>E18</td>
<td>Existing</td>
<td>West</td>
<td>Access from Wongala Cres, north of Chapman Ave</td>
</tr>
<tr>
<td>E19</td>
<td>Existing</td>
<td>East</td>
<td>Access from Sutherland Rd, between Chapman Ave and Narena Close</td>
</tr>
<tr>
<td>N5</td>
<td>New</td>
<td>West</td>
<td>Access from Wongala Cres, south of Albert Rd</td>
</tr>
<tr>
<td>GATE</td>
<td>TYPE</td>
<td>SIDE OF CORRIDOR</td>
<td>PROVIDE ACCESS FROM</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>E20</td>
<td>Existing</td>
<td>West</td>
<td>Access from Wongala Cres, north of Albert Rd</td>
</tr>
<tr>
<td>E21</td>
<td>Existing</td>
<td>West</td>
<td>Access from Wongala Cres, opposite Sherwood Close</td>
</tr>
<tr>
<td>E22</td>
<td>Existing</td>
<td>West</td>
<td>Access from Wongala Cres, between Lilla Rd and Brecks Way</td>
</tr>
<tr>
<td>E23</td>
<td>Existing</td>
<td>West</td>
<td>Access from end of Wongala Cres, south of Cumberland Hwy overpass</td>
</tr>
<tr>
<td>E24</td>
<td>Existing</td>
<td>East</td>
<td>Access from Hampden Rd, south of the Cumberland Hwy overpass</td>
</tr>
<tr>
<td>E25</td>
<td>Existing</td>
<td>West</td>
<td>Access from Yarrara Rd, opposite of Shields Lane</td>
</tr>
<tr>
<td>E26</td>
<td>Existing</td>
<td>East</td>
<td>Access from end of Railway St</td>
</tr>
<tr>
<td>E27</td>
<td>Existing</td>
<td>East</td>
<td>Access from end of Railway St</td>
</tr>
<tr>
<td>E28</td>
<td>Existing</td>
<td>East</td>
<td>Access from southern end of Stevens St</td>
</tr>
<tr>
<td>E29</td>
<td>Existing</td>
<td>East</td>
<td>Access from northern end of Stevens St</td>
</tr>
<tr>
<td>N6</td>
<td>New</td>
<td>West</td>
<td>Access from Yarrara Rd, opposite of (slightly north of Fullbourne Ave)</td>
</tr>
<tr>
<td>E30</td>
<td>Existing</td>
<td>West</td>
<td>Access from Yarrara Rd, between Pritchard St and Wells St</td>
</tr>
<tr>
<td>E31</td>
<td>Existing</td>
<td>East</td>
<td>Access from Railway Pde, south of Bellevue St</td>
</tr>
</tbody>
</table>
10 New Road Accesses

Any new temporary or permanent road access proposed by the Alliance must be formalised as required by the RMS Traffic Control at Worksites manual by completing the following activities where relevant:

- Road Geometry and Alignment including Stormwater Drainage
- Construction and Public access
- Safety Barrier and Fencing Placement
- Line marking
- Lighting

- Consultation with TPD’s Property Group, the applicable road authority (i.e. Hornsby Shire Council and/or RMS) and any businesses or residents to determine any further issues need to be addressed prior to construction.
- Conduct road safety audit as outline in the section “Inspection, Audit and Reporting”
11 Key Construction Activities

The key construction activities, its impact on traffic and mitigation measures are as follows:

1. Bridge works over the M2 Motorway and Viaduct adjacent to Beecroft Rd
   - Key impacts: Temporary lane and carriageway closures
   - Mitigation measures: Refer to procedure outline in FIGURE 2 – TCP PROCEDURE and FIGURE 3 – VMP PROCEDURE
   - Conduct early consultation with TMC and THML

2. Rail works of approximately 6km of new track and three turn outs
   - Key impacts: Construction access and routes
   - Mitigation measures: Refer to procedure outline in FIGURE 2 – TCP PROCEDURE and FIGURE 3 – VMP PROCEDURE

3. Stations upgrade at Cheltenham Station, Pennant Hills Station and Beecroft Station
   - Key impacts: Commuters, cyclist, pedestrians, parking, access to station and public transport
   - Mitigation measures: Refer to procedure outline in FIGURE 5 and COMMUTER AND PEDESTRAIN MANAGEMENT PLAN

4. Civil works such as sandstone cutting, embankment formation, retaining walls and utility relocation and protection
   - Key impacts: Construction access and routes
   - Mitigation measures: Refer to procedure outline in FIGURE 2 – TCP PROCEDURE and FIGURE 3 – VMP PROCEDURE

5. Rail systems works (power supplies, signalling, communications and control systems, overhead wiring, etc.)
   - Key impacts: Construction access and routes
   - Mitigation measures: Refer to procedure outline in FIGURE 2 – TCP PROCEDURE and FIGURE 3 – VMP PROCEDURE

Consideration will be given to the staging of the works to minimise the road traffic impacts on areas where significant disruption are likely to occur. These have been identified as in and around Cheltenham Girls High School during school drop off and pick up periods, around Beecroft Village during morning and afternoon peak traffic periods, along Yarrara Road during morning and afternoon peak periods, along Beecroft Road between the M2 and Epping during morning, afternoon and weekend peak periods and on the M2 Motorway between the M2 and Epping during morning, afternoon and weekend peak periods. Consultation will be undertaken with each of the relevant authorities in relation to lane and road closures prior to the works and approval gained through TCP, TMP and ROL process.

Oversize vehicular movements currently envisaged for the project include the delivery of the M2 bridge girders (3 a night) and plant deliveries (various). Timing for these movements is under the direction of RMS however, deliveries, duration and number may change in response to changing construction methodologies.

Impacts on commuters and pedestrians in and around the station precincts will be managed in close consultation with Hornsby Shire Council and Sydney Trains Station Liaison Group and approval gained from them prior to the implementation of restrictions and changes to pedestrian movements and flows.
Table 4 – Traffic Control at Work Site (TCWS) Manual VMP Requirements

<table>
<thead>
<tr>
<th>PROVIDING TRUCK MOVEMENTS APPROACH SPEED 60KM/HR TO 80KM/HR SITE DISTANCE LESS THAN 2*APPROACH SPEED</th>
<th>ADT</th>
<th>300 to 1,500</th>
<th>More than 1,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of truck movements per shift</td>
<td>≤20</td>
<td>&gt;20</td>
<td>≤20</td>
</tr>
<tr>
<td>TCP with traffic controllers or traffic signals</td>
<td>*Not Required</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>VMP required</td>
<td>*Not Required</td>
<td>Yes</td>
<td>*Not Required</td>
</tr>
<tr>
<td>Warning signs required as per TCWS manual standard TCP 195</td>
<td>*Not Required</td>
<td>Yes</td>
<td>*Not Required</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROVIDING TRUCK MOVEMENTS APPROACH SPEED 60KM/HR TO 80KM/HR SITE DISTANCE MORE THAN 2*APPROACH SPEED</th>
<th>ADT</th>
<th>300 to 1,500</th>
<th>More than 1,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of truck movements per shift</td>
<td>≤20</td>
<td>&gt;20</td>
<td>≤20</td>
</tr>
<tr>
<td>TCP with traffic controllers or traffic signals</td>
<td>*Not Required</td>
<td>Yes</td>
<td>*Not Required</td>
</tr>
<tr>
<td>VMP required</td>
<td>*Not Required</td>
<td>Yes</td>
<td>*Not Required</td>
</tr>
<tr>
<td>Warning signs required as per TCWS manual standard TCP 195</td>
<td>*Not Required</td>
<td>Yes</td>
<td>*Not Required</td>
</tr>
</tbody>
</table>

Note:

*Not Required - Only applicable for light vehicles and rigid trucks. If any trucks and deliveries that will encroach onto the wrong side of the road and/or required to stop traffic, a TCP and/or TMP will be developed in accordance with Figure 2.
12 Construction heavy vehicle numbers and composition

Light vehicle movements would generally be perceived as part of general movements across the wider road network with the key focus of this plan on heavy vehicles and numbers due to the nature of the surrounding environment and risk of conflicts. The highest heavy vehicle numbers would occur during the earthworks program which will be during 2014-2015. It is anticipated volumes of material moved would be between 1800m³ to 3500m³ a week. Higher volumes and numbers may occur during rail possessions due to a need to move material safely when trains are not operating. Indicative heavy vehicle numbers and types are identified below in Table 5:

Table 5 – Average Heavy Vehicles Movements

<table>
<thead>
<tr>
<th>Location</th>
<th>Average Number of Trucks/hour (may be an increase in possessions)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 2</td>
<td>4</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 3</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 4</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 5</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 8</td>
<td>5</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 9</td>
<td>4</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 10</td>
<td>4</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 11</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Cut 12</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Retaining Wall 13 and 14</td>
<td>2</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Down Relief (Pennant Hills to Thornleigh)</td>
<td>3</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Structural zone areas</td>
<td>5</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Capping</td>
<td>5</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Ballast</td>
<td>5</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Station Works</td>
<td>2 each location</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Piling and retaining walls</td>
<td>2 each location</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Beecroft Road and Cambridge Street</td>
<td>4 each location</td>
<td>Truck and Dog*, Bogie Tipper or Heavy Rigid</td>
</tr>
<tr>
<td>Compound S1</td>
<td>2</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
<tr>
<td>Compound S2</td>
<td>2</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
<tr>
<td>Compound S3</td>
<td>4</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
<tr>
<td>Compound S4</td>
<td>3</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
<tr>
<td>Compound S5</td>
<td>3</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
<tr>
<td>Compound S6</td>
<td>2</td>
<td>Light/heavy rigid delivery vehicles</td>
</tr>
</tbody>
</table>

* Truck and Dog will be utilised only where site access permits
13 Construction Routes

Consideration will be given to the delivery of construction materials via rail or utilising the rail corridor to move machinery (including setting up of cranes, etc.) whenever it is reasonable and feasible to minimise impacts on the road network.

Construction vehicle routes have been developed in reference to the EIS nominated route and form part of a TCP/VMP when finalised and approved by Council. New routes not identified in the EIS nominated route will be identified using the process as highlighted in FIGURE 3 – VMP PROCEDURE. Where feasible, route markers will be installed for routes identified in this TMAP and any significant or high usage routes.

Note Beecroft Rd pedestrian overbridge adjacent to Epping Station has a 4.6m vertical clearance in the northbound direction and 4.4m in the southbound direction.

Prior to construction, an independent and qualified person or team shall undertake a Road Dilapidation Report on the nominated routes. The report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction works. The report shall be submitted to the Hornsby and/or Parramatta Council or RMS for review prior to the commencement of haulage. Following completion of construction, a subsequent report shall be prepared to assess any damage that may have resulted from the Alliance work. Restoration or reinstate of roads affected by the Alliance shall be undertaken upon completion of construction and in accordance with the reasonable requirements of the relevant road authority.
Define your scope (i.e. access routes, access gates, type of material, quantity of trucks, type of trucks, and storage capacity inside the works area and existing traffic condition)

Refer to TABLE 2 – TCWS VMP REQUIREMENTS

Interface Manager

Consult with Council and RMS. Check load limit and clearances brigades if applicable

YES

Site Foreman

Project Engineer

NO

Will the route defined in the EIS and/or the TMAP?

Is the route defined in the EIS and/or the TMAP?

NO

YES

Will the route impede on 3 tonne limit roads?

Will the route travel through school zones, child care facilities and/or high pedestrian movements

NO

YES

Minimise activities and delivery during school zone time and peak hours (apply restriction as necessary)

Develop a VMP as per TCWS and in accordance with Figure 2 – TCP Procedure

Interface Manager

NO

YES

NO

NO

Traffic Engineer

Project Engineer

NO

YES

Implement VMP on site

1. Toolbox workers and drivers
2. Review VMP as part of TCP inspection
3. Revise as necessary.

Site Foreman

Protocol Engineer

NO

YES

Conduct a dilapidation report and submit to the Council

Had a dilapidation report done on the nominated route

NO

YES
Due to the safety and performance on the intersection, the following roads and intersection only permit left-in and left-out movements unless a TCP is implemented and all conditions on the ROL are followed i.e. do not conduct stop / go during peak hours, maintain traffic flow etc:

1. Beecroft Rd
2. Beecroft Rd and Old Beecroft Rd intersection
4. Yarrara Rd

The following roads have a 3 tonne load limit:

- Sutherland Rd (between Chapman Ave and Cheltenham Rd), near Cheltenham Station
- Yarrara Rd / The Esplanade, near Pennant Hills and Thornleigh Stations
- Copeland Rd (between Beecroft Rd and Pennant Hills Rd), near Beecroft Station
- Kirkham St (between Beecroft Rd and Murray Farm Rd, near Beecroft Rd

Where possible, the Alliance is to consider using other alternative routes to roads; with 3 tonne load limits, high pedestrian areas and school zones.

Table 6– Summary of Sensitive Receivers

<table>
<thead>
<tr>
<th>Sensitive Receivers</th>
<th>Address</th>
<th>Potential Traffic Impacts</th>
<th>Sensitive Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Roads</td>
<td>Various location from gate to arterial road</td>
<td>Construction vehicle noise</td>
<td>Out of hours works</td>
</tr>
<tr>
<td>Arden Anglican School</td>
<td>39-43 Wongala Cres, Beecroft</td>
<td>Construction vehicle noise</td>
<td>School zone time</td>
</tr>
<tr>
<td>Beecroft Primary School</td>
<td>90-98 Beecroft Rd, Beecroft</td>
<td>Minimum compared to existing situation</td>
<td>School zone time</td>
</tr>
<tr>
<td>Cheltenham Girls High School</td>
<td>Beecroft Rd &amp; The Promenade, Beecroft</td>
<td>Construction vehicle noise</td>
<td>School zone time &amp; exam time</td>
</tr>
<tr>
<td>Beecroft Long Day and Early Learning Centre</td>
<td>23A Wongala Cres, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Working hours and pick up and drop off time</td>
</tr>
<tr>
<td>KU Cheltenham Memorial Preschool</td>
<td>Beecroft Rd &amp; The Promenade, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Working hours and pick up and drop off time</td>
</tr>
<tr>
<td>Beecroft Buddies Childcare Centre</td>
<td>45 Wongala Cres, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Working hours and pick up and drop off time</td>
</tr>
<tr>
<td>Beecroft Combined OSHC Program</td>
<td>90-98 Beecroft Rd, Beecroft</td>
<td>Minimum compared to existing situation</td>
<td>Working hours and pick up and drop off time</td>
</tr>
<tr>
<td>Beecroft Nursing Home</td>
<td>134 Beecroft Rd, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Out of hours works</td>
</tr>
<tr>
<td>Uniting Church Retirement Home</td>
<td>Copeland Rd, west of Beecroft Rd</td>
<td>Construction vehicle noise</td>
<td>Out of hours works</td>
</tr>
<tr>
<td>Pennant Hills Library</td>
<td>Ramsay Rd &amp; Yarrara Rd, Pennant Hills</td>
<td>Construction vehicle noise</td>
<td>Working hours</td>
</tr>
<tr>
<td>Beecroft Scout Hall</td>
<td>Kirkham St and The Crescent, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Out of hours works</td>
</tr>
<tr>
<td>Beecroft Uniting Church</td>
<td>82 Beecroft Rd, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Possession Weekend</td>
</tr>
<tr>
<td>Sensitive Receivers</td>
<td>Address</td>
<td>Potential Traffic Impacts</td>
<td>Sensitive Times</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Beecroft Town / Community Centre</td>
<td>Wongala Cres &amp; Hannah St, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Peak hours and lunch time</td>
</tr>
<tr>
<td>Beecroft Lawn Tennis Club</td>
<td>The Crescent and Beecroft Rd, Beecroft</td>
<td>Construction vehicle noise</td>
<td>Possession Weekend</td>
</tr>
<tr>
<td>Cheltenham Recreational Club</td>
<td>60-74 The Crescent, Cheltenham</td>
<td>Construction vehicle noise</td>
<td>Out of hours works</td>
</tr>
<tr>
<td>Pennant Hills Town / Community Centre</td>
<td>Yarrara Rd, Pennant Hills</td>
<td>Construction vehicle noise</td>
<td>Peak hours and lunch time</td>
</tr>
</tbody>
</table>
14 Vehicle Movement Plan (VMP)

Prior to commencement of any work activity, the Engineer shall define the following:

- Scope of works (i.e. approximate amount and type of machinery, plant and labourer required)
- Define the access route and gates
- Assessed the route and consider the changes to the existing traffic network
- Identify any sensitive receivers on the route (i.e. school zones, child care and age care facilities, etc…)

Refer to TABLE 8 – SUMMARY OF SENSITIVE RECEIVERS and if necessary, apply restrictions and implement additional controls (e.g. minimise truck movements in school zones during school zone time, isolate work area from high pedestrian movement areas, etc…)

If necessary development of a site specific VMP as per this TMAP and RMS TCWS manual

The VMP will detail the following:

- Construction vehicle route
- Type of vehicles accessing the route (i.e. light vehicles only, rigid or semi trucks, oversize, etc...) Signage
- Procedure to access, travelling through and exit site
- Construction parking
- Restriction (i.e. hours of construction travel on certain routes to avoid impeding on items as listed below)
- Any significant landmark and sensitive receivers such as schools, child and age care facilities, train stations and public sporting ground
- A general note for the VMP Procedure for the project will be included. Draft details of this note is as follow below:

VMP General Procedure

“Deliveries of materials to site:

1. Engineer or foreman to plan the delivery (refer to Figure 3 – VMP Procedure). Where feasible, construction material to be delivered via rail and attempt to use the rail corridor to move materials and machinery.
2. Always plan delivery outside of peak road traffic periods and outside of school peak periods where feasible;
3. Adequately communicate with the sub-contractor the project traffic management requirements;
4. Notify traffic controllers of the vehicle movement details e.g. time and direction; as required;
5. If a vehicle is unable to perform construction activities immediately, reroute to the designated waiting area to prevent impacts on roads;
6. Contact the driver when the site is ready.
7. Minimise engine idling whenever possible especially in residential area.
8. Heavy vehicles travelling to site will be directed to refer to the RMS heavy vehicle section.

“When leaving the site:

1. Site access to be via nominated construction access gates
2. Access to be maintained at all times to affected private properties
3. Ensure the loads are secured and covered if there is the potential to generate dust;
4. Ensure wheels are free from mud and sediment; and
5. In the event of an incident (spill) or accident:
   - Report incident details to the Project Environment Manager or Site Foreman
   - Contact emergency services if required.”

The nominated communication protocol on site is via UHF radio. As the project progress, UHF radio channels and protocols will be established as per the work areas. The general UHF channels and protocols for the project and work areas will be detailed in the site induction. If a more specific requirement is necessary (i.e. involving traffic controllers, numerous plant activities, etc.) this will be detailed in the site specific VMP and toolbox to all relevant personnel.

Current VMPs are attached (Appendix A).
Figure 4 – PMP Development Process

1. Define your work area and scope (i.e. boundaries, construction methodology, access, etc.)

2. Survey the area (i.e. number, usage, activity, peak hours, age, etc. of pedestrians and cyclists)

3. Is the work near or part of the train stations upgrade?

4. Is the work in a high pedestrian activity area?

5. Does the work affect local road parking?

6. Does the work require detour and/or construction of new access track?

7. Does the work affect bus routes and stop (including RailCorp buses during rail possession)?

8. Does the work affect taxi ranks and “kiss and ride” bays?

9. Appropriate information signage, road and traffic signage, pavement markings and linemarking are to be implemented to advise commuters of the changes.

10. Develop a PMP in accordance with Figure 2 – TCP Procedure

3.1. Commuter and Passenger Management Plan (CoMP) required – refer to CoMP requirement in this TMAP

4.1. Install physical controls to separate pedestrian from work area

4.2. Where feasible, undertake work outside of peak periods

5.1. Can parking be temporarily reinstated in other location or replacement with time etc.?

5.2. Consult with Hornsby Shire Council

6.1. Ensure no trip hazards and wheelchair access.

7.1. Temporary relocate to a convenient location as agreed with bus operators

Temporary relocate to a convenient location as agreed with asset owners

Interface Manager
15 Managing Pedestrians, Cyclists and Parking

The PMP describes how the Alliance will safely manage pedestrians, cyclists and commuters on the project. As detailed in FIGURE 5 – PMP DEVELOPMENT PROCESS the Alliance will identify pedestrians, cyclists and commutes needs by considering the following:

Number of pedestrians

- Type of pedestrian activities (i.e. residential, commuters, retail, school, etc…)
- Origin and destination points of pedestrians, and their desired travel path
- Needs of vulnerable pedestrians (i.e. wheelchair, young children, etc…)
- Key facilities (i.e. train stations, bus stops, taxi ranks, “kiss and ride” bays, cyclist facilities, schools, sporting grounds, shopping centres)
- Peak hour traffic (i.e. between 0800 to 0900 and 1500 to 1600 for school, Saturday morning for sporting grounds)

The key construction areas and routes identified where there is a high level of interface with pedestrians and cyclists are as follow:

- Cheltenham Train Station - Mitigation measures: Refer to procedure outline in FIGURE 4 – PMP Development Process and CoMP
- Beecroft Train Station - Mitigation measures: Refer to procedure outline in FIGURE 4 – PMP Development Process and CoMP
- Pennant Hills Train Station - Mitigation measures: Refer to procedure outline in FIGURE 4 – PMP Development Process and CoMP
- Yarrara Rd between Pennant Hills Rd and Thornleigh Station - Mitigation measures: Delivery and/or cartage of material outside peak hour times and/or minimise deliveries during peak hours as per FIGURE 3 – VMP PROCEDURE and CoMP
- Beecroft Rd, Cheltenham (around the vicinity of Arden Anglican School, Beecroft Primary School and Cheltenham Girls High School) - Mitigation measures: Undertake delivery and/or cartage of materials outside school zone time and/or minimise deliveries during peak hours as per FIGURE 3 – VMP PROCEDURE
- Beecroft Rd south of the M2 – Mitigation measures: Refer to procedure outline in FIGURE 4 – PMP Development Process
- Cheltenham Rd, Copeland Rd, Chapman and Pennant Hills Rd road bridges - Mitigation measures: Refer to procedure outline in FIGURE 4 – PMP Development Process

When constructing work along local roads or any public space where the pedestrian and cyclist access may be affected, alternate routes will be clearly signed and delineated at each access points and throughout the detour route in accordance with the TCWS manual and Austroad Guide. The work site must be secure at all times with appropriate fencing / barriers and secure to the ground with appropriate connections and bracing. Where there is penetration, drop or a significant hazard the site will be secure with a 1.8m minimum high fencing. All access gates to these work sites have to be manned or locked at all times. Appropriate construction signage with emergency contact details will be erected. Allowance will be made on all temporary footpath, access or detour for wheelchair access. These routes will have the same grade as the existing routes, a smooth surface with no trip hazards and require regular inspection and maintenance as detailed in - TCP INSPECTION REQUIREMENT and INSPECTION, AUDIT AND REPORTING section of this TMAP

TCWS Manual Section 9.3 and AustRoads Guide to Traffic Engineering Practice – Pedestrians Part 13, Section 1 provide guidance on the needs of pedestrians. When pedestrians are diverted onto existing roadways adjacent to traffic flows, additional treatment will be implemented to ensure adequate separation is provided and clearly delineated
Figure 5 – Commuter and Passenger Management Process

1. Define your work area and scope (i.e. boundaries, construction methodology, access, etc.)

2. Survey the area (i.e. number, usage, activity, peak hours, age, etc... of pedestrians and cyclists)

3. Refer to FIGURE 6.1, 6.2 and 6.3 for nominated alternate route

4. Any loss of commuter car parking at Cheltenham and Beecroft Stations to be relocated within 400m walking distance of these stations

5. Stage works so that new or temporary facilities (i.e. bus stop, taxi ranks, bicycle facilities etc.) are commissioned before the old facilities are closed

6. Consult with Hornsby Shire Council, RailCorp, Transport Operators and Relevant Stakeholders

7. Refer to FIGURE 5 - PMP development process

8. ETTT Alliance for approval

Interface Manager needs to be approved by the STATION LIASION GROUP
16 Commuter and Passenger Management

As the Alliance is working in the vicinity of the train stations, specific movement plans are to be developed. These plans comprise:

a) drawings showing the layout of public areas, including facilities provided for rail staff and patrons for each stage of Works;

b) proposed arrangements at the station clearly showing the position of hoarding and platform interchange provision.

c) documented clearances and free area of platforms. The proposed level of service during construction shall be also identified;

d) drawings showing proposed arrangement of signage (temporary and existing) including location, size and wording;

e) drawings showing arrangement of passenger information panels including temporary relocations and modifications;

f) a program clearly indicating when configuration will be changed and proposed period of change;

g) controlled site access points;

h) delineation of work and public areas;

i) access points from different modes of transport and general ingress and egress points: and

j) identification of level changes via ramps, stairs, and other means.

The Alliance will clearly sign and delineate any detour or alternate route in accordance with the TCWS manual and Austroads Guide. The work site must be secure at all times with appropriate fencing / barriers and secure to the ground with appropriate connections and bracing. Where there is penetration, drop or a significant hazard the site will be secure with a 1.8m minimum high fencing. All access gates to these work sites have to be manned or locked at all times. Appropriate construction signage with emergency contact details will be erected at each of these gates. The Principal’s Representative may direct the Contractor to include additional or alternative signage and delineation than that specified in the COMP. The diagrams will be developed in consultation with the appropriate Station Liaison Group.

- Prior to implementation of any management devices the plan(s) shall be submitted to Station Liaison Group for approvals:

- Work around train stations will adhere to the following conditions:

  - Any loss of designated commuter car parking during construction at Cheltenham and Beecroft Stations would be accommodated. Any affected bicycle facilities, e.g. lockers, racks hoops/hails, would be reinstated to a location close to the new station entrance.

Changes to station facilities would be staged and communicated via signage so that new or temporary facilities are commissioned before the old facilities are closed, where possible. Bus stops, taxi ranks and “kiss and ride” locations affected by construction would be temporarily relocated to nearby locations so that they remain available throughout construction.

Any changes to pedestrian and cyclists routes and its facilities, bus stops, taxi ranks, car parking etc will be consulted with the Station Liaison Group, Hornsby and/or Parramatta Council, Sydney Trains and transport operators.
Figure 6 – TMAP and TMP Approval and Implementation Process

ETTT ALLIANCE
draft TMAP

TFNSW
for approval

RMS & Parramatta and/or Hornsby Shire Council
for consultation

ETTT ALLIANCE
revised TMAP

Dept. Of Planning
for approval as part of CEMP

ETTT ALLIANCE
TMAP implementation

Draft TMP

Consult relevant stakeholders

Project Engineer
Traffic Engineer

Interface Manager

Traffic Engineer or Qualified Personnel as per TCWS

ETTT Alliance Area Manager
for approval

TMP Implementation

needs to be approved by the STATION LIASION GROUP prior to implementation

Draft TCP, VMP and or PMP

Obtained necessary ROL from RMS and/or Hornsby Shire Council

Submit a copy to Principal’s Rep. on site

SITE LEVEL APPROVAL

Implement TCP, VMP and or PMP

Implement TCP, VMP and or PMP

Obtained necessary ROL from RMS and/or Hornsby Shire Council

Submit a copy to Principal’s Rep. on site
17 Development Process

This TMAP is developed and approved by means of consultation and agreement of key and relevant stakeholders, in particular RMS and Councils. Once approved, all site specific TMP’s will be developed in accordance with this TMAP and approved by ETTT Alliance Project Manager. The site specific TMP will address the specific key issues from the consultation with the relevant stakeholders. From the TMP, any relevant TCP’s, VMP’s and PMP’s will be generated by qualified personnel with a Design and Inspection Traffic Control Plans “orange” card and/or Select and Modify Traffic Control Plans (red) card and in accordance with the TCWS manual. This approval process is as outlined in FIGURE 6 –TMAP AND TMP APPROVAL AND IMPLEMENTAION PROCESS.
18 Roles and Responsibilities

Alliance Manager (AM)
• Approve the TMAP and revisions.

Construction Manager (CM)
• Determine the overall project work activities, scope and timing of activities.
• Approve the TMP and CoMP and revisions.

Interface Manager
• Manage all correspondence and liaison between the Alliance and external stakeholders, asset owners, community groups, etc.

Area Manager (AM)
• Development and implementation overall area staging plan.
• Determine the individual work activities, scope and timing of activities.

Stations Senior Project Engineer (SPE) and Project Engineer (PE)
• Development and implementation of the plans where appropriate.
• Development and implementation of stations upgrade staging plans including scope and timing of activities.
• Propose and implement remedial action to meet construction requirements.

Traffic Engineer (TE) – with Select/Modify Traffic Control Plan “red” card and Design & Inspect Traffic Control Plan “orange” card
• Development of any relevant TMP, TCP, VMP and PMP with the assistant of the PE.
• Development and implementation process and procedure for site traffic management with the assistant of the PE.
• Ensure the traffic management objectives as per this TMAP of the projects are achieved.
• Apply and obtain any relevant ROL and Speed Zone Authorisation (SZA).
• Implement procedure and checklist as per TABLE 7-TCP INSPECTION REQUIREMENT and monitor compliance level.
• Monitor, inspect and report any deficiencies in regards to traffic control management on site.

Foreman (F) and Project Engineer (PE)
• Implementation of any relevant TMP, TCP, VMP and PMP.
• Co-ordinate and program daily activities with Leading Hands, Foreman and Subcontractors / Traffic Supervisor.
• Monitor, inspect and report any deficiencies in regards to traffic control management on site.

Safety Manager (SM)
• Report any identified concerns to the CM.
• Investigate and report incidents.
• Training of workers in WMP and SWMS specific to traffic management operations.
• As necessary, assist with safety aspects of TMP, CoMP, TCP, VMP and PMP design and implementation.

Traffic Supervisor (Subcontractor) – with Traffic Controller “blue” card and Apply Traffic Control Plans “yellow” card
• Setup TCP as per approved plans and close down TCP as per TCWS manual.
• Inspect TCP as per TABLE 7-TCP INSPECTION REQUIREMENT
• If necessary amend TCP and report back to Traffic and or relevant Project Engineer
• Coordinate daily site TCP requirements
Figure 7 – Traffic Hierarchy Chart

Alliance Manager
• approves TMAP and its revisions

Construction Manager – approves TMP

Area Manager
• Review TMP
• develop traffic staging
• determine scope and activities

Station SPE and PE
• develop and implement plan
• develop staging plan

Traffic Engineer with assistant of PE
• develop and implement TMP, TCP, VMP and PMP
• assist in plan development
• Monitor, inspect and report
Table 7 – TCP Inspection Requirement

<table>
<thead>
<tr>
<th>INSPECTION</th>
<th>RESPONSIBILITY</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Control Setup</td>
<td>Traffic Supervisor</td>
<td>Before works start, 3hr max. interval during work and demobilisation/pack up</td>
</tr>
<tr>
<td>Weekly inspections</td>
<td>Traffic Engineer, Project and Foreman</td>
<td>On the day the work begins, and at least once per week.</td>
</tr>
<tr>
<td>Pre-opening inspections</td>
<td>Traffic Engineer and Project Engineer</td>
<td>Prior to opening temporary traffic switches, lane deviations or side track.</td>
</tr>
<tr>
<td>Pedestrian detour route</td>
<td>Leading hand, Foreman and Engineer</td>
<td>Informal daily inspection. Formal at least once per week or after heavy wind and/or rain events.</td>
</tr>
</tbody>
</table>

Note:

*Note: The reference to Engineer, Foreman and Leading Hand in the above table refers to personnel responsible for the work activity.
19 Inspection, Audit and Reporting

For the duration of the occupation by the Alliance of any part of a road open to the public, the Alliance must maintain, repair, clean and otherwise be responsible for the condition and function of that part of road. The Alliance will undertake regular inspections to ensure the safety of all traffic, pedestrians and commuters through and surrounding all work sites. The responsibilities and frequencies of inspections are as detailed in TABLE 7–TCP INSPECTION REQUIREMENT and is as per Section 6.1 of the TCWS manual. The Alliance has identified pedestrian interface at certain locations on the project as significant and will require additional monitoring on any detour and amendments to existing route. This is to ensure safety of the general public and commuters.

Where the Works or the Temporary Works require a change to existing boundaries and/or changed interface between the existing rail and road networks (such as through physical alteration, change or use and/or introduction of new hazards) then the Contractor must arrange for a “Road Safety Audit” to be carried out as per RMS Technical Direction for Road Safety Practitioners (TD2003/RS003) and RMS Guidelines for Road Safety Audit Practices.

Road safety audits must be carried out at least the following stages:

• On completion of the detailed design for the proposed changes to existing road networks; and

• On completion of construction of the changes to existing road networks but prior to operation.

The road safety audits must be carried out by a team consisting of a lead auditor and at least one other member who is experienced in traffic management. The lead auditor must be considered by the Institute of Public Works Engineering Australia Ltd (NSW Division) to be a level 3 auditor. Any identified issues or deficiencies identified during traffic inspection or audit will be assessed against a “risk matrix” i.e. frequency verses severity. Any high risk issues will be addressed and control immediately. Other items will be address upon completion of the inspection or audit and dealt with accordingly in the appropriate time frame.

The Traffic and Access Management Plans will be updated and improved continually throughout the life of the project. Plans will not stagnate between the formal management reviews. Triggers for review include:

• Within 1 month following a major (Class 1) incident

• Where an audit recommends a review

• Where there are repeat non-conformances and these are not closed out within the agreed timeframe

• As otherwise determined by the Environmental Manager in consultation with the Construction Manager.

The frequency of reporting as a result of audits or reviews falls under 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 Report – on planned lane closures / road occupancies and the performance results of recently implemented changed traffic conditions

• Monthly Report – on construction activities, incidents and proposed major traffic, pedestrians and/or commuters changes
**Figure 9 – Consultation and Communication Process**

1. **Development of TMP**
   - Consultation with relevant stakeholders

2. **Development of specific TCP, VMP, and PMP**

3. **Obtain ROL from TMC and/or Hornsby Shire Council. Review comments and amend plans**

4. **Where works will have significant impacts on community, business and commuters and/or ROL requirement**
   - Community Notification:
     - *Letterbox drop*
   - Community Advertising:
     - *Display*
     - *VMS (need TMC approval)*
     - *Published notices and advertising*

   Minimum 4 week lead time from drafting to approval

5. **Implement TMP / TCP and commence construction**

6. **Direct all Community feedback to the Interface Manager**
20 Consultation and Communication

A comprehensive Community Liaison Management Plan (CLMP) has been prepared for the ETTT project. The project encourages public participation at each phase of the project including planning, construction and commissioning. The project’s approach to community and stakeholder engagement will be tailored to each phase and component of the project, enabling appropriate consideration and balancing of community and stakeholders’ social economic, environmental, safety and functional issues to achieve best for project outcomes.

As illustrated in FIGURE 2 – TCP PROCEDURE, FIGURE 3 VMP PROCEDURE, FIGURE 5 - DEVELOPMENT PROCESS and FIGURE 6 – TMAP and TMP APPROVAL AND IMPLEMENTATION PROCESS any initial consultation and communication to relevant stakeholders will be through the Alliance Interface Manager with the exception of ROL applications. Interface with the TMC and Hornsby Shire Council in regards to ROL submissions will be managed by the relevant Area Manager and/or Traffic Engineer.

During the development of site specific TMP, the following stakeholders will be consulted as appropriate:

- Transport for NSW
- RMS
- Hornsby and/or Parramatta Council
- Emergency services
- Local businesses
- Local schools
- Local residents
- Community liaison / action groups
- Bicycle and pedestrian groups
- Station Liaison Group
- Adjacent major infrastructure project i.e. NWRL
- Transport Operators

Specific community notifications will be required for certain TMP. Notification of traffic re-arrangements will be distributed by letters to residents and local businesses that are directly affected by construction activities and changes to traffic conditions.

Specific advertising will publicly advertise adequate information during the construction to keep the community, including business, informed of proposed changes to traffic, parking and/or commuters movements. This notification may be in various formats including displays, variable message (VMS) boards, letterbox drops, published notices and advertising.

All forms of notification and advertising will be reviewed by the Transport for NSW and relevant authorities. The approval process for TfNSW is 5 working days and the time frame for notification is 2 weeks prior to commencement of construction and/or implementation of changed traffic conditions.

The need of either notification and/or advertising will be nominated by the Interface Manager and in accordance with the ROL conditions.
21 Managing Unplanned Incidents

21.1 Managing Traffic Incidents
The management and response to unplanned traffic incidents on the road network is not the responsibility of the Alliance, but where possible (i.e. where the Alliance has occupied the road and resource available) the procedure is as follows:

• If necessary contact Emergency Services
• Establish or amend traffic control to isolate and make safe of area. If possible maintain traffic flow till incident is clear.
• Prevent further harm and provide assistance if necessary
• Upon arrival of RMS and/or emergency services the site should be handed to the appropriate personnel.
• During major incidents provide a senior construction representative on-site to liaise with the RMS and and/or emergency services

The Alliance has identified two areas where there is a significant interface with traffic and that the occurrence of traffic incidents will have negative impacts on the operation of the road network:
• Viaduct construction and service relocation works on Beecroft Rd; and
• M2 bridge construction

Further to the procedure as listed above the Alliance will at these locations (or on any state road):
• Apply and maintain communication protocols between TMC
• Disseminate road condition information to the TMC for their distribution to road users.

21.2 Managing Construction Site Emergencies
The Alliance will develop an Emergency and Crisis Management Plan as part of the Safety Management Plan, which will incorporate standard operating procedures for managing construction site emergencies / incidents.

These plans will:
• define the Alliance’s roles and responsibilities in the event of incident and emergencies;
• establish and define Alliance’s roles and emergency response procedures for dealing with different category of emergency arising from construction, traffic and environmental incidents;
• identify and define the roles and responsibilities of the Alliance project personnel during emergencies and incidents;
• define the TfNSW, RMS and emergency services roles and responsibilities in the event of an incident or emergency;
• outline the communication protocols and system/s
• establishment formal arrangements for the review and maintenance of the plan

All construction or construction related incidents are entered into the safety database by the project Safety Team.
## 22 Existing Conditions

### Table 8 – Summary of Arterial and Sub-arterial Roads

<table>
<thead>
<tr>
<th>Road / Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epping Road</td>
<td>An arterial road which joins to Beecroft Road and Blaxland Road immediately east of the Beecroft Road bridge over the rail line. The bridge over the rail line at Epping currently provides five lanes (three lanes eastbound and two lanes westbound).</td>
</tr>
<tr>
<td>Beecroft Road (at Epping)</td>
<td>A four-lane, two way undivided sub-arterial road. It provides a connection between Epping Road, Blaxland Road runs along the western side of the rail line, between Epping Road and the M2 Motorway in the Epping study area.</td>
</tr>
<tr>
<td>Carlingford Road</td>
<td>A four-lane, two way undivided arterial road which connects Beecroft Road to the east and Cumberland Highway to the west. The posted speed limit is 60km/h with a 40km/h school zone outside Epping West Public School.</td>
</tr>
<tr>
<td>M2 Motorway</td>
<td>A high capacity motorway connecting the north-west area of Sydney with the Lower North Shore. The road generally has six-lanes with a divided carriageway and a posted speed limit of 100km/hr. The upgrading of the M2 Motorway has just been completed.</td>
</tr>
<tr>
<td>Blaxland Road</td>
<td>A four-lane, two-way undivided sub-arterial road. It runs along the eastern side of the rail line and connects with Land Cove Road at Top Ryde in the south and Epping Road in the north. The posted speed limit is 60km/h with a 40km/h school zones outside St Therese Primary School</td>
</tr>
<tr>
<td>Cheltenham Road</td>
<td>A two-lane two-way undivided local road crossing the rail lines with two-lane two-way over bridge. It connects Sutherland Road to the north and The Crescent to the south. The speed limit is 50km/h.</td>
</tr>
<tr>
<td>Beecroft Road (at Cheltenham)</td>
<td>A four-lane, two-way undivided sub-arterial road that connects with the M2 Motorway to the south and Pennant Hills Road to the north. Beecroft Road runs along the western side of the rail line. The posted speed limits is 60km/h with a 40km/h school zone outside Arden Anglican School, Beecroft Primary School and Cheltenham Girls High School.</td>
</tr>
<tr>
<td>Beecroft Rd (at Beecroft)</td>
<td>A four-lane, two-way undivided sub-arterial road that connects with The Crescent to the south and Pennant Hills Road to the north. Beecroft Road runs along the western side of the rail line, south of Copeland Road. The posted speed limit is 60km/h with a 40km/h school zone outside Arden Anglican School, Beecroft Primary School and Cheltenham Girls High School.</td>
</tr>
<tr>
<td>Pennant Hills Road</td>
<td>Pennant Hills Road (Cumberland Highway), forms part of the National Highway network. It is a RMS controlled road which runs along the eastern side of the rail lines. Pennant Hills Road is a six-lane divided road with a posted speed limit of 70km/h.</td>
</tr>
<tr>
<td>Yarrara Road</td>
<td>A two-lane two-way undivided collector road which runs along the western side of the rail lines. The posted speed limit is 60km/h.</td>
</tr>
</tbody>
</table>
Table 9 – Key Intersections’ Peak Hours

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Intersection Control</th>
<th>Peak Hours (Mon – Fri)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beecroft Rd/Old Beecroft Rd</td>
<td>Give-way priority</td>
<td>0700 to 0800 and 1730 to 1830</td>
</tr>
<tr>
<td>Beecroft Rd/Cheltenham Rd</td>
<td>Signals</td>
<td>0730 to 0830 and 1715 to 1815</td>
</tr>
<tr>
<td>Beecroft Rd/The Crescent</td>
<td>Give-way priority</td>
<td>0700 to 0800 and 1645 to 1745</td>
</tr>
<tr>
<td>Beecroft Rd/Copeland Rd</td>
<td>Signals</td>
<td>0715 to 0815 and 1715 to 1815</td>
</tr>
<tr>
<td>Beecroft Rd/Chapman Ave</td>
<td>Five-way priority</td>
<td>0715 to 0815 and 1700 to 1800</td>
</tr>
<tr>
<td>Pennant Hills Rd/City View Rd</td>
<td>Signals</td>
<td>0700 to 0800 and 1515 to 1615</td>
</tr>
<tr>
<td>Pennant Hills Rd/Yarrara Rd</td>
<td>Signals</td>
<td>0730 to 0830 and 1530 and 1630</td>
</tr>
<tr>
<td>Yarrara Rd/Wells St</td>
<td>Give-way priority</td>
<td>0730 to 0830 and 1700 and 1800</td>
</tr>
</tbody>
</table>
## 23 Implementation of Mitigation Measures

<table>
<thead>
<tr>
<th>No.</th>
<th>Requirement</th>
<th>Mitigation Measure</th>
<th>Timing</th>
<th>Responsibility</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>J.8</td>
<td>The CEMP would include measures to manage the potential impacts of construction compound operations. This would include inputs into the traffic management plan to ensure that vehicle movements to and from construction compounds do not impact on surrounding receivers.</td>
<td>Planning and during construction</td>
<td>Engineer</td>
<td>TMP and VMP</td>
</tr>
<tr>
<td>2.</td>
<td>O.1</td>
<td>Road occupancy licenses/road opening permits for temporary closure of roads would be obtained, where required.</td>
<td>Prior to construction</td>
<td>Engineer</td>
<td>ROL licence</td>
</tr>
<tr>
<td>3.</td>
<td>O.2</td>
<td>Traffic management plans would be prepared and provided to the relevant Roads Authority as required.</td>
<td>Prior to construction</td>
<td>Engineer</td>
<td>TMP</td>
</tr>
<tr>
<td>4.</td>
<td>O.3</td>
<td>Heavy vehicles would be restricted to specified routes, with the aim of avoiding local streets, high pedestrian areas and school zones. Where feasible, route markers would be installed for heavy vehicles along designated routes.</td>
<td>During construction</td>
<td>Engineer And Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>5.</td>
<td>O.4</td>
<td>Directional signage would be provided at each corridor access point to assist in deliveries to each work site.</td>
<td>During construction</td>
<td>Foreman</td>
<td>Check gates</td>
</tr>
<tr>
<td>6.</td>
<td>O.5</td>
<td>Signs would be provided at each access point for pedestrian and cyclist guidance.</td>
<td>Implementation</td>
<td>Engineer and Foreman</td>
<td>PMP</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
</tr>
<tr>
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<td>------</td>
</tr>
<tr>
<td>7.</td>
<td>O.6</td>
<td>Limit off-site construction vehicle parking to designated areas. Areas of temporary on-street parking during peak construction events would be identified in the traffic management plans to minimise the impact on surrounding properties and businesses.</td>
<td>Planning and during construction</td>
<td>Engineer and Foreman</td>
<td>TCP</td>
</tr>
<tr>
<td>8.</td>
<td>O.7</td>
<td>The queuing and idling of construction vehicles in residential streets would be minimised.</td>
<td>During construction</td>
<td>Foreman</td>
<td>Induction and toolbox</td>
</tr>
<tr>
<td>9.</td>
<td>O.8</td>
<td>An emergency response plan would be developed for construction traffic incidents.</td>
<td>Prior to construction</td>
<td>Safety Manager</td>
<td>This plan and Emergency and Crisis Management Plan</td>
</tr>
<tr>
<td>10.</td>
<td>O.9</td>
<td>A pre and post construction assessment of road pavement assets would be conducted in areas likely to be used by heavy construction vehicles.</td>
<td>Prior to and after construction</td>
<td>Engineer</td>
<td>Dilapidation report</td>
</tr>
<tr>
<td>11.</td>
<td>O.10</td>
<td>Where required, public communications would be conducted to advise the community and local residents of vehicle movements and anticipated effects on the local road network relating to site works in accordance with the CEMP.</td>
<td>Prior to construction</td>
<td>Interface Manager</td>
<td>Community notification</td>
</tr>
<tr>
<td>12.</td>
<td>O.11</td>
<td>Access to all private properties adjacent to the works would be maintained during construction, unless otherwise agreed with property owners.</td>
<td>During construction</td>
<td>Engineer</td>
<td>TMP and/or TCP</td>
</tr>
<tr>
<td>13.</td>
<td>O.12</td>
<td>During project inductions, all heavy vehicle drivers would be provided with the emergency response plan for construction traffic incidents.</td>
<td>During construction</td>
<td>Safety Manager</td>
<td>Induction</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
</tr>
<tr>
<td>-----</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>-----------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>14.</td>
<td>O.13</td>
<td>Undertake construction vehicle traffic movements outside of peak road traffic periods and outside of school peak periods where feasible.</td>
<td>During construction</td>
<td>Foreman and Engineer</td>
<td>ROL conditions, and/or TCP</td>
</tr>
<tr>
<td>15.</td>
<td>O.14</td>
<td>Where required, improvements to the existing access tracks within the rail corridor would be provided to facilitate safe construction vehicle access into/out of the construction compounds.</td>
<td>During construction</td>
<td>Foreman and Engineer</td>
<td>VMP or site inspection</td>
</tr>
<tr>
<td>16.</td>
<td>O.15</td>
<td>Bus stops, taxi ranks and kiss-and-ride locations affected by construction would be temporarily relocated to nearby convenient locations so that they remain available throughout construction. Agreement of the asset owners and consultation with transport providers would be undertaken.</td>
<td>Prior to construction</td>
<td>Engineer</td>
<td>CoMP, TCP</td>
</tr>
<tr>
<td>17.</td>
<td>O.16</td>
<td>Local bus operators would be consulted to ensure that the timing of short term road or kerb closures (if required) minimise impacts to bus services.</td>
<td>Prior to construction</td>
<td>Engineer</td>
<td>CoMP and/or TCP</td>
</tr>
<tr>
<td>18.</td>
<td>O.17</td>
<td>Coordination of proposal staging, vehicle movement and scheduling, equipment and resourcing, joint use of access points and regular project liaison between the NWRL and ETTT projects.</td>
<td>Prior to construction</td>
<td>Interface Manager</td>
<td>Consultation meeting minutes</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
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<tr>
<td>19</td>
<td>O.18</td>
<td>Affected stakeholders, such as local government authorities, emergency services, local schools, public transport operators, public transport users, road users, local businesses, local employees and residents, would receive advance notification of scheduled construction works to allow for planning of required journeys.</td>
<td>Prior to construction</td>
<td>Interface Manager</td>
<td>Community notification</td>
</tr>
<tr>
<td>20</td>
<td>O.19</td>
<td>The construction of the ETTT proposal would be undertaken and staged so that it does not affect timetabled passenger and freight operations other than during scheduled track closedowns or and as otherwise agreed with RailCorp and Transport for NSW. As discussed in Section 5.7.1 of the EIS, additional closedowns may potentially be required.</td>
<td>Planning</td>
<td>Construction and Area Managers</td>
<td>Staging Plans</td>
</tr>
<tr>
<td>21</td>
<td>O.20</td>
<td>Construction methods would seek to minimise the number of trucks using the public road network by:</td>
<td>Planning</td>
<td>Area Managers</td>
<td>Preplanning Meeting minutes</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>- delivering construction materials via rail to the construction sites, where possible and feasible</td>
<td>Planning</td>
<td>Area Managers</td>
<td>Preplanning Meeting minutes</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>- using the rail corridor, where possible, to move machinery and materials.</td>
<td>During Construction</td>
<td>Engineer and Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>24</td>
<td>O.21</td>
<td>Changes to station facilities would be staged and communicated via signage so that new or temporary facilities are commissioned before the old facilities are closed, where possible.</td>
<td>Planning and during construction</td>
<td>Engineer and Foreman</td>
<td>Commuter plans</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
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<tr>
<td>25.</td>
<td>O.22</td>
<td>Any loss of designated commuter car parking during construction at Cheltenham and Beecroft Stations would be accommodated on local streets within a 400 metres walking distance of these stations.</td>
<td>Planning</td>
<td>Engineer</td>
<td>TCP, commuter plans</td>
</tr>
<tr>
<td>26.</td>
<td>O.23</td>
<td>Any loss of other parking near construction sites, for example street parking, would be minimised in terms of duration. Consultation with Council to determine any temporary mitigation measures such as replacement timed parking would be carried out.</td>
<td>Planning</td>
<td>Engineer</td>
<td>TCP</td>
</tr>
<tr>
<td>27.</td>
<td>O.24</td>
<td>Any affected bicycle facilities, e.g. lockers, racks hoops/rails, would be reinstated to a location close to the new station entrance in consultation with Hornsby Shire Council.</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>TCP</td>
</tr>
<tr>
<td>28.</td>
<td>O.25</td>
<td>Appropriate information signage, road and traffic signage, pavement markings and line marking are to be implemented to advise commuters of the changed designated commuter car parking conditions.</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>TCP</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
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<tr>
<td>29.</td>
<td>0.26</td>
<td>Left-in and left-out only vehicle movements would be provided at the following locations:</td>
<td></td>
<td></td>
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<tr>
<td>30.</td>
<td></td>
<td>- into and out-of construction compound S1 from Beecroft Road</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>31.</td>
<td></td>
<td>- at the Beecroft Road/ Old Beecroft Road intersection</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>32.</td>
<td></td>
<td>- at the Beecroft Road/ The Crescent/Kirkham Road intersection</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>33.</td>
<td></td>
<td>- into and out-of construction compound S6 from Yarrara Road.</td>
<td>During construction</td>
<td>Engineer and Foreman</td>
<td>VMP</td>
</tr>
<tr>
<td>34.</td>
<td>0.27</td>
<td>Site accesses for construction compounds would be designed so that left-in-left out movements occur within existing kerbside lanes, vehicles do not encroach onto the wrong side of the road when entering or leaving the sites and all vehicles can enter and exit the sites in a forward direction. Where this is not feasible, consultation would be undertaken with Hornsby Shire Council or RMS (depending on road ownership) and Traffic Management Centre (TMC) to determine appropriate traffic management measures.</td>
<td>Planning and during construction</td>
<td>Engineer and Foreman</td>
<td>TCP and/or VMP</td>
</tr>
<tr>
<td>35.</td>
<td></td>
<td>Ongoing liaison with neighbouring projects (i.e. NWRL) to manage potential cumulative construction impacts would be undertaken throughout construction.</td>
<td>Planning and during construction</td>
<td>Construction Manager</td>
<td>Interface meetings</td>
</tr>
<tr>
<td>No.</td>
<td>Requirement</td>
<td>Mitigation Measure</td>
<td>Timing</td>
<td>Responsibility</td>
<td>Tool</td>
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<tr>
<td>36.</td>
<td>Good Practice</td>
<td>Provide an induction to site personnel (including subcontractors) addressing the requirements of this TMP and their responsibilities with regard to traffic management.</td>
<td>Planning and during construction</td>
<td>Construction Manager</td>
<td>Site Induction</td>
</tr>
<tr>
<td>37.</td>
<td>Good Practice</td>
<td>Where possible, materials are to be delivered to the site avoiding school drop off and pick up times (8 am to 9.30 am and 2.30 pm to 4 pm).</td>
<td>Construction</td>
<td>Project Engineers</td>
<td>Contract</td>
</tr>
<tr>
<td>38.</td>
<td>Good Practice</td>
<td>Lane closures are to be limited to the minimum amount of time required to allow for safe traffic movements</td>
<td>Construction</td>
<td>Project Engineers</td>
<td>ROL</td>
</tr>
<tr>
<td>39.</td>
<td>Good Practice</td>
<td>Heavy vehicle use on major roads should be timed for periods of lower traffic loads (eg out of peak periods and night time)</td>
<td>Construction</td>
<td>Project Engineers</td>
<td>ROL</td>
</tr>
<tr>
<td>40.</td>
<td>Good Practice</td>
<td>A vehicle/traffic movement plan will be developed for deliveries involving oversize vehicles</td>
<td>Construction</td>
<td>Project Engineers</td>
<td>TCP</td>
</tr>
<tr>
<td>41.</td>
<td>Good Practice</td>
<td>Loads will be covered and tailgates secured when entering public roads to prevent debris falling on roads.</td>
<td>Construction</td>
<td>Foreman</td>
<td>TCP</td>
</tr>
<tr>
<td>42.</td>
<td>Good Practice</td>
<td>Traffic controls such as variable message signage and controllers shall be employed for the project in accordance with the TMP and VMP as appropriate.</td>
<td>Construction</td>
<td>Foreman</td>
<td>TCP</td>
</tr>
</tbody>
</table>
Appendix A – Vehicle Movement Plans (VMPs)

Notes:
1. Area 1 UHF Ch 27 South of M2
2. Area 2 UHF Ch 28 North of M2
3. Refer Detailed VMP’s for site access requirements
4. Refer Detailed Notes Page for Further VMP Instructions
5. No Parking at Beecroft and Cheltenham Commuter car parks
6. No Float Movements between 8:00am and 9:30am and 2:30pm and 4:00pm school days at Arden School and Cheltenham Girls High School
7. Contact Area Foreman if in doubt

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0001
Rev: 13 Date: 09/11/15

VMP-0001 - Main North/South Route to Site and Compounds

Traffic Management and Access Plan (TMAP) Epping to Thornleigh Third Track Alliance
Notes:
1. Area 1 UHF Ch 27 South of M2
2. Area 2 UHF Ch 28 North of M2
3. Contact Area Foreman if In Doubt

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted
- Temporary Waiting Bay

VMP #: ETTT-VMP-0002
Rev: 13    Date: 09/11/15
Traffic Management and Access Plan (TMAP) Epping to Thornleigh Third Track Alliance

Notes:
1. Area 2 UMF Ch 28 North of M2
2. Right Hand Turn Entry at Gate E25 Permitted when Traffic Control is in Place.
3. Refer Detailed Notes Page for Further VMP Instructions
4. Contact Area Foreman if in Doubt

OHW WIRE CLEARANCE
E24=6.6m
E25B=4.9m
E26/E27=No Vehicle Access to Corridor
E28=7.50m
E29=8.86m
E30=5.7m
N6=4.5m

Yarrara Rd = 4.5m Min
Railway Parade = N/A
Hampden St and the Crescent = 4.6m Min

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0003
Rev: 13 Date: 09/11/15
Notes:
1. Area 2 UHF Ch 28 North of M2
2. Right Hand Turn Entry and Exit to Beecroft Rail Access Gates permitted when Traffic Control is in place.
3. No Parking at Beecroft and Cheltenham Commuter car parks
4. No Float Movements between 8:00am and 9:30am and 2:30pm and 4:00pm school days at Arden School and Cheltenham Girls High School
5. Refer Detailed Notes Page for Further VMP Instructions
6. Contact Area Foreman if in Doubt
7. Left Turn Only In & Out of E16B Gate

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0004
Rev: 13 Date: 09/11/15
Notes:
1. Area 2 UHF Ch 28 North of M2
2. Right Hand Turn Entry and Exit to all Cheltenham Rail Access Gates permitted when Traffic Control is in place.
3. No Parking at Beecroft and Cheltenham Commuter car parks
4. No Float Movements between 8:00am and 9:30am and 2:30pm and 4:00pm school days at Arden School and Cheltenham Girls High School
5. Refer Detailed Notes Page for Further VMP Instructions
6. Contact Area Foreman if in Doubt

**DHW WIRE CLEARANCE**
E6=4.0m, 15.1m
E7=5.0m
E8=7.6m
E10=4.6m, 9.2m
E13=6.8m
Crescent North of Cheltenham Rd = 4.6m min
Cheltenham Rd = 4.0min
The Boulevard = 4.3m
Lyne Rd = 4.5m
Old Beecroft Road = 3.6m

**LEGEND:**
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

**VMP #: ETTT-VMP-0005**
Rev: 13 Date: 09/11/15

**VMP-0005-Cheltenham - Gates E5 to E14 and E5A, N3, N4**

- Scout Hall Compound
- No Truck and Dog and Float Movements between 2:45pm to 3:30pm School Days
- No Float Exit from Cheltenham Road except by prior approval
- Right Turns Into and Out of The Crescent Not Permitted
- Right Turn Out of The Boulevard Not Permitted
- Right Turns Into and Out of Lyne Road & Old Beecroft Road Not Permitted
- No Access to/from Cheltenham via Murray Rd and The Promenade
- Copeland Road = 5.5m min
- Sutherland Road South of Cheltenham Rd = 4.3m min
- Sutherland Road South of Cheltenham Rd = 3.8m min
- Pymble Rd = 1.8m
- Sunset Rd = 4.3m
- Old Beecroft Rd = 4.1m
Notes:
1. Area 1 UHF Ch 27 South of M2
2. Left Hand Turn Entry and Exit into all Epping Gates E1 to E3 and N1 Permitted Only
3. Refer Detailed Notes Page for Further VMP Instructions
4. Contact Area Foreman if in Doubt

OWN WIRE CLEARANCE
E5=4.1m
E6=5.5m

5. Rev 9a – Two existing Sydney Trains access gates added to VMP – EST (High St) and EST Pedestrian Only (Baxland Road). No change to vehicle routes required.

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0006
Rev: 13 Date: 09/11/15
Notes:
1. Area 2 UHF Ch 28 North of M2
2. One way into Railway Parade from Pennant Hill Rd
3. Refer Detailed Notes Page for Further VMP Instructions
4. Contact Area Foreman if in Doubt

OHW WIRE CLEARANCE
E31 = 5.9m
Railway Parade = Lowest 5.4m
Parkes Street = Lowest 5.5m

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0007
Rev: 13 Date: 09/11/15
Notes:
1. Area 2 UHF Ch 28 North of M2
2. Refer Detailed Notes Page for Further VMP Instructions
3. Contact Area Foreman if in Doubt

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-0008
Rev: 13 Date: 09/11/15
Notes:
1. Refer Detailed Notes Page for Further VMP Instructions
2. Contact Area Foreman if in Doubt

CHW WIRE CLEARANCE
Lowest Overhead is 4.4m
8km=4.5m
N8=No overhead

LEGEND:
- Main Route
- Site Access Route
- Compound
- Gate
- Overhead Power Lines
- No Access Permitted

VMP #: ETTT-VMP-00
Rev: 13 Date: 09/11/15
VMP-Detailed Notes

Notes:
1. Area 1 UHF Ch 27 South of M2.
2. Area 2 UHF Ch 28 North of M2.
3. Left hand turn Entry and Exit to rail access gates and local roads permitted unless sign posted otherwise.
4. Right Hand Turn Entry and Exit to Rail Access Gates permitted when Traffic Control is in place.
5. Right Hand Turn Entry and Exit to local roads from Pennant Hills Road and Beecroft Roads permitted as shown on detailed VMP’s and summarised below.
6. No Parking at Beecroft and Cheltenham Commuter car parks.
7. No Float Movements between 8:00am and 9:30am and 2:30pm and 4:00pm school days at Arden School and Cheltenham Girls High School.
8. Minimise Truck Movements between 8:00am and 9:30am and 2:30pm and 4:00pm school days at Arden School and Cheltenham Girls High School.
9. 50km/hr speed limit applies to all local roads.
10. Avoid construction vehicles queuing outside of gates and local roads.
11. Do not block or restrict access to properties without prior approval and notification.
12. Minimise noise e.g. engine idling, no shouting.
13. Ensure loads are covered and wheels are free from mud prior to leaving site.
14. In the event of incident (spill or accident), contact the Alliance Foreman immediately.
15. All heavy vehicles travelling to site should check the following website prior: www.rms.nsw.gov.au/heavyvehicles/ravmap
16. Alternative VMP and Access requirements may be permitted. A request shall be made to the Traffic Manager and appropriate traffic management measures developed and approved prior.
17. Contact Area Foreman if in Doubt

Permitted Turns off or onto Pennant Hills Road and Beecroft Road:

Access to and from site from Pennant Hills Road

Wells Street—Left Turns In/Out and Right Turn In
Railway Parade—Left Turns In/Out and Right Turn In/Out
The Crescent—Left Turns In/Out and Right Turn In/Out
Yarrama Road—Left Turns In/Out and Right Turns Out
City View Road—Left Turns In/Out and Right Turns Out
Beecroft Road—Left Turns In/Out and Right Turn In/Out

Access to and from site from Beecroft Road

Albert Road—Left Turns In/Out permitted. Right Turns not Permitted. No access permitted from/to Beecroft Road Mon-Fri 8:00am-9:30am.
Chapman Avenue—No access permitted from/to Beecroft Road
Hannah Street—No access permitted from/to Beecroft Road
Copeland Road—Left Turns In/Out and Right Turns In/Out

The Crescent—Left Turns In/Out permitted. Right Turns not Permitted.
Murray Road—No access permitted from/to Beecroft Road
The Promenade—No access permitted from/to Beecroft Road
Cheltenham Road—Left Turns In/Out and Right Turn In/Out
The Boulevard—Left Turns In/Out and Right Turn In. Right turn out of the Boulevard not Permitted.
Lyne Road—Left Turns In/Out permitted. Right Turns not Permitted.
Old Beecroft Road—Left Turns In/Out permitted. Right Turns not Permitted.

Bilxiland Road—Left Turns In/Out and Right Turn In. Right turn out of the Bilxiland not Permitted.
Langston Place—Left Turns In/Out and Right Turn Out. Right turn into Langston Place not Permitted.