APPENDIX B1
Construction Traffic Management
Sub Plan
Windsor Bridge Replacement Project
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Report name: Windsor Bridge Replacement Construction Traffic Management Plan
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Revision history

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## Glossary / Abbreviations

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<td>Construction Traffic Management Sub Plan</td>
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<tr>
<td>EA</td>
<td>Environmental Assessment</td>
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<td>Office of Environment and Heritage</td>
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<td>Roads and Maritime Services</td>
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<td>Speed Zone Authorisation</td>
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<td>TCP</td>
<td>Traffic Control Plan</td>
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<td>VMP</td>
<td>Vehicle Management Plan</td>
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1 Introduction

1.1 Context

This Construction Traffic Management Sub Plan (CTMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Windsor Bridge Replacement Project (the Project).

This CTMP has been prepared to address the requirements of the Minister’s Conditions of Approval (CoA), the Statement of Commitments (SoC), the safeguards listed in the Windsor Bridge Replacement Environmental Assessment (EA) and all applicable legislation.

1.2 Background

The Windsor Bridge Replacement project team, comprised of the Roads and Maritime Service of NSW (RMS) and Georgiou Group Pty Ltd (Georgiou) have partnered together to undertake construction activities for the new road bridge over the Hawkesbury River at Windsor on behalf of the New South Wales (NSW) government.

The Windsor Bridge Replacement Project (the Project) has been assessed as State Significant Infrastructure under Part 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act). An Environmental Impact Statement (EIS) Windsor Bridge Replacement Project Environmental Impact Statement was prepared by Sinclair Knight Merz in November 2012 for RMS. The EIS was on public exhibition until December 17th 2012. A Submissions Report (and preferred infrastructure report) was finalised in May 2013 which addressed stakeholder submissions received during the EIS exhibition period. Following this, in December 2013, the Project was approved by the Minister for Planning and Infrastructure.

The EIS determined that the overall impact of construction activity on traffic conditions is anticipated to be minor, as construction would generally be undertaken clear of existing traffic. The arrival and departure pattern of the construction workforce is anticipated to occur earlier than the normal peak traffic periods minimising the impact on local roads and their users. Deliveries of materials would generally be timed, where possible, to occur outside peak traffic periods to minimise the potential for adverse impacts. Large concrete pours will generally need to commence early and continue through peak periods so as to ensure the quality of the construction. However, the addition of one to five concrete trucks per hour to the traffic stream during peak periods will have minimal effect on travel times of the normal peak hour traffic.

Delays for traffic using Bridge Street, George Street, Wilberforce Road and Freemans Reach Road would be expected during the construction phase in those periods outside peak periods when reduced speed limits are in place and when manual traffic control is in operation to facilitate the movement of construction vehicles into and out of work sites. There would also be delays during periods when existing sections of road are being connected to new road sections, although these activities would be scheduled to occur outside of peak periods.

Maritime operations may include a temporary navigational speed limit of 4 knots and/or a No-Wash zone. Maritime operations will be undertaken so that impacts are minimised, however, impacts such as an impact on vessels docking at Windsor Wharf, navigation between the bridges and U-turning vessels may occur.
1.3 Environmental management systems overview

The overall Environmental Management System for the Project is described in the Construction Environmental Management Plan (CEMP).

The CTMP is part of the Georgiou environmental management framework for the Project, as described in Section 4.1 of the CEMP. In accordance with CoA D5(a), this Plan has been developed in consultation with Hawkesbury City Council.

The review and document control processes for this Plan are described in Section 9 of the CEMP.

1.3.1 Plan relationship

This CTMP operates as the master document in a set of site specific plans, drawings and procedures dealing with the safe and effective management of traffic during the pre-construction and construction phase of the project. Site specific TCPs, Vehicle Movement Plans (VMPs) and associated operational procedures and traffic instructions are integrated with and are referenced from the CTMP.

1.3.2 Required Elements (Clause 2.3.2 of Roads and Maritime QA Specification G10)

The CTMP must address, as a minimum and where appropriate, the following elements:

- Traffic Control Plans, including provision for cyclists, and any specific traffic control arrangements associated with the conditions of approval of the Road Occupancy Licence (ROL).
- Vehicle Movements Plans showing the preferred travel paths for construction vehicles to enter, leave or cross the through traffic stream.
- Pedestrian Movement Plans showing the allocated travel paths for workers or pedestrians around or through the work site.
- Provision of access to adjoining properties and side roads affected by the construction.
- Copies of any ROL and approvals from other relevant authorities obtained.
- Design drawings for any temporary roadways and detours, including alignment and surface levels, pavement widths, pavement cross-sections and drainage.
- Names and contact details of nominated personnel responsible for attendance at traffic incidents where required to do so by the Police and emergency services, and for maintenance of traffic control devices and temporary roadways outside normal working hours. Provide confirmation that these details have been provided to the Police.
- Management measures identified in this Plan will be incorporated into the site specific Traffic Control Plan (refer to Chapter 7).

1.4 Training and awareness

The project specific site induction for team involved in any traffic management works covers any traffic management issues before commencing the works. The induction includes:

- A review of this CTMP.
- Identification of the relevant legislation.
- Roles and responsibilities for traffic management.
- Temporary traffic arrangements.
- Response procedure for dealing with traffic incidents.
- Any other relevant information.
1.5 Traffic Management risk assessment workshop

In conjunction with Roads and Maritime, Georgiou personnel involved in preparing this Plan, road designer, and the Police/local Council representatives (as required), will undertake a Traffic Management Risk Assessment Workshop to identify and address the risks associated with traffic management, road safety and other road network issues specific to the Site.

Purpose and objectives

2 Purpose and Objectives

2.1 Purpose

The purpose of this Plan is to describe how the Georgiou proposes to manage road and marine traffic during construction of the Project.

The strategies identified in this plan specifically address:

- Traffic management objectives and targets.
- Constraints and risks.
- Potential road network impact.
- Organisation and responsibilities.
- Management process tools.
- Controls and measures to be applied.
- Specific community / stakeholder consultation process and community relations strategies for managing changed traffic conditions.
- Inspections and monitoring.

2.2 Objectives

The key objective of the CTMP is to ensure that traffic impacts during construction are minimised and are within the scope permitted by the Project conditions of approval. This includes minimising delay; ensuring consideration is given to the needs of all road users and maintaining safety for both workers and the general public.

To achieve these objectives, Georgiou will undertake the following:

- Ensure appropriate controls and procedures are implemented during construction activities to address potential traffic impacts within the Project area.
- Ensure appropriate measures are implemented to address the relevant CoA and SoC outlined in Table 1 and Table 2, and the safeguards detailed in the EA.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.
3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation and regulatory requirements

Identified regulatory requirements are:

- An approved and valid Road Occupancy Licence (ROL).
- An approved relevant Speed Zone Authorisation (SZA).
- Australian Road Rules

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

3.1.2 Guidelines

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

- Roads and Maritime *Traffic Control at Worksites Manual (2017)*.

3.1.3 Definitions

The following terms used within this Traffic Management Plan are defined below:

3.2 Minister’s Conditions of Approval

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

Table 1 Conditions of Approval relevant to the CTMP

<table>
<thead>
<tr>
<th>CoA No.</th>
<th>Condition Requirements</th>
<th>Timing</th>
<th>Responsibility</th>
<th>Document Reference</th>
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<tr>
<td>CoA D1</td>
<td>The Applicant shall engage a suitably qualified person to prepare a pre-construction dilapidation report prior to the commencement of construction and a post-construction dilapidation report at the completion of construction works. These reports are to ascertain the: (a) structural condition of local roads likely to be used by the project’s construction traffic identified in the Traffic Management Sub-plan required under condition D5(a).</td>
<td>Pre-construction</td>
<td>Project Engineer</td>
<td>Road dilapidation reports prepared separately. Refer to Appendix F.</td>
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<td>(b) structural condition of footpaths, buildings and other utilities in the vicinity of the SSI;</td>
<td>Pre-construction</td>
<td>Project Engineer</td>
<td>Refer to Appendix F.</td>
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<td>(c) whether the construction works resulted in any structural damage to roads, buildings and other utilities in the vicinity of the SSI. In ascertaining whether adverse structural damage has occurred to adjoining buildings, infrastructure and roads, the post-construction dilapidation report must: (i) compare the post-construction with the pre-construction dilapidation report; and (ii) have written confirmation from the relevant authority that there is no adverse structural damage to their infrastructure and roads.</td>
<td>Construction / Post-construction</td>
<td>Project Engineer / Environment Manger</td>
<td>Refer to Appendix F.</td>
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<td>Post-construction</td>
<td>Project Engineer / Environment Manger</td>
<td>Refer to section 9.2.2. Refer to Appendix F.</td>
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<tr>
<td>CoA D5</td>
<td>As part of the CEMP for the project, the Applicant shall prepare and implement the following sub plan(s): (a) a Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service’s QA Specification G10 — Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a</td>
<td>Pre-construction</td>
<td>Project Manager</td>
<td>This plan Refer to Appendix G for evidence of</td>
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result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:

(i) identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/spoil haulage) on these routes;

(ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points;

(iii) details of potential impacts to traffic on the existing road network, including, intersection level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access;

(iv) details of temporary and interim traffic arrangements to address potential impacts;

(v) a response procedure for dealing with traffic incidents; and

(vi) a mechanism for the monitoring, review and amendment of this sub-plan.

### 3.3 Statement of commitments

Relevant SoC are listed in Table 2 below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

**Table 2 Statements of commitment relevant to this CTMP**

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<td>A Construction Traffic Management Plan will be prepared and implemented which would enable the safe management of traffic and minimise impacts on the local community. The plan will be structure to address the following issues:</td>
<td>Pre-construction, construction</td>
<td>This plan</td>
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<tr>
<td>Ref #</td>
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<td>Timing</td>
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<td>- Identification of public roads to be utilised by construction traffic.</td>
<td>Pre-construction</td>
<td>Chapter 5</td>
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<td>- Management measures so that construction traffic utilise the identified roads.</td>
<td>Pre-construction</td>
<td>Chapter 5</td>
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<td>- Identification of any public roads that may be partially or completely closed during the construction phase and the relevant expected timings and duration of closures.</td>
<td>Pre-construction</td>
<td>Chapter 5</td>
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<td>- Identification of sources of major construction materials and routes for their delivery to site.</td>
<td>Pre-construction</td>
<td>Chapter 5</td>
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<td>- Temporary access and traffic arrangements to be implemented during construction.</td>
<td>Pre-construction / Construction</td>
<td>Chapter 5</td>
</tr>
<tr>
<td></td>
<td>- Access arrangements to construction sites and compounds and measures to prevent construction traffic from obstructing traffic flow inadvertently.</td>
<td>Pre-construction / Construction</td>
<td>Chapter 5</td>
</tr>
<tr>
<td></td>
<td>- Parking for construction workers.</td>
<td>Pre-construction / Construction</td>
<td>Chapter 5</td>
</tr>
<tr>
<td></td>
<td>- A response plan for any construction traffic incident.</td>
<td>Pre-construction</td>
<td>Chapter 8</td>
</tr>
<tr>
<td></td>
<td>- Monitoring, review and amendment mechanisms.</td>
<td>Pre-construction / Construction</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>T2</td>
<td>Traffic Control Plans will be developed and implemented for specific areas and/or phases of construction. These will be prepared in accordance with relevant guidelines and by appropriately qualified personnel.</td>
<td>Pre-construction / Construction</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>T3</td>
<td>Traffic control schemes will be inspected regularly and modified if required.</td>
<td>Construction</td>
<td>Section 9.3 &amp; 10.1</td>
</tr>
<tr>
<td>T4</td>
<td>Drivers and construction workers will be inducted in the requirements of the traffic management plan.</td>
<td>Pre-construction / Construction</td>
<td>Section 1.4</td>
</tr>
<tr>
<td>T5</td>
<td>Deliveries and other major construction traffic movements will be timed to occur outside peak traffic periods, where possible.</td>
<td>Construction</td>
<td>Section 1.2 &amp; 5.1.8</td>
</tr>
<tr>
<td>T6</td>
<td>Queuing on public roads will be avoided by the use of two-way radios to call up haulage trucks from layover areas on a ‘just in time’ basis.</td>
<td>Construction</td>
<td>Section 1.2 &amp; 5.1.8</td>
</tr>
<tr>
<td>T7</td>
<td>Dilapidation surveys of roads around the project site will be undertaken prior to their use for construction as well as after construction is complete. Any damage to roads will be repaired.</td>
<td>Pre-construction / Construction</td>
<td>Section 9.2</td>
</tr>
<tr>
<td>T8</td>
<td>Consultation will be undertaken with the emergency services, bus operators, local business and other major stakeholders to inform them on changes in traffic management during construction.</td>
<td>Pre-construction / Construction</td>
<td>Section 9.2</td>
</tr>
<tr>
<td>T9</td>
<td>Construction related parking in local areas will be in accordance with the relevant parking restrictions. Opportunities to limit the impact this may have on the community will be investigated in consultation with the Hawkesbury City Council.</td>
<td>Pre-construction / Construction</td>
<td>Section 5.6</td>
</tr>
<tr>
<td>Ref #</td>
<td>Commitment</td>
<td>Timing</td>
<td>CTMP Reference</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>T10</td>
<td>Environmental management measures may include introducing a temporary navigational speed limit (4 knots or below) within the construction zone and/or introducing a temporary no wash zone. Exclusion zones around marine construction sites will be required, however at all stages passage up and downstream would be provided to watercraft. Other RMS maritime requirements will be complied with.</td>
<td>Construction</td>
<td>Section 5.8</td>
</tr>
<tr>
<td>T11</td>
<td>Maritime operations will be undertaken so that impacts are minimised.</td>
<td>Pre-construction / Construction</td>
<td>Section 5.8</td>
</tr>
<tr>
<td>T12</td>
<td>Operational traffic levels and delays will be monitored. When delays due to traffic growth become unacceptable reconfiguration of the lanes on the bridge and approach roads from the initial two lane configuration to two southbound and one northbound lane will be undertaken.</td>
<td>Prior to contract award.</td>
<td>Not applicable - addressed during the detailed design stage of the project.</td>
</tr>
</tbody>
</table>
4 Construction Traffic Impacts

Potential traffic impacts from the construction of the Project were assessed in the EA. The EA identified that the Project would cause disruption to traffic using the existing local access road network. Construction will require construction vehicles travelling to, from, and within the project area. The construction traffic movements to/from the work sites would have the potential to impact the efficient movement and safety of other road users.

Additional traffic demand would be generated by:

- Construction workers travelling to and from worksites.
- The delivery of heavy vehicles and machinery, and other equipment required for construction.
- The delivery of construction materials including concrete, steel, aggregates and imported fill, as well as pre-fabricated structural elements.
- The movement of spoil generated by earthworks, including the movement of materials within the site, transferral to stockpile sites and/or removal from the project site.

4.1.1 Impacts to Existing Road Network

Table 5 in Section 5.1.10 lists the estimated truck volumes throughout the life of the project. The average daily truck movements for the project is estimated to be 16.4. Given that the estimated daily vehicle movements on Bridge St alone are 19,000 (as listed in section 7.3.2 of the EIS), this increase in traffic due to construction will have a negligible impact on the road network.

Austroads defines the Levels of Service as per Table 3 below:

Table 3 Austroads Level of Service

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Delay per Vehicle (sec/veh)</th>
<th>Traffic signals and roundabouts</th>
<th>Give way and stop signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Less than 15</td>
<td>Good operation</td>
<td>Good operation</td>
</tr>
<tr>
<td>B</td>
<td>15 to 28</td>
<td>Good with acceptable delays and spare capacity</td>
<td>Good with acceptable delays and spare capacity</td>
</tr>
<tr>
<td>C</td>
<td>29 to 42</td>
<td>Satisfactory</td>
<td>Satisfactory but accident study required</td>
</tr>
<tr>
<td>D</td>
<td>43 to 56</td>
<td>Operating near capacity</td>
<td>Near capacity and accident study required</td>
</tr>
<tr>
<td>E</td>
<td>57 to 70</td>
<td>At capacity; at signals incidents will cause delays. Roundabouts require other control mode</td>
<td>At capacity, requires other control mode</td>
</tr>
<tr>
<td>F</td>
<td>Over 70</td>
<td>Extra capacity required</td>
<td>Extreme delay, traffic signal or other major treatment required</td>
</tr>
</tbody>
</table>

Windsor Bridge Replacement Project
Construction Traffic Management Sub Plan

14
4.1.2 Bridge Street/Macquarie Street Intersection

The EIS measured the following Level of Service for the Bridge St/Macquarie St intersection:

- Control: Signals
- Estimated Average Daily Truck Movements Through the Intersection Related to the Works (See Table 5 in Section 5.1.10): 8.2
- AM Peak:
  - Level of Service for Worst Movement: D
  - Average Delay per Vehicle (seconds): 45.2
- PM Peak:
  - Level of Service for Worst Movement: D
  - Average Delay per Vehicle (seconds): 45.8

Based on the current levels of service, there will not be an impact on the level of service, as the average daily truck movements through the intersection equate to 0.04% of the total vehicle movements through the intersection. In addition to this, the majority of these movements will occur during off-peak periods. By definition, this intersection has been categorised has having some spare capacity, based on the Austroads definitions listed in Table 3, thus, the works are not likely to alter the rating.

4.1.3 Bridge Street/George Street Intersection

The EIS measured the following Level of Service for the Bridge St/Macquarie St intersection:

- Control: Roundabout
- Estimated Average Daily Truck Movements Through the Intersection Related to the Works (See Table 5 in Section 5.1.10): 16.4
- AM Peak:
  - Level of Service for Worst Movement: B
  - Average Delay per Vehicle (seconds): 20
- PM Peak:
  - Level of Service for Worst Movement: B
  - Average Delay per Vehicle (seconds): 27.4

Based on the current levels of service, there will not be a discernible impact on the level of service, as the average daily truck movements through the intersection equate to 0.09% of the total vehicle movements through the intersection. In addition to this, the majority of these movements will occur during off-peak periods. By definition, this intersection has been categorised has having some spare capacity, based on the Austroads definitions listed in Table 3, thus, the works are not likely to alter the rating.

4.1.4 Wilberforce Rd/Bridge St/Freemans Reach Rd

The EIS measured the following Level of Service for the Bridge St/Macquarie St intersection:

- Control: Give Way
- Estimated Average Daily Truck Movements Through the Intersection Related to the Works (See Table 5 in Section 5.1.10): 16.4
- AM Peak:
  - Level of Service for Worst Movement: F
  - Average Delay per Vehicle (seconds): >100
- PM Peak:
  - Level of Service for Worst Movement: F
  - Average Delay per Vehicle (seconds): >100

Based on the current levels of service, there will not be a discernible impact on the level of service, as the average daily truck movements through the intersection equate to 0.13% of the
total vehicle movements through the intersection. In addition to this, the majority of these movements will occur during off-peak periods. The level of service through the Wilberforce Rd/Bridge St/ Freemans Reach Rd is already categorised as F. This project aims to rectify this. The capacity of the intersection will be affected during stage 4 and 5 as Freemans Reach Rd is rebuilt. However, the level of service category will not be adversely affected.

4.1.5 Local Roads

The overall impact of construction is anticipated to be minor, as construction would generally be undertaken clear of existing traffic. The arrival and departure pattern of the construction workforce will occur earlier than the normal peak traffic periods minimising the impact on local roads and their users.

Delays for traffic using Bridge Street, George Street, Wilberforce Road and Freemans Reach Road would be expected during the construction phase in those off peak periods when reduced speed limits are in place and when manual traffic control is in operation to facilitate the movement of construction vehicles into and out of work sites. There would also be delays during periods when the existing sections of road are being tied in with the newly constructed sections of road; however these would be scheduled to occur outside of peak hours.

4.1.6 Cyclists and Pedestrians

No specific on-road facilities are currently provided for cyclists within the road network impacted by the project except for the shared path on the existing bridge. Cyclists currently travel in amongst general traffic and would, therefore, be subjected to the same minor delays as general traffic.

Generally, pedestrian access will be maintained throughout the works. There will be some disruptions to pedestrian routes, as the works involves the reconstruction and reconfiguring of existing footpaths and adjacent kerbs. Pedestrian Movement Plans (PMPs) for the main sections of work have been provided in Appendix I. These plans shown the main pedestrian routes anticipated to be used during the construction. Detailed plans for smaller portions of the work will be developed as the works progress and will be available for information only upon request.

There will be no general pedestrian access to Windsor wharf during stages 1 and 2 as the area will be a heavy construction zone and/or heavy vehicle access route. Controlled pedestrian access to the wharf for the Paddle Steamer Operator’s tours will be managed in agreement with the Paddle Steamer Operator. General pedestrian access to the wharf will be returned in stage 3 via The Terrace.

Pedestrian access will always be maintained across the existing bridge until the shared path on the new bridge is opened. However, it will be necessary at various times to close pedestrian access routes to Macquarie Park via the new bridge to allow for the construction of the landscaped areas and the demolition of the existing bridge. One example of this will be the construction of the new shared path leading into the park across the existing road. Where a dedicated pathway that is either existing or new cannot be maintained from the new bridge to the park, a delineated walkway will be established on an alternate route to maintain pedestrian access. This walkway will be separated from the work site.

Works on the southern side of the river will require pedestrian routes to be closed. As there is redundancy in the footpath network on the southern side of the river, there will always be an alternate route for pedestrians, though route distance may increase.

As the works progress, pedestrian detours will be implemented where the works require an existing route to be closed. The works will be timed to so as to minimise the closure of a route.
The footpaths on Bridge and George Streets will be reconstructed so that at least one footpath on one side of each street is available for use.

### 4.1.7 Public Transport

No major route deviations required for bus services during construction, however bus services will be subject to the same delays as general traffic.

### 4.1.8 Parking

Parking for construction workers would be provided within the nominated construction compounds where possible, with only limited parking provided on the southern bank and a larger parking area on the northern bank. Aside from workers accessing shops, there is to be no parking in the Windsor town centre and surrounding roads for construction workers. This is further detailed in section 5.6 of this CTMP.

### 4.1.9 Property Access

Access to properties and local roads will be maintained throughout the construction of the project, although interruptions to access will be required at various times. Any such interruptions would be for short periods and by agreement with the effected property owners and / or relevant agencies. This is further detailed in section 5.5 of this CTMP.

### 4.1.10 Impacts on Maritime Operations

The following impacts on maritime operations could potentially arise during construction:

- Manoeuvring of vessels to dock at Windsor Wharf – the footprint of the construction zone could potentially impact on manoeuvrability during docking.
- Straight line navigation between the series of piers supporting the existing and new bridges – this is particularly relevant for rowing vessels, which have limited capacity to change course suddenly; high-speed watercraft such as jet skis; and vessels with a high navigational position, which have reduced lines of sight at more acute angles of incidence.
- U-turning of vessels – vessels approaching the bridges from both sides would be required to U-turn further upstream (if approaching from the Richmond side) or further downstream (if approaching from the Sackville side) to accommodate demolition of the existing bridge and construction of the replacement bridge. Water-based construction activities would not impact upon the operation of Windsor Wharf.

Management of these impacts is detailed in section 5.8 of this CTMP.
5 Traffic management

5.1 Construction stage traffic management

The construction of the project will be managed to minimise disruption to traffic using the existing local access road network. Risks associated with traffic management during construction are typically managed by ensuring that no activity commences on site that has an effect on traffic (including pedestrians and cyclists) without an approved Road Occupancy Licence (ROL). In addition, it shall be ensured that all work on site occurs in accordance with the relevant Traffic Management Sub Plan, Traffic Control Plan (TCP) and associated ROL. Safeguards in place at work sites typically include barriers, signage, beacons and traffic controllers.

5.1.1 General

The site is broken into two geographically distinct sections: the northern side of the river and the southern side of the river. Some elements of the management of traffic throughout the works are common to all stages:

Spoil

There is a surplus of material for the earthworks. During the works, it will be necessary to stockpile material for later re-use. The stockpile areas will be located on the northern side of the river in the site compound and across the road in RMS leased land. When works are occurring on the southern side of the river, surplus material generated will be loaded in road trucks (most likely bogies) and hauled across the existing or new bridge (depending on the stage) and stockpiled in the designated stockpile areas. Where there is limited access in and out of the site, traffic control will be used to manage the entry and exit of trucks into the site. This will lead to intermittent disruptions to the level of service along Bridge St however is unlikely to cause queuing.

Disposal of Surplus Material Off Site

Excess spoil will be removed from site from the stockpile areas on the northern side of the river. Anticipated truck movements will be 6 movements per hour. These movements will use the construction gates and as such will have negligible impacts on the traffic network and level of service.

Concrete Deliveries

Concrete agitators will be used to deliver concrete to the works on both sides of the river. Because the works on the northern side of the river occur within the confines of the site, there will be a negligible impact on the traffic network and levels of service. On the southern side of the intersection, it may be necessary to have the agitators enter and leave the site with traffic control. This may cause intermittent slowing of the flow of traffic however, agitator movements will not exceed 5 trucks per hour on pour days. Thus, the impact to the traffic network will be negligible.

5.1.2 Change in Impacts in Staging

The changes to the staging presented in this revision of the plan have the following impacts as detailed in table 4 below:
Table 4 Impacts of Staging Changes in this Revision

<table>
<thead>
<tr>
<th>Change</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition of stages 2B and 2C on the southern side of the river.</td>
<td>The addition of these stages means that a large portion of the archaeological salvage and roadworks in George St East can now be undertaken during the day, thereby reducing the impact to nearby receivers. Previously, these works would have been carried out in stage 4B at night.</td>
</tr>
<tr>
<td>Removal of temporary traffic signals at George St/Bridge St intersection.</td>
<td>The removal of the need for temporary traffic signals increases travelling lane width and removes confusing traffic switches from the staging. This also eliminates a large amount of temporary works. There is also a reduction in the number of night shifts required to undertake the works as a result of these changes.</td>
</tr>
<tr>
<td>Introduction of detour for Freemans Reach Rd roadworks.</td>
<td>The introduction of this detour allows all the work to be completed during the day. Previously, as there is not enough width of the carriageway on Freemans Reach Rd, it would have been necessary to undertake the work at night so that traffic could be managed with traffic controllers, as the proximity of the traffic to the work face would not have complied with the TCAWS.</td>
</tr>
<tr>
<td>Introduction of Stage 1B and 1C on the northern side of the river.</td>
<td>Reduces the construction period and therefore disruption to the public on Wilberforce Rd between CH 150 and 291.</td>
</tr>
</tbody>
</table>

5.1.3 Construction Staging – Southern Side of the River

This section provides an overview of the proposed work stages to be undertaken. Further detail is then provided within the staging plans located in Appendix D of this document. Note that stage 1 on the southern side of the river is already complete and not addressed in this revision of the plan.

Stage 2:

Estimated Stage Duration: 8 Months
Estimated Truck Movements During Stage: 1900
Estimated Average Daily Truck Movements During Stage: 10

During this stage, abutment A, the western and eastern retaining walls will be constructed. The roadworks will be completed on The Terrace and in the adjacent carpark, including all the necessary utility relocations and installations.

Upon completion of the scour protection, vehicular access to the Windsor Wharf will be closed, with the exception of vehicular access for the Paddle Steamer Operator, with whom special arrangements have been made. There will be no vehicular access to the top carpark above the wharf.
Pedestrians will gain access to the wharf via the Terrace along the alignment of the existing footpath. Temporary fencing will separate pedestrians from the work site. Pedestrians will access the top car park using the same route as the wharf.

Construction access to the work site will be via a temporary gate installed on the Terrace off Bridge St. This gate will be left in, left out. Access will also be used as necessary from the southern end of Lower Thompson Square adjacent to No 4 Old Bridge St.

**Stage 2B:**

Estimated Stage Duration: 1 Month  
Estimated Truck Movements During Stage: 100  
Estimated Average Daily Truck Movements During Stage: 5

This stage of works will occur concurrently with the construction of the bridge works in lower Thompson Square. During this stage, the archaeological salvage and pavement works will occur on the northern half of the road in George St east. Concrete barriers will be installed to separate the work site from the traffic. The pavement will be removed and the archaeological works will be completed. After this, services will be installed and the pavement will be reinstated.

During these works, there will be no entry into George St east from the roundabout at the intersection of Bridge St and George St. A detour will be implemented via Bridge St, Windsor Rd, Court St and Arndell St. No driveways are impeded by the works. Construction vehicles will enter the worksite from the eastern end of George St.

Left turns from Bridge St into George St, which are currently banned between 4:00pm and 6:00pm, will be permitted at all times to facilitate the detour. Traffic flow through the roundabout will be monitored to during the works whilst this ban is lifted. If the traffic flow is impeded up to and over the bridge the left turn ban will be reinstated and the detour route will be altered to suit this.

Prior to the change in traffic conditions, Variable Message Sign Boards (VMS) will be installed on Bridge St to the south of Macquarie St, Macquarie St to the west of Bridge St and on Wilberforce Rd to the north of the existing bridge. These VMS will be installed one week prior to the change. Plans for the proposed detour route can be seen in Appendix J.

**Stage 2C:**

Estimated Stage Duration: 1 Month  
Estimated Truck Movements During Stage: 100  
Estimated Average Daily Truck Movements During Stage: 5

This stage of works will occur concurrently with the construction of the bridge works in lower Thompson Square. Upon completion of stage 2B, the traffic will be switched so that archaeological salvage and pavement works can occur on the southern half of the road in George St east. The pavement will be removed and the archaeological works will be completed. After this, services will be installed and the pavement will be reinstated.

During these works, there will be no exit from George St east into the roundabout at the intersection of Bridge St and George St. A detour will be implemented via Arndell St, Court St, Windsor Rd and Bridge St. No driveways are impeded by the works. Construction vehicles will enter the worksite from the eastern end of George St.
Prior to the change in traffic conditions, Variable Message Sign Boards (VMS) will be installed on Bridge St to the south of Macquarie St, Macquarie St to the west of Bridge St and on Wilberforce Rd to the north of the existing bridge. These VMSs will be installed one week prior to the change. Plans for the proposed detour route can be seen in Appendix J.

**Stage 2D (Not Drawn):**

Estimated Stage Duration: 2 Weeks  
Estimated Truck Movements During Stage: 50  
Estimated Average Daily Truck Movements During Stage: 5

This stage of works will occur concurrently with the construction of the bridge works in lower Thompson Square. Once the archaeological works are completed on George St east, the barriers will be removed. Temporary pavement will be constructed in the north-west corner of the intersection to allow extra trafficable area through the intersection to suit the works. These works will be undertaken at night under traffic control.

Once the temporary pavement is constructed, the existing concrete roundabout and paved medians on Bridge St and George St will be removed and the area in-filled with temporary pavement. The roundabout will be moved to the west in the intersection, utilising the temporary pavement previously constructed, to suit the works in stage 3. These works will also be conducted at night under traffic control. Turn movements for vehicles over 8.8m will be banned with the new roundabout.

Pedestrian movements will not be affected by the works in this stage.

**Stage 3**

Estimated Stage Duration: 9 Months  
Estimated Truck Movements During Stage: 1700  
Estimated Average Daily Truck Movements During Stage: 8

With the roundabout relocated to the west in the intersection of Bridge and George Streets, barriers will be installed along Bridge St from approximate MCB0 CH 100 to 160 on the eastern side of the road. This will allow archaeological salvage and construction of the works on the southbound carriageway of Bridge St between MCB0 CH 100 and the new bridge.

Works to construct the new bridge structure will continue from stage 2, including the abutments and superstructure. There will also be construction of the Terrace and wharf carpark.

During this period, vehicular access to the drive ways of number 4 and number 6 Old Bridge St will be maintained. However, there will a number of periods during the works when the driveways will not be able to be used as the works will directly affect the driveways. Examples of such works are utilities installations, kerb construction and the reconstruction of new concrete driveways. During these periods, residents will be required to park in public street parking in the surrounding area. Vehicles will access the two driveways and the work site via a left-in-left-out gate off the south bound lane of Bridge St. This gate will be moved between CH 100 and 140 as necessary to suit the works. The occupants of the properties will be consulted prior to the works being carried out with the aim of finding a mutually suitable construction period.

During this stage, the new footpath on the eastern side of Bridge St will also be reconstructed. As there will be no public access to the wharf from Bridge St during this stage, the footpath will be closed to the public, with the exception of the residents of 4, 6 and 10 Bridge St. Where
unimpeded access cannot be maintained due to the works being completed at that time, this residential pedestrian traffic will be managed by traffic controllers or spotters.

The new kerb and works behind the new kerb will be constructed on the eastern side of Bridge St between Macquarie St and George St. These works include utility works, kerbing and landscaping. The works will occur either behind barriers or under traffic control where barriers cannot be used. During these works, a pedestrian detour will be implemented such that pedestrian access is maintained to 14 Bridge St. The works also involve the reconstruction of the driveway to 1/52 George St and 20 Bridge St. During this period, this driveway will not be usable. The resident will be required to park using street parking in the surrounding area.

**Stage 4**

Estimated Stage Duration: 5 Months
Estimated Truck Movements During Stage: 900
Estimated Average Daily Truck Movements During Stage: 8

Traffic will be switched onto the new bridge during a weekend closure of the existing Windsor Bridge. Pavement tie in works will be undertaken during this weekend at the interface of the new pavement and the existing pavement at MCB0 CH 100.

The roundabout within the Bridge St-George St intersection will be relocated to the east of the intersection. The barriers on Bridge St will be relocated to the western side of the road to allow construction of the new pavement and works behind the kerb between MCB0 40 and 180. The traffic will be travelling in the south bound carriageway of the final road alignment.

Construction traffic will enter and exit the site in a left-in-left-out manner. As the works progress, the barriers will be removed, which will create a wider shoulder. This shoulder will be closed with barrier boards or similar.

Pedestrians wanting to travel from the northern side of the river will not cross the new bridge and descend to The Terrace via the newly constructed stairs to the west of abutment A. Pedestrians will then walk along the Terrace and use the newly constructed stairs on the east of the Eastern Retaining Wall and then walk along the newly constructed footpath on the eastern side of Bridge St.

During the works to the south-western corner of the Bridge St/George St intersection, the footpath will be closed. A pedestrian detour will be implemented on the eastern side of George St to get to Bridge St and via Macquarie and Baker Streets to access George St.

**Stage 5A:**

Estimated Stage Duration: 2 Months
Estimated Truck Movements During Stage: 300
Estimated Average Daily Truck Movements During Stage: 6

Upon completion of the north bound carriageway, the barriers will be removed and the roundabout will be returned to its original position in the intersection. Traffic will be switched such that there is one lane in the northbound carriageway and one in the left hand lane of the south bound carriageway.
Once the traffic has been adjusted, the median islands and pavement finishing works will be completed. Landscaping behind the kerb will be also be completed on the western side of Bridge St and in Thompson Square.

**Stage 5B (Not Drawn):**

Estimated Stage Duration: 3 Months  
Estimated Truck Movements During Stage: 400  
Estimated Average Daily Truck Movements During Stage: 6

Once all works are complete and the pavement is ready for wearing course, the traffic signals at the Bridge St/George St intersection will be commissioned and the temporary roundabout will be removed.

The Terrace will also be reconstructed between CH 0 and CH 70, following the demolition of the existing bridge. Final landscaping in the area will be completed. Construction vehicles entering the area will use The Terrace to the west of the limit of works.

During this stage, the final wearing course, line marking and signage will be completed. Where necessary, these works will occur at night under traffic control.

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**5.1.4 Construction Staging – Northern Side of the River**

This section provides an overview of the proposed work stages to be undertaken. Further detail is then provided within the staging plans located in Appendix D of this document.

**Stage 1 (Not Drawn):**

Estimated Stage Duration: 8 Months  
Estimated Truck Movements During Stage: 3000  
Estimated Average Daily Truck Movements During Stage: 18

During this stage Freemans Reach Road and Macquarie Park Access would remain unaffected by Construction works. All existing pedestrian footpaths will also be unaffected.

During the construction of the structural works, there will be a number of truck movements. These movements will include concrete agitators, reinforcement deliveries, construction plant floats and bogie trucks hauling spoil. There will be some traffic control required to manage truck movements where access is restricted. This may have an impact on the level of service through the intersection of Bridge and George Streets, however this will only be intermittent, as the truck movements will most likely not exceed five per hour. During this time, scour protection works on the south side of the river bank will be completed. It is estimated that there will be approximately 3,000 truck movements during this stage.

Scour protection works on the northern side of the river bank and required ground improvement works adjacent to Abutment B will not have any direct impacts on local traffic. These works will be carried out within the site boundaries away from Wilberforce Road.

Piling and pier works to be completed within the Hawkesbury River for the replacement bridge construction, Refer to Maritime Traffic Management in section 5.8 of this plan for implementation during the relevant stages.
The bridge casting bay and launch area will be set up in the northern site compound area and bridge superstructure construction carried out from this side. The construction of piles and piers will have an effect on the operation of water craft along the Hawkesbury River. Marine Traffic Management is further explained in section 5.8.

PMPs for the southern side of the river are contained in Appendix I.

**Stage 1B:**

Estimated Stage Duration: 2 Months  
Estimated Truck Movements During Stage: 200  
Estimated Average Daily Truck Movements During Stage: 5

In addition to the ongoing works from stage 1, the following works will also occur:

The shoulder widening on the southern side of Wilberforce Rd between MCW0 CH 150 and 290 will be constructed. The traffic will shifted to the northern side of the existing pavement. Temporary barriers will be installed along roadway and existing line marking removed and replaced with a new configuration. All accesses to existing properties will be maintained through breaks in the barriers. The breaks will be left-in-left-out only.

The current cycle lane in the southern shoulder will be closed during the works. Cyclists must use the traffic lane in accordance with the NSW road rules.

**Stage 1C:**

Estimated Stage Duration: 2 Months  
Estimated Truck Movements During Stage: 200  
Estimated Average Daily Truck Movements During Stage: 5

Following the works from Stage 1B, the works from Stage 1 will continue. In addition, during this stage the shoulder widening on the northern side of Wilberforce Rd between MCW0 CH 100 and 290 will be constructed. The traffic will shifted to the southern side of the road. Temporary shoulder pavement will be constructed in areas as required. All accesses to existing properties will be maintained. Temporary barriers will be installed along roadway and existing line marking removed and replaced with a new configuration.

**Stage 2:**

Estimated Stage Duration: 4 Months  
Estimated Truck Movements During Stage: 1500  
Estimated Average Daily Truck Movements During Stage: 17

During this stage, the bridge cast yard will be decommissioned and the roadworks commenced. This work will occur from within the site compound. Fill material will be transported from the ancillary stockpile area on the northern side of Wilberforce Rd into the compound. Temporary fencing will be erected along the edge of Wilberforce Rd between the existing bridge and the site compound entrance as the works progress to allow road construction to move towards Wilberforce Rd. The line marking on Wilberforce Rd will be re marked to move traffic to the north of the bend and away from the work site, however there will not be any change to traffic flow. The pavement will also be constructed from the roundabout up to approximate MCW0 CH 150. Barriers will be utilised where necessary as the works encroach towards the live traffic.
**Stage 3:**

There are no works during this stage on the northern side of the river.

**Stage 4:**

**Stage 4A – Weekend Closure (Not Drawn):**

In order to switch traffic to the new bridge and tie-in the pavement at Macquarie Park Access, it is necessary to close the existing bridge and implement a detour. The detour is via Macquarie St, Hawkesbury Valley Way, Bells Line of Road, Terrace Rd, Kurmond Rd, Putty Rd and Wilberforce Rd. VMS boards will be erected one week prior to the closure to inform the public of the closure.

During the closure, a temporary pavement will be constructed to provide access to Macquarie Park from the new roundabout.

No pedestrians will be able to use the area during the closure.

**Stage 4B:**

Estimated Stage Duration: 1 Month  
Estimated Truck Movements During Stage: 160  
Estimated Average Daily Truck Movements During Stage: 8

Traffic will now be using the new bridge and roundabout. Freemans Reach Rd will be closed and a detour will be implemented via Wilberforce Rd, Putty Rd, Kurmond Rd, Gorricks Ln and Freemans Reach Rd. This will allow the reconstruction of Freemans Reach Rd from the tie-in to the roundabout to the limit of works. The works include a full depth pavement reconstruction, widening and utility works.

In addition to this, the pavement construction will also continue on Wilberforce Rd between MCW0 CH 60 and 150 on the northern carriageway. Barriers will be erected to separate the worksite from the traffic and the line marking will be reconfigured to suit.

This stage will include the northern half of the reconstruction of the Macquarie Park Access road. These works will be undertaken with traffic control as the width of the road does not permit the use of concrete barriers. Any queuing required for north bound traffic will be in the dedicated left turn lane into Macquarie Park. Any queuing required for south bound traffic will be in the right hand lane at the Wilberforce Rd end of the roundabout.

This stage will include the southern half of the reconstruction of the Macquarie Park Access road. These works will be undertaken with traffic control as the width of the road does not permit the use of concrete barriers. Any queuing required for north bound traffic will be in the dedicated left turn lane into Macquarie Park. Any queuing required for south bound traffic will be in the right hand lane at the Wilberforce Rd end of the roundabout.

The demolition of the existing bridge will also commence. The demolition will utilise the existing pavement area between the existing bridge and Macquarie Park Access. A construction gate will be established in this area.

Pedestrians will be able to access Macquarie Park using the new bridge and new footpaths. There will be no other access routes during this stage.
**Stage 4C:**

Estimated Stage Duration: 2 Months  
Estimated Truck Movements During Stage: 400  
Estimated Average Daily Truck Movements During Stage: 8

Traffic will be switched on Wilberforce Rd between MCW0 CH 0 and 290 to split the traffic to allow the completion of the pavement and median islands. This work will be managed with traffic control. The line marking will be reconfigured to suit.

This stage will include the southern half of the reconstruction of the Macquarie Park Access road. These works will be undertaken with traffic control as the width of the road does not permit the use of concrete barriers. Any queuing required for north bound traffic will be in the dedicated left turn lane into Macquarie Park. Any queuing required for south bound traffic will be in the right hand lane at the Wilberforce Rd end of the roundabout.

The demolition of the existing bridge will also continue. The demolition will utilise the existing pavement area between the existing bridge and Macquarie Park Access. A construction gate will be established in this area.

Pedestrians will be able to access Macquarie Park using the new bridge and new footpaths. There will be no other access routes during this stage.

**Stage 5 (Not Drawn):**

Estimated Stage Duration: 6 Months  
Estimated Truck Movements During Stage: 850  
Estimated Average Daily Truck Movements During Stage: 6

Landscaping works will be completed in this stage behind the kerb. Pavement finishing works such as median islands and kerbs will also be completed in this stage.

Once all works are complete, the asphalt wearing course will be laid, the surface line marked and signage installed. These works will be managed with traffic control.

Pedestrians will be able to utilise the final shared path alignments.

5.1.5 **Minimising road user delay**

The delay minimisation strategies to be applied by Georgiou will include:

- Minimising the impacts of each work area.
- Maintaining access to all adjacent properties.
- Georgiou acknowledges there are various measures which can be applied to minimise road user delays and these are generally divided into four categories:
  - Design
  - Isolation of work areas
  - Work methods
  - Planning of lane closure / road occupancies.

Where practical, Georgiou will apply the measures below via the Traffic Manager:

- Ensure road user delays are given consideration during the planning of construction activities.
• Isolate work areas from traffic flows (e.g. using lane deviations / widenings and temporary safety barriers).
• Develop alternative work methods to minimise impact (e.g. utilise more efficient plant / equipment, time of day applications).
• Plan all lane closures / road occupancies with the aim to:
  • Minimise the actual work area.
  • Limit obstructions and restrictions.
  • Maximise the road’s capacity.
  • Avoid peak traffic flow periods.
• Provide road users with changed traffic condition information to enable them to plan their journey and avoid the roadworks.

Where a temporary roadway or a detour is not provided or available, then subject to the approval by Roads and Maritime, construction under or adjacent to traffic may be permitted provided that at least one 3.0 m lane remains open to traffic on a two lane roadway.

Despite the importance of minimising road user delays, Georgiou will not pursue the minimisation of delays to the extent that it will compromise the safety of workers or road users.

5.1.6 Construction site traffic management

The effective management of project construction vehicle movements on site and throughout the road network is critical to the success of the project. Georgiou will plan all project vehicle movements with the aim of minimising the risk to other road users and keeping the traffic generated by the project to a minimum. The types of construction vehicle movements may include:

• Deliveries of materials, supplies, plant or equipment to site
• Deliveries of water
• Regular trips by project personnel in work trucks and utes.
• Georgiou acknowledges attention must be given to the safe movement of construction vehicles when planning the construction works.

When planning project vehicle movements for each stage of work, Georgiou will:
• Comply with all relevant environmental conditions of approval and statement of commitment.
• Conduct a risk assessment to identify specific hazards and facilitate the application of mitigation measures.
• Promote safe driving principles.
• Analyse, assess and mitigate the impact of the traffic generated by the project works.
• Prepare VMPs for project vehicle movements, whether on-site or on-road, and ensure the routes are communicated to all project personnel.
• Minimise the number of access points.
• Evaluate the need for temporary traffic control and / or major traffic controls to separate conflicts.
• Implement appropriate environmental controls.
• Design and implement safe access points.
• Provide an efficient and well maintained vehicle fleet.
• Determine the most appropriate hours of operation which will minimise the impact on the road network and local communities.

The VMP may be combined with or superimposed on a TCP and a written document or drawing. The hours of operation for the movement of project vehicles will be in accordance with the approved operating hours and in accordance with the environmental approvals. The risk assessment conducted as part of the project safety risk assessment and / or VMP will
identify specific locations where traffic controls are required to mitigate a particular hazardous movement. The type of temporary traffic controls to be installed by the project may include:

- Warning signs in advance of access points.
- Reduced speed zones on the approaches to access points and turning locations.
- Traffic controllers at access points to facilitate entry and exit movements.
- Road shoulder closures to provide deceleration and acceleration lanes.

A TCP will also be developed for all sign posting schemes, which may be a separate plan or incorporated within the VMP.

### 5.1.7 Maintaining access for buses

If required, Georgiou will maintain or provide alternative bus pick up and drop off locations (dependent on construction staging) and ensure also that all traffic staging can adequately cater for bus turning movements. Bus companies are to be kept informed of construction activities which may affect their bus routes (see Section 9.2).

During construction works, there will be no requirement to relocate or treat existing bus stops within the construction zone as there are no bus stops within that zone. There are bus stops on Windsor Road and Wilberforce Road which are outside of the works zone. The following are bus routes operated by Busways – Western Sydney Region in Windsor near the worksite or through the worksite:

- **668 Service** – Windsor to Richmond via Wilberforce, Glossodia and North Richmond. This bus travels north onto the existing Windsor Bridge to Wilberforce Road and heads east along this road
- **661 service** – Windsor to Riverstone via McGraths Hill. This bus travels south on Bridge Street/ Windsor Road. This bus does not travel over existing Windsor Bridge
- **663 service** – Windsor to Pitt Town and Wisemans Ferry via McGraths Hill. This bus travels south on Bridge Street/ Windsor Road. This bus does not travel over existing Windsor Bridge

Bus companies will be advised of works and traffic staging prior to implementation of each stage. Particular consultation will be made with bus companies for the weekend closure of the existing Windsor Bridge and the detours which will be implemented.
5.1.8 Maintaining access for heavy vehicles

To facilitate the movement of heavy vehicles, Georgiou will:

- Give consideration to the movement of heavy vehicles and over-dimensional loads when preparing TCPs (adopting designs which provide a minimum lane width of 3.5 metres and can accommodate the turning movements of a 26 metre long B-double heavy vehicle).
- Limit obstructions and restrictions within the road reserve, and when required, provide alternatives to maintain access for transport operators including over-dimensional load movements.
- Liaise with the police, permit authority and operators, as well as provide up-to-date information of any obstructions (specify minimum dimensions) which may impact on the movement of over-dimensional vehicles.
- When traffic control operations are in place, traffic controllers will effectively coordinate the movement of over-dimensional vehicles through the work site.
- Assist the Special Permits Unit and over-dimensional operators by notifying the relevant authority of any obstructions which may impact on over-dimensional vehicle movements.
- Where possible, time heavy vehicle deliveries and other major construction traffic movements to occur outside peak traffic periods.
- Avoid queuing on public roads, and mandate the use of two-way radios to call up haulage and delivery vehicles from layover areas on a ‘just in time’ basis.

5.1.9 Site compound traffic management

The main site compound access is proposed to be located in the northern project area on the southern side of Wilberforce Road, east of Freemans Reach Road, as shown in Figure 5-2. It is envisaged that the majority of vehicle movements to and from the site compound would use the following routes:

- Entry – from Windsor > north on Bridge Street > over Windsor Bridge > continue on Wilberforce Road > right turn into site compound at dedicated right turn bay.
• Exit – left turn from site compound > west on Wilberforce Road > continue on Bridge Street > over Windsor Bridge.

Figure 5-2: Location of Northern Site Compound

Access to the site compound will be constructed and maintained to ensure minimal impact on the efficient movement of existing traffic on Wilberforce Road. The access will be designed with a separate right turn bay to allow separation between traffic turning right into the site compound and traffic continuing east on Wilberforce Road.

5.1.10 Construction traffic routes

Construction traffic, for the most part, will use the routes listed in Table 5 below. The estimated construction delivery and haulage movements throughout the life of the project are listed in Table 5 as well.

Table 5 Construction Traffic Truck Movements Through Life of Project

<table>
<thead>
<tr>
<th>Road</th>
<th>Estimated Construction Traffic Truck Movements Throughout the Life of the Project</th>
<th>Average Daily Movements Over Project</th>
<th>Average Total Daily Vehicle Movements Nominated in EIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windsor Road – Bridge St – Wilberforce Rd</td>
<td>6,000</td>
<td>8.2</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Kurmond Rd – Wilberforce Rd</td>
<td>2,000</td>
<td>2.7</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Road</td>
<td>Traffic Volume</td>
<td>Speed Limit</td>
<td>Status</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>Macquarie St – Baker St -</td>
<td>1,000</td>
<td>1.4</td>
<td>Not Listed</td>
</tr>
<tr>
<td>The Terrace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macquarie St – Bridge St –</td>
<td>6,000</td>
<td>8.2</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Wilberforce Rd</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Putty Rd – Wilberforce Rd</td>
<td>8,000</td>
<td>11.1</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

This is dependent on the location of materials suppliers. It is anticipated that the majority of materials will be supplied from the Sydney region.

Traffic will no longer use Old Bridge St to access Windsor Wharf (when permitted), but will instead access through a new temporary road from the existing bridge to The Terrace. A gate will be installed to prevent unauthorised access to the wharf via the temporary road on the Terrace. This gate will be left turn in and left turn out only unless attended by traffic control.

Traffic will be temporarily relocated in stages to complete tie in works and reconstruction of roads where required. These areas will be surveyed for dilapidation prior to works commencing. In addition to this, pavement deflection testing will also be undertaken.

There will be multiple material deliveries made to site throughout the duration of the project. Most of the large deliveries to site will be concrete supply and quarry materials. Concrete batch plants and quarries servicing the Windsor area will provide material deliveries to site via Macquarie Street and Windsor Road as shown in Figure 5-3 below (refer to Appendix C for vehicle movements to and around site).
Vehicle movement plans will be included with purchase orders to ensure drivers are aware of vehicle routes and minimise impact on road users.

5.1.11 Traffic Generated Dust

Construction traffic will use sealed roads when travelling to and from site and consequently will not generate dust. Construction traffic operating within the site may generate dust during earthworks operations. This dust will be suppressed with a water cart which will be on site on a full time basis during earthworks operations.

5.2 Speed management

5.2.1 Applying roadwork speed limits

A speed limit can be varied through the preparation of a Speed Zone Authorisation (SZA) which can only be authorised by Roads and Maritime who has the responsibility for speed zoning throughout NSW. Georgiou acknowledges roadwork speed zones must be logical and credible, as well as enforceable. When considering the use of a roadwork speed zone, the project traffic management team will adopt the following principles:

- Roadwork speed zones must only be used where they are self-enforcing or will be enforced.
- Roadwork speed zones must not be used alone but with other traffic control signs and devices.
- Roadwork speed zones must not be used in place of more effective traffic controls.
- Roadwork speed zones must only be used while roadworks are in progress or a lower standard of road conditions exist.

**5.2.2 Determining the need for the roadwork speed limit**

Roadwork speed limits are only effective in controlling driver behaviour if they appear reasonable to drivers. A reduced roadwork speed limit must only be implemented where it is warranted. In accordance with AS1742.3, Georgiou will apply the following principles when selecting an appropriate speed limit:

- The speed limit applied should not exceed the maximum safe travel speed, when considering the frequency of conflict points, scale of vehicle and pedestrian activity, type and extent of works and the road characteristics.
- The speed limit should not be so low that a significant number of drivers will disregard it.
- Speed limits should encourage uniform travel speeds but be low enough to provide drivers with sufficient time to react to unusual events or to directions by personnel or traffic controllers.

Roadwork speed limits will not be applied as the only option to control traffic, but as one measure along with other temporary traffic control signs and devices. Roadwork speed limits will be installed to assist in controlling vehicle speeds when:

- Traffic travels through the work site.
- Workers are endangered by high speed traffic.
- Dust or smoke reduces visibility.
- Loose material is present on the road surface.
- Deep excavations exist adjacent to the travel lanes.
- Traffic is temporarily diverted onto opposing travel lanes or carriageways.

Section 8 of the Roads and Maritime Traffic Control at Work Sites Manual (TCAWS) and Section 4.9 of AS1742.3 provides guidance to assist with the selection and installation of roadwork speed limits. Specifically, Table 4.7 of AS1742.3 outlines the general selection criteria for selecting the speed limits (40, 60 or 80 kilometres per hour).

**5.2.3 Submission procedure**


Upon the receipt of a request from the Site Traffic Engineer, the Traffic Manager will process the submission to Roads and Maritime in accordance with the ROL / SZA process flow chart. The SZA Application must be forwarded to Roads and Maritime who has the responsibility for processing and approving SZAs. Roads and Maritime generally requires at least 10 working days to process the application and will either grant or reject application within this period. No works are to commence until the ROL is obtained.

Once approved, Georgiou will forward a copy of the SZA to the local NSW Police Highway Patrol Office and for local roads to Hawkesbury City Council.

**5.2.4 Extensions to SZA period of operation**

Roads and Maritime limits the period of operation of a SZA from one month to six months. To obtain extensions, SZA applications are required to be resubmitted by the Site Traffic Engineer. It is the responsibility of the Traffic Manager to ensure the validity of each approved
SZA, thus regular monitoring of SZA expiry dates is essential. The Traffic Manager will maintain an SZA database, which will contain details of all SZAs to assist with this process.

5.2.5 Speed zone considerations

Generally, Roads and Maritime will apply conditions to SZA approvals and has the power to revoke an approval at any time for breaches of the conditions. The typical conditions include, but are not limited to:

- A copy of the SZA must be forwarded to the local NSW Police Highway Patrol representative and for local roads to the Hawkesbury City Council representative accordingly.
- The temporary roadwork speed zone must be installed in compliance with conditions, notes, applicable dates and locations stipulated in the SZA.
- All temporary roadwork speed limits must be installed as per the TCP and operated in accordance with the Roads and Maritime TCAWS manual.
- Similar to all regulatory signs, the speed limit signs are to be properly erected and any contradictory signs or road markings are to be removed or covered.
- Records detailing the date and time the speed limit is in operation, the speed limit displayed, and the location of all signs, as well as any other relevant information associated with the speed limit, must be kept.

5.2.6 Authorisation limitations

Similar to ROL approvals and in accordance with Roads and Maritime requirements, the responsibility for compliance with the SZA conditions remains with Georgiou. The Roads and Maritime granting of a SZA does not:

- Constitute approval by Roads and Maritime of any actions that relate to traffic safety, occupational health and safety, or environmental issues and management.
- Relieve Georgiou or any person of their responsibility for compliance with legislation, regulations, or established operational procedures.
- Change any management accountability or responsibility.

5.2.7 Construction Speed Limits

Vehicles travelling on site must not exceed a speed 30 km/h.

5.3 Using traffic control devices

Traffic control devices are all signs, traffic signals, road markings, pavement markers, traffic islands and / or other devices placed or erected to regulate, warn and / or guide road users. The function of a traffic control device is to promote orderly traffic flow, regulate traffic (assign right-of-way and indicate regulations in force), warn road users of hazards or regulatory controls ahead, (in particular they also warn of temporary hazards which could endanger road users or workers at roadwork sites) and guide traffic (e.g. guide signs to inform road users of directions to destinations, identify routes and pavement markings to guide the travel path of vehicles). This may include the use of temporary street lighting, portable traffic signals and flashing arrows. Traffic control devices will conform to the principles below:

- Be capable of fulfilling an important need.
- Command attention.
- Command respect.
- Convey a clear, simple meaning with the minimum number of messages required to obtain the desired response from the driver.
- Be located to give adequate time for response.
- Not obscure any other traffic control devices.
Georgiou acknowledges the importance of traffic control devices and how they influence traffic flow and the safety for road users, in particular where temporary traffic controls are implemented at work sites. During the project, the Traffic Manager will assess the appropriateness for traffic control devices in accordance with the relevant guides / standards, and where required, instruct the installation of the device correctly, as well as conduct regular maintenance. Redundant or contradictory signs and line marking will be treated in accordance with Roads and Maritime Specification G10.

5.3.1 Sign posting and road markings

Signs and road markings are an important aspect of road safety and traffic management. Regulatory signs control specific traffic movements, warning signs give advance notice of traffic hazards, road markings (and pavement markers) provide delineation and reinforce signage while guide signs give advance guidance and advice of routes and destinations which assist all drivers to make clear, early decisions.

The aim of sign posting is to:

- Warn and inform road users of conditions ahead.
- Guide and control road users to safely negotiate the road ahead.
- Ensure the signs and their structures are not a hazard in themselves.
- Provide drivers with sufficient information to ensure there are no surprises along their path of travel.
- To provide data in a controlled and consistent way to avoid information overload.

5.3.2 Ensure devices are installed correctly

Georgiou recognises the value of providing road users with timely, clear and consistent messages and the Traffic Manager will ensure all signs, road markings and devices installed during the construction of the project are:

- Assessed for use in accordance with the appropriate guidelines.
- Manufactured in accordance with the requirements of the Australian Standards
- Installed in accordance with the relevant guides and standards.
- Not contradictory to existing signs or markings.
- Covered or removed when no longer required,
- Regularly maintained and repaired/replaced when damaged or lose their reflectivity.

All sign posting installed throughout the project will comply with the requirements outlined in Roads and Maritime’s Traffic Control at Worksites Manual, AUSTROADS Guide to Traffic Engineering Practice (Part 8 – Traffic Control Devices) and the relevant parts of AS1742.

5.3.3 Develop TCPs

TCPs will be developed to illustrate all temporary traffic arrangements, including the various traffic control signs, road markings and devices to be installed. The installation of homemade or non-standard signs will not be permitted on the project. Refer to Chapter 7.

5.3.4 Utilise flashing arrow signs

Flashing arrow signs are key components of some TCPs, in particular for use when closing traffic lanes and conducting mobile traffic control operations. The requirements of when to utilise flashing arrow signs are stipulated in Section 11 of the Roads and Maritime TCAWS Manual and Section 3.12 of AS1742.3. Any flashing arrow signs used on the project will comply with Roads and Maritime’s equipment requirements and be controlled by a trained traffic control team member.
5.3.5 Utilise portable traffic signals

In some situations during the project, Georgiou may utilise portable traffic signals to enhance traffic controller operations. The specific uses may include one lane reverse flow shuttle operations. When stipulated by the TCP, Georgiou will implement the portable traffic signals in accordance with Section 10 of the Roads and Maritime TCAWS Manual and Section 3.5.4 of AS1742.3.

All portable traffic signals used on the project will comply with Roads and Maritime’s equipment requirements and be operated and monitored by a trained traffic control team member. Georgiou will obtain approval from Roads and Maritime prior to installing any set of portable traffic signals.

5.4 Pedestrians and cyclists

5.4.1 Pedestrians

When planning works, Georgiou will give consideration to the following:

- Number of pedestrians.
- Type of pedestrian activity – whether commercial, retail, residential or recreational.
- Origin and destination points of the pedestrians, as well as their desired travel path.
- Needs of vulnerable pedestrians such as young children, the elderly, vision impaired, disabled people, people with prams, walkers and trolleys.
- Proximity of pedestrian generation developments such as schools, shopping centres, railway stations, bus terminals etc.

Unlike motor vehicles, pedestrian movements within and outside of the road reserve are generally unrestricted, with free access available to most areas. To provide a safe environment for pedestrians, the boundaries of all work areas will be clearly defined as will walking paths where required. Fencing will be provided in areas where pedestrian access is likely. All physical barriers will be appropriately erected and secured to prevent injury to the public in accordance with RMS Specification R132. Footpaths are to be temporarily diverted if affected by construction activities to maintain suitable alternative access routes for pedestrians.

All temporary footpaths will be:

- Clearly defined.
- Signposted appropriately to indicate the direction of the footpath.
- Constructed with an all-weather surface, free of trip hazards.
- Designed to accommodate the type of pedestrians to be encountered within the area.
- Where required, provided with pram ramps, hand rails and street lighting.
- The minimum width specified by the relevant authority.
- Kept well maintained while in operation.

5.4.2 Managing cyclists

When planning works, Georgiou will give consideration to the following:

- Number of cyclists.
- Type of cycling activity – school children, recreational, commuter, utility, touring or sport training.
- Origin and destination points of the cyclists and the connectivity of their routes.
- Needs of vulnerable cyclists, such as young children.
- Proximity of cyclist generating developments, such as schools, universities, public transport terminals, shopping precincts and CBDs etc.

The travel speed of cyclists.
Unlike motor vehicles, bicycle movements can be either on or off road. Cyclists generally travel along shared paths, road shoulders or within travel lanes. To provide a safe environment for cyclists, the boundaries of all work areas will be clearly defined and measures to mitigate any hazards will be implemented. The speed of cyclists can be high, at around 50 kilometres per hour on downhill grades, and most bicycles have no suspension. Any hazards, whether rough and loose surfaces, squeeze points, obstacles, low clearance heights and so on can be potentially dangerous.

Where possible, the introduction of hazards into the travel path of cyclists will be avoided. Where this is not feasible, appropriate physical barriers, treatments and/or warning signs will be implemented. Where work areas restrict access to cycle paths, alternative routes and facilities will be implemented. Alternatives may include using the opposite side of the road, detours via other streets/cycle routes, or the provision of temporary cycle paths through the work area.

All temporary cycle paths will be:

- Clearly defined.
- Signposted appropriately to indicate the direction of the cycle path.
- Free of loose materials and obstacles.
- Designed to accommodate the type of cyclists to be encountered along the route.
- Where required, provided with ramps and street lighting.
- Kept well maintained while in operation.
- The provision of on-road cycle facilities requires careful assessment and the factors below will be considered by Georgiou:
  - On-street parking conditions.
  - Travel speed of traffic.
  - Traffic volumes.
  - Bicycle volumes.
  - Experience of the cyclists.
  - Percentage of heavy vehicles.
  - Carriageway, lane and parking lane widths available.
  - The alignment of the road.

### 5.5 Property access

Georgiou will ensure that adequate arrangements are in place to maintain access to private property during construction. There are property accesses along Bridge Street, Old Bridge Street, George Street and Wilberforce Road which will be within the construction zone during any stage of the construction phase. Georgiou will ensure that adequate arrangements are in place to maintain access to private property during construction through consultation with the affected property owners, including the following:

- Safe and convenient passage for vehicles and pedestrians at all times to and from side roads and property connecting to the roadway under construction
- Locating entries as close as possible to the existing entrance
- Achieving alternative arrangements that are acceptable to the property owner.
- Allowing free movement in and out of properties at all times.

### 5.6 Parking

Where possible, public parking will be preserved during construction works. Parking along Bridge Street and George Street will be temporarily unavailable during kerb reconstruction.

The site compound to the north of the river will have off-street parking for construction staff and workforce to limit parking in the local streets. The site compound will have a capacity of
60 parking spaces. In other areas or work, construction vehicles will be parked within site boundaries where practical. The location of the parking spaces in the main compound will be moved to suit the works. The peak construction period is expected during stage 1 when the bridge casting/launching operation is underway.

An overflow car park will be constructed in lot 11, DP 1182305. This carpark will be able to hold approximately 50 vehicles may be used throughout the works. Carparking will be reduced in the main site compound once stage 2 of the works on the northern side of the river commences.

All personnel will be informed that construction vehicles may not park in the Windsor Township when undertaking work on the southern side of the river during the site specific project induction. This will be reinforced at weekly tool box talk meetings and the daily pre-start meetings. Personnel may park within the limits of the site if space permits. Other personnel will walk from the site compound over the existing bridge to the work front.

5.7 Special events

Hawkesbury Council may have special events within the local council area throughout the year which could increase the volume of cars travelling through the local Windsor area and across the existing Windsor Bridge.

The Georgiou Traffic Site Representative will liaise with Hawkesbury Council and RMS in relation to traffic management arrangements for any intersecting local roads and comply with Council’s advised requirements.

The advice of Council and RMS in relation to forthcoming traffic generating special events will be sought when planning any worksite traffic arrangements.

Project specific restrictions and requirements for traffic management as detailed in RMS QA Specification G10 Annexure A2 and A3 will be applied in relation to Road Occupancy Licences and the construction staging of the Works.

Management of traffic during periods of increased traffic volumes, for example school holidays and public holiday long weekends, will include liaison with Traffic Management Centre to ensure appropriate controls are in place. It is understood there may be times when restrictions are put in place in relation to traffic management during these times.

5.8 Maritime traffic management

Construction operations across the Hawkesbury River will introduce new obstructions in the form of piers, bridge segments and construction zones within the passage of watercraft, which will affect the current movement of marine vehicles.

Maritime operations will be undertaken so that impacts are minimised. Maritime traffic management will be in place to ensure protection of construction workers, structures and occupants of marine vehicles. A navigational plan will be provided to RMS Maritime services prior to altering marine traffic conditions. Georgiou will liaise with RMS Maritime services for the publication of marine notices advising the community of changed marine traffic conditions. Environmental management measures will be set up around construction zones and new structures to notify marine vehicles of current conditions, these include:

- Setting up exclusion zones around marine construction sites
- Installing signage and navigational buoys
• Installing lighting – including around structures and red and green passage lighting
• Introducing a temporary navigational speed limit (4 knots or below)
• Introducing a temporary no wash zone

At all stages of construction, passage up and downstream will be provided. Other RMS maritime requirements will be complied with.

6 Obtaining lane closure and road occupancy approvals

In accordance with the requirements of the Roads Act 1993 and other NSW Traffic Acts and Regulations, Georgiou will obtain the necessary approvals from the appropriate road authorities prior to conducting any works within the road reserve.

The three specific areas of approval will include:

• All works within the road reserve and/or any changes to existing infrastructure.
• The installation and/or changes of any regulatory traffic control device.
• Occupation of the road network to conduct works, and the associated installation of temporary traffic control devices.

The road authorities responsible for roads affected by this project include Roads and Maritime and local councils. Georgiou will liaise with Hawkesbury City Council concerning the use of local roads by construction vehicles.

6.1.1 Road occupancy – Local roads

In accordance with the requirements of the Roads Act 1993, the concurrence of the local councils is required prior to undertaking works within the road reserve.

Georgiou will obtain the concurrence of the relevant local council(s) prior to the installation of traffic controls/devices or occupying the road network.

The submission to the council will include:

• Brief details of the works to be conducted
• Any relevant design drawings of the works
• Program of the works
• Copies of TCPs
• If applicable, details of Speed Zone Authorisation (SZA) submission
• Contact details of a construction site representative.

6.1.2 Roads and Maritime Services road occupancy licensing

Roads and Maritime is responsible for the operational efficiency of the NSW Road Network, including the coordination of planned and unplanned incidents. The overall coordination of incidents is managed by the Transport Management Centre (TMC) at Eveleigh in Sydney.

Georgiou notes that the Road Occupancy Licence (ROL) scheme for the Project is managed by the Traffic Management Centre.

Georgiou acknowledges that a ROL scheme applies and understands the benefits of coordinating the occurrence of delays at separate work sites. Consequently, except in the case of an emergency, or when directed by Police or Emergency Services, Georgiou will obtain a ROL prior to the commencement of any works which:

• Slows, stops or otherwise delays traffic on arterial roads
• Diverts arterial road traffic from its normal course along the road carriageway, including lane closures, turning restrictions, side-tracks, detours and diversions
• Any occupation of the site by personnel or works contactors, equipment or plant that requires a TCP under the provisions of G10 Specification
• Occupies any portion of the arterial road network that is normally available for traffic, including road shoulders.

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

Georgiou acknowledges all road occupancies will be subject to the specific period of operation stated on the approved ROL and conditions on obtaining other necessary approvals.

6.1.3 Roads and Maritime ROL submission procedure
Transport for New South Wales has introduced a new online system, OPLINC, for registered users to apply for ROLs. Applications for ROLs will be assessed and licensed by the Road Occupancy Unit at the TMC.

Applicants must allow at least ten working days to process the application. It should be noted that the ROL request must comply with the various road safety and traffic management principles, objectives and targets outlined in the CTMP. More details relating to ROLs can be found at the following internet address:

6.1.4 Extensions to ROL periods of operation
The TMC has limited the maximum period of a ROL from one month to six months. To obtain extensions, ROL applications are required to be resubmitted by the Site Traffic Engineer. It is the responsibility of the Site Traffic Manager to ensure the validity of each approved ROL, thus regular monitoring of ROL expiry dates is essential. The Traffic Manager will maintain a ROL database, which will contain details of all ROLs to assist with this process.

6.1.5 ROL conditions
Generally, the TMC will apply conditions to ROL approvals, which may include:
• Maximum traffic stoppage times.
• Maximum queue lengths.
• Maximum travel time delay.
• Measures to provide information to road users.
• Provision of a weekly schedule outlining the proposed road occupancies for the preceding week.
• Records detailing the date and time of the road occupancy and the location of all signs, as well as any other relevant information associated with the traffic control, must be kept.

The TMC has the power to revoke ROL approvals at any time for breaches of the associated conditions.

6.1.6 ROL Authorisation limitations
In accordance with the TMC’s requirements, the responsibility for compliance with the ROL conditions remains with Georgiou. The granting of a ROL does not:
• Constitute approval by the TMC and Roads and Maritime of any actions that relate to traffic safety, occupational health and safety, or environmental issues and management
- Relieve Georgiou or any person of their responsibility for compliance with legislation, regulations, or established operational procedures.
- Change any management accountability or responsibility.

7 Preparing TCPs

In accordance with RMS Specification G10-Traffic Management, TCP must show, where applicable, the following details:

(a) Types and locations of permanent regulatory (R series) and warning (W series) signs.
(b) Types and locations of temporary signs (T series) including advance warning signs and variable message signs (VMS).
(c) Locations of permanent and temporary traffic signals.
(d) Locations of any required Traffic Controllers.
(e) Locations and lengths of taper and safety buffer areas. The safety barriers used must be listed on the "Safety Barrier Products (Safety Barrier) accepted for use on Classified Roads in NSW", and erected in accordance with Specification RMS R132 and the Acceptance conditions for that safety barrier product.
(f) Locations of safety barrier systems including end terminals.
(g) Pedestrians and cyclists paths.
(h) Locations of entry and exit gates to work areas, individually numbered and signposted.
(j) Details of access to adjoining properties, car parking areas, and side roads.
(j) Pavement marking details, including types of delineation required, turning arrows, stop/holding lines and other road markings, types and positions of raised pavement markers and other delineation devices, as well as removal of redundant pavement markings.
(k) Locations of temporary lighting.

The provision of a safe environment for road users and works staff is a key objective of the project. A TCP is a diagram showing signs and devices arranged to warn traffic and guide it around, past, or if necessary through a work site or temporary hazard.

All TCPs developed will aim to:

- Warn drivers of changes to the usual road conditions.
- Inform drivers about changed conditions.
- Guide drivers through the work site.
- Maintain safety for workers, motorists, pedestrians and cyclists.

7.1 Design TCPs

The TCPs are designed in accordance with the requirements stipulated in Roads and Maritime’s TCAWS Manual and AS1742.3. All TCPs must be modified to suit site conditions, utilising the standard plans in the TCAWS Manual and AS1742.3 as a base. Where modifications to the TCPs are necessary, these modifications must be shown clearly and recorded on a copy of the TCP.

All TCPs will be prepared using computer aided software, which will provide a clear, concise and consistent format. Our aim is to avoid the use of deficient TCPs, remove the inconsistency of overlapping or adjoining TCPs and give due consideration to the road design principles.
7.2 Develop site-specific TCPs

TCPs will be developed and implemented for specific areas and/or phases of construction. Site-specific TCPs will be developed for both long and short-term works.

Long-term relates to temporary arrangements that will be in place for a period longer than one shift. TCPs for long-term works will be prepared for the installation of side-tracks, reduced roadwork speed limits, auxiliary lane closures, shoulder closures, provision of temporary safety barriers and construction access points.

Short-term relates to a temporary arrangement that will be applied for one shift or less and where normal operating conditions are reinstated after all temporary traffic management devices are removed from the roadway. Short-term TCPs will be installed as required to facilitate day-to-day construction activities such as installation of side-tracks, surveying and geotechnical activities, and plant movements.

7.3 Conduct site inspections

Prior to preparing a TCP, Georgiou staff and our qualified traffic control subcontractors will conduct a detailed site inspection with the aim of identifying the existing lane configurations, intersection treatments, traffic operations, traffic control signage, speed zone locations, side roads, alignment restrictions (horizontal and vertical), private access points, bus stops, cycle/pedestrian facilities, bridge structures, roadside furniture, as well as any feature that may affect the installation of the desired TCP.

7.4 Check qualifications

A TCP can only be developed by a suitably qualified person who has successfully completed Roads and Maritime’s “Prepare a Work Zone Traffic Management Plan” training course, or a person under the direct guidance of a suitably qualified person.

Personnel performing traffic control roles must have attended and be qualified in the traffic control training courses relevant to their roles, as follows:

Table 6 Qualifications of Traffic Control Personnel

<table>
<thead>
<tr>
<th>Traffic Control Roles</th>
<th>RMS Traffic Control Training Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control traffic using “Stop/Slow” bat</td>
<td>Traffic Controllers (Blue Card)</td>
</tr>
<tr>
<td>Set up and work with Traffic Control Plans drawn up by others</td>
<td>Implement Traffic Control Plans (Yellow Card)</td>
</tr>
<tr>
<td>Select and make minor modifications to standard RMS Traffic Control Plans to suit work locations</td>
<td>Prepare a Work Zone Traffic Management Plan (RIICWD503D)</td>
</tr>
<tr>
<td>Design new Traffic Control Plans and inspect setting out of traffic controls at work sites</td>
<td>Prepare a Work Zone Traffic Management Plan (RIICWD503D)</td>
</tr>
</tbody>
</table>
8 Incident Management and response

8.1.1 Managing unplanned incidents
Georgiou will develop strategies to manage:

- Unplanned incidents on the road network.
- Construction site emergencies/unplanned incidents.

The occurrence of unplanned incidents within the construction site will potentially have a negative impact on the operation of the road network. Similarly, incidents which occur on the surrounding road network might temporarily restrict project activities.

In the event of a traffic accident occurring within locations affected by Georgiou work, the project team will record their knowledge of the facts and photograph the approach to the accident, including the location of all safety signs and notices, as soon as possible after the accident. A report with this information must be forwarded to Roads and Maritime within two days of the occurrence of the accident.

8.1.2 Types of incidents
The types of emergencies/unplanned incidents that may occur include, but are not limited to the following:

- Motor vehicle crashes
- Bush fires
- Environmental spills
- Construction-type incidents
- Catastrophic structural failures
- Inclement weather conditions
- Flooding
- Anti-social behaviour
- Terrorist attacks
- Bomb threats.

8.1.3 Manage emergencies
Georgiou acknowledges the inevitable nature of emergencies and their potentially significant social, economic and environmental consequences. Accordingly, we are aware that the NSW Government has enacted the State Emergency & Rescue Management Act 1989 to support emergency management activities.

In NSW, the agencies primarily responsible for controlling particular hazards/emergencies are as follows:

- Law enforcement / emergencies – NSW Police
- Fire – Fire Brigades / Rural Fire Service
- Hazardous materials – Fire Brigades
- Flood – State Emergency Service
- Storm and tempest – State Emergency Service

8.1.4 Roads and Maritime and Hawkesbury City Council responsibilities
In accordance with their statutory obligations, the TMC (on behalf of Roads and Maritime) and Hawkesbury City Council are responsible for road safety and traffic management of the road network. In conjunction with emergency service agencies, this includes the management of incidents and emergencies.
When requested, Georgiou will provide support to emergency service agencies and / or the TMC / Hawkesbury City Council when emergencies / incidents occur within or adjacent to the project site.

8.1.5 Manage unplanned incidents on the road network

The occurrence of unplanned incidents within the project site will potentially have negative impacts on the operation of the road network. Similarly, incidents that occur on the surrounding road network can temporarily restrict construction activities.

The Traffic Manager will:

- Apply and maintain communication protocols, particularly between project site and the TMC representatives.
- Inform the TMC of any incident and provide assistance, if appropriate, for the duration of the incident.
- If resources are available, provide initial response to unplanned incidents with the aim of making the scene of the incident safe and prevent further harm to persons or property.
- Provide support to emergency services, including traffic control, in the vicinity of the incident.
- During major incidents, provide a site representative to liaise with the TMC and emergency service agencies.
- Reschedule planned works that will interfere with the incident, or create additional delays to those road users already affected by the incident.

8.1.6 Manage project site emergencies / unplanned incidents

Georgiou has developed an Emergency Response Plan as part of the Workplace Health and Safety Plan (WHSP). This plan will incorporate standard operating procedures for managing site emergencies / incidents. These plans:

- Define the roles and responsibilities in the event of incidents and emergencies.
- Establish and define emergency response procedures dealing with different categories of emergency arising from construction, traffic or environmental incidents.
- Identify and define the roles and responsibilities of project personnel during emergencies and incidents.
- List available works contractors’ resources.
- Define TMC / Hawkesbury City Council and emergency services roles and responsibilities in the event of an incident or emergency.
- Outline the communication protocols and system.
- Outline incident administration procedures including training, record keeping etc.
- Establish formal arrangements for the review and maintenance of the plan.
9 Compliance management

9.1 Roles and responsibilities

The Georgiou Project Team is responsible for the implementation and maintenance of temporary traffic management measures. The Georgiou full-time Traffic Site Representative (Traffic Control Site Manager – G10) will be Michael Andrews. His contact details, given below, will be provided to the local police.

Michael Andrews, Senior Project Engineer – Roadworks and Traffic
0400 899 785

The specific responsibilities for all personnel are detailed below in the table below.

Table 7 Traffic management roles and responsibilities

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgiou Project Manager</td>
<td>• Ensures the project’s road safety and traffic management objectives are achieved.</td>
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<tr>
<td></td>
<td>• Ensures that all incidents caused by site activity are reported to Roads and Maritime.</td>
</tr>
<tr>
<td></td>
<td>• Coordinates incidents with the Roads and Maritime Incident Manager and NSW Police.</td>
</tr>
<tr>
<td>Georgiou Site Manager</td>
<td>• Identify any sites where Georgiou works would involve any obstruction to traffic.</td>
</tr>
<tr>
<td>(Superintendent)</td>
<td>• Ensures that traffic management is properly planned, organised, directed and controlled.</td>
</tr>
<tr>
<td></td>
<td>• Organise for TCPs to be prepared and submitted.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that there are sufficient resources and equipment.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that only suitably qualified traffic controllers are used on the project.</td>
</tr>
<tr>
<td></td>
<td>• Review applications for any Road Occupancy Licences (ROLs) prior to submission to the Transport Management Centre and Roads and Maritime.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that the traffic management is meeting its objectives.</td>
</tr>
<tr>
<td>Georgiou Field Supervisors</td>
<td>• Traffic Site Representative – responsible for coordinating the day-to-day traffic management activities and traffic control resources.</td>
</tr>
<tr>
<td>(Foreman)</td>
<td>• Provide directions and support to enable effective planning of temporary traffic management arrangements.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that all field team members receive the appropriate training.</td>
</tr>
<tr>
<td></td>
<td>• Coordinate and ensure that ROLs and Speed Zone Authorisation (SZA) approvals have been obtained from the Transport Management Centre and Roads and Maritime, if required.</td>
</tr>
<tr>
<td></td>
<td>• Liaise with the Transport Management Centre, Roads and Maritime, Hawkesbury City Council, NSW Police, other emergency services and other stakeholders on all traffic and incident management issues.</td>
</tr>
<tr>
<td></td>
<td>• Undertake site inspections of traffic control measures prior to commencement of work to ensure the traffic control measures are appropriate for the proposed works and work area (This needs to be undertaken by a suitably quality person – (with a Prepare a Work Zone Traffic Management Plan (RIICWD503D) qualification).</td>
</tr>
<tr>
<td></td>
<td>• Ensure all staff working within the road reserve are wearing the correct personal protective equipment.</td>
</tr>
<tr>
<td></td>
<td>• Managing all emergency control in the event of incidents and emergencies (TMC traffic commander will liaise with Police for overall management of traffic arrangements).</td>
</tr>
<tr>
<td></td>
<td>• Prepare reports on any incidents or accidents.</td>
</tr>
<tr>
<td>Role</td>
<td>Responsibilities</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Traffic Manager         | • Responsible for preparing TCPs.  
                          • Monitoring the implementation and operation of all road occupancies to ensure that they are compliant with ROLs, TCPs etc.  
                          • Ensuring that all traffic control staff are suitably trained and competent.  
                          • Ensuring that adequate equipment, traffic control signs and devices are available for use.  
                          • Conduct regular inspections of traffic control measures and, where necessary, instruct the rectification of deficiencies.                                                                                                                                                     |
| Georgiou Safety Manager | • Provides Workplace Health and Safety support to the project team.  
                          • Carries out safety audits and checks as required.  
                          • Investigates and reports on any safety incidents.                                                                                                                                                                                                                        |

All traffic controllers used by *Georgiou* will be required to have completed Roads and Maritime accredited Registration Scheme Category G ‘Traffic Control’. A list of the traffic controller names, tickets and ticket expiry dates will be registered in the project induction register. The names of the Traffic Controllers will also be entered in the Traffic Control Personnel Skills matrix in Appendix E and this will be submitted to Roads and Maritime for approval prior to commencing works on the site.

Traffic Controllers are to wear high visibility fluorescent safety vests complying with AS/NZS 4602, clearly bearing the words “Authorised Traffic Controller”, and must wear the vest as an outer garment only when controlling traffic, and not at other times. During poor light conditions or at night, Traffic Controllers are to be equipped with illuminated red wands when directing direct traffic.

### 9.2 Communication and consultation

#### 9.2.1 Communication

*Georgiou* acknowledges the importance of disseminating changed traffic condition information to enable road users to effectively plan their journeys.

The main objectives of the traffic communications strategies are to:

- Provide timely, accurate and comprehensive traffic and transport information to all potentially affected road users.
- Influence road users to abide by reduced speed limits in construction areas.
- Allow and accommodate community feedback regarding traffic and transport management issues.
- Minimise and manage traffic impacts on local residents and businesses.

*Georgiou* will closely liaise with Roads and Maritime staff about proposed traffic management. *Georgiou* will also inform the project community liaison staff of any proposed traffic management changes and will work with them to inform the community in line with the Community Communications Strategy (CCS). The CCS provides an approach to stakeholder and community communications that identifies opportunities for providing information and consulting with the community and stakeholders during the construction phase of the Project.

#### 9.2.2 Consultation

*Georgiou* will undertake consultation with the emergency services, bus operators, local business and other major stakeholders to inform them on changes in traffic management during construction.

This CTMP has been developed in consultation with the Hawkesbury City Council (refer to Appendix G), along with the pre-construction and post-construction dilapidation reports (refer
to appendix F). Once prepared, dilapidation reports are to be submitted for the approval of the Planning Secretary. Upon completion of the works, the structural conditions of the adjoining roads, buildings and other utilities will be photographed and compared to the report detailing the dilapidation survey undertaken at the start of the works. Any identified damage that has resulted as a consequence of the works will be rectified to its pre-works condition.

A summary of the consultation outcomes for this revision of the CTMP are contained in Table 8 below.

**Table 8 Summary of Consultation with HCC for this Revision of the CTMP**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>HCC Comments</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roundabout on Wilberforce Rd at site and stockpile yard entry/exit</td>
<td>No comment.</td>
<td>N/A (the roundabout will no longer be installed).</td>
</tr>
<tr>
<td>2</td>
<td>Detour on Freemans Reach Rd</td>
<td>No comment.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Change to traffic arrangements at the intersection of Bridge St and George St: no longer using temporary traffic signals.</td>
<td>No comment.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Archaeological Works on George St East</td>
<td>No objection to the relieving of the left turn ban into Court St as long as the roundabout is monitored so as not to impede free flow of traffic up to and over the bridge.</td>
<td>Stage 2D under section 5.1.3.</td>
</tr>
</tbody>
</table>

**9.3 Inspections**

Inspections of the temporary traffic controls will be conducted during the project, focusing on monitoring compliance against the TCP and identifying safety hazards, in order to enable implementation of corrective solutions.

Four main types of inspections will be performed on the works:

- Pre-start and pre-close down inspections of short-term traffic controls.
- Weekly inspections of long-term traffic controls.
- Night inspections of long-term traffic controls.
- Pre-opening inspections of minor temporary traffic switches.

The frequency of temporary traffic controls inspections will be conducted in accordance with the requirements stipulated in the G10 Specification and the Roads and Maritime TCAWS Manual.

All inspections can only be undertaken by a suitably qualified person who has successfully completed Roads and Maritime’s “Prepare a Work Zone Traffic Management Plan” training course, or a person under the direct guidance of a suitably qualified person. Records of the results of inspections are to be documented (see Section 9.5).

In addition, Georgiou will carry out routine maintenance of roadways include repairing potholes, cleaning kerbs and gutters, clearing blockages of stormwater drains, reinstating pavement markings, removing debris including animal carcasses from roadway, cleaning roadside furniture, grass mowing and trimming of vegetation.
Repairs of any type will be undertaken without delay. These repairs are to be documented in the monthly report (Section 9.5).

9.4 Auditing

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

An audit is to be carried out within 24 hours of a traffic switch on to a temporary roadways or detours. The audit is required to ensure the implemented traffic control measures at both daytime and night time have been safely applied. A road safety audit is to comply with the requirements stated in Clause 2.8 of RMS Specification G10. If the measures implemented are found to be deficient, then based on the initial report submitted and in consultation with the audit team and Roads and Maritime, Georgiou will develop corrective actions and implement the revised measures without delay.

A copy of the road safety audit report is to be submitted to Roads and Maritime within 5 working days of the audit, including details of any corrective actions arising from the audit findings.

Project Audit requirements are detailed in Section 8.3 of the CEMP.

9.5 Reporting

The following reports are to be documented under specification G10:

- A copy of the road safety audit is to be submitted to Roads and Maritime within 5 working days of a safety audit completion. The report must include details of any corrective actions developed and implemented.
- Records of the pre-start and pre-close down inspection of traffic controls, to be included in the monthly report to Roads and Maritime.
- Records of any repairs undertaken as part of routine maintenance of the existing road.

Reporting requirements and responsibilities are documented in Section 8.5 of the CEMP.

9.6 Hold points

Under specification G10, Georgiou is required to submit the following hold points to Roads and Maritime:

- Submit details of traffic control personnel (including names, registration numbers and expiry dates of their cards) for the project.
- Submit CTMP at least 20 working days prior to the proposed commencement date of any activity which will affect traffic conditions on site.
- Submit this CTMP and associated documents for approval 20 days prior to commencing any work on site.
- Submit TCPs and ROLs (not previously submitted as part of the CTMP) at least 3 working days before the required date of use. To include the Vehicle Movement Plan and Pedestrian Movement Plan, and copies of any associated ROL obtained.
- Submit, in writing, at least one day prior, a notification of the intended date of opening temporary roadways to traffic, and that the traffic control measures is conforming and ready for inspection.

Also note that traffic may only be switched to a temporary roadway or detour where Georgiou personnel will be on site for a minimum of two successive days thereafter. Unless approved by Roads and Maritime Georgiou is not to disturb sections of existing roadway for at least two
days after opening a temporary roadway or detour to traffic, to allow for the situation where failure of the temporary roadway or detour occurs and there is a need to redirect traffic back onto the existing roadway.
10 Review and improvement

10.1 Continuous improvement
Continuous improvement of this CTMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process has been designed to:

- Identify areas of opportunity for improvement of traffic management.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

10.2 CTMP update and amendment
The processes described in Section 8 and Section 9 of the CEMP may result in the need to update or revise this Plan. This will occur as needed. Minor amendments to this CTMP may be approved or rejected by the Environmental Representative.

A copy of the updated CTMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 10.2 of the CEMP.

10.3 Monitoring Traffic Impacts
During the works, the impacts on the traffic will be monitored by supervisory and engineering staff as well as the Traffic Manager. This will be completed during formal site inspections as well as on an ad hoc basis. The Traffic Manager will monitor traffic flow and queuing for areas that have been impacted by the works and make changes accordingly. Particular attention will be given to newly implemented traffic schemes or movement plans. Adjustments to the scheme will be made based on the results of the reviews.

Where there are significant changes required, such as changes to the staging arrangements, or it is determined that this CTMP cannot be implemented correctly, the CTMP will be reviewed, amended and submitted for acceptance.
APPENDIX A
RISK ASSESSMENT
<table>
<thead>
<tr>
<th>Heading</th>
<th>Activity</th>
<th>Hazard Aspect</th>
<th>Safety, Quality, Environment</th>
<th>Unwanted Event</th>
<th>Uncontrolled Risk Score</th>
<th>Mandatory Controls</th>
<th>Project Specific Controls</th>
<th>Legal and other References</th>
<th>Controlled Risk Score</th>
<th>Area</th>
<th>Category 1</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-MOBILISATION</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pre Mobilisation</td>
<td>Concurrent Works</td>
<td>Conflits of interest</td>
<td>Safety</td>
<td>Delays to works through disrupted deliveries (access/egress), Confusion with worker / project responsibility for shared zones, Conflict of req'd comms / signage, Inadequate segregation or separation of workers/public</td>
<td>High</td>
<td>Consultation via RMS with adjacent projects / stakeholders, Monitoring of agreed arrangements for effectiveness, compliance, improvement, innovation, CTMP / VMP Agreed methods of communications between stakeholders, Routine review meetings with stakeholders</td>
<td>Work Health &amp; Safety Act 2011 Work Health &amp; Safety Regulation 2017 NSW Code of Practice: How to manage health &amp; safety Risks NSW Code of Practice: Managing the risks of plant in the workplace NSW Code of Practice: Moving plant on construction sites NSW Code of Practice: Work health safety consultation, coordination &amp; cooperation</td>
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<tr>
<td>Initial arrival at site</td>
<td>Preparation to receive plant &amp; equipment</td>
<td>Site security, interaction with local protesters</td>
<td>Safety</td>
<td>Unauthorised persons entering site - potential collision with mobile plant and / or equipment leading to serious injury of member of public, media attention, vandal damage to plant &amp; equipment</td>
<td>Extreme</td>
<td>Security officers engaged and on site prior to the arrival of personnel, equipment or other deliveries, JHA to include security issues Traffic Control in place - refer to HEADING 'Traffic Management' Plan works to ensure a secure workplace is created, Authorised site personnel to be Personnel / contractors Inducted prior to mobilisation Pre-start briefing held remote of site, Personnel instructed not to become physically or verbally engaged by member of the public and to refer to project management / RMS community hotline Police advised in advance of mobilising to site, Consider obtaining video records of</td>
<td>Work Health &amp; Safety Act 2011 Work Health &amp; Safety Regulation 2017 NSW Code of Practice: How to manage health &amp; safety Risks NSW Code of Practice: Managing the risks of plant in the workplace NSW Code of Practice: Moving plant on</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Public Interface</td>
<td>Plant interface with public</td>
<td>Safety</td>
<td>Public Interface</td>
<td>Plant interface with public</td>
<td>Safety</td>
<td>Traffic Management</td>
<td></td>
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<td></td>
<td>Collision resulting in damage to public property or serious injury/fatality to a public person</td>
<td>Extreme</td>
<td>CTMP to address public interface - controls to be implemented</td>
<td>Traffic controllers to be used as identified in applicable TCP Operator to have attachments grounded &amp; machine turned off when approached by public</td>
<td>Wear high vis PPE</td>
<td>Use of spotters</td>
<td>Work Health &amp; Safety Act 2011</td>
<td>Work Health &amp; Safety Regulation 2017</td>
<td>RMS Traffic Control at Work Sites Manual</td>
<td>RMS Specification G10</td>
<td>Project Traffic Management Plan</td>
<td>AS 1742.3 - 1996, Manual of Uniform Traffic Control Devices - Part 3 - Traffic Control Devices For Works on Roads</td>
</tr>
<tr>
<td>Traffic Management</td>
<td>Moving plant, equipment, Moving plant and worker interaction</td>
<td>safety / environment</td>
<td>Extreme</td>
<td></td>
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<tr>
<td>Positive comms., (verbal or signal), must be made between mobile plant, heavy vehicle operators and/or personnel on foot &amp; comms acknowledged before clearance to proceed is granted before entering exclusion zone.</td>
<td>Positive comms., (verbal or signal), must be made between mobile plant, heavy vehicle operators and/or personnel on foot &amp; comms acknowledged before clearance to proceed is granted before entering exclusion zone.</td>
<td>Collision of mobile plant &amp; worker leading to potentially fatal injury, damage to plant</td>
<td>JHA / SWMS, Task Hazard Review Permanant site traffic signage deployed in accordance with authorised Traffic Control Plan (TCP) TCPs to be developed and reviewed by persons trained in Prepare Work Zone Traffic Management Plan Erect fencing around compound for security Site Traffic Rules; Speed limits set - 20kmh in compound, 10 &amp; 40 kmh (40kmh on haul roads when established - all vehicles restricted to 10kmh max when passing people, plant or as directed). Site speed limits posted. Vehicle Movement Plan (VMP) developed and displayed / communicated to personnel. Site personnel to challenge unrecognised, unauthorised persons entering site / report any occurrence. Site plant / equipment Compliance Checklist. Minimum standards for plant/vehicles on site - Amber light, reverse alarm &amp; 2-way radio Vehicle/plant serviced and maintained to OEM recommendations.</td>
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<td>Safety / environment</td>
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<tr>
<td>Vehicle Movement Plan (VMP)</td>
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<tr>
<td>Operator to have attachments grounded &amp; machine isolated from movement before pedestrian may approach Wear high vis PPE Site Traffic Rules Reverse alarms fitted to mobile plant - Check reversing path before engaging in reverse - Visitors escorted around worksite - Establish site exclusion zones - Establish site separation distances between plant &amp; people - Communicate dangerous shadow information - no employee to enter dangerous shadow area</td>
<td>Site Traffic Rules; Speed limits set - 20kmh in compound, 10 &amp; 40 kmh (40kmh on haul roads when established - all vehicles restricted to 10kmh max when passing people, plant or as directed). Site speed limits posted. Vehicle Movement Plan (VMP) developed and displayed / communicated to personnel. Site personnel to challenge unrecognised, unauthorised persons entering site / report any occurrence. Site plant / equipment Compliance Checklist. Minimum standards for plant/vehicles on site - Amber light, reverse alarm &amp; 2-way radio Vehicle/plant serviced and maintained to OEM recommendations.</td>
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<tr>
<td>Traffic Management</td>
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</tbody>
</table>

Windsor Bridge Replacement Project
Construction Traffic Management Sub Plan

Work Health & Safety Act 2011
Work Health & Safety Regulation 2017
RMS Specification G10
RMS Standards Traffic Control at Worksites (TCWS)
NSW CoP: Managing the risks of plant in the workplace
NSW CoP: How to manage work health and safety risks
AS 1742
<table>
<thead>
<tr>
<th>Traffic Management</th>
<th>Moving plant, equipment,</th>
<th>Operation of mobile plant near property</th>
<th>safety / environment</th>
<th>Collision of mobile plant with property leading to workers injury and / or property damage</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>In addition to above mandatory controls: Penetrations between 20cm to 2m in diameter, they shall be covered to prevent injury from falls to persons or from falling objects. Covers are to be fixed in place to prevent unintentional dislodgment &amp; be clearly marked WARNING OPENING BELOW. Covers shall</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>JHA / SWMS, Task Hazard Review Permenant site traffic signage deployed in accordance with authorised Traffic Control Plan (TCP) TCPs to be developed and reviewed by persons trained in Prepare Work Zone Traffic Management Plan. Erect fencing around compound for security. Site Traffic Rules; Speed limits set - 20km/h in compound, 10 &amp; 40 km/h (40km/h on haul roads when established - all vehicles restricted to 10km/h max when passing people, plant or as directed). Site speed limits posted. Vehicle Movement Plan (VMP) developed and displayed / communicated to personnel. Site personnel to challenge unrecongnised, unauthorised persons entering site / report any occurrence. Site plant / equipment Compliance Checklist. Minimum standards for plant/vehicles on site - Amber light, reverse alarm &amp; 2-way radio Vehicle/plant serviced and maintained to OEM recommendations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health and Safety</th>
<th>General</th>
<th>Traffic Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic Management</td>
<td>Moving plant, equipment,</td>
<td>Operation of mobile plant near other vehicles</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Extreme</td>
<td>Positive contact, either verbal or visual, must first be made with heavy vehicle operator &amp; clearance to proceed granted before entering exclusion zone.</td>
<td>- Speed limits to be established for site</td>
</tr>
</tbody>
</table>

Windsor Bridge Replacement Project
Construction Traffic Management Sub Plan
Traffic Management

Moving plant, equipment, operation of mobile plant near property, other plant or personnel, safety / environment

Collision of mobile plant with property / other plant / personnel leading to workers injury, plant damage & / or property damage

Extreme

Positive contact, either verbal or visual, must first be made with heavy vehicle operator & clearance to proceed granted before entering exclusion zone. Operator to have attachments grounded & machine turned off before pedestrian may approach - Wear high vis PPE

Speed limits to be established for site - Traffic Management Plan - Site Traffic Rules - Attachments to be lowered when parked - Check reversing path before engaging in reversing - Reverse alarms fitted to mobile plant - Establish site separation distances between plant & people - Communicate dangerous shadow information - no employee to enter dangerous shadow area

Hierarchy of control to be used to remove perceived / real risk from work area. Plant / vehicle serviced and maintained to OEM recommendations - Plant / Vehicle pre-mobilisation & pre-start checks complete. Drivers & operators appropriately licensed for item. Vehicles fit for purpose - on / off road use

Moderate

JHA / SWMS, Task Hazard Review

Permenant site traffic signage deployed in accordance with authorised Traffic Control Plan (TCP) - Erect fencing around compound for security

Site speed limits posted. Vehicle Movement Plan (VMP) developed and communicated to personnel. Site personnel to challenge unrecongnised, unauthorised persons entering site &/or report any occurrence.

AS 1742:2008

Safety & Health Act 2011

Safety & Health Regulation 2017

RMS

Specification G10

Traffic Control at Worksites (TCWS)

NSW CoP: Managing the risks of plant in the workplace

NSW CoP: How to manage work health and safety risks

Moderate
<table>
<thead>
<tr>
<th>Traffic Management</th>
<th>Mobile plant, vehicles entering and exiting site</th>
<th>Safety / Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Collisions, impacts with members of public / other road users</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved TCP &amp; ROL developed by qualified &amp; accredited consultant CTMP developed and approved/issued Traffic controls implemented as per TCP Traffic Controls monitored daily for compliance (as per RMS G10). Experienced, qualified &amp; competent traffic management personnel resourced &amp; deployed. Independent Traffic Auditor to review TCP implementation. Management of personnel - no personnel permitted to enter live traffic zones without risk assessment, JHA, approval of the Project Manager and/or the Traffic Control Site Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Works developed to effectively minimise road occupancy. Work areas to be isolated from live traffic. Effective safeguards for traffic controllers Positive comms for site developed and communicated. Vehicle/plant serviced and maintained to OEM recommendations. Plant / Vehicle pre-mobilisation &amp; pre-start checks complete. Drivers &amp; operators appropriately licenced for item. Vehicles fit for purpose - on/off road. Monitoring of real-time traffic movements</td>
</tr>
</tbody>
</table>

### Extreme

**Traffic Management**

- **Crane Operations**
  - **Overhead services**
    - **Safety**
      - Contact with overhead services leading to damage to plant / property/ services or worker injury
      - Overhead services in area of lift to be identified & marked. Area Controlled & barricaded as required. Ensure sufficient clearance between crane & other structures. Where possible have the overhead powerlines de-energised. Crane must not operate if any part of the crane can enter the prescribed exclusion zones from electrical overhead services
      - Crane must be able to maintain clearances based on Electricity Authority safe approach Distance & WorkSafe requirements.: <132Kv = 3m, <330Kv = 6m, Over 330Kv = 8m. Use of tiger trails & warning devices. Use of slewing & luffing restrictors set where fitted. Asset owner Protection Officer required for work in close proximity to assets. Crane crew to be suitably qualified to

---

**Crane Operations**

- **Overhead services**
  - **Safety**
    - Contact with overhead services leading to damage to plant / property/ services or worker injury
      - Overhead services in area of lift to be identified & marked. Area Controlled & barricaded as required. Ensure sufficient clearance between crane & other structures. Where possible have the overhead powerlines de-energised. Crane must not operate if any part of the crane can enter the prescribed exclusion zones from electrical overhead services
      - Crane must be able to maintain clearances based on Electricity Authority safe approach Distance & WorkSafe requirements.: <132Kv = 3m, <330Kv = 6m, Over 330Kv = 8m. Use of tiger trails & warning devices. Use of slewing & luffing restrictors set where fitted. Asset owner Protection Officer required for work in close proximity to assets. Crane crew to be suitably qualified to

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Windsor Bridge Replacement Project
Construction Traffic Management Sub Plan
<table>
<thead>
<tr>
<th>Crane Operations</th>
<th>Articulated Mobile Cranes</th>
<th>safety</th>
<th>Use of articulated mobile cranes on site</th>
<th>Works with articulated crane to be in accordance with crane manufacturer's operations instructions and charts.</th>
<th>G22:Annex J2.6 : Special Requirements - Work Health and Safety (Construction and Maintenance Works)</th>
<th>Low</th>
<th>Health and Safety</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface between mobile crane &amp; other plant, structures &amp; workers</td>
<td>safety</td>
<td>Contact / collision between mobile crane &amp; other plant, structures &amp; workers</td>
<td>VMP to be developed and communicated. Spotters &amp; traffic management to be used where necessary. Established communication between crane operator &amp; other workers. Avoid travelling on sloping ground. No unauthorised persons to enter area. JHA to document traffic management controls. All personnel associated with the task have been inducted &amp; signed the applicable SWMS/JHA. Supervisors must ensure specified controls are implemented and followed. Work planning must eliminate personnel being positioned under or near live loads. Task undertaken by qualified crane</td>
<td>Crane must be able to maintain clearances based on Electricity Authority safe approach Distance &amp; WorkSafe requirements. &lt;132Kv = 3m, &lt;330Kv = 6m, Over 330Kv = 8m. Use of tiger trails &amp; warning devices. Use of slewing &amp; luffing restrictors set where fitted. Asset owner Protection Officer required for work in close proximity to assets. Crane crew to be suitably qualified to operate near live electrical apparatus as a non electrical worker.</td>
<td>Work Health &amp; Safety Act 2011 Work Health &amp; Safety Regulation 2017 NSW CoP: Work near overhead powerlines NSW CoP: Managing the risk of plant in the workplace AS 2550 Cranes - Safe Use Pt1 JHA AS 2550.5 Mobile Cranes Georgiou Incident Alert 2016-014</td>
<td>Moderate</td>
<td>Health and Safety</td>
<td>General</td>
</tr>
<tr>
<td>Crane Set-up &amp; use inspection</td>
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<td>Traffic Management</td>
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<tr>
<td>Windsor Bridge Replacement Project</td>
<td>Construction Traffic Management Sub Plan</td>
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</tbody>
</table>

Before clearance to proceed is granted before entering exclusion zone. Personnel on foot accessing areas of mobile plant or vehicle movements must carry 2-way radio at all times, turned on & tuned.
## APPENDIX B
Current RMS ROLs And SZAs And Local Government Approvals

<table>
<thead>
<tr>
<th>ROL No</th>
<th>TCP No.</th>
<th>Location</th>
<th>Closure Type</th>
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</thead>
<tbody>
<tr>
<td>1001246</td>
<td>6106TRA-TCP-004 &amp; 005</td>
<td>Macquarie St Fitzgerald St Hawkesbury Lane 1 of 2, Short term/Intermittent</td>
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</tr>
<tr>
<td>1001206</td>
<td>6106TRA-TCP-011</td>
<td>Bridge St Court St Wilberforce Rd Lane 1 of 1, Short term/Intermittent, Stop/Slow</td>
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<tr>
<td>1001288</td>
<td>6106TRA-TCP-002 &amp; 007</td>
<td>Bridge St Wilberforce Rd Windsor Rd Lane 1 of 1, Short term/Intermittent, Stop/Slow</td>
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</tr>
<tr>
<td>1001316</td>
<td>6106TRA-TCP-010</td>
<td>Wilberforce Rd Bridge St Rose St No-trafficable area</td>
<td></td>
</tr>
<tr>
<td>1008752</td>
<td>6106TRA-TCP-009</td>
<td>Bridge St Wilberforce Rd Windsor Rd No-trafficable area</td>
<td></td>
</tr>
<tr>
<td>1008742</td>
<td>6106TRA-TCP-012</td>
<td>Wilberforce Rd Bridge St Rose St Stop/Slow - All lanes one direction</td>
<td></td>
</tr>
<tr>
<td>1008740</td>
<td>6106TRA-TCP-010</td>
<td>Wilberforce Rd Bridge St Rose St No-trafficable area</td>
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</tr>
<tr>
<td>1020604</td>
<td>6106TRA-TCP-013</td>
<td>Wilberforce Rd Bridge St Rose St Shoulder - Contra Flow</td>
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</tr>
<tr>
<td>1033492</td>
<td>6106TRA-TCP-012</td>
<td>Wilberforce Rd Bridge St Rose St Stop/Slow - All lanes one direction</td>
<td></td>
</tr>
<tr>
<td>1033496</td>
<td>6106TRA-TCP-010</td>
<td>Bridge St Wilberforce Rd Windsor Rd No-trafficable area</td>
<td></td>
</tr>
<tr>
<td>1033484</td>
<td>6106TRA-TCP-009</td>
<td>Bridge St Wilberforce Rd George St Stop/Slow - All lanes one direction</td>
<td></td>
</tr>
<tr>
<td>1033502</td>
<td>6106TRA-TCP-013</td>
<td>Wilberforce Rd Bridge St Rose St No-trafficable area</td>
<td></td>
</tr>
<tr>
<td>1045080</td>
<td>6106TRA-TCP-010</td>
<td>Bridge St Wilberforce Rd George St Short/Term/Intermittent Works</td>
<td></td>
</tr>
<tr>
<td>537427</td>
<td>6106TRA-TCP016,017,021,022</td>
<td>Wilberforce Rd Freemans Reach Rd 1km East Freemans Reach Rd</td>
<td>Short/Term/Intermittent Works</td>
</tr>
<tr>
<td>537431</td>
<td>6106TRA-TCP018,019,020,023,024,025</td>
<td>Wilberforce Rd Freemans Reach Rd 1km East Freemans Reach Rd</td>
<td>Short/Term/Intermittent Works</td>
</tr>
<tr>
<td>537433</td>
<td>6106TRA-TCP018,019,020,023,024,025</td>
<td>Wilberforce Rd Bridge St Rose St Stop/Slow - All lanes one direction</td>
<td></td>
</tr>
<tr>
<td>1045072</td>
<td>6106TRA-TCP-012</td>
<td>Wilberforce Rd Bridge St Rose St Stop/Slow - Lane 1, shoulder, medians</td>
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<tr>
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<td>1098900</td>
<td>6106TRA-TCP018,019,020,023,024,025</td>
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</tr>
<tr>
<td>1098878</td>
<td>6106TRA-TCP016,017,020,021</td>
<td>Wilberforce Rd Bridge St Rose St Shoulder - Contra Flow</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

VEHICLE MOVEMENT PLANS
Notes:
1. Communication & eye contact required prior to passing plant
2. Confirm unloading area prior to commencing
3. Flashing light & reversing siren to be operational prior to entering site
4. Ensure truck is on an even/flat surface prior to unloading
5. All LV to give way to HV

<table>
<thead>
<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Vehicle Movement Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>A. Smith</td>
<td>VMP No 001</td>
</tr>
<tr>
<td>Plan Date</td>
<td>7/06/2018</td>
<td>Site Contact Wayne Mayo 0403 311 285</td>
</tr>
<tr>
<td>Description</td>
<td>Site Establishment</td>
<td>UHF TBA</td>
</tr>
</tbody>
</table>
Stage 1 - VMP

- Access to The Terrace will be left in/left out. There will be no right turn from Bridge St onto The Terrace.

- Access to the southern end of the works will be via the existing right turn bay on Bridge St. Vehicles will exit the site and travel along old Bridge St.
Stage 2 - VMP

- Access to The Terrace will be left in/left out. There will be no right turn from Bridge St onto The Terrace.

- Access to the southern end of the works will be via the existing right turn bay on Bridge St. Vehicles will exit the site and travel along old Bridge St.

---

Project | Windsor Bridge Replacement | Vehicle Movement Plan
--- | --- | ---
Prepared by | A. Smith | VMP No | 003
Plan Date | 13/07/2018 | Site Contact | Wayne Mayo 0403 311 285
Description | Stage 2 South | UHF | TBA
Stage 3 - VMP

- Access to the Terrace is only left in/left out. There will be no right turn from Bridge St onto The Terrace.

- Access to the southern end of the works will be left in only off Bridge St. and Vehicles will exit the site travelling left only onto Bridge St.

<table>
<thead>
<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Vehicle Movement Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>A. Smith</td>
<td>VMP No</td>
</tr>
<tr>
<td>Plan Date</td>
<td>13/07/2018</td>
<td>Site Contact</td>
</tr>
<tr>
<td>Description</td>
<td>Stage 3 South</td>
<td>UHF</td>
</tr>
</tbody>
</table>
Stage 4
- Access to the site will be left in/left out via Bridge St.
Stage 5
- Access to the site will be left in/left out over the new kerb at Bridge St
Stage 1 - VMP

- All access and egress will be via the compound entrance.
- Entry to ancillary compound will be via Wilberforce Rd. Exit will be via Freemans Reach Rd.

<table>
<thead>
<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Vehicle Movement Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>A. Smith</td>
<td>VMP No 007</td>
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<tr>
<td>Plan Date</td>
<td>13/07/2018</td>
<td>Site Contact Wayne Mayo 0403 311 285</td>
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<tr>
<td>Description</td>
<td>Stage 1 North</td>
<td>JHF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TBA</td>
</tr>
</tbody>
</table>
**Stage 2 - VMP**
- All access and egress will be via the compound entrance.
- Entry to ancillary compound will be via Wilberforce Rd. Exit will be via Freemans Reach Rd.

<table>
<thead>
<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Vehicle Movement Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>A. Smith</td>
<td>VMP No</td>
</tr>
<tr>
<td>Plan Date</td>
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<td>Site Contact</td>
</tr>
<tr>
<td>Description</td>
<td>Stage 2 North</td>
<td>Wayne Mayo 0403 311 285</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UHF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TBA</td>
</tr>
</tbody>
</table>
Stage 3 - VMP

- All access and egress will be via the compound entrance.
- Entry to ancillary compound will be via Wilberforce Rd. Exit will be via Freemans Reach Rd.

<table>
<thead>
<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Vehicle Movement Plan</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Plan Date</td>
<td>13/07/2018</td>
<td>Site Contact</td>
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<tr>
<td>Description</td>
<td>Stage 3 North</td>
<td>Wayne Mayo 0403 311 285</td>
</tr>
<tr>
<td></td>
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<td>UHF</td>
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<tr>
<td></td>
<td></td>
<td>TBA</td>
</tr>
</tbody>
</table>
Stage 4 - VMP
- Access to the compound will be via a turning bay.
- Access to the work areas will be left in, left out.
Stage 5 - VMP
- Access to the compound will be left in, left out.
- Access to the work areas will be on at differing locations behind the kerb. This access will be managed with traffic control.
APPENDIX D
Staging Plans
NOTES
1. AREA UNDER TRAFFIC SHALL BE EFFECTIVELY DRAINED AT ALL TIMES.
2. ALL REQUIRED PAVEMENT MARKINGS SHALL BE REMOVED BEFORE TRAFFIC SWITCH.
3. ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
4. ACCESS TO BE MAINTAINED TO THE WHARF FOR THE FERRY STEAMER OPERATOR AND HIS PASSENGERS.
North of the River - Stage 2

NOTES
1. AREA UNDER TRAFFIC SHALL BE EFFECTIVELY DRIED AT ALL TIMES.
2. ALL PEDESTRIAN PAVEMENT MARKINGS SHALL BE REMOVED BEFORE TRAFFIC Switch.
3. ALL TIMES, CUMBERLAND SHOAL TO BE MAINTAINED.
4. THE TRAFFIC CONTROL PLANS FOR ROADWORK TO BE MAINTAINED.
5. ACCESS TO BE MAINTAINED TO FISHING HOOK FOR THE FISHERMEN.
### APPENDIX E
Traffic Control Personnel – Skills Matrix

<table>
<thead>
<tr>
<th>Name</th>
<th>Traffic Controller</th>
<th>Implement Traffic Control Plans</th>
<th>Prepare a Work Zone Traffic Management Plan</th>
</tr>
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<tbody>
<tr>
<td>Amanda Tims</td>
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</tr>
<tr>
<td>Brett Hassett</td>
<td>x</td>
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<tr>
<td>Eamon Mullan</td>
<td>x</td>
<td>x</td>
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</tr>
<tr>
<td>Edward Wheatley</td>
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<tr>
<td>Elie Matthew</td>
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<td>x</td>
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<tr>
<td>Jamie Petrovksi</td>
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<tr>
<td>Jeremy Sayer</td>
<td>x</td>
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<tr>
<td>Joanne Gaghan</td>
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</tr>
<tr>
<td>Keira Frappell</td>
<td>x</td>
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<tr>
<td>Kristy Berger</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Mario Martinez</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Mark Lucas</td>
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<td>x</td>
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<tr>
<td>Michael Delprado</td>
<td>x</td>
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</tr>
<tr>
<td>Natalie Lucas</td>
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<td>x</td>
<td></td>
</tr>
<tr>
<td>Sylvia Stehlik</td>
<td>x</td>
<td>x</td>
<td></td>
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<tr>
<td>Tony Boerello</td>
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</tbody>
</table>
APPENDIX F
Consultation with Council for Road Dilapidation Report
Email correspondence confirming on site meeting held 22 June between RMS, HCC and Georgiou

Michael Andrews

From: GILL Gene <Gene.Gill@cms.nsw.gov.au>
Sent: Friday, 22 June 2018 10:59 AM
To: STANDEN Graham W; STALDER Warren; Felipe Quiroz;
    'Richard.VABY@hawkesbury.nsw.gov.au'; Michael Andrews
Cc: WBR.Contract@rms.nsw.gov.au; EDISHO Elin; SINGH Gurjit
Subject: Road Dilapidation Report - Windsor Bridge Replacement Project

All,

Confirming details of Wednesday’s discussion about the road dilapidation report as follows:

- Report must include all council maintained roads which will be used by Georgiou construction traffic and footpaths, kerbs, utilities in those areas
- Report to include road, footpaths and kerbs 15-20 metres past the limit of new works
- Consideration of deflection testing will be limited to Georgiou construction traffic routes on council maintained roads only, and only if these areas are not getting new pavement. The area for deflection testing is to be limited to 20 metre intervals along all wheel paths in these areas
- Georgiou to capture the above areas using dashcam and forward to Richard from HCC for comment on whether quality is acceptable. Richard to CC RMS in on responses.
- If HCC is happy Georgiou to finalise the report and send to RMS and HCC for review prior to construction commencing

Please let me know if these details are not correct or I have missed anything.

Regards

Gene

Gene Gill
Project Manager/Engineer
Greater Sydney Project Office
M 0448 463 078 E Gene.Gill@rms.nsw.gov.au

Roads and Maritime Services
Level 9/27 Argyle St, Parramatta
Email correspondence from RMS confirming that HCC had no comments regarding the road dilapidation report

Michael Andrews

From: GILL Gene <Gene.Gill@rms.nsw.gov.au>
Sent: Friday, 24 August 2018 1:39 PM
To: Michael Andrews
Cc: WBR.Contract@rms.nsw.gov.au
Subject: FW: TMP - Windsor Bridge Replacement Project

Hi Michael,

Council reviewed the TMP with the road dilapidation report attached.

There were no comments from council regarding the Road Dilapidation Report.

Regards

Gene

From: EDISHO Elin
Sent: Friday, 24 August 2018 1:37 PM
To: GILL Gene
Subject: FW: TMP - Windsor Bridge Replacement Project

Hi Elin

In relation to the updated TMP provided and the information listed below, is it possible to have the table below added to Appendix G.

Thank you for advising us of the contents of the updated TMP; they are noted accordingly.

Regards,

Christopher Amit | Manager Design & Mapping Services | Hawkesbury City Council
☎ (02) 4560 4508 | ☏ 0409 927 332 | ☎ (02) 4587 7740
✉ Christopher.AMIT@hawkesbury.nsw.gov.au | 🏪 www.hawkesbury.nsw.gov.au

From: EDISHO Elin [mailto:ElIn.Edisho@rms.nsw.gov.au]
Sent: Wednesday, 25 July 2018 4:43 PM
To: Christopher Amit
Cc: STANDEN Graham W; SINGH Gurjit
APPENDIX G
Evidence of Consultation with Hawkesbury City Council
Good Afternoon Gene

We would not object to the relieving of the Left Turn Ban as long as the traffic movements at the roundabout are monitored as well as the traffic light ‘Green Time’ is sufficient to allow for the free flow of traffic up to and over the Bridge.

The left turn ban was imposed due to issues for traffic turning left from Macquarie Street to go over the Bridge which RMS Network would be aware of.

I have attached some background information that may assist as to how this ban came about.

---

Hi Chris,

Thank you for these comments. In relation the LHT into Court St being banned from 4-6PM: Both RMS Network and TMC are OK if this turn is allowed during this detour. Will this provide any specific problems for council?

Regards Gene

---

Good Afternoon Michael

In relation to the proposed changes to traffic movements at George Street at Bridge Street, Windsor, please refer to the attached document.

The provided information does not cover some of the current issues at this location and needs review.

In relation to the detours for Freemans Reach Road, I am currently sourcing this information. The traffic was diverted using Kurmond Road. Once I have that information I will forward it to you.

Regards,

Christopher Amit | Manager Design & Mapping Services | Hawkesbury City Council

* Christopher.AMIT@hawkesbury.nsw.gov.au |  www.hawkesbury.nsw.gov.au
Hi Chris,

I received an out of office notification from Jeff. Are you able to assist with the emails below.

Thanks, Michael

Hi Jeff,

Further to my email below, please find the attached concept TCPS for the detours to be implemented during the half closure of George St east. Could you please let me know if you have any comments.

Also, I am lead to believe that Council has previously implemented detours on Freemans Reach Rd similar to what is described below. Would it be possible to obtain the TCP/TMP for this detour?

Thanks, Michael

Hi Geoff,
I am writing to you with regard to changes to the traffic management we are planning for Windsor Bridge Replacement Project. These changes will be detailed in an updated TMP which is currently being drafted. I have listed the changes below.

**Roundabout on Wilberforce Rd**

We will be installing a small temporary roundabout to service our site entrance and stockpile area on Wilberforce Rd. This will remove the need for traffic control and will hopefully improve traffic flows. This is planned for January 2019.

**Detour on Freemans Reach Rd**

The design for Freemans Reach Rd is for a full depth pavement reconstruction with a nominal depth of 680mm. This extends approximately 100m down Freemans Reach Rd from the current intersection with Wilberforce Rd. The width of the existing road is not sufficient to allow two lanes of traffic to flow during construction. After discussions with the TMC, it was determined that a detour would be the most suitable means of traffic control for the works, as temporary traffic lights or traffic control to manage a single lane contra-flow arrangement would cause excessive queuing on Wilberforce Rd and pose a hazard to motorists, there is not enough space to maintain dedicated turning lanes.

The detour would need to be in place for approximately 4 weeks. During this period, we would box out the road, install all the services, construct the new pavement and tie-in to the new roundabout. At this stage, the detour will occur once traffic is switched to the new bridge and the new road alignment on Wilberforce Rd, which is currently programmed for December 2019.

The detour would run via Gorricks Lane and Kurmond Rd. **Works at the Intersections of Bridge and George Streets**

The original staging for the works through the intersection made use of the traffic signals that will be installed in the final scheme. However, because the use of traffic signals would require a dedicated lane for the right hand turn movement into George St and this is not possible due to the construction constraints, it is not safe to use traffic signals. Consequently, we will be removing the existing roundabout and installing a temporary roundabout of similar size in a modified location within the intersection, which will facilitate the pavement works. This location of this roundabout will vary as the works progress, but the turn movements will not be affected with the exception of the item below. Traffic lights will be used only for the final scheme. Heavy vehicles would be banned from turning into George St from Bridge St when the temporary roundabout is in place.

**Archaeological Works on George St East**

Archaeological salvage needs to be completed below the pavement on George St East. To complete this, it is necessary to close a lane from the intersection to approximately 40m into George St East. This will mean there will be either an east bound lane or a west bound lane only during this period. It is anticipated the archaeologists will need approximately 3 weeks on each side of the road, followed by a week of reconstruction. During this period, we would implement one way traffic on George St East adjacent to the work site, with either no entry from or exit to the roundabout, depending on the lane that is closed.

Please let me know if you have any questions or require any further information. Regards,

Michael

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**Consider the environment. Please don’t print this e-mail unless really necessary.**
Hi Gurjit

I refer to the Construction Traffic Management Sub Plan for the Windsor Bridge project referred to us for comment.

It is noted that further information will follow once it is available such as the Dilapidation report following on from the previous site meeting undertaken.

Based on the document provided, the following comments are provided:

- It is noted that parking for workers other than accessing shops will not be permitted in the Windsor town centres and surrounding roads. It would be appreciated that this is maintained as general on-street parking is in high demand.
- Stage 1 (p.13) refers to the removal and relocation of the 2 disabled parking spaces from the small car park to the existing eastern car park. Please advise if mobility access has been considered to and from the Wharf and the surrounding area.
- Stage 2 (p15-16) refers to the eastern car park and the Windsor Wharf area being closed off to pedestrians and general access. The plan does not stipulate the time frame that the closure will be in place. It appears that there will be no public access to the Wharf during this period.
- Stage 2 (p15-16) refers to the Windsor Wharf area being closed and access for passengers wanting to access the Wharf to the Paddle Steamer will be from the western side of The Terrace and by utilising the underpass for the Bridge. Please ensure that the condition of the underpass is assessed first as RMS may need to undertake any necessary upgrade of this area or ongoing works are required. Furthermore if this underpass is to be used will it satisfy Mobility access to the Wharf.
- Section 5.1.7 (p25-26) refers to the Site compound and access to the Site which is located between the River and Wilberforce Road. The Ancillary Facility referred to in Appendix C should be referred to in this section explaining the movement of vehicles and in particular the movement of heavy vehicles for the Stock pile site. It appears from the Diagram in Appendix C that access at Wilberforce Road will be ingress only, with egress onto Freemans Reach Road. It is noted from the Pavement diagram that Freemans Reach Road will be upgraded as also indicated in the Minutes from the meeting held on 31 May 2018 Section 6. Until this section of Freemans Reach Road (to Ch 115) is reconstructed, please ensure that this section of road provides a satisfactory level of service for motorists and does not deteriorate due to the nature of vehicles utilising the Ancillary-Stock Pile site. This section of road will be picked up as part of the dilapidation report and needs to be monitored by the Contractor/RMS.

Please contact me if you require any clarification on the information provided.

Regards,

Christopher Amit | Manager Design & Mapping Services | Hawkesbury City Council
☎ (02) 4560 4508 | ☎ 0409 927 332 | ☎ (02) 4587 7740
✉ Christopher.AMIT@hawkesbury.nsw.gov.au | ☇ www.hawkesbury.nsw.gov.au

Hawkesbury Fest 24 July
SUNDAY 29 JULY
11AM - 3PM
GOVERNOR PHILLIP PARK
LOCAL GOVERNMENT WEEK 2018

From: SINGH Gurjit [mailto:Gurjit.SINGH@rms.nsw.gov.au]
Sent: Friday, 29 June 2018 12:27 PM

1
To: Richard Vaby  
Cc: Christopher Amit; STAN DEN Graham W; GILL Gene  
Subject: TMP - Windsor Bridge Replacement Project

Hi Richard and Chris,

Please find attached the Traffic Management Plan for the Windsor Bridge Replacement Project for your review and consideration. RMS has reviewed the TMP and the attached is version 2.

As per our discussion on the phone can we receive your comments back in one week. If there are any issues feel free to contact me.

Thank you.  
Kind regards

Gurjit Singh  
Project Manager/Engineer, Greater Sydney  
Infrastructure Delivery | Infrastructure Development  
T 02 8849 2688 M 0459 808 823  
www.rms.nsw.gov.au  
Every journey matters

Roads and Maritime Services  
27 Argyle Street, Parramatta NSW 2150

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APPENDIX H
Site Compound Car Parking Layout
APPENDIX I
Pedestrian Movement Plans
Stage 2B South
- There will be no pedestrian access to Windsor Wharf unless arranged between Peddle Steam Operator and Georgiou.
- Pedestrians must use stairs beneath existing bridge to cross the road.

<table>
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<tr>
<th>Project</th>
<th>Windsor Bridge Replacement</th>
<th>Pedestrian Movement Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>J. Grasinger</td>
<td>PMP No</td>
</tr>
<tr>
<td>Plan Date</td>
<td>14/01/2019</td>
<td>Site Contact</td>
</tr>
<tr>
<td>Description</td>
<td>Stage 2B South</td>
<td>Wayne Mayo 0403 311 285</td>
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<td>UHF</td>
</tr>
<tr>
<td></td>
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</table>
Stage 2C South
- There will be no pedestrian access to Windsor Wharf unless arranged between Paddle Steam Operator and Georgiou.
- Pedestrians must use stairs beneath existing bridge to cross the road.

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<th>Pedestrian Movement Plan</th>
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<td>J. Grasinger</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>
Stage 3 South
- There will be no pedestrian access to Windsor Wharf unless arranged between Paddle Steam Operator and Georgiou.
- Pedestrians must use stairs beneath existing bridge to cross the road.
- Pedestrian access to George St Eastbound is closed coming from the bridge.

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<tbody>
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<td>PMP No</td>
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</table>
Stage 4 South
- Pedestrians to use stairs beneath new bridge to cross.
- Footpaths on each side of George St Westbound will be closed.

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<td>PMP No 009</td>
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<tr>
<td>Plan Date</td>
<td>14/01/2019</td>
<td>Site Contact Wayne Mayo 0403 311 285</td>
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<td>Description</td>
<td>Stage 4 South</td>
<td>UHF 39</td>
</tr>
</tbody>
</table>
Stage 5 South
-Pedestrians to use stairs beneath new bridge to cross.
Stage 4 North
- Pedestrian access to Macquarie Park via new bridge.
- No other pedestrian access.
- Footpaths to be closed or moved to suit works.

<table>
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<tr>
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<th>Pedestrian Movement Plan</th>
</tr>
</thead>
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<td></td>
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<tr>
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<td>PMP No 010</td>
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<td>Site Contact Wayne Mayo 0403 311 285</td>
</tr>
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APPENDIX J
George St (East) Detour Plan
George St, Windsor Entrance Closure

Detour Route

This site-specific TCP is based on BASI TRAC 4 Manual and is to be setup and packed up by qualified traffic management with proper introduction to Traffic Control at Roadside's (Yellow Card) site.

Information - To this site specific TCP should be used by qualified personnel with current Select and Monitor (Red Card) or Design and Inspect (Orange Card).

All modifications to be signed off by the TCP along with certification above.

This plan shall be set up in accordance with AS 1742.2:2008 and Traffic Control Services at Workshops. The TCP "Traffic Control at Workshops Manual V4" PLATINUM takes no responsibility for the implementation of this TCP when not directly involved in carrying out the subject works.

Prepared & Signed By

Date: 2011/10
Author: CHRISTOPHER JOLESH
Project: George St
Road Type: Two Way Multi Lane Un Divided Road Width: 50m

N

2

1

1

0

0

0

0

0

0

0

OTHER EQUIPMENT

This plan shall be set up in accordance with AS 1742.2:2008 and Traffic Control Services at Workshops. The TCP "Traffic Control at Workshops Manual V4" PLATINUM takes no responsibility for the implementation of this TCP when not directly involved in carrying out the subject works.

Prepared & Signed By

Date: 2011/10
Author: CHRISTOPHER JOLESH
Project: George St
Road Type: Two Way Multi Lane Un Divided Road Width: 50m

N

2

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OTHER EQUIPMENT
APPENDIX K
Freemans Reach Road Detour Plan