

Traffic Management Plan

Causeway Link Alliance

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Control Page

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1. INTRODUCTION

1.1 Purpose and Intent

The Traffic Management Plan (TMP) describes the strategies and policies to be implemented throughout all phases of the works for the Alliance to safely and efficiently manage road, pedestrian, cyclist, and river traffic impacted or generated by the Causeway Pedestrian and Cyclist Bridge Project across the Swan River in Perth, Western Australia.

The implementation of these initiatives provides for an effective project management system, whilst ensuring that the work satisfies the requirements of the Contract documents, statutory requirements and applicable standards and codes.

Note that the river traffic management is specifically covered under the 'Vessel Management Plan' (separate document).

1.2 Distribution and Authorisation

1.2.1 Plan Distribution:

The Alliance Construction Manager is responsible for the distribution of the TMP. It will be introduced to all relevant staff as required. The controlled copy of this document will be maintained in the project document control system.

1.2.2 Plan Authorisation:

The TMP shall be authorised by the nominated Traffic Management Representative (TMR) and by the Alliance Construction Manager. The implementation of the TMP is under the authority of the nominated TMR. All relevant personnel employed on the Project will perform their duties in accordance with the requirements of the TMP, supporting management plans and related procedures.

1.2.3 Further Development:

The TMP is a live document and maybe further developed and revised during its use on the project to address:

- Any changes in the project execution process.
- Comments and feedback by MRWA.
- Changes in technology and work methods to improve processes.
- Changes identified by continuous improvement.

1.3 Safety

The Alliance will ensure that environment, safety, and health guidelines are established in accordance with the TMP. The Alliance will ensure that all operations performed by any transport and logistics providers, or in relation to traffic management are in strict compliance with Project safety requirements, procedures and standards.

1.4 Subcontractor/Supplier Management

Prior to engagement, all potential suppliers and subcontractors will be assessed on their capacity, past performance and conformance of their systems and processes to ensure that competent and capable subcontractors/suppliers are engaged. The TMP will be provided and communicated to them as part of the engagement.

2. PROJECT OVERVIEW

The Causeway Pedestrian and Cyclist Bridge Project is an opportunity to deliver a landmark pedestrian and cyclist connection across the Swan River that responds to the unique cultural and historic significance of the area, integrates with existing landscape and urban design, and provides an attractive link for both tourists and the wider community.

The existing causeway bridge is one of only four pedestrian and cyclist crossings of the Swan River, being one of the busiest carrying approximately 1,400 cyclists and 1,900 pedestrians per day, with peak hour volumes of over 150 cyclists and 200 pedestrians. The need to improve this connection has been identified for some time, with concerns about existing shared path width, surface condition and mix of user groups generally causing safety concerns.

The new bridge will have a 3.5m wide cycle path and a 2.5m wide pedestrian walkway provided for separated and safer access across the Swan River for both cyclists and pedestrians independent of the road traffic. Located 80-90m downstream of the existing Causeway, this alignment was considered appropriate in terms of its ability to improve pedestrian/cyclist amenity, maintain directness and minimise impacts on flora and fauna, as well as the Swan River itself. Consisting of two cable stay bridges, the proposed option limits the number of river piers to just three, acknowledging the spiritual and cultural importance of the Swan River (Derbarl Yerrigan) to Perth's first nations peoples.

The historical and cultural significance of the areas is of prime importance. Both Heirisson Island and the Swan River hold significant Aboriginal cultural values, while the existing Causeway Bridges remains with high historical heritage value. The Department of Transport commenced early engagement with key stakeholders in 2019 and the Main Roads project team continue to engage until the Alliance is formed. This includes establishment of and, engagement with an Elders Advisory Group, as well as consultation with other key stakeholders such as the City of Perth, Town of Victoria Park and other key government agencies.



Figure 1 – Concept Image of the Causeway Pedestrian and Cyclist Bridge

3. DEFINITION

Term	Definitions
MRWA	Main Roads of Western Australia.
Alliance	MRWA, Civmec Construction & Engineering Pty Ltd, Seymour Whyte and WSP Engineering.
Contract	Document detailing the binding agreement between the MRWA and the Alliance NOP's for completion of the Project.
Subcontractor	An approved service provider/supplier engaged by the Alliance under subcontract to deliver services and/or supply materials and resources for the execution of the Alliance Project's Scope of Work.
Project	Causeway Pedestrian and Cyclist Bridge Project.
RTM	Roadworks Traffic Manager.
AWTM	Advanced Worksite Traffic Management.

4. ABBREVIATIONS

Document Number	Document Title (Source Location)
AGTTM	Austrroads Guide to Temporary Traffic Management.
AS	Australian Standard.
AS/NZ	Australian and New Zealand Standard.
AWTM	Advanced Worksite Traffic Management/Manager.
CCC	Care, Custody and Control.
COG	Centre of Gravity.
JHA	Job Hazard Analyses.
Km/h	Kilometres per Hour.
LoS	Level of Service.
MRWA	Main Roads Western Australia.
NTC	National Transport Commission.
PPE	Personal Protection Equipment.
RSA	Road Safety Audit.
RTM	Roadworks Traffic Manager (accredited by MRWA).
TGS	Traffic Guidance Scheme.
TMR	Traffic Management Representative.
TMP	Traffic Management Plan.
WTM	Worksite Traffic Manager.

5. REFERENCES/ASSOCIATED DOCUMENTS

Document Number	Document Title (Source Location)
040-RFP-CPCB	Basis of Design and Construction – Final at RFP – Rev 0.
041 to 066-RFP-CPCB	MRWA Reference Documents.

Document Number	Document Title (Source Location)
RFPMRWA008720	Request for Proposal Specification Documents.
Main Roads WA – Specification 202	Traffic.
MRWA Traffic Management for Works on Roads - Code of Practice	MRWA Traffic Management for Works on Roads - Code of Practice.
LOCAL GOVERNMENT ACT 1995 (WA)	Section 3.50 - Closing certain thoroughfares to vehicles.
AS/NZS 3845-1999	Australian Standard - Road Safety Barrier System.
AS/NZS/ISO 31000	Australian Standard - Risk management.
AS 1742.3	Traffic Control Devices for Works on Roads.
AGTTM	Austrroads Guide to Temporary Traffic Management.
www.mainroads.wa.gov.au	Traffic Management at Roadworks on State Roads – Policy.
www.commerce.wa.gov.au/	Guidance Notes – Safe Movement of Vehicles in the Workplace.
www.legislation.wa.gov.au	Road Traffic Code 2000.
www.wapvda.org.au	Western Australia Vehicle Drivers Association.
www.fwa.gov.au	Fair Work Australia.

6. SCOPE OF WORK

6.1 Objectives and Strategies

The objectives of the Traffic Management Plan are to ensure:

- The safety of the Alliance's workers on site;
- All road users, including pedestrians and cyclists, are safely guided around, through or past the work site.
- The performance of the road network is not unduly impacted and the disruption and inconvenience to all road users are minimised for the duration of the works.
- Impacts on users of the road reserve and adjacent properties and facilities are minimised.

To meet these objectives the Traffic Management Plan will incorporate the following strategies:

- Maintaining the minimum number of traffic lanes to accommodate vehicle volumes, as required under the Alliance's Project Scope of Work
- Ensuring delays and impact on the adjacent road networks are minimised.
- Ensuring all road users are managed safely around the construction site including motorists, pedestrians, cyclists, people with disabilities and public transport users.
- Ensuring work activities are carried out efficiently to minimise adverse impacts on the Project's Traffic Management controls
- Provision safe access/egress for works personnel on site in a safe manner in accordance with safety procedures.
- Safe and effective management of all site entry/exit points.

6.2 McCallum Park Traffic Control



Figure 2 – Outline of McCallum Park Traffic Plan

The above traffic management plan for McCallum Park has been developed after reviewing the risks associated with the location of the site and its way of set up. Based on RTM’s initial assessment the following risks are summarised:

- Interaction of site traffic movements with pedestrians and cyclists crossing PSP.
- Interaction of public traffic with decelerating vehicles entering site.
- Interaction of Public traffic with Site exiting vehicles.

After careful review of the risks, the following shall be implemented during construction activities at the McCallum Park site:

- Access to the main site area will be from Canning Highway;
- Install temporary fencing to isolate the work zone from the public;
- Installation of a closable/extendible gate system across PSP with supplemental approach signage to facilitate control of access point by site personnel or gateman.
- Construction of pavement markings including priority controls (Give Way/Slow Down etc) at all interface points of temporary paths, PSP detours and existing roads or path.
- Once temporary connection path is built, the existing foreshore cycle/pedestrian path will be closed.
- Signage will be erected both on Canning Hwy and the cycle/pedestrian paths to warn users of the changes and dangers ahead during construction.
- At the site entrance off Canning Hwy, adequate signage will be placed to control the interface between public and construction vehicles. This set up will need to be assessed by a qualified RTM. At this stage we are allowing for a traffic controller to be stationed for the safe guiding of vehicles, pedestrians, and cyclists during vehicle movements.
- The foreshore cycle/pedestrian path will be detoured around the fenced work site, along Canning Hwy, as shown above.

- On completion of the McCallum Park construction works the foreshore cycle/footpath will be reinstated and connected to the new Causeway Pedestrian and Cyclist Bridge.
- On completion of all works, access requirements at McCallum Park for construction vehicles and the temporary construction site will be removed, and the area made good and reinstated.

6.3 Heirisson Island Traffic Control



Figure 3 – Outline of Heirisson Island Traffic Plan

Similar to McCallum Park, the traffic management plan for Heirisson Island site access will require to be reviewed and assessed in detail by a qualified RTM. Based on the RTM’s preliminary assessment the following shall be implemented during construction activities at Heirisson Island:

- The existing vehicle access bay along the Causeway for Perth bound traffic, for Heirisson Island service vehicles, will be utilised for construction access.
- The vehicle access bay will be delineated using cones and bollards to prevent unauthorised access during construction.
- At the site entrance off the Causeway, a closable/extendible gate system to be installed across PSP with supplemental approach signage to facilitate control of access point by site personnel, gateman or traffic controller.
- A traffic controller or a gateman will be stationed for the safety of pedestrians and cyclists during vehicle movements.
- Signage will be erected both on the causeway and the cycle/pedestrian paths to warn users of the changes and dangers ahead during construction.
- During the Heirisson Island construction works, it is envisaged that the existing cycle/pedestrian pathways along the Causeway will remain unchanged.

- During the construction works, cycle/pedestrian access to the Southern end of Heirisson Island will be restricted.
- On completion of all work on Heirisson Island, the area made good and reinstated.
- At the same time the existing Causeway cycle/pedestrian path will be connected to the new Causeway Pedestrian and Cyclist Bridge on Heirisson Island.

6.4 Point Fraser Traffic Control

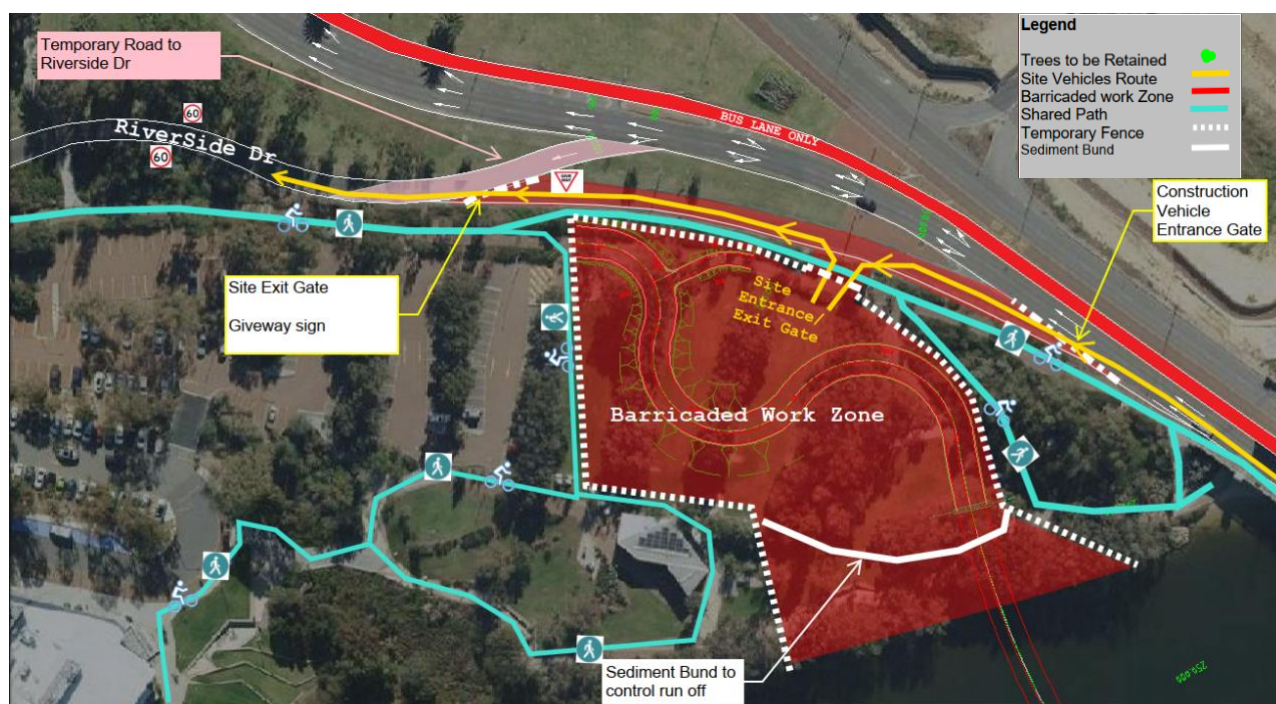


Figure 4 – Outline of Point Fraser Traffic Plan

The Point Fraser work area is relatively smaller than Heirisson Island and McCallum Park. During construction activities the Alliance team will try to minimise this interaction while maintaining the shared path open to public. The key risks after RTM’s preliminary assessments are:

- Interaction of site traffic movements with pedestrians and cyclists crossing PSP.
- Interaction of Public traffic with Site exiting vehicles.
- Likelihood of public traffic mistakenly driving into site – not correctly using temporary bypass ramp shown.

After reviewing the risks, the following at the Point Fraser site shall be implemented:

- Construct a 4m wide temporary road from Causeway onto Riverside Drive, for all traffic.
- After the temporary road has been constructed, all traffic to access Riverside Drive will be diverted to the temporary road onto Riverside Drive.
- Once implemented, the existing Riverside Drive turn off will be barricaded with an entrance gate installed for construction vehicles access only.
- Installation of a closable/extendible gate system across PSP with supplemental approach signage would facilitate control of access point by site personnel, gateman or a traffic controller.

- Interface between site exit and temporary ramp will require a Give Way or Stop sign (further assessment required) to be installed for construction vehicles to stop at the intersection.
- Signage will be erected both on the causeway and the cycle/pedestrian paths to warn users of the changes and dangers ahead during construction.
- Once the bridge construction works commence, the cycle/footpath from the Causeway underpass will be diverted up and around the barricaded work zone, as shown above.
- On completion of the Point Fraser Bridge construction works, the cycle/footpath connecting the underpass to the Riverside Drive pathway will be reinstated and connected to the new Causeway Pedestrian and Cyclist Bridge.
- On completion of all work access requirements at Point Fraser for construction vehicles, the Riverside Drive entry from the Causeway will be re-opened to road traffic.
- The temporary road and construction site will be removed, and the area made good and reinstated.

6.5 Logistics and materials delivery to site

The project will involve the transport and delivery of goods and equipment, including large bridge sections (decks, pylons, piling components etc). The transport and logistical operational requirements for transportation of all goods and equipment from the Perth Metro area to the Causeway Pedestrian and Cyclist Bridge Project construction site will be detailed at a later stage.

The Alliance will liaise with all suppliers, subcontractors, service providers to ensure that all necessary resources and approvals required for the safe and efficient transportation of all construction materials, structures and equipment to the nominated site location are available including approved permits and providing escort as required.

The Alliance shall be responsible for all transport and logistic activities including, but not limited to:

- Planning, management and coordination for all transport and logistics to the site.
- Appointing an approved, certified, and reputable traffic management subcontractor.
- Ensuring all subcontractors/suppliers are complying with the Chain of Responsibility (CoR) requirements.
- Providing a detailed logistics plan for critical items.
- On light vehicle, site personnel movement and parking.

For critical items delivery:

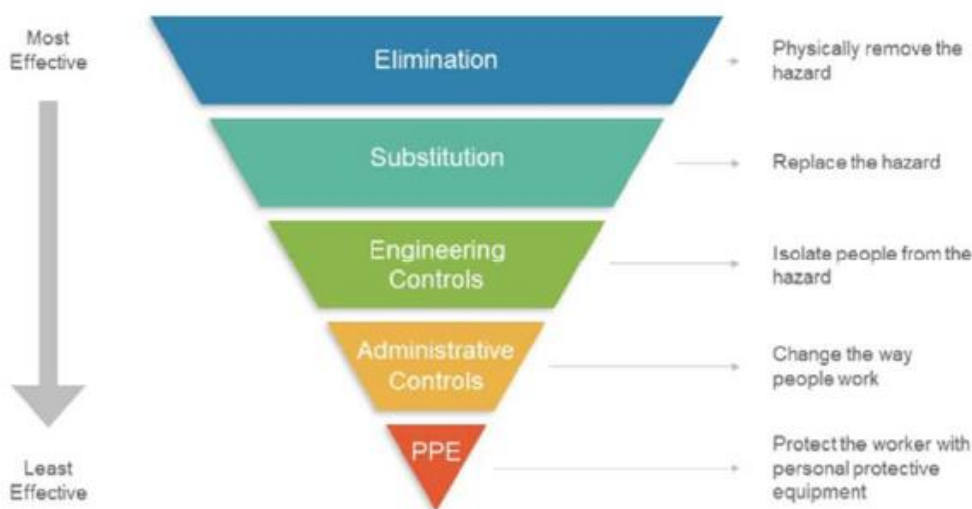
All transport and logistics providers shall, at all times be in radio communication, while on site and within 5 kilometers of the site to ensure that site traffic management controllers are aware of all movements in/out of the construction areas. Details on radio communication channels will be confirmed prior to commencement of construction activities on site All deliveries and/or movement in/out of site shall be communicated to the Alliance Construction Manager no less than 72hours in advance and daily updates thereafter until the completion of the activity.

Haulage Roads will be selected in consultation with the local authorities. As described above, it is not planned for construction vehicles to enter or leave the Site via any residential streets or through land used by nearby businesses.

Subcontractor/suppliers progress, performance will be reported in accordance with the Project's reporting requirements.

7. RISK MANAGEMENT

The following details the preliminary assessment of site hazards likely to be encountered, the level of risk associated with each and the control proposed. Note that the risk level is the level of assessed risk *without* the controls in place. The controls listed have been determined as being appropriate in reducing the risk to a level that is acceptable. The hierarchy of control has been utilised to ensure that the highest practicable level of protection and safety is selected:



In evaluating the options, a key consideration is whether the option takes traffic around, through or past the worksite.

7.1 Risk Classification Tables

QUALITATIVE MEASURES OF CONSEQUENCE OR IMPACT

Level	Consequence	Description
1	Insignificant	<ul style="list-style-type: none"> Mid-block hourly traffic flow per lane is equal to or less than the allowable lane capacity detailed in AGTTM. No impact to the performance of the network. Affected intersection leg operates at a Level of Service (LoS) of A or B. No property damage.
2	Minor	<ul style="list-style-type: none"> Mid-block hourly traffic flow per lane is greater than the allowable road capacity and less than 110% of the allowable road capacity as detailed in AGTTM. Minor impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of C. Minor property damage.
3	Moderate	<ul style="list-style-type: none"> Midblock hourly traffic flow per lane is equal to and greater than 110% and less than 135% of allowable road capacity as detailed in AGTTM. Moderate impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of D. Moderate property damage.

Level	Consequence	Description
4	Major	<ul style="list-style-type: none"> Midblock hourly traffic flow per lane is equal to and greater than 135% and less than 170% of allowable road capacity as detailed in AGTTM. Major impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of E. Major property damage.
5	Catastrophic	<ul style="list-style-type: none"> Midblock hourly traffic flow per lane is equal to and greater than 170% of allowable road capacity as detailed in AGTTM. Unacceptable impact to the performance of the network. Intersection performance operates at a Level of Service (LoS) of F. Total property damage.

OSH QUALITATIVE MEASURES OF CONSEQUENCE OR IMPACT

Level	Consequence	Description
1	Insignificant	No treatment required.
2	Minor	First aid treatment required.
3	Moderate	Medical treatment required or Lost Time Injury.
4	Major	Single fatality or major injuries or severe permanent disability.
5	Catastrophic	Multiple fatalities.

OSH QUALITATIVE MEASURES OF LIKELIHOOD

Level	Likelihood	Description
A	Almost certain	The event or hazard: <ul style="list-style-type: none"> Is expected to occur in most circumstances, will probably occur with a frequency in excess of 10 times per year.
B	Likely	The event or hazard: <ul style="list-style-type: none"> Will probably occur in most circumstances, will probably occur with a frequency of between 1 and 10 times per year.
C	Possible	The event or hazard: <ul style="list-style-type: none"> Might occur at some time, will probably occur with a frequency of 0.1 to 1 times per year (i.e. once in 1 to 10 years).
D	Unlikely	The event or hazard: <ul style="list-style-type: none"> Could occur at some time, will probably occur with a frequency of 0.02 to 0.1 times per year (i.e. once in 10 to 50 years).
E	Rare	The event or hazard: <ul style="list-style-type: none"> May occur only in exceptional circumstances, will probably occur with a frequency of less than 0.02 times per year (i.e. less than once in 50 years).

IMPORTANT NOTE: The likelihood of an event or hazard occurring shall first be assessed over the duration of the activity (i.e. “period of exposure”). For risk assessment purposes the assessed likelihood shall then be proportioned for a “period of exposure” of one year.

Example: An activity has a duration of 6 weeks (i.e. “period of exposure” = 6 weeks). The event or hazard being considered is assessed as likely to occur once every 20 times the activity occurs (i.e. likelihood or frequency = 1 event/20 times activity occurs = 0.05 times per activity). Assessed annual likelihood or frequency = 0.05 times per activity x 52 weeks/6 weeks = 0.4 times per year. Assessed likelihood = Possible.

7.2 Risk Register

Item	Risk Event	Consequence	Pre-Treatment Risk			Treatment	Residual Risk		
			L	C	RR		L	C	RR
1	Speeding traffic past the work areas may crash into / through the worksite, due to drivers unaware of advanced warning signs regarding the works or the presence of traffic controller.	Injuries to work personnel working adjacent to the traffic edge.	C	3	M (9)	Advanced warning signage to be installed on all approaches to the work area. Where workers have their back to traffic, a spotter is to be present to alert worker to approaching vehicles. Traffic arrangements to be evaluated for effectiveness following initial opening to traffic.	D	3	L (6)
2	Restrictions associated with traffic control measures may cause unacceptable delays to emergency services.	Reduced response time for Police, Fire or Ambulance services which could result in a poor outcome for affected person/s.	C	3	M (9)	Onsite crews to monitor traffic snarls. Emergency services vehicles shall always be a priority. Traffic Controller to hold all traffic when emergency vehicle is approaching. Emergency services will be notified prior to work commencing.	D	3	L (6)
3	Traffic Controllers at the location of the works may be hit by vehicles during set up or dismantling of traffic control devices.	Injury to traffic controllers.	C	3	M (9)	Shadow vehicle with flashing lights used to protect workers. Workers to wear high visibility garments in accordance with AGTTM Part 7. A shadow vehicle to act as spotter and sound horn to warn of approaching stray	D	3	L (6)

Item	Risk Event	Consequence	Pre-Treatment Risk			Treatment	Residual Risk		
			L	C	RR		L	C	RR
					H (12)	vehicles. Traffic controllers must never walk signage across carriageway unprotected, must be shadowed by TMA or TMA at all times.			
4	Construction traffic entering and leaving the worksite may result in conflict with through traffic causing collision and injury.	Injury to road workers and traffic control personnel.	C	4	H (12)	The Traffic Management Plan outlines the procedures for construction and all other work vehicles entering and leaving the worksite. See section 11.3.	E	4	L (4)
5	Poor weather conditions resulting in decreased visibility for road users resulting in impact with works personnel.	Injury to road workers and traffic control personnel.	D	2	L (4)	Traffic Management Supervisor is able to relocate the approach signs to within a distance of no more than 25% of D. This complies with AGTTM Part 3: Section 2.5.3 and AGTTM Part 6: Section 6.8. If visibility is still poor traffic control is to be removed until it is safe to continue.	E	2	L (2)
6	Injury to work personnel moving signage.	Injury to road workers and traffic control personnel.	D	3	L (4)	Traffic Controllers are to be aware of all safe manual handling procedures and wear correct PPE. Traffic Management Supervisor is to manage site and all personnel safely.	E	3	L (3)

Item	Risk Event	Consequence	Pre-Treatment Risk			Treatment	Residual Risk		
			L	C	RR		L	C	RR
7	Plant entry/egress to/from work area may conflict with traffic.	Resulting in an accident leading to, delays and/or damages.	C	3	M (9)	Construction vehicles fitted with warning devices. Operators should only enter where advised by traffic controller or supervisor. "Spotters" will assist work vehicles and/or workers in entering or leaving worksite. Plant exit may be done within gaps of traffic.	E	3	L (3)
8	Pedestrian traffic coming into conflict with the works when traversing through the worksite.	Injury to member of the public.	D	3	L (4)	Footpath closures will be implemented during the works with pedestrian detours. The traffic controllers onsite are to assist with pedestrian, cyclist and / or vulnerable road user as required. See Section 4.2.1.	E	3	L (3)
9	Transport of large structures (deck segments, pylons) from fabrication workshop causes damage	Damage to infrastructure, roads etc	D	3	L (4)	Detailed planning in conjunction with transport providers assessing width, length and swept path of all large structures.	E	3	L(3)

7.3 Risk Rating Matrix

Likelihood	A - Almost certain	Greater than 75%	Moderate A1	High A2	High A3	Critical A4	Critical A5
	B - Likely	50% to 75%	Moderate B1	Moderate B2	High B3	High B4	Critical B5
	C - Possible	25% to 50%	Low C1	Moderate C2	Moderate C3	High C4	Critical C5
	D - Unlikely	10% to 25%	Low D1	Low D2	Moderate D3	High D4	High D5
	E - Rare	Less than 10%	Low E1	Low E2	Moderate E3	Moderate E4	High E5
		Probability		1	2	3	4
			1 - Minor	2 - Medium	3 - Serious	4 - Major	5 - Catastrophic
Consequence							

8. TRAFFIC MANAGEMENT PLANNING AND ASSESSMENT

8.1 Traffic Assessment and Analyses

8.1.1 Traffic and Speed Data

The speed limits along the roads to be affected by the Causeway Pedestrian and Cyclist Bridge Project will not be impacted by the works to be undertaken:

- Causeway Perth bound traffic – 60km/h.
- Riverside Drive west bound traffic – 60km/h.
- Taylor Street traffic – 40km/h.

8.1.2 Temporary Speed Zones

A temporary speed limit of 40km/h may be required for the Riverside Drive temporary road connection once implemented. During the delivery of large, extra oversized loads such as bridge segments and pylons, traffic speeds may be temporarily required to be reduced to 20km/h, however, this will be planned in consultation with MRWA and key stakeholders to ensure minimal impact to road users.

8.1.3 Existing Traffic Signals

Not applicable.

8.1.4 Impact to Adjoining Network

The impact to the adjoining road networks will be minor with traffic volumes being within the recommended levels.

8.1.5 Temporary Traffic Signals

Not applicable.

8.2 Road Users

8.2.1 Pedestrians

When works affect the existing footpaths a closure and pedestrian detour will be implemented. Traffic controllers will monitor pedestrians and together with appropriate and approved signage will guide them across construction access ways.

8.2.2 Cyclists

When works affect the existing cycle-paths a closure and cyclist detour will be implemented. In some cases, this may require sharing pathways with pedestrians.

Traffic controllers will monitor cyclists and together with appropriate and approved signage will guide them across construction access ways.

8.2.3 Public Transport

It is not envisaged that any public transport bus routes will be impacted by the works for the Causeway Pedestrian and Cyclist Bridge Project.

8.2.4 Heavy Oversized Vehicles

During the project large, oversized structures will be delivered to site. Those that will need to access site via the Causeway will cause some disruption to traffic but will be planned to occur outside of peak hour traffic periods.

Detailed planning is to be undertaken to analyse the road transport envelope, allowance ground bearing pressures, swept paths and the like.

8.2.5 Existing Parking Facilities

Parking at Point Fraser and potentially at Taylor Street will be impacted during construction. At Point Fraser, construction occurs in the existing overflow car park, although the main car park remains unaffected.

The slipway on the Causeway for access to Heirisson Island will have bollards installed during the construction activities.

8.2.6 Access to Adjoining Properties/Business

Access to existing properties and businesses will not have access affected during the project:

- Access to Taylor and Garland Streets properties off Canning Hwy.
- Access for business and customers to Point Fraser car park off Riverside Drive.

8.2.7 Rail Crossings

Not applicable

8.2.8 School Crossings

Not applicable

8.2.9 Special Events and Other Works

At the time of the RFP no conclusion could be made as to other works that may coincide with the proposed works.

Special events that are undertaken by City of Perth will not be impacted by the proposed works.

Special events planned for McCallum Park will have to be re-scheduled or discussed during the proposed works.

8.2.10 Emergency Vehicle Access

Emergency vehicle access will not be impacted by the works.

8.2.11 Stakeholder Feedback and Approvals

As per Contract requirements, Traffic flow on public roads will not be interrupted without the approval of relevant Authorities and Main Roads' Representative.

The development of an effective TCP relies on consultation and communication with a variety of key stakeholder groups. Those groups will be consulted in both the development and ongoing deployment of the site-specific Traffic Control Plans. The TCP document will provide evidence of consultation and agreement by relevant Stakeholders and Authorities.

TCP's will be submitted for approval in writing 14 days before the proposed change. Subsequent minor changes will be submitted at least two days before the proposed change.

9. SITE ASSESSMENT

9.1 Provision to Address Environmental Conditions

9.1.1 Adverse Weather

Weather is not expected to adversely impact on the effectiveness of the traffic control detailed in the attached TMP. However, should adverse weather conditions be encountered during the works, the following contingency plans should be activated. Note: any adjustments to the plan shall be risk assessed and approved by someone holding a WTM or AWTM accreditation. Major changes require road authority approval:

9.1.1.1 Rain

In the event of rain, an on-site assessment shall be made and sign spacing and tapers may be extended by 25% to account for increased stopping distances.

If rain occurs, Traffic Management Personnel shall inspect the site and where signage and/or devices are not clearly visible, signage may need to be adjusted to improve visibility or, if necessary, provide additional signage and delineation. Where stopping distances are adversely affected by wet surfaces, spacing between signs may need to be adjusted to provide increased reaction time for drivers, cyclists and pedestrians. In cases where it is determined that the rain is so heavy that the risk is considered unacceptable, all work shall cease until rain has cleared. All changes shall be noted in the daily diary.

9.1.1.2 Floods

Should works be affected by flooding to the extent that the worksite becomes impassable or risk is considered unacceptable, all work shall cease immediately and Traffic Controllers (and other personnel if necessary) shall be deployed immediately to close the site and direct traffic around the flooded area (under the direction of the Alliance Project Manager or Traffic Manager). Emergency services and the MRWA shall be notified immediately and Traffic Controllers shall remain onsite until emergency services and the MRWA personnel arrive and take control of the affected area.

9.1.1.3 Other adverse weather (strong winds, thunderstorms, etc)

Should strong winds occur on site, signs will be weighted by sandbags or other weighting devices to counteract toppling of signs by strong winds. However, works will possibly cease temporarily until conditions improve or be rescheduled to a later date.

9.1.2 Sun Glare

Where sun glare is identified as adversely affecting a driver's or cyclist's ability to sight signage and/or traffic control devices, sign locations may need to be adjusted and additional delineation and/or traffic control devices provided to address risk from glare. Additionally, in the event that traffic control is adversely affected by glare at sunset and sunrise, traffic controllers may need to assist in maintaining low traffic speeds.

All changes to be noted in the daily diary.

9.1.3 Fog, Dust or Smoke

Where fog, dust or smoke is identified as adversely affecting a driver's and cyclists ability to sight signage and/or traffic control devices, sign locations may need to be adjusted and additional delineation and/or traffic control devices provided to address the risk. All changes are to be noted in the daily diary. Should works be affected by fog, dust, or smoke to the extent that risk is considered unacceptable, all work shall cease immediately, and Traffic Controllers (and other personnel if necessary) shall be deployed immediately to close the site.

9.1.4 Terrain

The traffic management devices have been placed in the best possible positions catering to the existing road footpath layouts. All signs shall be regularly inspected and repositioned as required to reduce the effects of shadows. All changes shall be recorded in the daily diary. Upon completion of site set up, the Alliance Traffic Management crew leader shall drive through the entire site and check that visibility is at a maximum to all motorists.

9.1.5 Vegetation

As above

9.2 Existing Traffic and Advertising Signs

All conflicting signage on the carriageway within the work site shall be covered for the duration of the works whilst temporary signs are in place.

10. SAFETY PLAN

10.1 Occupational Health and Safety

All persons and organisation's undertaking the Causeway Pedestrian and Cyclist Bridge Project works or using the site have a duty of care under statute and common law to themselves, their employees, and all site users, lawfully using the site, to take all reasonable measures to prevent accident or injury.

This TMP forms part of the overall project Safety Management Plan, and provides details on how all road users considered likely to pass through, past, or around the worksite will be safely and efficiently managed for the full duration of the site occupancy and works.

10.2 Responsibility

The Alliance Director has the ultimate responsibility to ensure the TMP is implemented for the prevention of injury and property damage to employees, contractors, sub-contractors, road, cyclist and pedestrian users and all members of the public.

The Alliance Director will ensure all site personnel are fully aware of their responsibilities, and that Traffic Controllers are appropriately trained and accredited and that sufficient controllers are available to ensure appropriate breaks are taken.

The Alliance Director will ensure accurate training records, both electronic and hard copies are maintained, reviewed for currency, and updated by the HR department regularly and are accessible via the HR online database, Success Factors. The project-specific Skills Register is updated regularly during the project to ensure training records are current.

All personnel engaged in the field activities will follow the correct work practices as required by the MRWA Code of Practice, AGTTM and AS1742.3.

All personnel will not commence or continue work until all signs, devices and barricades are in place and

operational in accordance with the requirements of the TMP.

All personnel responsible for temporary traffic management shall ensure that the number, type and location of signs, devices and barricades are to a standard and the MRWA Code of Practice, AGTTM and AS1742.3. Should a situation arise that is not covered by this TMP, MRWA Code of Practice, AGTTM and AS1742.3, the Road Authority Representative shall be notified.

11. IMPLEMENTATION

11.1 Sequencing and Staging

Before work commences, signs and devices at approaches to the work area shall be erected in accordance with the adopted TGS (to be compiled on award of contract), in the following order:

- Advance warning signs.
- All intermediate advance warning and regulatory signs and devices required in advance of the taper or start of the work area.
- All delineating devices required to form a taper including flashing arrow signs or temporary hazard markers where required.
- Delineation past the work area or into a side track.
- Other warning signs or regulatory signs.

Delineation devices such as cones and bollards should be placed in the same sequence, i.e. those furthest in advance of the work placed first.

Signs and devices that are erected before they are required shall be covered by a suitable material. The cover shall be removed immediately prior to the commencement of work.

Removal of traffic control signs and devices should be undertaken in the reverse order of erection, progressing from the work area out toward the approaches.

The sequence of temporary traffic management installation, work activities and temporary traffic management removal shall be defined upon award of contract.

11.2 Sign Requirements

All signs used shall conform to the designs and dimensions as shown in Australian Standard AS 1742.3, AGTTM and the MRWA Code of Practice.

Prior to installation, all signs and devices shall be checked by a suitably qualified personnel (*Basic Worksite Traffic Management as a minimum*) to ensure that they are in good condition and meet the following requirements:

- Mechanical condition – Items that are bent, broken or have surface damage shall not be used.

- Cleanliness – Items should be free from accumulated dirt, road grime or other contamination.
- Colour of fluorescent signs – Fluorescent signs whose colour has faded to a point where they have lost their daylight impact shall be replaced.
- Retro reflectivity – Signs for night-time use whose retro reflectivity is degraded either from long use or surface damage and does not meet the requirements of AS 1906 shall be replaced.
- Battery operated devices – shall be checked for lamp operation and battery condition.

Where signs do not conform either to the requirements of AS 1742.3 or would fail to pass any of the above checks, they shall be replaced on notice.

Signs and devices shall be positioned and erected in accordance with the locations and spacings shown on the drawings. All signs shall be positioned and erected such that:

- They are properly displayed and securely mounted.
- They are within the driver's, cyclist's and pedestrian's line of sight.
- They cannot be obscured from view.
- They do not obscure other devices from the driver's cyclists and pedestrians, line of sight.
- They do not become a possible hazard to workers, vehicles, cyclists, or pedestrians.
- They do not deflect traffic into an undesirable path.

Signs and devices that are erected before they are required shall be covered by a suitable opaque material. The cover shall be removed immediately prior to the commencement of work. Where there is a potential for conflict of information between existing signage and temporary signage erected for the purpose of traffic control, the existing signs shall be covered. The material covering the sign shall ensure that the sign cannot be seen under all conditions i.e. day, night and wet weather. Care must be taken to ensure existing signs are not damaged by the covering material or by adhesive tape.

11.3 Site Access for Works Vehicles

Construction and/or traffic management vehicles entering and exiting the traffic stream shall be mindful of the conditions that may affect the safety of these movements.

All entry and exit movements will be in accordance with the Road Traffic Code and shall be undertaken in the following manner:

Access points shall be notified to work personnel and suppliers.

Vehicles shall:

- Decelerate slowly and signal their intention by indicator to leave the traffic stream.
- Activate the vehicle's rotating yellow lamp, where fitted, once a speed of 20 km/h. has been reached and at least 50m prior to the exit location.
- Switch on the vehicle hazard lights once the vehicle is stationary.
- Due to risks associated with unassisted exit or entry to or from the traffic stream being high, Traffic Controllers will be used to assist entry and exit movements.

Vehicles fitted with rotating amber lamps shall have the vehicle's rotating lamp activated prior to entering the traffic stream and shall undertake the following:

- Switch off the vehicle hazard lights.
- Indicate intention to enter the traffic stream using direction indicators.
- Ensure there is a suitable gap from oncoming traffic to allow for a safe entry manoeuvre.

- Turn off the rotating yellow lamp(s) once a speed of 40 km/h is reached.

Entry and exit manoeuvres shall be avoided in close proximity to intersections. Work personnel shall not cross traffic streams on foot unless absolutely necessary.

Construction or traffic management vehicles shall only be parked where indicated on the Traffic Guidance Scheme. Vehicles shall not obstruct paths and be parked an adequate distance from intersections or driveways to ensure clear sight lines remain for all road and footpath users.

11.4 Communicating TMP Requirements

The Alliance Traffic supervisor must conduct a pre-start meeting with traffic controllers and the contractor to outline potential hazards on site. Traffic controllers must ensure that communication via two-way radio is operational before commencing works.

11.5 Emergency Management and incident response plans

Detailed procedures will need to be developed, reviewed and implemented prior to the start of works on site and should be referenced in the Emergency Management Plan.

12. MONITORING AND MEASUREMENT

12.1 Daily Inspections

Prior to works commencing the Alliance Traffic Supervisor shall undertake to communicate the Traffic Management Plan to all key stakeholders and affected parties.

On completion of setting out the traffic control measures the site is to be monitored for a suitable time period. If traffic or cyclist speeds on the approaches to the work site are assessed as being above the posted speed zone for the work site, the Alliance Traffic Supervisor is to initiate action to modify the approach signage and tapers in accordance with the requirements of AS1742.3. All such actions are to be recorded in the Daily Diary.

The Worksite Traffic Management accredited supervisory person at the worksite will be required to contact the AWTM for conditional approval changes made to a complex traffic management plan subject to review and endorsement of the change by an RTM as soon as practicably possible.

The Traffic Management Contractor shall ensure that all temporary signs, devices, and controls are maintained at all times. To achieve this, procedures in line with the requirements outlined in AGTTM Part 6 will be instituted. The monitoring program shall incorporate inspections:

- Before the start of work activities onsite.
- During the hours of work.
- Closing down at the end of the shift period.
- After hours.

A daily record of the inspections shall be kept indicating:

- When traffic controls were erected.
- When changes to controls occurred and why the changes were undertaken.
- Any significant incidents or observations associated with the traffic controls and their impacts on road and footpath users or adjacent properties.

The Traffic Management Contractor shall ensure that personnel are assigned to monitor the traffic control scheme. Inspections shall at least satisfy the following requirements.

12.1.1 Before Work Starts

- Confirm TMP is suitable for the day's activities.
- Inspect all signs and devices to ensure they are undamaged, clean and comply with the requirements depicted on the Traffic Guidance Schemes.
- All lamps check and cleaned and cleaned as necessary.
- Confirm Traffic Management Plan for the day's activities.
- After any adjustments have been made to the signs and devices, conduct a drive and cycle/ walk through inspections to confirm effectiveness.

12.1.2 During Work Hours

- Designate and ensure that appropriate work personnel drive and cycle/walk through the site periodically to inspect all signs and devices and ensure they are undamaged and comply with the requirements depicted on the Traffic Guidance Schemes.
- Attend to minor problems as they occur.
- Conduct on the spot maintenance/repairs as required.
- When traffic controllers are on the Job, ensure they remain in place at all times. Relieve controllers as necessary to ensure attentiveness is retained.
- During breaks or changes in work activities remove or cover any signs that do not apply (e.g. PREPARE TO STOP).
- Reposition signs or required by work processes throughout the day and keep records of any changes.

12.1.3 Closing Down Each Day

- Conduct a pre-close down inspection, allowing time for any appropriate maintenance works.
- Remove any unnecessary signage (e.g. PREPARE TO STOP).
- Replace any unnecessary signage with appropriate delineation.
- Install barriers and lights where required.
- Drive and cycle/walk through site and confirm all signs and devices are operating correctly with no misleading visual cues.
- Record details of inspection and any changes made to layout.

12.2 TMP Audits

One compliance audit (using the 'Compliance Audit Checklist for Traffic Management for Works on Roads' – found on the MRWA website) must be conducted by the RTM following setting up of the traffic management and prior to commencement of the works.

Audit findings, recommendations and actions taken shall be documented and copies forwarded to the Alliance Project Manager and the Road Authority's Representative.

12.3 Inspections and Records

A daily diary recording all inspections including variations to the approved TMP shall be kept using Standard Forms "Daily Diary".

The Alliance Traffic Supervisor is to record all inspections made on a daily basis and at those times prescribed by the Traffic Management Implementation Standards. Upon completion of each day the Alliance Traffic Supervisor shall provide copies of the daily diary record to the Alliance Project Manager.

The Alliance Traffic Supervisor is to record all variations made to the approved Traffic Management Plan on a daily basis and indicate, clearly, the nature of the variations and the reason for the variations. Upon completion of each day the Traffic Supervisor shall provide copies of the variation record to the Project Manager.

Civmec document control department is the focal point of all Project documentation distribution to all parties involved in the execution of the contract. Civmec use an electronic system CIVTRAC to control project generated documentation. This system can be accessed by all staff allowing real time access to the most current revision and status of all controlled documentation.

13. MANAGEMENT REVIEW AND APPROVALS

13.1 TMP Review and Improvement

The Alliance Director will undertake a review of the efficiency of this TMP. Any improvements shall be noted to determine if a TMP review is needed.

13.2 Variations

If variations to MRWA Code of Practice, AGTTM or AS 1742.3 are required, Approval for the variation shall be obtained from each relevant Road Authority responsible for the care and control of the road on which the placement of traffic control take place.

On-site variations, if required, shall generally only be made following approval by the Alliance Traffic Supervisor and recorded in the daily diary. In emergency situations, on-site variations shall be made and recorded in the daily diary, and the Alliance Traffic Supervisor notified as soon as practicable.

Any changes which require alteration to the design of the Traffic Management shall be consulted to and approved by the RTM.

13.3 Approvals

Approvals for the implementation of this TMP shall be obtained in accordance with the MRWA CoP from the relevant Body of Authority responsible for the road reserve. In this instance Main Roads Metropolitan Region is to approve traffic management and approval will be sort from City of Perth to access the road reserve.