REPORT

Tonkin+Taylor

Healthy Waters - Harania Flood Resilience Works - Tennessee Bridge

Draft Construction Traffic Management Plan

Prepared for
Auckland Council Healthy Waters
Prepared by
Tonkin & Taylor Ltd
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Definitions

Table 0.1: Definitions and abbreviations

Abbreviation	Detail
AT	Auckland Transport
ATOC	Auckland Transport Operations Centre
CAR	Corridor Access Request
CEMP	Construction Environmental Management Plan
CMO	Compliance Monitoring Officer
CoPTTM	Code of Practice for Temporary Traffic Management[1]
CTMP	Construction Traffic Management Plan
EED	Engineering Exception Decisions
ITA	Integrated Transport Assessment
MOTSAM	Manual of Traffic Signs and Markings[2]
NZGTTM	New Zealand Guide To Traffic Management
NZTA	New Zealand Transport Agency
PEL	Project Engagement Lead
PPE	Personal Protective Equipment
RCA	Road Controlling Authority
SSTMP	Site Specific Traffic Management Plan
STMS	Site Traffic Management Supervisor
TCD	Traffic Control Devices manual
TMC	Traffic Management Controller
TMD	Traffic Management Diagram
TMP	Traffic Management Plan
WAP	Work Access Permit

[1] NZTA is developing a new approach to how temporary traffic management will be delivered on Aotearoa New Zealand's state highways and roads. The new guidance (NZGTTM) aligns with WorkSafe's Road Good Practice Guidelines (2022) and will be implemented from 2023 in stages to eventually replace CoPTTM.
[2] NZTA plan to archive the Manual of Traffic Signs and Road Marking (MOTSAM) after the publication of the Traffic Control Devices Manual Part 4 in 2024.

1 Introduction

1.1 Background

The January 2023 floods, followed closely by Cyclone Gabrielle, marked a period of unprecedented weather challenges for Auckland. Auckland Council is carrying out flood resilience projects with the aim of mitigating flood risk to property through a series of blue-green networks, addressing critical flood-prone areas with sustainable stormwater solutions. The Harania catchment was one of the worst affect areas of Auckland following the January 2023 floods. Healthy Waters identified significant flooding, causing risk to life, and widespread flood damage to homes. This occurred due to poor flood conveyance at the location of the current Tennessee Avenue embankment dam.

1.2 Project Description

A detailed description of the full project works can be found in the Assessment of Effects on the Environment (AEE) report[3].

The proposed flood resilience works involve removing the current embankment which carries the existing Eastern Interceptor, an approximately 2.6 m diameter reinforced concrete wastewater pipe. The replacement will comprise a new pipe and pipe bridge in the Coastal Marine Area (CMA) to open up the waterway capacity to allow increased flood conveyance. Diversion chambers are required at either end of the new pipe, connecting it to the existing pipe to facilitate the change over from the old pipe to the new pipe bridge diversion. A pedestrian bridge is proposed on top of the pipe bridge. The flood resilience works are referred to as the Tennessee Bridge project and a general overview is shown in Figure 1.1 below:

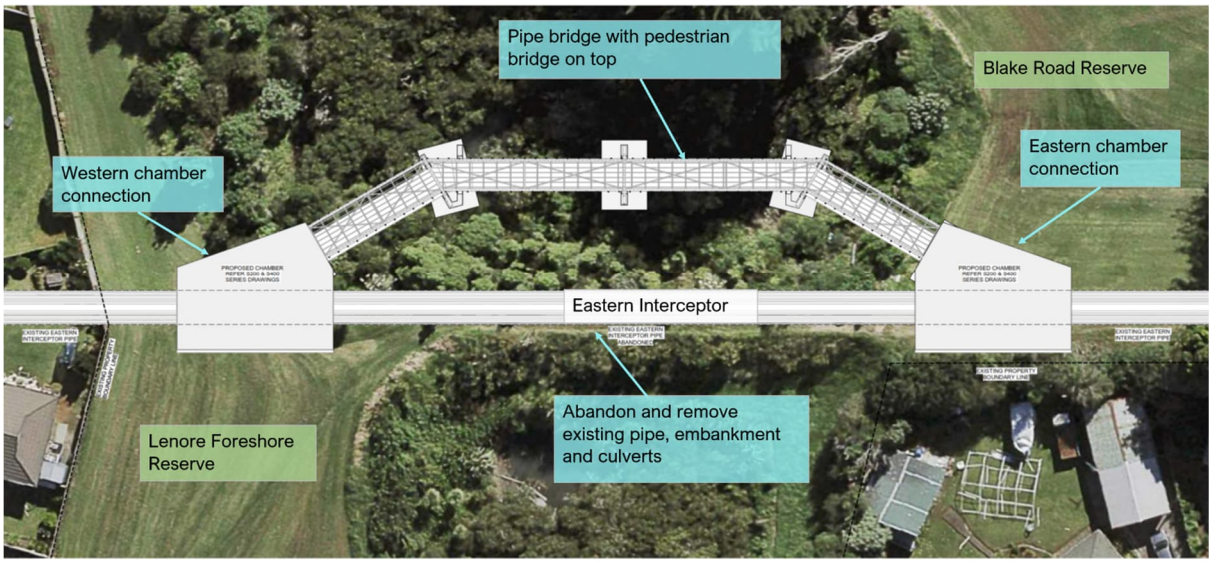

Figure 1.1: Overview of proposed flood resilience works

[3] *Harania Flood Resilience Works – Tennessee Bridge Assessment of Effects on the Environment*, Beca Limited, November 2024.

1.3 Scope of Works

Tonkin & Taylor Ltd (T+T) has been engaged by Auckland Council's Healthy Waters to prepare a Draft Construction Traffic Management Plan (CTMP) related to the proposed Tennessee Bridge upgrade works (the Project) and this has been prepared to accompany a resource consent application for the Tennessee Bridge project under the Severe Weather Emergency Recovery (Auckland Flood Resilience Works) Order 2024. Although a CTMP is not required to be submitted to support a resource consent application, Healthy Waters have taken the initiative to prepare a Draft CTMP to assist Auckland Council in determining the Resource Consent application.

The purpose of the draft CTMP is to outline the standards and agreed approach and measures that will be taken to avoid, remedy, mitigate, minimise or manage the traffic effects associated with construction works for the duration of this Project. However, some information was not available at the time this CTMP was drafted as the resource consent application is being prepared. The purpose of this CTMP is to:

- Provide a fundamental structure and demonstrate the initial findings for the CTMP which will be developed prior to the commencement of any construction activities. The CTMP shall be implemented throughout the entire construction period and is intended to be the primary tool to inform the project's management of construction traffic effects.
- The CTMP will also establish a framework that can be used to support the development of the Site-Specific Traffic Management Plans (SSTMP) and Corridor Access Requests (CAR), which will enable physical works in the road corridor once approved by Auckland Transport (AT).

The draft CTMP is generally consistent with the Integrated Transport Assessment (ITA) prepared by T+T, as part of the resource consent application.

This draft CTMP is consistent with the NZTA New Zealand Guide to Traffic Management (NZGTTM) and Code of Practice for Temporary Traffic Management (CoPTTM), noting that CoPTTM is proposed to be withdrawn in 2024. Where applicable, works within transport corridors will be undertaken in accordance with the National Code of Practice for Utility Operators Access to Transport Corridors (November 2011), unless otherwise agreed between the consent holder and the Corridor Manager.

The CTMP describes the general measures required to reduce the impacts of construction traffic and maintain the safety of all road users (including public transport and active modes) and residents/ businesses that may result from construction traffic. This will entail the implementation of strategies to maintain, or minimise the impact on, traffic capacity and safety, while managing the effects on project delivery.

This CTMP does not enable physical works to take place. Approved Corridor Access Requests (CAR) and SSTMPs will be required for each activity to enable live works on the road corridor.

The draft CTMP has been based on the best available information from Fulton Hogan (proposed Healthy Waters Contractor). It is noted however that resource consent has not yet been granted, construction methodology has not been finalised and a traffic management company has not yet been engaged. All traffic management measures included in the following CTMP have yet to be approved by AT. As such, it cannot be guaranteed that the methodology and management of effects described herein will be that employed verbatim at the time of construction.

The scope of this draft CTMP relates to construction activities of the proposed Tennessee Bridge upgrade works in the project area as highlighted in Figure 1.2 below (with the proposed construction traffic access to the eastern and western compounds highlighted in orange):

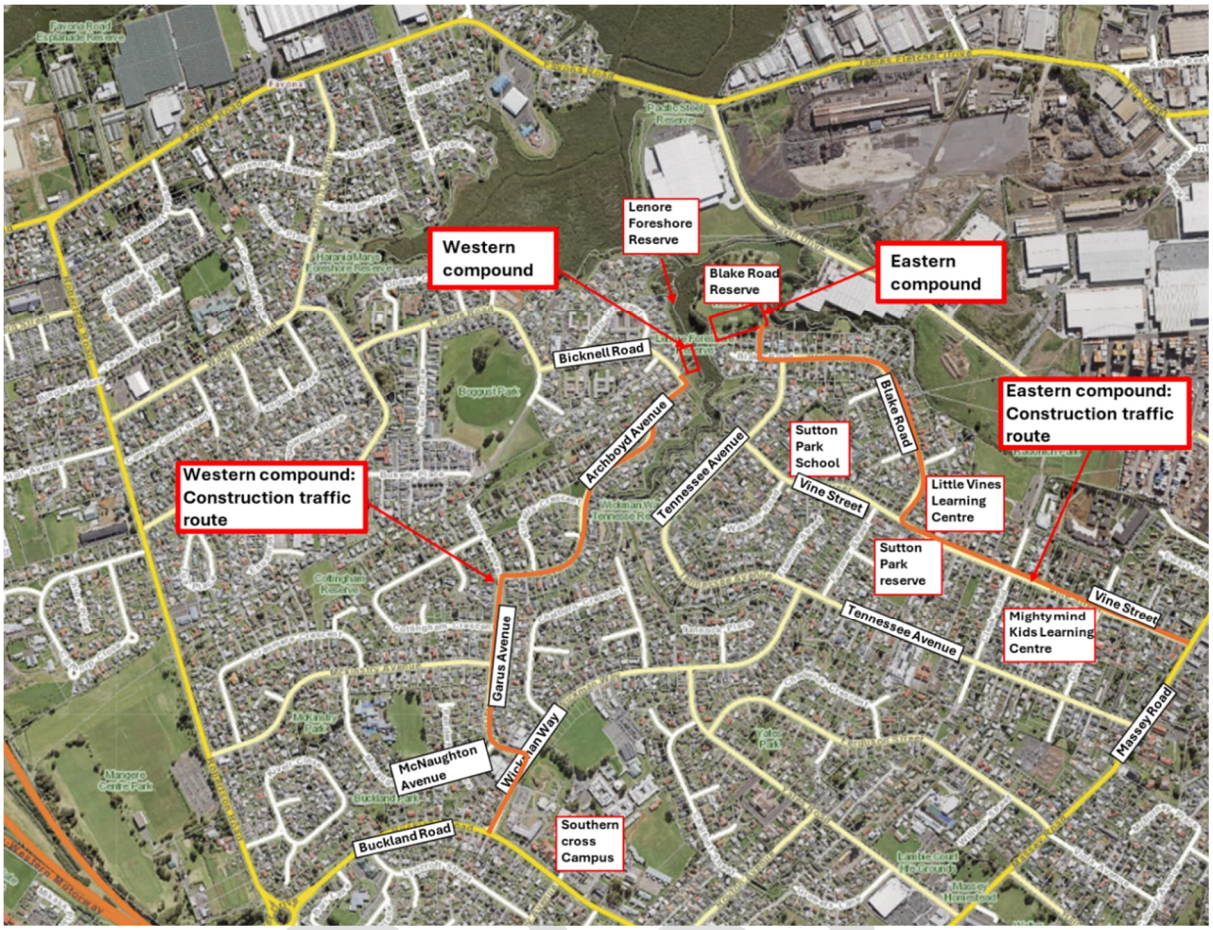

Figure 1.2: Project Location

The draft CTMP makes reference to (and does not repeat) the following sections of the ITA in Appendix A:

- Section 2 - site location.
- Section 3 - existing transport network.
- Section 4 - proposed construction methodology and construction traffic volumes.
- Section 5 - assessment of temporary construction traffic effects.

1.4 Philosophy

This draft CTMP has been developed in general accordance with the traffic management recommendations put forward in the ITA report prepared for the resource consent application. Updates will be made in the CTMP should the construction methodology change in the future and/or where alternative measures have been identified.

Monitoring will be an important aspect of the CTMP and will enable the evaluation of construction effects as the Project evolves. Given the duration of the project and the potential for changing conditions and environment, the CTMP will remain a live document to be updated when necessary.

The following objectives have been set as a summary of the philosophy for the CTMP:

- Maximise safety of the travelling public and site staff.
- Enable construction efficiencies.
- Minimise delays to the public and road users.

- Minimise disruption to property access.
- Ensure appropriate access for emergency vehicles.
- Inform the public about potential impacts of Project construction traffic on the road network.
- Remediate and maintain the current condition of road assets where damage has been directly caused by construction activity.

This will be achieved by a high standard of:

- Planning construction traffic movement.
- Design of site access points and temporary traffic management (TTM).
- Maintenance of roads, signs, and work sites.
- Communication internally within the Project, and with road users.

1.5 Relationship to other plans

This draft CTMP forms part of a comprehensive suite of environmental controls within the Construction Environmental Management Plan (CEMP) for the construction phase of the Project. The CTMP addresses the potential traffic effects associated with construction activities related to the eastern and western compounds.

1.6 Sequence of traffic management documents

Figure 1.3 below shows the relationship between the sequence of documents relating to traffic management activities. As mentioned above, the CTMP does not enable physical works to take place on the road corridor but rather sets the philosophy as to how traffic will be managed for this project.

SSTMPs and CAR's approved by AT enable physical works to take place within the road corridor. These will be developed in accordance with the philosophy documented in this CTMP.

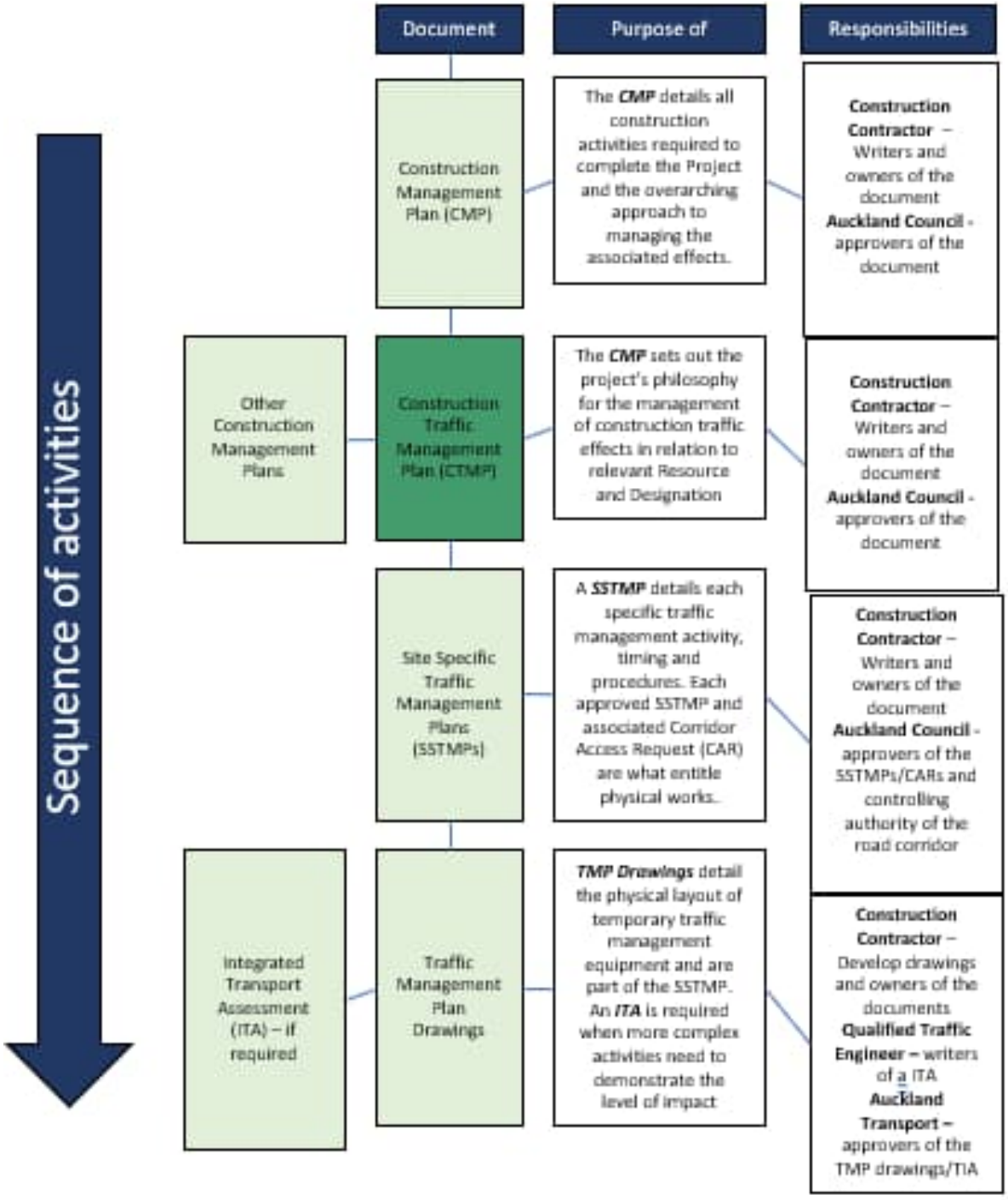

Figure 1.3: Sequence of activities for traffic management related documents

1.7 SSTMP planning

Traffic Management Plans (TMPs) are required for all activities that vary the normal operating conditions of a road, irrespective of whether the activity is on a carriageway, on a footpath or on a road shoulder. Site Specific Temporary Traffic Management Plan's (SSTMPs) are a document describing the nature and extent of TTM at a work site and how road users (including pedestrians and cyclists) will be managed by the use of TTM. These documents outline the TTM procedures to be

implemented, to ensure the safety of both the public and contractors is maintained throughout the duration of each construction activity.

Following programming of construction tasks, associated TTM requirements will be identified and SSTMPs prepared to ensure construction activity is conducted using an approved methodology, with agreed mitigation measures in place. There need not be a unique SSTMP for every construction activity, where appropriate generic SSTMPs can be used.

A Contractor required to undertake work within the road corridor will need a Works Access Permit (WAP) from AT. To obtain this WAP, the Contractor will apply for a CAR through the beforeudig website http://www.beforeudig.co.nz/#, with a SSTMP uploaded to this CAR along with any supporting information required.

1.8 Performance standards

The following standards and guidelines shall be adhered to in planning and implementing TTM during construction of the project:

- NZTA New Zealand Guide To Traffic Management (NZGTTM).
- NZTA Code of Practice for Temporary Traffic Management (COPTTM).
- NZTA Traffic Controls Devices Manual (TCD).
- NZTA Manual of Traffic Signs and Markings (MOTSAM).
- Austroads "Road Design" and "Traffic Management" guides.
- Auckland Council and AT specific requirements.

The CTMP and the subsequent SSTMP's shall be consistent with the applicable version of the NZGTTM/COPTTM. Where it is not possible to adhere to this standard, the COPTTM prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with AT Road Asset Manager. The Traffic Management Controller (TMC) has authority to approve SSTMPs and consider any associated EEDs.

TMPs must be prepared by a qualified Site Traffic Management Supervisor (STMS). The TMP is then included in a CAR and submitted to AT by the STMS for approval. The Contractor shall allow up to 5 working days for approval of a SSTMP.

1.9 CTMP related consent requirements

A condition of consent requires details of "*how potential adverse effects of construction traffic on the safe and efficient operation of the surrounding road network will be managed"* to be submitted as part of the CEMP for certification prior to any works commencing. This CTMP will form a part of the CEMP to address the aforementioned matter.

1.10 Draft CTMP structure

The remainder of this document is structured as follows:

- Section 2 defines the roles and responsibilities that will apply for the Project.
- Section 3 details the management activities required to mitigate the anticipated impacts of construction activity.
- Section 4 details the procedures that will apply for the operation and management, governance, development of SSTMPs, approvals and monitoring of the traffic management throughout the life of the Project.

- Section 5 details key stakeholders for the Project site, communications and engagement forums.
- Section 6 details the key review monitoring and update mechanisms of the CTMP.

2 Roles and responsibilities

2.1 Defined roles and delegated level of responsibility

Specific roles and responsibilities relating to the implementation of this CTMP are detailed in Table 2.1 below:

Table 2.1: CTMP Roles and responsibilities

Role	Responsibility
AT	• Approval of SSTMPs. • Auditing of TTM during site operations. • Advising network considerations such as other scheduled road works which could impact project works and TTM.
Auckland Council – Regulatory Consents	• Certification of the CTMP. • Monitoring of compliance with the Consent Conditions during site operations.
Temporary traffic management working group	• A Temporary Traffic Management Working Group (TTMWG) could be formed consisting of technical and communications representatives from AT including Auckland Traffic Operations Centre (ATOC), and the AT Metro Service Delivery Team.
Consent Holder	• Overall responsibility to ensure resource consent conditions and TMP requirements are complied with.
Construction Manager	• Confirming site works are being undertaken in accordance with the construction methodologies and relevant management plans. • Responsible for delivering resources to ensure TTM is managed and maintained.
Construction Traffic Manager (CTM)	• Responsible for establishing and maintaining safe processes for all traffic management activities. • To ensure the Site is operated in accordance with the CTMP. • Responsible for coordinating all temporary traffic management activities for the Project. • Responsible for preparation, submission, and coordination of all traffic management plans for the Project. • Responsible for arranging any Integrated Transport Assessments (ITA) that are required for the SSTMP. • Responsible for the management of all temporary traffic site crew and operations. • Liaise with AT throughout the process (in each of the preparation, submission and coordination phases) to ensure the best possible traffic management result for each party (principals, RCA and contractors). • Provide the approved SSTMPs to the site traffic management supervisor (STMS) to implement on site. • Arrange for pre-construction pavement surveys. • Arrange regular meetings with the CMO regarding upcoming works and permissions/approvals required. • Ensure that staff parking is appropriately managed. • To facilitate coordination meetings with AT. • To respond to complaints and incidents.

Role	Responsibility
	• To provide inductions and training for staff. • Ensure complaints and incidents register and write reports. • Manage the SSTMP process.
Site Traffic Management Supervisor (STMS)	• Responsible for onsite implementation, maintenance and removal of the approved SSTMPs in accordance with the requirements of NZGTTM/ CoPTTM. • Be onsite during attended periods and monitor traffic flows. • Provide feedback to the traffic manager regarding how the SSTMP is operating to the traffic manager who can propose any amendments to improve traffic flows or safety. • Monitor the site at regular intervals (minimum of every 12 hours) to ensure that safety is maintained. • Prepare and submit SSTMPs to AT for approval.
Traffic controllers (TC)	• Traffic Controllers are responsible for assisting the STMS with their responsibilities and in accordance with the requirements of NZGTTM/ CoPTTM.
Construction staff	• To create a safe working environment. • To operate the Site traffic and pedestrian management according to the CTMP.
Project Engagement Lead (PEL)	• Lead and coordinate community and stakeholder engagement and communication processes. • Arrange for letter drops to neighbours as required.
External traffic engineers and planners	• The Project may draw on a wider group of experts to undertake ITAs and assist with planning and review of SSTMPs and planned Temporary Traffic Management (TTM).

2.1.1 Contact details

The final CTMP will include contact details for key staff including the PEL (including role, name, phone number and email), for general queries or complaints. Project contact details will be provided in the final CTMP and any further contact details will be provided in the CEMP Communications Plan.

2.2 Approvals

An internal approvals procedure will be implemented by the Contractor to address all relevant issues and provide necessary notice and consultation prior to application for the SSTMPs.

The SSTMP shall be prepared and reviewed for compliance with NZGTTM/CoPTTM and issued to the approvals team of Auckland Council. For TTM the SSTMP will be issued to the AT Road Protection Team for approval.

All TTM applications will go to the following contact as appropriate (to be completed in Final CTMP):

AT
Phone:
Email:

3 Draft CTMP strategies

3.1 Background

Based on assessment of temporary effects identified in the ITA, this section sets out the general traffic management strategies applicable to the project including:

- Applied standards.
- Site specific CTMP activities.

3.2 Applied standards

Temporary Traffic Management is governed by New Zealand legislation, in particular, the Land Transport Act 1998. Land Transport Rules made pursuant to that act, which relate to Temporary Traffic Management, including:

- Land Transport (Road User) Rule 2004.
- Land Transport Rule: Traffic Control Devices 2004.

The project shall adopt the following standards and guidelines insofar as they are relevant:

- NZTA Traffic Control Devices Manual.
- NZGTTM/CoPTTM.
- National Code of Practice for Utility Operators Access to Transport Corridors (November 2011).

This document and the SSTMPs shall be consistent with the applicable version of the NZGTTM/ CoPTTM. Where it is not possible to adhere to this standard, the CoPTTM's prescribed Engineering Exception Decision process will be followed. This will include appropriate mitigation measures that shall be agreed with the AT Asset Manager.

Traffic and temporary warning signage shall conform to the standards specified in NZGTTM/ COPTTM. All such specific signage will be clearly shown on plans to the approval of AT, as an integral part of the CTMP and any subsequent TTMP's.

3.3 Site Specific CTMP management strategies

This section summarises the CTMP management strategies that are applicable to mitigate the traffic effects of construction activities. The approach and measures will be discussed and agreed on and will be used to inform the construction site set-up, operations and development of SSTMPs.

The objectives of the CTMP are to:

- Ensure construction traffic movements on the transport network are appropriately managed.
- Provide for the safety of everyone at all times.
- Minimise disruption and maintain pedestrian and vehicle access to/from surrounding residential properties.
- Minimise disruption from construction traffic on the travelling public and road users along the identified sections of the construction routes.
- Seek to avoid full road closures and minimise any partial or managed closures.
- Manage integration with other construction projects and AT projects – noting that as reported in section 3.7 of the ITA, AT have confirmed there are no planned works adjacent to the Project site during the proposed construction period.

Table 3.1 below provides the general management strategies that are applicable to mitigate the traffic effects of construction activities.

Table 3.1: General management strategies for the Project sites

Traffic management activity	General management strategies
Construction vehicle movements, routes and hours of operation	• Where possible, truck layover areas will be provided within the compounds. • Temporary removal of parking on surrounding streets will occur if a truck layover area is unable to be provided on site. • All over dimension vehicle routes to be agreed with AT. • Procedures shall be developed to ensure any spill of materials being transported to or from the site are contained. • Major construction activities that generate peaks of traffic, such as significant concrete pours will, as far as practicable, be scheduled to avoid the AM and PM peak periods and school arrival and departure periods. • Any works that may need to take place outside of the specified hours shall provide a report to AT and Auckland Council, prior to the commencement of such work, detailing how the work will be carried out and why it is necessary.
Roads and intersections performance	Monitor the performance of the key roads and intersection performances identified in the ITA with AT.
Parking	• There will be minor temporary loss of on-street parking at both compounds to accommodate heavy vehicle entry and exit. • Contractor will provide staff and visitor parking within the compounds. • Should any street parking need to be occupied, these parking spaces need to be coned off a minimum of 24 to 48 hours prior to these works commencing by displaying the appropriate 'No Parking' signage at least every 6 m along the road. A notice will also be placed under the windscreen wipers of cars in the affected work site area. • Full reinstatement of any car park spaces that have been impacted during construction activities.
Emergency vehicle access	• Emergency vehicle access will include provisions for Fire and Emergency Services New Zealand, NZ Police and St Johns. • If requested by the emergency services, any vehicles within the sites will be removed to provide for emergency vehicle access. Vehicles will not be moved unless load is secured and safe to move. • Emergency vehicles will have unrestricted access to the site for any emergencies that occur at ground level and when the site is attended. • The emergency services (notably FENZ, St Johns and NZ Police) will be notified of the appropriate contact for 24hr site access prior to the works through the CEMP and SSTMP application processes.
Active user requirements	• SSTMPs will be developed to manage this effect with alternative access arrangements to be implemented. • Temporary access in accordance with NZGTTM/CoPTTM. • Temporary detours that are as short as possible and as convenient as practicable, having regard to safety of all users. • Full reinstatement of any footpaths that have been impacted during construction.

Traffic management activity	General management strategies
Parks and reserves	There will be no public access to the works areas at all times.
Public transport	In conjunction with AT, monitoring of bus journey times and reliability will be undertaken.
Eastern and western compound site access	The following requirements will be met as part of the Project site access works: • SSTMPs will cater for safe and effective site access point use. • If vehicles are required to stop or reverse in a live lane to gain access to site, Manual Traffic Control (MTC) will be implemented using an approved SSTMP during off peak hours. • Vehicle-mounted flashing beacons must be switched on prior to a work vehicle entering or leaving a closure. • Construction and delivery drivers will call ahead to the STMS by radio or mobile phone when approaching the worksite access to ensure that the gate is clear of obstructions and they can enter the site without blocking flowing traffic. • Traffic Control (TC) will be in place at each site access to remove cones and allow vehicles into site. • TTM must be designed to allow the safe and efficient movement of visitors or workers either in work vehicles or on foot. • Maintaining the safety of the site access is the responsibility of all and will be managed by the STMS.
Kerbside refuse collections	At this stage this is not anticipated to be affected by the proposed works. Should there be any changes required this will be managed by the TTM team. Residents will be advised to leave bins outside their properties as usual and Traffic Controllers onsite will move bins to the nearest accessible location for collection. Collectors to be advised where these locations are via the Contractor Stakeholder Manager and Newsletters as per the Communication Plan.
Wait areas	Any trucks waiting to enter the sites will need to park on adjacent roads in accordance with NZ laws and Council regulations and be called to the site if there is insufficient room to accommodate multiple trucks on-site.
Materials storage	Materials are to be stored in the compounds.
Workers and visitors vehicles	There will be enough room within the compounds for contractors and visitors to park. Workers will be encouraged to car share/pool vehicles to minimise single occupancy vehicle movements.
Utility services	Some limited disruption to utility services may occur but it is not foreseen that outside of these works there will be a need to restrict access to utility services.
Pedestrian safety	• At all times, pedestrians will be managed in accordance with NZGTTM/CoPTTM. At this stage it is envisaged that all footpaths will remain open. • Should footpaths be impacted then pedestrians will be managed in accordance with NZGTTM/CoPTTM and footpaths temporarily closed (if required) with appropriate signage and ramps provided to direct pedestrians. It is considered prudent that a fence is put in place around the perimeter of the compounds to prevent inadvertent / unauthorised access into the site by pedestrians. • At the interface of the construction accesses with the footpaths these will be safely managed using a hierarchy of measures as follows: – Carry out construction whilst maintaining access to existing footpath with no impact to pedestrians.

Traffic management activity	General management strategies
	– Realign or redirect the facility onto temporary surfacing on the same side of the road. – Close the facility, with an alternative facility provided on the opposite side of the road. Safe crossing points will be provided and signed. – Temporarily close the facility, with an alternative route signposted and communicated to the public.
Delay	Under COPTTM, delays caused by the TTM are generally not permitted to be greater than 5 minutes in typical traffic conditions. All practical steps shall be undertaken to minimise traffic effects caused by construction activities or TTM measures. The impact of TTM shall be considered in each SSTMP, including the calculation of the expected level of delay in order to satisfy that the impacts are understood. Where delays are deemed to be unacceptable, construction staging methodologies will be revised to reduce the duration or impact of the activity.
Vehicle Environmental Controls	Dust suppression and detritus control is to be provided by the Contractor. If earth worked materials are carried onto the surrounding road network (dropped from vehicles carting materials to and from site), the Contractor shall be responsible for cleaning and repairing the road back to its original condition each evening during the earthworks period. In doing this, the Contractor shall ensure that approved TTM measures are in place to undertake this work safely and that no materials are washed or swept into any stormwater drains or natural drainage systems. The Contractor shall take all practicable measures to minimise the discharge of dust and detritus from the site. These measures shall include, but not be limited to: • Training staff and contractors on practices relating to minimising dust emissions, dust control and procedures for reporting and dealing with dust emissions if they arise. • Minimising the areas of exposed ground. • Mulching, re-grassing and/or planting of bare areas such as topsoil piles and completed batters as soon as reasonably practicable. • Using water and/or dust suppressants on all disturbed surfaces including roads when required. • Applying a speed restriction on all internal roads and not exceeding 30 km/hr at all times and erecting a sign at the entrance to the site advising of this. • Provision of wheel cleaning facilities including hoses, brooms and shovels or maintaining a contingency of sweeper equipment on call at all times to clean up material which may have been accidently spilt onto public roads. The Contractor is to adhere to any further guidance given by the Traffic Management Co-ordinator and/or AT in relation to dust suppression and removal of detritus material.
Private properties	Pedestrian and vehicle access will be maintained to all private properties for residents and/or stakeholders at all times. In the unlikely situation where vehicle access is not possible access plans for properties for residents and/or stakeholders are to be developed and agreed upon by the TTMWG prior to closure implementation. The process is: • Sensitive receptor plan development – Stakeholder Manager to speak with all residents affected by upcoming works to determine if special access is required (i.e. – frequent Ambulance visits, mobility access needs). • Plan developed to maintain access to properties. • Plan discussed with construction team and distributed to TTM team and emergency services.

Traffic management activity	General management strategies
	• Residents/businesses advised where and how to access site safely – this is during attended and unattended hours. Discussions with the occupants of the affected properties will take place at least 48 hours in advance to identify: • Any times of day that are better than others for the work. • Any alternative routes that can be established. • Any need for shuttles etc. to or from transport on either side of the work area. These processes will avoid any unreasonable inconvenience to landowners and minimise disruption to private property access.
Site Staff	All staff involved in the Project will attend a Project induction prior to the commencement of work to ensure a common basis for approaching their work. The induction will include environmental, health and safety and hazard management in relation to the Project area, along with temporary traffic control. Training will include the following: • Specific training will be provided to those involved in temporary traffic management as appropriate to their role and responsibilities. • Regular toolbox talks will provide a forum to reinforce and educate Project staff around specific temporary traffic control issues and actions during the Project. • The STMS will also conduct briefings on-site prior to every TTM operation to identify hazards pertaining to the work site and controls to be implemented to protect the safety of Project staff and public.
Driver induction and driver safety briefings	The STMS is responsible to undertake a site induction and ongoing driver safety briefings with all contracted transport operators to/from the compounds. The training is to cover (but not be limited to): • Routes of travel to and from the Eastern and Western Compounds. • Permissible times of deliveries (noting the suggested restrictions at school arrival and departure times). • Requirement for, and use of possible communication systems. • Requirements to abide by local speed restrictions for dust and detritus management. • Requirement for courteous driving. • Appropriate following distances. • Requirements to report hazards on the transport route. • Check rear view mirrors regularly and where safe to pull over, allow traffic behind to pass. • No overtaking on public roads unless this can be done safely. • Strict adherence to speed limits. The contractor will strictly monitor speeds of the construction workforce. • Protocols around other road users such as cyclists/pedestrians. This includes, all construction related activity to give way to pedestrian/cycle traffic, all traffic to reduce to 20 km/h when passing pedestrians/cyclists and ensuring that at least 1.5 metres of separation between vehicles and cyclists/pedestrians. If this separation cannot be achieved, then the vehicle is to wait until a safe passing space is available or the rider signaled that it was safe to pass. • No unnecessary stopping and no idling outside private residences/driveways. • Reporting of any incidents/issues to the Contractor.

Traffic management activity	General management strategies
	• Drivers made aware to maintain clean public road surfaces throughout the construction period and report any dust/dirt tracking. • Headlights should be dipped (low beam) at all times if required. Signs will be installed within the site requiring that when vehicles headlights are used, they shall be dipped (low beam) at all times.
Personal Protective Equipment	As a minimum, all personnel working on site must wear a day or night compliant high visibility garment. Construction workers will therefore be clearly visible, and will set a consistent high level of Personal Protective Equipment and appearance across the site.
Other permits or approvals	• Over-dimension and over-weight permits if applicable. • Approvals from road controlling authority, such as approved CAR application.
Construction Traffic Speed enforcement	Monitoring of speeds of Construction staff during construction will be the responsibility of the STMS. The STMS will obtain feedback from the Traffic Controllers who are best to advise of any concerns in relation to speed. Should the STMS or Traffic Controllers suspect speed is an issue then there are two methods for monitoring and enforcement: • Floating car surveys (i.e. car following) or: • Use of a radar gun. The STMS will record the registration plate of the offender and a formal warning process will occur. In the event that the same offence occurs twice for one person, that person will be expelled from the site unless the reason is based on an emergency situation.
Clean Roads	Public roads will be maintained in a clean state to minimise any potential dirt tracking onto the road surfaces and subsequent effects such as sediment runoff, dust and loss of traction. The proposed management measures include: • Maintaining a contingency of implementing portable truck washes at all site access points. • Twice daily formal monitoring and education of all construction staff/drivers to monitor for any material which may be accidently spilt onto public roads from construction traffic. • Maintaining a contingency of water carts and sweeper trucks on call at all times to clean up any material which may be accidently spilt onto public roads from construction traffic. • Coordinate residents reporting to site staff of any tracked/spilt material for immediate clean up.
Communications	• Communication campaigns should be undertaken in relation to traffic management activities throughout construction activities (including letter drops to affected residents and schools, flier drops, project signage, web based resources, liaison with Sutton Park and Southern Cross campus schools etc). • Appropriate temporary traffic management measures should be incorporated by AT to advise other road users of the construction traffic. • Continuous communications with AT Metro to monitor bus journey times and reliability and identify any TTM measures that could assist bus operations. • Continuous communications with AT school bus operators to monitor school bus journey times and reliability and identify any Temporary Traffic Management (TTM) measures that could assist school bus operations.

Table 3.2 below details site specific management strategies where the general strategies are not sufficient. In case of a conflict between general and site-specific management strategies, the site specific management strategies always take precedence.

Table 3.2: Site specific management strategies for the Project sites

Site specific activity	Description of impact	Mitigation measures
Eastern and Western Compounds	Construction traffic routing	• Access to the eastern compound will be from Massey Road/Vine Street/Blake Road. • Access to the eastern compound will be from Buckland Road/Wickham Way/Garus Avenue/Archboyd Avenue/Bicknell Road.
	Site access	• Eastern and western compound construction accesses will be designed in accordance with relevant AT design standards (including sight lines, accessway widths and gradients).
	Operation	• A 1.8 m high security fence will be erected around the perimeter of the site to delineate the construction area to prevent public access. • TTM and clear warning signs of the construction site access and egress. • Appropriate wheel wash facilities to be set up at the exit points. • Site Traffic Management Supervisor will safely manage the movements of construction traffic to and from the road network to ensure the safety of all road users is maintained and that construction vehicles can negotiate access and egress. • Site Traffic Management Supervisor will co-ordinate (for example via radio control) trucks accessing the site to ensure that construction vehicles arriving and departing the site can do safely. • The CTMP will implement a construction driver education programme given the close proximity to residential properties and schools. • Movements of specialised machinery or large components (e.g., cranes) will not occur on a day to day basis. Separate to the Resource Consent application, bespoke SSTMPs and CARs will be developed once exact details of the machinery and vehicles required is known, as they have successfully been carried out for other Healthy Water projects. Agreement with AT will be required and over-dimension rules and associated permitting processes will need to be complied with. • Contractor to provide appropriate staff and visitor parking within the site. • Wheel wash facilities to be set up at the exit points of the compounds.
Eastern Compound	Management of construction traffic	• Vehicle tracking of construction vehicles for the route to the to the Eastern Compound from the Massey Road/Vine Street intersection has been carried out and temporary works improvements are required at the site access -in the form of temporary parking restrictions adjacent to the reserve site access and at the Blake Road intersection. • Although construction traffic will not directly pass Sutton Park School, Vine Street (east of Blake Road) and Blake Road itself are likely routes to be used by children to access the school. In addition, there are two ECC's on Vine

Site specific activity	Description of impact	Mitigation measures
		Street and also there are two school bus routes on Vine Street and Blake Road. Provisions will be made for restricting movements of the Project construction traffic during peak school drop-off and pick-up times for example 0830-0915 and 1445 and 1530 (based on Sutton Park school start time of 0900 and finish time of 1500 School Hours – Sutton Park School). This restriction would not apply on Saturdays and during school holiday periods. • Continuous communications with residents on Vine Street, Blake Road and Sutton Park School will be essential to rapidly address any traffic issues should they arise.
Western Compound	Management of construction traffic	• Vehicle tracking of construction vehicles for the route to the Western Compound from the Buckland Road /Wickham Way intersection has been carried out and the following temporary works improvements are identified: – Site access - widening of existing concrete vehicle crossing and temporary parking restrictions adjacent to the site access. Trucks arriving and departing will need to be managed by TM personnel since this won't be able to operate as a two-way access for trucks. – Bicknell Road /Archboyd Avenue bend and site access. Temporary parking restrictions on the bend and temporary 30 km/h speed limit on the approaches to the bend and site access to reduce vehicle speeds. Introduction of three-way TTM traffic signals during the short periods when this compound will be in use. – Garus Avenue /Archboyd Avenue intersection - Temporary removal of existing island and replacement with road markings and re-instatement of island following completion of the works. • Provisions will be made for restricting movements of the Project construction traffic during peak school drop-off and pick-up times for the Southern Cross Campus for example 0830-0930 and 1430 and 1530. This is based on Junior school start time of 0845 (0900 on a Tuesday) and finish time of 1510 and College start time of 0900 and finish time of 1510 (1440 on a Tuesday) This restriction would not apply on Saturdays and during school holiday periods. • Continuous communications with residents on Wickam Way, Garus Avenue, Archboyd Avenue and Bicknell Road and Southern Cross Campus will be essential to rapidly address any traffic issues should they arise.
Pavement Condition Assessment (PCA)		Construction traffic movements will result in a negligible temporary increase in traffic and, as such, it is considered that there will be a negligible impact on the pavement condition of these roads. Although this is considered to be a negligible increase on the road pavement condition, it is proposed that a Pavement Condition Assessment (PCA) is carried out. The PCA will provide an assessment of the road surface condition, prior to and post construction of: • Vine Street (between Massey Road and Blake Road). • Blake Road (between Vine Street and the Blake Road Reserve access road).

Site specific activity	Description of impact	Mitigation measures
		• Wickham Way (between Buckland Road and Garus Avenue). • Garus Avenue (between Wickham Way and Archboyd Avenue). • Archboyd Avenue/Bicknell Road (between Garus Avenue and the site access opposite #41 Bicknell Road). This will allow for an evaluation of any changes to the condition of the road pavement. A pre-construction PCA will be carried out by a visual inspection of the road surface and the findings will be presented in a Pre-construction PCA report which will identify any pre-existing road surface condition issues. Upon completion of the construction works, a post construction PCA will be carried out by a visual inspection of the road surface. A comparison of the road surface conditions pre-and post-construction will be carried out and reported in a post construction PCA report. This will also identify any remedial works and a timescale for implementation that are directly attributable to the construction traffic (as opposed to general wear and tear).
TM signage		Signage helps with control of traffic. The following types of signage are proposed: • AT regulatory standard signage and Information signage. • Health and Safety (H&S) signage. • Temporary traffic management (TTM) signage. All signs will be removed at the completion of construction. Regulatory signs As part of SSTMPs, regulatory signs will be installed including: • Temporary signs warning of turning construction traffic at both the compounds access for the duration of the construction period. These signs will be agreed with AT in accordance with Part 4 of the Traffic Control Devices (TCD) manual, noting that TCD now replaces Manual of Traffic Signs and Markings (MOTSAM). The Contractor will position the signs in accordance with the detailed design drawings and AT traffic management requests. H&S signs Health and Safety signage will be erected in accordance with the Health and Safety and Employment Act and associated New Zealand Standards in relation to the works. These signs are general warning signs in relation to work activities or hazards and will be used in various locations along the route. TTM signs

Site specific activity	Description of impact	Mitigation measures
		As part of SSTMPs, temporary traffic management signs will comply with COPPTM/ NZGTTM. The signs and traffic control will be temporary in nature and will be managed by the contractor. Daily inspection and random audits of the signage will be undertaken by the Contractor to ensure it complies with the final approved CTMP.

4 Temporary traffic management framework

4.1 Background

This section sets out the general operational procedures for temporary traffic management activities for the Project discussed in this CTMP.

4.2 Site specific traffic management plan development

SSTMPs will be required (under the Local Government (Auckland Council) Act 2009) for all work or physical controls that occur within the road corridor at the Project sites.

The SSTMPs will be prepared for discrete stages of work within the road corridor and will follow the format set in NZGTTM/CoPTTM. They will describe the measures to be implemented to manage the temporary traffic effects associated with the movement of construction traffic or particular works.

SSTMPs will be submitted to, and approved by, AT. The SSTMPs will be assessed by the Traffic Management Coordinator for compliance with NZGTTM/CoPTTM and the ability to avoid adverse effects on the travelling public.

During the development of each SSTMP, the Project personnel will liaise directly with AT to ensure that the overall concept of the TTM is acceptable to all parties. This will, in turn, assist with timely approvals of SSTMPs.

The general framework for the submission of a SSTMP is as follows:

- Initial liaison with internal Project personnel to determine scope of SSTMP.
- Depending on the projected disruption to traffic, consultation with AT may be required immediately, otherwise the development of initial draft Traffic Management Diagrams (TMD) shall begin. Should an ITA be required, the development of the ITA would start immediately.
- Liaison between internal Project personnel to confirm work areas shown on draft TMDs are correct and allow for the construction works to proceed.
- Consultation with AT utilising the agreed draft TMDs. This stage will allow AT to determine if an ITA is required, as well as notification from AT of any other additional specific requirements. If an ITA has been requested at this stage, this is when development of the ITA would commence.
- Finalising of the SSTMP (and ITA if required) as well as any other AT requirements and then submission to AT for official approval.
- Any further liaison with AT as required.
- Receiving the approved SSTMP from AT and dissemination to the wider Project team in preparation of implementation.

4.3 Site specific traffic management plan structure

The following four elements summarise the structure of a typical SSTMP:

- SSTMP Pro-forma - This is the text of the document, which outlines the requirements, methodologies and standards required in observing the SSTMP. Details included in each SSTMP Pro-forma will vary depending on the activity requiring traffic control.
- Engineering Exception Decisions (EED) - All applicable EED's will be appended to the SSTMP.

- CAD drawings - CAD drawings will be employed for illustrating the closures defined by the pro-forma and will include all relevant road features that require consideration in managing the impacts of construction.
- Communications strategy - The communications strategy will outline the proposed strategy for informing the public of the works. This may include public notifications in local newspapers, advertisements, radio communications, flyer or posters, variable message signs strategies, or driver information signage installed.

A template of the SSTMP will be provided in the final CTMP.

4.4 Review and approvals

SSTMPs once fully developed and ready for final approval, will be submitted to AT. MyWorksites, an online TMP submission system, will be used to submit and manage SSTMPs relevant to the Project.

Following submission of the SSTMPs to AT, the contractor will work with AT to resolve any remaining issues prior to final approval. Most of these items should be covered off during the initial liaison period with AT while developing the SSTMP.

Any SSTMPs or CARs obtained from AT will be forwarded to Auckland Council's compliance monitoring officer for record.

4.5 Monitoring and audits

The STMS will continuously monitor the site they are responsible for while works are ongoing. This will be recorded in the form of two hourly checks each day and will include any issues and actions taken to rectify them.

The Contractor's Traffic Controller (TC) will conduct official audits of the construction site, in compliance with NZGTTM/ CoPTTM, specifically Section A8, on a weekly basis. The TC will then discuss the results of these audits with the relevant STMS and ensure any issues are understood and rectified.

Copies of the audits will be kept by the Project and made available to Healthy Waters (or their representative) on request.

4.6 Training

Training in relation to temporary traffic management is outlined in Table 4.1 below:

Table 4.1: TM training

Qualification/Training	Description	Who
Project Induction	Initial induction.	All site staff.
Appropriate Site Safe accreditation	Demonstrate proficiency on site.	All site staff.
Toolbox talks	Regular meetings to highlight key messages or issues and receive feedback.	All site staff.
STMS Level 1	NZQA qualification to oversee site in live road environment.	Person responsible for traffic management associated with the project.
Traffic Controller (TC)	NZQA qualification to assist with traffic management.	All staff undertaking traffic management associated with the project.

5 Communications

5.1 Background

The following section outlines the key stakeholders affected by the traffic related activities for the proposed work. The Communication Plan will include more details on the consultation and engagement process for key stakeholders where required.

5.2 Key stakeholders

Table 5.1 below identifies the key stakeholders and specific issues that will be engaged with prior to and during construction include:

Table 5.1: Key stakeholders and issues to be discussed during the development of the Project

Key Stakeholder	Compound affected	Specific issues to be discussed
AT	Both	• CTMP, SSTMP, CAR and assessment of effects of construction activities.
Owners and occupiers of neighbouring properties	Both	• Keep residents informed of Project activities and progress and also to understand any specific access requirements and effects that residents they may be experiencing during the construction activity.
Local Board	Both	• Timing and duration of construction.
Auckland Council – Parks, Sports and Recreation	Both	• Impact on reserves and public and maintenance access to them.
Sutton Park Primary School	Eastern	• Provisions for restricting movements of the Project construction traffic during peak school drop-off and pick-up times (for example 0830-0915 and 1445 and 1530). • Continuous communications with the School will be essential to rapidly address any traffic issues should they arise.
Southern Cross Campus	Western	• Provisions for restricting movements of the Project construction traffic during peak school drop-off and pick-up times (for example 0830-09300 and 1430 and 1530). • Continuous communications with the School will be essential to rapidly address any traffic issues should they arise.

This will be updated in the development of the final CTMP.

Key themes and topics of relevance for the key stakeholders relating to traffic related construction activities include:

- Where construction related vehicle movements may impact normal operations of the key stakeholders.
- Any impacts upon access or parking due to traffic management measures on roads adjacent to the site.

- Any construction related activities that may impact upon the safety of key stakeholders at any time during the construction period of the Project.
- Communication of significant construction works and vehicle movements that may impact key stakeholders to ensure safety is maintained.

5.3 Special considerations

5.3.1 Special events

Special events are defined as construction activities that generate a major peak in construction traffic or a change in vehicle access that may require a further level of planning for traffic impacts. These are generally non-typical and occur very infrequently over the course of the construction programme. Special events could include:

- Major delivery and pick up of large plant for example the crane at the start and end of the project.
- Large concrete pours that may result in a greater volume of truck movements.

5.3.2 Neighbour notifications – letter drop

Letter drops to residents along the proposed routes to the Eastern and West Compounds (i.e. Vine Street, Blake Road, Wickham Way, Garus Avenue, Archboyd Avenue and Bicknell Road) will be undertaken to inform neighbours of information and any changes relating to the Project. This may include:

- Working hours.
- Estimated arrival/departure times of site personnels (separate to working hours).
- Periods of heavy vehicle activity.
- Night works if applicable.
- Changes to on-street parking.
- Significant changes in project activities.

As a minimum the letter will include:

- Auckland Council/Healthy Waters logos.
- Project description and work programme and progress.
- Location of the changes.
- Reason for the changes.
- Expected duration (dates).
- Project contact details and communication channel.

The Project Engagement Lead (PEL) shall arrange for letter drops to the neighbours as required throughout the project. In addition to the physical letter drop, an electronic copy of the letter should also be provided to the compliance monitoring officer for their reference and information.

5.3.3 Incident response

An incidents register will be developed to provide "*a detailed process for detecting, investigating, and recording incidents"* and the CTM will be responsible for updating this. Actions to be undertaken in the event of an incident are described below:

Scope

The contractor will have necessary resources available to respond promptly in the event of a traffic incident or other emergency situation. The top priority will be the safety and wellbeing of everyone involved and then take any actions, working in conjunction with AT, NZ Police , FENZ and St Johns to minimise disruption or inconvenience, whilst keeping the incident or area isolated from members of the general public.

Extent

In the event of a traffic incident, the nominated site STMS and available crew will attend in the first instance and report to the Traffic Management Site Lead. The project will make available any mobile plant (eg water trucks, excavators etc) which can assist in the case of a serious incident. Any TTM resource on site not immediately involved in critical works will be made available to assist as appropriate.

Emergencies and incident communications

An emergency action plan will be produced prior to implementation of any TTM activities. The Plan will outline procedures, requirements and responsibilities in the case of an emergency. In addition to this plan, each SSTMP will address specific requirements in the case of an emergency. Events that may require implementation of the emergency action plan include:

- Traffic accidents.
- Emergency services requiring access to or through the site.
- Natural disasters.
- Flooding.
- Unplanned construction events.
- Emergency works.
- Significant traffic congestion.
- Inclement weather.

In the event of a crash or significant incident, the Contractor will provide immediate assistance and where necessary, contact the emergency services. Full support to those organisations will be provided to manage traffic whilst the incident is being bought under control. An incident report will be completed for each incident or near-miss.

In an emergency event, the STMS must ensure the traffic management staff protect their personal safety, the safety for adjacent public access then notify the necessary authority and then attend to the situation.

In the event that a representative of the NZ Police requests a copy of implemented TMP for safety or emergency reasons, the contractor will immediately comply with this request. In the event of an emergency or breakdown on site, the contractor will endeavour to provide a clear passage for emergency vehicles or tow trucks to ensure that the disruption and delay to other motorists through the site is minimised.

Relevant teams at AT shall be advised of any incident at the worksite via email and/or phone call and then an incident report sent to AT CAR/Compliance team((TTM.crash@aucklandtransport.govt.nz) AT CAR Manager, Project Manager and any other appropriate parties within 48 hours of the incident. This will include:

- A description of the nature, timing and cause of the incident.
- An assessment of any adverse effects of the incident on the environment.

- A description of any remedial and/or mitigation measures that have been, or will be, implemented as a result of the incident to prevent the incident reoccurring in the future.

Remedial action and/or mitigation measures described in the incident report must be implemented as soon as practicable of the incident report being provided to AT to ensure that they are not ongoing. This could also involve updates to the CTMP.

5.3.4 Complaints management

Any legitimate traffic complaints received will be taken seriously and matters raised shall be investigated and responded to as quickly as possible. This will involve maintaining a register of any complaint received regarding the construction activities associated with this Project. The register will include:

- Contact details of the complainant.
- Nature and details of the complaint.
- Location, date and time of the complaint and the alleged event giving rise to the complaint.
- Weather conditions.
- Other activities in the area, unrelated to the Project, that may have contributed to the complaint.
- Description of any measures taken to respond to the complaint.

The CEMP requires "*methods for responding to queries and complaints*" and the CTM will be responsible for updating the CTMP complaints register.

6 CTMP review, monitoring and update

This Draft CTMP should be considered as a live document. It will be developed by the Contractor to become a final CTMP following the resource consent approvals and will be included in the CEMP for certification prior to construction.

The final CTMP will also be updated throughout the course of the project to reflect material changes to construction methods, site conditions or the natural environment. Table 6.1 outlines the temporary traffic monitoring to be undertaken during construction of the Project:

Table 6.1: CTMP monitoring programme

Monitoring activity	Frequency	Responsibility
Check method statement reflects requirements and requisite TMP has been approved.	Prior to approving work packs.	Construction Manager.
Inspect temporary traffic management layout.	2 hourly when site is live.	STMS.
Documented check of all temporary traffic management.	Daily and as layouts change.	STMS.
TTM audit in accordance with NZGTTM/CoPTTM.	Monthly.	Traffic Engineer.

AT may from time to time undertake random audits of the TTM installations. The STMS will be notified of this audit at the time it is undertaken and the site condition rating form resulting from the AT inspection will be made available to the Project Team in accordance with NZGTTM/ COPTTM.

Approved CMTPs and SSTMPs will be reviewed by the Project Manager and STMS on a regular basis, to ensure that the documents remain relevant for use. Any changes to these plans will be recorded.

7 Applicability

This report has been prepared for the exclusive use of our client Auckland Council Healthy Waters, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Auckland Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

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.....	.....
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Appendix A ITA

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