

Eastern Busway – EB2/ EB3R

Construction Traffic Management Plan

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Eastern Busway – EB2/EB3R

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List of Abbreviations and Definitions

Abbreviation and Definitions	Description
AT	Auckland Transport
ATOC	Auckland Traffic Operations Centre
CAR	Corridor Access Request
CTMP	Construction Traffic Management Plan
CoPTTM	Code of Practice for Temporary Traffic Management
EBA	Eastern Busway Alliance
ITA	Integrated Transport Assessment
km	Kilometre(s)
kph	Kilometres per hour
LILO	Left in left out
m	Metre(s)
m ²	Square Metre(s)
m ³	Cubic Metre(s)
NoR	Notice of Requirement
AUP(OP)	Auckland Unitary Plan (Operative in Part) 2016
PWA	Public Works Act 1981
RTN	Rapid Transit Network
RRF	Reeves Road Flyover
RMA	Resource Management Act 1991
TMO	Traffic Management Operative
TTM	Temporary Traffic Management
STMS	Site Traffic Management Specialist
SAP	Site Access Point
SSTMP	Site Specific Traffic Management Plan

1 Introduction

Eastern Busway Alliance (EBA) has developed this Construction Traffic Management Plan (CTMP) on behalf of Auckland Transport (AT) to support the following stages of the Eastern Busway Project:

- The notice of requirement (NoR) and applications for resource consents in relation to Eastern Busway 2 (EB2) – Pakuranga Town Centre, including the Reeves Road Flyover (RRF) and Pakuranga Bus Station
- The applications for resource consent in relation to Eastern Busway 3 – Residential (EB3 Residential) – South Eastern Arterial (SEART) to Pakuranga Creek, including Edgewater and Gossamer Intermediate Bus Stations.

The combined EB2 and EB3 Residential work packages are hereon referred to as 'EB2/ EB3R'.

1.1 Purpose and Scope

The purpose of the CTMP is to identify the means to be used to avoid, remedy or mitigate the adverse effects of construction of EB2/ EB3R on transport, parking and property access so far as it is reasonably practicable.

The CTMP has been prepared in accordance with the relevant designation and resource consent conditions as contained in the condition set lodged with the NoR/ resource consent applications and includes management methods, controls and reporting standards to be implemented in order to comply with those conditions. The CTMP also sets out the framework for subsequent development of Traffic Management Plans (TMP) for individual activities and stages of work during the construction of EB2/EB3R (including associated resolution reports for traffic control device changes and Corridor Access Requests).

The CTMP has been informed by the Integrated Transport Assessment (ITA) submitted with EB2/EB3R packages and reflects best practice through drawing on:

- The Code of Practice for Temporary Traffic Management prepared by the New Zealand Transport Agency, 4th Edition 2018 (CoPTTM)
- NZ Guide to Temporary Traffic Management (NZGTTM), (currently in pre-consultation draft and will supersede CoPTTM in due course).

The CTMP may be updated throughout the course of EB2/ EB3R to reflect changes to construction techniques or the physical environment. Any updates or revisions of the CTMP will be submitted to the Auckland Council for comment.

1.1.1 Construction Traffic Management Plan Objectives

The CTMP objectives are as follows:

- a) Manage the road transport network for the duration of construction to promote safe and efficient movement of traffic and manage congestion to minimise delays for road users
- b) Inform the public about traffic management on the road transport network and work with community and stakeholders to manage impacts associated with construction
- c) Protect public safety including safe passage for pedestrians and cyclists
- d) Maintain pedestrian access to private property at all times

- e) Provide vehicle access to private property to the greatest extent possible
- f) Manage effects of traffic movements from construction yards on adjacent properties
- g) Promote worker safety through following Health and Safety Act requirements for managing risks
- h) ensure that local services (e.g., rubbish and recycling collection, deliveries, bus services etc) and maintenance activities provided to affected residents adjacent to EB2/ EB3R remain at a level consistent with current provisions.

1.2 Project Description

EB2/ EB3R involves two works packages titled EB2 and EB3R. These are described separately below.

1.2.1 EB2

EB2 is located at Pakuranga Town Centre and commences from the intersection of William Roberts Road and Pakuranga Road and traverses west to the Ti Rakau Drive / SEART intersection. EB2 encompasses works on Ti Rakau Drive, Pakuranga Road, Reeves Road, Cortina Place and the South-Eastern Highway (SEART).

EB2 will improve safety by simplifying intersections and the provision of extra crossings to the town centre (including more regular crossing intervals). New cycle lanes and walking paths will make it possible to walk or cycle off-road, improving accessibility and safety around the town centre.

Key elements of EB2 include:

- Pakuranga Station - the key station for Pakuranga/Howick users of the busway leading to the Panmure Station and Botany Station
- Reeves Road Flyover (the RRF) - provides for local traffic to bypass the heavily congested Pakuranga Road and Ti Rakau Drive route to the Pakuranga Highway/South-Eastern Arterial Highway (SEART) via an overpass between SEART and Pakuranga Road (north).

An overview of the proposed EB2 works is shown in Figure 1 below.

Figure 1 Overview of EB2



1.2.2 EB3R

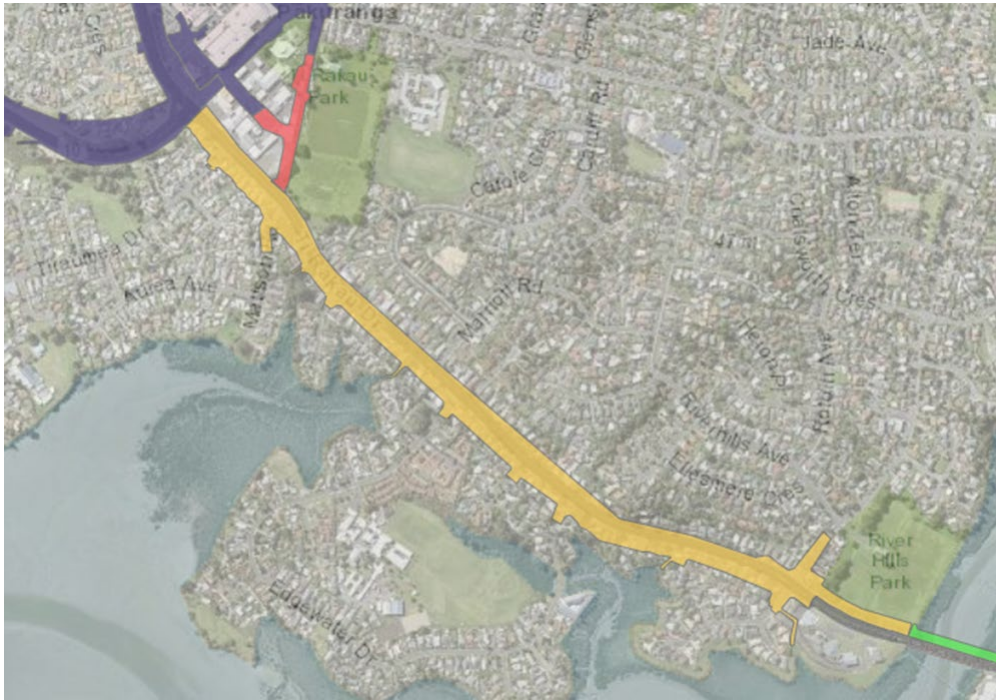
EB3R will provide the extension of the Rapid Transport Network from SEART in the west to Pakuranga Creek in the east, including additional walking and cycling infrastructure. The construction of the busway within EB3R will involve a staged approach to construction to minimise disruption on the existing road network.

Key elements of EB3R include:

- A separated busway through the centre of Ti Rakau Drive
- The construction of two new westbound lanes for general traffic
- Two intermediate bus stations, being Edgewater Station and Gossamer Station (interim design)
- The western abutment for a future bridge across Pakuranga Creek, adjacent to the existing Ti Rakau Drive Bridge
- Intersection upgrades along Ti Rakau Drive, including William Roberts Road and Gossamer Drive.

The location of the EB3R is shown in yellow in Figure 2 below:

Figure 2 EB3R Location (shown in yellow)



1.3 Roles and Responsibilities

The team responsible for implementing the CTMP is set out in Table 1 below. A team approach shall be taken when planning and implementing CTMP methods, controls and reporting measures. Team members will have the appropriate experience, project involvement and responsibility to ensure that all relevant aspects of EB2/ EB3R are considered when making decisions on CTMP implementation.

Table 1 Roles and Responsibilities

Name	Role	Contact Details	Responsibility
Eastern Busway Alliance			
TBC	Traffic Manager		Suitably qualified traffic manager who will oversee traffic management during construction including incident response.
Josie Jackson	Traffic Engineer		Preparing Site Specific Traffic Management Plans. Incident response support.

		Conducting internal audits of the site and installed TTM.
Matt Zame	Project Director	Responsible for overall project delivery, including works safety and stakeholder.
Andy Gibbard	Construction Manager	Responsible for operations during construction including CTMP implementation
Sarah Price	Customer & Community Manager	Responsible for stakeholder engagement on potential traffic impact and management.
Several throughout EB2/ EB3R	Site Traffic Management Specialist	Responsible for the installation, maintenance and removal of the TTM measures described in SSTMPs. Providing incident response support as needed.
Auckland Transport		
TBC	Traffic Management Coordinator	Manage permissions relating to road corridor access and coordinate work sites.
Manoj Nathoo or other Service Disruptions representative <Service.Disruptions@at.govt.nz>	Service Disruptions	Endorse TMP applications if bus network is impacted.
TBC	Auckland Transport	Endorse TMP applications if signalled

Operations Centre	intersections on the network are impacted. Manage impacts on the network in event of incidents
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1.4 Site Specific Traffic Management Plans

The CTMP sets out the overarching approach to traffic management throughout the construction phase of EB2/ EB3R. Several Site-Specific Traffic Management Plans (SSTMP) will be developed in accordance with the CTMP to provide further detail on the traffic management in specific areas of works.

1.4.1 Temporary Traffic Management Working Group

A Temporary Traffic Management Working Group (TTMWG) will be formed consisting of technical and communications representatives from Auckland Transport including the Road Corridor Access Team, Auckland Traffic Operations Centre (ATOC), and the Auckland Transport (AT) Metro Service Delivery Team.

Proactive engagement, planning and coordination will be facilitated by the Traffic Manager, who will be a key link between site temporary traffic managers and stakeholder management forward planning.

The project team will have regular bi-weekly meetings with the working group to discuss upcoming SSTMPs and significant portions of construction tasks and their impacts. This will allow for early engagement of the submission and approval process.

As upcoming SSTMPs and long-term SSTMPs (staging) are discussed, the scope of any traffic modelling and traffic performance will be discussed and agreed with the working group. Section 1.4.2 outlines the SSTMP approval process.

1.4.2 Site Specific Traffic Management Plans Approval Process

The SSTMPs will be submitted to the AT Corridor Access Request team for approval in the form of a Corridor Access Request (CAR). Once the CAR is approved, EBA will be issued with an accepted Work Access Permit for the relevant area. No works will commence in any area until a Work Access Permit for that particular area has been granted.

The AT Corridor Access Request team provides independent assessment of SSTMPs in accordance with CoPTTM and the National Code of Practice for Utility Operators' Access to Transport Corridors (the Code) which defines the set of standards for working in the road and the Corridor Access Request (CAR) processes. The Code is mandatory under the Utilities Access Act 2010 and applies to all works carried out in the road corridor, whether the work is for or by a utility, local government, commercial organisation or private individual(s).

Table 2 and Table 3 below includes an indication of the steps and timeline for the SSTMP approval process. The submission to (and approvals) the CAR Team is managed via their system called MyWorksites. Tracking of the preparation, review and forms associated with SSTMPs will be tracked internally via an electronic tool called Business Information Portal (BIP).

Table 2 Discreet SSTMP Development Process

Discreet (Minor/Short Term Closures With Minimal Disruption to Traffic Carried Out During Off-Peak Times) SSTMP Approval Timeframe	
1-5 Weeks	Design SSTMP
1-4 Weeks	Project team review SSTMP to ensure it is fit for purpose
1-2 Weeks	Service disruptions endorsement
	Clash resolution with other worksites. May take longer if clash requires re-work.
1 Week	Submit finalised SSTMP to MyWorksites for approval with all appropriate documentation
3 Weeks	Auckland Transport to approve final SSTMP (including ATOC review)

Table 3 Major SSTMP Development Process

MAJOR (EXTENDED SHUTDOWNS AND LONG TERM LAYOUT CHANGES) SSTMP APPROVAL TIMEFRAMES. (Some activities will occur concurrently)	
6 weeks	Design SSTMP
4 weeks	Project team review SSTMP to ensure it is fit for purpose
	ATOC to review
	Preliminary review with CAR Team
12 Weeks	ATOC design new temporary signal phasing (if required)
6 Weeks	Detailed assessment of traffic impact if required. Timeframe may vary with scope.
1 Week	Submit finalised SSTMP to MyWorksites for approval with all appropriate documentation
3 Weeks	Auckland Transport to approve final SSTMP (including ATOC review)

2 Legislative Requirements

The CTMP has been prepared in accordance with the condition set submitted with the application. This document is intended to provide a framework and information that will assist in the implementation of these requirements.

If there is a conflict between the management plan and the corresponding legislative requirements, including consent conditions, then the legislative requirements shall prevail.

3 Construction Methodology

3.1 Overview of Construction Works

The below sections provide a high-level overview of the construction works relating to EB2 and EB3R. Further detail on the EB2 and EB3R design and construction can be found in Section 4 of the ITA and within the construction programme provided in Section 3.3 of the CEMP.

3.1.1 EB2 Construction Works

The extent of EB2 is provided in Section 1.2.1 and Figure 1. Construction will occur in multiple work zones summarized as follows:

1. *Reeves Road* - Extensive works will be undertaken on Reeves Road between Ti Rakau Drive and William Roberts to construct the RRF. Reeves Road will be closed for approximately 3.5 years and will ultimately be replaced by the RRF
2. *William Roberts Road* - During the construction period, William Roberts Road between Pakuranga Road and Reeves Road will be isolated by converting the WRR legs of those intersections into cul-de sacs with access off Ayr Road. Earlier works will occur for William Roberts Road South to be built connecting Reeves Road to Ti Rakau Drive and is covered by a separate consent.
3. *Pakuranga Road* - The RRF will tie into Pakuranga Road upon the completion of construction. During construction, works to complete the tie in will occur over four stages to ensure 5 lanes of traffic can be maintained at all times.
4. *SEART* – Works along SEART will be split into three phases:
 - Phase 1 will concentrate on the eastbound carriageway which is the section, connecting to Ti Rakau Drive running between Dale Crescent and the northern side of SEART, this work will be offline
 - Phase 2 applies to the westbound carriageway and traffic will be transferred to the new and existing eastbound lanes
 - Phase 3 relates to the centre of the carriageway and relates to the removal of existing features and the construction of a pier head adjacent to Ti Rakau Drive.
5. *Ti Rakau Drive* - The works along Ti Rakau Drive have been split into two sections relating to Pakuranga Road to Reeves Road Section and the Ti Rakau Drive/ Reeves Road Intersection works will be broken down into subphases to introduce the new bus lanes.
6. *Pakuranga Road* - works within Pakuranga Road will involve longitudinal and crossing drainage works, converting the existing kerbside lanes to cycleways while retaining the existing footpaths along both sides.

3.1.2 EB3R Construction Works

The extent of EB3R is provided in Section 1.2.2, Figure 2. Online bus lanes will be constructed throughout the entire length of the corridor from Reeves Road to Gossamer Drive. Construction will occur along Ti Rakau Drive in multiple work zones summarised as follows:

1. *Reeves Road to Mattson Road* - The construction of this section will be divided into sub-phases and will for the majority of its duration occur during the Reeves Road closure. The work will consist of offline works to construct the new westbound lanes on the acquired properties on the southern side of the carriageway and the Mattson Road intersection, construction of the

Tiraumea Drive intersection and works in the centre of the carriageway to construct the new bus lanes.

2. *Mattson Road to Gossamer Drive Phase 1* - will involve the construction of westbound lanes offline within the properties acquired by EBA on the southern side of Ti Rakau Drive and rebuilding pavement at intersections where the new busway intersects.
3. *Mattson Road to Gossamer Drive Phase 2* - will consist of the construction of bus lanes within the centre of Ti Rakau Drive, which will tie into the new EB2 bus lanes and will terminate at Gossamer Drive. The new Edgewater Drive Bus Station, the new westbound Gossamer Drive Bus Station and new U-turn facilities will also be constructed during this phase.
4. *Mattson Road to Gossamer Drive Phase 2a* - During Phase 2a multiple right-turns across the workspace will require temporary removal, resulting in the intersections supporting LILLO movements only. This will occur at Roseburn Place, Marriott Road, Wheatley Avenue and Edgewater Drive east. The intersection at Edgewater Drive west and Chevis Place will remain open during Phase 2a.
5. *Mattson Road to Gossamer Drive Phase 2b* - During Phase 2b the Edgewater Drive west / Chevis Place intersection will be converted to the final LILLO intersection arrangement and enable construction of that part of the carriageway.
6. *Mattson Road to Gossamer Drive Phase 3* - will consist of significant drainage works in the existing eastbound lanes and will have some temporal overlap with Phase 2 as sections are completed and traffic can be transitioned into the new bus lanes.
7. *Gossamer Drive and Ti Rakau Drive intersection* - Works will be undertaken in substages relating to the construction of the western, northern and eastern approaches of the Ti Rakau Drive / Gossamer Drive intersection and the construction of Freemantle Place approach.

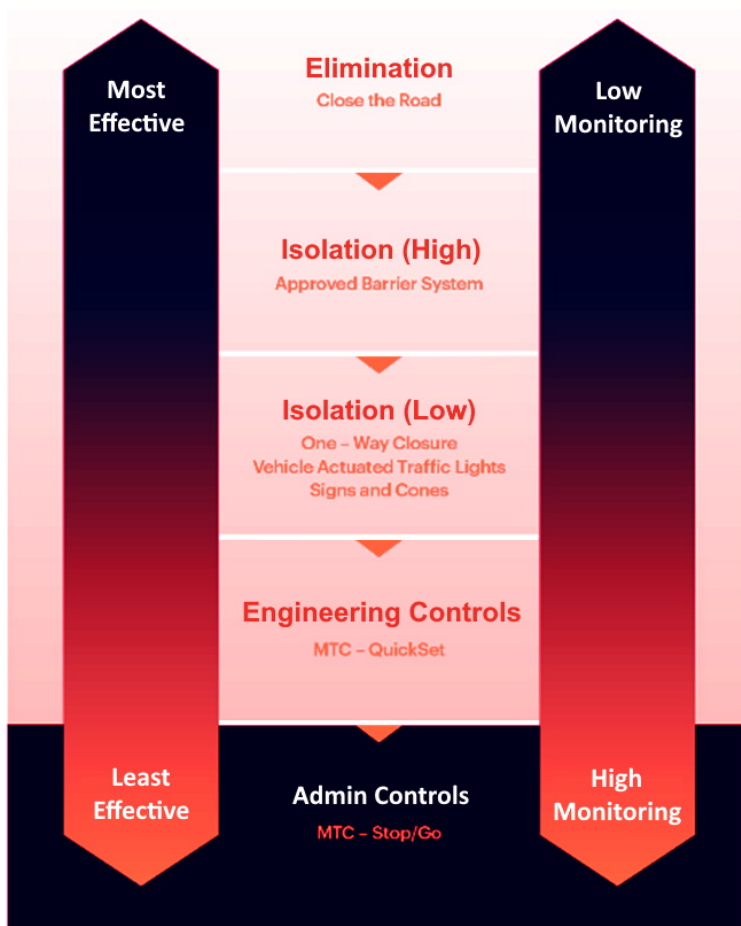
4 Traffic Management Strategy

This section sets out the traffic management strategy and sets out the temporary traffic management solutions and health and safety controls that will be used to achieve the objectives set out in Section 1.1.1. The Hierarchy of Controls provided in Figure 3 will be used to select TTM solutions that are proportionate to the risk to health and safety an activity may present. Referring to Figure 3 below the traffic management approach shall move to a lower level (less restrictive) control only when the higher level (more restrictive) control is impractical or creates more risk than a lower control. Excessive congestion or delays can increase risk to road users, this risk must be considered when selecting the appropriate control. This methodology has been developed in accordance with Section 6 of the Health and Safety Act and CoPTTM will be applied to determine the correct control type on site.

Figure 3 Hierarchy of Controls



Hierarchy of Controls



4.1 Design Standards

Any SSTMPs developed in accordance with Section 1.4 will be guided by the following Traffic Management documentation:



- The Code of Practice for Temporary Traffic Management prepared by the New Zealand Transport Agency, 4th Edition 2018 (CoPTTM) including update notes
- NZ Guide to Temporary Traffic Management (NZGTTM), (currently in pre-consultation draft and will supersede CoPTTM in due course)
- NZTA State Highway Geometric Design Manual (SHGDM)
- Austroads Guide to Road Design (Geometric and barrier design)
- NZTA M23 Appendix C (Temporary barriers)
- Highway Capacity Manual 2010
- NZTA RTS18 On Road Tracking Curves
- Manual of Traffic Signs and Markings (MOTSAM).

All temporary traffic management will comply with CoPTTM standards and use industry best practice. Table 4 sets out the SSTTM design criteria which will be used.

Table 4 Standard TMM Design Criteria

STANDARD TTM CRITERIA	
Minimum Temporary Speed Limit	30km/h
Minimum lane width	3.0m 3.2m with bus movements Swept turning path for buses to be catered for at key intersections
Minimum footpath width	1.2m
Minimum shared footpath and cycleway width	2.2m

4.1.1 Barrier Design

Temporary barrier systems will be put in place where they will reduce overall risk acknowledging the risks associated with install/removal and the introduction of new hazard to the road environment.

Barrier systems will be designed by qualified individuals and the Barrier Design Statements attached to the SSTMP's. The most common barrier systems planned for EB2/ EB3R are:

- BG800
- SafeZone
- HV2
- Sentry II.

Barrier designers should be familiar with the systems guides as published by the manufacturers.

4.2 Hours of Operation

The standard hours of operation during the construction period are:

- Weekdays – 07:00am to 18:00pm
- Saturdays - 07:00am to 15:00pm.

No construction is to occur at night-time, on Sundays or public holidays except under the circumstances set out in Section 4.2.1 and 4.2.2. It should be noted that staff will begin arriving at site prior to

construction start times and leave after construction end times. CTMP measures including TTM controls may also be setup, packed up and inspected outside of the hours above. Office hours for the site offices will be from 07:00 to 19:00.

4.2.1 Exceptions

Exceptions to the working hours may be required for specific tasks. These specific tasks will be outlined in a SSTMP including the reasons and mitigations as appropriate for the continuous work period. The SSTMPs are required to demonstrate why the regular work hours cannot be adhered to.

Section 5.4.3 identifies sensitive receivers which construction vehicles will be required to avoid during sensitive times, i.e., school pick up or drop off times.

4.2.2 Night Works

It is anticipated that some night works will be undertaken to minimise the disruption to the public, businesses and traffic. Night works are anticipated throughout the construction of EB2/ EB3R to enable various sections of work to be completed. This includes various levels of impacts from installing contraflows, to detours, to significant road/intersections closures. Further information on night time works is included in Section 3.6.3 of the CEMP.

SSTMPs will be developed and approved by the Auckland Transport CAR approval team, with endorsements from Metro Services and ATOC when impacting on their services/signalised network (in accordance with Section 1.4). These plans will be developed with the same strategy discussed above, moving through the hierarchy of controls seen in Figure 3.

Night works will be carried out in accordance with an Auckland Council certified Construction Noise and Vibration Management Plan (CNVMP) and any related site-specific schedules.

4.2.3 Site Attendance

When the site is attended, a qualified Practising Site Traffic Management Specialist (STMS) will be onsite undertaking 2-hourly checks. The STMS may leave site between these site checks to attend other matters however must be within 30 minutes of site and a person qualified to Traffic Management Operative Practising (TMO) is delegated authority to maintain the site. The STMS qualification levels are set out in Table 5.

Table 5 STMS Qualifications

Practising STMS Qualification Level	Road Environment	Road examples
Level 1 / Category A	Speed : <65km/hr AADT <10000vpd	Burswood Drive
Level 2 / Category A	Speed : <65km/hr AADT >10000vpd	Ti Rakau Drive Pakuranga Road

Level 3 / Category C	Speed : > 65km/hr Multilane Environment	SEART – east of speed change
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During unattended times, a qualified Practising STMS will be available on call should issues with the site be reported.

Unattended sites will be checked at a minimum of 1 time every 24 hours and additional resources will be available on call if necessary to rectify faults identified during the site checks.

4.3 Public Transport

EB2/ EB3R Team will work to ensure the performance of the bus network is maintained. There are seven routes within EB2/ EB3R area that currently operate on the Eastern Busway corridor. These routes are 70, 72C, 72M, 72X, 352, 711, 712 and details of these routes are shown in Figure 4 and outlined in Table 7 below. Some bus stops and the bus route 711 will be notably impacted requiring minor relocations to accommodate construction work as discussed in the below sections.

Figure 4 Existing bus routes operating in the EB2 and EB3R project areas.



Table 6 Bus Services Through EB2/ EB3R Area

Route Type	Route No	Frequency	Description
Frequent Services	70	Every 10 minutes	Botany, Pakuranga, Panmure, Ellerslie, Newmarket, City
	72C/M	Every 15 minutes	Howick, Pakuranga Road, Pakuranga, Panmure
Connector Services	711	Varying	Howick, Cook Street, Union Road, Bradbury Road, Cascades Road, Reeves Road, Panmure
	712	Varying	Bucklands Beach, Casuarina Road, Glenmore Road, Panmure
Peak Period Services	72X	Services operate weekdays only, during morning and afternoon peaks	Botany, Howick, Pakuranga, Panmure, Southern Motorway, City

Route Type	Route No	Frequency	Description
	352	Services operate weekdays only, during morning and afternoon peaks	Panmure, Highbrook, East Tamaki, Manukau
School Bus Routes	S415	Once in the morning and once in the afternoon on school days	Pakuranga to Sacred Heart College
	S416		Botany to Sacred Heart College
	S440		Bucklands Beach to Sancta Maria College and Primary
	S013		Otara to Edgewater College
	S073		Otahuhu to Edgewater College

Any disruptions to public transport services will be submitted to the AT Service Disruptions team for endorsement prior to SSTMPs being submitted to AT CAR team (see Section 1.4). Collaboration between the EBA traffic team and AT Service Disruptions team will occur to find acceptable mitigation to minimise disruption to public transport services and enable work to occur.

4.3.1 Bus Stops

There are 14 bus stops within EB2/ EB3R area on the existing public network, and 2 destinations where private bus stop use may be impacted. These are set out in Table 7 below.

Table 7 Bus Stops within EB2/ EB3R Area

Stop Number	Stop Name	Direction	Bus Services
6062	Pakuranga Plaza	EB	72C, 72M, 72X, 712
6060	Pakuranga Plaza	WB	72C, 72M, 72X, 712, 711
6127	Palm Avenue/Pakuranga Plaza	WB	70, 352
6132	Palm Avenue/Pakuranga Plaza	EB	70, 352, 711
6134	Ti Rakau Park	EB	70, 352
6129	Ti Rakau Park	WB	70, 352
6136	Marriott Road	EB	70, 352
6131	Marriott Road	WB	70, 352
6138	Edgewater Drive	EB	70, 352
6133	Edgewater Drive	WB	70, 352
6140	Ti Rakau Drive/Gossamer Drive	EB	70, 352
6135	Ti Rakau Drive/Gossamer Drive	WB	70, 352
1977	William Roberts Road	WB	711
1972	William Roberts Road	EB	711
-	Edgewater College		School Bus
-	Te Tuhi		Visitors Shuttle

During construction the bus stops will be maintained where possible. It is expected that the bus stops will need to shift longitudinally as the works progress. This movement is planned to be within 200m. It is

anticipated that the bus stop (ID 6127) in the Pakuranga Town Centre will only be removed after works on the RRF and Reeves Road have been completed. It is also anticipated that bus stops (ID 6134, 6129, 6131, 6136, 6138 and 6133) along Ti Rakau Drive will only be removed following Phase 2 of EB3R and bus stops (ID 6140 and 6135) following Phase 3 of EB3R (as discussed in Section 3.1).

Temporary bus stops will be agreed upon by AT Metro Service Disruptions and undergo the required approvals for double decker busses to use them.

4.3.2 Bus Travel Times

Opportunities to improve bus travel times will be explored in SSTMPs including the provision of temporary bus priority where feasible. Public communication and signage will also be provided during construction informing motorists of the works and potential delays, which may reduce the impact on bus travel times through changes in travel behaviour. For example, with advanced traffic warning, motorists would be more likely to consider travelling outside the peak periods or using alternative routes reducing traffic volumes along bus routes.

4.3.3 711 Service

The 711 outbound service travels partly along Reeves Road as a connector service between Howick and Panmure. During the Reeves Road closure, the 711 outbound (eastbound) service will be diverted temporarily to the William Roberts Road, which is being altered through a separate consenting process. Figure 5 shows the existing service in green and the proposed service in red. No bus stops need to be relocated to facilitate this diversion.

Figure 5 Existing and proposed 711 routes



Currently, the 711 inbound (westbound) service travels partly along William Roberts Road north. Once William Roberts Road north is closed, the 711 inbound service will be diverted temporarily to William Roberts Road south and along Ti Rakau Drive (Figure 6).

At present, the 711 inbound service utilises bus stop (ID 6060) to pick-up / drop-off passengers at the Pakuranga Plaza. Once William Roberts Road north is closed and until Reeves Road reopens, the 711 inbound service will utilise bus stop (ID 6127) instead.

Figure 6 Existing and proposed 711 inbound service



4.4 Property Access and Public Parking

4.4.1 General

There are multiple locations within EB2/ EB3R area that offer public parking including:

- Pakuranga Plaza customer parking
- Te Tuhi
- Cortina Place businesses
- William Roberts Road and Ti Rakau Park carparking
- Ti Rakau Drive on street parking
- Edgewater Drive shops
- Riverhills Park carparking
- Local roads on street parking.

EBA will endeavour to maintain vehicle access to private property at all times throughout the construction of EB2/ EB3R. However, there may be times where vehicle access cannot be maintained, (for example, during resurfacing outside driveways throughout EB3R). Where this is the case, engagement with property owners will be undertaken in accordance with the Communication and Consultation Plan and mitigation measures will be implemented to assist residents and work will be done to minimise the duration of the restriction. This mitigation may take various forms such as:

- Providing alternate secure parking as near to the property as possible
- Construction team members to assist residents transport goods/materials to and from their property to alternate parking locations
- Manage waste collection services including relocation of rubbish and recycling bins if collection trucks will not have access on collection days.

The goal is to mitigate the impact on residents/business operators and provide assistance where we can, to accommodate their needs around our works while still enabling the works to occur.

4.4.2 2 Reeves Road- Gull Service Station

Access to the property from Reeves Road will not be maintained during the Reeves Road closure and permanent access will also be severed given planned dedicated bus lanes on Reeves Road. The service station forms part of a larger site which will retain access from Cortina Place. Discussions are ongoing with the owner regarding future access arrangements.

4.4.3 11 Reeves Road- Eastside Pups Dog Grooming and Day Care

Access to the property at 11 Reeves Road will not be maintained from Reeves Road while Reeves Road is closed for works. A temporary two-way access will be provided from Cortina Place via the property at 2 Cortina Place (see Figure 7), which is owned by AT. The manoeuvring width between parking spaces to the rear of the property is approximately 8.4m and will be sufficient to accommodate a two-way temporary access, while having no effect on on-site parking.

Figure 7.11 Reeves Road temporary access during construction



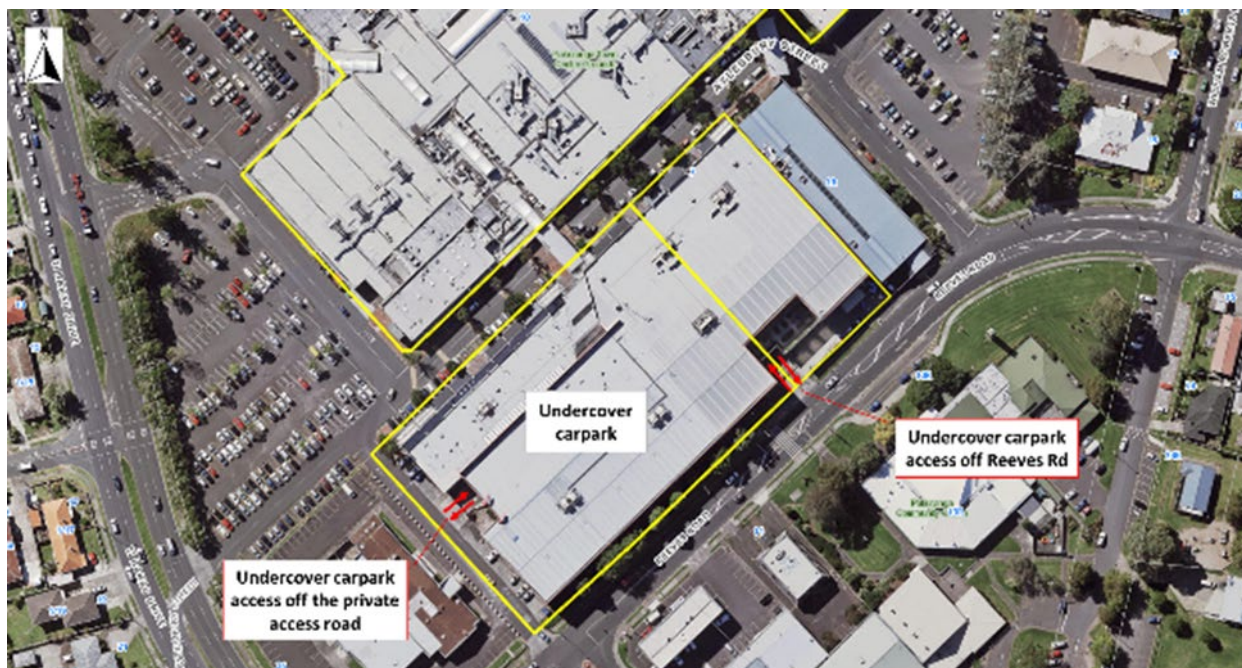
4.4.4 7 Aylesbury Street and 2R Ti Rakau Drive- The Warehouse and Pakuranga Library

Currently, access is provided to The Warehouse's goods access and the associated undercover carpark at 7 Aylesbury Street from Reeves Road. Similarly, the service entrance of the Pakuranga Library and Citizens Advice Bureau at 2R Ti Rakau Drive is also accessed from Reeves Road.

When Reeves Road is closed for construction accesses to these two entrances will be closed to the general public. Alternative access to the undercover carpark will be available from the access road off Aylesbury Street to the west (Figure 8). Access into this underground carpark will be maintained as agreed with the property owner.

Access to the service entrance of the library will be restricted to reduce exposure to construction hazards. Access to the library is still maintained through their main entrance off Aylesbury Street.

Figure 8 Pakuranga Plaza undercover carpark access during construction



Pakuranga Plaza currently has seven access points. These can be seen listed in the Table 8 and Figure 9 below. Figure 9 also shows the current AM (PM) peak traffic volumes at each entrance.

Table 8 Pakuranga Plaza Access Points

Ref #	Access Type	Location
1	Entry and Exit	Access Road via Reeves Road
2	Entry and Exit	Underground carpark via Reeves Road
3	Entry and Exit	Aylesbury Street via Reeves Road
4	Entry and Exit	Brampton Court via Pakuranga Road - East
5	Exit Only	Brampton Court via Pakuranga Road – West
6	Entry and Exit	Aylesbury Street via Ti Rakau Drive – West
7	Entry and Exit	Aylesbury Street via Ti Rakau Drive – East

Access points 1-3 will be closed and not maintained while Reeves Road is closed. This traffic will be redistributed amongst other entrances.

A new access point to replace access points 6 and 7 is to be located opposite Palm Ave. This new access will be opened prior to the closure (temporarily or permanently) of accesses 6 or 7.

Accesses 4 and 5 will be maintained as best as possible to enable bus routes accessing stop 6060. This may require one-way closures as works are staged across 4, use of steel plates to maintain access during the day, or where these options cannot work then a temporary bus stop to replace 6060 on Pakuranga Road may be required. These works will be for short durations (1-2 weeks) as drainage works are built along Pakuranga Road. These mitigations will be discussed and agreed upon with GYP (the Plaza Owners).

Figure 9 Pakuranga Plaza Access Points

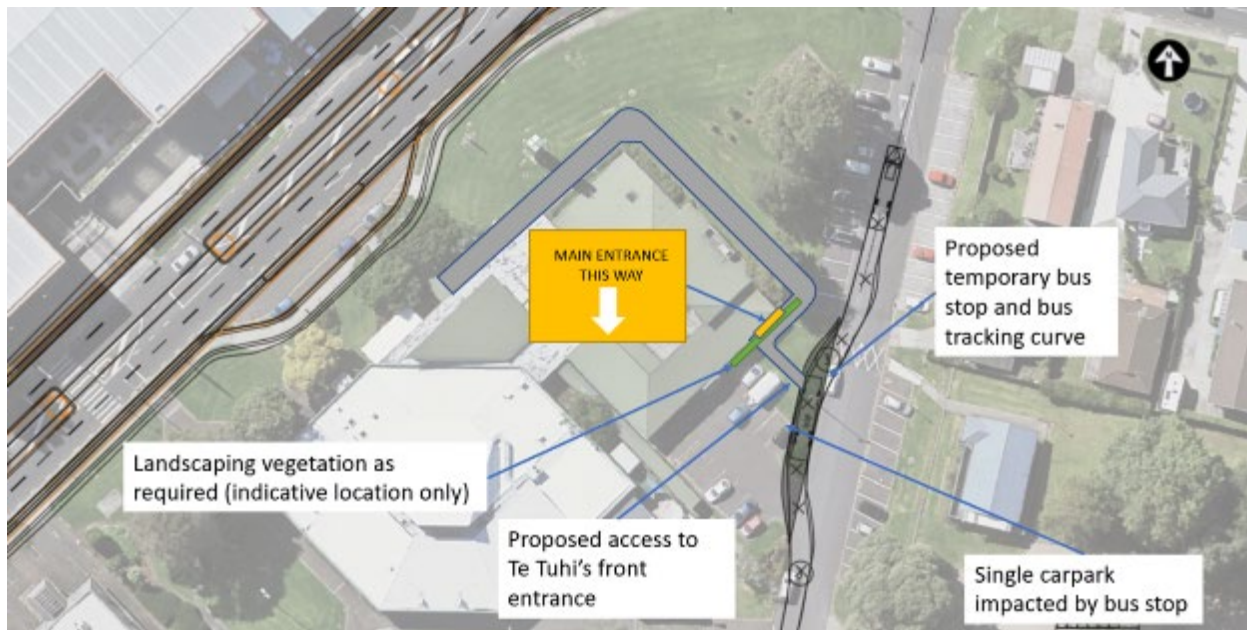


There will be parking losses – both permanently and temporarily across this site. These impacts are expected to be negligible given current utilisation. However, care should be taken to reduce the work area as much as practicable to ensure minimum impact on Plaza customers.

4.4.5 Te Tuhi

The main access to the property off Reeves Road will not be maintained during the Reeves Road closure. A temporary indented drop-off area will be provided on the western side of William Roberts Road, with a temporary walkway leading around the property to the main entrance (see Figure 10).

Figure 10 13R Reeves Road temporary access during construction



4.4.6 141 Pakuranga Road- GAS Service Station

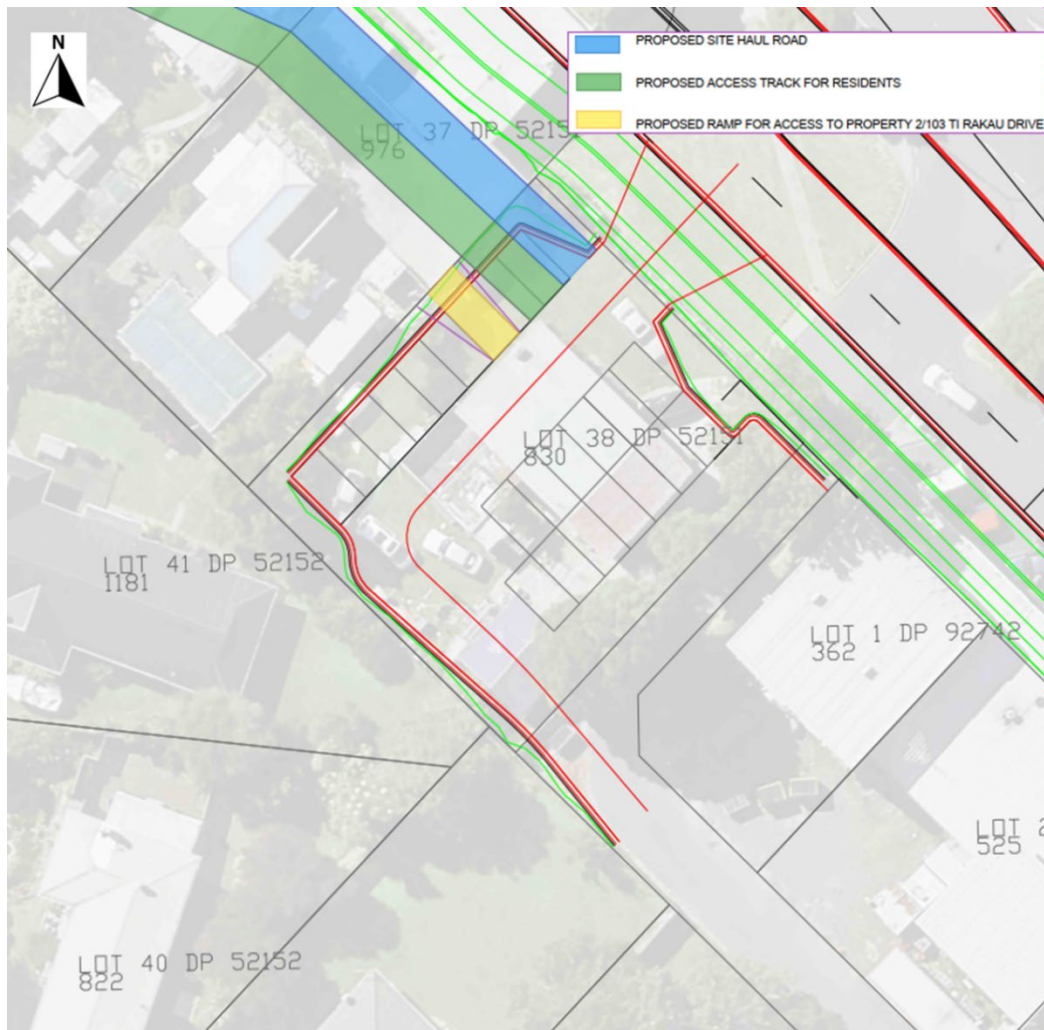
Longitudinal drainage construction will include the temporary closure of a section of the westbound kerbside lane on Pakuranga Road between William Roberts Road and Ti Rakau Drive. During this phase of work, access to the Pakuranga Plaza via Brampton Court, access to the GAS service station and the Pepler Street exit will be maintained at all times via steel plating across the trench.

The drainage works will be completed in sections to ensure this. It is envisaged that lateral shifts of the access points may be required. The construction team will also liaise with the operators of the GAS service station to ensure sufficient access widths are provided, as and when required, for fuel delivery tankers.

4.4.7 Edgewater Shops Parking

Outside Edgewater shops in the current arrangement is 26 car parks for public use. Prior to the demolition/obstruction of these carparks, access will be provided to the permanent carpark replacement that will be positioned immediately west of the shops (or a temporary carpark which matches the level of service) to minimise disruption to the associated businesses (Figure 11).

Figure 11 Proposed Access to Edgewater Shops During Construction



4.4.8 On Street Parking

On street parking will be permanently removed during construction from sections along the west side of Ti Rakau Drive and on side streets. Temporary alternatives will not be provided.

4.4.9 Private Property Access – Back Properties

During Phase 1 of EB3R, there will be 10 long driveways or 'strip accessways' extending off Ti Rakau Drive to residential properties not being acquired by AT. Access to these properties will be maintained via access tracks built along EB2/ EB3R property. These access tracks are to be separated from site haul roads such to isolate them from construction traffic. In cases where the access tracks are greater than 50m in length, these tracks will be wide enough for two-way traffic flow.

4.5 Pedestrians and Cyclists

Protecting public safety including safe passage for pedestrians and cyclists is a key consideration in the traffic management strategy for EB2 and EB3R. At the interface of the construction areas with the existing network there are several places where pedestrian and/or cyclist facilities exist. These will be safely managed using a hierarchy of measures as follows:

1. Carry out construction whilst maintaining access to existing footpath with no impact to pedestrians.
2. Realign or redirect the facility onto temporary surfacing on the same side of the road.
3. Close the facility, with an alternative facility provided on the opposite side of the road. Safe crossing points will be provided and signage.
4. Temporarily close the facility, with an alternative route signposted and communicated to the public.

Pedestrian access to properties will be maintained at all times. Further information on safe routes for pedestrians and cyclists including locations for placement of clear directional signage for safe routes and crossing points will be provided in SSTMPs.

Pedestrian amenities and facilities along Ti Rakau Drive vary across the corridor. Within EB2 a pedestrian footpath is available on both sides of the road and there are two signalised crossing facilities at intersections of Pakuranga Road / Ti Rakau Drive and Ti Rakau Drive / Reeves Road. Within EB3R there is a footpath along both sides of Ti Rakau Drive. Footpath facilities enable pedestrian movements along Ti Rakau Drive. The Ti Rakau Drive residential area supports low to medium density housing with a number of cul-de-sacs, as well as local schools and parks. There are two pedestrian crossing points in EB3R, at the intersections of Chevis Place / Ti Rakau Drive / Edgewater Drive and Gossamer Drive / Ti Rakau Drive / Fremantle Place. Existing crossing points of Ti Rakau Drive are scarce and should be maintained as a minimum standard. Where these crossings need to be closed temporary alternatives or permanent arrangements nearby should be provided.

There is an absence of cycle facilities along the majority of Ti Rakau Drive, with the exception of Ti Rakau Drive/ Gossamer Drive intersection which provides cycle priority boxes and marked cycle lanes across the left slip lanes. Cyclists share an on-road lane with traffic and crossing opportunities are limited to the intersections discussed above, however, the parking shoulder may be utilised by cyclists.

4.5.1 Temporary Footpaths

In the first preference, temporary footpaths will be used where existing or permanent footpaths are not available during construction. The temporary footpaths will accommodate all users. These footpaths will be isolated from the worksite by safety fencing or in the case of an attended site, cone bars can be used to guide pedestrians (as discussed above in section 4.5.2). When temporary footpaths are located on the carriageway, pedestrian footpaths will be isolated from live traffic with road safety barriers as described in section 4.1. Temporary fencing must be used to isolate temporary footpaths from barrier deflection zones.

Temporary footpath routes will include signs used to guide pedestrians around or through the worksite safely. Standard CoPTTM pedestrian direction signs (Figure 11) will be positioned at the location a permanent footpath will be detoured and at other footpath intersections to clearly direct pedestrians to the other end of the closed footpath. Details of the temporary footpath routes and sign location will be specified in SSTMPs that will be submitted to AT Corridor Access Request Team for approval in accordance with Section 1.6.

Figure 12 CoPTTM Sign TU32 Pedestrian Direction



A map of the site showing alternate routes or parking facilities may also be positioned next to pedestrian detour signs to provide more in-depth info about pedestrian detours and the wider project.

Temporary footpath surfaces will be considered and if a footpath is redirected onto unsuitable surfaces for vulnerable users, footpath mats will be laid down to provide a safe surface.

4.5.2 Fencing

Safety fencing will be installed around EB2/ EB3R working space to prevent public access to the construction works associated with EB2/ EB3R. Fences must:

- be at least 1m high
- have gaps no larger than 100mm
- include a bottom rail less than 100mm above ground
- include an upper rail more than 1m above ground
- have infill material that does not allow children to climb over the fence.

All fences should be stable and remain upright in poor weather and standard worksite conditions.

Where pedestrian fencing is used to channel pedestrians, COPTTM type safety fences will be deployed. Site fencing that is not used to channel pedestrians may be either COPTTM type safety fences or portable mesh fencing provided the fencing complies with the above requirements. Neither type of pedestrian fence will be used for channelling or directing vehicular traffic.

Cone bars are considered sufficient to guide pedestrians but are not sufficient to prevent access to the work area. Cone bars may be used as delineation in front of metal fencing as specified above.

4.5.3 Footpaths Crossing Haul Roads

Please refer to Section 5.1.4 which covers this vehicle and pedestrian interaction.

4.6 Emergency Services

Emergency Services include:

- New Zealand Police
- New Zealand Fire Service

- St John Ambulance.

Emergency services are not expected to be restricted in terms of connectivity or accessibility during the construction period. All staff are trained to work with emergency services to provide access where available. During the short period of time William Roberts Road will be closed off at the northern extent access to the learning centre and the leisure centre will still be maintained from the south via Cortina Place. Emergency services will receive a copy of the proposed SSTMP, onsite contact details and detailed plans of detour routes and access.

Emergency Service Access to private properties will be available at all times. Private properties as per Section 4.4 and emergency services will receive notification of works outside properties and access plans if regular access is impeded.

4.7 Impacts on Heavy Haulage

Ti Rakau Drive, Pakuranga Road and SEART are all Over Dimension Routes (Figure 13) but not Overweight Routes. When SSTMPs restrict the dimensions of over dimension vehicles in accordance with the Heavy Haulage Association requirements (Figure 14) then notification will be given to the Heavy Haulage Association prior to the works commencing. This notification can contain alternative routes (if appropriate) along with details of the impairment on the carriageway. Alternative routes can be seen in Figure 15 below which highlights the alternate routes to the other ends of EB2/ EB3R.

Figure 13 Over Dimension Routes - Auckland Transport - Accessed 06/05/2022

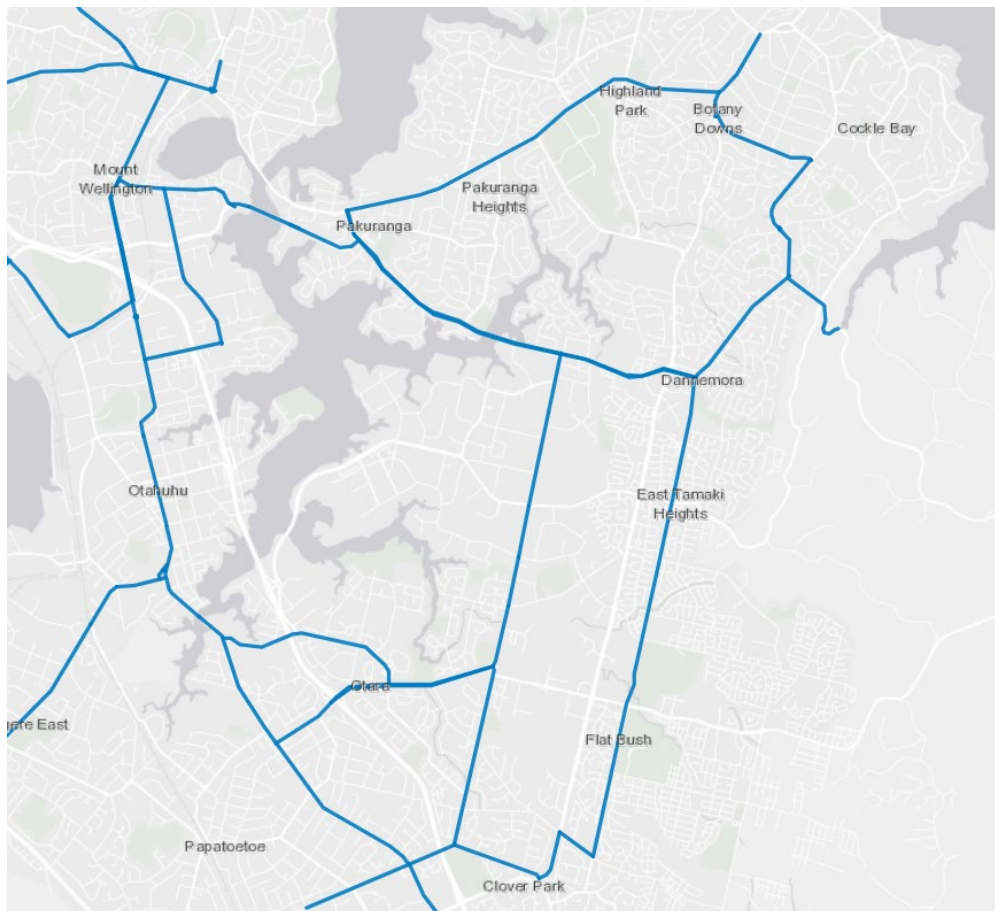


Figure 14 Over Dimension Requirements - HHA

Minimum Overall width	11.5 metres
Minimum Height from pavement surface	6.5 metres

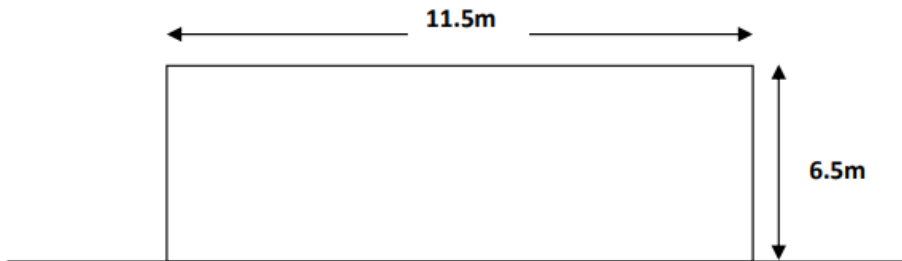
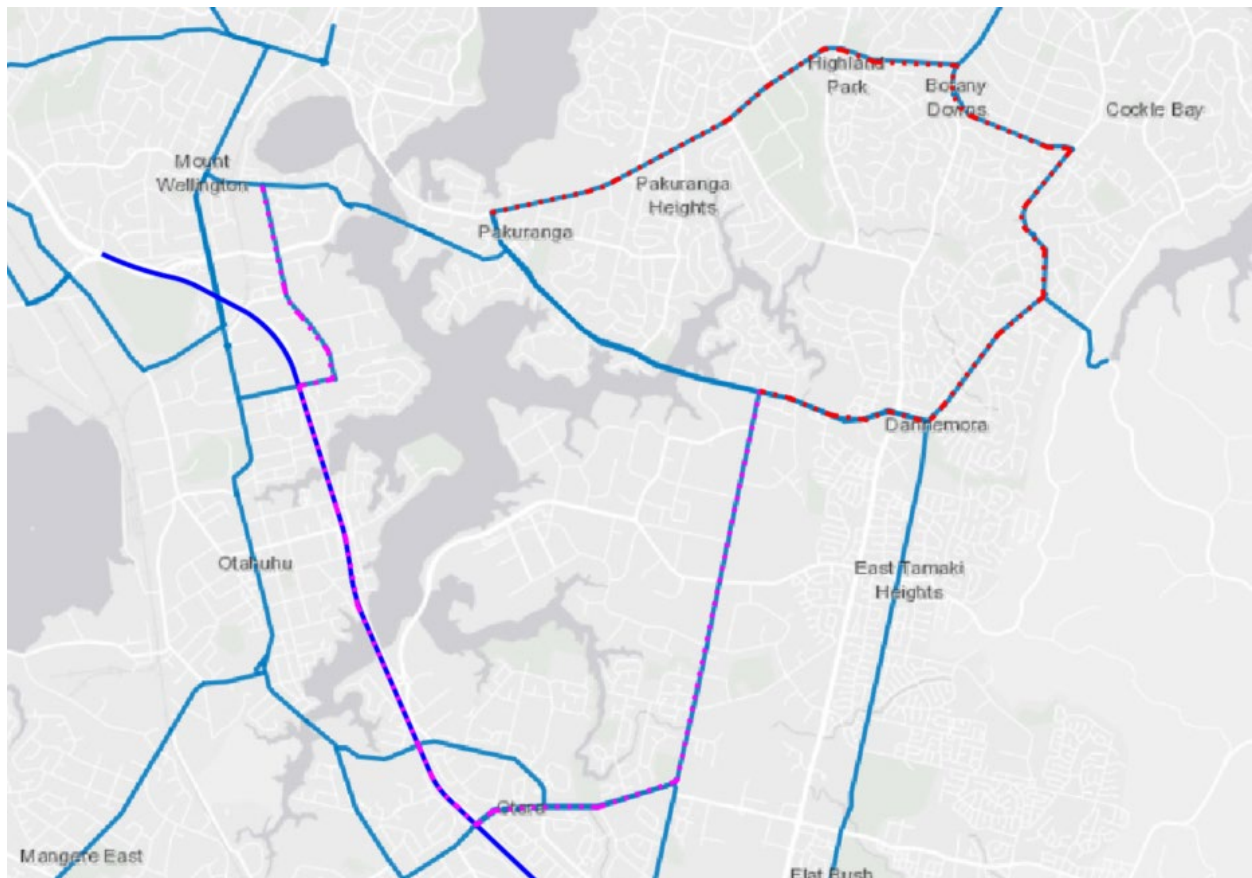


Figure 15 Alternate Over Dimension Routes



To ensure the local service of rubbish and recycling collection can continue without issue when vehicle access is restricted, EB2/ EB3R team will move the rubbish and recycling bins that are placed outside of properties to a location that is easily and safely accessed by rubbish and recycling trucks. EB2/ EB3R team will return the bins to the relevant properties once the rubbish and recycling collection has occurred.

4.7.1 Lane widths

Table 9 sets out the lane width minimums that will be used during construction.

Table 9 Lane Width Minimums

Speed limit (kph)	Lane width (m)
80	3.25
70	3.25
50	3.0
30	3.0 2.75m on Level 1 side roads only

Note that the 2.75m lane width at 30 kph will not be used on any of the Level 2 roads, except in exceptional circumstances, as the volume of heavy traffic on the Level 2 route presents an increased risk as trucks & busses have difficulty negotiating narrow sites.

4.8 Impacts on Taxi Users

There are no taxi stands within the site boundary and therefore a high volume of taxis is not anticipated. Taxi access to destinations will be restricted in the same manner as other vehicle users.

5 Construction Access and Laydown

5.1 Site Access

Site Access Points (SAP) are to be maintained throughout EB2/ EB3R to enable access to various work areas. Where possible they shall be located off Ti Rakau Drive and Pakuranga Road, utilising roads with lower volumes of traffic to reduce exposure of the site to the travelling public and vice versa.

Each SAP will be identified and outlined in the appropriate SSTMP. Where the layout differs to the ones presented below a site-specific risk assessment will be undertaken to ensure the SAP can operate safely. The position, traffic conditions and roading environment will influence the access procedure. The typical access procedures and layouts below will be common:

5.1.1 Entry procedure along lane – major and minor road

Layout examples seen in Figures 16, 17 and 18 below. Noting that where a SAP is in close proximity to and arterial it may be unsuitable for work vehicles to turn into the SAP without impacting the main road.

- Activate beacon light at 100m from site access point or when vehicle begins to slow down for site entry (whichever occurs first)
- Indicate into the site entry point and slow down
- Enter site via designated Site Access Point
- Activate hazard lights and deactivate beacon light

Figure 16 Major Road SAP Example

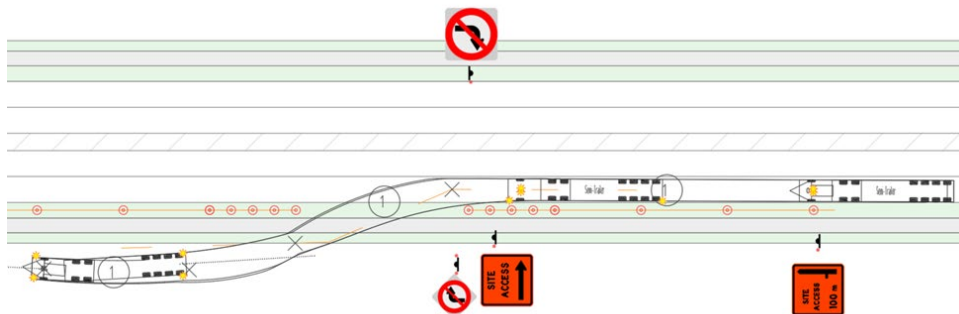


Figure 17 Minor Road SAP

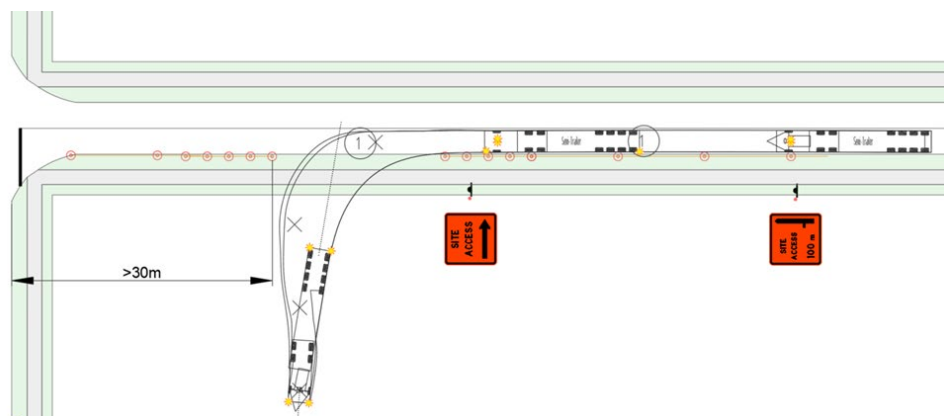
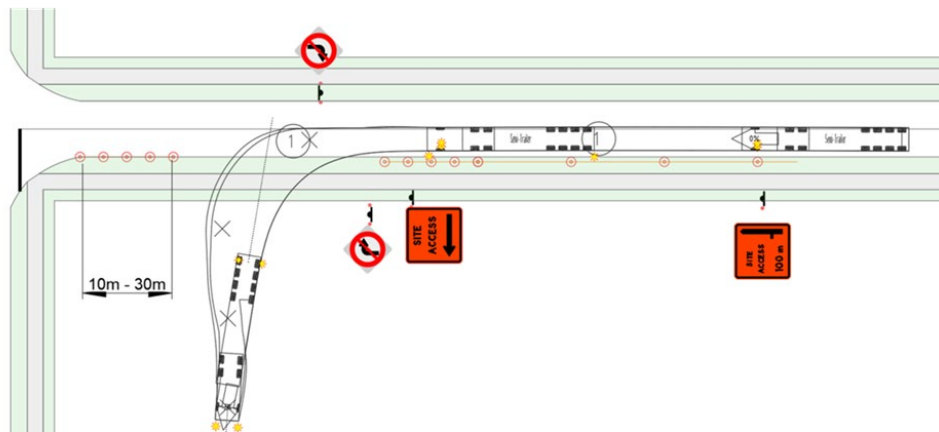


Figure 18 Minor Road SAP with Poor Clearance from Arterial

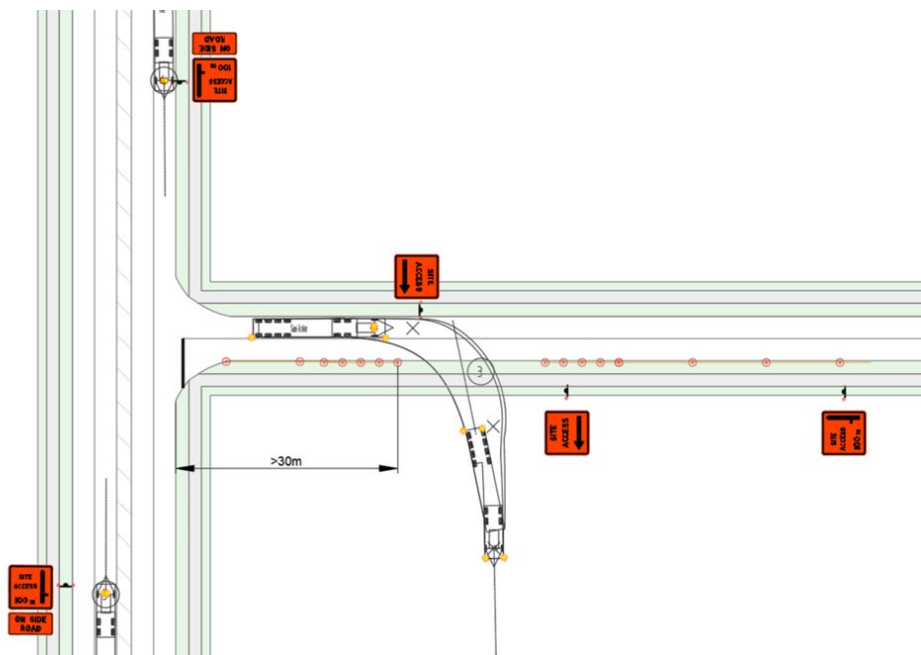


5.1.2 Entry procedure across lane – minor road

An example layout can be seen in Figure 19 below.

- Activate beacon light at 100m from site access point or when vehicle begins to slow down for site entry (whichever occurs first)
- Indicate into the site entry point and slow down
- Slow and check for pedestrians, cyclists, and choose a suitable gap in traffic
- Enter site via designated SAP
- Activate hazard lights and deactivate beacon light.

Figure 19 Entry Procedure Across Lane- Minor Road



5.1.3 Heavy combination vehicles

The above procedures apply for rigid vehicles and light vehicles with/without trailers. For heavy combination vehicles and overweight/dimension vehicles, tracking curves will be completed to risk

assess whether the intended vehicle can enter/exit site off Ti Rakau Drive or Pakuranga Road at 15kph without stopping, reversing, or swinging out of driving lane. A site specific risk assessment will be undertaken for SAP points on SEART. When an escort is required, the below procedure is typical and will be copied into the relevant SSTMP.¹

- A shadow truck equipped with a TMA (suitable to road level) will act as an escort vehicle
- After meeting at a specified location (SAP plan specified or otherwise agreed upon) proceed towards the SAP in convoy (work vehicle directly followed by the escorting shadow vehicle, not to be separated by other vehicles or intersections)
- Both vehicles to activate beacon lights at 100m from site access
- TMA to display hazard/caution warning with no arrow if the shadow vehicle is not required to stop. If the shadow will need to stop and there are 2 lanes available, then the right arrow should be shown directing traffic around the shadow vehicle and work vehicle
- Work vehicle to indicate into site and both vehicles to slow down
- Work vehicle to enter site, Shadow vehicle to remain in lane
- Work vehicle to activate hazard lights and deactivate beacon, shadow vehicle to accelerate up to speed.

5.1.4 Footpaths interacting with Haul Roads and SAP

Whenever vehicles and pedestrians intersect there must be suitable sight distances to allow both parties to see and react to the other. In Table 10 below, the stopping sight distances have been outlined depending on the vehicle speed limit. Vehicles must be able to see a point 1.2m off the ground, at least 4m along the foot path from the crossing point (>3.2 second walking time with standard 1.2m/s walking speed) when they are the appropriate SSD away from the crossing point.

Table 10 Sight Distances²

Speed Limit (kph)	SSD (metres)
5	3.0
10	6.6
20	15.5
30	26.4

5.1.4.1 SAP crossing footpaths

Where SAPs cross foot paths, pedestrians always have right of way and site vehicles must give way.

SAPs must be designed such that the limit line for vehicles leaving the site have clear sight distance along the footpath at least 4m in each direction, noting that the greater the sight distance the more favourable. Where this cannot be achieved, then the SAP must be manned with a spotter to ensure pedestrian safety. Clear communication standards will be outlined in the Project SOP for this task.

¹ This procedure may be altered as a result of any risk assessment.

² SSD based off 2 second reaction time and 0.36 deceleration factor

5.1.4.2 Within Site

Footpaths on occasion may need to travel through the worksite to gain access between side roads and the main road. In the cases this can't be avoided, pedestrians will by default have right of way to reduce actions required by members of public and be guided through the site by fencing/cone bars if attended.

Footpaths running along /through worksites will be isolated from the working space with fences as discussed in section 4.5.2. If plant operates in that work area a 1m lateral safety zone shall be coned or fenced off to clearly delineate the plant operating zone.

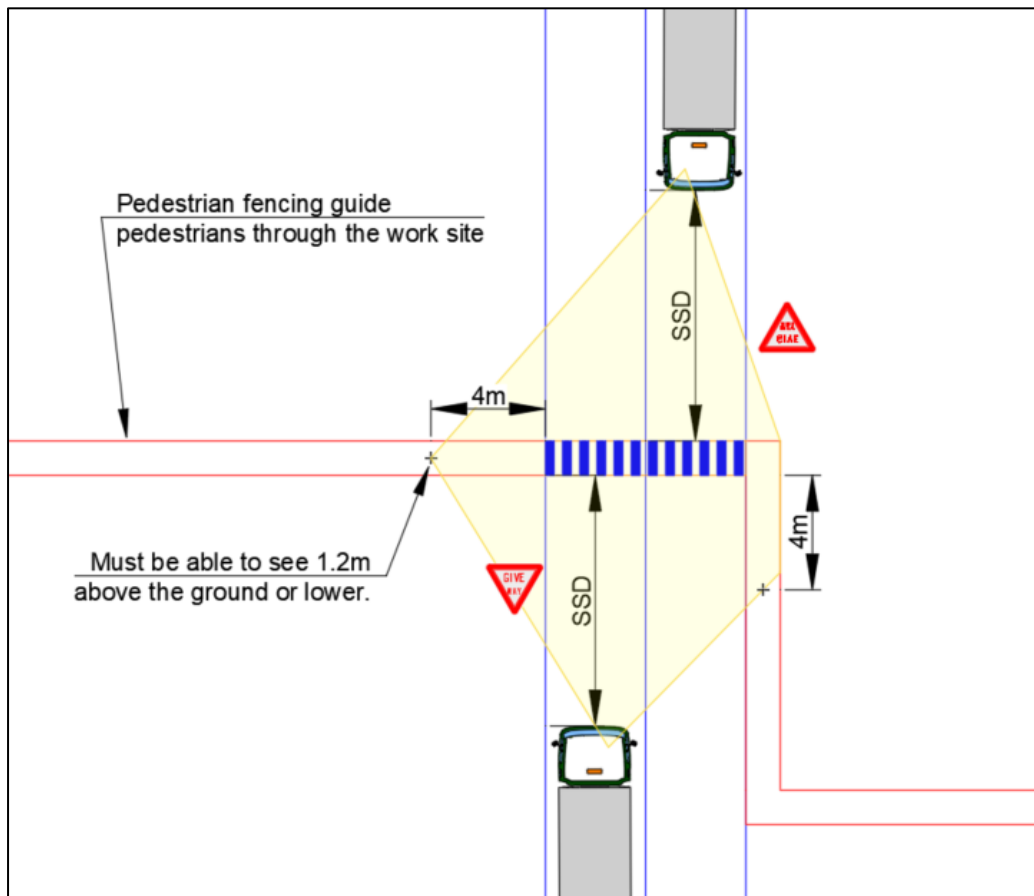
Where footpaths intersect vehicle routes, there must be suitable sight distance between site vehicles and pedestrians to allow site vehicles to give way. These details will be outlined on the SSTMP that introduces the crossing point, with design guided by the below principles. An example layout can be seen in Figure 20 below. Signage and vehicle stopping points will be clearly displayed.

1. Where pedestrians have right of way (preferred):
 - a. Where practicable, these pedestrian crossing will be indicated by 0.3m white zebra stripes on the ground
 - b. Give way signs to be positioned facing vehicles
 - c. If it is anticipated that cyclists may use these footpath routes signage must be in place indicating, they dismount prior to approaching the crossing point.
2. Where vehicles have right of way:
 - a. Where practicable, these pedestrian crossing will be indicated by red paint (RAL 2002) with diagonal 0.1m orange stripes (RAL 1021) on the ground



- b. Crossing points must be manned where peds must stop and give way to site traffic, there should also be appropriate warning signs
- c. Gates to indicate the hazardous crossing must open inwards and must be designed to prevent pedestrians being trapped within the road corridor.

Figure 20 Example Pedestrian Crossing Site Road



5.2 Staff Parking

It is envisaged that, at least for the initial year of construction, site office staff will use public transport where practicable for commuter trips and will access the site offices on foot. Workforce Travel Management Plans will be developed to achieve this. The aim of the Workforce Travel Management Plans will be to reduce the number of private vehicles travelling to the worksites and to increase the accessibility of the worksites through more travel options. Following the initial year and as construction activities ramp up, a staff carpark will be provided at 26 Ti Rakau Drive (Figure 21) until that site is redeveloped for the Pakuranga Bus Station.

Figure 21 Location of staff carparking at 26 Ti Rakau Drive



5.3 Site Offices & Satellite Compounds

5.3.1 Main Site Office

The main site office (Site Office 1) is located at 5 Reeves Rd with access from Reeves Road and Cortina Place (Figure 18). It is envisaged that Site Office 1 at 5 Reeves Road will accommodate approximately 120 workstations. This office will mainly be accessed by light vehicles for workers with some carparks available on the office property. Overflow carparking will be provided within Project properties.

During the closure of Reeves Road, vehicle access to Site Office 1 from Reeves Road will not be maintained, although the property will still be accessible via Cortina Place. Pedestrian access to the property will be maintained at all times. Approximately 11 off-street parking spaces will be maintained on the eastern side of the property for visitors and deliveries.

Figure 22 Site Office 1 and 2



5.3.2 Satellite Compounds

EB2/ EB3RProject covers a large area and will have multiple satellite compounds located throughout its footprint.

Within each satellite compound, designated carparking areas will be setup for construction staff and visitors to site. Public parking on side streets by construction staff will be discouraged and monitored to ensure minimum disruption to the community and users of sports fields, public reserves, and townships on event / opening day(s).

Site Office 2 at 2 Cortina Place is shown on Figure 22 above and will accommodate approximately 30 workstations at the peak of construction. The closure of Reeves Road will result in the loss of the access to Site Office 2 from the western frontage, however the property will still be accessible from Cortina Place. Pedestrian access to the property will be always maintained. The building in the centre of the property will be used as site office space, while the building along the eastern frontage of the property (red outline) will be demolished. Approximately five off-street parking spaces will be maintained on site and accessed from Cortina Place for material deliveries.

2R Ti Rakau Drive Pennell Place will also be occupied as a satellite compound (Figure 23). The site will be used to support the construction of the RRF. In particular, it will be used to receive and pre-assemble the special gantry (bespoke crane) to be used to lift and position the 'Super-T' beams. The site will also

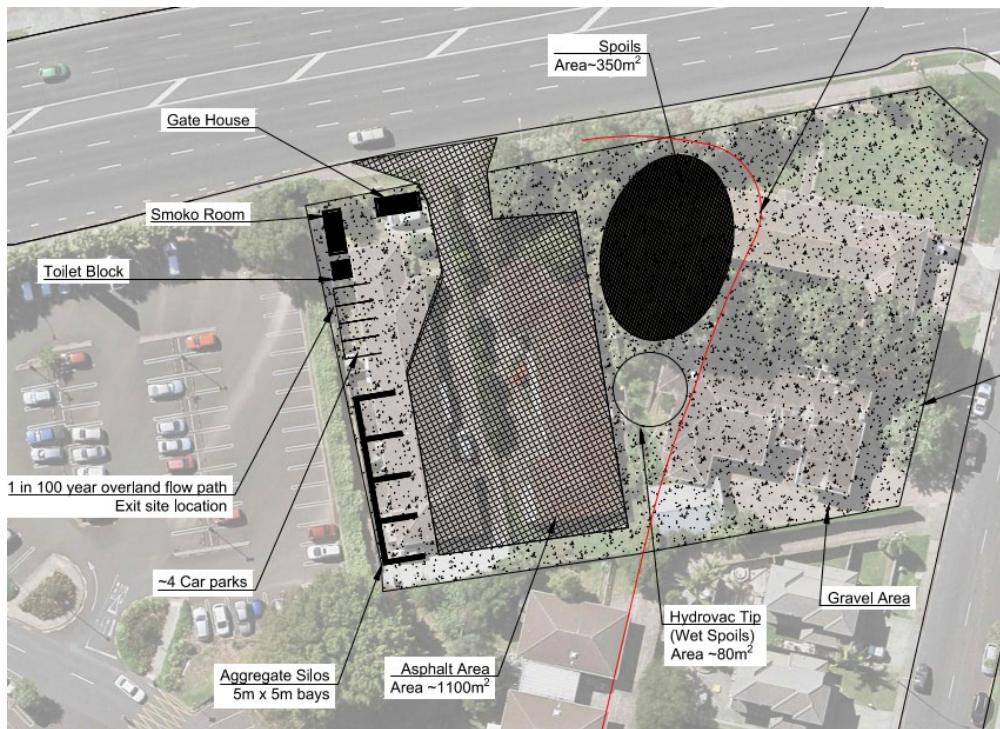
provide parking on site for specialist personnel and deliveries. The Pennell Place parking area will be occupied for approximately two years and two months.

Figure 23 2R Ti Rakau Drive Pennell Place Satellite Office



A laydown yard will also be positioned on the south-western quadrant of the Pakuranga Road/ William Roberts Road intersection and will serve as the main laydown area of materials and aggregate (Figure 24). Access will be established off Pakuranga Road and Ti Rakau Drive respectively. This compound is subject to a separate resource consent application.

Figure 24 - Main Laydown Yard (169/171 Pakuranga Road)



The other satellite laydown yard is at 220/222 Ti Rakau Drive will also be constructed for the Ti Rakau Bridge western abutment and all relevant works. With the removal of the existing houses, the site will provide a temporary storage area for the material and plants including a gantry crane. It will operate associated with the abutment construction period. Access from southbound of Gossamer Drive and Eastbound of Ti Rakau Drive.

Figure 25 - Satellite Compound (220/222 Ti Rakau Drive)



A satellite compound at 14 Seven Oaks Drive will also be established for site offices and parking. Access will be maintained off Seven Oaks Drive, utilising the existing driveway (Figure 26).

Figure 26 14 Seven Oaks Drive Satellite Compound



Satellite compounds will also be established at 12 Bolina Crescent, 143 Ti Takao Drive and 178 Gossamer Drive for the construction of EB3R. These sites will include parking, office space and welfare facilities (Figure 27, Figure 28 and Figure 29). Access will be maintained off Bolina Crescent, Ti Rakau Drive and Gossamer Drive, utilising the existing driveways.

Figure 27 Satellite Compound at 12 Bolina Crescent



Figure 28 Satellite Compound at 143 Ti Rakau Drive



Figure 29 Gossamer Drive Satellite Compound



5.4 Construction Vehicle Movements

5.4.1 Local to Project

Construction vehicle primary and secondary routes have been outlined in the ITA assessment and considered for network impacts within the vicinity of EB2/ EB3R. These primary routes utilise arterial roads where possible traveling along:

- i. Ti Rakau Drive
- ii. Pakuranga Road
- iii. SEART
- iv. Reeves Road
- v. Gossamer Drive
- vi. William Roberts Road North (to access the primary construction yard).

Some routes to/around the local area may vary depending on origin/destination however most heavy construction vehicles will use the construction vehicle routes listed above and shown in Figure 30.

Figure 30 Construction Vehicle Routes



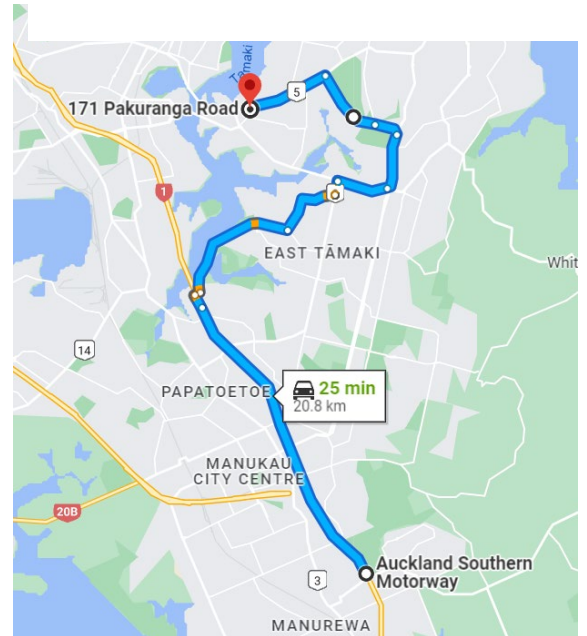
5.4.2 To/From Project Area

The main origins for construction vehicles to EB2/ EB3R are from the quarry and asphalt plant. The likely quarries to be used are located south of EB2/ EB3R at Hunua or Drury. There are two primary travel route options for vehicles travelling north on SH1.

Option 1 – via Highbrook Drive (Figure 31)

- Travel north along SH1
- Take Exit 443, signs for Highbrook Drive
- Turn right over the motorway
- Take second exit from roundabout, signs for Highbrook East Tamaki
- Continue along Highbrook Drive until turning left onto Cryers Road
- Turn left onto Harris Road/Route 8
- Turn right onto Ti Rakau Drive/Route 5
- Turn left onto Botany Road/Route 30 (signs for Howick)
- Turn left onto Cascades Road
- At the roundabout, take the 1st exit and stay on Cascades Road
- Turn left onto Pakuranga Road/Route 5
- Turn left into the primary construction yard at 169 Pakuranga Road

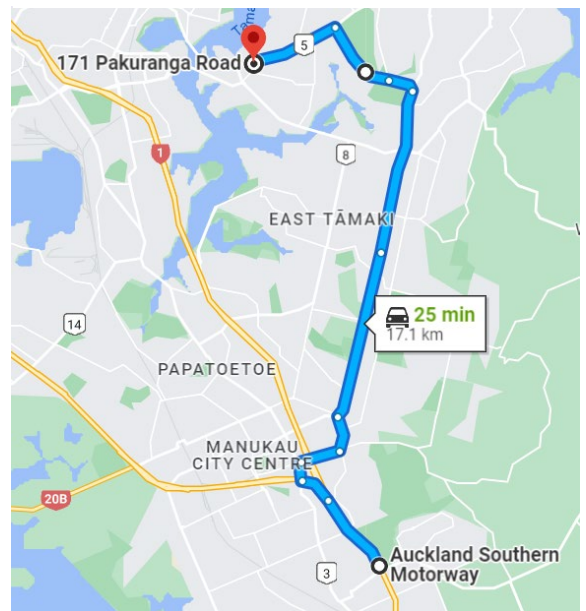
Figure 31 Route via Highbrook Drive



Option 2 – via Redoubt Road (Figure 32)

- Travel north along SH1
- Take Exit 449A, signs for Great South Road
- Turn right onto urban route 3
- Turn right onto Redoubt Road
- Keep ahead until turning left onto Hollyford Drive
- Keep ahead until turning left onto Te Irirangi Drive
- Keep ahead onto Botany Road
- Turn left onto Cascades Road
- At the roundabout, take the 1st exit and stay on Cascades Road
- Turn left onto Pakuranga Road/Route 5
- Turn left into the primary construction yard at 169 Pakuranga Road

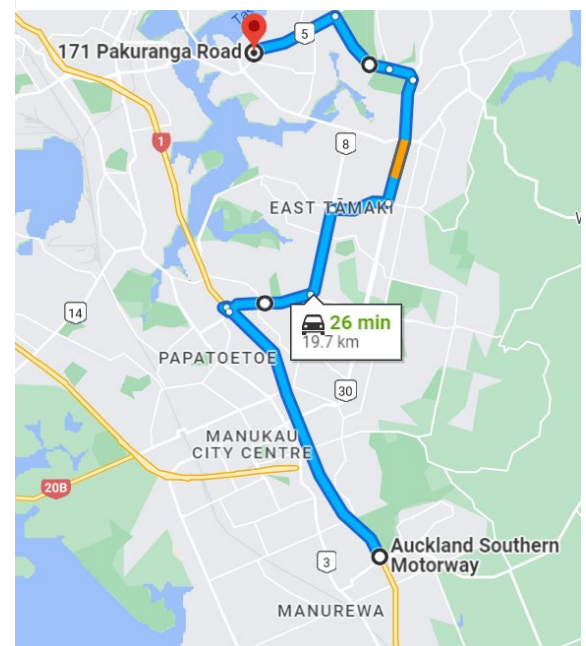
Figure 32 Route via Redoubt Road



Option 3 – via East Tamaki Road and Harris Road (Figure 33)

- Travel north along SH1
- Take Exit 444, signs for East Tamaki Road
- Turn left onto urban Route 8, signs for M.I.T. Otaru East Tamaki
- Keep ahead for 5.8km until turning right onto Ti Rakau Drive/Route 5
- Turn left onto Botany Road/Route 30 (signs for Howick)
- Turn left onto Cascades Road
- At the roundabout, take the 1st exit and stay on Cascades Road
- Turn left onto Pakuranga Road/Route 5
- Turn left into the primary construction yard at 169 Pakuranga Road

Figure 33 Route via East Tamaki Road and Harris Road

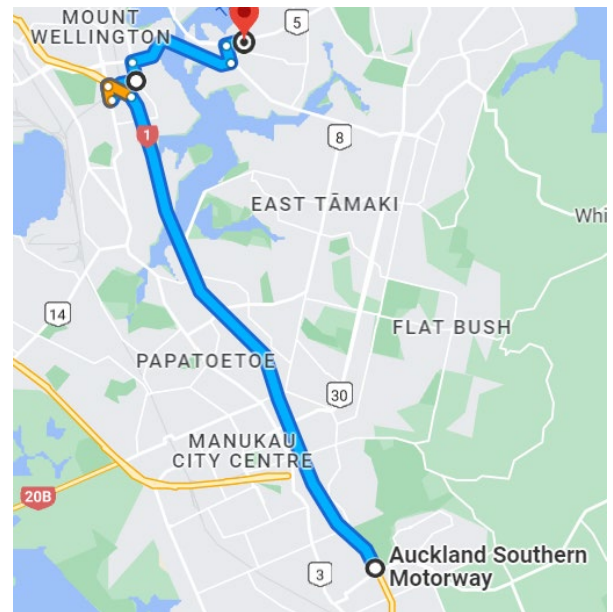


Where all of the primary routes are unable to be used or is later found unsuitable for certain deliveries then the below secondary route will be used. However, this requires a right turn into William Roberts Road from Pakuranga Road. This is a challenging movement to find a suitable gap across 3 lanes which can cause significant delays and unsafe turns. In the case where only the occasional heavy vehicle will complete the right turn then the intersection may be left unsignalised. If this movement will be used heavily then the intersection will be signalised to reduce delays and reduce risk from poor gap selection.

The secondary travel routes will be: Option 1 – via SEART (17.2km) (Figure 34).

- Travel north along SH1
- Take Exit 438, signs for Mt Wellington Highway
- Turn Left onto Mt Wellington Highway
- Take 1st exit from roundabout utilising the left slip lane to travel on Clemow Drive
- Turn left onto Carbine Road
- Turn right onto South Eastern Highway (SEART)
- Turn left onto Ti Rakau Drive
- Turn right onto Pakuranga Road
- Turn right into William Roberts Road
- Turn right into CSA area, taking caution in giving way to pedestrians

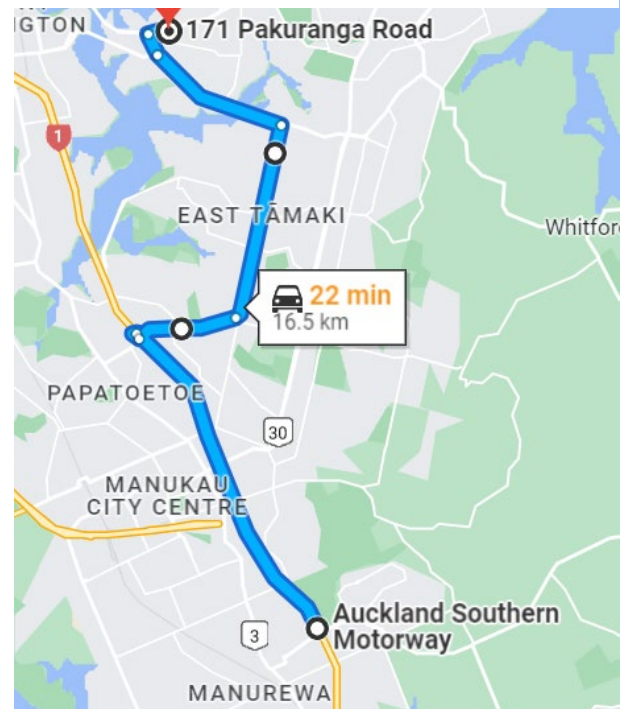
Figure 34 Route via SEART



Option 2 – via East Tamaki Road and Harris Road (Figure 35)

- Travel north along SH1
- Take Exit 444, signs for East Tamaki Road
- Turn left onto urban route 8, signs for M.I.T. Otara East Tamaki
- Keep ahead for 5.8km until turning left onto Ti Rakau Drive/Route 5
- Turn right onto Pakuranga Road
- Turn right into William Roberts Road
- Turn right into primary construction yard, taking caution in giving way to pedestrians

Figure 35 Route via East Tamaki Road



Ongoing consultation with operations to ensure that routes are suitable with the various deliveries. These routes may change to best suit the deliveries and should utilise arterial roads as much as possible and minimise impact on residential roads.

5.4.3 Sensitive Receivers

Within EB2/ EB3R area there are multiple sensitive receivers which should be avoided during sensitive times.

The following schools (Table 11) should be avoided by heavy vehicles during the below hours on school days. Light vehicles should also take additional care and caution when traversing these areas.

08:25 – 09:00

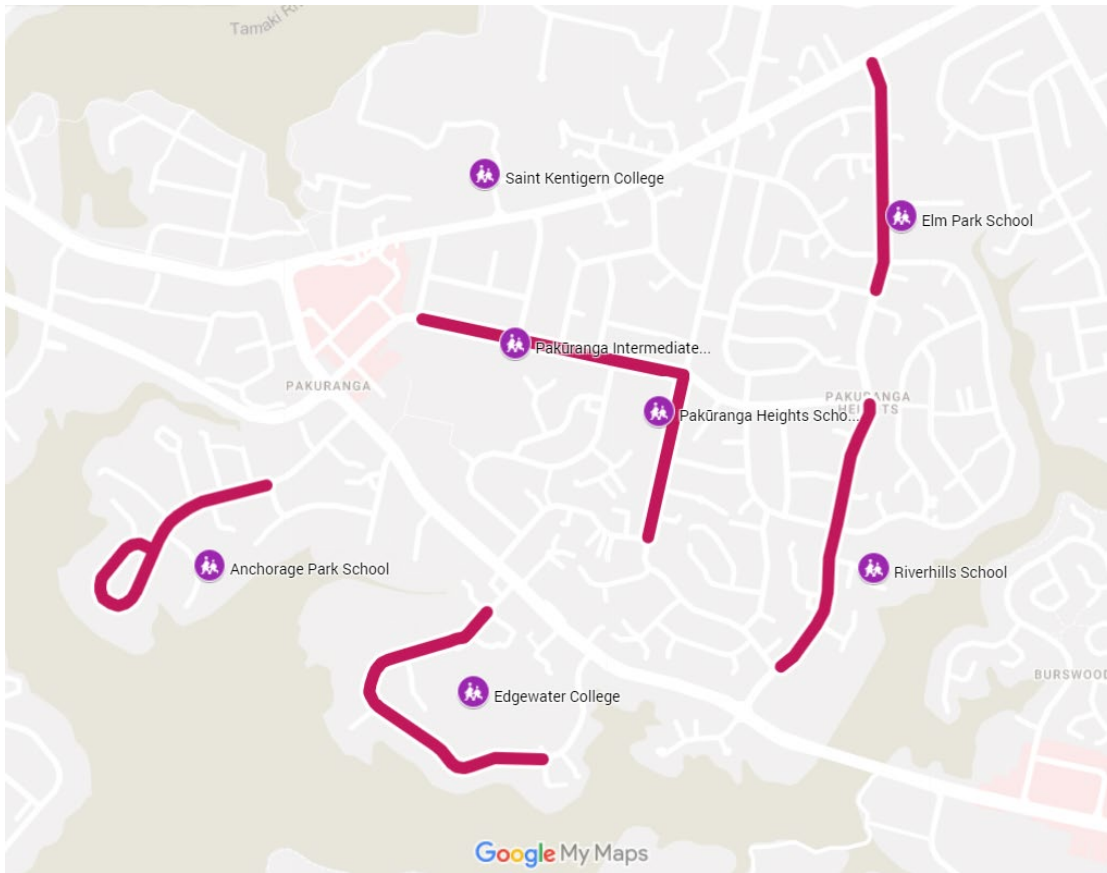
14:55 – 15:15

Table 11 Schools at which heavy vehicle restrictions apply

School Name	Address	Associated no travel route
Pakuranga Intermediate School	43/49 Reeves Road, Pakuranga, Auckland 2010	Reeves Road spanning from William Roberts Road to Gossamer Drive.
Pakuranga Heights School	77 Udys Road, Pakuranga, Auckland 2010	Udys Road spanning from Marriott Road to Reeves Road.
Saint Kentigern College	130 Pakuranga Road, Pakuranga, Auckland 2010	None – signalised access off main arterial considered low risk.
Edgewater College	32 Edgewater Drive, Pakuranga, Auckland 2010	Edgewater Drive spanning from Snell Place to Raewyn Place.
Anchorage School	16 Swan Crescent, Pakuranga, Auckland 2010	Tiraumea Drive and side streets south-west of Jan Place.
Elm Park School	46 Gossamer Drive, Pakuranga Heights, Auckland 2010	Gossamer Drive spanning from Beechdale Crescent to Pakuranga Road
Riverhills School	13 Waikaremoana Place, Pakuranga Heights, Auckland 2010	Gossamer Drive spanning from Riverhills Avenue to Reeves Road

In relation to the schools in Table 11, Figure 36 below shows the areas in which restrictions will apply.

Figure 36 Areas where heavy vehicle use will be restricted near school zones



No other construction vehicle routes have been identified as necessary. Should this change, and alternative routes are required, the CTMP will be updated to identify further sensitive receivers and provide details on how adverse effects from these vehicle movements are to be mitigated through limiting or controlling times for vehicle movements using those routes. Any mitigation will be arrived at through engagement with the relevant stakeholders.

6 Transport Network Management – Critical Movements

Throughout EB2/ EB3R area are critical travel routes for maintaining the transport network. The below sections outline the minimum capacity requirements to be maintained during the AM and PM peak traffic times. Where a SSTMP would impair the capacity of these critical movements consideration will be given to the wider network when developing mitigation, in accordance with ATOC requests. These considerations will be reviewed by AT’s CAR Team with guidance from ATOC as required. Peaks hours for these arterial roads are set out in Table 12.

Table 12 Peak hours for traffic on arterial roads

Road Name	Direction of travel	Peak Hours
Ti Rakau Drive	Eastbound	06:00 - 09:00
	Westbound	15:00 - 18:00
Pakuranga Road	Eastbound	15:00 - 18:00
	Westbound	06:00 - 09:00
SEART	Eastbound	14:00 - 19:00
	Westbound	06:00 - 09:00
Gossamer Drive	Eastbound	07:00 - 19:00
	Westbound	

Adverse effects on these critical movements beyond what has been assessed in the ITA is not anticipated to result from any long-term staging.

Critical movements may potentially be impacted through night works for discreet closures and extensions in working times, e.g. for closing the intersection of SEART and Ti Rakau Drive to conduct a beam lift for the RRF. These closures are for short durations and not anticipated to result in ongoing impacts. These discrete impacts will be mitigated as far as practicable by utilising the rest of the network. Clear communication with plenty of advance warning will be implemented to ensure motorists avoid areas with restricted capacity.

6.1 Ti Rakau Drive

Ti Rakau Drive is the connection from Pakuranga through to Botany and serves around 18,000 vehicles each way per day (AADT, June 2020) which exceed one lanes capacity during peak hours. Sections of Ti Rakau Drive can act tidally, notably spanning from Pakuranga Road to SEART and from Harris Road to Botany Road. In these sections, two lanes in the peak direction and one lane in the off-peak direction will be maintained. From SEART to Harris Road, two lanes in each direction will also be maintained along Ti Rakau Drive due to the bi-peak nature.

6.2 Pakuranga Road

The ITA assessment has assessed that 5 lanes along Pakuranga Road, two each way with the centre acting tidally, provides sufficient capacity to meet the roads peak demands. This capacity will be maintained so there will not be a significant impact on the network that would need to be mitigated. This is the minimum requirement until further traffic impact assessment is done to demonstrate that a lower capacity is suitable.

6.3 South Eastern Highway (SEART)

SEART is a main arterial with significant traffic volumes of AADT of 26,000 eastbound (June 2020) and 31,000 westbound (June 2020). During peak hours 2 lanes must be maintained and intersection movements are not to be restricted.

6.4 Reeves Road

Reeves Road has an AADT of around 13,000 (June 2020) which when displaced with Reeves Road closing cannot be accommodated by existing critical lanes discussed in section 8. During peak times additional capacity must be provided to accommodate this traffic flow, this will be provided by marking an additional lane along Ti Rakau Drive between Reeves Road and William Roberts Road. The centre median island will be removed and lanes will be narrowed to achieve this.

6.5 Gossamer Drive

There are heavy movements between Gossamer Drive and the eastern leg of Ti Rakau Drive, right turning onto Gossamer Drive and left turning onto Ti Rakau Drive. In 2019, construction undertaken on the eastern leg of Ti Rakau Drive at the intersection with Gossamer Drive added a second right turn lane to reduce queueing and delays experienced by that movement. This capacity is required and cannot be reduced without impacting the delays experienced by that movement. These movements will need to be preserved during peak times without consideration on the particular movements that would need to be mitigated.

7 Communicating Traffic Management Impacts

Good stakeholder communication practices are a key component for the management of traffic disruption from construction activities. Prior to construction commencing, clear communication channels will be established between EB2/ EB3R team and those in the community potentially most affected by construction activities. It is important that information is provided in a transparent and consistent manner in relation to exposure, duration, mitigation and management measures.

Details of EB2/ EB3R engagement strategy is set out in Section 3 of the Communication and Consultation Plan (CCP). Where construction of EB2/ EB3R will disrupt businesses and social infrastructure including schools (Primary, Intermediate and Secondary), libraries, Te Tuhi art gallery, parks and playgrounds, additional engagement will be undertaken to ensure that effects of construction are mitigated as far as practicable, and issues and feedback are reviewed and addressed where possible.

EBA will employ a variety of engagement tools and techniques to ensure an appropriate level of communication is maintained throughout the construction period. These are set out in Table 13 below.

Table 13 Engagement Tools and Techniques

Project Phase	Tool: Publication	Usage / Content
Design and construction	Project newsletter 'bUSway' (Quarterly)	Project wide updates about design and construction progress, upcoming site-specific information, interesting stories from site, progress. Distributed quarterly leading into and during construction, recipients will include EBA's distribution list, subscriber's database and project stakeholders.
Construction	Construction email update – progress and look-ahead (monthly)	Monthly email construction update providing notification on the construction progress, milestones, project highlights and traffic changes. These can include photographs from site progress over the previous month. Distributed monthly leading into and during construction, recipients will include EBA's distribution list, subscriber's database and project stakeholders
Construction	Weekly traffic and changes report	Key traffic disruptions, road closures and other critical or helpful information for the week ahead. Distributed to EBA's distribution list including traffic update subscriber's database and project stakeholders.
Design and construction	Letters	Letters to explain upcoming works (e.g. night work), potential impacts or to address a particular issue with specifically targeted residents or stakeholders.

		<p>Letterbox or email according to the recipient's preferences or distribution requirements.</p> <p>Working with apartment building managers to ensure messages are received by occupants, as required.</p>
Design and construction	Information sheets	<p>A one-page community information sheet featuring details on a particular aspect of EB2/ EB3R. For example, construction techniques, timing and duration of works, key effects / what to expect, dust and noise mitigation, who to contact with questions.</p> <p>Virtual and hardcopies available for distribution as required.</p>
Construction	Posters	<p>Advertising construction activities, associated detours and disruptions.</p> <p>Displayed at information stations, project offices and AT designated locations.</p>
Design and construction	Internal Stakeholder Engagement Progress Reports	<p>Monthly reports highlighting the key issues, current and planned communication and engagement activities and performance for the reported period. Issued by the EBA Stakeholder Manager to the EBA Project Director and Owner Interface Manager.</p>
Design and construction	FAQs and Q&As	<p>Approved responses to frequently asked questions, available to support Customer and Community Team in responding to stakeholder queries.</p>
Construction	Calling cards	<p>Able to be left at properties when we have called in and owner not home.</p> <p>Developed using EBA logo and branding.</p>
Design and construction	Feedback	<p>Feedback forms will be made available at information sessions. These will encourage the community to comment on whether they feel that they are being kept up to date on progress and so they can voice concerns.</p> <p>Regular community feedback will be sought and considered in decision making processes including during the detailed design and consenting process phases.</p>
Construction	Business cards	<p>Containing contact details of EB2/ EB3R email, phone, website and key project messages. Distributed to all team members who can then pass on to stakeholders and the community as required.</p>

Construction	VMS notification (Variable message signs)	To update road users, pedestrians and cyclists to upcoming works, diversions and wayfinding. Where VMS signs are deemed appropriate, mobile trailer mounted VMS units will be used. The specific locations and messaging will be included on the relevant SSTMPs.
Construction	Signage and hoardings	To provide a better customer experience project signage, hoarding and detour signage will be produced to show traffic detours and changes to bus, cycle and haulage routes (as required under project TMP). In addition to site safety, construction site hoardings will be located and designed to maintain an acceptable standard of amenity for the adjoining community.

Face to face engagement and virtual engagement will also be employed in accordance with Section 3.3 of the CCP and contact details will be made publicly available throughout the construction period. Including:

- A project freephone line, 0800 BUSWAY (0800 287 929);
- Public project-specific email address info@easternbusway.nz
- EB2/ EB3R specific website (www.easternbusway.nz) will be hosted using AT’s website, and will be continuously updated with the latest project information and details for the community.

All stakeholder interactions will be recorded within the Customer and Communities stakeholder database system (Darzin). Darzin will be used by the Customer and Community Team to record all stakeholder contact details and interactions including meeting minutes, emails, face to face conversations and phone calls during EB2/ EB3R. Responses from EB2/ EB3R team are also recorded. All feedback regarding construction traffic will be managed in accordance with Section 7.1 of this CTMP.

7.1 Enquiries and Feedback

All community and stakeholder enquiries and feedback will be managed in accordance with Section 4.2 of the CCP. Feedback (including complaints) will be dealt with in a responsible manner to ensure a relationship of trust and reliability between the community and the EBA.

All enquiries will be processed with immediate acknowledgement of receipt and if contact details are provided, the Customer and Community Team will contact the enquirer within one working day. All enquiries will be captured in the Customer and Communities stakeholder database system (Darzin), as outlined in section 7 above, including the date, contact details, enquiry and response, including any action undertaken. Any enquiries not related to EB2/ EB3R will be passed back to AT as soon as possible to assign to the correct project.

The process for managing enquiries and feedback is set out in Table 14 Complaints Management Process.

Table 14 Complaints Management Process

Enquiries and Feedback Process

Process steps	Action
1	All stakeholder queries from EB2/ EB3R email or phone are to be acknowledged by the EBA Customer and Community Team within 24 hours (within working hours, Monday to Friday, or out of hours if night works are scheduled).
2	<p>The customer will be provided with a response acknowledging their query by the Customer and Community team within one working day, and where required the 'frequently asked questions' document will be used as a reference for common responses or EBA team members input will be sought to provide a comprehensive response.</p> <p>Major complaints such as building damage will be addressed as soon as is practicable. Formal acknowledgement shall be made within five working days of receipt.</p>
3	All correspondence will be captured in the Customer and Communities stakeholder database system (Darzin), including EBA responses. A correspondence event entry will be set up once the query has been made, within the stakeholder's demographic profile. If it's the first contact the stakeholder has made with EB2/ EB3R and no profile exists, one will be established.
4	When a query is a complaint, it will be forwarded onto the EBA Customer and Community Lead, EBA Project Director and Owner Interface Managers, for input (roles defined in Section 1.7 of the CCP).
5	<p>The EBA Customer and Community Lead will work closely with the EBA Project Director and Owner Interface Manager and delivery team to resolve complaints. They will be proactive in keeping complainants informed of what action is being taken to address their concerns if practicable.</p> <p>Where required the EBA Project Director and Owner Interface Manager will review/approve EBA response before replying to the stakeholder.</p>
6	<p>Complaints on traffic management concerns will be investigated. The Customer and Community team will notify the Environmental Lead of these types of complaints and discuss potential mitigation options available.</p> <p>Minor damage complaints to vehicles and properties will be investigated by Customer and Community team and if damage was directly due to project activities mitigation will be confirmed by the Customer and Community Lead, EBA Project Director and Owner Interface Manager.</p>
7	When complaints are from project neighbours a Customer and Communications and Construction team representative will offer to visit the property to discuss concerns in-person (COVID-19 restrictions permitting).

8	<p>All meetings and phone calls are recorded in Darzin to ensure that a complete record of times, dates and location are maintained.</p> <p>When a complaint is resolved it should be 'closed out' as an action in Darzin.</p>
9	<p>Customer and Community team monthly progress reports to the EBA Management team will include a record of queries, complaints, positive feedback, initial response times, how many queries have been closed out, and statistics on the complainants including their query type (for example traffic disruption, vibration and noise).</p> <p>This will also include any outstanding issues or disputes raised.</p>
10	<p>The complaints process will be regularly reviewed, with a focus on continuous improvement and assist the customer and community team in implementing strategies to minimise stakeholder community disruption.</p> <p>If required, improvements to project processes and mitigation strategies will be implemented to minimise future complaints.</p>

7.2 Incident Response

In response to a traffic incident or an emergency situation, the traffic management team will have the appropriate resources and procedures onsite to ensure prompt and appropriate response. The top priority will be the safety and wellbeing of everyone involved, isolating the incident or area, and communicating with ATOC(AT), NZ Police, and Emergency Services to guide road users around the site to reduce congestion.

In the event that a representative of the NZ Police requests a copy of implemented SSTMP for safety or emergency reasons, we will immediately comply with this request. This copy may be in digital or physical form. In the event of an emergency or breakdown on site, EB2/ EB3R team shall endeavour to make the scene safe and 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.

7.2.1 Response Procedure

The following response procedure will be carried out in a traffic incident or an emergency situation:

- STMS to attend incident and notify Traffic Manager.
- Traffic Manager attend all serious incidents and report all incidents to Construction Manager.
- Traffic Manager or STMS will communicate event with relevant authorities.
- Construction Manager to isolate area and secure the site for the safety of the public and workers.
- Construction Manager will make available any equipment or mobilise plant that can assist in response to any serious incident i.e. water trucks, excavators etc.
- The STMS will update with the construction team when the relevant authority (e.g., incident controller, emergency services, or worksafe) has confirmed works can recommence within the area of the incident.

7.2.2 Communications

The following steps will be implemented in regard to incident communications:

- ATOC alerted to the incident either via CCTV, phone call or via emergency services
- ATOC phone Traffic Manager in the first instance
- Auckland Transport CAR/Compliance team to be advised of incident in the worksite via email and/or phone call
- Traffic Manager or Traffic Engineer to send incident report to AT Compliance Team (TTM.crash@aucklandtransport.govt.nz)

8 Temporary Traffic Management Auditing

8.1 TTM Site Auditing

Auditing of temporary traffic management measures will be carried out as follows:

- Audits shall be undertaken in accordance with CoPTTM 4th edition (Section A8, E and Appendix C). Regular auditing shall include day and night-time inspections by an approved Audit Team.
- For long term layouts
 - The Traffic Manager or Traffic Engineer will undertake inspections prior to opening new long-term traffic layouts;
 - The Traffic Manager or Traffic Engineer shall be responsible for final certification of any TTM prior to opening to traffic
- For discrete layouts
 - The STMS will undertake inspections prior to opening new traffic layouts;
 - The STMS shall be responsible for checking that the site is safe to remove any TTM prior to opening to traffic.
- Monthly night and day audit of EB2/ EB3Rs traffic management shall be undertaken by independent suitably trained and experienced AT accredited personnel. The initial audit report given at the time of the audit, with a full audit report provided to EB2/ EB3R team within one week of the audit if required.

Any discrepancies identified by the auditing process will be addressed as soon as possible by the Traffic Manager and the STMS with an initial action plan in place within 24 hours of receiving the audit.

8.2 Barrier Auditing

Barrier systems must comply with their manufacturers auditing guidance with the minimum requirements:

- Upon installation, a qualified barrier installer competent with the system will complete and document an installation inspection.
- Once every 24 hours, a visual inspection will be conducted by a competent individual. If the barrier system shows signs of damage, low water level in water filled systems, or having moved, a qualified barrier inspector competent with the specific barrier system will conduct a barrier inspection and form an action plan to address any concerns raised by the visual inspection.
- Once a month a qualified barrier installer competent with the barrier system will complete and document a post-installation inspection.

Barrier design statements for any TMP for EB2/ EB3R must include a template for the installation inspection checklist and the post-installation inspection checklist.

9 Monitoring and Reporting

The Alliance will be acting in and impacting on the network over the whole length of EB2/ EB3R and over that time our impact will be monitored. The EBA will agree upon certain Key Performance Indicators (KPIs) to assess how well the EBA is performing at minimising community disruption. This KPI will be reported to EB2/ EB3R Alliance Board at an agreed interval.

The EBA will use a monitoring system to track travel time through defined routes and compare these travel times to the normal travel time for that road at that time of day. This allows impacts of the works to be identified without false triggering of the system which may arise through normal congestion on busy routes. Additionally, STMSs will monitor disruption as part of their regular site checks and take action where able to address the congestion.

Where disruption is identified as exceeding the trigger levels agreed with AT, the STMS will take action to reduce the impact of the works. This may include uplifting the closure or re-opening traffic lanes if this can be achieved quickly and safely.

Where disruption is occurring as a result of long term TTM, the Traffic Manager or Traffic Engineer will review the TTM measures and consider options to reduce the impact. The specific review process will depend on the nature and magnitude of each issue but will typically involve consultation with ATOC and the CAR team from AT, and AT within the EBA to determine the acceptable level of disruption.

This review process may include reviewing the staging of the construction activities, ability to provide further bus prioritisation at the expense of the general traffic, providing additional bus services as focus will be directed to provide prioritisation to bus services, or revised bus servicing. It is acknowledged that retaining current public transport users is important for busway utilisation after EB2/ EB3R is complete.