

16 June 2014

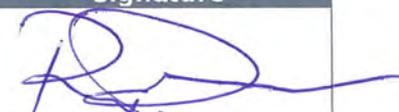
CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Buckle Street Underpass & National War Memorial Park

Reference Number:

UND-04-CON-MP Construction Traffic Management Plan

Rev.	Status	Prepared by	Checked by	Date
1	Final	Ryan Dunn	Richard Galloway	13 May 2013
2*	Final	Tom Mabelson	Ryan Dunn	16 June 2014

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*Doesn't require Certification as Revision is an update only.

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Any additions or alterations to the Construction Traffic Management Plan arising during the course of the Project are to be documented and attached to this Plan. In June 2014 the Construction Traffic Management Plan was revised to incorporate the construction activities associated with the National War Memorial Park. In the event of subsequent changes in construction activity, this Construction Traffic Management Plan will be reviewed and amended as required.

Certification of an amended Construction Traffic Management Plan shall be required upon major changes of construction phasing or activity which affects how traffic management is managed, to ensure the Construction Traffic Management Plan remains consistent with the conditions of the National War Memorial Park (Pukeahu) Empowering Act 2012.

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1 INTRODUCTION

This Construction Traffic Management Plan (CTMP) has been prepared to identify and outline the manner in which construction traffic will be managed to ensure the safe and efficient performance of the road network, to minimise adverse effects on the existing community arising from construction traffic, and to provide the community with information about specific management methods to be employed during construction of the Buckle Street Underpass (Underpass) and National War Memorial Park (Memorial Park).

1.1 Scope of Construction Traffic Management Plan

This CTMP covers the various parts of the site, phases of construction, levels of construction activity, traffic impacts and the traffic management requirements associated with construction of the Underpass, Memorial Park and operation of the State Highway 1 (SH1) diversion section of public road, between Sussex Street and Taranaki Street. This includes the intersections of the SH1 diversion road with Tory Street and Taranaki Street, and the improvements to the local road network required to support the Underpass and Memorial Park construction. **It does not include the Alliance's other project** elements of the Inner City Bypass optimisation. The Basin Reserve Bridge is also excluded.

Manuals used for guidance in developing this CTMP, and specifically for compliance of site specific temporary traffic management plans (TTMP's) for the works include NZTA's Code of Practice for Temporary Traffic Management (CoPTTM), NZTA's Manual of Traffic Signs and Markings (MOTSAM) and Austroads Guides to Road Design and Traffic Management.

1.2 Legislative Requirements for Construction Traffic Management Plan

Preparation of a CTMP for the Underpass and Memorial Park construction activities is required by the National War Memorial Park (Pukeahu) Empowering Act 2012 (the Act), within conditions NZTA 14-18 of Schedule 3, Part 2 Conditions applying to exercise of designation; Traffic Management and Roding – Construction, Pages 67-69

This CTMP aims to address all of the potential traffic effects specified within the Act for the duration of the Underpass and Memorial Park construction activities. A copy of the conditions from the Act relevant to construction traffic management is included as Appendix A.

1.3 Construction Traffic Management Plan Objectives

The objectives of this CTMP are to:

- Ensure the specific requirements of Acts, Regulations, Bylaws and Consent Conditions in relation to construction traffic are adhered to;
- Detail the location, nature and duration of traffic associated with the Underpass and Memorial Park construction projects;
- Outline methods to provide clear and timely communication with the community and any directly affected property owners over planned construction activities and associated traffic effects;
- Outline methods to ensure the effects on the level of service of general road users and restrictions on on-street parking are minimised, and safe and clearly defined pedestrian, cyclist and vehicle routes are maintained;
- Outline methods to ensure that potential impacts upon the physical conditions of any public roads are minimised and are in accordance with Road Controlling Authority (RCA) and community expectations;

- Outline methods to ensure that any potential nuisance effects (traffic delays, dust, noise etc.) of construction traffic are minimised;
- Outline methods to ensure that any potential health and safety/security effects of construction traffic upon both the public and site staff are minimised;
- Outline methods to ensure that construction staff are aware of all potential traffic effects and that traffic management requirements are successfully implemented; and
- Outline recording and monitoring procedures to ensure that any potential additional construction traffic effects are identified and responded to accordingly.

2 TRAFFIC MANAGEMENT ROLES AND RESPONSIBILITIES

Implementation of the traffic management requirements outlined within this plan will be the responsibility of all site staff. In this respect site staff will be required to undertake site induction and attend weekly toolbox meetings, which will include education of the potential traffic issues and required management protocols outlined within this plan.

Figure 1 shows a project team structure detailing the roles and responsibilities for traffic management for the project (including external consultation, TMP approvals and audits).

Overall traffic management on site will be the responsibility of:

- Ryan Dunn , Traffic Engineer, 027 478 6753; and
- Tom Mabelson, Temporary Traffic Management Engineer.

3 CONSULTATION

This CTMP has been prepared in consultation with the named parties in Condition NZTA 16 of Schedule 3, Part 2, including:

- The Road Asset Manager of the Wellington City Council (or his/her nominee);
- Emergency services (Police, fire and ambulance);
- Massey University;
- New Zealand Defence Force;
- The owners of the former Mt Cook Police Barracks, 13 Buckle Street;
- Tasman Garden Body Corporate;
- Wellington Tenth Trust and Port Nicholson Block Settlement Trust;
- Mt Cook School; and
- Wellington High School.

The schools, childcare centres, and any other educational activities consulted include Mt Cook School, Wellington High School and Massey University, being the only facilities of this type having frontage or access to roads affected by the Project.

Access provisions for facilities on Old Buckle Street, signage, and parking areas have all been amended in response to issues raised during consultation. Specific comments and inputs received are addressed at stakeholder meetings. Records of these are contained in Appendix B.

Consultation between the project team and the above parties will continue throughout the construction phase of the Project and include advance notice of any potential major traffic disruptions or effects on access routes (pedestrian, cyclist and vehicular). This will include direct contact by phone, email or meeting, as well as more general letter drops. In addition, newspaper advertising and signage will continue to be used. Refer to Section 4.11 for details of the communications process.

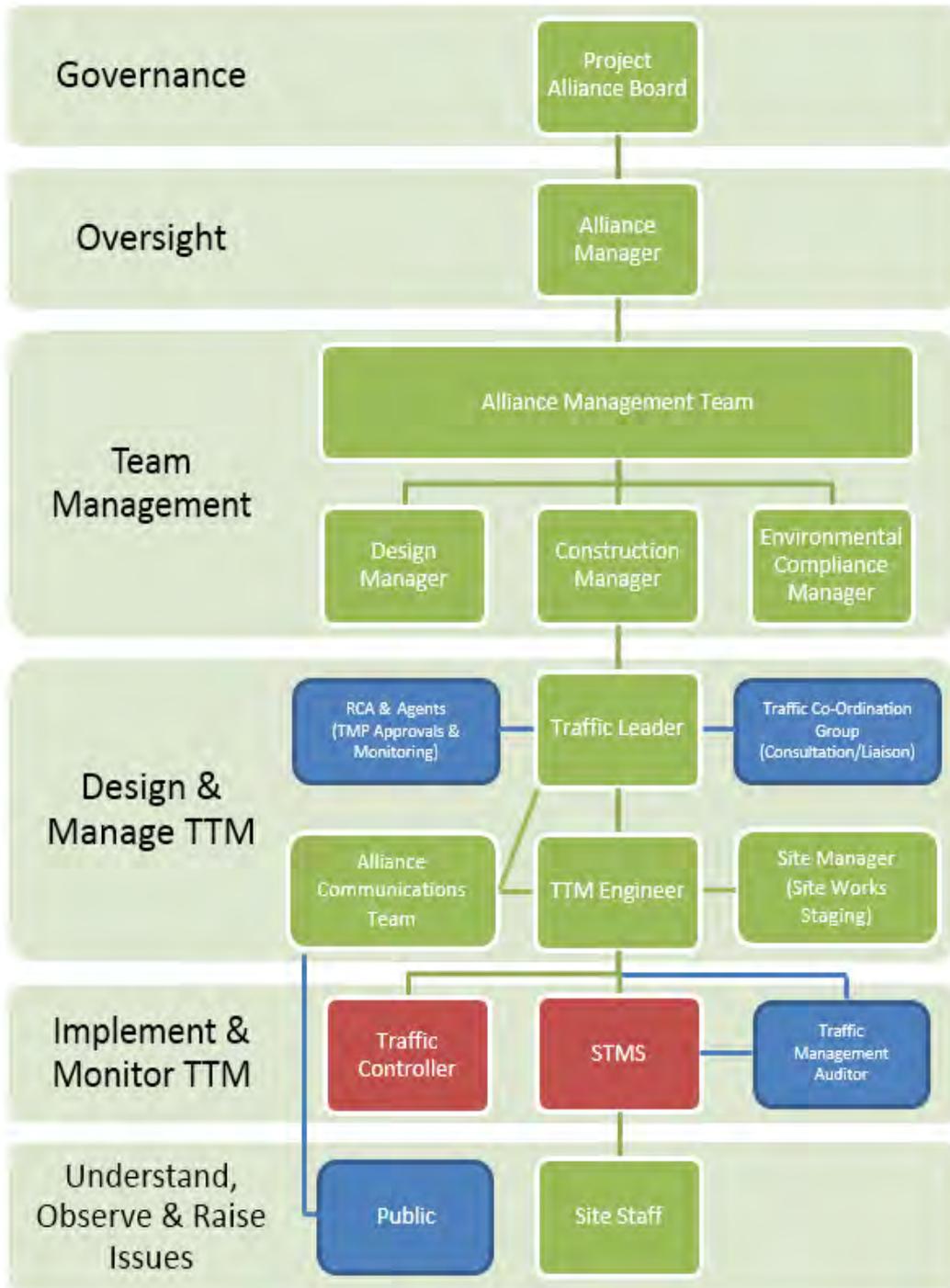


Figure 1: Project Traffic Management Responsibilities

4 TRAFFIC MANAGEMENT

4.1 Site Access

4.1.1 Underpass

State Highway 1 (SH1) in the vicinity of Buckle Street is to be re-aligned through an Underpass below the planned National War Memorial Park. While the Underpass is being constructed, roughly in the location of the current alignment of Buckle Street, traffic will follow a temporary alignment along a SH1 diversion road. This SH1 diversion road will be located to the north of the current alignment for the duration of the Underpass construction, at which point traffic will revert into the Underpass and the SH1 diversion road dismantled for the creation of the Memorial Park.

The SH1 diversion road will start at Sussex Street on the Basin Reserve and be back on the alignment of the previous SH1 at Taranaki Street. The road maintains two westbound lanes, widening to three lanes at the intersections of Tory Street and Taranaki Street to accommodate right turns separate from through traffic.

The connection from Tory Street to Tasman Street will be severed during construction, and the vehicular link from the Basin Reserve (Sussex Street) to Buckle Street will also be removed. Once the Underpass is open, Tasman Street will be re-connected to Tory Street.

Access to the Mt Cook Barracks, Massey University, the National War Memorial and the Defence buildings will be maintained via Buckle Street. This road is meant for access to these sites and will only carry a small proportion of the through traffic which previously used Buckle Street. Tasman Street and Buckle Street can be accessed from Rugby Street.

Through creation of the SH1 diversion road and maintaining access to Buckle Street from Tasman Street, construction of the Underpass is able to take place within a construction site completely separate from general traffic, occupying the space that previously accommodated SH1. This separation from general traffic provides the safest and fastest way to construct the Underpass.

Drawings UND-14-938 to 940 shows the indicative site layout relative to the SH1 diversion road, and examples of how construction vehicles will typically access the site for various phases of construction. Construction is to start at the Taranaki Street end, with excavation and construction of temporary retaining walls progressing east, followed by construction of the concrete floor, walls, then roof of the Underpass following behind. Construction of the east and west trenches will tie in to the existing road network and allow traffic through the completed Underpass on completion, due October 2014.

Construction vehicles will enter the site from the SH1 diversion road travelling either via the Basin Reserve (Vivian Street / Kent Terrace / Basin Reserve) or Tory Street. Truck and trailer access via Tory Street is to be restricted. A large proportion of exiting vehicles will be travelling to the Southern Landfill in Happy Valley via the SH1 diversion road / Arthur Street / Karo Drive / Victoria Street / Brooklyn Road / Ohiro Road.

Up to seven site access gates will be created along the SH1 diversion road, although only two or three will be in use at a time, dependant on the position of cranes and machinery on-site. An internal haul road allows construction vehicles to manoeuvre through the site. On the southern side of the construction area, two site access gates will be created on Buckle Street. Located near the Tasman Street intersection and at the National War Memorial access road, these gates will be accessed via Tasman Street and Rugby Street.

Site access points will be supervised to ensure incoming vehicles comply with safety and other requirements, and that vehicles exit safely. To assist with safe exits along the SH1 diversion road, an active warning sign has been installed west of the Tory Street **intersection. Developed in conjunction with WCC traffic signals Engineer's, this system** is linked to the Tory Street traffic signals, and is operated from the construction site by

manual traffic control personnel. Upon arrival of an exiting site vehicle, the traffic controller will activate the warning system whilst holding the vehicle on-site. The traffic signals at the Tory Street intersection will then impart an extended all red period prior to the Tory Street phase, allowing a gap in the traffic for the controller to safely guide the site vehicle out onto SH1. Traffic approaching from Tory Street are warned of the heavy vehicle exiting site by flashing amber signals above and below a truck crossing sign.

On public roads, construction traffic is to comply with the posted speed limit. An approved site specific TTMP will impose a 30km/h temporary speed limit on Buckle Street and Tasman Street. Separate from this but not signposted, truck drivers have been advised to restrict speed to 30km/h along Tory Street in the vicinity of the work site and Mt Cook School.

4.1.2 Memorial Park

Construction of the Memorial Park is to be complete in time for the centenary ANZAC Day commemorations in April 2015. To complete construction within this timeframe, some early phases of the Memorial Park construction will run concurrently with the final stages of construction of the Underpass.

Drawing MP-01-943 shows the indicative site layout for the Memorial Park construction phasing relative to the Underpass and SH1 diversion road. Construction is to begin on the northern areas of site, and Buckle Street in front of the National War Memorial, marked Phase A. Construction in those northern areas is able to take place within a construction site separate from traffic and pedestrian/cyclist paths, occupying the space that previously accommodated parking areas for Mt Cook School and Te Papa archives. Construction vehicle access to these areas will be gained from Tory Street, travelling via the same SH1 diversion route as the Underpass traffic, or from Martin Square via Taranaki Street. The access via Martin Square is to be restricted to low volumes.

During construction works on Buckle Street, public vehicle access will be maintained to the Mt Cook Barracks, Massey University, the National War Memorial and the Defence buildings via Tasman Street and Buckle Street, similar to the Underpass construction phasing described above. Works in this area will be staged so continued vehicle access will be provided along temporary traffic routes on Buckle Street, managed by on-site manual traffic controllers. Upon completion of the works on Buckle Street, access through to the Taranaki Street intersection could be established once more.

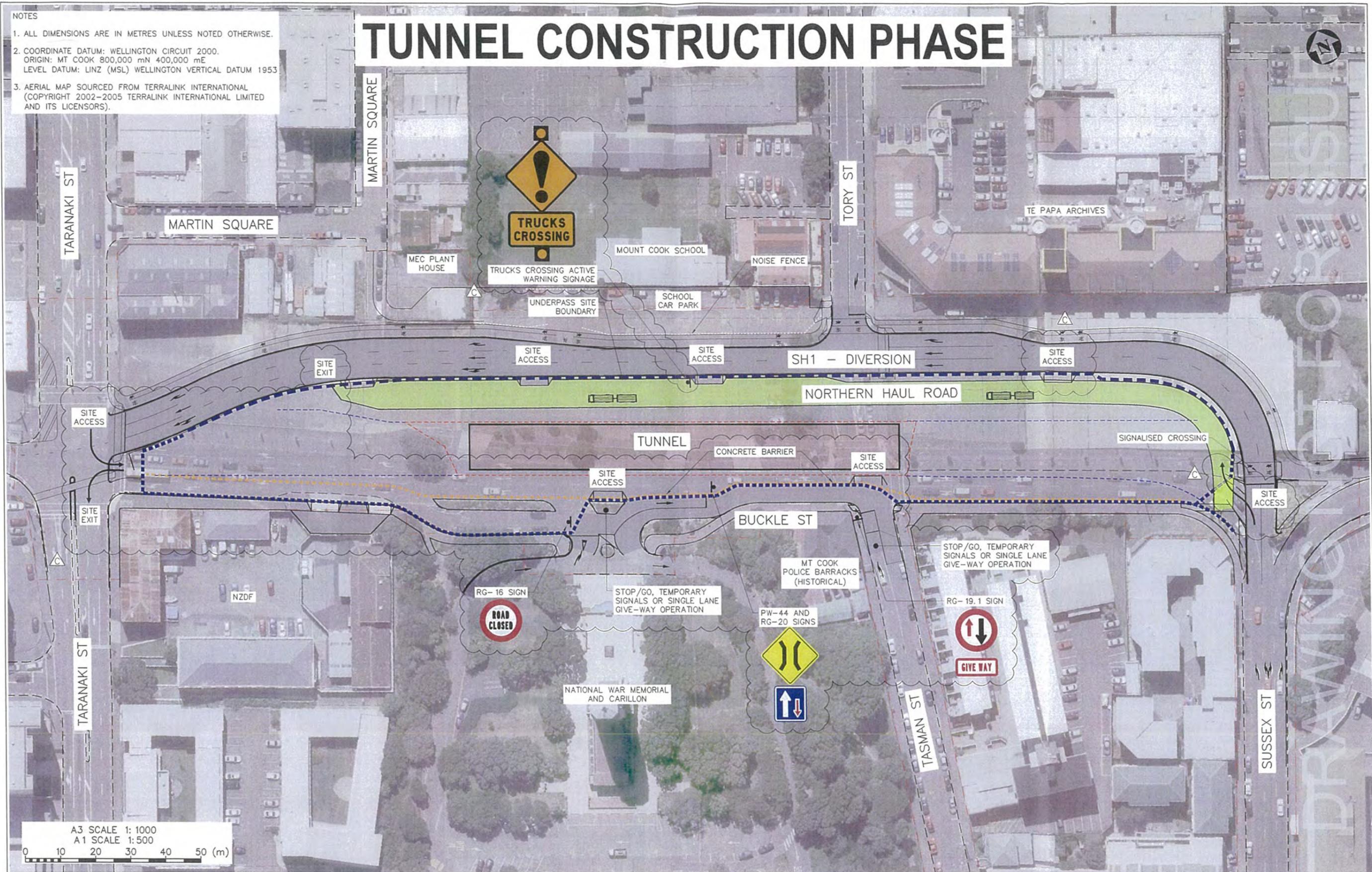
Once the Underpass is opened to traffic in October 2014, the temporary SH1 diversion road will be closed and construction of the remainder of the Memorial Park shown in the Phase D areas will commence. This includes construction in the areas above the Underpass, the re-establishment of the Tory Street and Tasman Street link, and the area previously occupied by the SH1 diversion road. Site access for Phase D of the Memorial Park construction will be gained from up to four areas – from Tory Street, Tasman Street, Taranaki Street and the Sussex St entry to the SH1 diversion road.

The closure of the SH1 diversion road will prevent traffic access from Tory Street to SH1. Further information on this is detailed in Section 4.6 of this report. The opportunity to provide the north-south vehicle connection between Tory Street and Tasman Street during construction will be investigated and may be feasible with traffic management depending upon the extent of planned construction activities.

The proposed access arrangements for all Memorial Park construction phases are shown on drawing MP-01-943.

- NOTES
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 2. COORDINATE DATUM: WELLINGTON CIRCUIT 2000.
ORIGIN: MT COOK 800,000 mN 400,000 mE
LEVEL DATUM: LINZ (MSL) WELLINGTON VERTICAL DATUM 1953
 3. AERIAL MAP SOURCED FROM TERRALINK INTERNATIONAL (COPYRIGHT 2002-2005 TERRALINK INTERNATIONAL LIMITED AND ITS LICENSORS).

TUNNEL CONSTRUCTION PHASE



A3 SCALE 1:1000
A1 SCALE 1:500
0 10 20 30 40 50 (m)

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
C	BUCKLE STREET CLOSED						
B	SITE ACCESSES REMOVED						
A	FOR INFORMATION						

Tab UND-14-938
Scales 1:1000 (A3) 1:500 (A1)
Original Size A1

NZ TRANSPORT AGENCY
Waka Kotahi

Memorial Park Alliance

DRAFT

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SH1 WELLINGTON INNER CITY IMPROVEMENTS

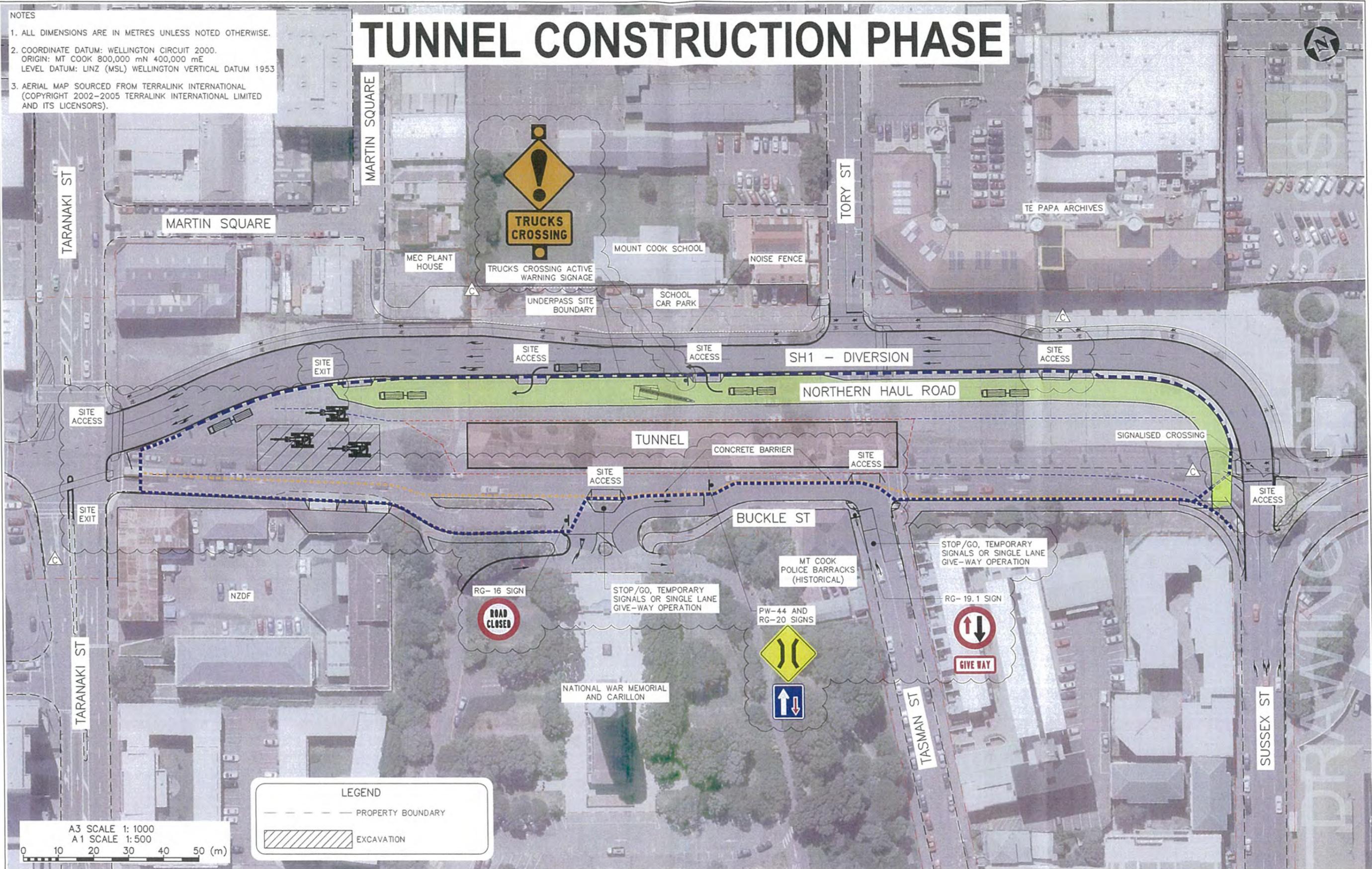
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UNDERPASS - 14 TEMPORARY WORKS
TUNNEL CONSTRUCTION
TRAFFIC MANAGEMENT PLAN

Status FOR INFORMATION
Drawing Number UND-14-938
Revision C

- NOTES
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
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ORIGIN: MT COOK 800,000 mN 400,000 mE
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TUNNEL CONSTRUCTION PHASE



A3 SCALE 1: 1000
A1 SCALE 1: 500
0 10 20 30 40 50 (m)

LEGEND

--- PROPERTY BOUNDARY

[Hatched Box] EXCAVATION

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
C	BUCKLE STREET CLOSED	QDO'S		RD			
B	SITE ACCESSES REMOVED	QDO'S		RD			
A	FOR INFORMATION	QDO'S		RD			

Tab	UND-14-939
Scales	1:1000 (A3) 1:500 (A1)
Original Size	A1

NZ TRANSPORT AGENCY
Waka Kotahi

Memorial Park Alliance

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SH1 WELLINGTON INNER CITY IMPROVEMENTS

UNDERPASS - 14 TEMPORARY WORKS

TUNNEL CONSTRUCTION

TRAFFIC MANAGEMENT PLAN

Approved

NOT FOR CONSTRUCTION

Status

FOR INFORMATION

Drawing Number

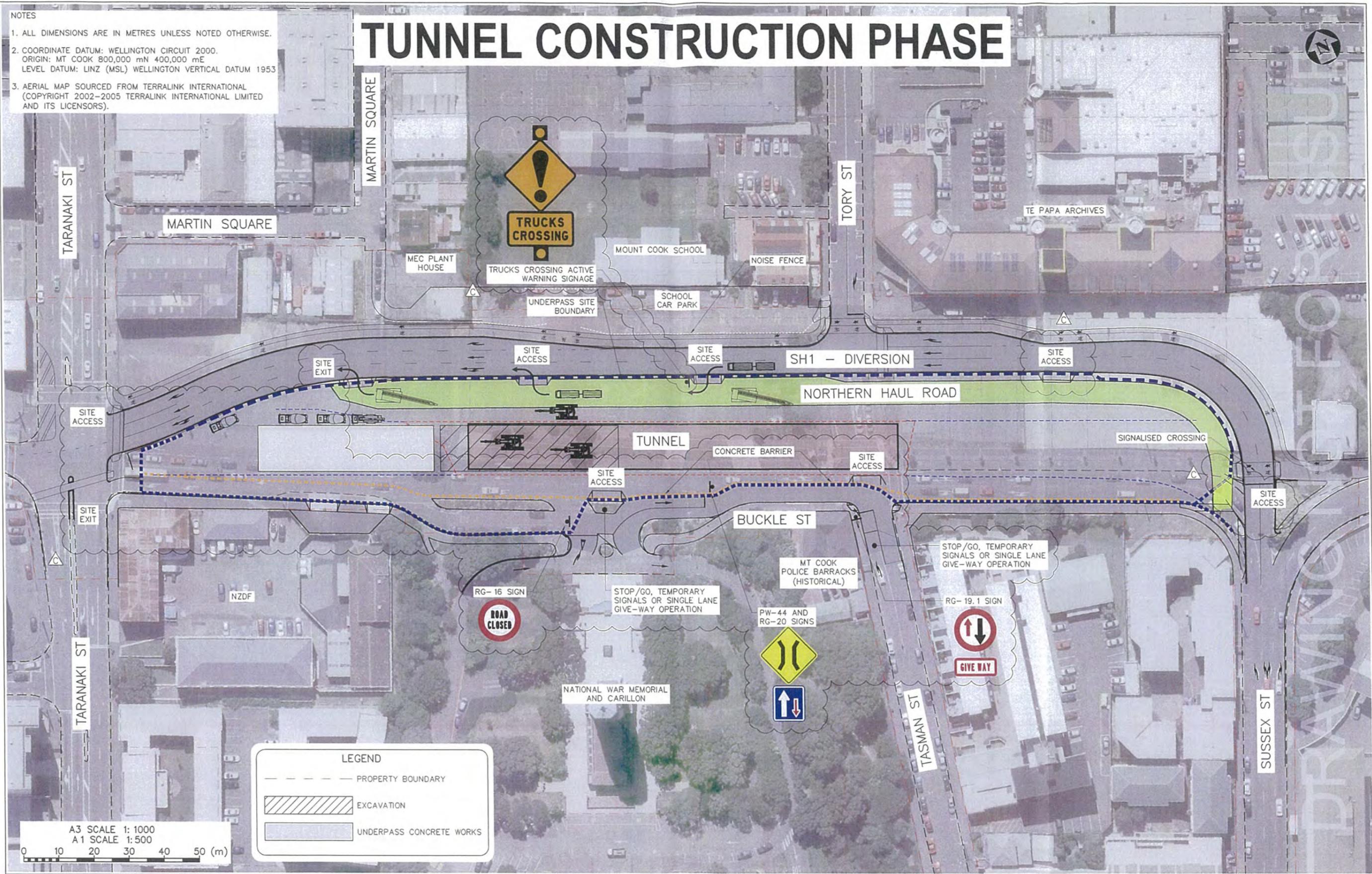
UND-14-939

Revision

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- NOTES
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 2. COORDINATE DATUM: WELLINGTON CIRCUIT 2000.
ORIGIN: MT COOK 800,000 mN 400,000 mE
LEVEL DATUM: LINZ (MSL) WELLINGTON VERTICAL DATUM 1953
 3. AERIAL MAP SOURCED FROM TERRALINK INTERNATIONAL (COPYRIGHT 2002-2005 TERRALINK INTERNATIONAL LIMITED AND ITS LICENSORS).

TUNNEL CONSTRUCTION PHASE



LEGEND

- PROPERTY BOUNDARY
- ▨ EXCAVATION
- UNDERPASS CONCRETE WORKS

A3 SCALE 1: 1000
A1 SCALE 1: 500
0 10 20 30 40 50 (m)

Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
C	BUCKLE STREET CLOSED	QDO'S		RD			
B	SITE ACCESSES REMOVED	QDO'S		RD			
A	FOR INFORMATION	QDO'S		RD			

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Scales	1:1000 (A3) 1:500 (A1)
Original Size	A1

NZ TRANSPORT AGENCY
MAKIA KOPIRIWA

Memorial Park Alliance

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SH1 WELLINGTON INNER CITY IMPROVEMENTS

**UNDERPASS - 14 TEMPORARY WORKS
TUNNEL CONSTRUCTION
TRAFFIC MANAGEMENT PLAN**

Approved
NOT FOR CONSTRUCTION

Status
FOR INFORMATION

Drawing Number
UND-14-940

Revision
C

HAINING STREET



MEMORIAL PARK CONSTRUCTION PHASING PLAN

MARTIN SQUARE

LEGEND - CONSTRUCTION PHASING

-  PHASE A - CONSTRUCTION START 19/05/14
-  PHASE B - PRIOR TO OPENING OF UNDERPASS
-  PHASE C - PRIOR TO OPENING OF UNDERPASS
-  PHASE D - POST OPENING OF UNDERPASS
-  AUSTRALIAN WAR MEMORIAL

LEGEND - ROUTES

-  PUBLIC TRAFFIC ROUTES DURING CONSTRUCTION
-  POTENTIAL PUBLIC TRAFFIC ROUTES DURING CONSTRUCTION
-  PEDESTRIAN AND CYCLIST ROUTES
-  POTENTIAL PEDESTRIAN AND CYCLIST ROUTES

TARANAKI ST

TORY ST

MARTIN SQUARE

SITE ACCESS

MT COOK SCHOOL

TE PAPA ARCHIVES

SITE ACCESS

SH1 DIVERSION



BUCKLE ST

SITE ACCESS

SITE ACCESS

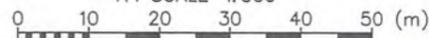
NZDF

NATIONAL WAR
MEMORIAL AND
CARILLON

TASMAN ST

GENERAL TRAFFIC

A3 SCALE 1:1000
A1 SCALE 1:500



Rev	Description	Drawn	Checked	Designed	Design Checked	Approved	Date
A	FOR INFORMATION	QDO'S	DG				

Tab	MP-01-939
Scales	1:1000 (A3) 1:500 (A1)
Original Size	A1



Memorial Park Alliance

DRAFT

Document Controller Check: _____ Date: _____
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SH1 WELLINGTON INNER CITY IMPROVEMENTS		Approved
MEMORIAL PARK - 01 GENERAL CONSTRUCTION PHASING ROUTES DURING CONSTRUCTION		NOT FOR CONSTRUCTION
		Status FOR INFORMATION
Drawing Number	Revision	
MP-01-943	A	

4.2 Minimising Construction Traffic

The construction methods and site access protocols to be employed on site are critical for minimising potential traffic impacts on the surrounding roading network. Measures proposed on site to minimise construction traffic are described as follows:

- On-site parking will be reserved only for those vehicles that need to travel to and from the site daily, with other staff encouraged to use public transport, walk or cycle. Travel arrangements will be monitored to minimise single staff vehicle trips to site;
- Excavated waste material will predominately be transported on truck and trailer units;
- The internal northern haul road and once the Underpass is open, the space afforded by the closure of the SH1 diversion road, will allow construction vehicles to manoeuvre throughout the site without need to use the public road network.

4.3 Signage

A comprehensive on-road signage scheme is to assist the control of traffic flows around the construction area. Four types of signage are proposed:

- Regulatory signage (i.e. give-way, one-way);
- Guide signs (i.e. intersection direction signs);
- Permanent warning signs (i.e. school crossing); and
- Temporary traffic management signage (i.e. trucks crossing, new road layout, pedestrian/cyclist signage)

In this regard, Appendix C shows the location and form of each sign proposed for the Underpass construction phase.

Regulatory, guide and permanent warning signs will be constructed and erected in accordance with the NZTA Manual of Traffic Signs and Markings (MOTSAM).

Upon completion of construction and with traffic travelling through the Underpass, the on-road signage scheme will be amended to reflect the new travel routes. This will involve removal of temporary traffic management signage, and repositioning and removal of some of the guide and regulatory signage which related to the use of the SH1 diversion road.

Signage requirements for the construction of the Memorial Park will focus on the Tory Street and Tasman Street areas. Tory Street in particular will require signage to reflect the change in access to SH1, the detail of which would be covered in the detail of a temporary traffic management plan. Temporary traffic signage shown in Appendix C for Tory Street and Tasman Street access would remain during Memorial Park construction.

4.4 Temporary Traffic Management Plans

The duration and scale of the Project means Temporary Traffic Management Plans (TTMP's) may be implemented for periods ranging from a few minutes to the full duration of the **construction programme. Site specific TTMP's are documents that outline the TTM** procedures to be implemented to ensure safety of both the public and site staff is maintained throughout the duration of each construction activity. Each site specific TTMP will be prepared to ensure construction activities are efficiently conducted using an approved methodology, with approved mitigation measures in place.

Construction of the Underpass and elements of the Memorial Park are contained within a construction site separate from general traffic, as described in Section 4.1. As such there will not be a unique TTMP for every construction phase, and the intersections of the SH1

diversion road with Arterial Roads of Taranaki Street and Tory Street are not covered by **TTMP's, unless required due to a lane closure or similar short term work activity on these roads**. One such construction phase which will require a long-term TTMP is the period between when the Underpass is open to traffic and completion of construction of the Tory Street to Tasman Street link through Memorial Park, which requires the closure of Tory Street at the southern end. The TTMP for this activity would set out the alternative routes for those road users who previously used Tory Street to access SH1, signage, delay calculations for alternative routes, public consultation and duration of works, expected to be approximately four months to February 2015.

Where appropriate, **generic TTMP's will be used**. A generic TTMP can be issued for long-term repetitive activities at similar locations on the road network. For example, a generic site access TTMP is to be prepared for this project, specifying how construction vehicles are to access the site via the SH1 diversion road.

For all proposed works requiring site specific TTMP's, applications will be submitted by the Alliance to the appropriate requiring authority for approval prior to the works commencing. Each TTMP will describe the nature and extent of temporary traffic management at the work site, access provisions, types of vehicles, and how road users (including pedestrians and cyclists) will be managed by the use of temporary traffic management measures. An example of a site specific TTMP is attached in Appendix D.

For the State Highway carriageway and footpath within 1m of the kerb, MWH New Zealand Ltd (MWH) is the approving authority on behalf of NZTA. For all local roads and footpaths (including those on a State Highway beyond 1m of the kerb) Wellington City Council (WCC) are the approving authority. The Wellington Traffic Operations Centre (WTOC) will be informed before and immediately after completion of temporary works on the State Highway, and both MWH and WCC will be consulted on traffic management matters through monthly meetings, with key issues to be raised earlier as appropriate.

Temporary traffic management plans will comply with the NZTA Code of Practice for Temporary Traffic Management (COPTTM). The signs and traffic control are temporary in nature and will be managed by the Temporary Traffic Management Engineer and Traffic Controllers. A Site Traffic Management Supervisor (STMS) will be on-site at all times when traffic management is in place and will undertake daily inspections and random audits of temporary traffic signage to ensure it is safe and complies with the approved traffic management plans. An independent traffic management auditor will undertake monthly random audits of active traffic management installations and report back to the Temporary Traffic Management Engineer and Traffic Leader with COPTTM site condition rating reports and suggestions for improvement.

Temporary traffic management signs are generally black text on orange background and are intended to convey information with respect to the Underpass and Memorial Park construction, and state the main requirements with respect to traffic controls and diversions in place. These signs will be removed at the end of construction of the Underpass and Memorial Park.

All traffic management plans will take account of:

- Council and NZTA COPTTM requirements;
- **NZTA's Manual of Traffic Signs and Markings (MOTSAM) and Austroads Guides to Road Design and Traffic Management**
- Specific requirements of this plan;
- Site specific details;
- Business and residential driveways;
- Other road users such as pedestrians, cyclists and mobility impaired users:

- Contingency plans; and
- Weather or emergency related risks

A 30km/h temporary speed limit will be in place on Buckle Street and Tasman Street to encourage lower traffic speeds. This will also help ingrain the slow speed behaviour sought for this environment once the Memorial Park is complete.

4.5 Timing & Construction Traffic Volumes

The table below shows an outline programme for construction of the Underpass and Memorial Park. This will be updated as the construction methodology is refined. The anticipated Underpass construction duration is 510 days and 230 days for Memorial Park.

Underpass Construction Phase	Duration (Days)	Start Date	Completion Date
Temporary Road Construction	80	1 Oct 2012	25 Jan 2013
Site Available - Environmental Controls & Archaeological Investigation	75	25 Jan 2013	15 May 2013
Construct Haul Road	25	25 Mar 2013	01 May 2013
Temporary Works Installations (Retaining Walls)	58	10 May 2013	30 July 2013
Excavation & Ground Anchors	86	25 June 2013	23 Oct 2013
Drainage Works	225	30 Aug 2013	23 July 2014
Underpass Structure (Piling, Floor, Walls, Roof)	250	12 Sep 2013	08 Sep 2014
Mechanical & Electrical Services	220	11 Nov 2013	29 Sep 2014
Pavement	40	04 Aug 2014	29 Sep 2014
Traffic Services i.e. signals, signage, line marking	35	19 Aug 2014	06 Oct 2014
Hand Over & Completion (including Testing & Commissioning)	35	8 Sep 2014	14 Oct 2014
Underpass Open to Traffic		14 Oct 2014	
Total	510	1 Oct 2012	14 Oct 2014

Memorial Park Construction Phase	Duration (Days)	Start Date	Completion Date
Phase A - North Lane West - North Lane East - Central Space	180	1 May 2014	14 January 2015
Phase B - South Lane West	136	5 May 2014	12 November 2014
Phase C - Tasman Street - South Lane East	125	14 July 2014	15 January 2015
Phase D - East Terraces - West Terraces - Ceremonial Grounds - Tory Street	115	14 October 2014	31 March 2015
Australian War Memorial	90	5 November 2014	24 March 2015
Total	230	1 May 2014	31 March 2015

Both the Underpass and Memorial Park construction areas will largely be separated from general traffic, construction machinery such as cranes, excavators, piling rigs etc. will be delivered to and remain within the construction site. Therefore, the typical daily traffic generated to and from site on public roads is related to the delivery of materials or labour (such as delivery of people, construction materials and removal of excavated material).

Various sections of the road network will experience more construction traffic than others, with vehicles entering site from the SH1 diversion road travelling via the Basin Reserve (Vivian Street / Kent Terrace / Basin Reserve) or Tory Street. Truck and trailer access via Tory Street is to be restricted.

A large proportion of exiting vehicles will be travelling to the Southern Landfill in Happy Valley during the excavation phase of the Underpass construction; via the SH1 diversion road / Arthur Street / Karo Drive / Victoria Street / Brooklyn Road / Ohiro Road. Later phases will see exiting vehicles predominately using the SH1 routes.

The most noticeable period of traffic generation will be during the excavation stage when an average of 40 truck and trailer loads of material will be removed each day. These equate to 80 truck and trailer movements, and will be accompanied by around 100 other truck trips (mostly single unit trucks with a wide range of sizes) each day. The daily traffic volumes will fluctuate depending on the phase of the construction activities and weather conditions. Total car and Ute movements are not generally expected to exceed 200 trips per day.

The rate of departure of the truck and trailer loads during the excavation phase is dependent on the rate of excavation of material on-site. The construction programme has informed the anticipated rate of extraction and therefore the anticipated number of 40 truck and trailer loads of material to be transported each day. With a consistent departure rate from site throughout the day, the project will contribute approximately one truck and trailer load leaving site towards Happy Valley cleanfill every 15-20 minutes, including during peak hour commuter traffic periods. This phase of construction is programmed to be complete late October 2013.

The Memorial Park construction will predominately see the delivery of materials such as pre-cast panels, imported fill, paving and concrete, landscaping and street furniture. As detailed in Section 4.1.2 of this report, construction vehicle access will be gained from Tory Street, Tasman Street, Martin Square (restricted to low volumes), and upon closure of the SH1 diversion road, Taranaki Street and Sussex St. Construction traffic generation related to the Memorial Park construction will average some 20 heavy vehicle loads each day. This equates to 40 heavy vehicle movements, and will be accompanied by a similar number of other vehicle trips as the Underpass construction phase, with increased periods of vehicle movements expected during delivery of imported fill material,

The management of vehicle trips to and from site come under the control of the Temporary Traffic Management Engineer and site Traffic Controllers, following the procedures set out in the generic traffic management plan for site access. Gatemen will be stationed on active site access gates at all times to safely control the movement of construction vehicles between site and public roads, as detailed in Section 4.1 above.

Standard hours of work will be 7:00am to 5:30pm weekdays and 7:00am to 3:00pm Saturdays. Night works will also occur as required, with works generally scaling down due to noise requirements between 11:00pm and 6:00am.

4.6 Alternative Vehicle Routes

4.6.1 Underpass

With the closure of Tasman Street at the Buckle street end, and Buckle Street between the National War Memorial/Massey University and Taranaki Street, motorists will be required to take alternative routes around the construction site to reach destinations further afield. Mostly affected will be motorists who usually use the Tory Street to Tasman Street and Buckle Street to Taranaki Street routes, who will now be directed along alternative routes as detailed in the diagram shown in Appendix E

In terms of the capacity of the proposed alternative routes and their ability to carry the additional re-routed traffic, Paramics micro-simulation traffic modelling was undertaken of the construction phase road network to determine the capacity constraints and travel time effects of the construction works, and inform selection of the most appropriate alternative routes. A comprehensive publicity drive will inform motorists of the recommended alternative routes, which predominately make use of the State Highway and Collector roads, which have ample capacity to accommodate diverted traffic, and provide for the shortest and most convenient detours which are reasonably practicable to provide, having regards to safety and efficiency.

The results of the Paramics modelling showed an increase in the average travel time across the modelled road network of 4 and 5 seconds/vehicle in the morning and evening peak periods respectively. This includes delay to otherwise unaffected traffic in the area resulting from extra traffic on the alternative routes. However, this change will not generally be noticeable except to the diverting vehicles themselves, and does not change the current road Levels of Service. The capacity and travel time for motorists using the SH1 diversion road is essentially unchanged, as the road typically follows the previous alignment and has no reduction in lanes.

The noticeable delays will be on the following alternative routes:

- Massey University to Taranaki Street (via Tasman Street, Rugby Street, Sussex Street, SH1 diversion road) — 1 ½ to 2 ½ minutes extra; and
- Vivian Street to Tasman Street and Massey University (via Kent Terrace, Basin Reserve and Rugby Street) — 2 to 3 ½ minutes extra.

Careful consideration of how this increase in travel time could be minimised included options such as installation of a bailey bridge across the Tory Street / Tasman Street link, keeping a pedestrian route open through the site, and shortening the construction period to minimise the time roads are closed/diverted. None of the options investigated were considered feasible.

During the initial phases of construction, left turn traffic from the SH1 diversion road to Taranaki St was restricted, resulting in short diversions for traffic destined for Taranaki St via Haining Street and Buckle Street. The restriction on left turning traffic from the SH1 diversion road to Taranaki Street has since been removed, coinciding with a long term closure of the section of Buckle Street between the National War Memorial/Massey University and Taranaki Street.

As a result of allowing the left turn from the SH1 diversion road, the operational performance of Haining Street and Tory Street has subsequently returned to pre-construction levels. Traffic that utilises the SH1 diversion road / Taranaki Street route to Mt Cook, and then via Bidwell Street / Brooklyn Road to Brooklyn will now experience less travel time delay compared to the previous route that required travel via Arthur St / Victoria Street / Willis Street. Through traffic has also been removed from Tasman Street and Buckle Street, which now caters for local access to Massey University, the National War Memorial, local business and residents only.

Traffic which previously accessed Taranaki Street via Buckle Street, is now required to divert via Rugby Street and Sussex Street, slightly increasing the volumes on the SH1 diversion road. The relatively low volume of traffic diverting via this route is not considered to change the current SH1 Level of Service. The operational performance of the SH1 route is to be monitored monthly using GPS travel time data, and immediately following any significant changes to the traffic management arrangements surrounding the site and if required, measures identified, and implemented to prevent significant congestion.

There are no public bus routes through the affected sections of Buckle Street, Tory Street and Tasman Street. Public bus routes on Taranaki Street and between Cambridge/Kent Terrace and Adelaide Road do not require diversions, however may encounter minimal increases in journey times on the road network as a result of the construction works.

Buses will still be able to utilise Buckle Street to access the National War Memorial and Massey University campus via the alternative route of Rugby Street and Tasman Street. Options for accommodating buses in this location or via alternative routes elsewhere will be consistently reviewed in consultation with GWRC and bus companies.

4.6.2 Memorial Park

Construction of the Memorial Park will begin in May 2014, initially at Buckle Street (south of the Underpass) and the Tory Street/Martin Square connection (north of the Underpass). During these works there would be no change to the alternative vehicle routes described above, with diversions in place for traffic travelling between Tory Street to Tasman Street.

In order to complete the construction of the Underpass (at the west end adjacent to Taranaki Street) the SH1 diversion road approach to Taranaki Street is being realigned. This will not require any vehicle alternatives and will result in no change to the performance of the road network.

Once the Underpass is opened, expected early October 2014, the temporary SH1 diversion road would be closed, preventing vehicle access from Tory Street to SH1. Traffic that would normally turn right onto SH1 from Tory Street will instead be diverted via Haining Street and Taranaki Street where it can turn right onto SH1 as detailed in Appendix E. Road diversion and closure signage will be positioned at Tory Street. As part of the ICB improvements an additional right turn lane is proposed from Taranaki Street into Arthur Street. The potential to implement this lane prior to the Tory Street closure is being investigated in order to provide additional capacity and mitigate the effects of the road closure and diverting traffic.

The closure of Tory Street at the Buckle Street end was previously required for several months from September 2012 to facilitate construction of the temporary SH1 diversion road. Traffic modelling identified that the road closure would result in minor traffic travel time increases of some 3-4 seconds in the morning peak, and some 30 seconds in the evening peak associated with diverting traffic. During this time, Haining Street operated satisfactorily with a maximum observed queue length at the Taranaki Street intersection of five vehicles. The operational performance of Haining Street will be monitored bi-monthly during peak traffic periods, and immediately following any significant changes to the traffic management arrangements surrounding the site and if required, measures identified, and implemented to prevent significant congestion.

4.7 Special Events & Emergencies

Consultation with the parties named in Section 3, and the Construction Traffic Coordination Group (Section 4.11) of this report will identify any planned events such as road works, parades, sports events, including those outside the immediate project area that will have an effect on the project works, particularly the temporary traffic management and alternative routes identified above. The TTM Engineer, STMS and TC will react and respond as necessary to such events, and implement or remove temporary traffic management as necessary in **co-ordination with the RCA's**. In the event of a crash or significant incident site staff will provide immediate assistance and where necessary, contact the relevant emergency services. Full support to those organisations will be provided to manage traffic whilst the incident is being brought under control.

Any new detour route required as a result of any temporal effects will be analysed in advance with the use of the Paramics model to determine link capacity and therefore its effectiveness as an alternative traffic route before approval is gained for its use by the RCA.

4.8 Existing Property Access

Existing vehicle access to adjacent properties and businesses has been maintained, achieving access via alternative routes in some instances. For example, property accesses on Tory Street and Tasman Street remain unchanged, and access to Massey University, the National War Memorial and the businesses on the southern side of the construction area is maintained via Buckle Street, although for some users, these destinations require use of the alternative routes detailed above. Access to Mt Cook School on the northern side of the construction area is achieved through construction of a new driveway access on Tory Street. Any temporary changes in property access will be discussed with the occupant prior to the start of any works which may affect their access.

4.9 Safety

A detailed design Road Safety Audit has been undertaken of the enabling works, which identified some safety issues relevant to the detour routes detailed above. These issues included:

- Provision of diversion signage for the network changes as a result of the construction area;
- Use of Buckle Street as a diversion route during construction; and

- Safe provision for eastbound pedestrian and cyclists to cross Sussex Street

The Alliance has incorporated mitigation measures into the design to satisfy these issues, such as:

- Development of a comprehensive signage plan to provide clear and repeated directions to drivers for the alternative routes required (attached in Appendix C); and
- Addition of a signalised pedestrian/cyclist crossing on Sussex Street, in line with the existing pathway

As discussed in Section 4.6 above, Buckle Street is no longer used as a diversion route to Taranaki Street.

There are no known safety issues associated with the proposed alternative vehicle routes, and the amount of additional traffic on these routes is not considered to generate any additional safety concerns. The intersection of Rugby Street / Sussex Street has been upgraded by the Alliance to improve pedestrian and driver safety for those vehicles required to divert during construction, and with a view to the long-term vehicle routes once the Underpass is open.

Discussions with NZTA and WCC have identified the desire for ‘no left turn’ signage to deter vehicles turning the wrong way down one-way streets. The signage plan attached in Appendix C details the signage placed in response to this safety risk.

The safety performance of these routes will be monitored throughout the construction period.

Perimeter site screening is not proposed, allowing road users a passing view of construction activities on-site. Site screens are however available should monitoring indicate any related safety issues.

4.10 Cyclist, Pedestrian and Mobility Impaired Accessibility

4.10.1 Underpass

Footpaths will be maintained on the far side of each road surrounding the construction site. A 3.7m wide shared path along the northern side of the SH1 diversion road (connecting with the existing shared path on Arthur Street west of the site) and 2.5m shared path along the southern side of Buckle Street surrounding the construction site will accommodate both pedestrians and off-road cyclists.

Construction works will require temporary changes in the position of the footpath, particularly along Buckle Street. The pedestrian routes will be actively managed by traffic management personnel to ensure temporary footpaths have sufficient width and fencing is continuously provided along the site construction perimeter.

Signage will clearly define identified pedestrian and cyclist access routes on the roads and footpaths adjacent to the construction works. The details of which are shown in Appendix F. Traffic management personnel will be located at key locations around the construction site to direct pedestrians.

Temporary ramps will bridge any changes in surface level to prevent tripping, and pedestrian bridges and/or steel plates will provide direct access over any trenches to ensure the safest and most direct routes for users are promoted and maintained.

Pedestrian paths and crossings will be provided in accordance with Council and NZ standards for ease of use by the mobility impaired. Prior to any changes in the footpath network, information will be disseminated to affected parties such as the Royal New Zealand Foundation for the Blind and Disability Action Services.

A new signalised pedestrian crossing on Sussex Street will be provided to maintain a safe and clearly identified route for those people travelling between Cambridge Terrace and Massey University, the National War Memorial and Tasman Street. This crossing also provides the shortest detour route for those people that travel between Tasman Street and Tory Street, who will now have to cross Sussex Street to access either road via the SH1 diversion road. This route is the shortest and most convenient for pedestrians and cyclists along desire lines between these areas, and the signalisation of the crossing ensures the safe progression of these users across the two lanes of approaching traffic on Sussex Street.

The standard of access will be monitored throughout construction with regular inspections involving walking, cycling and navigating a wheelchair through the area. Random monthly surveys of pedestrians and cyclists travelling around site will also deliver feedback on the public perception of the paths and identify areas for improvement.

4.10.2 Memorial Park

During the construction of the Memorial Park, footpaths will be provided along the east-west routes to the north and south of the Underpass, broadly along the same alignment provided during the Underpass construction. Construction activities may require temporary changes to the footpath routes and their width however the pedestrian connections will remain open and with a desirable minimum width of 2m. The pedestrian routes will be signed and active traffic management provided where footpaths interface with construction vehicle accesses.

The SH1 Diversion Road approach at Taranaki Street will be realigned to the north to facilitate completion of the Underpass. This will change the position of the pedestrian footpath and some signalised crossings, however all routes and crossings will be maintained.

Whilst the Underpass is being constructed the north-south pedestrian route between Tory Street and Tasman Street is being diverted via Sussex Street. It is anticipated that a pedestrian connection between Tory Street and Tasman Street will be fully restored when Tory Street reopens, anticipated mid-January 2015. The opportunity to provide the north-south pedestrian connection sooner than this will be investigated and may be feasible with traffic management depending upon the extent of planned construction activities.

Relocation of the signalised pedestrian and cyclist crossing on Sussex St is proposed to maintain pedestrian and cyclist access for those travelling between Cambridge Terrace and Massey University, the National War Memorial and Tasman Street upon completion of the Underpass, and during construction of Memorial Park. This will also form an alternative route to those provided through the completed Memorial Park, and will facilitate safe crossing of the two lane SH1 carriageway which enters the Underpass.

4.11 Parking

Parking for approximately 130 construction staff vehicles can be accommodated within designated site compound areas on NZTA and privately owned land at each of the following sites:

- Francis Holmes Building, 208 Taranaki Street - approximately 25 spaces;
- Martin Square - three off-street spaces within construction site office grounds;
- The corner of Hania Street and Ellice Street - approximately 20 spaces;
- Vacant land, 20-23 Victoria Street - approximately 25 spaces;
- Vacant land, Karo Drive - approximately 25 spaces accessed via the above vacant land on Victoria Street;

- Te Papa Archives carpark, 169-179 Tory Street – approximately six spaces; and
- The corner of Buckle Street and Cambridge Terrace - approximately 30 spaces within and adjacent to the Armstrong Mitsubishi yard.

With up to 200 staff involved in the Project at peak, staff will be encouraged to avoid single occupant commuting. Encouragement of alternative travel modes aims to ensure construction of the Project will not have any effects on on-street parking in the vicinity of the works. There are no proposed temporary restrictions to on-street parking, except for **Massey University's private parking on Buckle Street**. No on-street parking is to be removed on Tory Street during construction. Any proposed temporary parking restrictions on detour routes outside the designation of the legislation for the project would be required to go through a Council resolution or TMP process prior to implementation.

4.12 Site Security

The site will be secured with a wire mesh boundary fence. Access points will be controlled by gatemen when in use. Outside of working hours, the site will be patrolled by security guards, who will monitor and report any traffic safety issues.

4.13 Communications

A communications relationship has been established between the Alliance and the WCC and NZTA communications teams. This will ensure that any public enquiries relating to this project received by the WCC and NZTA call centres are promptly directed to the Alliance project liaison representative. The project liaison representative will also be contactable at all times on 0800 020 086. Any comments, complaints or compliments will be quickly communicated to the relevant project staff. This line is operational 24 hours per day/seven days per week during the construction phase of the project.

Regular communications with the community and any directly affected property owners over planned construction activities and associated traffic effects will comprise a key management technique throughout the Project. As the works proceed regular contact will be maintained with the residents and stakeholders by the project liaison person to ensure they are aware of the nature and duration of the works occurring.

Establishment of a Construction Traffic Coordination Group provides an opportunity to advise road user groups of planned works and to listen to concerns and issues that may arise from construction.

This group comprises the following parties:

- The AA;
- Road Transport Forum;
- Emergency Services (Fire, NZ Police, Wellington Fire Ambulance);
- Taxi companies;
- NZTA and their Traffic Management Coordinators MWH New Zealand Ltd;
- Bus companies;
- Wellington City Council;
- Greater Wellington Regional Council; and
- Project team members.

Bi-monthly meetings will maintain awareness of construction activities. Discussions will also occur with Cycle Advocates Network (Cycle Aware Wellington), Living Streets, and Disability Action.

In addition, communications activities proposed include:

- Publication of a newsletter, or similar;
- Newspaper advertising;
- Focussed notification with parties such as the Foundation of the Blind and Disability Action to inform members of intended changes to access routes;
- Notification to emergency services of traffic management that may affect access or travel through or around site;
- Notification and consultation with individual property owners and occupiers within 200m of construction activities; and
- The NZTA project website.

The newsletters will outline progress to date with the construction works, a forecast for construction activities over the coming month, and notification of any potential construction traffic impacts upon the surrounding roading network.

Prior to the commencement of construction activities, signage will be erected on the surrounding road network to advise motorists, pedestrians and cyclists of the works being undertaken and direct them to alternative routes for travel in the vicinity of the construction site. This is detailed in sections 4.3 and 4.6 above.

Information boards along the construction site perimeter fence will also inform commuters about the project works as well as a broad range of relevant information.

4.14 Clean Roads

Procedures to prevent the deposition of slurry, clay or other materials on roads by vehicles leaving the site will include:

- Use of asphalt millings to surface the internal site haul road;
- Provision of wheel cleaning facilities including hoses, brooms and shovels;
- Twice daily monitoring, and education of all construction staff/drivers to monitor for any material which may be accidentally spilt onto public roads from construction traffic; and
- Maintaining a contingency of sweeper equipment on call at all times to clean up material which may be accidentally spilt onto public roads.

Adherence to this plan will be included within site induction and weekly toolbox meetings as required to ensure all site staff are aware and practice the required clean roads protocols.

4.15 Dust

A Construction Air Quality (Dust) Management Plan will be prepared separately to this CTMP document. The key aspect, with respect to construction traffic, is the surfacing of the internal haul road and dust suppression.

4.16 Noise and Vibration

A Construction Noise and Vibration Management Plan will also be prepared separately to this CTMP document, and includes specific details relating to methods for the control of noise and vibration associated with the construction traffic, such as:

- The use of non-tonal reversing alarms on construction vehicles; and
- Selection of vibration equipment at the lower end of the vibration ranges specified

4.17 Pre-Condition Assessment

A pre-construction road condition survey has been carried out on specified local roads in the vicinity of the project. The report is attached in Appendix G.

The Alliance is responsible for undertaking monthly inspections to identify and repair any potholes and other damage on these roads, resulting from the construction of the Project as soon as practically possible.

5 MONITORING AND REPORTING

Monitoring of construction traffic and traffic management measures will occur to ensure compliance with the traffic management requirements outlined within this CTMP.

During the construction of the Underpass and Memorial Park, there is a requirement to minimise the impacts on travel times for members of the public. In order to ensure that the impacts on travel times are indeed minimised, there is a need to measure, monitor and report them. Specifically, the following monitoring will be undertaken for the Underpass and Memorial Park construction activities:

Monitoring Item	Monitoring Method	Monitoring Frequency	Reporting Requirements
Construction Traffic Movements	Gatemen to monitor active site accesses and control construction vehicle exits to public roads.	At all times	A record of any issues identified and remedial actions undertaken will be maintained within the site log and incident reports.
Construction Traffic Speeds	On public roads drivers are to comply with the posted speed limit. Monitoring by existing GPS fleet systems where installed.	At all times – by construction staff & public	See Section 6 – Complaints Procedures for public road traffic speeds. Identified on-site issues are to be communicated to staff through tool box meetings and remedial actions undertaken will be maintained within the site log. Warning systems and non conformance notices may be implemented.
Traffic Incidents /Complaints	Inspections/observations/consultation	At all times – by construction staff, public, Council liaison	See Section 6 – Complaints Procedures. A record of any issues identified and remedial actions undertaken will be maintained within the site log and incident reports. Warning systems and non conformance notices may be implemented.
Public Road Conditions	Road Inspections	Monthly inspection of public road surfaces – by Project Engineer	Any damage to public roads as a result of the construction works will be recorded and reported directly to relevant Council staff. Required remedial/maintenance plans will be developed and implemented by the Alliance in consultation with Council staff. Random monthly public surveys will record on site issues. A record of issues and remedial actions undertaken will be maintained within the site log.
Clean Roads	Road inspections	At all times – by gatemen.	Requests for road sweeping will be sent to the Civil Construction Manager for immediate action.
Traffic Delays	Random audits by Project Engineer, Traffic Controller delay observation, GPS	At all times – particularly during	Proposed continuous GPS monitoring systems will provide live journey times along key

Monitoring Item	Monitoring Method	Monitoring Frequency	Reporting Requirements
	travel time monitoring	temporary road and lane closures. GPS monitoring will be continuous throughout construction.	routes, generating reports and alerts when a particular journey time exceeds threshold i.e. maximum 2 minute average delay time. A record of breaches of the maximum delay time will be maintained. Monthly performance reports are generated.
Temporary Traffic Management	Audits of temporary traffic management equipment and public perception surveys	Daily – by temporary traffic management Engineer. Random by RCA and independent auditor.	A record of any issues identified and remedial actions undertaken will be maintained within the site log and in incident reports. Audit records will be forwarded to the Traffic Leader by the RCA and independent auditor for communication back to Traffic Management Staff.

With the redistribution of traffic within the road network, monitoring of traffic delays is therefore particularly important. The Alliance has adopted a requirement that traffic delays of no more than two minutes are encountered as a result of construction activities. This two minute threshold can be extended to the maximum of five minutes permitted by COPTTM for special circumstances with RCA (NZTA or WCC as appropriate) approval through the TTMP process.

Provision of the proposed GPS-based solution to monitor travel times throughout the construction period will enable travel time increases or decreases to be identified across individual segments of the road network. Although this solution will be tailored for specific implementation on this project, it is comparable to the journey time website provided by AA, which utilises similar technology.

Delay calculations are undertaken by software providing ‘real time’ tracking of vehicles with GPS capable tracking devices installed. Generated reports can demonstrate:

- Normal flow prior to construction activities;
- Assessment of impacts on travel time as work phases change; and
- Normal flows after project completion

In the event that travel times approach or exceed a threshold (two minutes) in a particular segment of the route, alerts are received and effort required to improve the situation can be focussed to a specific area.

Unpredicted changes in travel time due to incidents such as, for example; traffic accidents, emergencies, natural disasters, and inclement weather may require alternative traffic management techniques. Examples of techniques that may be implemented to manage travel times across the network include:

- Implementation of active traffic management or removal of existing TTM;
- Signal phasing changes;
- Alternative detours (with RCA approval);and

- Road closures

The performance of this CTMP and the site specific TTMP's will be measured by monitoring of the following:

- The travel time as described above;
- The incidence of any safety issues for all road users around the site; and
- Audits of the temporary traffic management measures through the TMP process.

The effectiveness of the CTMP document and TTMP's will also be reviewed bi-monthly in consultation with the Construction Traffic Coordination Group.

Records of all monitoring undertaken and any subsequent remedial actions will be maintained within the site log and can be made available for review by Council staff upon request.

6 COMPLAINTS PROCEDURES

Legitimate traffic complaints received will be taken seriously and matters raised shall be investigated and responded to as quickly as possible. The first point of contact for members of the public is the Project Liaison Representative on 0800 020 086 or the email address info@memorialpark.co.nz.

Urgent matters can be raised directly with:

- Ryan Dunn , Traffic Engineer, 027 478 6753; and
- Tom Mabelson, Temporary Traffic Management Engineer

The standard procedure for complaints during construction requires maintenance of a permanent record of any complaints received alleging adverse effects from, or related to, the project works. The record shall include:

- The name and address (as far as practicable) of the complainant; and
- Identification of the nature of the complaint; and
- Location, date and time of the complaint of the alleged event; and
- Weather conditions at the time of the complaint (as far as practicable).

Details of the complaint will be immediately forwarded to the Stakeholder Manager and Site Supervisor. The Stakeholder Manager will then proceed to:

- Liaise directly with the complainant to confirm the issue and effects and discuss with any relevant staff;
- Liaise directly with the Project Engineer and Site Foreman to implement additional control measures on site immediately to prevent any on-going effects;
- Any additional traffic management measures required (e.g. additional signage, road sweeping, reduce extent of lane closure etc.) to prevent any on-going effects from the works will be maintained until the risk of further effects is removed;
- The Stakeholder Manager will liaise with the complainant to confirm the outcome of the investigations into the complaint, and any remedial measures undertaken to respond to the complaint;

- The incident will be communicated to site staff through the tool box meetings and within site management reporting to ensure awareness of the potential issues and that similar incidents do not occur through the site.

A record of any remedial actions undertaken will be maintained within the complaints record. This record shall be maintained on site and shall be made available to the Council Manager, upon request.

APPENDIX A — DESIGNATION CONDITIONS

Part 2—continued

Condition no	Conditions—Traffic management and roading: Construction
NZTA 14	<p>The Agency shall not commence the undergrounding of part of Buckle Street until:</p> <ul style="list-style-type: none"> (a) the Agency has prepared a Construction Traffic Management Plan (CTMP); and (b) a qualified traffic engineer has certified under subpart 5 of Part 2 that the methods provided for in the CTMP are consistent with the conditions of this designation relating to construction traffic management and provide for appropriate means to ensure as far as practicable those conditions of the designation are able to be met. <p>The Agency may commence investigations and enabling works for the Project (including construction and use of the proposed at-grade diversion of Buckle Street and any other temporary roads) prior to the CTMP being certified.</p>
NZTA 15	<p>The CTMP prepared under Condition NZTA 14 shall address the following:</p> <ul style="list-style-type: none"> (a) the staging of the works, including details of any proposals to work on multiple sections of the Project route concurrently; (b) details of construction yard access points where they gain access directly from a local road; (c) a general methodology for selecting detour routes so as to provide for the shortest and most convenient detours which it is reasonably practicable to provide, having regard to safety; (d) the potential effects on the detour routes selected and how these will be managed to seek to ensure safety for all road users; (e) any potential effects of the construction of the Project on on-street parking in the vicinity of the Project. <p>The CTMP shall describe—</p> <ul style="list-style-type: none"> (a) temporary traffic management measures required to manage impacts on road users during proposed working hours; and (b) delay calculations associated with the proposed closure/s and detour routes; and (c) the capacity of any proposed detour route/s and their ability to carry the additional traffic volumes and any known safety issues associated with the detour route, including any mitigation measures the Agency proposes to put in place to address any identified safety issues; and (d) individual traffic management plans for intersections of the proposed Project with arterial roads; and

Part 2—continued

Condition no	Conditions—Traffic management and roading: Construction
(e)	measures to maintain, where practicable, existing vehicle access to adjacent properties and businesses; and
(f)	measures to maintain, where practicable, safe and clearly identified pedestrian and cyclist access on roads and foot-paths adjacent to the construction works. Where detours are necessary to provide such access the Agency shall provide for the shortest and most convenient detours, which it is reasonably practicable to provide, having regard to safety; and
(g)	any proposed temporary changes in speed limit; and
(h)	any proposed temporary restrictions to on-street parking; and
(i)	provision for safe and efficient access of construction vehicles to and from construction site(s); and
(j)	the measures that will be undertaken by the Agency to communicate traffic management measures to affected road users and stakeholders.
NZTA 16	The CTMP shall be prepared in consultation with—
(a)	the Road Asset Manager of the Wellington City Council (or his or her nominee(s)); and
(b)	representatives of the following: <ul style="list-style-type: none"> (i) emergency services (Police, fire, and ambulance); and (ii) Massey University; and (iii) New Zealand Defence Force; and (iv) the owners of the former Mt Cook Police Barracks, 13 Buckle Street; and (v) Tasman Garden Body Corporate; and (vi) Wellington Tenthis Trust and Port Nicholson Block Settlement Trust; and (vii) schools, childcare centres, and any other educational activities with frontage or access to roads that will be affected by works associated with the Project.
	Any comments and input received shall be clearly documented within the management plan, along with a clear explanation of where any comments have not been incorporated and the reasons why. A copy of the CTMP shall be provided to the Road Asset Manager.

Part 2—continued

Condition no	Conditions—Traffic management and roading: Construction
NZTA 17	The CTMP shall be consistent with the version of the NZTA Code of Practice for Temporary Traffic Management (COPTTM) which applies at the time the CTMP is prepared.
NZTA 18	The NZTA shall carry out random auditing of temporary road closure/s in accordance with COPTTM at regular intervals throughout the construction of the Project. The intervals shall be stated in the CTMP.
NZTA 19	<p>Prior to the commencement of the undergrounding of Buckle Street, the Agency shall undertake a pre-construction condition survey of the carriageway/s of the following sections of local road—</p> <ul style="list-style-type: none"> (a) the section of Tory Street and Tasman Street between the intersections with Vivian Street and Rugby Street (b) the section of Taranaki Street between the intersections with Vivian Street and Wallace Street (c) the section of Webb Street between Taranaki Street and Willis Street (d) any other section of local road where the Agency considers that the condition of the carriageway of that section of road may be materially affected by construction traffic generated by the Project— <p>and submit it to the Manager and the Roading Asset Manager. The condition survey shall consist of a photographic or video record of the relevant sections of carriageway, and shall include roughness, rutting defects and surface condition. The Agency may commence investigations and enabling works for the Project (including construction and use of the proposed at-grade diversion of Buckle Street and any other temporary roads) prior to this survey being undertaken.</p>
NZTA 20	The Agency shall carry out regular inspections of the sections of local road surveyed under condition NZTA 19 during construction, to ensure that all potholes and other damage resulting from the construction of the Project are repaired as soon as practicable.
NZTA 21	The Agency shall ensure that procedures are adopted to seek to prevent the deposition of slurry, clay or other materials on the roads identified in Condition NZTA 19 by vehicles leaving the construction site for the Project where such material is liable to cause a nuisance or hazard. Procedures shall include but not be limited to use of an on-site wheel wash.

APPENDIX B — CONSULTATION RECORDS



17/01/2013

MEMORANDUM

Email: ryan.dunn@tdg.co.nz

To	Meeting Attendees
From	Ryan Dunn / Richard Galloway
CC	CC
Date	17/01/2013
Subject	Traffic Co-Ordination Group Meeting Minutes

Attendees:

Ben Young, Automobile Association	byoung@aa.co.nz
Miranda Greer, Community Liaison, MPA	miranda.greer@downer.co.nz
Raymond Malcolm, Greater WN Regional Council	raymond.malcolm@gw.govt.nz
Brent Blann, Mana Coach Services	brentb@manacoach.co.nz
Richard Hocken, NZ Police	richard.hocken@police.govt.nz
Stephen Harfe, Wellington City Council	stephen.harfe@wcc.govt.nz
Ryan Dunn, Traffic Engineer, MPA	ryan.dunn@tdg.co.nz
David Gedney, Civil Engineering Leader, MPA	david.gedney@urs.com
Brian Aspin, Community Relations Manager, MPA	brian.aspin@nzta.govt.nz
Richard Galloway, Traffic Leader, MPA	richard.galloway@tdg.co.nz
Dirk Botha, MWH Global	
Des O'Sullivan, NZTA	des.osullivan@nzta.govt.nz

Apologies:

Jason Wildman, MWH Global	jason.p.wildman@nz.mwhglobal.com
Ken Samson, NZTA	ken.samson@nzta.govt.nz
Ken Climo, NZ Police	ken.climo@police.govt.nz
Peter Stokes, NZ Police	peter.stokes@police.govt.nz
Nigel McCreight, Construction Manager, MPA	nigel.mcreight@downer.co.nz
Jon Vardell, Design Manager, MPA	jon.vardell@urs.com

Agenda Items:

- | | |
|---------------------------------|---|
| 1. Alliance Overview | 2. Traffic Co-Ordination |
| 3. Project Programme | 4. Construction Traffic Management Plan |
| 5. Local Roading Improvements | 6. Dissemination of Information |
| 7. Discussion on Issues to Date | 8. Any Other Business |
| 9. Next Meeting | |

File Name

MEMORANDUM

1. Alliance Overview

Richard Galloway gave a brief overview of the Memorial Park Alliance team and objectives:

- June 2012 the tunnel construction project announced as part of the National War Memorial Park Project
- August 2012 the Memorial Park Alliance team tasked with delivery of the Tunnel project was formed, made up of NZTA, Downer, HEB Construction Ltd, URS and Tonkin & Taylor
- The Alliance structure promotes togetherness, with one goal, to deliver an outstanding project
- The completion date for the War Memorial Park is the centenary of the Gallipoli landings on ANZAC Day 2015
- The temporary road, constructed to allow the excavation of the tunnel under Buckle Street is almost open
- The Alliance is also tasked with delivering the Inner City Bypass (ICB) improvements and Basin Reserve Bridge (once consented) projects.

2. Traffic Co-Ordination

The purposes of the Traffic Co-Ordination Group were discussed: to disseminate information at once monthly meetings regarding the projects progress, identify major project transitions, and give the opportunity to raise issues and questions so that we can appropriately cater for all stakeholders needs, or seek appropriate alternatives.

3. Project Programme

David Gedney gave an overview of the Alliance projects' construction programme and key points:

- The temporary Buckle Street diversion road is due to open midnight Thursday 24th January
- The diversion road severs the link between Tory St and Tasman St during the construction period for the tunnel
- A new signalised pedestrian and cyclist crossing is provided across Sussex Street, linking Tasman Street with the new diversion road and Tory Street
- The first task for the tunnel construction is services diversion
- The tunnel construction will start proper February 2013 continuing through to December 2014
- The relocation of the Sisters of Compassion crèche is scheduled for December 2013
- Memorial Park construction is due for completion 2 April 2015, ready for the centenary celebrations of ANZAC day 25 April 2015.
- The Basin Reserve Bridge Board of Inquiry (BOI) process will commence near the end of February 2013, with a decision expected January 2014, and if approved, construction to start January 2014 running through to September 2016
- The ICB improvements are scheduled for construction between August 2013 through to July 2015, the length of construction period is dependent on the working hours
- The ICB is the project that gives the traffic benefits
- Mt Victoria tunnel duplication is programmed for 2019-2020, with Terrace Tunnel duplication beyond that

4. Construction Traffic Management Plan

A Construction Traffic Management Plan document is to be prepared, which sets out what we are doing with the Tunnel project, and how we propose to mitigate effects. A brief description of the content of the report was given by Richard Galloway:

- Construction is to start at the Taranaki Street end, with excavation progressing east, followed by construction of temporary retaining walls, and construction of the floor, walls then roof of the tunnel following behind
- Trucks will access the site off the new diversion road, through any one of up to eight access gates, and travel along a temporary haul road within the construction site

File Name:

MEMORANDUM

- It is expected up to 80 truck and trailer loads of material is to leave site each day, travelling to Happy Valley landfill via Kara Drive, Victoria Street and Brooklyn Road
- Around 200 staff are to work on the project, including designers and office staff (around 120 expected on-site)
- Traffic management is important, this will be emphasised to staff regularly, and safety of all road users and site staff is paramount
- The traffic management will particularly focus on cyclists and pedestrians, as vehicles are well covered by existing processes
- Daily on-site safety briefings for staff
- Guidance to pedestrians and cyclists to enable a safe path around site
- Installation of the new signalised pedestrian crossing, operating on-call only, and linked to surrounding intersections
- There is a significant amount of surveillance from the Traffic Operations Centre (TOC) throughout the project via CCTV cameras along the route
- Pedestrian and cyclist routes are to be on opposite sides of the road from the site perimeter, on shared paths with signage to direct people
- Pre-construction road inspections have been undertaken, and the roads are to be kept clean and wheel washes implemented. The haul road will potentially be sealed to prevent dust and tracking material onto the public road
- Access gates along the diversion road will be supervised by a gate person to undertake all necessary checks (including health and safety) and assist safe exit of vehicles back onto the diversion road
- There will be 24 hour security on-site
- A comprehensive communication policy, backed up by people on roads handing out information prior to the opening of the temporary diversion road, and people on-site guiding pedestrians and cyclists around site on opening
- Mt Cook school currently supervise the crossing at Taranaki Street, and signage will also direct pedestrians to the north side to access the school and Tory Street

5. Local Roading Improvements

A number of local road traffic improvements are required by the legislation for the project. A report detailing these is to be prepared, features of this to date are:

- Multiple pedestrian and cycle routes through Memorial Park
- Bus manoeuvres into the Memorial Park from Tory and Tasman Street is still a work in progress in liaison with the Park designers
- The Park design incorporates Crime Prevention Through Environmental Design (CPTED) principles: the traffic lane offers passive surveillance, visual surveillance achieved with CCTV cameras and high level of lighting, an attractive environment to ensure people are always present
- There are no changes recommended to the Rugby Street/Tasman Street Intersection

6. Dissemination of Information

In addition to the current communications with stakeholders, the following was agreed:

- Transfield Services are contact for overhead network for such things as crane delivery etc, (Alliance team already in contact with Wellington Cable Car)
- NZ Bus and other bus operators are to be notified through Raymond Malcolm GWRC of any diversions affecting services
- Ken Climo and Richard Hocken are the main contacts for NZ Police
- The AA could potentially advise of project within media and Directions magazine, however this will be managed by AA themselves

File Name:

MEMORANDUM

7. Discussion on Issues to Date

In the course of the meeting a few questions were raised and issues discussed:

- For liaison on diversion and lane closures affecting bus services, could GWRC and all bus operators be informed with plenty of advance notice
- The ICB construction will require a different methodology for traffic management to keep traffic moving, looking to extend working hours for maximum effect which will minimise long term disruption and not slow vehicles down
- Options for this include removal of line marking and parking in areas, temporary line marking lane shifts to maintain same number of lanes, and concrete barriers with hoardings such that traffic management can be left out long term rather than removed each evening
- Ben Young (AA) enquired as to whether the Tunnel construction will result in any safety detriments over what currently exists on Buckle Street, to which the reply was there will be no change to safety, a variation to the existing situation will be the addition of the signalised pedestrian crossing on Sussex Street which improves safety for pedestrians, and a safety audit procedure has been undertaken with issues identified addressed through design
- Raymond Malcolm (GWRC) requested that a bit of forward planning was undertaken when programming works to include impacts of events that shut down other areas of the city and creates extra traffic on outskirts, such as traffic route around construction site
- Richard Hocken (NZ Police) enquired as to what happens on ANZAC day between now and opening of the Memorial Park in 2015, to which the reply was access to the NZ War Memorial will be via Tasman Street, liaison has been on-going with the curator for ANZAC day preparations for 2013, and liaison was requested with NZ Police for accommodation of the VIP arrival timetable
- A general comment from Richard Hocken that communication to date has been excellent

8. Any Other Business

None

Meeting closed at 11:00am

9. Next Meeting

1:00pm Thursday 21 February.

An agenda and invites are to go out in advance.

Actions:	Owner
Liaise with GWRC on city wide events to incorporate in forward planning	RSG
Liaise with NZ Police to accommodate provision for VIP arrivals ANZAC day 2013	RSG
Confirm CCTV capabilities and lighting levels for Park design	DG
Liaise with GWRC on Wellington High School bus access via Tasman Street	RD
Liaise with MWH Global on proposed ICB traffic management methodology	RSG

File Name:



29/01/2013

MEMORANDUM

Email: ryan.dunn@tdg.co.nz

To	Meeting Attendees
From	Ryan Dunn / Richard Galloway
Date	29/01/2013
Subject	Wellington City Council CTMP Briefing Minutes

Meeting Commenced: 2:45pm

Attendees:

Steve Spence, Wellington City Council
 Stephen Harte, Wellington City Council
 Soon Teck Kong, Wellington City Council
 Ryan Dunn, MPA
 Richard Galloway, MPA

steve.spence@wcc.govt.nz
stephen.harte@wcc.govt.nz
Soon.TeckKong@wcc.govt.nz
ryan.dunn@tdg.co.nz
richard.galloway@tdg.co.nz

1. Construction Traffic Management Plan Overview

A draft version of the Construction Traffic Management Plan document was tabled at the meeting, which sets out traffic management associated with the Tunnel project, and how the MPA propose to mitigate effects. A brief description of the content of the report was given by Richard Galloway:

- Construction is to start at the Taranaki Street end and progress east
- Trucks will access the site off the new diversion road, through any one of up to eight access gates, and travel along a temporary haul road within the construction site
- It is expected up to 80 truck and trailer loads of material is to leave site each day, travelling to a cleanfill at or near Happy Valley via Karo Drive, Victoria Street and Brooklyn Road
- Around 120 staff are expected on-site
- Guide signage provided to pedestrians and cyclists to enable a safe path around site
- Installation of the new signalised pedestrian crossing on Sussex Street
- Pedestrian and cyclist routes on opposite sides of the road from the site perimeter, on shared paths
- Pre-construction road inspections have been undertaken, and the roads are to be kept clean and wheel washes implemented. The haul road will potentially be sealed to prevent dust and tracking material onto the public road
- Access gates along the diversion road will be supervised by a gate person to undertake all necessary checks (including health and safety) and assist safe exit of vehicles back onto the diversion road
- There will be 24 hour security on-site
- Mt Cook school currently supervise the crossing at Taranaki Street
- A traffic counter is in position on Haining Street to monitor traffic flows this week
- The project team are yet to meet representatives of Cycle Aware Wellington, Living Streets and Disability Action
- Deven Singh has previously been consulted on the pre-construction road inspections, and elected not to have a Council representative accompany the inspectors; a copy of their report is attached to the CTMP document

File Name

MEMORANDUM

2. Initial Council Comment

In the course of the meeting a few questions were raised and issues discussed:

- Figure 1 of the report shows the location of the site in relation to the temporary diversion road, however needs more detail on site accesses shown;
- Currently there is a turning restriction on the diversion road preventing left turns to Taranaki St, and a lack of signage on Sussex Street to direct these left turning motorists to the alternative route via Rugby / Tasman St;
- Without a Contractor appointed to date for the cartage of the excavated material to landfill, can it be confirmed that truck and trailer units will be employed for this operation;
- Are there any peak hour restrictions on site traffic (mainly heavy vehicles) accessing the State Highway and turning into Victoria St i.e. travelling through Brooklyn;
- Are there any restrictions imposed for transport during school hours;
- Could material be stockpiled on-site and transported outside of peak traffic periods;
- What are the anticipated peak hour truck movements to/from site;
- The reason behind suggesting peak hour restrictions are that trucks are slow moving vehicles that add delay to general traffic flows, Council contracts would impose restrictions, and residents of Brooklyn have been vocal in the past regarding truck traffic on Brooklyn Road;
- What is the truck fleet size required to ensure adequate productivity on site;
- Justification is required as to why trucks are proposed to operate during peak traffic periods;
- NZTA Highways Network Operations (HNO) will be the authority to approve truck movements to/from the State Highway during peak traffic periods;
- Council Transport Assets staff will need to review the pre-construction road inspection report
- A permanent (post construction) 20km/h speed limit was agreed for the southern access lane (Old Buckle Street)

Comments / Actions	Comments	Owner
Figure 1 of report to be amended	Agreed	MPA
Turning restriction / Sussex St signage	Have approval from NZTA to allow left turn from temporary diversion road, however requires signal configuration before can proceed. Modelling indicates a 20% drop in traffic on slip lane as a result.	
Truck & Trailer units for transport	Truck & Trailer units confirmed for excavation cartage off-site	
Peak hour restrictions	None Intended due to significant construction programme time pressures, constrained site prevents stockpiling, NZTA approval gained for peak hour SH access from site	
Peak hour truck movements	Approximately one truck & trailer movement every 8-10 minutes throughout the day, see section 4.5 of the CTMP document	
Truck fleet size	To be confirmed upon appointment of contractor	MPA
Review pre-construction road inspection report	Agreed	WCC

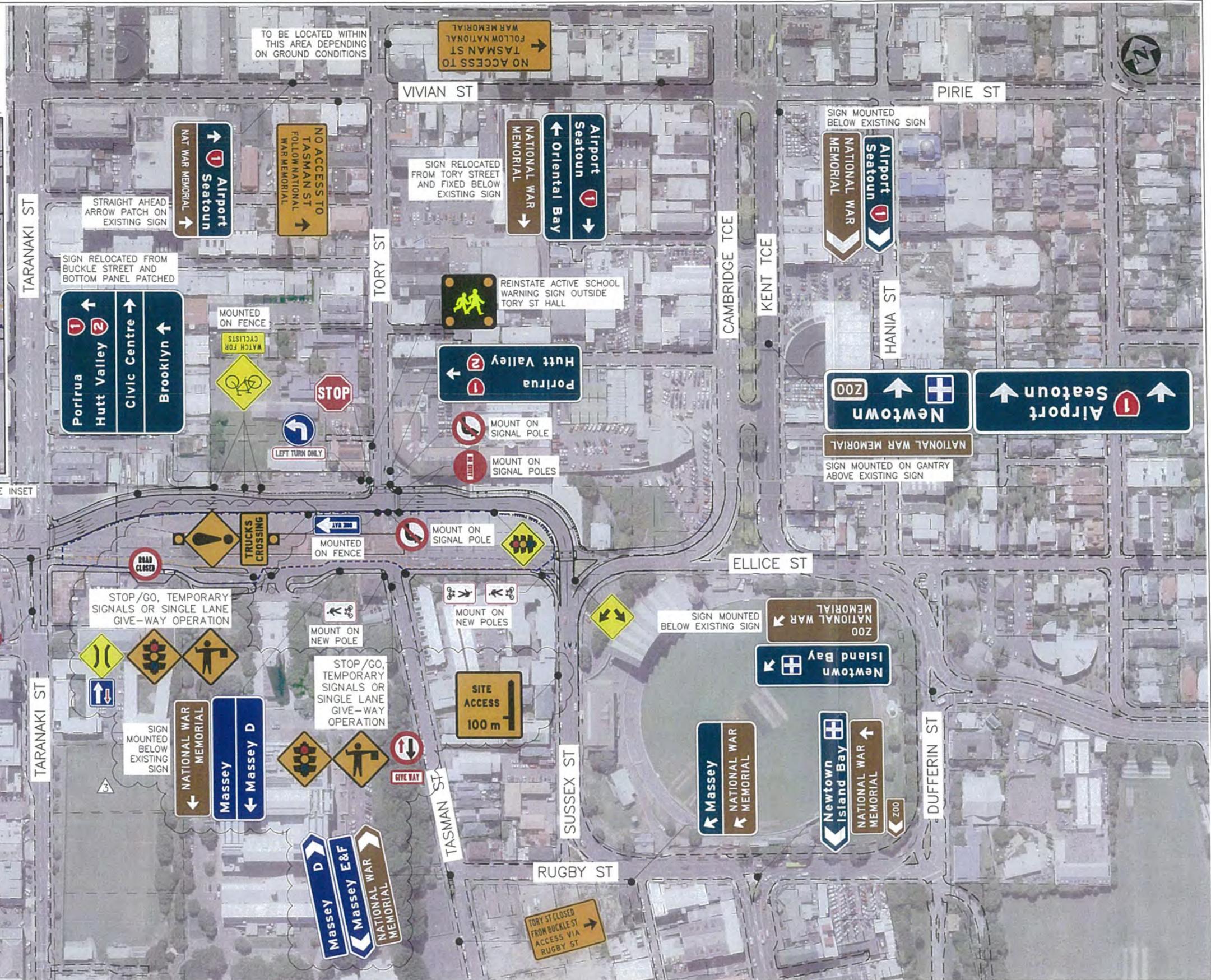
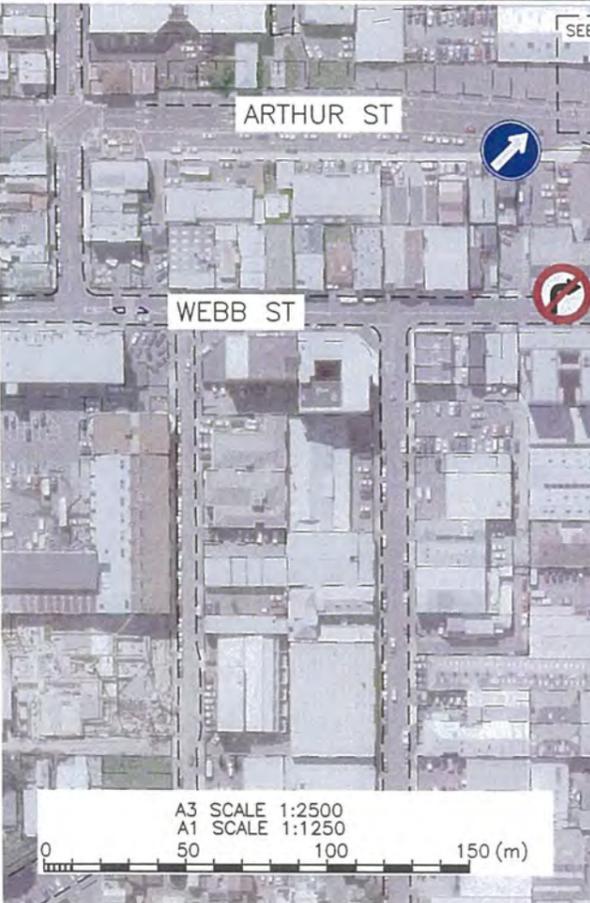
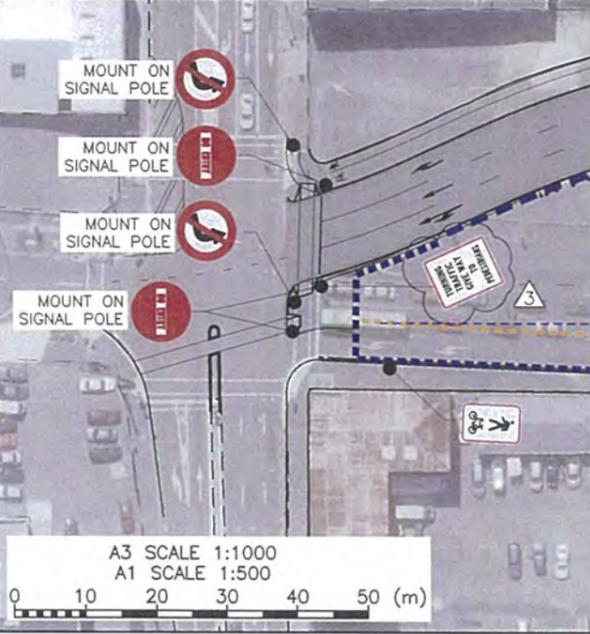
Meeting Closed 4:30pm

File Name:

APPENDIX C — TRAFFIC MANAGEMENT SIGNAGE SCHEME

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. COORDINATE DATUM: WELLINGTON CIRCUIT 2000.
ORIGIN: MT COOK 800,000 mN 400,000 mE
LEVEL DATUM: LINZ (MSL) WELLINGTON VERTICAL DATUM 1953
3. AERIAL MAP SOURCED FROM TERRALINK INTERNATIONAL (COPYRIGHT 2002-2005 TERRALINK INTERNATIONAL LIMITED AND ITS LICENSORS).



Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date
3	SIGNS ADDED/REMOVED	QDO'S		RD			
2	REVISED CONSTRUCTION ISSUE	QDO'S	CJD	RG	RD	DG	01.02.13
1	FOR CONSTRUCTION	QDO'S	CJD	RG	PK	JV	18.01.13

Tab
UND-03-020
Scales
1:2500 (A3)
1:1250 (A1)
Original Size
A1



Document Controller Check: _____ Date: _____
This drawing is not to be used for construction purposes unless signed approved and issued For Construction.

SH1 WELLINGTON INNER CITY IMPROVEMENTS		Approved
UNDERPASS - 03 TRAFFIC SERVICES STAGE 1 SIGNAGE PLAN		Status FOR CONSTRUCTION
Drawing Number UND-03-020	Revision 3	

APPENDIX D — Site specific ttmp example

**MWH New Zealand Ltd - State Highway Management
TMP Registration**



Major
 Night Time
 Detours In Place
 Long Term
 Weekend
 Authorised by TMC

Project No: Z1449012 **TMP No:** Wgn_8868
Date Received: 25-Jul-13 **By:** E-mail
Reference: TMD-MPA 21 **Expiry Date:** 25-Apr-15
Area: Wellington **SH:** SH1
From RS: 1075 / 1.3 **To RS:** 1075 / 0.95
Direction: Decreasing **Closure:** Caution Only
Location: Buckle St (old alignment)
Affected Pty: Wellington City Council
Description: 1) Give way closure; To allow for extension of MPA compound
 2) Portable traffic light closure; To allow for work to progress when site extents do not allow for clear visibility during the give way closure
Consent No: 681N
TTM Contractor: All Traffic Management Services (ATMS)
Main Contractor: Memorial Park Alliance
STMS: Maui Manuela **Tel:** 027 828 743
Plan Sheet No: TMD-MPA 21 Traffic light closure and TMD-MPA 21 Give way closure

Operational Times:

Start Date	End Date	Start Time	End Time	Time Breakdown
02-Aug-13	25-Apr-15	12:00 a.m.	12:00 a.m.	Times include TTM

Speed Limits:

Appr. Date	Appr. Status	Appr. Speed	Notes
25/07/2013	APPR_TSL	30	Approved for 2/8/13 - 2/2/14
25/07/2013	APPR_TSL	30	Approved for 3/2/14 - 2/8/14
25/07/2013	APPR_TSL	30	Approved for 3/8/14 - 2/2/15
25/07/2013	APPR_TSL	30	Approved for 3/2/15 - 25/4/15

Applied EEDs:

Engineering Exception Decision (EED) Application: NA
Authorisation to Carry Out Planned Traffic Management: Approved
Draft Media Advertisement Approval: NA
Comments: Refer to attached TMP for alternate STMS. Closure includes the use of temporary traffic signals. Refer to additional conditions

Friday, 26 July 2013

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Page 1 of 2

**MWH New Zealand Ltd - State Highway Management
TMP Registration**



TMC Staff:

Friday, 26 July 2013

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Page 2 of 2*

MWH New Zealand Ltd - State Highway Management

TMP Authorisation



Attention: Halmona Leef

Fax:

Email: haimz@atmsnz.co.nz

CC To:

Reference: TMD-MPA 21

TMP No: Wgn_8868 (when entered to NM2_TMP)

Project No: Z1449012

Date Received TMP: 25-Jul-13

By: E-mail

Area: Wellington

Affected Party: Wellington City Council

SH: SH1

From RS: 1075 / 1.3 **To RS:** 1075 / 0.95

Direction: Decreasing

Closure Type: Caution Only

Location: Buckle St (old alignment)

Expiry Date: 25-Apr-15

Plan Sheet No: TMD-MPA 21 Traffic light closure and TMD-MPA 21 Give way closure

Description: 1) Give way closure: To allow for extension of MPA compound
2) Portable traffic light closure: To allow for work to progress when site extents do not allow for clear visibility during the give way closure

Consent No: 681N

TTM Contractor: All Traffic Management Services (ATMS) **STMS:** Maui Manuela (Tel: 027 828 743)

Operational Times:

Start Date	End Date	Start Time	End Time	Time Breakdown
02-Aug-13	25-Apr-15	12:00 a.m.	12:00 a.m.	Times include TTM

Speed Limits:

Appr. Date	Appr. Status	Appr. Speed	Notes
25/07/2013	APPR_TSL	30	Approved for 2/8/13 - 2/2/14
25/07/2013	APPR_TSL	30	Approved for 3/2/14 - 2/8/14
25/07/2013	APPR_TSL	30	Approved for 3/8/14 - 2/2/15
25/07/2013	APPR_TSL	30	Approved for 3/2/15 - 25/4/15

Applied EED:

TMC from 24 September 2008

Subject to the following conditions:

- THIS APPROVAL MUST ACCOMPANY THE TMP SUBMITTED FOR THE TMP TO BE VALID
- You are required to contact the Local Authority as your operation extends into their area of responsibility.
- Note the permitted times for your Temporary Traffic Management Operation.
- Note the permitted dates for your Temporary Traffic Management Operation.
- Please update the Traffic Management Coordinator of your scheduled operations for the following week via a weekly programme by 9am each THURSDAY. This programme MUST include a field indicating the approved TMP which is being used and speed restriction

MWH New Zealand Ltd - State Highway Management**TMP Authorisation****Attention:** Haimona Leef**Fax:****Email:** haimz@atmsnz.co.nz**CC To:****Reference:** TMD-MPA 21**TMP No:** Wgn_8868 (when entered to NM2_TMP)**Project No:** Z1449012

- This TMP is endorsed on the basis that your operation conforms to the NZ Transport Agency Code of Practice for Temporary Traffic Management (COPTTM) requirements. The TMC accepts no responsibility for failure in any way to meet the COPTTM requirements.
- Please check the areas that you wish to inspect prior to your works to ensure that you can access them safely.
- You are required to inform the WTOC (0800 868 256) prior to commencing and upon completion of your operations/works.

- 1) Approved times do not constitute approval to work 24hrs a day, 7 days a week.
- 2) Portable traffic signals are to be vehicle actuated (CoPTTM preference)
- 3) Portable traffic signals are to form part of the 'compliant systems' register as per CoPTTM 4 'Section B5.1.2 Certification of portable traffic signals' and as per the 'Technical note, portable traffic signals'
- 4) TMP approved for Buckle St section only (old alignment, SH1). Tasman St closure/TM requires WCC approval.

Friday, 26 July 2013

Produced by MWH using NM2
Page 2 of 3

MWH New Zealand Ltd - State Highway Management

TMP Authorisation



Attention: Haimona Leef

Fax:

Email: haimz@atmsnz.co.nz

CC To:

Reference: TMD-MPA 21

TMP No: Wgn_8868 *(when entered to NM2_TMP)*

Project No: Z1449012

This TMP is Approved on the Following Basis

1. To the best of the Approving Engineer's judgement, this TMP conforms to the requirements of the NZ Transport Agency's Code of Practice for Temporary Traffic Management.
2. This plan is approved on the basis that the activity, the location and the road environment have been correctly represented to the applicant. Any inaccuracy in the portrayal of this information is the responsibility of the applicant. The STMS for the activity is reminded that it is the STMS's duty to "Postpone, cancel or modify operations due to the adverse effects of traffic, weather or other conditions that affect the safety of this site" (reference A4.5).

Approving Engineer:



 Signature Date

Approving Eng: Jason Wildman

Cert No: 30743

Acceptance by TMC:



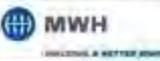
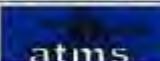
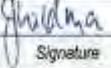
 Signature Date

TMC: Jason Wildman

Cert No: 30743

8869

		RCA consent (eg CAR/WAP)		Contract 681N				
TRAFFIC MANAGEMENT PLAN (TMP) – SHORT FORM								
Complete short form if simple activity and RCA permits. Refer to the NZ Transport Agency's Traffic control devices manual, part B Code of practice for temporary traffic management (CoPTTM), section E, appendix A for a guide on how to complete each field.								
Organisational/TMP reference	TMP reference: TMD-MPA 21	Contractor: : Memorial Park Alliance 		Principal (Client): ; Memorial Park Alliance 				
	RCA: NZTA 							
Location details and road characteristics	Road names and suburb		House no. / RPs (From and to)	Road level	Permanent speed	AADT/Peak flows		
	Old Buckle Street, Wellington		1075/1.90 to 1075/0.95	1	50			
Description of work activity	<p>Give Way Closure: To install a give way closure so it gives MPA room to extend their compound so that works can take place within the proposed area.</p> <p>Traffic Light Closure: To install a portable traffic light closure when the work that is proposed extends where there is no visibility to run a give way closure.</p> <p>Both closures will run 24 hours a day 7 days a week.</p>							
Planned work programme								
	Start date	Friday 2 nd August 2013	Time	12:00am	End date	Saturday 25 th April 2015	Time	12:00am
Consider significant stages, for example: <ul style="list-style-type: none"> road closures detours no activity periods. 	<ul style="list-style-type: none"> 24 hours a day, 7 days a week Both closures will be maintained at all times with 2 hourly checks during unattended period 							
Alternative dates if activity delayed	As per "Planned work programme"							
Aspects affected								
Pedestrians affected?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Property access affected?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Traffic lanes closed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Cyclists affected?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Restricted parking affected?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delays likely?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
TSL/ Diagram (refer TSL decision matrix for guidance)	TSL details as required Approval of Temporary Speed Limits (TSL) are in terms of Section 5 of Land Transport Rule: Setting of Speed Limits 2003, Rule 54001 (List speed, length and location)		Times (From and to)	Dates (Start and finish)	Diagram ref. no.s (Layout drawings or TMDs)			
Attended day/ night	A temporary maximum speed limit of 30km/h is hereby fixed for motor vehicles traveling over the length of 250m situated between the corner of Rugby street/Tasman street right through to the end of Old Buckle street.		7:00am – 6:00pm	2 nd August 2013 to 25 th April 2015	TMD-MPA 21 Give Way Closure TMD-MPA 21 Portable Traffic Light Closure Attached			

atms RCA consent (eg CAR/WAP)		Contract 681N				
Unattended day/ night	A temporary maximum speed limit of 30km/h is hereby fixed for motor vehicles travelling over the length of 250m situated between the corner of Rugby street/Tasman street right through to the end of Old Buckle street.	6:00pm – 7:00am	27 th May 2013 to 2 nd August 2013	TMD-MPA 15 Give Way Closure TMD-MPA 15 Portable Traffic Light Closure Attached		
Contingency plan						
If long queues form or delays exceed 5mins (or any other period required by RCA), site to be disestablished or additional lanes made available.		Adjust TMD to suit unforeseen circumstances (eg weather or site overlaps with another work site).		Emergency services will be accommodated and access provided through the site as required.		
Add additional contingencies:						
Contact details						
	Company	Name	24/7 contact number	CoPTTM ID	Qualification	Expiry date
Principal		Richard Galloway	0212416911			
TMC		Jason Wildman	021440113	30743	L2/3 NP	25/5/14
Engineers' representative		Richard Galloway RYAN DUNN	0212416911 0274786753			
Contractor		Richard Galloway RYAN DUNN	0212416911 0274786753			
STMS		Maui Manuela	027828743	67801	L1	23/02/2016 ✓
STMS		Teresa Mata	02040145568	56058	L1	31/10/2015 ✓
TMP preparation (or approval if STMS delegated authority to approve TMPs) Delete the option that does not apply (either prepared or approved)						
Prepared	Jade Ng (021-767-541)	Jade Ng	26-07-2013	L2/3NP	53266	
	Name	Signature	Date	Qualification	ID no.	
Number of diagrams attached					2	
TMP returned for correction						
	Name	Signature	Date	Qualification	ID no.	
Engineer/TMC to complete following section when approval or acceptance required						
Approved by TMC or engineer (delete one)	JASON WILDMAN 30743		26/7/13	L2/3 NP	30743	
	Name	Signature	Date	Qualification	ID no.	
Acceptance by TMC (if required)						
	Name	Signature	Date	Qualification	ID no.	
Qualifier for engineer or TMC approval						

 RCA consent (eg CARWAP)	Contract 681N
---	----------------------

This TMP is approved on the following basis:

1. To the best of the approving engineer's/TMC's judgment this TMP conforms to the requirements of CoPTTM.
2. This plan is approved on the basis that the activity, the location and the road environment have been correctly represented by the applicant. Any inaccuracy in the portrayal of this information is the responsibility of the applicant.
3. The STMS for the activity is reminded that it is the STMS's duty to postpone, cancel or modify operations due to the adverse traffic, weather or other conditions that affect the safety of this site.

LEVEL 1 LAYOUT DISTANCES TABLE

Permanent speed limit or RCA designated operating speed (km/h)	≤50	60	70	80	90	100		
Traffic signs								
A	Sign visibility distance (m)	50	60	70	80	90	100	
B	Warning distance (m)	30 or 50*	80	105	120	135	150	
C	Sign spacing (m)	15 or 25*	40	50	60	70	75	
Safety zones								
D	Longitudinal (m) [†] +(Not required on LV roads)	5 or 10*	15	30	45	55	60	
E	Lateral (m) [†] +(Optional on LV roads)	1	1	1	1	1	1	
Tapers								
G	Taper length (m) [#]	30	50	70	80	90	100	
G	LV roads taper length (m) [#]	25	30	35	40	45	50	
K	Distance between tapers (m)	40	50	70	80	90	100	
Delineation devices								
	Cone spacing in taper (m)	2.5	2.5	5	5	5	5	
	Cone spacing: Working space (m)	5	5	5	10	10	10	
<p>* Larger minimum distances apply where there is more than one lane each way and on all state highways.</p> <p>† On LV roads the longitudinal and lateral safety zones may be reduced, or eliminated, in order to retain a single lane width. Positive traffic control and an appropriate TSL are to be used.</p> <p># Where there are road environment constraints (including intersections and commercial accesses) a 10m taper may be used for speeds 50km/h and under. This does not apply on state highways or where portable traffic signals, manual traffic controller (stop/go) or priority give way are used.</p> <p>On all roads tapers may be reduced to 30m where portable traffic signals, manual traffic controller (stop/go) or priority give way are employed.</p>								
Lane widths								
(km/h)		30	50	60	70	80	90	100
F	Lane width (m)	2.75	3.0	3.0	3.25	3.25	3.5	3.5

Except for delineation device spacings, which are maximum values, the distances specified in the above tables are minimum values.

LV/low risk roads

Working on roads designated as LV/low risk roads (less than 250vpd - less than 20 vehicles per hour), with clear sight distance to the operation and an operating speed of less than 65km/h:

- Use an appropriate advance warning sign (static installation) and amber flashing beacon(s) on working vehicle when working on the shoulder.
- Consider stop/go or give way control of traffic when activity encroaches onto lane.

If the above requirements cannot be achieved, the operation must be modified to comply with the requirements of a higher risk rating.



APPENDIX E — ALTERNATIVE VEHICLE ROUTES

Stage 2: Buckle Street underpass closures and diversions

25 January 2013 - SH1 Diversion route opens and Tasman Street closes

Buckle Street traffic will be moved to the new SH1 diversion route. Tory Street will re-open and connect to the new diversion, Tasman Street will be closed at the Buckle Street end until late 2014 when the new underpass is expected to be open for use.



Our contact details
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Email: memorial.park@nzta.govt.nz
www.nzta.govt.nz/memorial-park

New Zealand Government



Stage 3: Buckle Street underpass closures and diversions

March 2013 – No access to Taranaki St from the Massey University slip road

Traffic exits Massey and the National War Memorial via Tasman St and on to Sussex St and the Buckle St Diversion. Traffic management is required to enable access when project works affect traffic flow on the Massey slip road.



Stage 3: Alternative vehicle routes



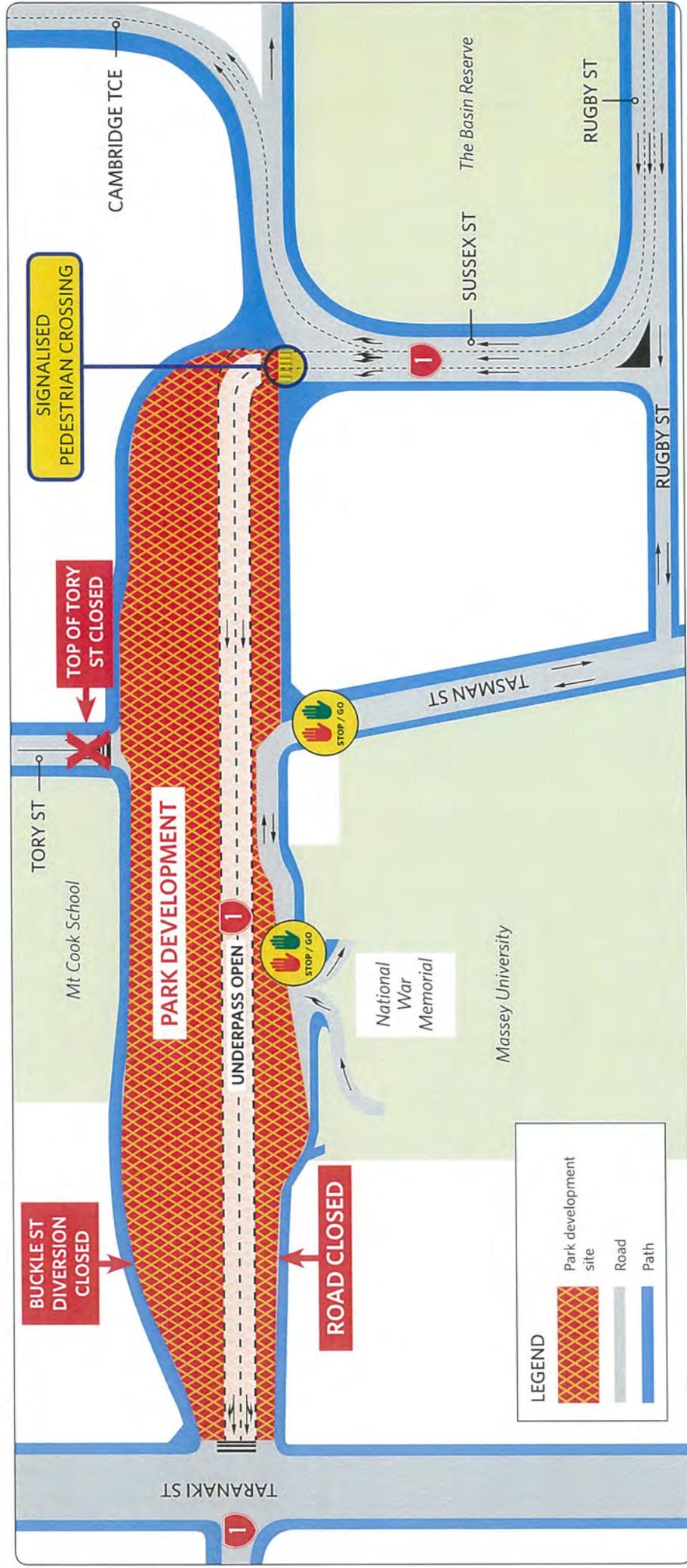
Our contact details

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 Email: info@memorialpark.co.nz
www.nzta.govt.nz/memorial-park

Stage 4: Buckle Street underpass closures and diversions

October 2014 – The underpass opens to SH1 traffic

Traffic enters the underpass after travelling round the Basin Reserve. Tory St access to SH1 is closed to allow park development. Buckle St Diversion will be removed, also to allow park development. Traffic continues to access Massey and the National War Memorial via Tasman St and on to Sussex St during construction.



Memorial Park Alliance

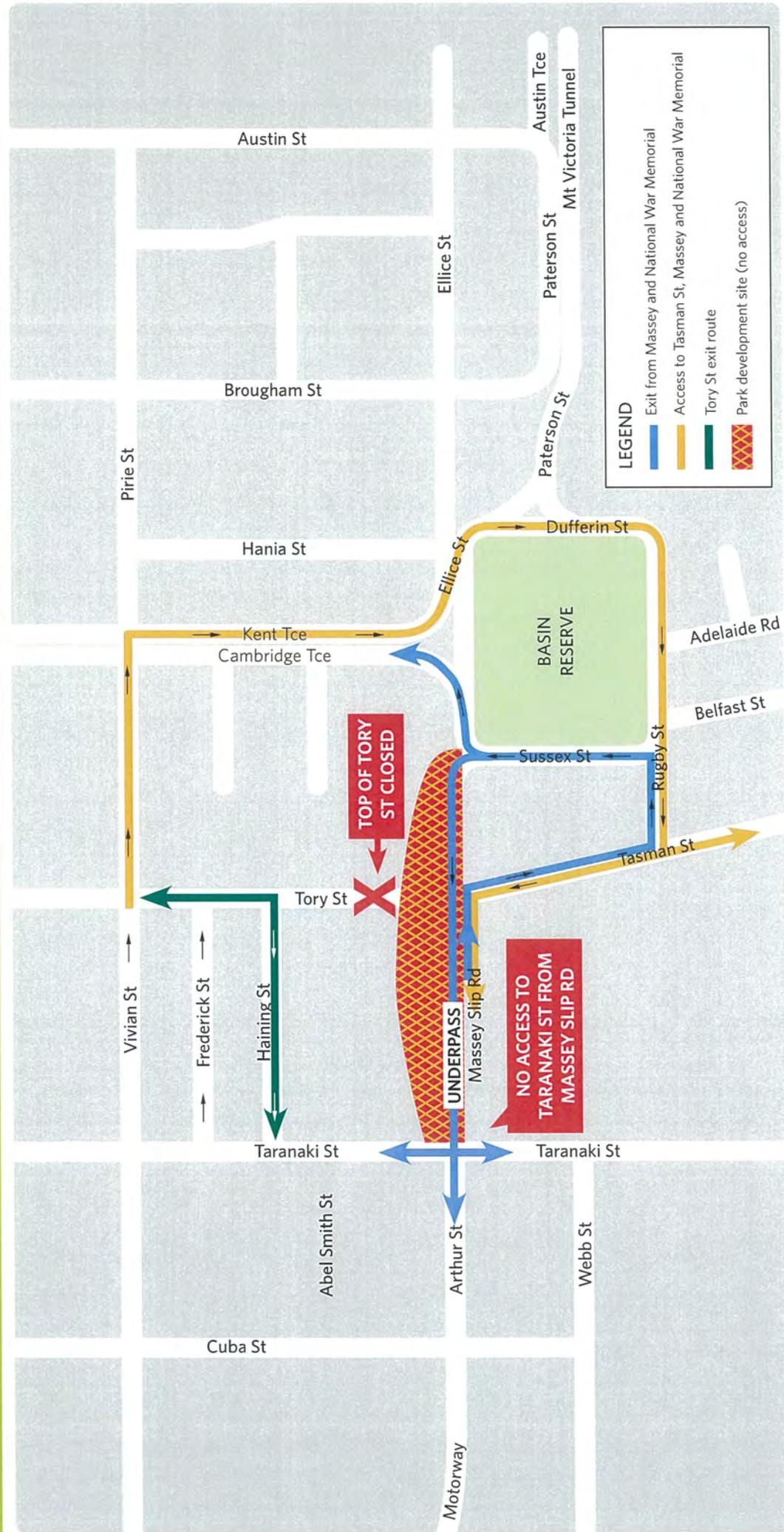
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www.nzta.govt.nz/memorial-park

Stage 4: Alternative vehicle routes

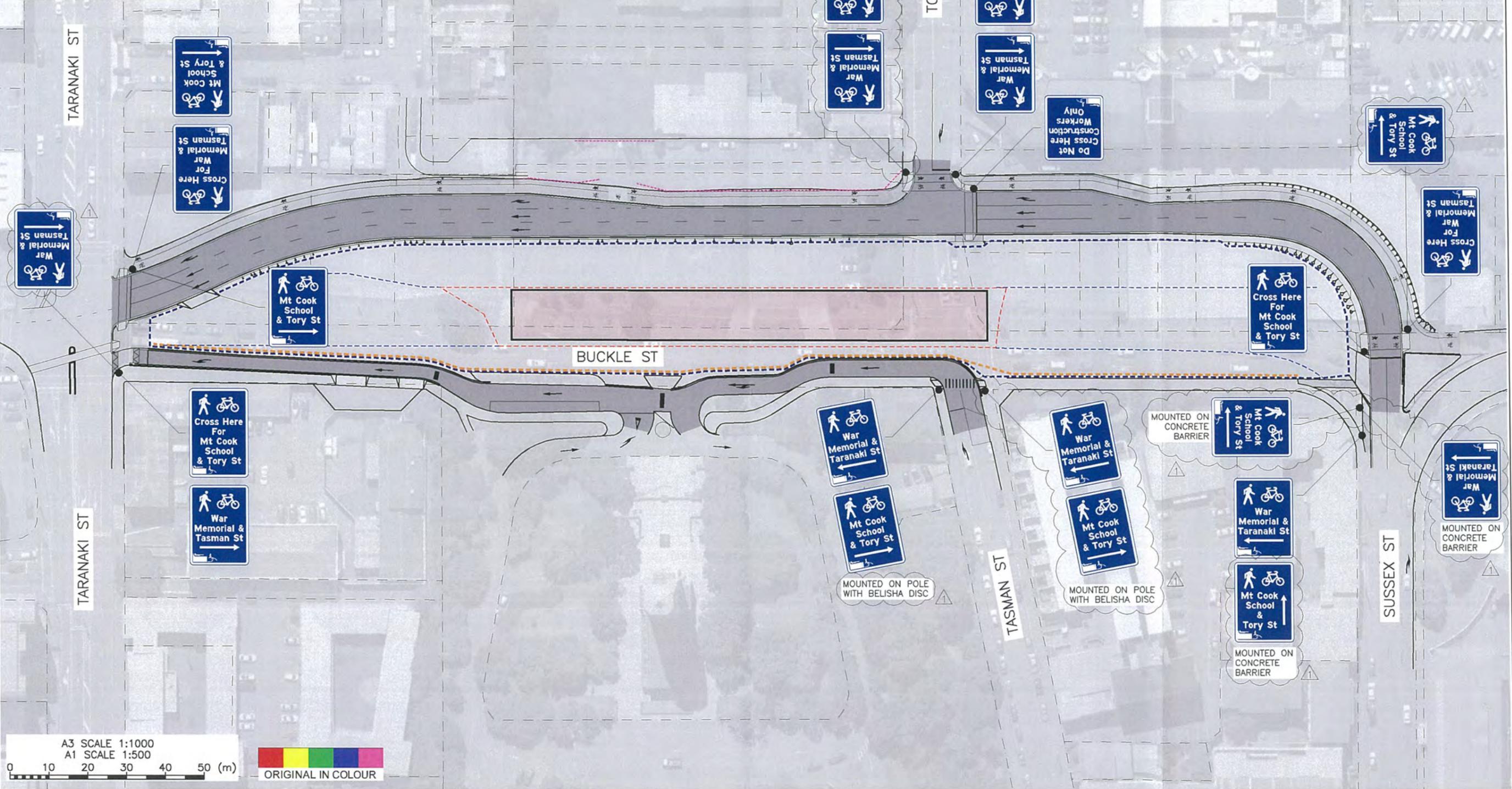


Our contact details

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www.nzta.govt.nz/memorial-park

APPENDIX F — PEDESTRIAN & CYCLIST SIGNAGE

- NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
 2. COORDINATE DATUM: WELLINGTON CIRCUIT 2000.
ORIGIN: MT COOK 800,000 mN 400,000 mE
LEVEL DATUM: LINZ (MSL) WELLINGTON VERTICAL DATUM 1953
 3. AERIAL MAP SOURCED FROM TERRALINK INTERNATIONAL
(COPYRIGHT 2002-2005 TERRALINK INTERNATIONAL LIMITED
AND ITS LICENSORS).
 4. SEE DRAWING EW-03-012 FOR SIGN SIZES.
 5. ALL SIGNS TO BE MOUNTED ON SIGNAL POLES UNLESS OTHERWISE NOTED.



1	FOR CONSTRUCTION	ODO'S	CJD	RG	RD	DG	01.02.2013
A	FIRST ISSUE	ODO'S		RG			
Rev	Revision Description	Drawn	Checked	Designed	Design Checked	Approved	Date

Tab EW-03-011
Scales 1:1000 (A3) 1:500 (A1)
Original Size A1

Memorial Park Alliance

This drawing is not to be used for construction purposes unless signed approved and issued For Construction

MEMORIAL PARK ALLIANCE		Approved
ENABLING WORKS - 03 TRAFFIC SERVICES		Status FOR CONSTRUCTION
PEDESTRIAN / CYCLIST SIGN LOCATIONS		Drawing Number EW-03-011
		Revision 1

APPENDIX G — PRE-CONSTRUCTION ROAD CONDITION



23 January 2013

Buckle Street Tunnel

PRE-CONSTRUCTION PAVEMENT CONDITION SURVEY

Rev. #	Status	Prepared by	Checked by	Date
	For Review	Andrew Prosser	Richard Galloway	23 January 2013

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2	METHODOLOGY	3
3	RESULTS.....	4
4	RECOMMENDATIONS.....	4
5	CONCLUSION	6
	APPENDIX A - Photos, Excel spreadsheet.....	7

1 INTRODUCTION

The Memorial Park Alliance has been established between NZTA, Downer, HEB, Tonkin & Taylor and URS.

The Alliance is tasked with the Buckle Street Tunnel and Basin Reserve Bridge, along with enhancements to the adjacent Inner City Bypass.

The construction of these assets will enable the creation of the National War Memorial Park and significantly improve traffic flows in the Basin Reserve area.

As required by the legislation empowering construction, the Alliance has completed an existing pavement condition survey of the local roads identified as being most likely to be used and affected by the transportation of machinery; materials; construction related staff; and/or the redesign and rehabilitation of existing road carriageway features.

The local roads included in the pre-construction pavement condition survey were;

- **Taranaki Street** (Bidwill Street to Vivian Street (State Highway 1))
- **Webb Street** (Willis Street to Taranaki Street)
- **Martin Square** (full length)
- **Haining Street** (Taranaki Street to Tory Street)
- **Frederick Street** (Taranaki Street to Tory Street)
- **Tory Street** (Buckle Street (State Highway 1) to Vivian Street)
- **Tasman Street** (Yale Road to Buckle Street)
- **Rugby Street** (Sussex Street to Tasman Street)

These roads are controlled and managed by Wellington City Council. A post construction pavement condition survey will also be undertaken once the tunnel is complete.

As a brief summary of the report and findings which follow, it was found that the existing road pavements are, on the whole, in a good condition with a significant proportion of the existing roads exhibiting little to no pavement wear. Only minor road surface faults and pavement damage were observed and recorded.

As a consequence of the survey's findings, there are no recommendations pertaining to the need to make any urgent pavement repairs.

2 METHODOLOGY

A pre-construction carriageway survey was carried out on Monday 3 December 2012 and involved two engineers.

The survey team examined the existing carriageways and recorded observed maintenance issues such as (but not limited to):

- potholes;
- seal surface flushing;
- edge break;
- pavement depression;

- cracking;
- gouging;
- blocked sumps and/or damaged stormwater features; and
- broken manhole covers and road furniture (including signs and other road safety features).

Photographs were also captured at certain key areas and along the full route.

Figure 1 shows the inspection area.

3 RESULTS

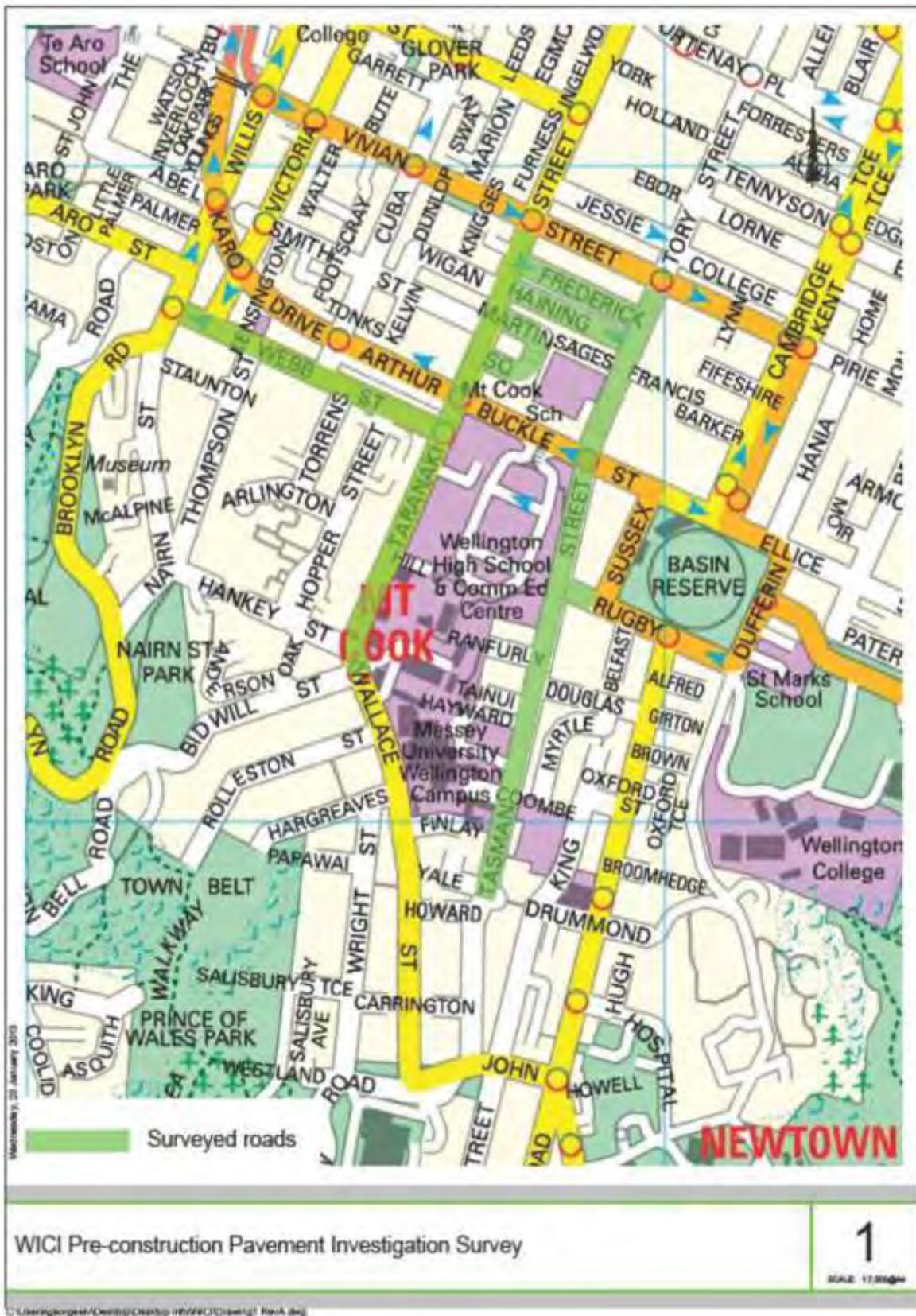
A full set of tabulated observations can be found in Appendix A of this report. Referenced photos are included on the accompanying CD.

As can be seen on the tabulated records, very few pavement faults or maintenance issues were observed along the roads surveyed. It is also noted that the majority of the faults identified have resulted when the roads had been last rebuilt and/or when service lids had been adjusted as part of the replacement or repair of buried services (such as stormwater, water and sewer mains).

It was also noted that Council contractors were working in Tasman Street at the time of the pre-construction pavement condition survey. This work appeared to involve the replacement of an existing water main along the centre of the road and the works appeared to also run the full length of this road. Similarly, several of the other surveyed roads also exhibited signs of recent trench reinstatement works with new asphaltic concrete surface pavement repairs. On the whole, the trench works appeared to be well constructed, with little to no noticeable deformation in the pavement shape or issues relating to the need to water proof the formed seal joints. While some minor rutting and pavement depression was noted along a couple of the surveyed roads, the scale and effects of these faults are considered to be negligible.

4 RECOMMENDATIONS

As previously reported, the planned Buckle Street tunnel works will have some effect on the surveyed roads, either involving design changes or the regular use/transportation of construction related or diverted vehicles. It is on this basis that the pre-construction pavement condition survey has considered the potential effects of these expected demands relative to ability of the roads to be able to support such activities.



As the survey noted little to no significant concerns, it is recommended that the condition of the existing road pavements is monitored at regular intervals during the construction sequencing of the planned improvement works.

5 CONCLUSION

Based on the findings of the pre-construction pavement condition survey it is concluded that the existing carriageway pavements and traffic features located on the defined road routes are currently well maintained and there are little signs of significant pavement deterioration and/or faults occurring. The overall frequency of the various faults or issues of concern identified during the survey was extremely low.

Based on these findings, the roads planned to improved and/or used by construction traffic during the anticipated contract period, are of a good condition; no remedial works are required; and that they have been assessed to be in a condition that can appropriately support the level of additional construction related traffic accordingly.

January 2013

APPENDIX A - PHOTOS, EXCEL SPREADSHEET

WICI PAVEMENT CONDITION SURVEY

3 December 2012 — Completed By A. Prosser and T. Rabel (Traffic Design Group Ltd)

Rugby Street



Item 1: Existing pavement repair at intersection with SH1



Item 2: Seal joint on Rugby Street and example of older pavement condition and previous repairs



Item 3: Pavement repairs and water main trench (full length of road). Repairs are in good condition.



Observation: Footpath repair on LHS (facing uphill). Good condition



Item 4: Existing pavement repair and water main trench (LHS). Well-constructed works

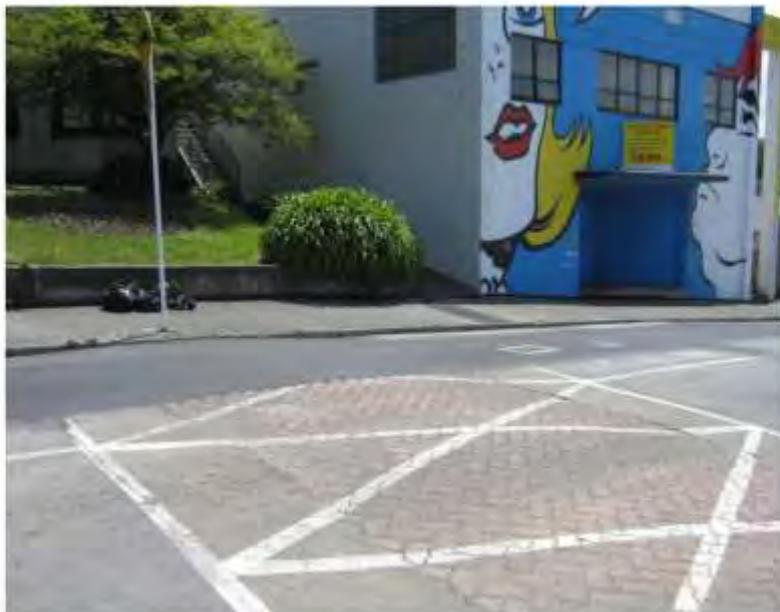


Item 5: Scabbing of existing seal on RHS - multiple small patches

Tasman Street



Item 6: Tiles broken on speed hump – probably due to recent stormwater trench works



Item 7: Tiles broken on 2nd speed hump – again probably due to recent stormwater trench works



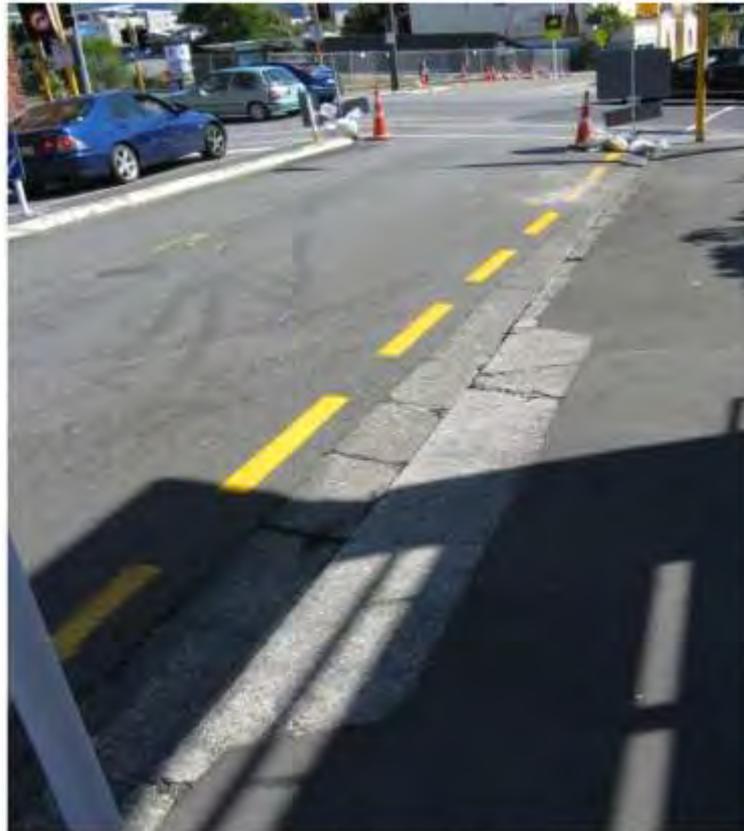
Item 8: Several pavement repairs – joints are in good condition



Item 9: Minor slump at driveway to Seventh Day Adventist Church. Existing kerb and channel also broken / cracked.



Item 10: Minor pavement and kerb damage at Tasman Street Vet Centre entrance.



Item 11: Minor driveway slump at 31/1 Tasman Street

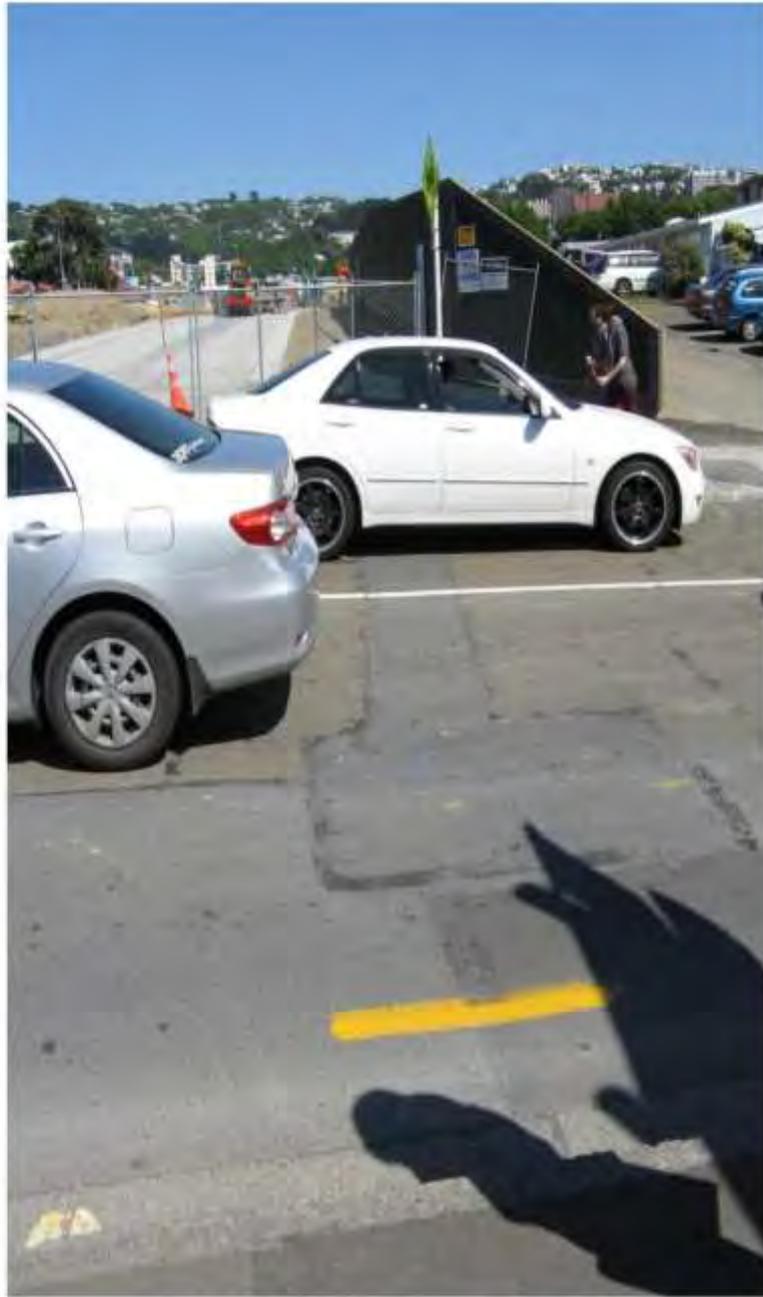
Tory Street



Item 12: Pavement repair at centre of road – well constructed works



Item 13: water main trench crossing full width of road opposite by-pass road works position. Well-constructed trench repairs.



Item 14: minor pavement subsidence at repairs – slight deformation in pavement surface but seal joints are in good condition.



Item 15: pavement repair near coffee shop entrance – seal joints are in good condition. Broken kerb and channel at accessway.



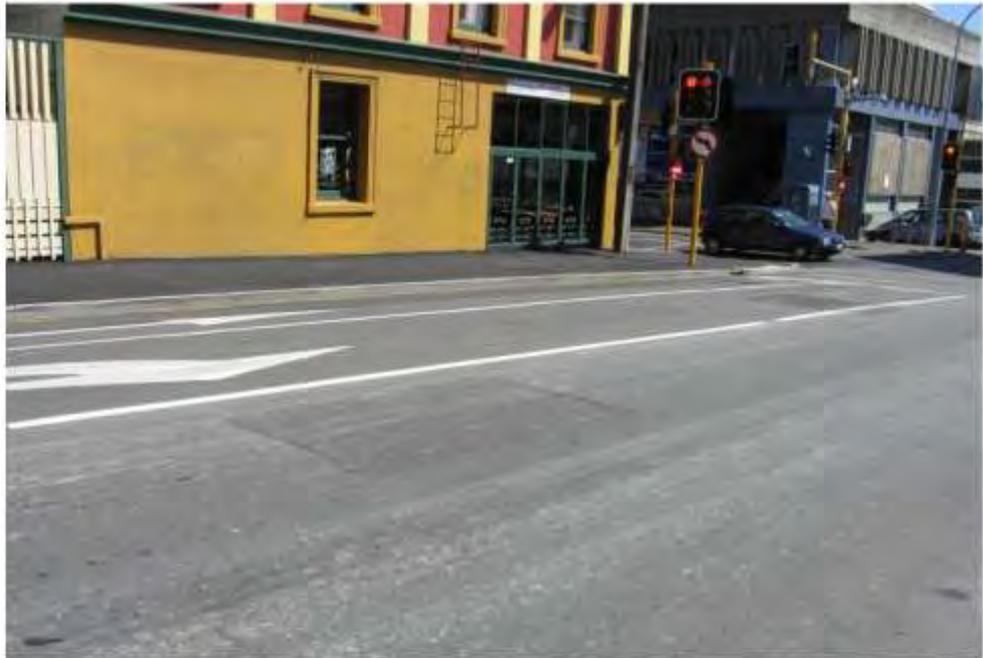
Item 16: pavement subsidence at fire hydrant. Area has already been identified for repair by Council as indicated by yellow markings



Item 17: Recent trench works - well constructed and no faults

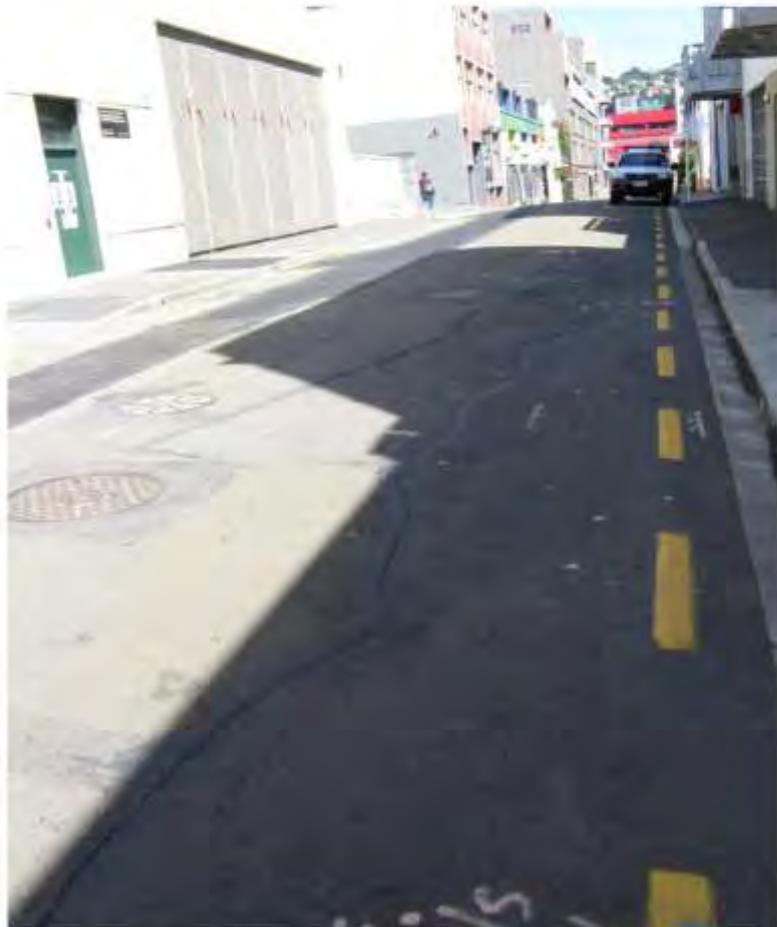


Item 18: Broken fire hydrant lid



Item 19: minor slump in pavement repair but remains waterproof

Frederick Street



Item 20: Longitudinal cracks in trench repair with poor seal joints

Haining Street



Item 21: Pavement damage / gouge



Item 22: Lateral trench repair - well constructed works



Item 23: Minor seal damage

Martin Square



Item 24: Pavement replacement due to recent stormwater works - good shape and condition



Item 25: Damaged footpath at entrance to "The Print Room"



Item 26: Pavement failure - surface damage and potential shallow shear / basecourse problems.

Taranaki Street



Item 27: longitudinal cracking on existing pavement on RHS of road.



Item 28: lateral cracking on existing pavement adjacent to trench works

Webb Street



Item 29: Slump around fire hydrant lid



Item 30: well-constructed repair around Telecom lid



Item 31: broken concrete surround at fire hydrant lid

Job No:	11770/3	Observers:	Andrew Prosser, Thanura Rabel
Date:	3/12/2012		
Weather:	Fine		

Item No	Route Position (m)		Side	Length(m)	Width (m)	Defect Code	Comments
	Rugby Street	Tasman Street					
1	0.5		START left	at SH1 0.6	0.35	patch repair	travelling west Well-constructed repair with no sign of subsidence
2	3.4		both sides			seal joint	cracking and minor edge break
3	37.5		left	25	0.35	patch repair	Well-constructed repair with no sign of subsidence
4	38		centre	4	0.6	pavement repair / possible watermain works	Well-constructed repair with no sign of subsidence
5	60.3		centre	500	0.4	pavement repairs	signs of chip surface rutting/scabbing (predominantly on RHS)
6	87		END	at Tasman Street			
		Tasman Street	START	at Yale Road			
7	75		left	5	3	tiles broken on speed hump due to trench reinstatement works.	travelling north expect speed hump to be replaced as part of remedial works by trenching contractor
8	220		left	5	3	tiles broken on 2nd speed hump due to trench reinstatement works.	as above – expect speed hump to be replaced as part of remedial works by trenching contractor
9	504		Right	2	1	pavement repair	Well-constructed repair with no sign of subsidence
10	540.7		Right	2	0.5	pavement failure	minor driveway slump at entrance to Seventh Day Adventist Church
11	564.4		Right	1.5	0.5	pavement failure	minor driveway slump at entrance to Tasman Street Vet Centre

Item No	Route Position (m)	Side	Length(m)	Width (m)	Defect Code	Comments
12	641	Right	1	0.5	pavement failure	minor driveway slump at entrance to No 31/1 Tasman Street
13	Tory Street 20	START centre	at Buckle Street (SH1) 3	1	pavement repair opposite temporary by-pass works	traveling north Well-constructed repair with no sign of subsidence
14	33	both sides	12	0.5	watermain trench / pavement repair	fairly new works and in good condition
15	49.3	right	1	1	minor pavement subsidence	Refer Photo
16	80.9	right	0.5	0.5	pavement failure around fire hydrant lid	Refer to Photo
17	137.4	right	1.5	2	Pavement failure	opposite Coffee shop – Refer to Photo
18	227.5	right			new stormwater trench	Well-constructed repair with no sign of subsidence
19	263.1	right			broken fire hydrant lid	Refer Photo
22	263.3	centre	1.5	0.9	Pavement failure	minor slump in trench repair refer to Photo
	280	END	at Vivian Street (SH1)			
	Frederick St	START	at Tory Street			traveling west
23	15	right	40	0.4	longitudinal cracking adjacent to pavement digout/repair and new kerb and channel works	Refer to photos
	204	END	at Taranaki Street			
	Haining Street	START	at Taranaki Street			traveling east
24	44	left	0.2	0.2	pavement damage	something dropped on pavement causing gouge - Refer to photo
25	131	both sides	6	0.5	lateral trench repair	well-constructed repair with no sign of subsidence
26	192.4	Left	0.5	0.2	minor seal damage	Refer to photo
	204	END	at Tory Street			
	Martin Square	START	at Taranaki Street			traveling east

Item No	Route Position (m)	Side	Length(m)	Width (m)	Defect Code	Comments
27	20.1	both sides	6	0.5	lateral trench repair	well-constructed repair with no sign of subsidence
28	47.4	both sides		full width	pavement replacement works due to stormwater pipe works	well-constructed repair with no sign of subsidence
29	57.2	left	2	2	damaged footpath at existing driveway	entrance to "The Print Room" - Refer to photo
30	183	left	20	0.5	Pavement failure on trench	Refer to photo
	263	END	at Taranaki Street			
	Taranaki Street	START	at Buckle Street (SH1)			traveling south
31	181	right	30	0.45	longitudinal cracking	Refer to photo
32	259.6	right	10	0.4	longitudinal cracking	Refer to photo
	280	END	at Bidwell Street			
	Webb Street	START	at Taranaki Street (SH1)			traveling west
33	49.8	Right	1	1	slump around fire hydrant lid	Refer to photo
34	67.9	centre	3	3	pavement repair around telecom manhole lid	Well-constructed repair with no sign of subsidence
35	119	Right	0.5	0.5	broken concrete surrounding Fire Hydrant lid	Refer to photo