



**MWH**

*BUILDING A BETTER WORLD*

**City Rail Link Notices of Requirement  
Auckland Transport  
Technical Specialist Report on Traffic Matters**

Prepared for Auckland Council  
June 2013



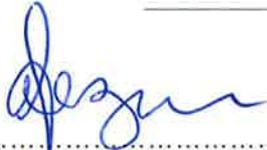
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## EXPERIENCE AND QUALIFICATIONS

I Fariz bin Abdul Rahman have prepared this report. I hold a Bachelor of Engineering (Civil) Honours (2<sup>nd</sup> Class Upper Division) from Nanyang University of Technology, Singapore (1999). I am a Chartered Professional Engineer (CPEng) in the practice area of road design & improvements and traffic audits & safety engineering and have 14 years experience in the field of traffic engineering. I hold a Project Management Professional (PMP) credential, which is accredited by the Project Management Institute (PMI). I currently assume the position of Group Manager – Transportation Auckland in the consultancy firm MWH New Zealand Ltd.

## QUALITY STATEMENT

<b>PROJECT MANAGER</b>		<b>PROJECT TECHNICAL LEAD</b>	
Annie Feng		Paula Hunter	
<b>PREPARED BY</b>			5, 6, 2013
Fariz Rahman			
<b>CHECKED BY</b>			5, 6, 2013
Andrew McDonald			
<b>REVIEWED BY</b>			5, 6, 2013
Chris Scafton			
<b>APPROVED FOR ISSUE BY</b>			5, 6, 2013
Amy Clore			

**AUCKLAND LEVEL 3**  
 Level 3 Building C Millennium Centre, 600 Great South Road, Greenlane, Auckland 1051  
 PO Box 12-941, Penrose, Auckland 1642  
 TEL +64 9 580 4500, FAX +64 9 580 7600

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# Auckland Council

## City Rail Link Notices of Requirement

### Auckland Transport

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# 1 Introduction

## 1.1 Purpose of report

The purpose of this report is to assess the traffic effects of the City Rail Link (CRL) project on Auckland's road network in the city centre. This report will also examine the issues raised by the submitters in respect of vehicular and pedestrian movements in the vicinity of the CRL project and assessing the adequacy of the conditions proposed by Auckland Transport (AT) to avoid, remedy or mitigate these traffic issues.

## 2 Documents considered

- i. Notice of Requirement Overview
- ii. Notice of Requirement 1 (NoR 1)
- iii. Notice of Requirement 2 (NoR 2)
- iv. Notice of Requirement 3 (NoR 3)
- v. Notice of Requirement 4 (NoR 4)
- vi. Notice of Requirement 5 (NoR 5)
- vii. Notice of Requirement 6 (NoR 6)
- viii. Assessment of Environmental Effects Executive Summary
- ix. Assessment of Environmental Effects (AEE)
- x. AEE Appendix 1 Aerial Plans
- xi. AEE Appendix 4 District Plan Maps
- xii. NoR Appendix 1 Environmental Management Framework
- xiii. NoR Appendix 5 Integrated Transport Assessment (ITA)
- xiv. NoR Appendix 13 Concept Design Report (CDR)
- xv. NoR Appendix 13 Concept Design Report Appendix A
- xvi. NoR Appendix 13 Concept Design Report Appendix B
- xvii. NoR Appendix 13 Concept Design Report Appendix C
- xviii. Proposed Draft Notice of Requirement Conditions
- xix. Supplementary Report, Traffic Modelling of Alternative Construction Scenarios

## 3 Overview of traffic matters

The CRL project consists of the construction of 3.4 km underground railway tracks with three stations servicing the CRL between the Britomart Station and the North Auckland Line (NAL) in the vicinity of Mt Eden Station. Key construction activities for the project that will impact the city centre's road network are:

- Cut and cover construction methodology and construction site to tie the new railway tracks at Britomart Station. The construction activities will affect accesses, increase construction traffic, restrict both vehicular and pedestrian movements and affect public transport routes on Customs Street East, Commerce Street, Galway Street, Tyler Street, Quay Street, Queen Street, Lower Albert Street, Customs Street West and Albert Street.
- Cut and cover construction methodology for the new rail tunnels along Albert Street between Customs Street East/West and Victoria Street West. The construction activities will affect accesses, increase construction traffic, restrict both vehicular and pedestrian movements and affect public transport routes on this section of Albert Street. In addition, adjoining roads affected by the tunnel construction are Customs Street East, Customs Street West, Mills Lane, Wolfe Street, Swanson Street, Wyndham Street, Albert Street (lower service lane), Kinston Street and Victoria Street West. Works also include the diversion of Auckland Council's 1500-1665 mm diameter stormwater drain, which is located beneath Albert Street at a similar depth to the proposed rail tunnels.
- Cut and cover construction methodology for the new Aotea Station on Albert Street and the station entrances on Victoria Street West and Wellesley Street West will affect accesses, increase construction

traffic, restrict both vehicular and pedestrian movements and affect public transport routes. Other roads affected by the station construction are Mayoral Drive and Myers Street (cul-de-sac). The Auckland Council carpark area in front of Bledisloe Building is also marked as a construction site. Works also include the strengthening and bridging works of Watercare's Orakei Main Sewer at Victoria Street West.

- Cut and cover shafts and mined tunnel caverns construction methodology for the new Karangahape Station on Karangahape Road and Pitt Street and the station entrances on Beresford Square and Mercury Lane will affect accesses, increase construction traffic, restrict both vehicular and pedestrian movements and affect public transport routes. Two areas are marked as construction sites; the northern site is off Beresford Square and the southern site is off Mercury Lane. Other roads affected by the station construction and construction sites are Poynton Terrace (cul-de-sac), Day Street, Samoa House Lane (cul-de-sac), Cross Street and Canada Street. Works also include the permanent diversion of Watercare's 375 mm diameter bulk water supply main in Pitt Street.
- Cut and cover shafts and mined tunnel caverns construction methodology for the new Newton Station on Symonds Street, New North Road and Mt Eden Road and the station entrances on Basque Road and Dundonald Street will affect accesses, increase construction traffic, restrict both vehicular and pedestrian movements and affect public transport routes. The carpark area at the corner of Symonds Street and Mt Eden Road is also marked as a construction site.
- Cut and cover construction methodology to connect the CRL to the NAL in the vicinity of the existing Mt Eden Station will affect accesses, increase construction traffic and restrict both vehicular and pedestrian movements. The area in the vicinity of Ruru Street, Shaddock Street, Nikau Street, Korari Street, Flower Street and Ngahura Street (cul-de-sac) is also designated as the main construction site. The main construction site will include areas for site offices, delivery and lay down areas, storage of construction materials, stockpiling of spoil material, launching and assembly of tunnel boring machines and electrical sub-stations (located between Porters Avenue and Ngahura Street in the west, Mt Eden Road in the east, Nikau Street in the north and the NAL to the south). Works also include the localised support of Watercare's 1300 mm diameter bulk water supply main and the diversion of Auckland Council's 1950 mm diameter stormwater drain in the vicinity of Nikau Street and Ruru Street.
- Surface construction works to grade separate Porters Avenue and Wynyard Road over the NAL and CRL tracks. The construction activities will affect accesses, increase construction traffic and restrict both vehicular and pedestrian movements on Porters Avenue, Wynyard Road, Haultain Street (cul-de-sac) and Fenton Street (cul-de-sac).
- Surface construction works to grade separate Normanby Road over the NAL and CRL tracks. The construction activities will affect accesses, increase construction traffic and restrict both vehicular and pedestrian movements on Normanby Road, Lauder Road (cul-de-sac), Boston Road and Nugent Street.
- Replacement of the Mt Eden Road Bridge to facilitate the additional CRL tracks below and associated construction works will affect accesses, increase construction traffic, restrict both vehicular and pedestrian movements and affect public transport route.
- Provision of a new pedestrian overbridge over the NAL and CRL tracks in the vicinity of Ngahura Street to replace the existing at grade pedestrian level crossing.

While the Assessment of Environmental Effects (AEE) demonstrated the operational benefits of the CRL project to Auckland, technical reports supporting the AEE identified that there will be temporary adverse effects on public and private transport, pedestrians and cyclists as a result of the anticipated five to six years construction period for the CRL project. The adverse effects are most significant during the construction activities at the Britomart Station and QEII Square areas, the cut and cover construction methodology of the two tunnels along Albert Street and the new Aotea Station, the construction activities at the NAL section in the vicinity of Mt Eden Station and the bridge works at Mt Eden Road and Normanby Road.

### 3.1 Key issues relating to traffic

#### Operational effects

As demonstrated by the NoR, AEE and the supporting technical reports, the implementation of the three new CRL stations between the existing Britomart Station and NAL will ease congestion in the city centre, increase the use of public transport and encourage walking and cycling. The AEE highlighted that these new stations should be accessible by all modes of transport and one of the CRL's urban design principles is to provide safe pedestrian crossing facilities in the vicinity of station entrances. The Concept Design Report (CDR) also states that one of the project's architectural principles is for the stations to provide safe, functional and clear transport solutions.

While it is expected that facilities such as "kiss and ride", taxi bays, bus stops, loading/unloading zone and provision for emergency vehicle access will be considered during the later stages of the station design, it is unclear whether the project will provide for the safe crossing facilities for pedestrians as recommended by the Integrated Transport Assessment (ITA) or it will only cater for pedestrian facilities in the immediate vicinity of the station entrances

#### Construction effects

Adverse temporary effects to the existing road transport network and property accesses during the construction of the CRL are likely to be significant as a result the following activities.

- The advance diversion of the stormwater drain, bridging and strengthening of the Orakei Main Sewer and construction of the two tunnels between Britomart Station and the new Aotea Station.
- The construction of the new Aotea Station and establishment of construction areas at QEII Square and Auckland Council's carpark area in front of Bledisloe Building.
- The construction of the new Karangahape Station, diversion of a bulk water main and the establishment of construction areas.
- The construction of the new Newton Station and the establishment of the construction area at the carpark in the corner of Symonds Street and Mt Eden Road.
- The construction activities at the NAL connection where it involves grade separation works at Porters Avenue and Normanby Road and the replacement of the existing Mt Eden Road bridge.
- Establishment of the main construction site in the vicinity of the NAL area near the Mt Eden Station.

The establishment of the various construction areas will generate additional traffic in the form of construction vehicles. Large truck units for example transporters, semi-trailers and truck-trailer units transporting equipment and material and the removal of spoils will have a significant effect on the road transport network. The project team should make sure that the truck routes are appropriately identified prior to the start of construction to ensure that there are no vehicle tracking issues at the local road intersections and the increase in heavy vehicle movements do not result in premature deterioration of the local roads.

Furthermore, as a direct effect of the construction traffic management and the additional construction vehicles on the road network, the level of service on the Quality Transit Network (QTN) in the city centre can be expected to be low to moderate. The roads likely to be affected by the construction activities are Symonds Street, Karangahape Road, Mayoral Drive, Pitt Street, Albert Street and the Britomart Station.

### 3.2 Summary of key issues raised in submissions

About 39% of traffic related submissions raised the issue about the need to have uninterrupted access to their properties, both residential and commercial. Another 24% are concerned with the impacts of the construction activities to the traffic flows on the existing road network which may delay their daily trips, increase journey times and lead to congestion. 9% of the submitters would like certainty of the construction staging works, 5% are concerned with impact of road closures, 13% raised issues with regards to maintaining pedestrian connectivity particularly the east-west movement across Albert Street and the remaining 10% raised other issues such as requesting AT to further consider alternatives, provide future proofing, suggesting third party involvements and requesting AT to reconsider the viability of the CRL project.

While the mitigation of the key issues with regards to access, traffic flows, construction activities, road closures and pedestrian connectivity will be discussed in detail in the later sections of this report, the

other issues raised appear to have been dealt with and addressed by the NoR, AEE and the other supporting technical reports.

### 3.3 Other issues

The NoR documents have provided clear concept design of the permanent works and construction areas of the CRL project including the traffic effects as a result of the construction activities. However, in order to enable a better understanding of the exact traffic effects along Albert Street and at the NAL as a result of the proposed construction methodology, it is recommended that the project team provide concepts of the construction staging and temporary road diversions at these locations during the earlier design phase. Considerations shall not only be limited to private vehicle movements but determining alternative bus routes and providing desirable safe pedestrian and cycling connectivity.

## 4 Assessments of traffic effects

### 4.1 Description of traffic effects

#### Long Term Operational Effects

It is expected that the new Aotea Station, Karangahape Station and Newton Station will generate high pedestrian movements due to their locality and the station entrances being on the QTN routes of Albert Street, Karangahape Road and Symonds Street respectively as well as on established pedestrian areas of the city. It is important to ensure that the adjacent road network will provide safe crossing facilities for pedestrians. The project team should consider the following recommendations by the ITA.

- Provision of an additional pedestrian crossing across Symonds Street at the intersection of Symonds Street, Mt Eden Road and New North Road.
- Removal of the free left turn for traffic turning from Symonds Street onto Khyber Pass Road and provision of a signalised pedestrian crossing over this approach.
- Provision of a pedestrian crossing over the left turn movement from Khyber Pass Road at the intersection of Symonds Street, Khyber Pass Road and Newton Road intersection.
- Introduction of a mid-block pedestrian crossing on Pitt Street, adjacent to Karangahape Station and Beresford Square.
- Implementation of a “Barnes Dance” pedestrian crossing phase at the Albert Street and Wellesley Street intersection.

#### Temporary Traffic Management Effects

Two areas of concern to expect significant traffic management issues are the cut and cover section along Albert Street and the bridge works at Normanby Road and Mt Eden Road. The capacity of the affected roads will be reduced and it is likely that the adjacent roads in the vicinity will experience higher traffic volumes. Pedestrian and cyclist movements will be affected and bus routes may need to be rerouted along these affected roads.

The cut and cover construction methodology for the tunnels and station construction between Britomart Station and the new Aotea Station will reduce the capacity along Albert Street to two lanes in each direction plus lane restrictions at key Albert Street intersections with Customs Street, Victoria Street and Wellesley Street. Other key construction activities to be undertaken along this section of the CRL are preserving the historic bluestone retaining wall which splits Albert Street at Durham Street West to 5 m below the main road level and the diversion of Auckland Council’s 1500-1665 mm diameter stormwater drain. As indicated by the ITA, journey times along Albert Street between Custom Street and Mayoral Drive doubled during both the AM and PM peak periods. The network model however, has not taken into account the stop and start scenarios when buses are picking-up or dropping-off passengers and vehicles slowing down to turn into and out of properties. In addition, if the temporary lane widths are narrow, it will restrict turning manoeuvres and will not permit passing movement when a bus stops or a vehicle breaks down.

At the NAL end of the CRL, the CDR indicated that the track, grade separation and bridge replacement works will involve closure of Porters Avenue, Normanby Road and Mt Eden Road. This road closure will be staged so that only one crossing point is being worked on at any one time. The assessment of the impact of these closures to the existing roading network is not adequate because the traffic model used in the ITA cuts off immediately south of the NAL. Both Normanby Road and Mt Eden Road are relatively

busy roads and any route diversions will put pressure on these routes particularly during the AM and PM peak periods.

#### Effects to Private Vehicular Access

It is envisaged that there will be access interruptions to residential and commercial properties during construction but areas of concern are along single access residential and commercial properties along Albert Street and cul-de-sacs where there are no alternatives. Consideration should be to maintain these accesses at all times or provide a viable and secured alternative.

#### Construction Vehicles Effects

Areas designated as construction sites are as follows:

- The Downtown Shopping Centre area or QEII Square.
- Auckland Council carpark area in front of the Bledisloe Building.
- Area off Mercury Lane.
- Carpark area at the corner of Symonds Street and Mt Eden Road.
- The main site area at the NAL.

Key construction areas that will generate significant truck movements including transporters, semi-trailers and truck and trailer units for haulage of equipment, machinery, construction materials and cartage of spoils are the Downtown Shopping Centre area, the carpark area in front of the Bledisloe Building and the main site at the NAL. Routes taken by these trucks especially along the local roads will need to be assessed as there may be issues to accommodate truck turning movements and may result in premature pavement failures. Horizontal carriageway clearance and sight lines at intersections will need to be examined along these routes, which may involve removal of on street parking.

#### Effects to Public Transport

With the expectation that the level of service for public transport to be between low and moderate during the construction phase, the CRL project will need to consider rerouting key bus routes and increasing buses frequency. This is consistent with the ITA approach to discourage the use of private vehicles in the city centre as an option to mitigate congestion.

## 4.2 Auckland Transport assessment and proposed mitigation

AT proposed to manage the effects of the CRL project via a management plan framework that will be used to develop the Environmental Management Plan (EMP). The EMP will be supported by a Design Management Plan (DMP), Construction Environmental Management Plan (CEMP) and Delivery Work Plans (DWPs).

Following the NoR documentation, AT has subsequently provided the following draft conditions to mitigate the adverse effects on the transport network.

Issues	Draft Condition Nos.	Related NoR
Operational	29, 2 <sup>nd</sup> and 3 <sup>rd</sup> bullet points	1, 4, 5 and 6
Traffic Management	16(b) and 16(e)	1, 2, 4, 5 and 6.
	17(a), 17(b) and 17(e)	1
	18(a) and 18(b)	4
	19(a) and 19(b)	5
	20(a)	6
Access	16(c)	1, 2, 4, 5 and 6.
	17(c)	1
	18(c)	4
	19(c)	5
	20(b)	6

Construction Vehicles	16(a)	1, 2, 4, 5 and 6.
Public Transport	16(d)	1, 2, 4, 5 and 6.
	17(d)	1
	20(c)	6

### 4.3 Submitter topics

A total of 55 traffic related submissions were made which identified traffic related issues. The concerns raised can be classified into five (5) key topics. They are access concerns, congestion as a result of construction activities and construction traffic, ability for pedestrians to move and cross safely, impacts of road closures and effects from the nearby construction staging areas.

**Access** – The majority of the access issues are along Albert Street tunnels and the new Aotea Station construction. This is followed by the new Karangahape Station construction and the bridge works at Normanby Road and Mt Eden Road. The table below provides a summary of the submissions.

Locality	Related NoR	Issues	AT Proposed Mitigation
Albert Street	1	— Maintaining access at all times including accesses off adjoining side roads (17 submissions).	Condition 16(c) Condition 17(c)
Vincent Street	2	— Restricted access to properties during construction (1 submission).	Condition 16(c)
Britomart Station	1	— No access to properties as a result of Tyler Street closure (2 submissions).	Condition 16(c) Condition 17(c)
Karangahape Station	2 and 4	— Concern with vehicle access along the surrounding road network (10 submissions).	Condition 16(c) Condition 18(c)
Symonds Street and St Benedict's Street	2	— Construction will result in loss of foot traffic and direct vehicle access (1 submission).	Condition 16(c)
Normanby Road and adjoining roads	6	— Maintain access at all times (6 submissions).	Condition 16(c) Condition 20(b)
Mt Eden Road and adjoining roads	6	— Maintain access at all times (3 submissions).	Condition 16(c) Condition 20(b)
Ngahura Street	6	— Restricting access to	Condition 16(c)

		properties submission). (1	Condition 20(b)
Ruru Street	6	— Restricting access to properties submissions). (2	Condition 16(c) Condition 20(b)

**Traffic Flows** – There are significant concerns around congestion as a result of the construction activities in the vicinity of the Albert Street, the new Aotea Station, the new Karangahape Station and Normanby Road are greatest including requests to maintain the east-west movements across Albert Street. The table below provides a summary of the submissions.

Locality	Related NoR	Issues	AT Proposed Mitigation
Entire CRL route	All	<ul style="list-style-type: none"> <li>— Large areas used for construction sites will cause traffic disruption (1 submission).</li> <li>— Travel Demand Management (TDM) coordination and effects to freight movements (1 submission).</li> </ul>	Conditions 16(a), 16(b), 16(d) and 16(e) Conditions 17(a), 17(b) and 17(d) Conditions 18(a) and 18(b) Conditions 19(a) and 19(b) Condition 20(a)
St Benedict Street, Alex Evans Street and associated intersections	2	<ul style="list-style-type: none"> <li>— Adverse effects along the existing road network (1 submission).</li> </ul>	Conditions 16(a), 16(b) and 16(e)
Albert Street	1	<ul style="list-style-type: none"> <li>— Impact to the road network during construction (8 submissions).</li> <li>— Retaining east-west movements (2 submissions).</li> </ul>	Conditions 16(a), 16(b), 16(d) and 16(e) Conditions 17(a), 17(b) and 17(d)
Lauder Road off Normanby Road	6	<ul style="list-style-type: none"> <li>— Maintain two-way operations to avoid delays (1 submission).</li> </ul>	Condition 20(a)
Normanby Road	6	<ul style="list-style-type: none"> <li>— To remain open in both directions with normal parking facilities as much as possible.</li> <li>— Construction adversely affecting traffic flow in the surrounding area (3 submissions).</li> </ul>	Condition 20(a)
Mt Eden Road	6	<ul style="list-style-type: none"> <li>— Construction traffic will have congestion effect (1 submission).</li> </ul>	Condition 20(a)

Karangahape Station	2 and 4	— Construction adversely affecting traffic flow in the surrounding area (6 submissions).	Conditions 16(a), 16(b) and 16(e) Conditions 18(a) and 18(b)
Ruru Street	6	— Safety concern with the increased in construction vehicles (1 submission).	Conditions 16(a) and 16(e) Condition 20(a)

Pedestrian Connectivity – Submitters are concern with the effects of construction to pedestrian movements and the majority raised concerns at Albert Street. The table below provides a summary of the submissions.

Locality	Related NoR	Issues	AT Proposed Mitigation
Aotea Station and Newton Station	1, 2 and 5	— Additional stations to provide better pedestrian connectivity (1 submission).	Condition 29, 2 <sup>nd</sup> bullet point
Britomart Station	1	— Restriction of pedestrian movements during construction (1 submission).	Condition 17(e)
Karangahape Station	2 and 4	— Inability to properly serve pedestrian connectivity (3 submissions).	Condition 18(c)
Albert Street	1	— Retain pedestrian movements including east-west (9 submissions). — Reduction in footpath widths (2 submissions).	Condition 17(e)

Road Closure - The table below provides a summary of the submissions.

Locality	Related NoR	Issues	AT Proposed Mitigation
Tyler Street	1	— Closure will affect access (2 submissions).	Condition 16(b) Condition 17(b)
Karangahape Station	2 and 4	— Long term adverse effect of the Beresford Square Closure (1 submission).	Condition 29, 3 <sup>rd</sup> bullet point
Nikau Street vicinity	6	— Congestion as a result of the proposed road	Conditions 16(b) and 16(e) Condition 20(a)

		closures in the vicinity (1 submission).	
Ngahura Street	6	— Impact of the road closure will have on parking and vehicle entries from Ngaruha Street (1 submission).	Conditions 16(b) and 16(e) Condition 20(a)

**Construction Activities** – Most of the submissions are related to NoR 1 which is the works at Britomart Station (QEII Square), Albert Street and the new Aotea Station. The table below provides a summary of the submissions.

Locality	Related NoR	Issues	AT Proposed Mitigation
Britomart Station	1	— Reinvestigate construction methodology to reduce construction times or investigate alternatives (3 submissions).	Conditions 17(a) and 17(b)
Nikau Street	6	<ul style="list-style-type: none"> <li>— Design and construction methodology to be altered to underground works (1 submission).</li> <li>— Inconvenience as a result of the construction, maintenance and operation of the CRL (1 submission).</li> <li>— Congestion as a result of the construction activities in the vicinity (1 submission).</li> </ul>	Condition 20(a)  Conditions 16(a), 16(b), 16(d) and 16(e).  Conditions 20(a) and 20(b)  Condition 16(b)  Condition 20(a)
Albert Street	1	<ul style="list-style-type: none"> <li>— Uncertain timing and sequencing of works (2 submissions).</li> <li>— Measures taken to mitigate issues during construction (1 submission).</li> <li>— Prohibition of parking/unloading from construction vehicles (1 submission).</li> <li>— Staging of cut and cover works to be no more than one intersection at a time (1 submission).</li> </ul>	Conditions 16(a), 16(b) and 16(e)  Conditions 17(a) and 17(b)
Newton Station and NAL	2, 5 and 6	— Request consultation before and during construction (1	Condition 16(c) and 16(e)  Condition 17(c)

		submission).	Condition 20(b)
Newton Station	2 and 5	— Inconvenience as a result of the construction, maintenance and operation of the CRL (1 submission).	Conditions 16(a), 16(b), 16(d) and 16(e). Conditions 20(a) and 20(b)

In addition, the submitters also put forward their suggestions and/or requests to AT for the CRL project to consider. These are other issues and summarised as follows:

Other Issues Raised

- Four (4) submitters requested the CRL project to consider alternative routes.
- One (1) submitter suggested future proofing the NAL for a new station at Dominion Road.
- One (1) submitter suggested engaging Karangahape Road Business Association for the design of the Square.
- One (1) submitter (NZTA) requested AT to undertake a joint process to manage traffic during construction.
- One (1) submitter suggested the CRL project to consider additional underground connections to Aotea Centre.
- One (1) submitter suggested engaging Cycle Action Auckland for the CRL project.
- One (1) submitter is concern that the route may not provide timely service for access to key areas such as Auckland University, AUT and Auckland Hospital.
- One (1) submitter is concern particularly around the design and intent of the new Aotea Station at street level.
- One (1) submitter requested the decision on the designation be deferred subject to further consideration of a loop/link operation that is fully beneficial to future public transport options.

## 4.4 Mitigation measures

To manage the adverse effects on the transport network during the construction of the CRL, AT has proposed draft conditions 16, 17, 18, 19 and 20 to be included in the CEMP. The adequacy of some of the mitigation proposed by AT are discussed below.

Condition 16(a) applicable to NoRs 1, 2, 4, 5 and 6: *The road routes which are to be used by construction related vehicles, particularly trucks to transport construction related materials, equipment, spoil, including how the use of these routes by these vehicles will be managed to mitigate congestion.*

Comments

Condition should consider undertaking improvements along the routes to be travelled by construction vehicles. The routes, particularly along the local roads, should consider the ability of large truck units such as transporters, semi-trailers and truck-trailers to manoeuvre safely and are safe for other road users. For example, improvement works at intersections to ensure that truck turning movements are feasible, removing of on street parking to ensure adequate clearance and sight distances, strengthening of the existing road pavement to prevent premature deterioration due to increase loading. AT should also consider conditions for the reinstatement of the existing road network.

*Condition 16(c) applicable to NoRs 1, 2, 4, 5 and 6: How disruption to the use of private property located adjacent to the designation will be mitigated through providing pedestrian and cycle access to private property at all times and providing vehicle access to private property as practicably possible at all times, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure.*

Comments

This condition is silent on the likely action when accesses are not available. The condition stops at communication and consultation in advance with the property owners but what happens next is unknown. Condition should consider provision of a secured alternative in the event that properties accesses are not available.

*Condition 17(a) applicable to NoR 1: How construction works can be undertaken to mitigate congestion on Albert Street, Wellesley Street, Victoria Street, Customs Street, and Quay Street including retaining east-west traffic movements across Albert Street on Customs Street, Victoria Street and Wellesley Streets noting that:*

- *Customs Street intersection with Albert Street cannot be fully closed while either the intersections of Victoria or Wellesley Streets with Albert Street are fully closed; and*
- *Victoria and Wellesley Street intersections with Albert Street cannot be fully closed at the same time.*

Comments

This condition appears to be in conflict with the CDR and ITA, which were referred to by the NoR. Although a subsequent supplementary report on the Traffic Modelling of Alternative Construction Scenarios was provided to assess the effects of various temporary traffic management schemes, this condition is still unclear. AT should consider the information provided by their Principal Advisors to provide conditions for acceptable temporary traffic management and construction staging of the works along Albert Street.

From the supplementary report, it can be recommended that only one full intersection closure of either the Customs Street, Victoria Street or Wellesley Street intersections with Albert Street can be permitted during construction. In addition, the east-west lanes on the intersections that are open to traffic shall be maintained, as a minimum, at its current capacity.

AT to revisit the statement in the AEE with regard to the methods to manage adverse effects for RTE 8, which is to maintain vehicle access at Albert Street and Customs Street intersection at all times.

*Condition 17(c) bullet points 2, 3 and 4 applicable to NoR 1: How disruption to the use of private property located immediately adjacent the designation with access onto Galway Street, Tyler Street, Queen Elizabeth Square, Customs Street, Albert Street, Victoria Street and Wellesley Street, will be mitigated through:*

- *Providing vehicle access to private property as practicably possible at all times, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure;*
- *Retaining local vehicle access to properties located along Albert Street (which may include only left in, left out access ), except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure; and*
- *Retaining access for loading and unloading of goods located along the service lane on the eastern side of Albert Street between Victoria Street and Wellesley Street, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure.*

Comments

This condition is silent on the likely action when accesses are not available. The condition stops at communication and consultation in advance with the property owners but what happens next is unknown. Condition should consider provision of a secured alternative in the event that properties accesses are not available. Furthermore, the proposed temporary left in and left out arrangement for local vehicle accesses implies that Albert Street and its key intersections remains open to traffic.

*Condition 17(e) bullet point 2 applicable to NoR 1: How disruption to pedestrians and cyclists requiring the ability to cross from east to west (and vice versa) across Albert Street between Victoria Street and Customs Street can be mitigated through:*

- *At a minimum one safe crossing passageway between Victoria Street and Customs Street needs to be provided throughout the construction works in this area of Albert Street.*

Comments

Further clarity on the proposed temporary traffic management and construction staging of the works along Albert Street are required. One crossing may not be adequate if the distance required to walk to the designated pedestrian crossing are not desirable. The condition should consider providing safe pedestrian crossing facilities within appropriate distances.

*Condition 18(c) bullet point 2 applicable to NoR 4: How disruption to the use of private property located immediately adjacent the surface designation with access onto Beresford Street, Pitt Street, Mercury Lane, and East Street will be mitigated through:*

- *Providing vehicle access to private property, which may include only a turn in and a turn out in the same direction), as practicably possible at all times, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure.*

Comments

This condition is silent on the likely action when accesses are not available. The condition stops at communication and consultation in advance with the property owners but what happens next is unknown. Condition should consider provision of a secured alternative in the event that properties accesses are not available.

*Condition 19(c) bullet point 3 applicable to NoR 5: How disruption to the use of private property located immediately adjacent the surface designation with access onto Symonds Street, Dundonald Street, and the western end of Basque Road will be mitigated through:*

- *Providing vehicle access to private property, which may include only a turn in and a turn out in the same direction), as practicably possible at all times, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure.*

Comments

This condition is silent on the likely action when accesses are not available. The condition stops at communication and consultation in advance with the property owners but what happens next is unknown. Condition should consider provision of a secured alternative in the event that properties accesses are not available.

*Condition 20(a) applicable to NoR 6: How construction works can be undertaken to mitigate congestion on New North Road, Ruru Street, Korari Street, Flower Street, Nikau Street, Ngahura Street, Porters Avenue, Mt Eden Road, Normanby Road, Boston Road, Nugent Street, and the road network in general in this area including:*

- Which routes are to be used by construction trucks to remove spoil from the construction yard including how the use of these routes by these vehicles will be managed to mitigate congestion;*
- Which routes are to be used by construction related traffic (especially trucks) to deliver construction materials and other related goods and services to the construction yard including how the use of these routes by these vehicles will be managed to mitigate congestion;*
- Providing for traffic to turn right out of Ruru Street to reduce any congestion (particularly at peak times) resulting from not being able to travel via Nikau Street to the traffic lights at Flower Street and New North Road;*
- The retention of at least two traffic lanes (one in either direction) on Mt Eden Road during the construction of the replacement Mt Eden Road Bridge;*
- Providing accessibility along Mt Eden and Normanby Roads as a priority for, where practicable: public transport (buses), emergency services, access to properties for pedestrians, and cyclists;*
- The grade separation of Porters Ave so that it is undertaken at a time when vehicles, pedestrians, and cyclists can be managed and accommodated on Dominion Road, Mt Eden Road and Normanby Road to an extent which mitigates where possible and practicable delays to travel journeys from congestion on these roads resulting from City Rail Link construction works;*
- The grade separation of Normanby Road so that it is undertaken at a time when vehicles, pedestrians, and cyclists can be managed and accommodated either on a temporary level railway crossing located within the designation footprint, or on Dominion Road, Mt Eden Road and Porters Avenue, to an extent which mitigates where possible and practicable delays to travel journeys from congestion on these roads resulting from City Rail Link construction works;*
- The timing and sequencing of temporary road lane reductions and / or closures along Symonds Street, New North Road, Ruru Street, Korari Street, Flower Street, Nikau Street, Ngahura Street, Porters Avenue, Mt Eden Road, Normanby Road, Boston Road, Nugent Street, and the alternative routes and temporary detours to be used, including how these have been selected and will be managed to where practicable mitigate congestion on the surrounding road network.*

#### Comments

Condition should consider undertaking improvements along the routes to be travelled by construction vehicles. The routes, particularly along the local roads, should consider the ability of large truck units such as transporters, semi-trailers and truck-trailers to manoeuvre safely and are safe for other road users. For example, improvement works at intersections to ensure that trucks turning movements are feasible, removing of on street parking to ensure adequate clearance and sight distances, strengthening of the existing road pavement to prevent premature deterioration due to increase loading. AT should also consider conditions for the reinstatement of the existing road network.

The condition to provide a right turn out of Ruru Street should be reinforced with the need for a safe intersection facility to allow safe turning movements particularly the right turn into New North Road, which is a busy multi-lane arterial road. Temporary signalisation of this intersection should be considered in the condition.

The conditions for temporary traffic management and construction staging of the bridge works at Mt Eden Road and Normanby Road appear to be in conflict with the CDR. The CDR is suggesting closure of Mt Eden Road and Normanby Road (one at a time) to facilitate the bridge works. RTE 15 of the AEE states that to manage the adverse effects, maintaining accessibility along Mt Eden Road and Normanby Road is a priority. RTE 16 of the AEE states that to manage the adverse effects, traffic affected by the works on Porters Avenue will need to be managed and accommodated on Dominion Road, Mt Eden Road and Normanby Road. Further clarity is required for the acceptable temporary traffic management and construction staging of the works on Porters Avenue, Mt Eden Road and Normanby Road.

Furthermore, the ITA has not extended the traffic model to properly assess the impact to the existing road traffic in the vicinity of the NAL works. It is recommended that the impact of the construction works to be modelled to identify any adverse effects on the road network.

*Condition 20(b) bullet points 2, 3 and 4 applicable to NoR 6: How disruption to the use of private property located immediately adjacent to the surface designation with access onto New North Road, Ruru Street, Korari Street, Flower Street, Nikau Street, Ngahura Street, Porters Avenue, Mt Eden Road, Normanby Road, Boston Road, Nugent Street will be mitigated through:*

- *Providing local vehicle access and pedestrian access at all times to properties located along Flower Street (between Nikau Street and Shaddock Street), and Shaddock Street (between Flower Street and its dead end to the east), which are not located within the designation footprint, except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure;*
- *Retaining local vehicle and pedestrian access to properties located outside the designation footprint along Haultain Street, Fenton Street, Porters Avenue, Ngahura Street, Ruru Street, Korari Street, Flower Street, Nikau Street, Mt Eden Road, Boston Road, Nugent Street, and Normanby Road at all times except for temporary closures where landowners and occupiers have been communicated and consulted with in reasonable advance of the closure;*
- *Full accessibility to those parts of Porters Avenue not affected by, but in the vicinity of, the construction works.*

#### Comments

This condition is silent on the likely action when accesses are not available. The condition stops at communication and consultation in advance with the property owners but what happens next is unknown. Condition should consider provision of a secured alternative in the event that properties accesses are not available.

## 5 Conclusion and conditions

With regards to effects to the existing road network, areas of concern are the proposed temporary traffic management and construction staging at the Britomart Station (QEII Square), Albert Street, Mt Eden Road and Normanby Road. AT's draft conditions and the technical reports with regards to the recommended traffic management along Albert Street for the cut and cover of the tunnels and Aotea Station and the bridge works at Mt Eden Road and Normanby Road are unclear.

The ITA assessment of the effects to the road network during construction is out dated and its supplementary report does not provide any recommendation of the likely temporary traffic management scenario. Furthermore, the current traffic model does not fully include an extended network of roads to properly assess the effects to the road network at the NAL end of the CRL.

The effects on public transport, particular buses, during construction will need to have early involvement of the key stakeholders as the proposed traffic management at Britomart Station, Albert Street and in the vicinity of the NAL works may preclude key bus routes. Public transport is key to ensure acceptable level of service of the transport network in the city centre during the CRL construction.

There is no monitoring requirement for the level of service of the city centre's roading network during construction. While it is expected that traffic conditions will not be ideal, any traffic management to be implemented during construction of the CRL should not gridlock the city centre's road network.

Safe pedestrian movements and connectivity at the stations are covered by the urban design and landscape conditions but only for the immediate vicinity of the station entrances. The recommendations by the ITA have not been adopted through the conditions although the technical report highlighted that these improvements are required to improve pedestrian safety.

In addition to the comments made in Section 4.4 of this report, it is recommended that AT consider the following:

- To include a condition to provide a concept level temporary traffic management and construction staging plans for NoR 1 and 6 of the expected temporary traffic management and construction staging in the affected areas.

- To include a condition to provide the minimum level of service during construction which is to be used as a benchmark to monitor the traffic conditions during construction. AT should reference the ITA and its supplementary report to indicate the acceptable journey times and average vehicle speeds during construction.
- To include a condition to provide a temporary bus management plan to detail alternative bus routes, changes to scheduling and relocation of bus stops during construction. This condition is to support the statements in the AEE to manage the adverse effects by encouraging public transport use (RTE 7).
- To include a condition to provide for the safe pedestrian crossing facilities recommended by the ITA. This condition is to support the statements in the AEE to manage the adverse effects by accommodating for additional pedestrian movements into the street network (RTE 5).
- To include conditions at DMP stage for key issues such as temporary traffic management and bus management plans in addition to the conditions for the later CEMP stage.



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