

# St Lukes Interchange - Project Update

## Recommendation(s)

That the Board:

- i. Notes this update on the status of the St Lukes Interchange project.

## Executive summary

The New Zealand Transport Agency (NZTA) is upgrading the St Luke's Interchange (the Project) to accommodate future increased traffic demand at the intersection as a consequence of the opening of the SH16/SH20 Waterview Connection in March 2017. NZTA's proposed upgrade offers Auckland Transport (AT) an opportunity to provide bus priority, cycling and pedestrian improvements (Improvements) at this location as part of the NZTA project.

The Improvements were not included in the 2012-2015 RLTP, as the opportunity to deliver the works early through the Project had not been identified. In August 2012, AT and NZTA made an agreement in principle (subject to Board approval if required) that AT would deliver the Improvements through the Project and contribute to the related costs, then estimated to be between \$4.5m and \$8.0m. The most recent assessment, received in January 2015, puts the estimated total AT cost at \$5.5m for which budget is allocated in the 2014/15 Annual Plan.

Works to increase the number of lanes on the St Lukes section of the motorway are already underway (Stage 1) and consents to lift and widen the motorway overbridge as well as associated works affecting the St Lukes Interchange were granted to both AT and NZTA for their respective portions in February 2014.

NZTA and AT are seeking to provide an additional turning lane for westbound access to the motorway overbridge on Great North Road and additional lane allocation to provide for bus priority through the St Lukes Road-Great North Road intersection. These works are known as Stage 2, the preferred option, and result in the removal of six Pohutukawa trees.

Alternative options to avoid removal of the six Pohutukawa trees were investigated including; reduced lane widths, relocating traffic lanes, alternative land take, reduced lanes and a do nothing option. Only the preferred option delivers AT's required outcomes, being improved passenger transport facilities (lengthened bus lane), improved cycle/pedestrian facilities (widened footpath to provide a shared use facility) and improved traffic flows (additional left hand turn from Great North Road to St Lukes Road). None of the alternative options could provide these overall improvements; therefore Stage 2, the current Works proposal was progressed to consenting.

In May 2014, AT lodged a NoR to alter two designations to enable progress of the Stage 2 works. The application was publicly notified on 6 June 2014. As is standard practice for applications where council land is involved, an independent hearing panel was appointed to hear the application. Following a hearing on 5 & 6 November 2014, the hearing panel concluded that AT has adequately considered alternatives and the works are reasonably necessary to meet the transport objectives of the immediate and wider network.

The Group Manager Property and Planning has reviewed the hearing panel's recommendation and at the time of writing a decision on whether to formally accept or decline the recommendation is imminent. The decision is required to be notified to council (a statutory requirement of the NoR process).

## Strategic context

The Project will contribute to AT's Statement of Intent by:

- Promoting the "One Network" approach because it contributes directly to ensuring that the State Highway and regional arterial road networks are integrated to function as one system;
- Demonstrating effective coordination with NZTA because AT's transport needs at the intersection will have been identified, planned, funded and implemented in a coordinated and strategic manner thereby helping to maximise the return on transport investment for Auckland.
- Contributing to delivering a high-quality transport system that is essential to the performance of Auckland's economy and its residents' way of life because it will address issues of congestion and will provide improved PT performance and cycling and walking amenity.

## Background

The intersection of Great North Road and St Lukes Road is congested at peak times, causing delays for motorists and public transport. When the Waterview tunnels open in March 2017 the volume of traffic on the north-western motorway (State Highway 16, SH16) will increase markedly as the tunnels will then link State Highway 20 directly with SH 16 and, in turn, with State Highway 18. Once completed the overall project will consist of 48 kilometres of motorway linking Auckland, Manukau, Waitakere and the North Shore (refer Attachment 1).

Congestion through this part of the network already occurs and will continue to get worse as Auckland grows, regardless of what happens with the Western Ring Route. However the Western Ring Route is a contributing factor in bringing forward the impacts earlier than anticipated at this location. The biggest impact of this congestion will be on the local road network not necessarily the interchange itself.

The Board of Inquiry decision on the Waterview tunnels project provided for four lanes on SH16 in both directions between the Great North Road and St Lukes interchanges. Steps are being taken to cope with the increased flows, including widening SH16 and works on the interchanges at Te Atatu Road, Lincoln Road and St Lukes. The various steps collectively will culminate in the Western Ring Route project (WRR).

Works to increase the number of lanes on the St Lukes section of the motorway are already underway and consents to lift and widen the motorway overbridge as well as associated works affecting the St Lukes interchange were granted in February 2014 (refer Attachment 2).

The application for those consents initially included the works which are the subject of the current NoR application but that application was amended to exclude these works following discussions with the Council's Parks Sport and Recreation Department and the Waitemata Local Board so that an option not requiring removal of six Pohutukawa trees on one corner of the intersection could be explored further.

In order to address the increased volume of traffic predicted for St Lukes, NZTA and AT are seeking to provide an additional turning lane from just north of the St Lukes Road intersection for westbound access to the motorway overbridge on Great North Road. The additional lane would allow two lanes of westbound traffic to make left turns from Great North Road onto the widened overbridge. The proposed new lane will also provide a route

for cyclists by linking Great North Road across the bridge to the North Western Cycleway. A further aspect of the overall proposal is to provide for bus priority through the St Lukes Road-Great North Road intersection on both sides of Great North Road. These works are known as Stage 2 (refer Attachment 3) and result in the removal of six Pohutukawa trees.

## Issues and options

### Options Analysis

Following consultation an alternative options report was prepared to investigate alternative scenarios, including options which would not require the trees to be removed. This report was produced in conjunction with NZTA's designer, Arborists, and Urban & Landscape Architects input, as well as further traffic modelling, undertaken by Beca (refer Attachment 4), to identify the traffic impacts of two left turns compared to one left turn and the reduction in eastbound lanes from three to two on Great North Road (East).

The alternative options report investigated seven options; including reduced lane widths, relocating traffic lanes, alternative land take, reduced lanes and a do nothing option. Only Stage 2, the preferred option delivers AT's required outcomes, being improved passenger transport facilities (lengthened bus lane), improved cycle/pedestrian facilities (widened footpath to provide a shared use facility) and improved traffic flows (additional left hand turn from Great North Road to St Lukes Road). None of the alternative options could provide these overall improvements; therefore the current Works proposal was progressed.

Typical cross section details for the consented works (Stage 1) and proposed works (Stage 2) and various alternatives can be seen in Attachment 5.

### Notice of Requirement (NoR) and consenting

In May 2014, AT lodged a NoR to alter two designations and an application to vary an existing stormwater consent under s127 of the RMA. The variation application did not include or authorise the removal of the Pohutukawa trees. The application was publicly notified on 6 June 2014. As is usual practice for applications where council land is involved, an independent hearing panel was appointed to hear the application.

A total of 64 submissions were received (52 related to the variation and included opposition to the removal of the Pohutukawa trees and 12 related to the NoR). The theme of the opposing submissions was the removal of the 6 Pohutukawa.

The independent commissioners ruled that only the 12 submissions relating to the NoR would be considered when making their recommendation on the NoR. There was some discontent from submitters at the hearing in relation to this matter. This resulted in the independent commissioners allowing Patricia Reade to call Sean Freeman from the Tree Council to provide arboriculture evidence on her behalf. The Tree Council was one of the parties who only submitted on the variation application.

The Waitemata Local Board was one of the submitters in opposition to the NoR and they suggested an alternative design which would have seen the trees retained. AT considered this alternative as well as other options and determined that the option as proposed, which necessitates the removal of the trees, is the most appropriate to achieve the transport objectives in this area.

Following a hearing on 5 & 6 November 2014, the hearing panel concluded that AT had adequately considered alternatives and the works are reasonably necessary to meet the transport objectives of the immediate and wider network. Accordingly, they have recommended that AT confirm the NoR, subject to conditions. These conditions include the

implementation of a landscaping plan (refer Attachment 6) following the completion of construction works which includes planting of advanced grade Pohutukawa trees along the frontage of 820 Great North Road.

AT formally received Council's recommendation and has 30 working days to make a decision on whether or not to accept the Hearing Panel's recommendation. AT can make that decision any time before 18 February 2015. The decision will be made under delegated authority by the Group Manager Property and Planning. At the time of writing the decision is imminent.

AT will then advise Council of its decision to accept or decline the Hearing Panel's recommendation, Council will then make that decision public (online and via letter to all submitters to the NoR). Submitters to the NoR will have the opportunity to appeal to the Environment Court if they are unhappy with the decision. The appeal period will run for 15 working days from Council's notification of Auckland Transport's decision.

The risk to the project from delays in obtaining a confirmed designation through Environment Court appeals and relevant consents would include congestion and safety issues on the local and state highway network as a result of other completed roading improvements associated with the Western Ring Route.

### **Stakeholder engagement**

Auckland Council Parks and the Waitemata and Albert-Eden Local Boards have been engaged throughout the process and continue to be engaged with meetings planned early and mid-February 2015. The local boards have also requested improvements to walking and cycling facilities and connections outside the scope of the original project limits and these are being developed to be incorporated where possible.

### **Works required as part of consented option (Stage 1)**

The proposed raising of the carriageway level of Great North and St Lukes Road requires the pruning of vegetation along the frontage of 820 Great North Road to achieve over height route dimensions (6m vertical clearance from the road level). To achieve this, the proposed work involves the removal of one generally protected tree (white poplar) and work within the dripline of and pruning of five of the Pohutukawa trees at 820 Great North Road.

Pruning work involving the removal of 25-50% of the canopies of four of the Pohutukawa trees on the frontage of 820 Great North Road to achieve the 6m clearance is required. A fifth Pohutukawa tree will require pruning unlikely to result in significant loss to the overall tree form and the sixth Pohutukawa will not require pruning. Careful management of pruning, clearance of low growing vegetation beneath the trees and placement of mulch, all under the supervision of an arborist, and supervision of all works within the driplines during the construction process will be adhered to.

It is considered the effects on the long term health of the trees at 820 Great North Road requiring pruning and work within the dripline can be mitigated with the imposition of recommendations contained within the Specimen Tree Company Arboricultural Implication Report, 2 October 2013.

### **Landscape mitigation for Stage 2 works**

A landscaping plan (refer Attachment 6) has been prepared identifying the proposed replanting of the site, post completion of construction works. This concept has been developed following interaction with Council Parks Officers.

The plan identifies planting of nine Pohutukawa trees (6-8m in height) as part of an overall planting and landscaping plan.

## Finance and funding

In mid-2012, NZTA and AT discussed an upgrade to the St Lukes intersection and to adjacent local roads as part of the Waterview Connection. The NZTA project provided an opportunity for AT to carry out identified improvements as part of the NZTA project.

Following discussion with NZTA in August 2012, the Chief Infrastructure Officer agreed in principle (subject to Board approval if required) that AT would fund its proposed works, being an extended bus lane and improved walking and cycling connections through the intersection as part of NZTA's overall improvement works.

The upgrade to the St Luke's Interchange had not been included in AT's previous RLTP, as the opportunity to deliver the works early had not been identified at the time. However, given the importance of the project, budget was included in the Annual Plan and revised LTP from 2013/14 onwards.

Originally, the cost of the works required by AT was estimated to be between \$4.5m and \$8.0m, and expected to be approximately \$7.0m, made up of design, physical works, management supervision quality assurance (MSQA) fees, associated staff costs and AT managed costs (e.g. peer reviews, safety audits and consultation fee's).

The work proceeded on the basis of the verbal agreement and later correspondence between AT and NZTA, particularly in relation to the planning elements of the project.

The most recent assessment, received in January 2015, puts the estimated total AT cost at \$5.5m for which budget is allocated in the 2014/15 Annual Plan. There is an ongoing assessment of actual and projected costs being undertaken by NZTA and AT, based on a cost share allocation of activities that has been negotiated and refined over time.

The consequences of not making use of the opportunity to include the additional works proposed by AT within NZTA's interchange project would be:

- The opportunity for carrying out AT's proposed improvements as a standalone project would likely be beyond 10 years;
- The cost of a standalone project at a future date would be more expensive as a result of increased contractor costs (traffic management, site establishment and project management);
- The current poor level of service at this intersection would worsen after the Waterview Connection is completed;
- Benefits from improvements to other intersections being undertaken along the corridor to optimise bus operations would not be realised;

The current projection for expenditure is that the costs will be fully incurred this financial year.

The next step will be to seek authorisation of the procurement plan for the physical works, estimated at \$4.9m, however this will be dependent upon the outcome of the NoR process currently underway.

## NZTA Support

NZTA have reviewed the paper and support the contents.




## Next steps

Item	Date
AT accepts/declines commissioners recommendation	18 February 2015
Appeal period (15 working days)	TBC (Feb/Mar)
Road raising	TBC (April 2015)
Tree removal (if approved)	TBC

## Attachments

Number	Description
1	Western Ring Route Projects
2	Consented intersection layout (Option 2)
3	Proposed intersection layout (Option 1)
4	Beca Traffic modelling (one left turn lane)
5	Typical Cross sections
6	Landscaping plan

## Document ownership

<b>Submitted by</b>	Chris Jones <b>Delivery Manager Central</b>	
<b>Reviewed by</b>	Andrew Scoggins <b>Group Manager Roding</b>	
<b>Recommended by</b>	Greg Edmonds <b>Chief Development Officer</b>	
<b>Approved for submission</b>	David Warburton <b>Chief Executive</b>	

## Glossary

Acronym	Description
AT	Auckland Transport
BTN	Basic Transport Network
LTP	Long Term Plan
NoR	Notice of Requirement
NZTA	New Zealand Transport Agency
WRR	Western Ring Route

# Completing the Western Ring Route

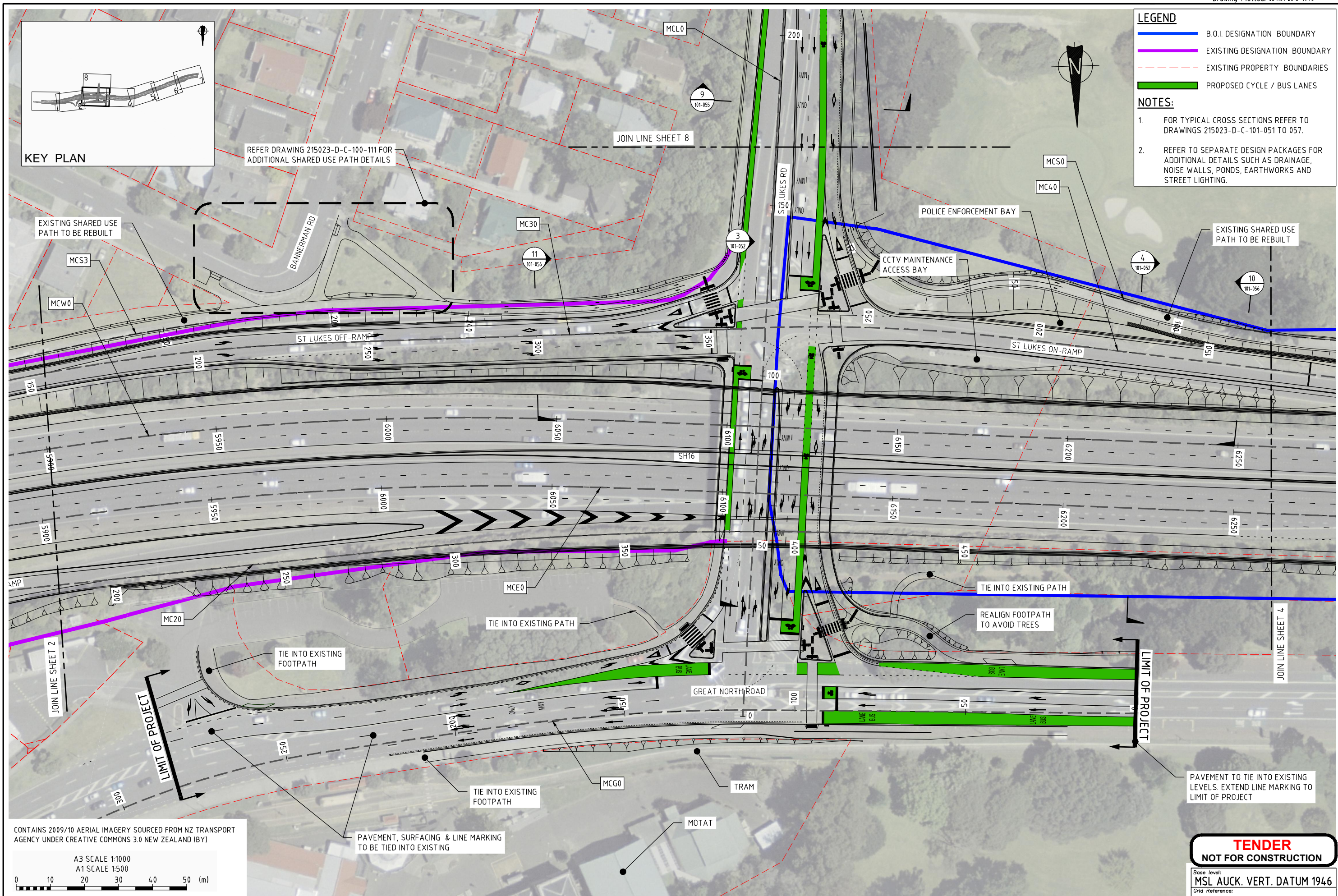
Appendix 1 - Western Ring Route Projects



**KEY**

- = Waterview Connection (SH16)
- = Waterview Connection (SH20) New Motorway
- = Lincoln Road Interchange
- = Lincoln Road to Westgate



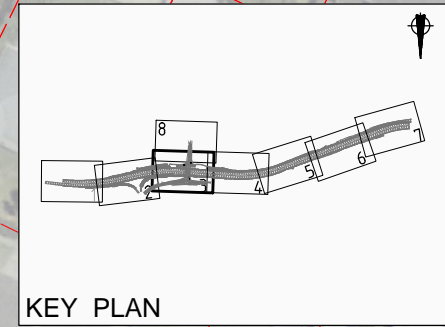


**LEGEND**

- B.O.I. DESIGNATION BOUNDARY
- EXISTING DESIGNATION BOUNDARY
- EXISTING PROPERTY BOUNDARIES
- PROPOSED CYCLE / BUS LANES

**NOTES:**

1. FOR TYPICAL CROSS SECTIONS REFER TO DRAWINGS 215023-D-C-101-051 TO 057.
2. REFER TO SEPARATE DESIGN PACKAGES FOR ADDITIONAL DETAILS SUCH AS DRAINAGE, NOISE WALLS, PONDS, EARTHWORKS AND STREET LIGHTING.



REFER DRAWING 215023-D-C-100-111 FOR ADDITIONAL SHARED USE PATH DETAILS

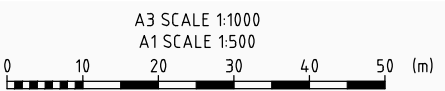
JOIN LINE SHEET 8



EXISTING SHARED USE PATH TO BE REBUILT

EXISTING SHARED USE PATH TO BE REBUILT

CONTAINS 2009/10 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY)



PAVEMENT, SURFACING & LINE MARKING TO BE TIED INTO EXISTING

PAVEMENT TO TIE INTO EXISTING LEVELS. EXTEND LINE MARKING TO LIMIT OF PROJECT

**TENDER**  
**NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946  
Grid Reference: MT EDEN 2000

No.	Revision	By	Chk	Appd	Date
A	GREAT NORTH ROAD SINGLE LEFT TURN OPTION	MGO	BM	DH	01.11.13

Drawing Originator:  
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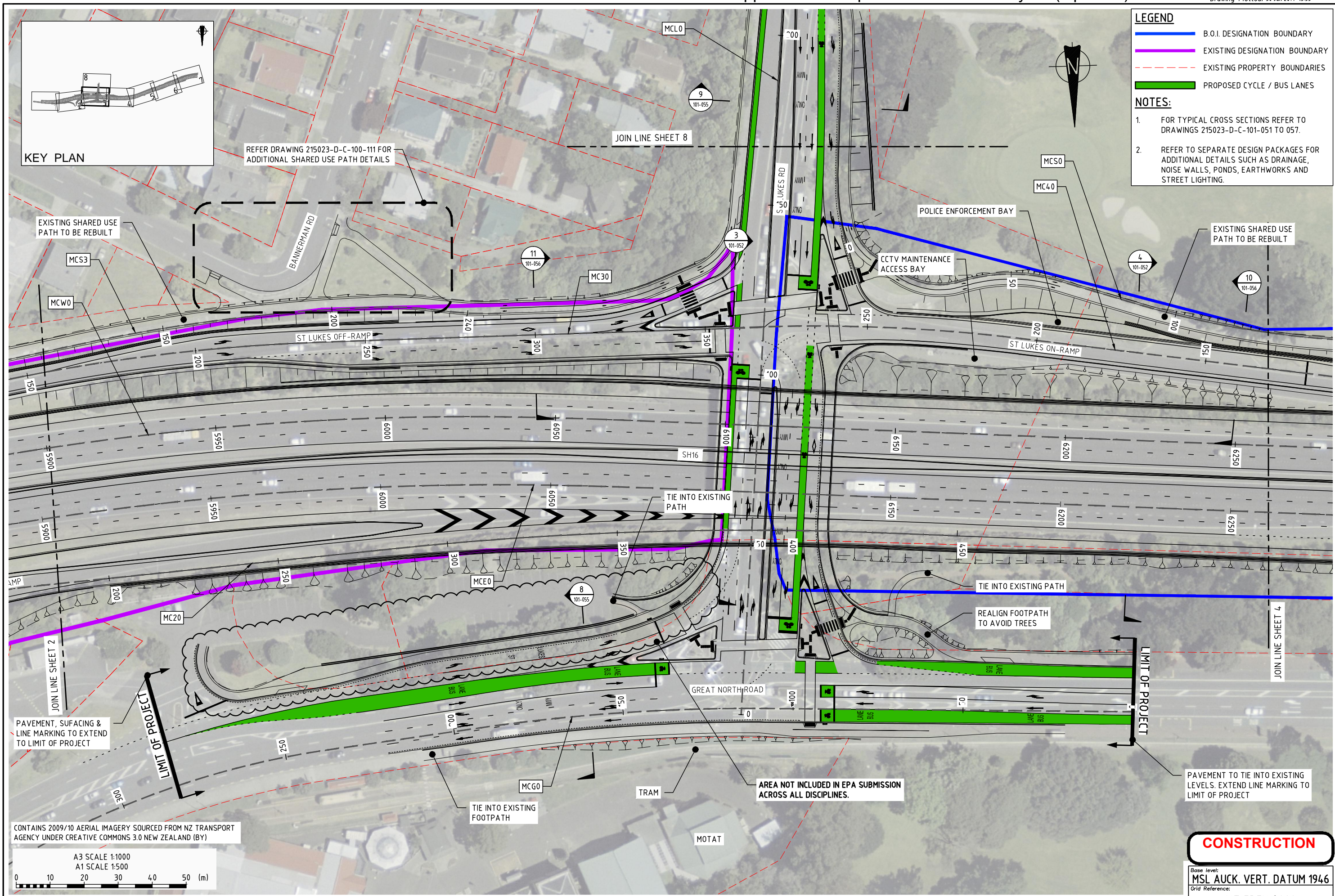
Original Scale (A1)	1:500	Design Engineer	M. OORSCHOT
Reduced Scale (A3)	1:1000	Review Engineer	B. MITCHELL
		Drafting Checked	V. SMITH
		Consultant Approval	D. HOOKER

**NZ TRANSPORT AGENCY**  
WAKA KOTAHĪ

Project: SH16 ST LUKES WESTERN RING ROUTE PROJECT

Title: SINGLE LEFT TURN LANE OPTION GREAT NORTH ROAD GENERAL ARRANGEMENT - SHEET 3 OF 8

Originator No.	
Project No.	215023-D-C-100-303
Rev.	A



**LEGEND**

- B.O.I. DESIGNATION BOUNDARY
- EXISTING DESIGNATION BOUNDARY
- EXISTING PROPERTY BOUNDARIES
- PROPOSED CYCLE / BUS LANES

**NOTES:**

1. FOR TYPICAL CROSS SECTIONS REFER TO DRAWINGS 215023-D-C-101-051 TO 057.
2. REFER TO SEPARATE DESIGN PACKAGES FOR ADDITIONAL DETAILS SUCH AS DRAINAGE, NOISE WALLS, PONDS, EARTHWORKS AND STREET LIGHTING.

KEY PLAN

REFER DRAWING 215023-D-C-100-111 FOR ADDITIONAL SHARED USE PATH DETAILS

JOIN LINE SHEET 8

JOIN LINE SHEET 4

CONTAINS 2009/10 AERIAL IMAGERY SOURCED FROM NZ TRANSPORT AGENCY UNDER CREATIVE COMMONS 3.0 NEW ZEALAND (BY)



No.	Revision	By	Chk	Appd	Date
3	ISSUE FOR CONSTRUCTION	MGO	MF	JH	30.06.14
2	ISSUE FOR CONSTRUCTION	MGO	DH	JH	28.03.14
1	ISSUE FOR CONSTRUCTION	MB	MF	JH	07.03.14

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Original Scale (A1)	1:500	Design Engineer	R. LAUREN
Reduced Scale (A3)	1:1000	Review Engineer	B. MITCHELL
		Drafting Checked	V. SMITH
		Consultant Approval	J. HIND



Project: SH16 ST LUKES WESTERN RING ROUTE PROJECT

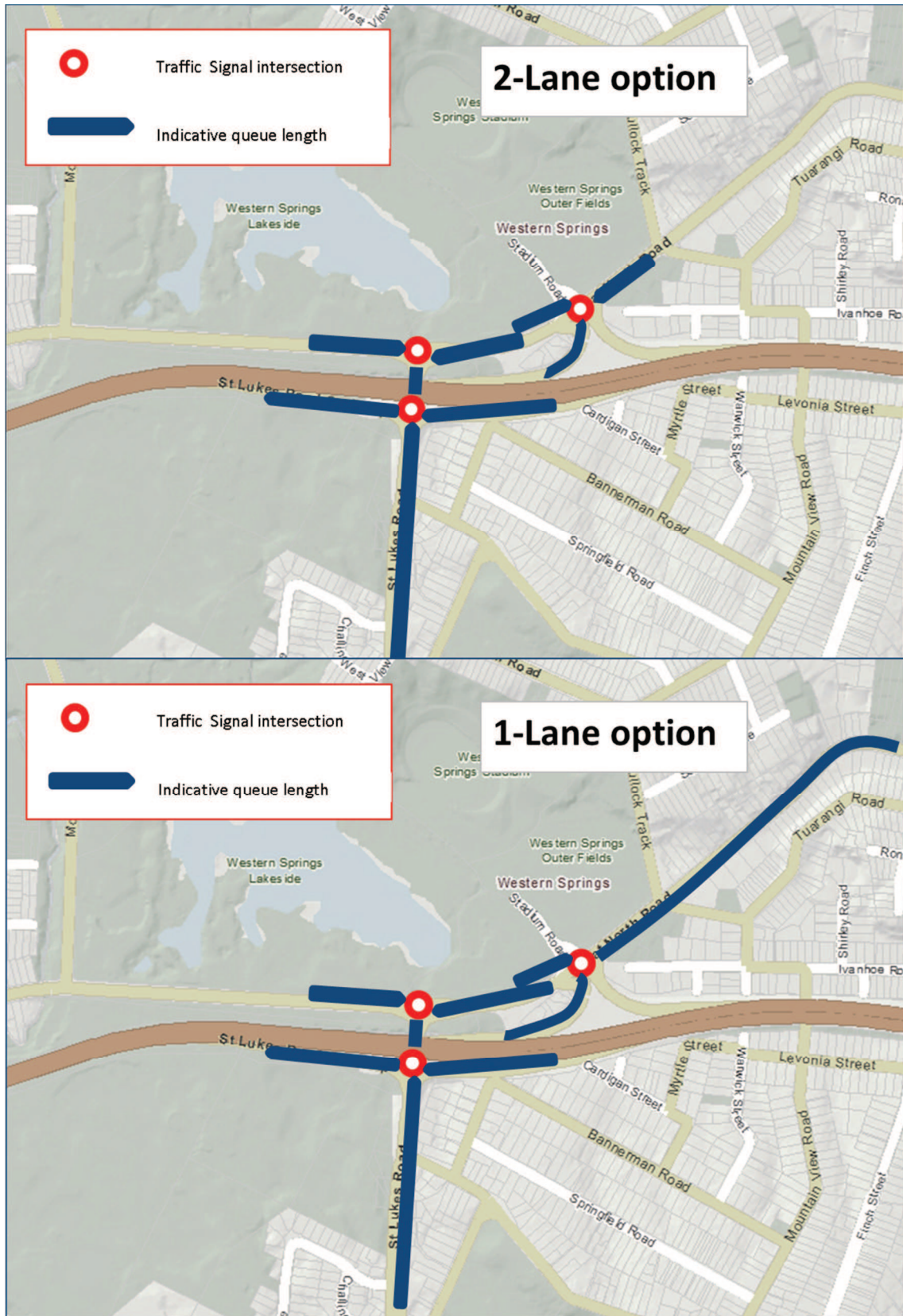
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**CONSTRUCTION**

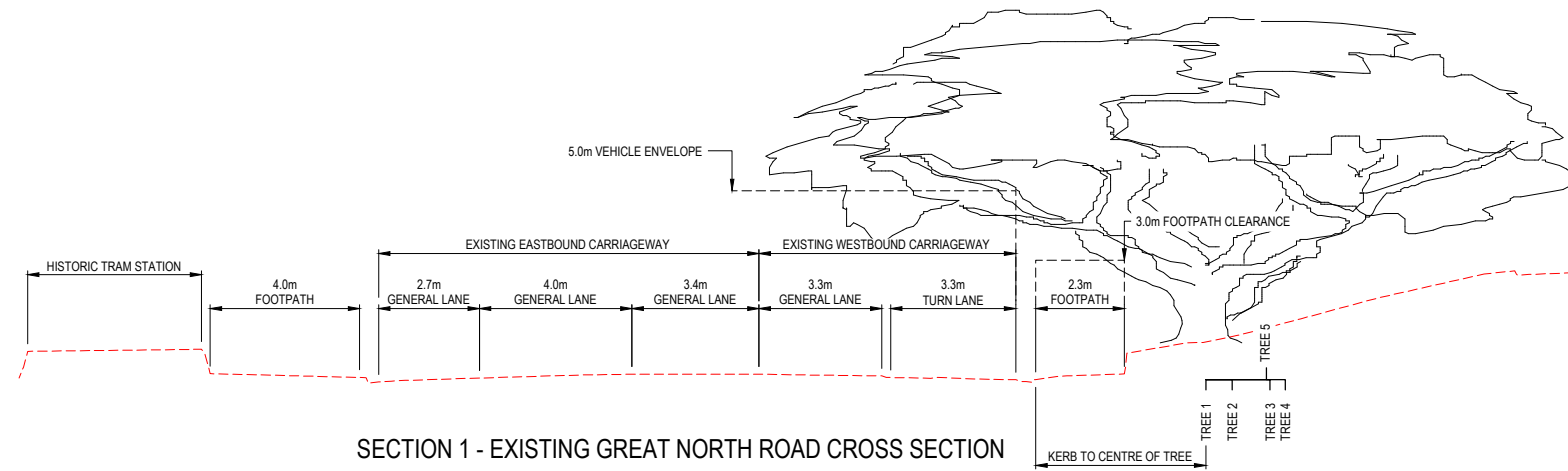
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 Project No. 215023-D-C-100-003  
 Rev. 3

# Attachment 4 - Beca Traffic Modelling (one left turn lane)

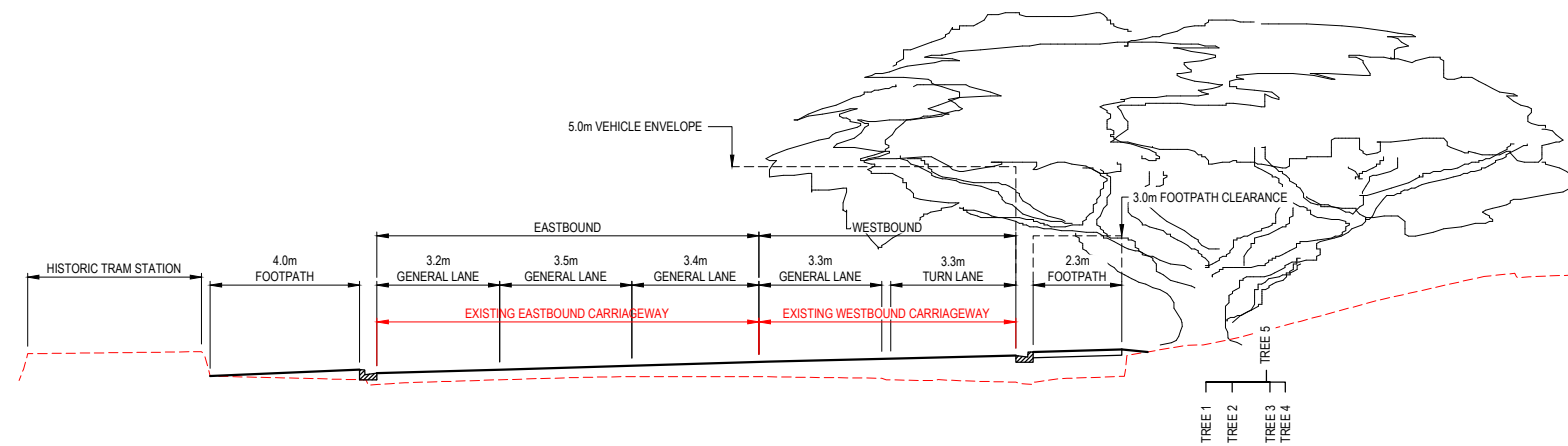
Figure 3.6 2026 PM Peak Indicative Queue Lengths



# Attachment 5 - Typical Cross Reference



SECTION 1 - EXISTING GREAT NORTH ROAD CROSS SECTION



SECTION 2 - CURRENTLY APPROVED GREAT NORTH ROAD CROSS SECTION  
NOTE: LANE WIDTH REQUIRED TO MATCH INTO SECTION 1



**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

Base level: MSL AUCK. VERT. DATUM 1946	
Grid Reference: Mt Eden 2000	
Originator No.	
Project No. 215023-SK-C-075	Rev. A

No.	Revision	By	Chk	Appd	Date
A	DRAWING CREATED	R LAUREN			28.01.15

Drawing Originator:  
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Original Scale (A1) 1:100 (A1)	Design Engineer
Reduced Scale (A3) 1:200 (A3)	Review Engineer
	Drafting Checked
	Consultant Approval

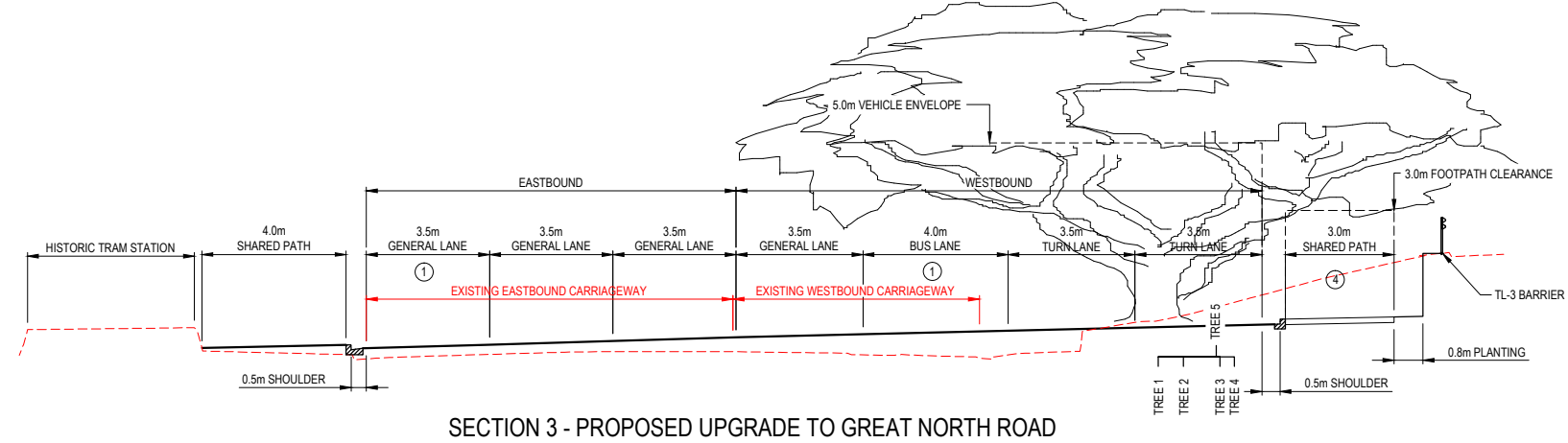


Project:  
**SH16 ST LUKES**  
**WESTERN RING ROUTE PROJECT**

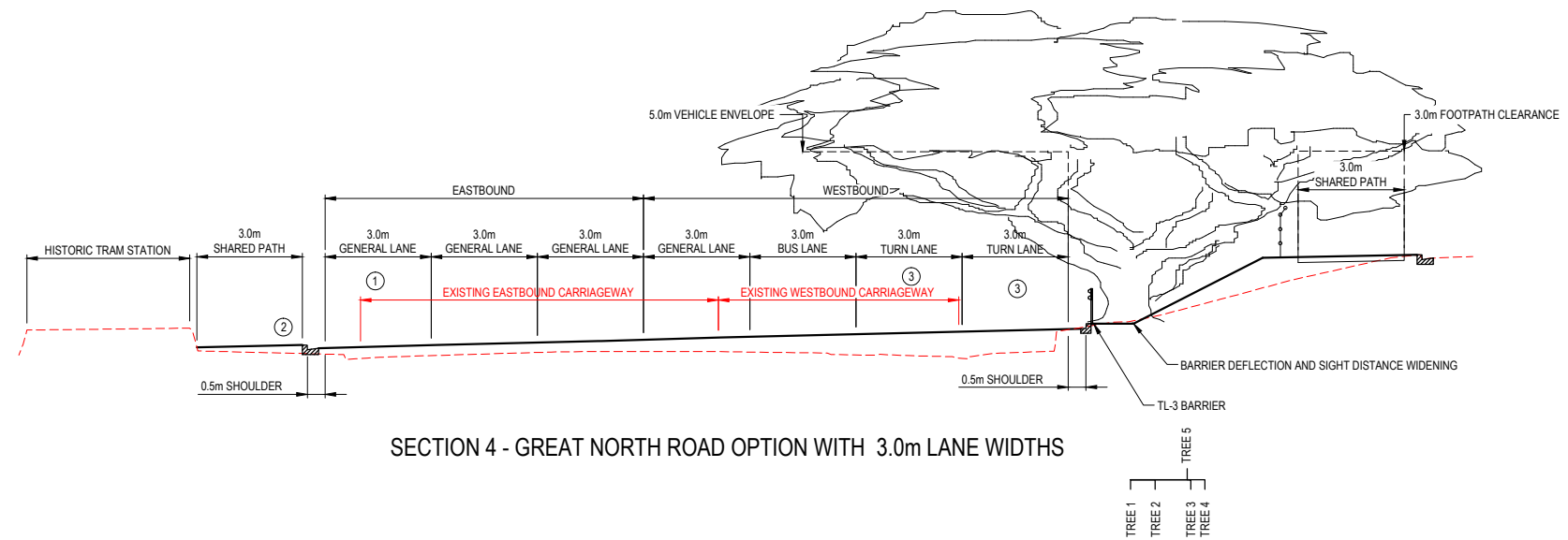
Title:  
**GREAT NORTH ROAD**  
**TYPICAL CROSS SECTIONS**  
**SHEET 1 OF 2**

GENERAL NOTES:  
 TYPICAL CROSS SECTION IS BASED ON EXISTING PINCH POINTS  
 MINIMUM LANE WIDTH 3.5m (ATCOP SECTION 7 TABLE 16)  
 MINIMUM SHOULDER WIDTH 1.5m (ATCOP SECTION 7 TABLE 18)

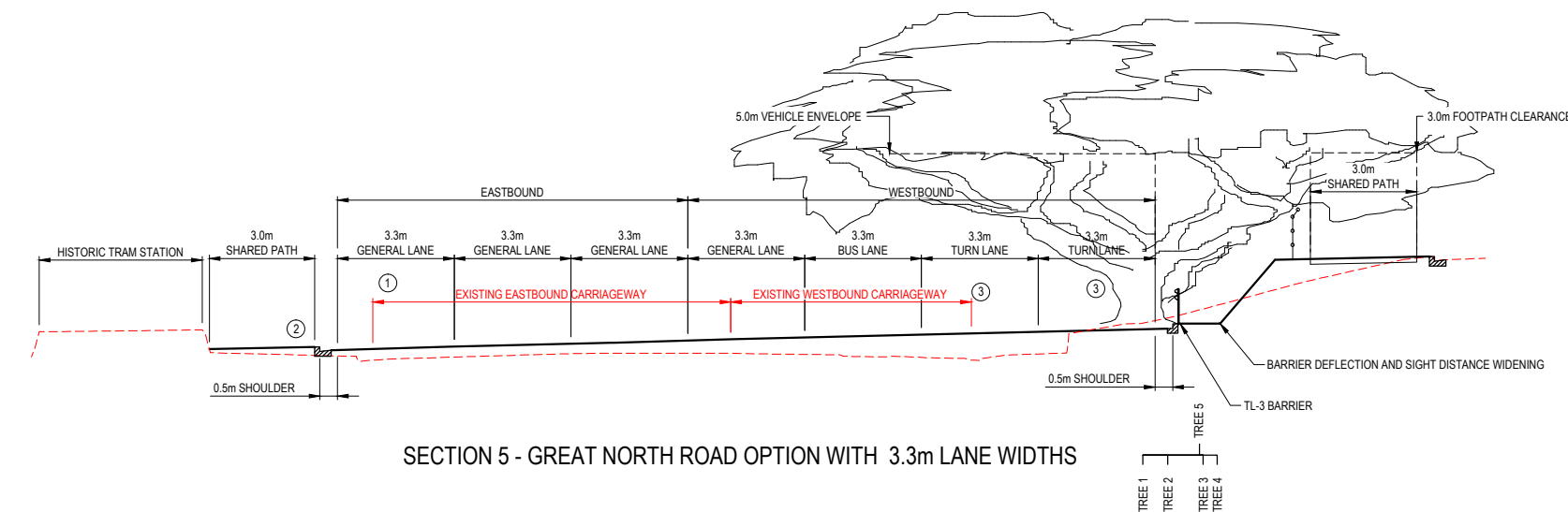
SPECIFIC NOTES:  
 1. LANE DESIGNED FOR FUTURE EXTENTION OF BUS-LANE AS PART OF STADIUM ROAD UPGRADE  
 2. MOVING THE NORTHERN KERB LINE REQUIRES THE EXTENT OF WORKS TO BE MOVED TO STADIUM ROAD  
 3. TURN LANES WILL REQUIRE ADDITIONAL WIDENING FOR TRACKING AS THEY APPROACH THE INTERSECTION  
 4. DESIRABLE SHARED USE PATH WIDTH IS 3.0m PLUS 0.5m LATERAL CLEARANCE EITHER SIDE.



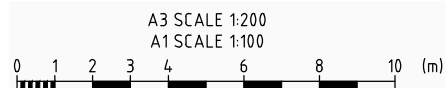
SECTION 3 - PROPOSED UPGRADE TO GREAT NORTH ROAD



SECTION 4 - GREAT NORTH ROAD OPTION WITH 3.0m LANE WIDTHS



SECTION 5 - GREAT NORTH ROAD OPTION WITH 3.3m LANE WIDTHS



**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

Base level:	MSL AUCK. VERT. DATUM 1946
Grid Reference:	Mt Eden 2000
Originator No.	
Project No.	215023-SK-C-076
Rev.	A

No.	Revision	By	Chk	Appd	Date
A	DRAWING CREATED	R LAUREN			28.01.15

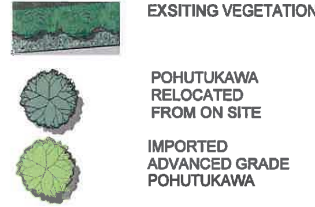
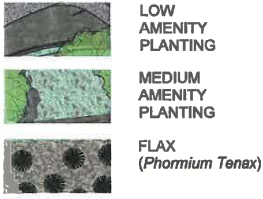
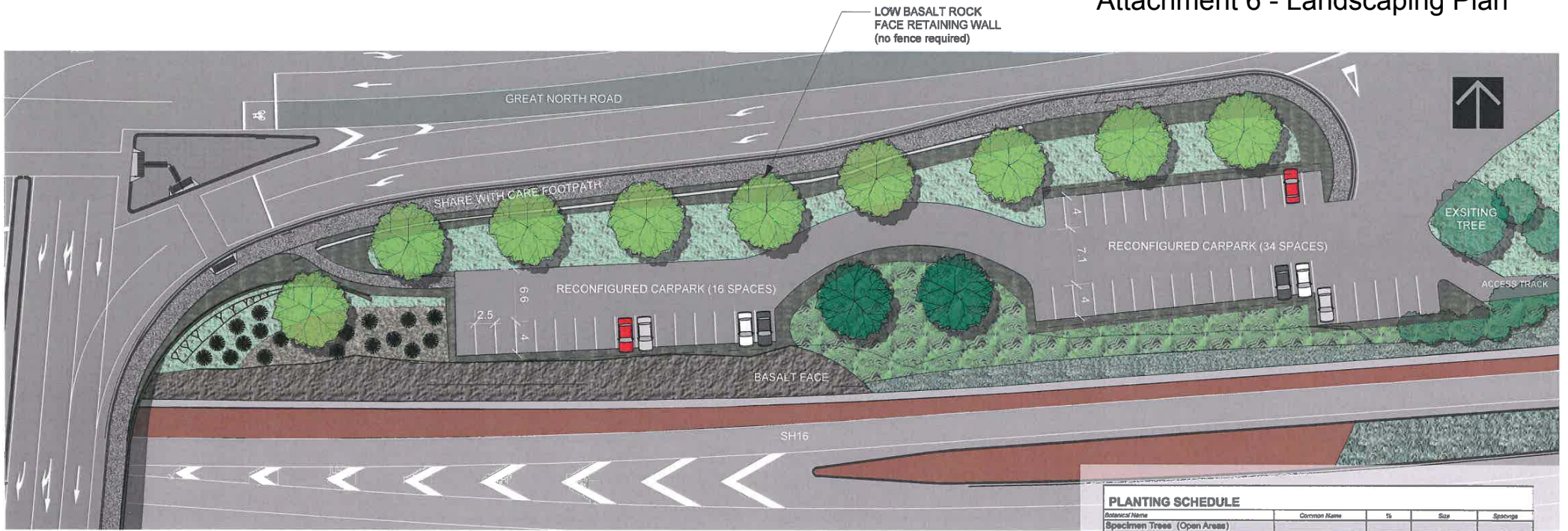
Drawing Originator:  
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Original Scale (A1)	1:100 (A1)
Reduced Scale (A3)	1:200 (A3)
Design Engineer	
Review Engineer	
Drafting Checked	
Consultant Approval	



Project: SH16 ST LUKES WESTERN RING ROUTE PROJECT

Title: GREAT NORTH ROAD TYPICAL CROSS SECTIONS SHEET 2 OF 2



Botanical Name	Common Name	%	Size	Spacing
<b>PLANTING SCHEDULE</b>				
<b>Specimen Trees (Open Areas)</b>				
<i>Cordyline australis</i>	cabbage tree	n/a	PB-0 Advanced Grade 5-7m	Shown
<i>Metrosideros excelsa</i>	pohutukawa			Shown
<b>Coastal Lowland Shrub Mix</b>				
<i>Coprosma robusta</i>	karumu	15	PB3	1000
<i>Cordyline australis</i>	cabbage tree	5	"	"
<i>Entele arborescens</i>	whau	10	"	"
<i>Gentostoma rupestre</i>	hangehange	5	"	"
<i>Griselinia lucida</i>	broadleaf	10	"	"
<i>Hebe stricta</i>	koromiko	5	"	"
<i>Kunzea ericoides</i>	kanuka	10	"	"
<i>Melicope ternata</i>	wharangi	5	"	"
<i>Melicope remiflorus</i>	mahoe	10	"	"
<i>Pittosporum crassifolium</i>	karo	5	"	"
<i>Phormium tenax</i>	flax	10	"	"
<i>Pseudopanax lessonii</i>	houpara	10	"	"
<b>Low Edge Mix (Motorway)</b>				
<i>Apodasmia similis</i>	otoi	20	1 lt	600
<i>Carex sacca</i>	purei	25	1lt	700
<i>Muehlenbeckia complexa</i>	pohuehue	10	PB3	800
<i>Phormium cookianum</i>	coastal flax	45	PB3	800
<b>Amenity Planting</b>				
<b>Low Shrubs &amp; Groundcovers</b>				
<i>Coprosma repens</i> 'Poor Knights'	postrate laupata	N/a	PB3	750
<i>Libertia grandiflora</i>	NZ iris	"	"	600
<i>Libertia peregrinans</i>	sand iris	"	"	400
<i>Muehlenbeckia axillaris</i>	creeping pohuehue	"	"	700
<b>Medium Shrubs</b>				
<i>Asteria banksii</i>	shore asteria	"	PB3	"
<i>Phormium 'Dwarf Green'</i>	coastal flax	"	"	800
<i>Phormium 'Majestic Rage'</i>	flax var	"	"	1000

No.	Revision	By	Check	App'd	Date
B		TB	JH	JH	13.10.14
A	Preliminary	TB	JH	JH	06.10.14

LA4 Landscape Architects  
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 P.O. Box 5069, Wellesley Street, Auckland  
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Original	Design	JH
1:5000	Drafting	TB
1:5000	Drafting Checked	JH
-	Approval	JH



Client: SH16 ST LUKES WEST RING ROUTE PROJECT

Title: CARPARK 820 GREAT NORTH ROAD ALTERNATE LANDSCAPE CONCEPT

**PRELIMINARY NOT FOR CONSTRUCTION**

Discipline: LANDSCAPE/URBAN DESIGN  
 Project No: 215023-SK-C-919-101  
 Rev. B