UNITARY PLAN UPDATE REQUEST MEMORANDUM

TO Warren Maclennan, Manager Planning North West and Islands

FROM Jo Hart, Principal Planner, Planning North West and Islands

DATE 18 October 2019

SUBJECT **Designation in accordance with s168 of the Resource Management Act of the Auckland Unitary Plan(AUP) Operative in part (15 November 2016)**

This memorandum requests an update to Auckland Unitary Plan Operative in part

Reason for update: Section 168 Notice of Requirement for a new designation	
Chapter	Chapter K Designations
Section	Auckland Transport
Designation only	
Designation #	1477 Lincoln Road Corridor Improvements
Locations:	Lincoln Road, Henderson, between its intersection with Te Pai Place/Pomaria Road and State Highway 16.
Lapse Date	7 years
Purpose	Lincoln Road Corridor Improvements - the construction of improvements (including road widening) to Lincoln Road and local road connections and the ongoing operation and maintenance of the improvements.
Changes to text (shown in underline and strikethrough)	This update incorporates a new designation as confirmed by the Environment Court in its consent order dated 13 February 2018. Changes to text are shown in Attachment 2.
Changes to diagrams	Addition of aerials as shown in Attachment 2
Changes to spatial data	Designation overlay to be amended (as shown in Attachment 3
Attachments	**Attachment 1 -** Environment Court Consent Order **Attachment 2 –** Updated text D1477 **Attachment 3 -** Updated GIS Viewer D1477

Prepared by: Jo Hart Principal Planner	**Text Entered by:** Sophia Coulter Planning Technician
Signature: 	**Signature:** 
Maps prepared by: Mitesh Bula Geospatial Analyst	**Reviewed by:** Jo Hart Principal Planner
Signature: 	**Signature:** 
Signed off by: Warren Maclennan Manager Planning – North/West & Islands	
Signature: 	

Attachment 1 - Environment Court Consent Order

BEFORE THE ENVIRONMENT COURT
I MUA I TE KOOTI TAIAO O AOTEAROA

IN THE MATTER	of Resource Management Act 1991
AND	of appeals under s 174 of the Act
BETWEEN	THE NATIONAL TRADING COMPANY
	(ENV-2017-AKL-000100)
	BRANKO VELA, FLORIDA VELA, DION VELA AND BM TRUSTEES LIMITED
	(ENV-2017-AKL-000104)
	Appellants
AND	AUCKLAND TRANSPORT
	Respondent

Environment Judge J A Smith sitting alone under s 279 of the Act
In Chambers at Auckland

CONSENT ORDER

[A] Under s 279(1)(b) of the Resource Management Act 1991, the Environment Court, by consent, orders that:

(1) the appeals are allowed subject to the amendments set out in Annexure **A**, Annexure **B**, Annexure **C** and Annexure **D** to this order;

(2) the appeals are otherwise dismissed.

[B] Under s 285 of the Resource Management Act 1991, there is no order as to costs.

REASONS

Introduction

[1] These appeals concern a decision of Auckland Transport to confirm the Notice of Requirement for a designation for the Lincoln Road Corridor Improvements Project.

[2] The Velas own the site at 311 to 313 Lincoln Road. They appealed Auckland Transport's decision to confirm the designation in its entirety and in the alternative sought changes to the following:

(a) Works affecting access to the Vela's site, the operation of the shop, the parking and landscaping within the site;

(b) Condition 2 regarding the designation lapse date;

(c) Conditions 5 and 6 regarding the Outline Plan process;

(d) Condition 7 regarding AT's obligation to review the extent of the designation;

(e) Condition 21(a) regarding landowner approval of landscape work on private land; and

(f) U-turns on Lincoln Road.

[3] The National Trading Company also appealed the decision to confirm the designation in its entirety. In the alternative it sought changes to:

(a) The construction of improvements (including road widening) to Lincoln Road in front of NTC's site including work that affects access, encroaches on the parking area and affects landscaping within the boundaries of NTC's site;

(b) Condition 2 regarding the designation lapse date;

(c) Conditions 5 and 6 regarding the Outline Plan process;

(d) Condition 7 regarding AT's obligations to review the extent of the designation;

(e) Condition 14(b) regarding construction during the month of December;

(f) Condition 21(a) regarding landowner approval of landscape work on private land; and

(g) Condition 34 regarding the Universal Drive pedestrian crossing.

[4] The parties have now reached agreement in relation to both appeals, that resolves both appeals in their entirety.

[5] The agreement reached includes an amended set of designation conditions to address the appellants' concerns.

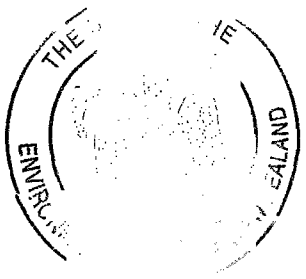
[6] In addition, the parties to the Vela's appeal have agreed to a reduction of the extent of the designation adjacent to 311-313 Lincoln Road and that the accessway into and out of 311-313 Lincoln Road will constructed in order to mitigate the impact of the Project on the Vela's land.

[7] The parties to the National Trading Company's appeal have agreed that the respondent is to revise the accessway arrangements into and out of the National Trading Company's site during the construction of the Project.

[8] In making this order the Court has read and considered the appeals and the consent memoranda of the parties dated 4 December 2017 and 19 January 2018.

[9] Northern Bays Motors Limited and Z Energy Limited gave notice of intention to become a party under s 274 of the Act, and have agreed to the relief sought in this order.

[10] The Court is making this order under s 279(1)(b) of the Act, such order being by consent, rather than representing a decision or determination on the merits pursuant to s 297. The Court understands for the present purposes that:



(a) All parties to the proceeding have executed the memorandum requesting this order;

(b) All parties are satisfied that all matters proposed for the Court's endorsement fall within the Court's jurisdiction, and conform to relevant requirements and objectives of the Resource Management Act 1991, including in particular Part 2.

Order

[11] Therefore the Court orders by consent that:

(a) The appeals are allowed to the extent that the Respondent is directed to reduce the extent of the designation adjacent to 311-313 Lincoln Road as shown in the drawing in **Annexure A**;

(b) The appeals are allowed to the extent that the Respondent is directed to construct the accessway into and out of 311-313 Lincoln Road in general accordance with **Annexure B**; and

(c) The appeals are allowed to the extent that the Respondent is directed to make the amendments to the designation conditions as specified in **Annexure C**.

(d) The appeals are allowed to the extent that the Respondent is directed to revise the accessway arrangements into and out of the National Trading Company's site during the construction of the Project as shown in **Annexure D**.

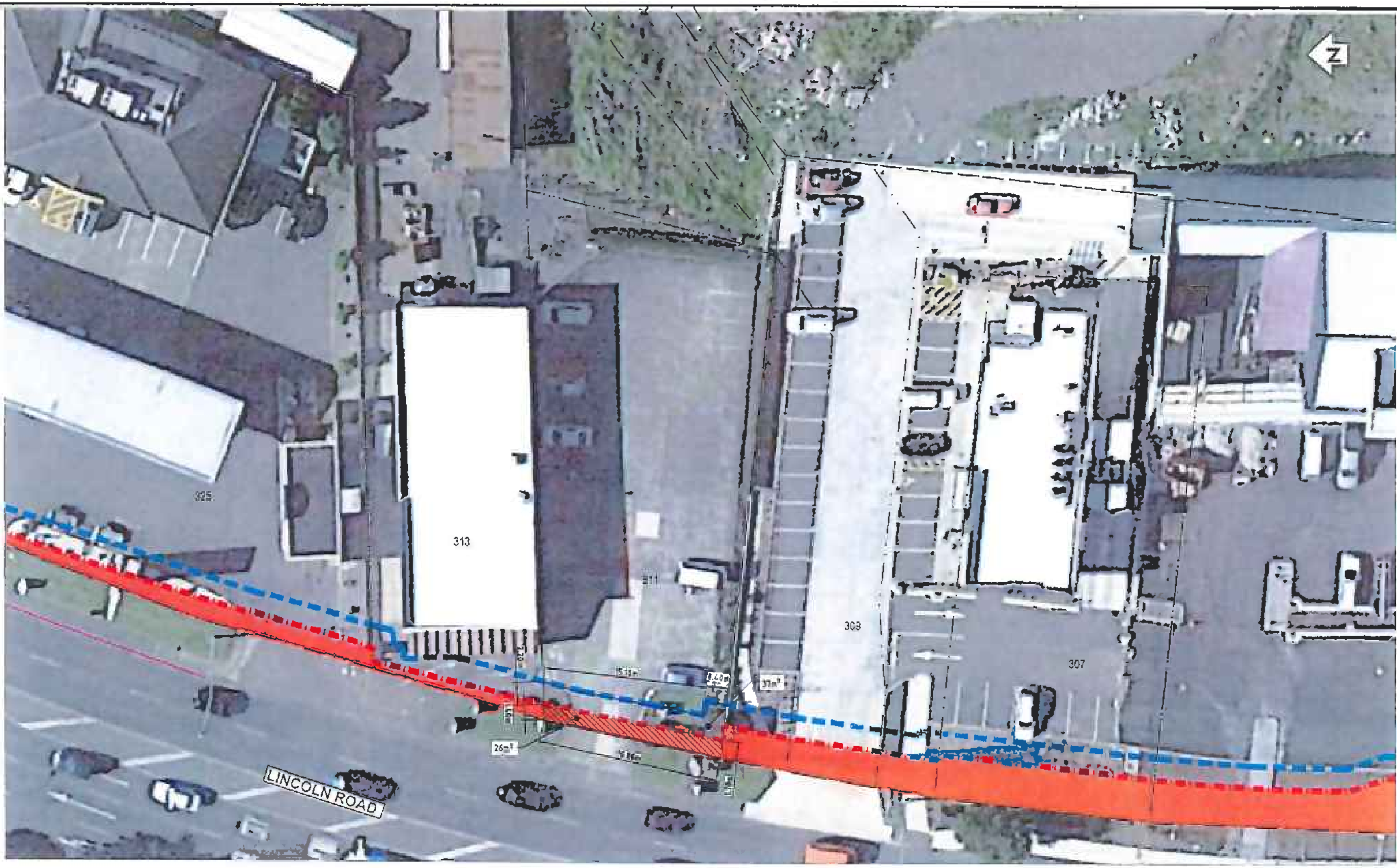
(e) The appeals are otherwise dismissed.

(f) There is no order for costs.

DATED at Auckland this 13th day of February 2018

J A Smith
Environment Judge

Annexure A: Land Requirement Plan - 311/313 Lincoln Road (80507651-0301-C706 Rev B and 80507651-0301-C705 Rev B)



LEGEND

- TEMPORARY DESIGNATION FOR CONSTRUCTION
- PERMANENT DESIGNATION
- EXISTING BOUNDARY
- PROPOSED AREA OF LAND PURCHASE

NOTES

1. CADASTRAL BOUNDARIES ARE INDICATIVE ONLY. BOUNDARIES TO BE VERIFIED BY SURVEY.
2. ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

PLAN
SCALE 1 : 200

LAND REQUIREMENT SCHEDULE					
PROPERTY ADDRESS	LEGAL DESCRIPTION	CERTIFICATE OF TITLE	ORIGINAL AREA (m^2)	PERMANENT LAND REQUIRED FOR ROAD WIDENING PURPOSES (m^2)	TEMPORARY LAND REQUIRED (m^2)
311 LINCOLN ROAD	PART LOT 1 DP	NA57B/1256	959	26	37

SCALE 1:200

APPROVAL SIGNATURE -

REV	REVISIONS				DATE
B	MODIFIED AS A RESULT OF MEDIATION HEARING AMENDMENTS	NH			25.10.17
A	FOR VALUATION	PD	JP	AGS	13.05.16

SURVEYED		
DESIGNED	Michael Yale	04.2016
DRAWN	Prachi Dhera	04.2016
CAD REVIEW	Gavin Smit	04.05.16
DESIGN CHECK	Jarrod Pettigrew	13.05.16
DESIGN REVIEW	Graeme Stanton	13.05.16
APPROVED	Nick Overdevest	
PROF REGISTRATION		

MWH.

LINCOLN ROAD CORRIDOR UPGRADE

LAND REQUIREMENT PLAN
311 LINCOLN ROAD

NOT FOR CONSTRUCTION

FOR CONSULTATION

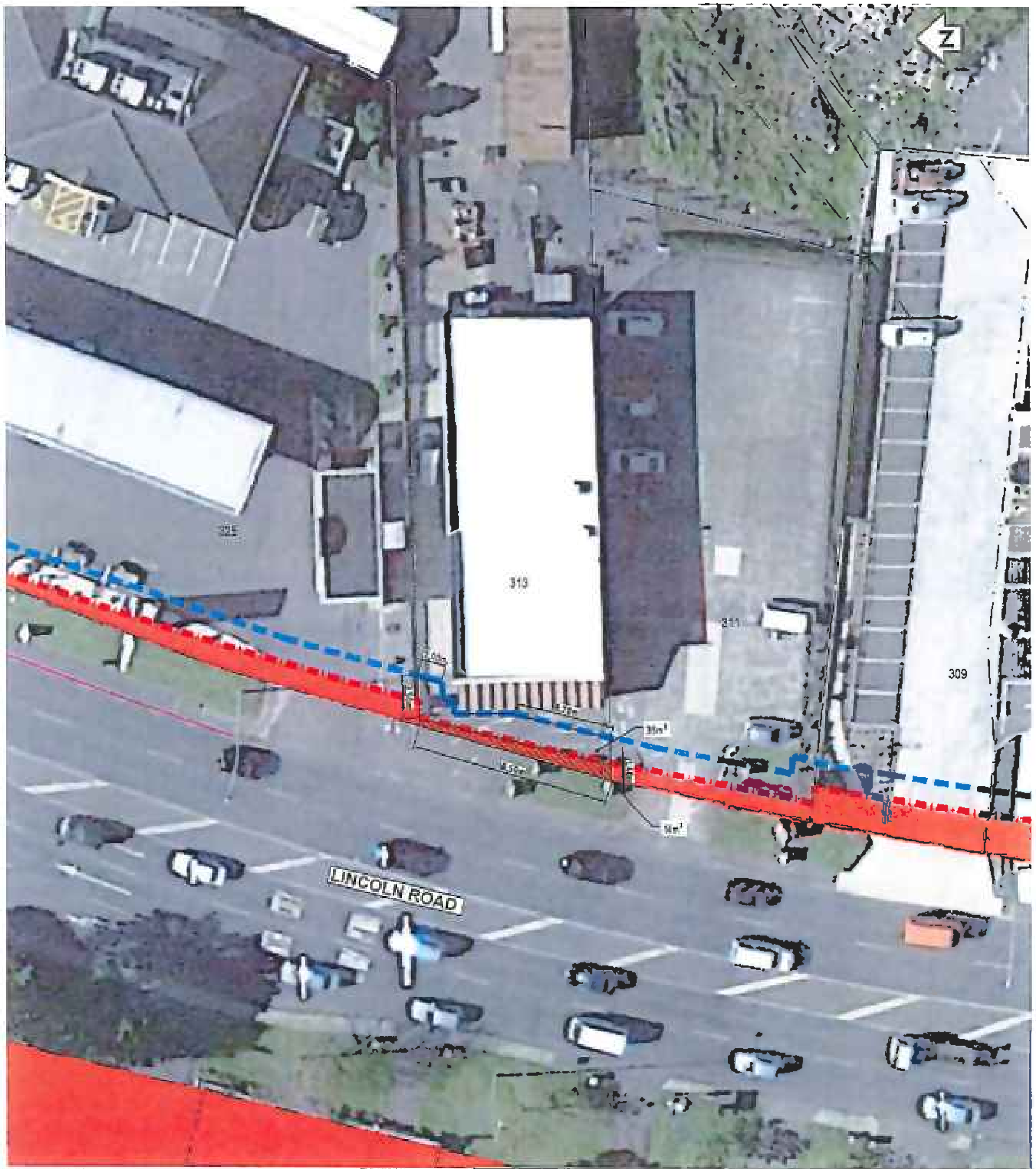
Scale 1:200

Drawing No. 80507651-0301-C706 B

ORIGINAL SIZE A1

DO NOT SCALE

Last modified Nov 2 2017 By Elisha Morris



PLAN
SCALE 1:200

SCALE 1:200

LEGEND

- TEMPORARY DESIGNATION FOR CONSTRUCTION
- PERMANENT DESIGNATION
- EXISTING BOUNDARY
- PROPOSED AREA OF LAND PURCHASE

NOTES

1. CADASTRAL BOUNDARIES ARE INDICATIVE ONLY. BOUNDARIES TO BE VERIFIED BY SURVEY.
2. ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

LAND REQUIREMENT SCHEDULE

PROPERTY ADDRESS	LEGAL DESCRIPTION	CERTIFICATE OF TITLE	ORIGINAL AREA (m^2)	PERMANENT LAND REQUIRED FOR ROAD WIDENING PURPOSES (m^2)	TEMPORARY LAND REQUIRED (m^2)
313 LINCOLN ROAD	PART ALLOT 6PSH	113658	5704	16	35

APPROVAL SIGNATURE -

REV	REVISIONS	DRN	CHK	APP	DATE
B	MODIFIED AS A RESULT OF MEDIATION HEARING AMENDMENTS				25.[illegible]
A	FOR VALUATION	PD	JP	AGS	13.[illegible]16

SURVEYED		
DESIGNED	Michael Yale	04.2016
DRAWN	Prachi Ohara	04.2016
CAD REVIEW	Gavin Sall	06.05.16
DESIGN CHECK	Jarrod Pettigrew	13.05.16
DESIGN REVIEW	Graeme Stanton	13.05.16
APPROVED	Nick Overdevest	31.10.17
PROF REGISTRATION		

MWH.

NOT FOR CONSTRUCTION

FOR CONSULTATION

LINCOLN ROAD CORRIDOR UPGRADE

LAND REQUIREMENT PLAN
313 LINCOLN ROAD

Scale 1:200

Drawing No. 80507651-0301-C705

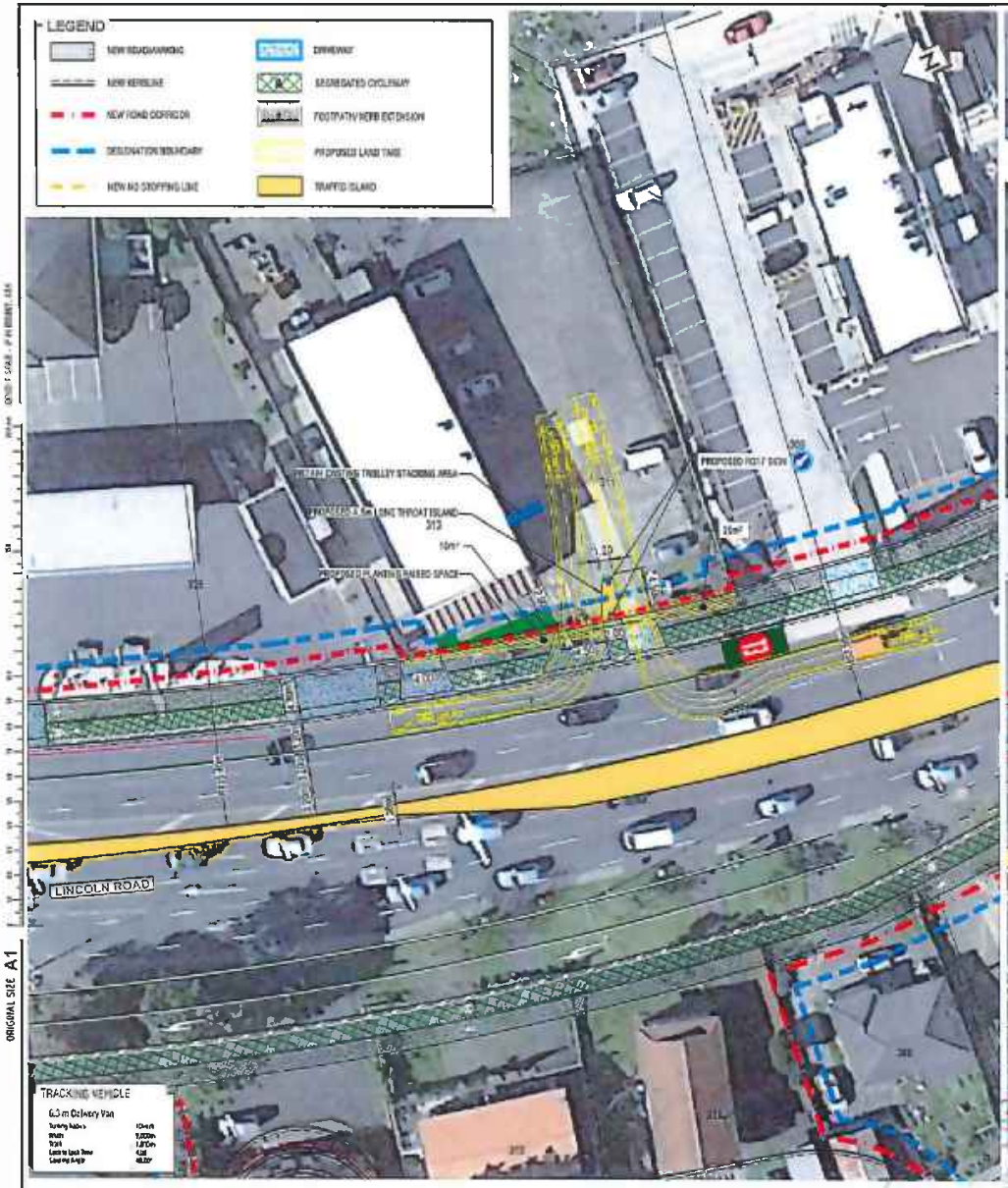
B

DO NOT SCALE - IF IN DOUBT ASK

ORIGINAL SIZE A1

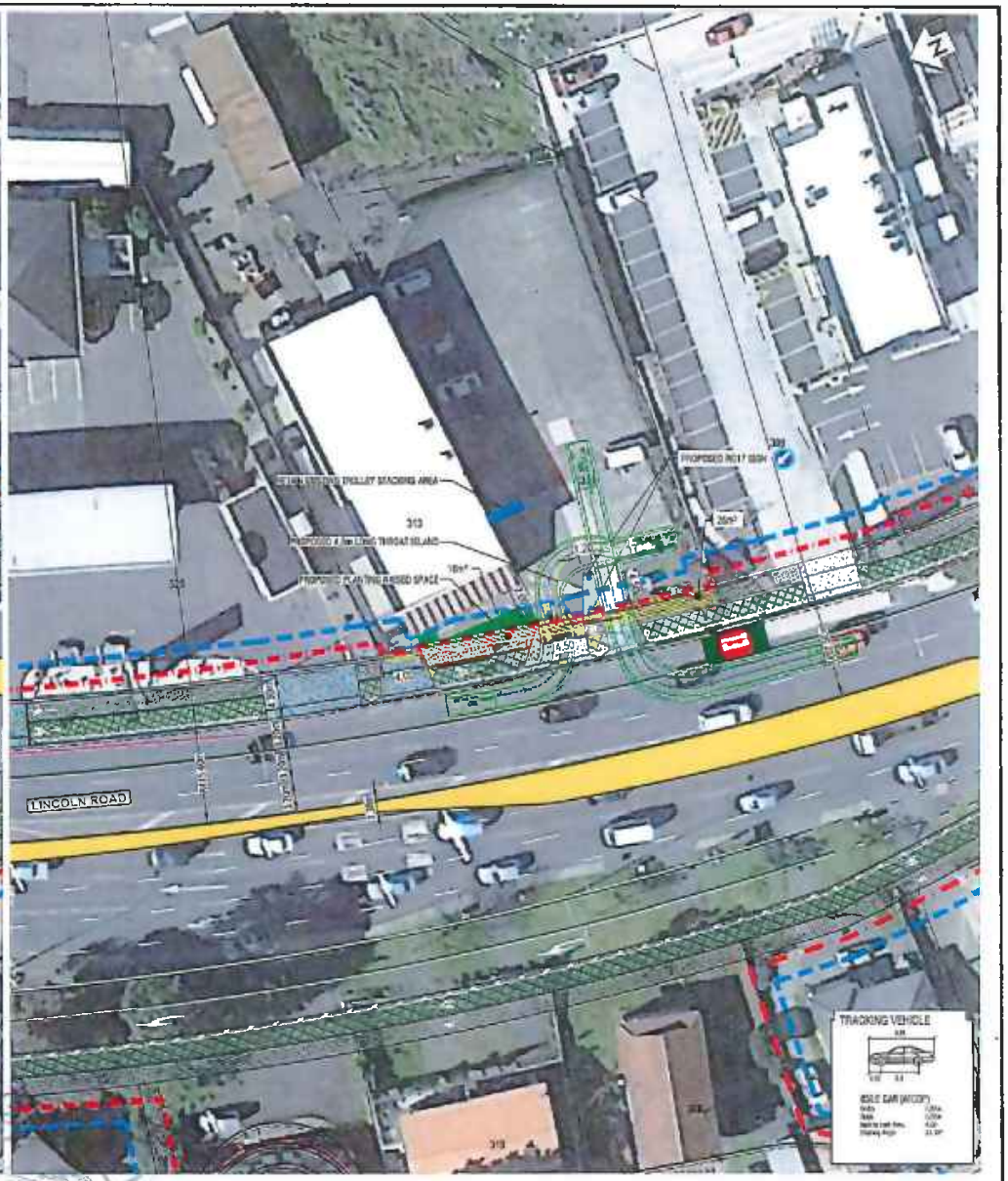
Last modified: Nov 2 2017 By Elisha Harris

Annexure B: Access arrangement for 311/313 Lincoln Road (80507651-0301-SK004 Rev F)



OPTION 2 MODIFIED: CHANNELISED LEFT TURN IN AND TURN OUT - 6.3m VAN

SCALE 1:250



OPTION 2 MODIFIED: CHANNELISED LEFT TURN IN AND TURN OUT - PASSENGER CAR

SCALE 1:250

SCALE 1:250

NOT FOR CONSTRUCTION

REV	REVISIONS				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	[illegible]	NM	NO	[illegible]	[illegible]
B	FOR PROPERTY OWNER CONSULTATION	NM	NO	NO	13.09.17
C	[illegible]	NM	MW	NO	21.09.17
D	[illegible]	NM	MW	NO	28.09.17
E	[illegible]	NM	NO	NO	13.10.17
F	- OPTION 2 MODIFIED AS A RESULT OF AGREEMENT REACHED BY MEDIATION HEARING	MW	NO	NO	18.10.17

SURVEYED	[illegible]	[illegible]
DESIGNED	Ha Nguyen	17.10.17
DRAWN	Ha Nguyen	17.10.17
CAD REVIEW	Gavin Smit	13.09.17
DESIGN CHECK	Nick Overdevest	13.09.17
DESIGN REVIEW	Nick Overdevest	13.09.17
APPROVED	Nick Overdevest	20.10.17
PROF REGISTRA	[illegible]	

MWH now part of Stantec

Client: AT

LINCOLN ROAD CORRIDOR UPGRADE

311 - 313 LINCOLN ROAD - REVISED ACCESS STRATEGY
PREFERRED ACCESS ARRANGEMENT - OPTION 2 MODIFIED

Status/Stage: FOR CONSULTATION

Date Issued: 20.10.17

Scale: 1:250@A1, 1:500@A3

Drawing No.: 80507651-0301-SK004

Rev: F

Annexure C: Amended designation conditions

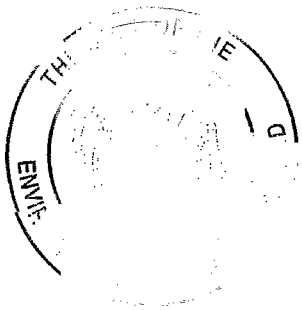
Designation Conditions

Auckland Transport Designation Conditions (Lincoln Road Corridor Improvements) – Definitions and Abbreviations

DEFINITIONS	
Best practicable option	Has the meaning under the Resource Management Act 1991 as follows: **Best practicable option**, in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to – (a) The nature of the discharge or emission and the sensitivity of the receiving environment to the adverse effects; and (b) The financial implications, and the effects on the environment, of that option when compared with other options; and (c) The current state of technical knowledge and the likelihood that the option can be successfully applied
Directly Affected Parties	Owners and occupiers of land in the project area that have vehicle access from Lincoln Road or are within the proposed designation footprint (including Auckland Council Parks and Watercare).
Mana Whenua	Mana whenua for the purpose of this designation are considered to be the following (in alphabetical order), who at the time of the Notice of Requirement expressed a desire to be involved in the LRCI project: (a) Ngāti Te Ata Waiohua (b) Ngāti Tamaoho (c) Ngāti Whātua o Kaipara (d) Ngāti Whātua o Orakei (e) Te Akitai Waiohua (f) Te Kawerau a Maki (g) Te Runanga o Ngāti Whātua

Protected Premises and Facilities (PPFs)	For noise, PPFs are defined in accordance with the New Zealand Standard for Road-Traffic Noise for New and Altered Roads 2010 (NZS 6806), as spaces inside buildings that are used for residential activities, marae, overnight medical care and teaching. For vibration, PPFs are dwellings, educational facilities, boarding houses, homes for the elderly and retirement villages, marae, hospitals that contain in-house patient facilities and buildings used as temporary accommodation (e.g. motels and hotels).

ABBREVIATIONS	
BPO	Best practicable option
CCP	Communication and Consultation Plan
CEMP	Construction Environmental Management Plan
CFLBMP	Community Facilities and Local Business Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CTMP	Construction Traffic Management Plan
DUDLP	Detailed Urban Design and Landscape Plan
LRCI	Lincoln Road Corridor Improvements
NoR	Notice of Requirement
ONMP	Operational Noise Management Plan
RMA	Resource Management Act 1991



Designation Conditions

GENERAL CONDITIONS	
1.	Except as modified by the conditions below, the LRCI Project shall be undertaken in general accordance with the plans and information provided by the Requiring Authority, unless amended by any plan or document listed below: 1. Revised slip-lane arrangement plan (Z Energy) dated 18 May 2017. 2. Revised designation plan for 311/313 Lincoln Road (80507651-0301-C706 Rev B and 80507651-0301-C705 Rev B). 3. Access arrangement for 311/313 Lincoln Road (80507651-0301-SK004 Rev F). Where there is inconsistency in the documents listed in the NoR or the documents listed above and the conditions, the conditions shall prevail.
Lapse Date	
2.	In accordance with section 184(1) of the RMA, this designation shall lapse if not given effect to within ~~10~~7 years from the date on which it is confirmed.
Outline Plans	
3.	Prior to commencing any works pursuant to this designation, the Requiring Authority shall submit an Outline Plan(s) to the Auckland Council for the project in accordance with section 176A of the RMA. The Outline Plan(s) shall include the following plans: (a) A Communication and Consultation Plan (CCP); (b) A Construction Environmental Management Plan (CEMP); (c) A Construction Traffic Management Plan (CTMP); (d) A Detailed Urban Design and Landscape Plan (DUDLP); (e) An Operational Noise Management Plan (ONMP); and (f) A Community Facilities and Local Business Management Plan (CFLBMP).
4.	All work shall be undertaken in accordance with the requirements of the plans listed in Condition 3(a) to (f) above. Where there are any inconsistencies between the contents of the above plans, then the provision that involves the least adverse effects on Directly Affected Parties shall apply.

5.	The plans listed in Condition 3(a) to (f) above shall include a process for amendment of the relevant plan in response to any contractor's requirements, without the need for a further Outline Plan provided that the amendments do not result in materially different or greater adverse effects ~~on particular receivers~~, (including on Directly Affected Parties)~~;~~ to ~~that~~those ~~described~~ ~~in~~generated by the original Outline Plan.
6.	Once finalised, the plans listed in Condition 3(a) to (f) above, including any amendments, will be ~~made available~~provided in electronic format to all Directly Affected Parties and will also be available upon request to the public generally.
Designation Review	
7.	On an on-going basis as work stages are completed, as soon as reasonably practicable, and no later than 12 months from the date of the stage becoming operational, the Requiring Authority shall: (a) Confirm those areas of the designation that have been identified for temporary construction purposes; (b) Identify any other areas of the designation that are no longer necessary for the on-going operation or maintenance of the project or for on-going mitigation measures; and (c) Give notice to the Council in accordance with section 182 of the RMA for the removal of those parts of the designation identified in (a) and (b) above.
PRE-CONSTRUCTION CONDITIONS	
Network Utility Operators	
8.	The Requiring Authority shall work collaboratively with Network Utility Operators: (a) During the development of the detailed design for Lincoln Road to provide for the ongoing operation and access to Network Utility operations; and (b) During the preparation and implementation of the Construction Methodology in relation to remedying or mitigating any adverse effects on existing infrastructure and Network Utility operations.
9.	In the period before construction begins, the following activities undertaken by Network Utility Operators will not prevent or hinder the project, and can be

	undertaken without seeking the Requiring Authority's written approval under section 176(1)(b) of the RMA: (a) Maintenance and urgent repair works of existing Network Utilities; (b) Minor renewal works to existing Network Utilities necessary for the on-going provision or security of supply of Network Utility operations; and (c) Minor works such as new property service connections. For the avoidance of doubt, in this condition "existing Network Utilities" includes infrastructure operated by a Network Utility Operator which was: • In place at the time the NoR for the LRCI Project was served on Auckland Council; or • Undertaken in accordance with this condition or the section 176(1)(b) RMA process.
Mana Whenua Engagement	
10.	The Requiring Authority shall undertake ongoing consultation and input of Mana Whenua into the design and construction of the project, including, but not limited to: (a) Regular meetings between the Requiring Authority and Mana Whenua the frequency of meetings shall be agreed between the two parties; (b) Input into the preparation of the DUDLP (in accordance with Condition 21); (c) Involvement of Mana Whenua in removal and or replanting of any native tree species; and (d) Any other matters agreed between the Requiring Authority and the Mana Whenua consultation that is within the scope of the project.
CONSTRUCTION CONDITIONS **Communication and Consultation Plan**	
11.	A Communication and Consultation Plan (CCP) shall be included in the Outline Plan submitted to Auckland Council. The objective of the CCP is to ensure appropriate communication and consultation is undertaken with affected parties during the detailed design and project construction periods. The CCP shall include, but not be limited to:

	(a) A communications framework that details the Requiring Authority's communication methods, the frequency of communications and consultation and any other relevant communication matters; (b) The Communication and Consultation Manager for the project including their contact details (phone, email and postal address); (c) A summary of consultation undertaken between the Requiring Authority and Directly Affected Parties on the detailed design for the Lincoln Road improvements; (d) A summary of the communication and consultation undertaken between the Requiring Authority and Network Utility Operators in accordance with Condition 8; (e) Methods for communicating and consulting with owners and occupiers located adjacent to proposed construction works, including: (i) determining adequate notice periods for the commencement of construction activities and works that affect access to properties; (ii) informing parties of the expected timing, duration and staging of works and regular updating of progress, (f) Methods for recording and managing queries, concerns and complaints during the project, including (as needed on a 24/7 basis) contact details and complaints procedures; (g) Methods for communicating and consulting in advance about temporary traffic management measures to owners and occupiers located adjacent to proposed construction works, including the provision of suitable vehicle access to affected sites during construction works and provision of appropriate notice periods in cases when access will be reduced or unavailable; (h) Methods for communicating and consulting with owners and occupiers located adjacent to proposed construction works regarding the management of work around vegetation to be retained, vegetation to be removed, and the transplanting of vegetation, where practicable; (i) Methods for communicating and consulting with owners and occupiers located adjacent to the proposed construction works regarding the preparation of the CFLBMP required by Condition 31 and the co-ordination of that input with the preparation of CTMP (Condition 12), CEMP (Condition 14), and DUDLP (Condition 21); (j) Methods to communicate any changes, made in accordance with Condition 5, to the management plans listed in Condition 3;

	(k) Methods to ensure ongoing communication with Mana Whenua who have expressed an interest through this process. Preparation of the CCP is to include a process to invite feedback from Directly Affected Parties, prior to the CCP being submitted to the Council as part of an Outline Plan. The CCP shall document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.
Construction Traffic Management Plan	
12.	A CTMP shall be included in the Outline Plan submitted to the Council. The objective of the CTMP is to ensure measures are in place that will avoid, remedy or mitigate the local and network-wide transportation effects of construction associated with the project. The temporary traffic management measures in the plan shall include: (a) Proposed operating speeds and traffic layouts during construction; (b) Proposed method of monitoring traffic speeds, safety and levels of congestion and steps to be taken to avoid significant adverse traffic effects, where practicable. (c) Provision for controlling construction access to the site, traffic control adjacent to the site, and the protection of the public; (d) How access for pedestrians and cyclists along the corridor and to properties will be maintained; (e) How safe vehicle access to properties will be maintained to the greatest extent possible while acknowledging that construction needs will likely result in temporarily reduced capacity or closure of vehicle access. In the first instance, reduced capacity, alternative temporary access or sharing access with adjacent sites (where possible) should be provided. Where there is no practicable alternative, temporary full closure must involve adequate notice in accordance with the time periods specified in Condition 11(g). (f) How construction workforce parking will be managed; and (g) How provision will be made for access of emergency vehicles at all times. Preparation of the CTMP is to include a process to invite feedback from directly affected parties, prior to the CTMP being submitted to the Council as an Outline Plan. The CTMP is to document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.

13.	A copy of the CTMP shall be kept on the site at all times during construction. All measures for the protection of the public and other personnel set out in the CTMP shall be maintained and complied with at all times until such time as the works are completed.
Construction Environmental Management Plan	
14.	A CEMP shall be included in the Outline Plan submitted to Auckland Council. The objective of the CEMP is to provide for avoidance, remediation or mitigation of adverse effects associated with the construction of the project. The CEMP shall reflect the requirements of any resource consent issued by Auckland Council and as a minimum include: (a) A description of the proposed works and construction methodology; (b) An optimised construction programme that minimises disruption as far as practicable along Lincoln Road within the Project area during the period 12-24 December, and including the period 1-26 December in particular in respect of the site and adjacent road environment at 202-224 Lincoln Road; (c) An Erosion and Sediment Control Management Plan; (d) A Dust Management Plan, including the proposed means of managing dust during construction taking into account the recommendations in section 5.2 of the Air Quality Report 31/05/2016 provided by the Requiring Authority with the Notice of Requirement, and how dust will be monitored throughout the construction period; (e) A Construction Noise and Vibration Management Plan (CNVMP) to provide for the development and implementation of identified best practicable options to avoid, remedy or mitigate the adverse effects on receivers of noise and vibration resulting from construction. The CNVMP shall contain, but not be limited to: i. The project noise and vibration criteria (including weekend and night time works) in accordance with the NZS 6803:1999 Acoustic Construction Noise and Guideline DIN4150-3 1999, Structural Vibration – Effects of vibration on structures, and taking into account the recommendations of the Noise and Vibration Report provided by the Requiring Authority with the Notice of Requirement for a weekday and Saturday night time noise limit of LAeq 55dB for residential receivers; ii. A summary of construction noise and vibration assessments/predictions; iii. General construction practices, management and mitigation;

iv. Noise management and mitigation measures specific to activities and/or receiving environments, such as temporary barriers or enclosures, selection of appropriate machinery, specific consideration of any night-time works, and preparation of site-specific construction noise management plans where required;

v. Vibration management and mitigation measures specific to activities and/or receiving environments, including the process to be followed to prepare site-specific construction vibration management plans where required;

vi. Site specific CNVMPs shall describe site specific noise effects and/or vibration risks, mitigation measures~~,~~ including consultation and notice processes with affected parties, and shall stipulate the required monitoring of noise or vibration levels. A site specific CNVMP may prescribe noise and vibration levels higher than those prescribed in condition 14(e)(i) provided they have been determined by a suitably qualified and experienced person as being the Best Practicable Option to manage noise and vibration effects. Any such site specific CNVMP may be for individual buildings or for groups, whichever is appropriate, and must be prepared by a suitably qualified person;

vii. Site specific CNVMPs must be submitted to the Council 5 working days prior to the noise being generated for certification that the proposed noise mitigation measures (BPO) are appropriate given the noise to be generated and the surrounding activities. Council may require additional mitigation measures where necessary to ensure BPO is achieved;

viii. Monitoring and reporting requirements;

ix. Procedures for handling complaints;

x. Procedures for review of the CNVMP throughout the project; and

xi. Methods for communication and consultation with affected parties, including procedures for giving advance notice where it is anticipated that there may be perceptible levels of vibration and/or noise levels will exceed relevant standards.

(f) Construction lighting details and how the use of temporary construction floodlighting shall be located and directed to minimise potential glare effects on occupants of residential buildings;

(g) Details of the temporary stormwater management system that will be in place at all times during construction;

	(h) How works around trees and on-site landscaping will be undertaken to retain vegetation in accordance with Condition 21; (i) Details of on-site car parking management where works require the temporary removal of existing car parks. This may involve temporary re arrangement of car parks on site, agreement to share parking on adjacent sites or similar measures; (j) Details as to the nature and extent of works in the Temporary designation area shown on the NoR plans. Generally, this area should not be used for stockpiling of machinery or materials, while the use of hoardings and other screens should be kept to a minimum; (k) Details of works in the vicinity of hazardous substances facilities and how those works will be undertaken in a safe manner; and (l) Preparation of the CEMP is to include a process to invite feedback from directly affected parties, prior to the CEMP being submitted to the Council as part of an Outline Plan. The CEMP shall document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.
Safety audits	
15.	Prior to the commencement of construction activities, the Requiring Authority shall provide a copy of a detailed design safety audit to Auckland Council.
15A.	A safety audit with respect to the operation of U-turn arrangements at the Universal Drive and Central Park Drive intersections with Lincoln Road shall be undertaken within three months of the issue of the certificate of practical completion.
Accidental Discovery Protocol	
16.	In the event of an accidental discovery of archaeological material, the site manager must: (a) Cease work immediately within 10m of the discovery, and secure this area. (b) Notify the Council and Heritage New Zealand - Pouhere Taonga Regional archaeologist within one working day of the discovery. (c) Advise the NZ Police and Coroner if skeletal remains are uncovered. (d) Ensure that works within the secured area do not resume until all necessary statutory authorisations or consents have been obtained.

17.	If at any time during investigation, potential koiwi, archaeology or artefacts of Maori origin are discovered, the Requiring Authority will notify Mana Whenua. *Advice note: Works affecting archaeological sites are subject to a consent process under the Heritage New Zealand Pouhere Taonga Act 2014. An authority (consent) from Heritage New Zealand - Pouhere Taonga must be obtained for the work prior to commencement. It is an offence to damage or destroy a site for any purpose without an authority. The Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage.*
Overland Flow	
18.	Prior to construction commencing, detailed design shall include an assessment of overland flow and flooding effects of the design, and demonstrate that any flooding effects on sites outside the designation are avoided or mitigated by the design.
Lighting	
19.	All street lighting will be designed to comply with AS/NZS 1158, and Auckland Transport's Code of Practice.
20.	The DUDLP required by Condition 21 shall include finalised proposed lighting specifications, locations, illumination levels, shielding and any relevant industry standards and demonstrate that lighting minimises light spill and glare for neighbouring residences, while being integrated with the public realm.
Landscape / Urban Design	
21.	A detailed Urban Design and Landscape Plan (DUDLP) shall be included in the Outline Plan submitted to Auckland Council. The DUDLP shall be prepared by a suitably qualified person taking into account the principles of the Urban Design, Landscape and Visual Assessment report submitted with the NoR, updated where necessary to take account of best practice and any changes to the environment along Lincoln Road since the NoR was confirmed. The DUDLP must include details of: (a) Locations for all tree and vegetation planting including number, sizes and species, consistent with Condition 22; ~~and~~ ~~r~~ (b) Replacement planting on private properties as designed in consultation with and as approved by the landowner(s) of each private property;

	(c) Replacement planting in Daytona Reserve of at least 3 Totara trees of PB 95 size, to be planted along the same alignment as the existing trees; and further planting in Te Pai Park as to be agreed with the Council; (d) Design of the new public space at 308-310 Lincoln Road, incorporating replacement trees; (e) Landscape treatment for the raised median buffer space beside the cycle lane and T3 lane and residual or new berm areas, complying with Condition 21 as necessary; (f) Design of retaining walls and batters. Where retaining walls are greater than 1m in height and will face residential activities, then specific designs should be identified that minimise impacts on residential amenity, including privacy and outlook, sunlight and daylight access and visual appearance, as well as minimising the height of the retaining wall where feasible. (g) Treatments of footpaths, pedestrian paths and cycle lane surfaces and alignments (including at vehicle crossings and pedestrian and cycle crossing points at intersections), to ensure the safety and convenience of pedestrians and cyclists, taking into account the location of other street elements and furniture. The design of T intersections should clearly signal to vehicle drivers that they are entering a low speed environment. (h) How the designs of (a) to (f) are compatible with the landscape treatment of the State Highway 16 Lincoln Road interchange, Te Pai Park and Daytona Reserve, as relevant. (i) How the detailed design addresses NZS 4121:2001 – 'Design for Access and Mobility – Buildings and Associated Facilities', RTS 14 – 'Guidelines for facilities for blind and vision - impaired pedestrians, and the principles set out in the National Guidelines for Crime Prevention Through Design in NZ; (j) A consistent palette of options for replacement fencing and landscape strips on land not part of the permanent designation (as to be agreed with landowners), including any acoustic fencing that may be required by condition 32; and (k) Lighting details required by condition 19.
Trees: New Planting	
22	The DUDLP required by Condition 21 shall include details on the street tree planting, as follows: (a) As many suitable street trees as possible are to be planted in the raised median, remaining berm areas and where feasible in the footpaths in general accordance (including number and spacing) with the concept

	plan submitted with the NoR and as updated through the DUDLP Condition 21 taking into account the following factors: (i) The location of utilities and services and their protection from installation works and the on-going growth of trees. This could include possible relocation of services, if necessary; (ii) The design of engineered tree pits to ensure healthy growth of street trees, providing at least $20m^3$ of soil per tree. This is likely to include the design of structural tree pits which extend beyond the footprint of the median strip or road berm. Techniques should include use of: • Soil cells, or; • Vault or rafting, or; • Structural Soils, (iii) Pre-ordering appropriate nursery stock so that they can be trained to form an appropriate shape prior to installation within the median. (b) A maintenance plan setting out methods to maintain the trees in their establishment phase and once established, including irrigation, pruning and maintenance of ground cover and replacement of individual trees that do not thrive or are subsequently damaged; (c) Record of consultation with Watercare in respect of planting in proximity to their assets; and (d) The works arborist identified in Condition 24 to oversee the median tree planting works.
Trees: Works	
23.	Trees located within the (Temporary and Permanent) designation footprint may be removed, except for scheduled trees located within the road reserve outside 158 Lincoln Road (Himalayan Cedar) and 172 Lincoln Road (Rimu).
24.	Works in the driplines of trees (removal or alteration) is to occur under the supervision of a suitably experienced arborist ('Works Arborist') to be employed by the Requiring Authority for the duration of the project. The Works Arborist is to monitor, direct and supervise all tree removals and all works within the dripline of trees adjacent to the works site. The appointed Works Arborist must be experienced in tree protection systems and construction methodologies and be able to coordinate the site works to ensure that the approved tree protection methodology is correctly implemented.
25.	Where works occur within the dripline of trees (for trees either located within or adjacent to the designation footprint), an on-site determination as to

	whether a tree can be viably retained or shifted shall be undertaken by the Works Arborist. The Works Arborist shall consider the following criteria (and provide a copy of the assessment in writing) when making his/her determination: (a) Whether or not there any design solutions which would allow for a tree or trees to be retained; (b) Species' known tolerance to root pruning/disturbance; (c) Overall condition of the tree (vigour/vitality); (d) Actual confirmed distance between the tree and the proposed works; (e) Any known previous root pruning/disturbance; (f) Numbers and diameters of roots which are required to be pruned; and (g) Size of the tree.
26.	The removal of any vegetation shall be undertaken in a manner which avoids any unnecessary damage or disturbance to any retained vegetation and their root zones (for example sectional felling in conjunction with modern rigging techniques where required).
27.	Works around retained trees shall be according to best arboricultural practices, in accordance with section 9 of the Arboricultural report from Amenity Tree Consultants Limited, titled Lincoln Road Corridor Improvements, dated May 2016, including methods to prune roots where necessary and avoidance of stockpiling of construction material machinery etc. in drip lines.
28.	Measures are to be taken to ensure that all contractors, subcontractors, and workers engaged in all activities covered by this designation are advised of the tree protection measures required as conditions upon this designation, and operate in accordance with them.
29.	Ten days prior to any work occurring within the dripline of the three notable trees located outside the properties at 158 Lincoln Road (Himalayan Cedar) and 172 Lincoln Road (Rimu), and within the property of 170 Lincoln Road (Rimu), details of the proposed works will be submitted to the Council for certification. The works shall follow best arboricultural practice, to avoid/minimise root loss by using non-dig construction options, and damage to the tree. The design should allow for permeable surfaces beneath the dripline where practicable.
30.	Regular monitoring reports and a completion report are to be submitted to the Council.

	The Requiring Authority shall prepare and submit to the Council's Consents Arborist and Monitoring Inspector compliance reports on a monthly basis throughout the course of the works. The compliance reports shall include: (a) A digital photographic record of the tree works undertaken from the appointed Works Arborist; and (b) Confirmation that the works to date have been in accordance with the conditions of this designation while under the direction of the Works Arborist. A completion report shall be provided by the Works Arborist to the Council's Resource Consents Arborist within one month of the finish of site works. The completion report shall confirm (or otherwise) that the works have been undertaken in accordance with the tree protection measures in the conditions and under the direction of the Works Arborist. The completion report shall also confirm (or otherwise) that the impact on the protected trees has been no greater than that afforded under the conditions.
Community Facilities and Local Business Management Plan	
31.	At least 3 months prior to the commencement of construction works, and prior to the submission to the Council of the Outline Plans listed in Condition 3, a Community Facilities and Local Business Management Plan (CFLBMP) shall be submitted to the Council and provided to stakeholders, for their information. The objective of the CFLBMP is to identify the potential effects of the construction works on local community facilities and local businesses, identify potential mitigation measures and how these will be implemented through the plans listed in Condition 3. The CFLBMP shall be developed in consultation with directly affected parties, local community facility operators and business owners. The CFLBMP shall document feedback received and the measures to be taken to address concerns, or reasons why specific feedback cannot be addressed. The CFLBMP shall identify the following: (a) Measures to avoid, remedy or mitigate (as far as reasonably practicable) disruption to access (including pedestrian, cycle, passenger transport and service/private vehicles) and operations for community facilities and local businesses as a result of construction activities; i. Temporary signage; ii. Provision of alternative car parking during construction; iii. Adequate notice of when and how construction will affect customer and delivery access in accordance with Condition 12(e); and

	iv. Timing and staging of the works during construction. (b) How the potential temporary loss of amenity for community facilities and businesses as a result of construction activities will be or have been mitigated through the CEMP.
Operational Noise	
32.	An Operational Noise Management Plan (ONMP) shall be prepared in accordance with NZS6806:2010 Acoustics - Road Traffic Noise - New and Altered Roads. The objective of the ONMP is to set out how the effects of road noise on PPFs existing prior to the designation being in place will be mitigated by the adoption of the Best Practicable Option. The ONMP shall: (a) identify how the Project will be designed and constructed so that using the best practicable option, predicted operational noise levels from the Project 10 years after opening; at the PPFs identified in Appendix D of the Styles Group report (Appendix D, "Table of Predicted Noise Levels", Operational Noise Assessment Report, June 2016); do not result in any upwards change to the specified "Noise Criteria Category" in Appendix D "Preferred Design Option" noise levels predicted by the acoustic modelling undertaken by Styles Group Acoustics and Vibration; and (b) detail the best practicable option for reducing noise levels for the PPFs in accordance with NZS6806:2010 and as agreed with the landowners where relevant.
33.	An independent acoustic expert shall prepare the ONMP to be submitted with the Outline Plan required by Condition 32.
Universal Drive pedestrian crossing	
34.	Subject to being able to meet any safety and operational requirements identified by the safety audit undertaken for the detailed design for the project, the detailed design for the permanent replacement signalised pedestrian crossing on Universal Drive, adjacent to 202-224 Lincoln Road shown on Sheet 13 in Appendix 21 of the NoR shall be amended so that the southern leg of the crossing aligns approximately with the existing pedestrian route through 202-224 Lincoln Road. Advice note: In the event that the revised crossing design required by Condition 34 is not able to meet Auckland Transport's safety and operational requirements, the Requiring Authority shall, in consultation with the owner of 202-224 Lincoln Road, use its best endeavours to realign the pedestrian

	route through 202-224 Lincoln Road to align with the replacement signalised crossing on Universal Drive.

Annexure D – Proposed Temporary Traffic Management Plan (Ref. L1N171201)

Auckland Transport
An Auckland Council Organisation

6 Henderson Valley Road, Henderson, Auckland 0612
Private Bag 92250, Auckland 1142, New Zealand
Ph 09 355 3553 **Fax** 09 355 3550

19 December 2017

Zaid Essa
Principle Engineer, Auckland Transport
20 Viaduct Harbour Avenue
Auckland Central

Dear Zaid

Lincoln Road, Pak n Save Access

In regards to the proposed Temporary Traffic Management Plan for the works on Lincoln Road outside the Pak 'n Save access (Ref. L1B171201). We confirm that the proposed Temporary Traffic Management Plan is approved in principle.

Please note that the Temporary Traffic Management Plan will need to be resubmitted for final approval 15 days prior to commencement of construction. In addition, minor adjustments to the final Temporary Traffic Management arrangements may be required once the work starts, such as vehicles entering and exiting Pak'nSave, pedestrian management and traffic signal management, visibility of signage and traffic signals, tracking for vehicles turning manoeuvres, left and right turning manoeuvres in and out of the site and possible short detours, phasing of the traffic signals etc.

Kind regards

Jane Harris
Senior Corridor Access Coordinator,

Auckland Transport

THE SEAL OF THE ENVIRONMENT COURT NEW ZEALAND

flow
TRANSPORTATION SPECIALISTS

Reference Number: L1B171201

1 December 2017

Zaid Essa
Auckland Transport
AUCKLAND

via email: Zaid.Essa@at.govt.nz
cc Rachel Dimery Rachel.Dimery@at.govt.nz

Dear Zaid

LINCOLN ROAD NOR APPEALS – PAK'N SAVE ACCESS

We have undertaken investigations regarding accessing the Pak'n Save site while construction works are occuring past the Pak'n Save access on Lincoln Road. The investigations have included the following:

- investigations of the layout of the Lincoln Road/Pak'n Save access intersection whilst the safe zone areas are in place
- obtain and review SCATS data for the Lincoln Road/Universal Drive intersection and prepare SIDRA models
- using the new layout for the Lincoln Road/Universal Drive intersection, 2017 SCATS volumes, test rerouting of right turn inbound at the Pak'n Save access relocating to Universal Drive
- using the new layout for the Lincoln Road/Universal Drive intersection, 2017 SCATS volumes, test rerouting of the right turn outbound at the Pak'n Save access moving to Universal Drive
- using the new layout for the Lincoln Road/Universal Drive intersection, 2017 SCATS volumes, test rerouting of the right turn inbound and outbound at the Pak'n Save access moving to Universal Drive

As a summary, based on the assessment, it is possible to provide a construction sequence where all movements turning to and from the Lincoln Road/Pak'n Save access are able to be provided for. However, if circumstances require additional space for the works, it is suggested that re-routing the right turn in will not result in significant adverse effects on the operation of the Universal Drive/Lincoln Road intersection. If the re-routing might occur over weekends, it is suggested that the right turn in could be re-routed to the Universal Drive/Lincoln Road intersection but that the right turn out should be retained at the Lincoln Road/Pak'n Save access.

1 ASSESSMENT OF ACCESS LAYOUT WITH SAFE ZONE AREAS

A construction sequence that includes the sequential opening of the access road in three parts has been investigated. A 1 m safe zone and 1 m barrier width around the work areas has been assumed, with the construction areas needing to overlap in order for each section to tie into the adjacent

section. The overlap for the work zones is a minimum of 0.5 m. A 6.3 m van has been assumed for tracking purposes to and from the Pak'n Save access. These vehicles are larger than typical cars and for example are the size of a 4-berth motorhome.

The intersection layouts for the short term construction scenarios are shown on the attached plans and comprise the following:

Section 1 – Plans 1 and 2

- Plans 1 and 2 show a construction area adjacent to the southern side of the Pak'n Save accesss. To get sufficient overlap with the mid section of works, the safe zone extends to include the second right turn exit lane.
- The splitter island on the Pak'n Save access approach is assumed to be removed (as it is likely to be anyway once the trench is located across this section), and this allows an entry and exit lane to be provided. Traffic signals and associated signal software will need to be implemented appropriately.
- With the northbound kerbside lane on Lincoln Road marked as a shared through/left turn lane, vehicles entering from the south and north do so separately and therefore will not conflict each other.
- Exit movements from the Mitre 10 parking area onto the Pak'n Save access to the west of Lincoln Road will be required to turn left due to the relocation of the entry lane along the access. If they wish to, the drivers of these vehicles can use the roundabout just to the west to return to Lincoln Road.

Section 2 – Plans 3 and 4

- Plans 3 and 4 show a construction area in the centre of the access with a 1 m safety zone outside barriers.
- The inbound lane is located against the southern side of the access and can accommodate turning movements from the north and south separately. A right turn exit lane would be located adjacent to this inbound lane. Cones would be placed down the centre of these lanes and appropriate signs would be needed to ensure that motorists turning into the access road from Lincoln Road turn into the left most lane. Otherwise, there is a risk that they may turn into the right turn out lane if a vehicle is not stopped there. Turning speeds will be low and visibility to any vehicle stopped at the exit limit line should be visible through the 1 m safe zone.

Section 3 – Plans 5 and 6

- Plans 5 and 6 show a construction area adjacent to the northern side of the access, surrounded by barriers and a safety zone.
- Exiting left and right turn movements can be made from separate lanes and inbound movements can use the existing inbound lane.

2 ASSESSMENT OF THE OPERATION OF UNIVERSAL DRIVE/LINCOLN ROAD

2.1 Assessment Methodology

While not considered necessary based on the plans shown in Section 1 above, there may be the unexpected need to re-route some movements from the Pak'n Save access on Lincoln Road to the Universal Drive access. A temporary left in/left out access can be provided on Lincoln Road into the Pak'n Save carpark and therefore only right turn movements have been considered in this assessment. The assessment has separately considered the re-routing of the right turn out, the right turn in, as well as both right turns needing to re-route.

The Universal Drive/Lincoln Road intersection has been assumed to accommodate the extra turning movements as a result of right turn movements not being made at the Pak'n Save access on Lincoln Road. The operation of the intersection has been assessed using SIDRA[1] assuming the new layout of the Universal Drive/Lincoln Road intersection, as proposed in the Lincoln Road Project[2], and assuming that downstream blocking back from the Lincoln Road/Central Park Drive intersection will have reduced. The operation of the Pak'n Save access on Universal Drive has not been assessed.

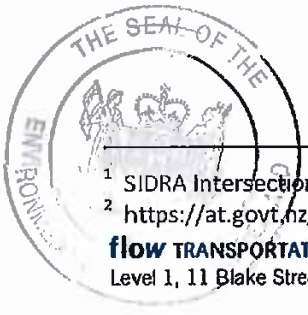
The criteria used in the assessment includes "level of service" (LOS), which is a measure of how well the intersection is performing. For traffic signalised intersections, the average delay per vehicle has been considered in determining the LOS and the criteria is as follows.

- LOS A: average delay per vehicle is less than or equal to 10 seconds
- LOS B: average delay per vehicle is between 10 and 20 seconds
- LOS C: average delay per vehicle is between 20 and 35 seconds
- LOS D: average delay per vehicle is between 35 and 55 seconds
- LOS E: average delay per vehicle is between 555 and 80 seconds
- LOS E: average delay per vehicle is equal to or greater than 80 seconds

2.2 Traffic Data

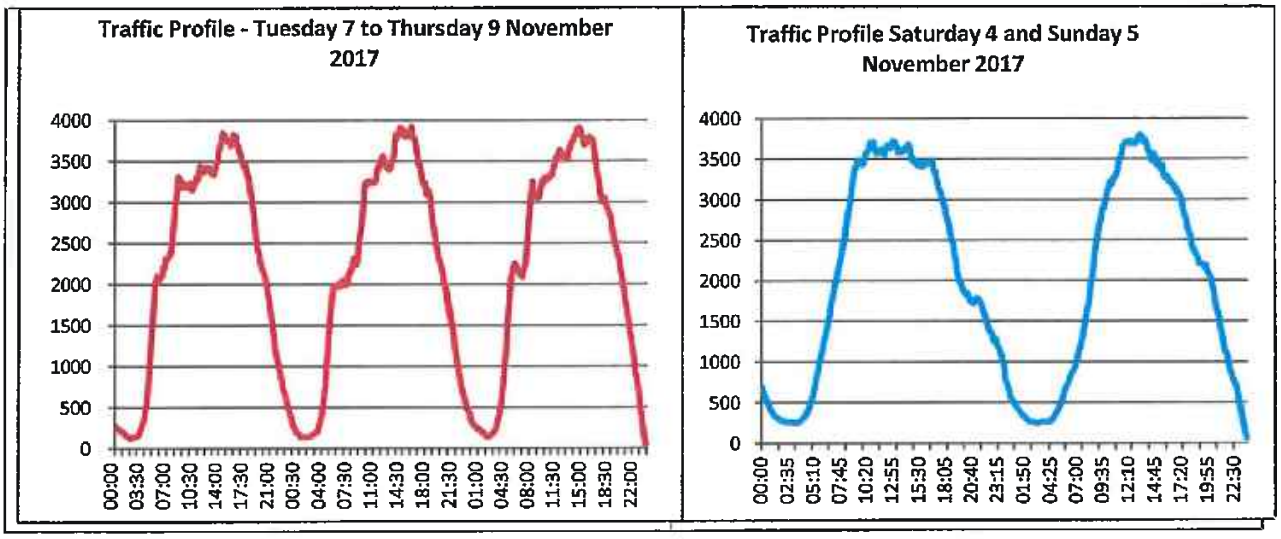
Traffic data has been sourced from the automatic traffic counts at the Universal Drive/Lincoln Road intersection for 4 to 5 and 7 to 9 November 2017. This data has been supplemented with manual traffic count data as some of the automatic count data appeared unreliable.

The traffic profiles on the three weekdays were found to be relatively consistent, as shown in the figure below. Similarly, traffic volumes on a Saturday and Sunday were found to be relatively consistent.



[1] SIDRA Intersection is a traffic modelling software tool used in the analysis of intersection capacity and performance.
[2] https://at.govt.nz/projects-roadworks/lincoln-road-upgrade/

Figure 1: Traffic Profile at Universal Drive/Lincoln Road Intersection, November 2017



Traffic during weekday morning and evening commute times and a weekend peak were assessed, with average volumes assumed from the data for 8 to 9 am, 4 to 5 pm on a weekday and 1 to 2 pm on a weekend day. These hours are considered to represent the peak of the weekday commute and the peak of the weekend traffic volumes.

No allowance has been made for changes in the traffic movements as a consequence of the upgraded intersection, growth in background traffic, or the on-going construction works. It is likely that the on-going construction works will inhibit traffic growth.

Information regarding vehicle occupancy and the likely use of the T3 lanes has been obtained from surveys undertaken in 2011. These identified that at that time, some 3.7% to 3.8% of vehicles had more than three occupants in the morning peak and 4.5% to 8.4% of vehicles had more than three occupants in the evening peak. It could be expected that these percentages will increase once the T3 lanes are implemented.

Traffic count data from the Pak'n Save access on Lincoln Road has been obtained to determine the right turn volumes that may need to re-route via the Universal Drive access. This data was collected on Thursday 2 March and Saturday 4 March 2017. The peak hour traffic volumes were observed as follows.

Table 1: Lincoln Road/Pak'n Save Access – Peak Hour Right Turn Movements

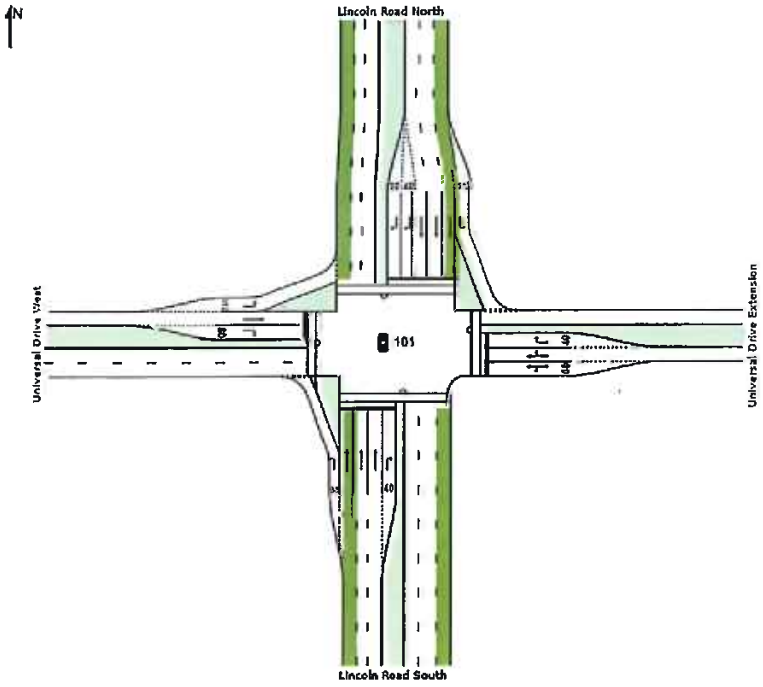
	Weekday AM	Weekday PM	Weekend MD
Right turn out	46	178	248
Right turn in	37	94	115

For the re-routed right turn in, an equivalent volume has been reduced from the southbound through movement on Lincoln Road, as the Lincoln Road southbound volume makes up 95% to 97% of the southbound traffic that might contribute to the right turn in.

2.3 Universal Drive/Lincoln Road Modelled Layout

The new layout of the Universal Drive/Lincoln Road intersection has been modelled using SIDRA. The modelled layout is shown in the figure below. The lanes coloured green represent T3 lanes and can only be used by designated users (buses and vehicles with three or more occupants).

Figure 2: Modelled Layout of Universal Drive/Lincoln Road Intersection



2.4 Weekday Morning Peak Hour

A summary of the assessment of the operation of the intersection with the weekday morning peak hour flows is provided in Table 2. The following sections provide more details regarding the assessment.

Table 2: 2017 Weekday Morning Peak – Universal Drive/Lincoln Road Model Outputs

	Observed Flows, New Layout	Re-route Right Turn In from Lincoln/Pak'n Save	Re-route Right Turn Out from Lincoln/Pak'n Save	Re-route both Right Turns from Lincoln/Pak'n Save
Average delay (sec/veh)	35.3	33.8	35.5	34.1
Overall LOS	D	C	D	C
Worst LOS	E	E	E	E
Worst LOS Movement	Right turn from Lincoln Road south	Right turn from Lincoln Road south	Right turn from Lincoln Road south	Right turn from Lincoln Road south

The operation of the Universal Drive/Lincoln Road intersection remains relatively constant between all the scenarios; the overall LOS change for re-routing with the right turn in is due to the average delay

being calculated as just under 35 seconds per vehicle (the cusp of LOS D), with the other scenarios ranging from 35.3 and 35.5 seconds per vehicle.

Further details from the models are provided in the figures below.

Figure 3: Modelled Outputs from 2017 AM Peak - Universal Drive/Lincoln Road Intersection - No-re-routing

2017 AM Lincoln Road Universal Drive
Signals - Fixed Time Isolated Cycle Time = 100 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	155	2.0	0.117	6.4	LOS A	1.4	10.2	0.26	0.58	46.0
2	T1	498	3.0	0.847	51.8	LOS D	13.1	93.6	0.99	0.99	29.3
3	R2	62	2.0	0.565	58.0	LOS E	3.2	22.8	1.00	0.77	27.9
Approach		715	2.7	0.847	42.5	LOS D	13.1	93.6	0.84	0.88	31.7
East: Universal Drive Extension											
4	L2	26	2.0	0.220	36.0	LOS D	4.2	29.8	0.83	0.68	34.5
5	T1	106	2.0	0.220	31.4	LOS C	4.2	29.8	0.83	0.69	34.6
6	R2	187	2.0	0.220	35.9	LOS D	4.1	29.1	0.83	0.74	34.0
Approach		320	2.0	0.220	34.4	LOS C	4.2	29.8	0.83	0.72	34.2
North: Lincoln Road North											
7	L2	141	2.0	0.102	6.3	LOS A	1.3	9.0	0.25	0.57	46.1
8	T1	842	3.0	0.858	44.5	LOS D	23.6	168.0	0.97	0.99	31.2
9	R2	378	2.0	0.828	53.2	LOS D	9.6	68.5	0.97	0.96	29.0
Approach		1361	2.6	0.858	43.0	LOS D	23.6	168.0	0.89	0.94	31.5
West: Universal Drive West											
10	L2	641	3.0	0.563	9.1	LOS A	12.0	85.9	0.49	0.69	44.5
11	T1	193	2.0	0.477	38.0	LOS D	8.4	59.8	0.93	0.76	33.1
12	R2	169	2.0	0.441	42.2	LOS D	7.3	52.2	0.92	0.79	31.9
Approach		1003	2.6	0.563	20.2	LOS C	12.0	85.9	0.65	0.72	39.3
All Vehicles		3399	2.6	0.858	35.3	LOS D	23.6	168.0	0.80	0.84	33.8

Figure 4: Modelled Outputs from 2017 AM Peak - Universal Drive/Lincoln Road Intersection – Right Turn In Re-routed from Lincoln Road/Pak'n Save Access

2017 AM Lincoln Road Universal Drive with RT In re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 110 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	155	2.0	0.119	6.6	LOS A	1.6	11.4	0.26	0.58	45.9
2	T1	498	3.0	0.790	51.5	LOS D	13.8	98.5	0.99	0.92	29.4
3	R2	62	2.0	0.622	64.2	LOS E	3.6	25.3	1.00	0.79	26.7
Approach		715	2.7	0.790	42.9	LOS D	13.8	98.5	0.84	0.84	31.6
East: Universal Drive Extension											
4	L2	26	2.0	0.242	41.4	LOS D	4.8	33.9	0.85	0.70	32.9
5	T1	106	2.0	0.242	36.8	LOS D	4.8	33.9	0.85	0.71	32.9
6	R2	187	2.0	0.242	41.3	LOS D	4.6	33.0	0.85	0.74	32.4
Approach		320	2.0	0.242	39.6	LOS D	4.8	33.9	0.85	0.73	32.6
North: Lincoln Road North											
7	L2	141	2.0	0.101	6.4	LOS A	1.3	9.5	0.24	0.57	46.1
8	T1	803	3.0	0.680	33.3	LOS C	19.9	141.8	0.89	0.77	34.4
9	R2	417	2.0	0.800	51.9	LOS D	11.0	78.0	0.93	0.91	29.3
Approach		1361	2.6	0.800	36.2	LOS D	19.9	141.8	0.84	0.79	33.5
West: Universal Drive West											
10	L2	641	3.0	0.552	9.3	LOS A	12.8	91.9	0.48	0.68	44.4
11	T1	193	2.0	0.500	42.7	LOS D	9.3	66.4	0.94	0.77	31.8
12	R2	169	2.0	0.463	46.9	LOS D	8.2	58.0	0.93	0.80	30.6
Approach		1003	2.6	0.552	22.1	LOS C	12.8	91.9	0.64	0.72	38.5
All Vehicles		3399	2.6	0.800	33.8	LOS C	19.9	141.8	0.78	0.77	34.3

Figure 5: Modelled Outputs from 2017 AM Peak - Universal Drive/Lincoln Road Intersection – Right Turn Out Re-routed from Lincoln Road/Pak'n Save Access

2017 AM Lincoln Road Universal Drive with RT Out re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 100 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	155	2.0	0.117	6.4	LOS A	1.4	10.2	0.26	0.58	46.0
2	T1	498	3.0	0.847	51.8	LOS D	13.1	93.6	0.99	0.99	29.3
3	R2	62	2.0	0.565	58.0	LOS E	3.2	22.8	1.00	0.77	27.9
Approach		715	2.7	0.847	42.5	LOS D	13.1	93.6	0.84	0.88	31.7
East: Universal Drive Extension											
4	L2	26	2.0	0.220	36.0	LOS D	4.2	29.8	0.83	0.68	34.5
5	T1	106	2.0	0.220	31.4	LOS C	4.2	29.8	0.83	0.69	34.6
6	R2	187	2.0	0.220	35.9	LOS D	4.1	29.1	0.83	0.74	34.0
Approach		320	2.0	0.220	34.4	LOS C	4.2	29.8	0.83	0.72	34.2
North: Lincoln Road North											
7	L2	141	2.0	0.102	6.3	LOS A	1.3	9.0	0.25	0.57	46.1
8	T1	842	3.0	0.858	44.5	LOS D	23.6	168.0	0.97	0.99	31.2
9	R2	378	2.0	0.828	53.2	LOS D	9.6	68.5	0.97	0.98	29.0
Approach		1361	2.6	0.858	43.0	LOS D	23.6	168.0	0.89	0.94	31.5
West: Universal Drive West											
10	L2	641	3.0	0.563	9.1	LOS A	12.0	85.9	0.49	0.69	44.5
11	T1	193	2.0	0.477	38.0	LOS D	8.4	59.8	0.93	0.76	33.1
12	R2	218	2.0	0.567	43.4	LOS D	9.7	69.3	0.95	0.81	31.6
Approach		1052	2.6	0.567	21.5	LOS C	12.0	85.9	0.67	0.73	38.8
All Vehicles		3447	2.6	0.858	35.5	LOS D	23.6	168.0	0.81	0.84	33.7

Figure 6: Modelled Outputs from 2017 AM Peak - Universal Drive/Lincoln Road Intersection – Right Turn In and Right Turn Out Re-routed from Lincoln Road/Pak'n Save Access

2017 AM Lincoln Road Universal Drive with RT In and Out re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 110 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	155	2.0	0.119	6.6	LOS A	1.6	11.4	0.26	0.58	45.9
2	T1	498	3.0	0.790	51.5	LOS D	13.8	98.5	0.99	0.92	29.4
3	R2	62	2.0	0.622	64.2	LOS E	3.6	25.3	1.00	0.79	26.7
Approach		715	2.7	0.790	42.9	LOS D	13.8	98.5	0.84	0.84	31.6
East: Universal Drive Extension											
4	L2	26	2.0	0.242	41.4	LOS D	4.8	33.9	0.85	0.70	32.9
5	T1	106	2.0	0.242	36.8	LOS D	4.8	33.9	0.85	0.71	32.9
6	R2	187	2.0	0.242	41.3	LOS D	4.6	33.0	0.85	0.74	32.4
Approach		320	2.0	0.242	39.8	LOS D	4.8	33.9	0.85	0.73	32.6
North: Lincoln Road North											
7	L2	141	2.0	0.101	6.4	LOS A	1.3	9.5	0.24	0.57	46.1
8	T1	803	3.0	0.680	33.3	LOS C	19.9	142.0	0.89	0.77	34.4
9	R2	417	2.0	0.800	51.9	LOS D	11.0	78.0	0.93	0.91	29.3
Approach		1361	2.6	0.800	36.2	LOS D	19.9	142.0	0.84	0.79	33.5
West: Universal Drive West											
10	L2	641	3.0	0.552	9.3	LOS A	12.8	91.9	0.48	0.68	44.4
11	T1	193	2.0	0.500	42.7	LOS D	9.3	66.4	0.94	0.77	31.8
12	R2	218	2.0	0.595	48.3	LOS D	10.8	77.0	0.96	0.82	30.3
Approach		1052	2.6	0.595	23.5	LOS C	12.8	91.9	0.68	0.73	38.0
All Vehicles		3447	2.6	0.800	34.1	LOS C	19.9	142.0	0.78	0.78	34.2

2.5 Weekday Evening Peak Hour

A summary of the assessment of the operation of the intersection with the weekday evening peak hour flows is provided in Table 3. The following sections provide more details regarding the assessment.

Table 3: 2017 Weekday Evening Peak – Universal Drive/Lincoln Road Model Outputs

	Observed Flows	Re-route Right Turn In from Lincoln/Pak'n Save	Re-route Right Turn Out from Lincoln/Pak'n Save	Re-route both Right Turns from Lincoln/Pak'n Save
Average delay (sec/veh)	58.4	97.0	60.8	97.9
Overall LOS	E	F	E	F
Worst LOS	F	F	F	F
Worst LOS Movement	Right turn from Lincoln Road north	Right turn from Lincoln Road north	Right turn from Lincoln Road north	Right turn from Lincoln Road north

The overall operation of the Universal Drive/Lincoln Road intersection remains relatively constant between the base and right turn out scenarios. Re-routing the right turn in is expected to increase the average delay from around one minute to one minute 40 seconds. Further details from the models are provided in the figures below.

Figure 7: Modelled Outputs from 2017 PM Peak - Universal Drive/Lincoln Road Intersection - No-re-routing

2017 PM Lincoln Road Universal Drive
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	221	2.0	0.193	11.3	LOS B	5.1	36.5	0.37	0.63	43.4
2	T1	864	3.0	0.956	91.6	LOS F	39.5	281.4	0.99	1.18	22.4
3	R2	75	2.0	0.559	79.9	LOS E	5.5	39.4	1.00	0.77	23.9
Approach		1160	2.7	0.956	75.6	LOS E	39.5	281.4	0.87	1.05	24.7
East: Universal Drive Extension											
4	L2	44	2.0	0.698	68.3	LOS E	16.1	114.7	1.00	0.84	26.6
5	T1	210	2.0	0.698	68.7	LOS E	16.1	114.7	0.99	0.84	26.7
6	R2	342	2.0	0.698	67.3	LOS E	12.6	89.6	0.97	0.83	26.3
Approach		596	2.0	0.698	66.1	LOS E	16.1	114.7	0.98	0.84	26.5
North: Lincoln Road North											
7	L2	157	2.0	0.108	6.5	LOS A	1.8	13.1	0.21	0.58	46.0
8	T1	895	3.0	0.576	30.4	LOS C	26.7	190.5	0.75	0.68	35.4
9	R2	597	2.0	0.962	105.9	LOS F	28.1	199.9	0.89	1.12	20.5
Approach		1649	2.5	0.962	55.4	LOS E	28.1	199.9	0.75	0.82	28.5
West: Universal Drive West											
10	L2	509	3.0	0.487	17.7	LOS B	18.1	129.7	0.58	0.72	40.4
11	T1	168	2.0	0.524	62.0	LOS E	11.3	80.6	0.98	0.79	27.3
12	R2	104	2.0	0.341	64.4	LOS E	6.6	46.2	0.93	0.78	26.8
Approach		781	2.7	0.524	33.4	LOS C	18.1	129.7	0.71	0.74	34.5
All Vehicles		4186	2.5	0.962	58.4	LOS E	39.5	281.4	0.81	0.87	27.9

Figure 8: Modelled Outputs from 2017 PM Peak - Universal Drive/Lincoln Road Intersection – Right Turn In Re-routed from Lincoln Road/Pak'n Save Access

2017 PM Lincoln Road Universal Drive with RT IN re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	221	2.0	0.231	23.0	LOS C	8.4	59.7	0.57	0.68	38.1
2	T1	864	3.0	1.046	176.2	LOS F	56.1	400.4	0.99	1.61	15.3
3	R2	75	2.0	0.512	76.5	LOS E	5.5	38.9	1.00	0.77	24.2
Approach		1160	2.7	1.046	140.7	LOS F	56.1	400.4	0.91	1.38	17.0
East: Universal Drive Extension											
4	L2	44	2.0	0.698	68.3	LOS E	16.1	114.7	1.00	0.84	26.6
5	T1	210	2.0	0.698	63.7	LOS E	16.1	114.7	0.99	0.84	26.7
6	R2	342	2.0	0.698	67.3	LOS E	12.6	89.6	0.97	0.83	26.3
Approach		596	2.0	0.698	66.1	LOS E	16.1	114.7	0.98	0.84	26.5
North: Lincoln Road North											
7	L2	157	2.0	0.109	6.5	LOS A	1.8	13.1	0.21	0.56	46.0
8	T1	801	3.0	0.528	30.3	LOS C	23.6	168.3	0.74	0.64	35.4
9	R2	691	2.0	1.058	220.7	LOS F	52.4	373.0	1.00	1.49	12.4
Approach		1649	2.5	1.058	107.8	LOS F	52.4	373.0	0.80	0.99	20.1
West: Universal Drive West											
10	L2	509	3.0	0.475	17.0	LOS B	17.5	125.7	0.58	0.72	40.7
11	T1	168	2.0	0.524	62.0	LOS E	11.3	80.6	0.96	0.79	27.3
12	R2	104	2.0	0.341	64.4	LOS E	6.8	48.2	0.93	0.78	26.8
Approach		781	2.7	0.524	33.0	LOS C	17.5	125.7	0.70	0.74	34.6
All Vehicles		4186	2.5	1.058	97.0	LOS F	56.1	400.4	0.84	1.03	21.4

Figure 9: Modelled Outputs from 2017 PM Peak - Universal Drive/Lincoln Road Intersection – Right Turn Out Re-routed from Lincoln Road/Pak'n Save Access

2017 PM Lincoln Road Universal Drive with RT Out Re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	221	2.0	0.193	11.3	LOS B	5.1	36.5	0.37	0.63	43.4
2	T1	864	3.0	0.956	91.6	LOS F	39.5	281.4	0.99	1.18	22.4
3	R2	75	2.0	0.559	79.9	LOS E	5.5	39.4	1.00	0.77	23.9
Approach		1160	2.7	0.956	75.6	LOS E	39.5	281.4	0.87	1.05	24.7
East: Universal Drive Extension											
4	L2	44	2.0	0.698	68.3	LOS E	16.1	114.7	1.00	0.84	26.6
5	T1	210	2.0	0.698	63.7	LOS E	16.1	114.7	0.99	0.84	26.7
6	R2	342	2.0	0.698	67.3	LOS E	12.6	89.6	0.97	0.83	26.3
Approach		596	2.0	0.698	66.1	LOS E	16.1	114.7	0.98	0.84	26.5
North: Lincoln Road North											
7	L2	157	2.0	0.108	6.5	LOS A	1.8	13.1	0.21	0.56	46.0
8	T1	895	3.0	0.576	30.4	LOS C	28.7	190.5	0.75	0.66	35.4
9	R2	597	2.0	0.962	105.9	LOS F	28.1	199.9	0.89	1.12	20.5
Approach		1649	2.5	0.962	55.4	LOS E	28.1	199.9	0.75	0.82	28.5
West: Universal Drive West											
10	L2	509	3.0	0.487	17.7	LOS B	18.1	129.7	0.58	0.72	40.4
11	T1	168	2.0	0.524	62.0	LOS E	11.3	80.6	0.96	0.79	27.3
12	R2	282	2.0	0.941	97.9	LOS F	25.5	181.4	1.00	1.10	21.5
Approach		959	2.5	0.941	49.0	LOS D	25.5	181.4	0.77	0.85	30.1
All Vehicles		4364	2.5	0.962	60.8	LOS E	39.5	281.4	0.82	0.89	27.4

Figure 10: Modelled Outputs **from 2017 PM Peak - Universal Drive/Lincoln Road Intersection – Right** Turn In and Right Turn Out Re-**routed from Lincoln Road/Pak'n Save Access**

2017 PM Lincoln Road Universal Drive with RT IN and OUT re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	221	2.0	0.231	23.0	LOS C	8.4	59.7	0.57	0.68	38.1
2	T1	864	3.0	1.046	176.2	LOS F	56.1	400.4	0.99	1.61	15.3
3	R2	75	2.0	0.512	78.5	LOS E	5.5	38.9	1.00	0.77	24.2
Approach		1160	2.7	1.046	140.7	LOS F	56.1	400.4	0.91	1.38	17.0
East: Universal Drive Extension											
4	L2	44	2.0	0.698	68.3	LOS E	16.1	114.7	1.00	0.84	26.6
5	T1	210	2.0	0.698	63.7	LOS E	16.1	114.7	0.99	0.84	26.7
6	R2	342	2.0	0.698	67.3	LOS E	12.6	89.6	0.97	0.83	25.3
Approach		596	2.0	0.698	66.1	LOS E	16.1	114.7	0.98	0.84	26.5
North: Lincoln Road North											
7	L2	157	2.0	0.109	6.5	LOS A	1.8	13.1	0.21	0.56	46.0
8	T1	801	3.0	0.528	30.3	LOS C	23.6	168.3	0.74	0.64	35.4
9	R2	691	2.0	1.058	220.7	LOS F	52.4	373.0	1.00	1.49	12.4
Approach		1649	2.5	1.058	107.8	LOS F	52.4	373.0	0.80	0.99	20.1
West: Universal Drive West											
10	L2	509	3.0	0.475	17.0	LOS B	17.5	125.7	0.58	0.72	40.7
11	T1	168	2.0	0.524	62.0	LOS E	11.3	80.6	0.96	0.79	27.3
12	R2	282	2.0	0.941	97.9	LOS F	25.5	181.4	1.00	1.10	21.5
Approach		959	2.5	0.941	48.7	LOS D	25.5	181.4	0.76	0.84	30.2
All Vehicles		4364	2.5	1.058	97.8	LOS F	56.1	400.4	0.84	1.04	21.4

2.6 Weekend Peak Hour

A summary of the assessment of the operation of the intersection with the weekend peak hour flows is provided in Table 4. The following sections provide more details regarding the assessment.

Table 4: 2017 Weekend Peak – Universal Drive/Lincoln Road Model Outputs

	Observed Flows	Re-route Right Turn In from **Lincoln**/Pak'n Save	Re-route Right Turn Out from Lincoln/Pak'n Save	**Re-route both Right Turns from Lincoln/Pak'n Save**
Average delay (sec/veh)	58.4	107.0	116.1	173.4
Overall LOS	E	F	F	F
Worst LOS	F	F	F	F
Worst LOS Movement	Through from Lincoln Road south and right turn from Lincoln Road north	Through from Lincoln Road south and right turn from Lincoln Road north	Through from Lincoln Road south, right turn from Lincoln Road north and right turn from Universal Drive West	Through from Lincoln Road south, right turn from Lincoln Road north and right turn from Universal Drive West

The operation of the Universal Drive/Lincoln Road intersection is anticipated to worsen with the scenarios that assume that right turn movements will re-route from the Lincoln Road/Pak'n Save. Re-routing the right turn in is expected to increase the average delay from around one minute to one

minute 50 seconds, and to almost two minutes if the right turn out is re-routed. Re-routing both right turn movements is expected to increase the average delay to almost three minutes. Further details from the models are provided in the figures below.

Figure 11: Modelled Outputs from 2017 Weekend Peak - Universal Drive/Lincoln Road Intersection - No-re-routing

2017 PM Lincoln Road Universal Drive
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	159	1.0	0.131	8.8	LOS A	2.8	19.9	0.30	0.59	44.7
2	T1	850	2.0	0.969	98.9	LOS F	40.8	288.6	0.99	1.23	21.6
3	R2	107	1.0	0.544	74.8	LOS E	7.6	53.8	0.99	0.79	24.8
Approach		1116	1.8	0.969	83.8	LOS F	40.8	288.6	0.89	1.09	23.4
East: Universal Drive Extension											
4	L2	39	1.0	0.404	64.2	LOS E	8.8	61.8	0.94	0.77	27.3
5	T1	175	1.0	0.404	59.7	LOS E	8.8	61.8	0.94	0.77	27.4
6	R2	182	1.0	0.404	64.2	LOS E	8.7	61.5	0.94	0.78	27.0
Approach		396	1.0	0.404	62.2	LOS E	8.8	61.8	0.94	0.77	27.2
North: Lincoln Road North											
7	L2	167	1.0	0.119	7.5	LOS A	2.4	17.0	0.25	0.58	45.5
8	T1	859	2.0	0.558	33.0	LOS C	24.7	174.8	0.77	0.67	34.5
9	R2	608	1.0	0.952	98.5	LOS F	27.5	194.1	0.89	1.09	21.3
Approach		1634	1.5	0.952	54.8	LOS D	27.5	194.1	0.76	0.82	28.6
West: Universal Drive West											
10	L2	628	2.0	0.576	17.1	LOS B	23.0	163.9	0.60	0.74	40.6
11	T1	197	1.0	0.610	63.0	LOS E	13.5	95.3	0.98	0.81	27.1
12	R2	149	1.0	0.485	66.1	LOS E	10.0	70.5	0.96	0.80	26.4
Approach		974	1.6	0.610	33.8	LOS C	23.0	163.9	0.73	0.78	34.3
All Vehicles		4120	1.6	0.969	58.4	LOS E	40.8	288.6	0.80	0.87	27.9

Figure 12: Modelled Outputs from 2017 Weekend Peak - Universal Drive/Lincoln Road Intersection – Right Turn In Re-routed from Lincoln Road/Pak'n Save Access

2017 PM Lincoln Road Universal Drive with right turn IN re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	159	1.0	0.156	19.1	LOS B	5.2	36.8	0.50	0.66	39.8
2	T1	850	2.0	1.061	194.6	LOS F	59.1	417.3	0.99	1.69	14.5
3	R2	107	1.0	0.484	72.3	LOS E	7.5	52.7	0.98	0.79	25.2
Approach		1116	1.8	1.061	157.8	LOS F	59.1	417.3	0.92	1.45	15.7
East: Universal Drive Extension											
4	L2	39	1.0	0.404	64.2	LOS E	8.8	61.8	0.94	0.77	27.3
5	T1	175	1.0	0.404	59.7	LOS E	8.8	61.8	0.94	0.77	27.4
6	R2	182	1.0	0.404	64.2	LOS E	8.7	61.5	0.94	0.78	27.0
Approach		396	1.0	0.404	62.2	LOS E	8.8	61.8	0.94	0.77	27.2
North: Lincoln Road North											
7	L2	167	1.0	0.120	7.5	LOS A	2.4	17.0	0.25	0.58	45.5
8	T1	744	2.0	0.501	33.5	LOS C	21.2	149.6	0.76	0.65	34.3
9	R2	723	1.0	1.079	251.0	LOS F	59.0	416.9	1.00	1.57	11.2
Approach		1634	1.5	1.079	127.1	LOS F	59.0	416.9	0.81	1.05	18.2
West: Universal Drive West											
10	L2	628	2.0	0.561	15.9	LOS B	21.8	155.4	0.58	0.73	41.2
11	T1	197	1.0	0.610	63.0	LOS E	13.5	95.3	0.98	0.81	27.1
12	R2	149	1.0	0.485	66.1	LOS E	10.0	70.5	0.96	0.80	26.4
Approach		974	1.6	0.610	33.1	LOS C	21.8	155.4	0.72	0.76	34.6
All Vehicles		4120	1.5	1.079	107.0	LOS F	59.1	417.3	0.83	1.08	20.2

Figure 13: Modelled Outputs from 2017 Weekend Peak - Universal Drive/Lincoln Road Intersection – Right Turn Out Re-routed from Lincoln Road/Pak'n Save Access

2017 PM Lincoln Road Universal Drive with RT OUT re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	159	1.0	0.140	15.0	LOS B	4.4	31.3	0.43	0.63	41.6
2	T1	850	2.0	1.061	194.6	LOS F	59.1	417.3	0.99	1.69	14.5
3	R2	107	1.0	0.622	77.6	LOS E	7.8	55.2	1.00	0.80	24.3
Approach		1116	1.8	1.061	157.8	LOS F	59.1	417.3	0.91	1.45	15.7
East: Universal Drive Extension											
4	L2	39	1.0	0.404	64.2	LOS E	8.8	61.8	0.94	0.77	27.3
5	T1	175	1.0	0.404	59.7	LOS E	8.8	61.8	0.94	0.77	27.4
6	R2	182	1.0	0.404	64.2	LOS E	8.7	61.5	0.94	0.78	27.0
Approach		396	1.0	0.404	62.2	LOS E	8.8	61.8	0.94	0.77	27.2
North: Lincoln Road North											
7	L2	167	1.0	0.122	7.3	LOS A	2.3	16.4	0.24	0.58	45.6
8	T1	859	2.0	0.635	38.7	LOS D	27.3	192.7	0.83	0.72	32.7
9	R2	608	1.0	1.086	263.4	LOS F	50.2	354.6	1.00	1.61	10.8
Approach		1634	1.5	1.086	119.1	LOS F	50.2	354.6	0.83	1.04	18.9
West: Universal Drive West											
10	L2	628	2.0	0.560	16.1	LOS B	22.2	158.0	0.58	0.73	41.1
11	T1	197	1.0	0.449	53.6	LOS D	12.4	87.5	0.91	0.76	29.0
12	R2	397	1.0	1.070	229.8	LOS F	59.9	422.6	1.00	1.55	12.0
Approach		1222	1.5	1.070	91.6	LOS F	59.9	422.6	0.77	1.00	22.2
All Vehicles		4368	1.5	1.086	116.1	LOS F	59.9	422.6	0.84	1.11	19.2

Figure 14: Modelled Outputs from 2017 Weekend Peak - Universal Drive/Lincoln Road Intersection – Right Turn In and Right Turn Out Re-routed from Lincoln Road/Pak'n Save Access

2017 PM Lincoln Road Universal Drive with right turn IN and OUT re-routed from Lincoln Road/Pak'n Save
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lincoln Road South											
1	L2	159	1.0	0.149	17.2	LOS B	4.9	34.3	0.47	0.65	40.6
2	T1	850	2.0	1.133	296.3	LOS F	75.8	535.9	0.99	2.09	11.1
3	R2	107	1.0	0.544	74.8	LOS E	7.6	53.8	0.99	0.79	24.8
Approach		1116	1.8	1.133	235.3	LOS F	75.8	535.9	0.92	1.76	11.7
East: Universal Drive Extension											
4	L2	39	1.0	0.404	64.2	LOS E	8.8	61.8	0.94	0.77	27.3
5	T1	175	1.0	0.404	59.7	LOS E	8.8	61.8	0.94	0.77	27.4
6	R2	182	1.0	0.404	64.2	LOS E	8.7	61.5	0.94	0.78	27.0
Approach		396	1.0	0.404	62.2	LOS E	8.8	61.8	0.94	0.77	27.2
North: Lincoln Road North											
7	L2	167	1.0	0.121	7.3	LOS A	2.3	16.4	0.24	0.58	45.6
8	T1	744	2.0	0.541	36.7	LOS D	22.4	158.6	0.79	0.68	33.4
9	R2	723	1.0	1.164	388.3	LOS F	75.8	535.2	1.00	1.92	7.6
Approach		1634	1.5	1.164	189.2	LOS F	75.8	535.2	0.83	1.22	13.8
West: Universal Drive West											
10	L2	628	2.0	0.549	15.0	LOS B	21.0	149.4	0.55	0.72	41.6
11	T1	197	1.0	0.492	56.6	LOS E	12.8	90.0	0.93	0.78	28.4
12	R2	397	1.0	1.147	354.2	LOS F	77.3	545.5	1.00	1.89	8.5
Approach		1222	1.5	1.147	131.9	LOS F	77.3	545.5	0.76	1.11	17.7
All Vehicles		4368	1.5	1.164	173.4	LOS F	77.3	545.5	0.84	1.29	14.7

3 SUMMARY

Based on the assessment, it is possible to provide a construction sequence where all movements turning to and from the Lincoln Road/Pak'n Save access are able to be provided for. However, if circumstances require additional space for the works, it is suggested that re-routing the right turn in will not result in significant adverse effects on the operation of the Universal Drive/Lincoln Road intersection. If the re-routing might occur over weekends, it is suggested that the right turn in could be re-routed to the Universal Drive/Lincoln Road intersection but that the right turn out should be retained at the Lincoln Road/Pak'n Save access.

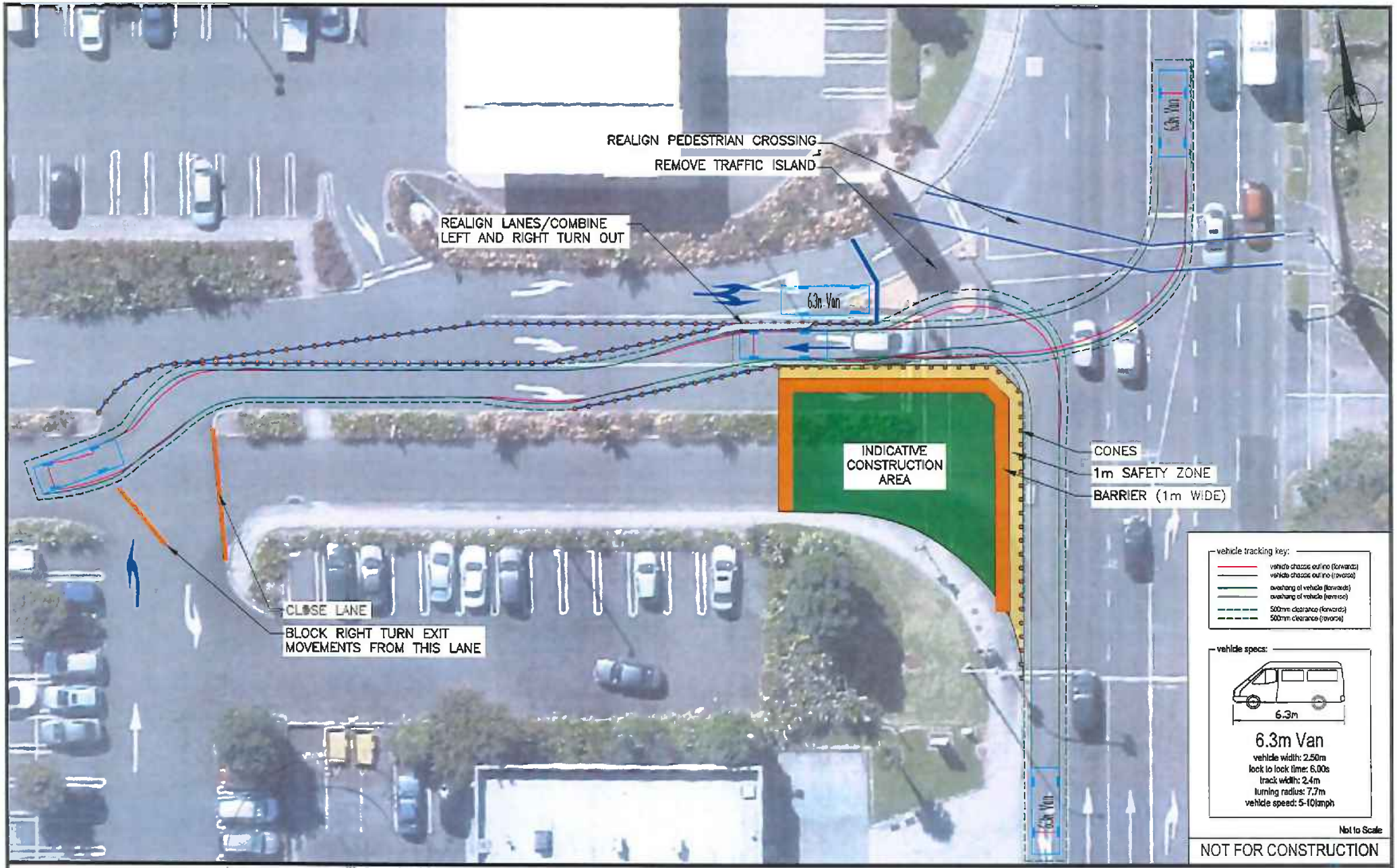
Yours sincerely

Angie Crafer
DIRECTOR

enc: Plans 1 to 6

Reference: P:\atmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\reporting\L1B171201.docx - Angie Crafer

P:\tmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D1B171201 Lincoln Rd TMP.dwg 1 vj 01/12/2017 3:49 pm



vehicle tracking key:
- vehicle chassis outline (forwards)
- vehicle chassis outline (reverse)
- overhang of vehicle (forwards)
- overhang of vehicle (reverse)
- 500mm clearance (forwards)
- 500mm clearance (reverse)

vehicle specs:

6.3m Van
vehicle width: 2.50m
lock to lock time: 6.00s
track width: 2.4m
turning radius: 7.7m
vehicle speed: 5-10kmph

Not to Scale

NOT FOR CONSTRUCTION

0 10m

1 of 6 sheets

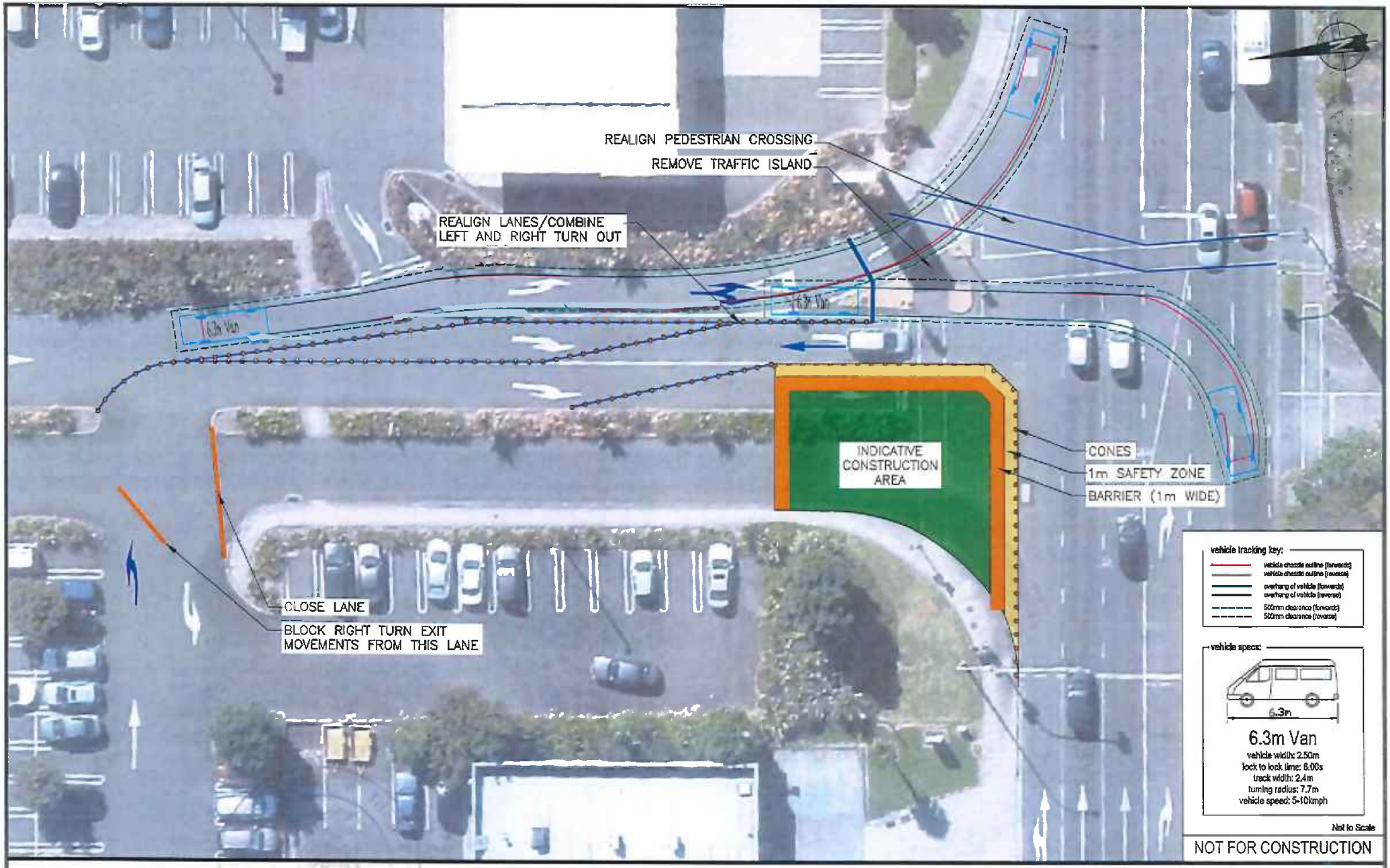
scale:	1:250 A3
date:	1/12/2017
ref:	plmp 052
design:	rb
drawn:	rb
checked:	ac

status	issued
A	30/11/2017
	1/12/2017

PaknSave Access TMP - Lincoln Road Section 1

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Bolton Street, Parnell, Auckland | PO Box 47497 Ponsonby
p 09 970 3820 | f 09 970 3830 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D16171201 Lincoln Rd TMP.dwg 2 4 01/12/2017 3:48 pm



0 10m

2 of 6 sheets

scale:	1:250 A3
date:	1/12/2017
ref:	akmp 052
drawn:	rb
checked:	sc

status	issued
a	23/11/2017
b	1/12/2017

PaknSave Access TMP - Lincoln Road Section 1

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Elgin Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3820 | f 09 970 3890 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS T emporary Access Assessment\Drawings\D1B171201 Lincoln Rd TMP.dwg 01/12/2017 3:48 pm

3 of 6 sheets

scale:	1:250 A3
date:	1/12/2017
ref:	akmp 052
design:	rb
drawn:	rb
checked:	ac

status	issued
e	23/11/2017
f	1/12/2017

PaknSave Access TMP - Lincoln Road Section 2

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3620 | f 09 970 3690 | www.flownz.com

P:\akmp052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D1B171201 Lincoln Rd TMP.dwg 4 vl 01/12/2017 3:48 pm

4 of 6 sheets

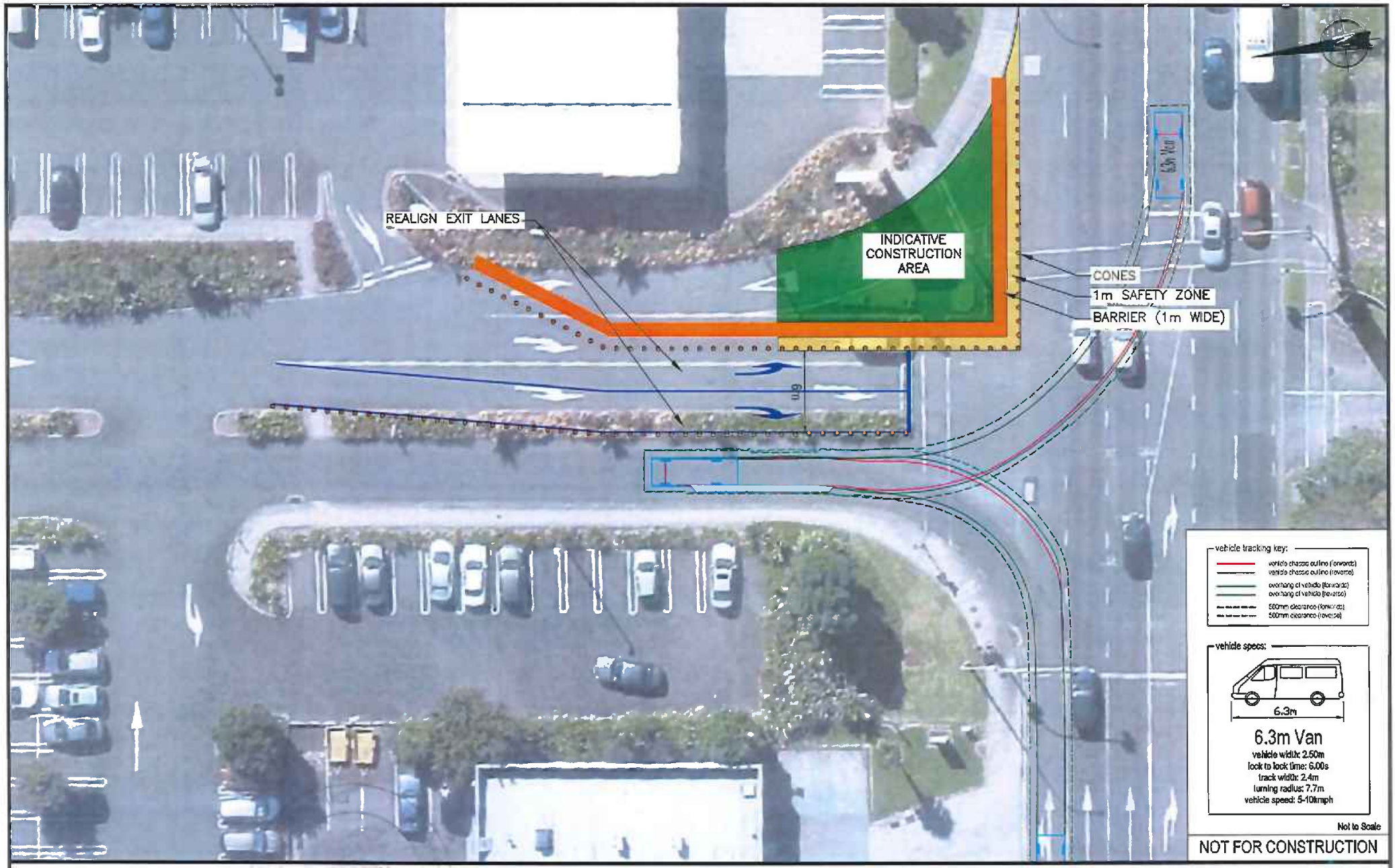
scale:	1:250 A3
date:	1/12/2017
ref:	akmp 052
design:	db
drawn:	db
checked:	dc

status	issued
a	20/11/2017
b	1/12/2017

PaknSave Access TMP - Lincoln Road Section 2

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3820 | f 09 970 3880 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\01\171201 Lincoln Rd TMP.dwg 5 vj 04/12/2017 3:46 pm



0 10m

5 of 6 sheets

scale:	1:250 A3
date:	1/12/2017
ref:	akmp 052
design:	rb
drawn:	rb
checked:	

status	issued
a	23/11/2017
b	1/12/2017

PaknSave Access TMP - Lincoln Road Section 3

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Biddle Street, Parnell, Auckland | PO Box 47497 Ponsonby
p 09 970 3820 | f 09 970 3660 | www.flownz.com

P:\tmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D1B171201 Lincoln Rd TMP.dwg 6 vj 01/12/2017 3:48 pm

0 10m

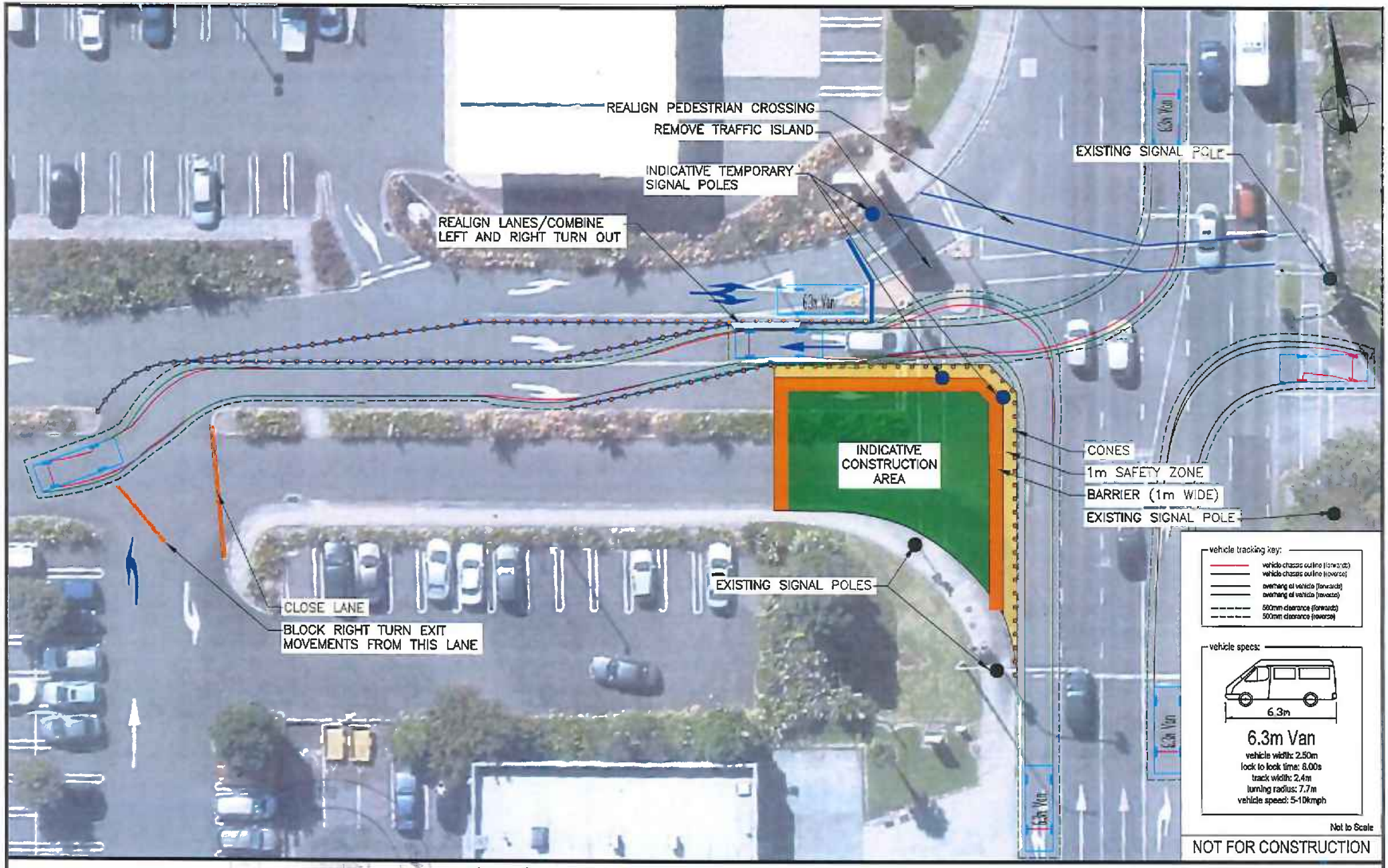
6 of 6 sheets

status	issued
a	23/11/2017
b	1/12/2017

PaknSave Access TMP - Lincoln Road Section 3

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47697 Ponsonby
p 09 970 3620 | f 09 970 3690 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\0 IC171213 Lincoln Rd TMP.dwg 1 13/12/2017 1:47 pm



0 10m

1 of 6 sheets

scale: 1:250 A3 design: rb
date: 13/12/2017 drawn: rb
ref: akmp 052 checked: ac

status	issued
a	23/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 1

flow TRANSPORTATION SPECIALISTS
Level 1, 11 Bruce Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3920 | f 09 970 3990 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\01C171213 Lincoln Rd TMP.dwg 2 13/12/2017 1:47 pm

0 10m

2 of 6 sheets

scale	1:250 A3	design	rb
date	13/12/2017	drawn	rb
ref	akmp 052	checked	rb

status	issued
a	23/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 1

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47-497 Ponsonby
p 09 970 3820 | f 09 970 3890 | www.flownz.com

P:\temp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\DWG\171213 Lincoln Rd TMP.dwg 3 tj 13/12/2017 1:47 pm

0 10m

3 of 6 (Sheets)

scale	1:250 A3
date	13/12/2017
ref	052
drawn	rb
checked	

status	issued
a	23/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 2

flow TRANSPORTATION SPECIALISTS
Level 1, 11 Bleks Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3820 | f 09 970 3890 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D1C171213 Lincoln Rd TMP.dwg 4 13/12/2017 1:47 pm

0 10m

4 of 6 sheets

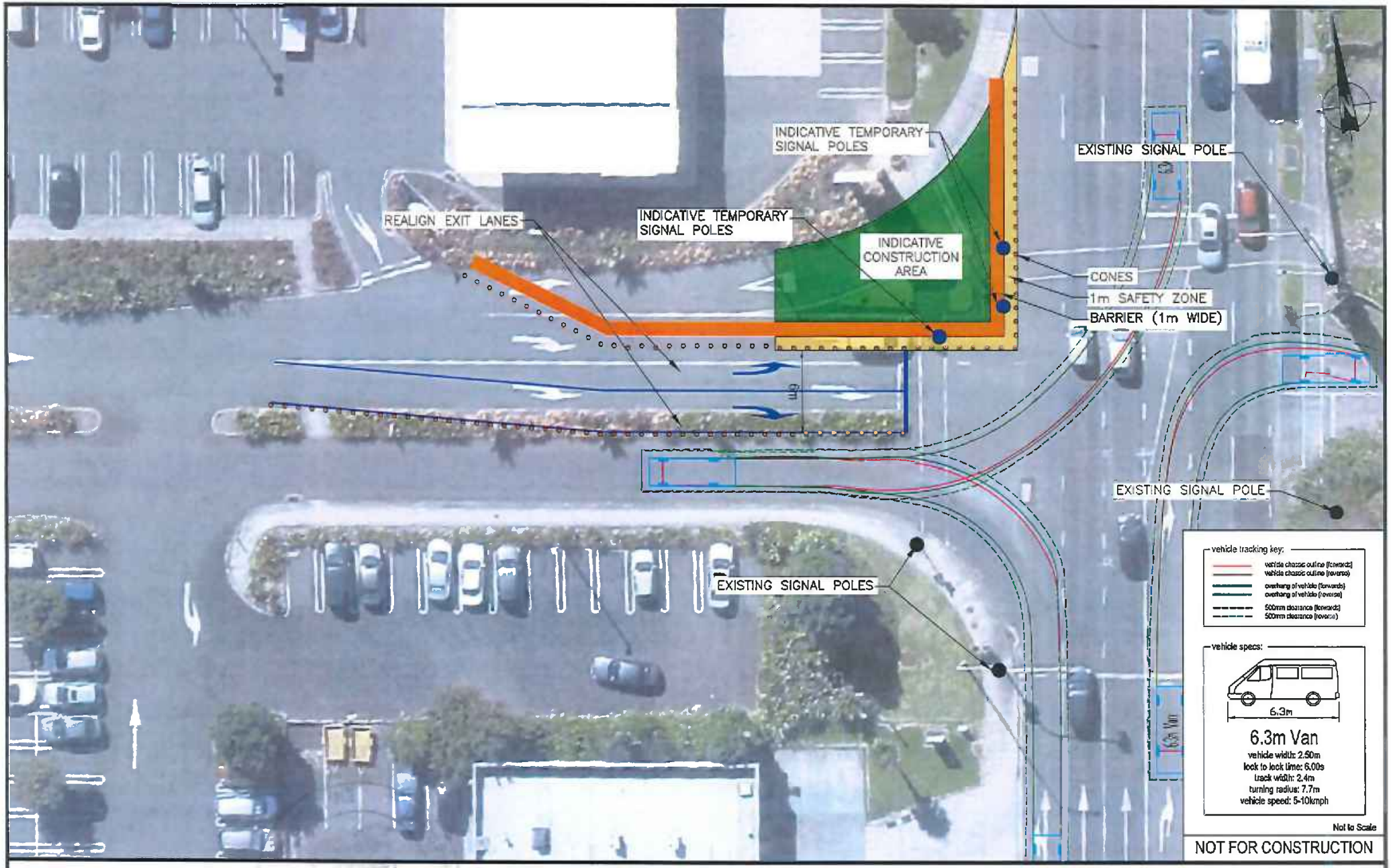
scale:	1:250 A3
date:	13/12/2017
ref:	akmp-052
design:	rb
drawn:	rb
checked:	ac

a	22/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 2

flow TRANSPORTATION SPECIALISTS
Level 1, 11 Elliott Street, Papakura, Auckland | PO Box 47-497 Ponsonby
p 09 970 3620 | f 09 970 3690 | www.flownz.com

P:\akmp\052 Lincoln Road NOR Appeal - PNS Temporary Access Assessment\Drawings\D1C171213 Lincoln Rd TMP.dwg 5 13/12/2017 1:47 pm



0 10m

5 of 6 sheets

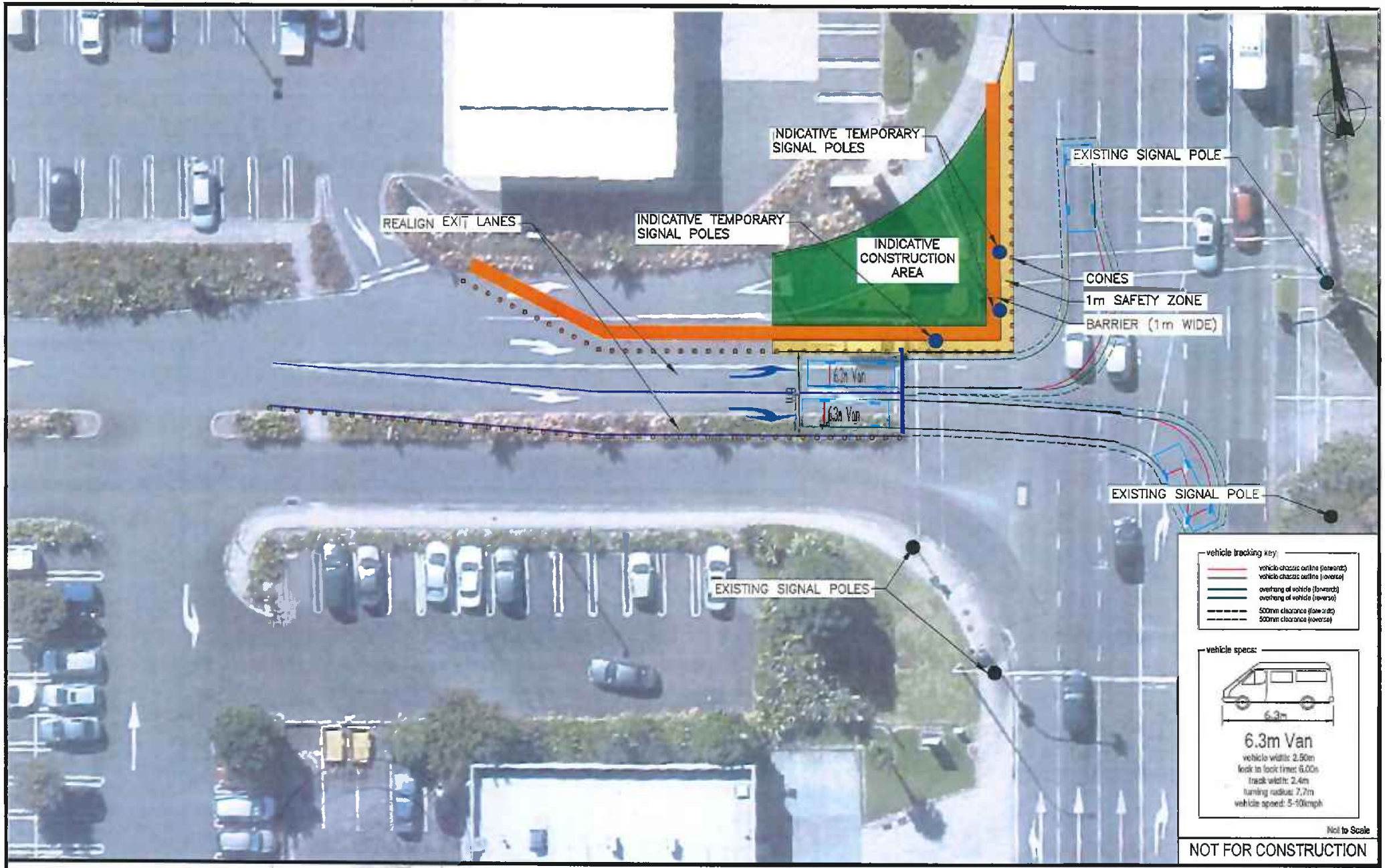
scale:	1:250 A3
design:	rb
date:	13/12/2017
drawn:	rb
ref:	akmp 052
checked:	ac

a	29/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 3

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970-3620 | f 09 970-3690 | www.flowtrans.com

P:\smp\052 Lincoln Road NCR Appeal - PNS Temporary Access Assessment\Drawings\01\C171213 Lincoln Rd TMP.dwg 6 13/12/2017 1:47 pm



0 10m

6 of 6 sheets

scale:	1:250 A3
date:	13/12/2017
job:	akmp 052
design:	rb
drawn:	rb
checked:	ac

issue	issued
a	23/11/2017
b	1/12/2017
c	13/12/2017

PaknSave Access TMP - Lincoln Road Section 3

flow
TRANSPORTATION SPECIALISTS
Level 1, 11 Blake Street, Ponsonby, Auckland | PO Box 47497 Ponsonby
p 09 970 3620 | f 09 970 3690 | www.flownz.com

Zaid Essa (AT)

From: Zaid Essa (AT)
Sent: Wednesday, 13 December 2017 15:57
To: Jane Harris (AT)
Cc: Laurence Jones (AT); Michael McCauley (AT); Rachel Dimery (AT)
Subject: RE: Lincoln Road: Pak'n Save Access

Importance: High

Hi Jane,

Thank you for sending these queries through, our responses are in red below. Please let me know if you want to meet up and discuss these with the rest of the team;

Section 1 – Sheets 1-2

- This TMP arrangement puts the ped crossing on the northern side directly in conflict with the exiting traffic from Pak N Save access (Boulevard). It is serious safety issue and a ped crossing must never operate like this.
  All vehicles exiting from the Pak'n Save access will be managed with signals, and will have a red signal when the pedestrian movement has the green signal. Cones could be placed adjacent to the northern kerb on the Pak'n Save access to reduce the width of the exit lane so that there is the perception of one lane (for left and right turns) at the limit line. There will be no conflict.
- The ped crossing across Pak n Save access (Boulevard) has been blocked. This is again not good for ped safety. It may encourage pedestrian to cross unsafely. Pedestrian access must be maintained at all times. Have any alternative arrangements been made to provide a safe pedestrian environment?
  The layout is indicative only. A pedestrian crossing across the Pak'n Save access will be provided, however the details of this cannot be confirmed until the extent and location of the trenching required is confirmed.
- The left turn from Lincoln Road into Boulevard and the right turn exiting the Boulevard are overlapping movements which run concurrently in one particular signal phase. The TMP arrangement shown does not seem to allow adequate space (tracking) to allow this movement. Tracking in general appears to be very tight.
  Tracking for turning movements has been undertaken with a 6.3 m van, as advised. It is intended that the software for the signal phasing will be adjusted for the construction works and the phasing will not permit these movements to occur at the same time (it is noted that the northbound left turn is from a shared left turn/straight through lane and that this currently affects the efficiency of the left turn movement in this phase).
- Signal visibility may be an issue due to the changes in the layout.
  Visibility to signals on the Lincoln Road approaches to the intersection will not be affected by the proposed construction works. All construction works will be located within the Pak'n Save access. Two to four temporary signal poles will replace two signal posts currently located in the splitter island on the Pak'n Save exit – these can generally be located within the work area and will provide for pedestrian crossing signals (and call button) across the Pak'n Save approach, the tertiary displays for the Lincoln Road northbound approach, the secondary displays for the Laidlow College approach, and dual primary displays for the Pak'n Save approach. The attached plans show two temporary signal poles in the work area; however, if each temporary pole can only accommodate one set of signals, then four temporary signal poles will be needed. In addition, for this scenario, a temporary primary signal will be installed on the Pak'n Save exit approach, to the left of the lane. Visibility to the existing tertiary signal will be unaffected. Visibility to the secondary signal from the Pak'n Save access approach may be affected depending on the final location of the trench and what equipment/machinery is used, however the dual primary displays on a temporary pole in

the work zone will be able to act as the third set of signals for this approach. Existing and proposed temporary signal pole locations are now shown on the plans.

- The proposed layout, especially the side road approach, does not seem to have a primary signal display. Existing tertiary display is also not adequate for this arrangement. Inappropriate and incomplete signal display arrangements can lead to serious crashes. It is a serious safety concern.
  As stated above, a temporary primary signal will be provided for the Pak'n Save access approach. The tertiary signal is directly opposite the approach, fully visible from the temporarily realigned access.
- To accommodate the northern ped crossing with proper protection, a new software will be required.
  Agreed.
- The pedestrian on the northern side has been realigned but there is no mentioning of any related hardware to activate the pedestrian and to operate it safely (also refer to comment 1 above about the direct conflict).
  The layout is indicative only, intended to demonstrate that there is sufficient space to accommodate the proposed CTMP layout. All required hardware will need to be provided.

Section 2 – Sheet 3-4

- No pedestrian access provided to the ped across Pak n Save access (Boulevard). Have any alternative arrangements been made?
  As above, a pedestrian crossing across the Pak'n Save access will be provided, however the details of this cannot be confirmed until the extent and location of the trenching required is confirmed.
- Tracking not provided for overlapping movements as mentioned above.
  The tracking for inbound and outbound movements is shown separately on Sheets 3 and 4. The tracking for the left turn in does not overlap with the right turn out.
- I assume that the central median island is going to be removed to accommodate the right turn exiting Pak n Save access road? There will be no detector to call the side road phase. Adjacent faulty detector will call and extend the phase every cycle which may cause operational issues during peak times.
  Yes the island will be removed. Necessary hardware will be installed to ensure the temporary layouts function as intended. The right turn out is likely to be called in every phase sequence, however, if necessary (or if there are concerns about efficiency), a temporary microwave detector could be provided. ATOC may need to monitor and manage the phasing as appropriate to ensure that Lincoln Road is not unduly affected.
- Tracking has not been provided to show if diamond phase can be accommodated safely.
  The tracking of a 6.3m van turning right into the Pak'n Save access has been shown on the plans. This does not cross into the right turn bay marking shown. For clarity, a van turning right into the opposite access has been shown on the attached updated plans.
- Signal visibility may be a serious issue with changed layout. The Pak n Save access (Boulevard) approach has no primary display near the limit line, there is no tertiary display for vehicles to follow when moving into the intersection. This is a serious safety concern. Every approach is required to have at least three displays (Primary, Tertiary, and Secondary). The locations of the lantern displays should be as such they are clearly visible and are not confusing to motorists.
  As noted, temporary signals will be provided, including one in the work zone that will provide the primary displays for this movement. Visibility to the existing secondary signal for the right turn out of the Pak'n Save access will be unaffected, with the signal located just to the south of the Laidlow College access. The existing tertiary signal, to the north of the Laidlow College access may be harder to see, depending on what machinery etc is located within the work area. Acknowledging that there is limited opportunity to provide an additional set of signals due to the location of the Laidlow College access, and that this is a temporary situation, the third display could be located in a visible location within the work area, beyond the primary display pole. (It is noted that while the minimum number of signal faces for a given approach is three, AUSTROADS also states that "the minimum number of signal faces for each right-turn movement is two". In this circumstance, with temporary

traffic management measures providing a slow and aware environment for drivers, it may be acceptable to provide just two sets of signal displays for this right turn movement)

Section 3 – Sheet 5-6

- No pedestrian access provided at the NW corner of the intersection. No alternative arrangements shown either.
  As above, a pedestrian crossing across the Pak'n Save access will be provided, however the details of this cannot be confirmed until the extent and location of the trenching required is confirmed.
- The left turn exiting the side road (Pak n Save access) is in conflict with the pedestrian crossing. Current software does not provide protection due to a non-conflict due to the existence of slip lane. Removal of the slip lane creates this direct conflict and a new software will be required to address this issue. Without providing a proper protection this arrangement is not recommended as it could result in serious crashes.
  The left turn will be managed with signals, and will not run at the same time the pedestrian crossing has a green signal.
- The changes lay out on the side road approach may affect the detector activation.
  Necessary hardware will be installed to ensure the temporary layouts function as intended. The Pak'n Save exit movements are likely to be called in every phase sequence, however, if necessary (or if there are concerns about efficiency), a temporary microwave detector could be provided. ATOC may need to monitor and manage the phasing as appropriate to ensure that Lincoln Road is not unduly affected.
- What signal equipment has been provided on the Boulevard to match the proposed layout?
  All the necessary hardware will be installed as required to ensure the temporary layouts function as intended.

Regards,
Zaid

From: Jane Harris (AT)
Sent: Wednesday, 13 December 2017 7:52 a.m.
To: Zaid Essa (AT) <Zaid.Essa@at.govt.nz>
Cc: Laurence Jones (AT) <Laurence.Jones@at.govt.nz>
Subject: FW: Lincoln Road: Pak'n Save Access

Morning Zaid,

We have had a response back from jtoc who have some questions listed below. If you could come back to us sooner rather than later with your response under each item it would be appreciated as we are not in a position to put anything in writing until all the issues below are addressed.

Kind regards

Jane

From: Imran Rashid [mailto:Imran.Rashid@jtoc.govt.nz]
Sent: Tuesday, 12 December 2017 4:18 p.m.
To: Jane Harris (AT) <Jane.Harris@at.govt.nz>
Subject: RE: Lincoln Road: Pak'n Save Access

Hi Jane,

I have following comments regarding this TMP.

Section 1 – Sheets 1-2

- This TMP arrangement puts the ped crossing on the northern side directly in conflict with the exiting traffic from Pak N Save access (Boulevard). It is serious safety issue and a ped crossing must never operate like this.
- The ped crossing across Pak n Save access (Boulevard) has been blocked. This is again not good for ped safety. It may encourage pedestrian to cross unsafely. Pedestrian access must be maintained at all times. Have any alternative arrangements been made to provide a safe pedestrian environment?
- The left turn from Lincoln Road into Boulevard and the right turn exiting the Boulevard are overlapping movements which run concurrently in one particular signal phase. The TMP arrangement shown does not seem to allow adequate space (tracking) to allow this movement. Tracking in general appears to be very tight.
- Signal visibility may be an issue due to the changes in the layout.
- The proposed layout, especially the side road approach, does not seem to have a primary signal display. Existing tertiary display is also not adequate for this arrangement. Inappropriate and incomplete signal display arrangements can lead to serious crashes. It is a serious safety concern.
- To accommodate the northern ped crossing with proper protection, a new software will be required.
- The pedestrian on the northern side has been realigned but there is no mentioning of any related hardware to activate the pedestrian and to operate it safely (also refer to comment 1 above about the direct conflict).

Section 2 – Sheet 3-4

- No pedestrian access provided to the ped across Pak n Save access (Boulevard). Have any alternative arrangements been made?
- Tracking not provided for overlapping movements as mentioned above.
- I assume that the central median island is going to be removed to accommodate the right turn exiting Pak n Save access road? There will be no detector to call the side road phase. Adjacent faulty detector will call and extend the phase every cycle which may cause operational issues during peak times.
- Tracking has not been provided to show if diamond phase can be accommodated safely.
- Signal visibility may be a serious issue with changed layout. The Pak n Save access (Boulevard) approach has no primary display near the limit line, there is no tertiary display for vehicles to follow when moving into the intersection. This is a serious safety concern. Every approach is required to have at least three displays (Primary, Tertiary, and Secondary). The locations of the lantern displays should be as such they are clearly visible and are not confusing to motorists.

Section 3 – Sheet 5-6

- No pedestrian access provided at the NW corner of the intersection. No alternative arrangements shown either.
- The left turn exiting the side road (Pak n Save access) is in conflict with the pedestrian crossing. Current software does not provide protection due to a non-conflict due to the existence of slip lane. Removal of the slip lane creates this direct conflict and a new software will be required to address this issue. Without providing a proper protection this arrangement is not recommended as it could result in serious crashes.
- The changes lay out on the side road approach may affect the detector activation.
- What signal equipment has been provided on the Boulevard to match the proposed layout?

These are some of my preliminary thoughts. I hope you find them helpful. Please feel to contact me should have any questions regarding my comments.

Regards,

Imran

Imran Rashid
Senior Traffic Signals Engineer

DDI 09 927 9737
Mob 021 910 205
Fax 09 927 9793
Email imran.rashid@jtoc.govt.nz

ATOC
Smales

TRANSPORT AGENCY

Attachment 2 – Updated text D1477

1477 Lincoln Road Corridor Improvements

Designation Number	1477
Requiring Authority	Auckland Transport
Location	Lincoln Road, Henderson
Rollover Designation	No
Legacy Reference	
Lapse Date	7 years from the date when it was confirmed by the Environment Court consent order (13 February 2025)

Purpose

Lincoln Road Corridor Improvements - the construction of improvements (including road widening) to Lincoln Road and local road connections and the ongoing operation and maintenance of the improvements.

Conditions

Definitions and Abbreviations

DEFINITIONS	
Best practicable option	Has the meaning under the Resource Management Act 1991 as follows: **Best practicable option**, in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to – (a) The nature of the discharge or emission and the sensitivity of the receiving environment to the adverse effects; and (b) The financial implications, and the effects on the environment, of that option when compared with other options; and (c) The current state of technical knowledge and the likelihood that the option can be successfully applied
Directly Affected Parties	Owners and occupiers of land in the project area that have vehicle access from Lincoln Road or are within the proposed designation footprint (including Auckland Council Parks and Watercare).
Mana Whenua	Mana whenua for the purpose of this designation are considered to be the following (in alphabetical order), who at the time of the Notice of Requirement expressed a desire to be involved in the LRCI project:

	(a) Ngāti Te Ata Waiohua (b) Ngāti Tamaoho (c) Ngāti Whātua o Kaipara (d) Ngāti Whātua o Orakei (e) Te Akitai Waiohua (f) Te Kawerau a Maki (g) Te Runanga o Ngāti Whātua
Protected Premises and Facilities (PPFs)	For noise, PPFs are defined in accordance with the New Zealand Standard for Road-Traffic Noise for New and Altered Roads 2010 (NZS 6806), as spaces inside buildings that are used for residential activities, marae, overnight medical care and teaching. For vibration, PPFs are dwellings, educational facilities, boarding houses, homes for the elderly and retirement villages, marae, hospitals that contain in-house patient facilities and buildings used as temporary accommodation (e.g. motels and hotels).
ABBREVIATIONS	
BPO	Best practicable option
CCP	Communication and Consultation Plan
CEMP	Construction Environmental Management Plan
CFLBMP	Community Facilities and Local Business Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CTMP	Construction Traffic Management Plan
DUDLP	Detailed Urban Design and Landscape Plan
LRCI	Lincoln Road Corridor Improvements
NoR	Notice of Requirement
ONMP	Operational Noise Management Plan

RMA	Resource Management Act 1991

Designation Conditions

GENERAL CONDITIONS	
1.	Except as modified by the conditions below, the LRCI Project shall be undertaken in general accordance with the plans and information provided by the Requiring Authority, unless amended by any plan or document listed below: 1. Revised slip-lane arrangement plan (Z Energy) dated 18 May 2017. 2. Revised designation plan for 311/313 Lincoln Road (80507651-0301-C706 Rev B and 80507651-0301-C705 Rev B). 3. Access arrangement for 311/313 Lincoln Road (80507651-0301-SK004 Rev F). Where there is inconsistency in the documents listed in the NoR or the documents listed above and the conditions, the conditions shall prevail.
Lapse Date	
2.	In accordance with section 184(1) of the RMA, this designation shall lapse if not given effect to within 7 years from the date on which it is confirmed.
Outline Plans	
3.	Prior to commencing any works pursuant to this designation, the Requiring Authority shall submit an Outline Plan(s) to the Auckland Council for the project in accordance with section 176A of the RMA. The Outline Plan(s) shall include the following plans: (a) A Communication and Consultation Plan (CCP); (b) A Construction Environmental Management Plan (CEMP); (c) A Construction Traffic Management Plan (CTMP); (d) A Detailed Urban Design and Landscape Plan (DUDLP); (e) An Operational Noise Management Plan (ONMP); and (f) A Community Facilities and Local Business Management Plan (CFLBMP).

4.	All work shall be undertaken in accordance with the requirements of the plans listed in Condition 3(a) to (f) above. Where there are any inconsistencies between the contents of the above plans, then the provision that involves the least adverse effects on Directly Affected Parties shall apply.
5.	The plans listed in Condition 3(a) to (f) above shall include a process for amendment of the relevant plan in response to any contractor's requirements, without the need for a further Outline Plan provided that the amendments do not result in materially different or greater adverse effects, (including on Directly Affected Parties) to those generated by the original Outline Plan.
6.	Once finalised, the plans listed in Condition 3(a) to (f) above, including any amendments, will be provided in electronic format to all Directly Affected Parties and will also be available upon request to the public generally.
Designation Review	
7.	On an on-going basis as work stages are completed, as soon as reasonably practicable, and no later than 12 months from the date of the stage becoming operational, the Requiring Authority shall: (a) Confirm those areas of the designation that have been identified for temporary construction purposes; (b) Identify any other areas of the designation that are no longer necessary for the on-going operation or maintenance of the project or for on-going mitigation measures; and (c) Give notice to the Council in accordance with section 182 of the RMA for the removal of those parts of the designation identified in (a) and (b) above.
PRE-CONSTRUCTION CONDITIONS	
Network Utility Operators	
8.	The Requiring Authority shall work collaboratively with Network Utility Operators: (a) During the development of the detailed design for Lincoln Road to provide for the ongoing operation and access to Network Utility operations; and (b) During the preparation and implementation of the Construction Methodology in relation to remedying or mitigating any adverse effects on existing infrastructure and Network Utility operations.
9.	In the period before construction begins, the following activities undertaken by Network Utility Operators will not prevent or hinder the project, and can be

	undertaken without seeking the Requiring Authority's written approval under section 176(1)(b) of the RMA: (a) Maintenance and urgent repair works of existing Network Utilities; (b) Minor renewal works to existing Network Utilities necessary for the on-going provision or security of supply of Network Utility operations; and (c) Minor works such as new property service connections. For the avoidance of doubt, in this condition "existing Network Utilities" includes infrastructure operated by a Network Utility Operator which was: • In place at the time the NoR for the LRCI Project was served on Auckland Council; or • Undertaken in accordance with this condition or the section 176(1)(b) RMA process.
Mana Whenua Engagement	
10.	The Requiring Authority shall undertake ongoing consultation and input of Mana Whenua into the design and construction of the project, including, but not limited to: (a) Regular meetings between the Requiring Authority and Mana Whenua the frequency of meetings shall be agreed between the two parties; (b) Input into the preparation of the DUDLP (in accordance with Condition 21); (c) Involvement of Mana Whenua in removal and or replanting of any native tree species; and (d) Any other matters agreed between the Requiring Authority and the Mana Whenua consultation that is within the scope of the project.
CONSTRUCTION CONDITIONS	
Communication and Consultation Plan	
11.	A Communication and Consultation Plan (CCP) shall be included in the Outline Plan submitted to Auckland Council. The objective of the CCP is to ensure appropriate communication and consultation is undertaken with affected parties during the detailed design and project construction periods. The CCP shall include, but not be limited to:

	(a) A communications framework that details the Requiring Authority's communication methods, the frequency of communications and consultation and any other relevant communication matters; (b) The Communication and Consultation Manager for the project including their contact details (phone, email and postal address); (c) A summary of consultation undertaken between the Requiring Authority and Directly Affected Parties on the detailed design for the Lincoln Road improvements; (d) A summary of the communication and consultation undertaken between the Requiring Authority and Network Utility Operators in accordance with Condition 8; (e) Methods for communicating and consulting with owners and occupiers located adjacent to proposed construction works, including: (i) determining adequate notice periods for the commencement of construction activities and works that affect access to properties; (ii) informing parties of the expected timing, duration and staging of works and regular updating of progress, (f) Methods for recording and managing queries, concerns and complaints during the project, including (as needed on a 24/7 basis) contact details and complaints procedures; (g) Methods for communicating and consulting in advance about temporary traffic management measures to owners and occupiers located adjacent to proposed construction works, including the provision of suitable vehicle access to affected sites during construction works and provision of appropriate notice periods in cases when access will be reduced or unavailable; (h) Methods for communicating and consulting with owners and occupiers located adjacent to proposed construction works regarding the management of work around vegetation to be retained, vegetation to be removed, and the transplanting of vegetation, where practicable; (i) Methods for communicating and consulting with owners and occupiers located adjacent to the proposed construction works regarding the preparation of the CFLBMP required by Condition 31 and the co-ordination of that input with the preparation of CTMP (Condition 12), CEMP (Condition 14), and DUDLP (Condition 21); (j) Methods to communicate any changes, made in accordance with Condition 5, to the management plans listed in Condition 3;

	(k) Methods to ensure ongoing communication with Mana Whenua who have expressed an interest through this process. Preparation of the CCP is to include a process to invite feedback from Directly Affected Parties, prior to the CCP being submitted to the Council as part of an Outline Plan. The CCP shall document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.
Construction Traffic Management Plan	
12.	A CTMP shall be included in the Outline Plan submitted to the Council. The objective of the CTMP is to ensure measures are in place that will avoid, remedy or mitigate the local and network-wide transportation effects of construction associated with the project. The temporary traffic management measures in the plan shall include: (a) Proposed operating speeds and traffic layouts during construction; (b) Proposed method of monitoring traffic speeds, safety and levels of congestion and steps to be taken to avoid significant adverse traffic effects, where practicable. (c) Provision for controlling construction access to the site, traffic control adjacent to the site, and the protection of the public; (d) How access for pedestrians and cyclists along the corridor and to properties will be maintained; (e) How safe vehicle access to properties will be maintained to the greatest extent possible while acknowledging that construction needs will likely result in temporarily reduced capacity or closure of vehicle access. In the first instance, reduced capacity, alternative temporary access or sharing access with adjacent sites (where possible) should be provided. Where there is no practicable alternative, temporary full closure must involve adequate notice in accordance with the time periods specified in Condition 11(g). (f) How construction workforce parking will be managed; and (g) How provision will be made for access of emergency vehicles at all times. Preparation of the CTMP is to include a process to invite feedback from directly affected parties, prior to the CTMP being submitted to the Council as an Outline Plan. The CTMP is to document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.
13.	A copy of the CTMP shall be kept on the site at all times during construction. All measures for the protection of the public and other personnel set out in the CTMP shall be maintained and complied with at all times until such time as the works are

	completed.
Construction Environmental Management Plan	
14.	A CEMP shall be included in the Outline Plan submitted to Auckland Council. The objective of the CEMP is to provide for avoidance, remediation or mitigation of adverse effects associated with the construction of the project. The CEMP shall reflect the requirements of any resource consent issued by Auckland Council and as a minimum include: (a) A description of the proposed works and construction methodology; (b) An optimised construction programme that minimises disruption as far as practicable along Lincoln Road within the Project area during the period 12-24 December, and including the period 1-26 December in particular in respect of the site and adjacent road environment at 202-224 Lincoln Road; (c) An Erosion and Sediment Control Management Plan; (d) A Dust Management Plan, including the proposed means of managing dust during construction taking into account the recommendations in section 5.2 of the Air Quality Report 31/05/2016 provided by the Requiring Authority with the Notice of Requirement, and how dust will be monitored throughout the construction period; (e) A Construction Noise and Vibration Management Plan (CNVMP) to provide for the development and implementation of identified best practicable options to avoid, remedy or mitigate the adverse effects on receivers of noise and vibration resulting from construction. The CNVMP shall contain, but not be limited to: i. The project noise and vibration criteria (including weekend and night time works) in accordance with the NZS 6803:1999 Acoustic Construction Noise and Guideline DIN4150-3 1999, Structural Vibration – Effects of vibration on structures, and taking into account the recommendations of the Noise and Vibration Report provided by the Requiring Authority with the Notice of Requirement for a weekday and Saturday night time noise limit of LAeq 55dB for residential receivers; ii. A summary of construction noise and vibration assessments/predictions; iii. General construction practices, management and mitigation; iv. Noise management and mitigation measures specific to activities and/or receiving environments, such as temporary barriers or enclosures, selection of appropriate machinery, specific consideration of any night-time works, and preparation of site-specific construction noise management plans where required;

	v. Vibration management and mitigation measures specific to activities and/or receiving environments, including the process to be followed to prepare site-specific construction vibration management plans where required; vi. Site specific CNVMPs shall describe site specific noise effects and/or vibration risks, mitigation measures~~,~~ including consultation and notice processes with affected parties, and shall stipulate the required monitoring of noise or vibration levels. A site specific CNVMP may prescribe noise and vibration levels higher than those prescribed in condition 14(e)(i) provided they have been determined by a suitably qualified and experienced person as being the Best Practicable Option to manage noise and vibration effects. Any such site specific CNVMP may be for individual buildings or for groups, whichever is appropriate, and must be prepared by a suitably qualified person; vii. Site specific CNVMPs must be submitted to the Council 5 working days prior to the noise being generated for certification that the proposed noise mitigation measures (BPO) are appropriate given the noise to be generated and the surrounding activities. Council may require additional mitigation measures where necessary to ensure BPO is achieved; viii. Monitoring and reporting requirements; ix. Procedures for handling complaints; x. Procedures for review of the CNVMP throughout the project; and xi. Methods for communication and consultation with affected parties, including procedures for giving advance notice where it is anticipated that there may be perceptible levels of vibration and/or noise levels will exceed relevant standards. (f) Construction lighting details and how the use of temporary construction floodlighting shall be located and directed to minimise potential glare effects on occupants of residential buildings; (g) Details of the temporary stormwater management system that will be in place at all times during construction; (h) How works around trees and on-site landscaping will be undertaken to retain vegetation in accordance with Condition 21; (i) Details of on-site car parking management where works require the temporary removal of existing car parks. This may involve temporary re arrangement of car parks on site, agreement to share parking on adjacent sites or similar measures; (j) Details as to the nature and extent of works in the Temporary designation area shown on the NoR plans. Generally, this area should not be used for stockpiling

	of machinery or materials, while the use of hoardings and other screens should be kept to a minimum; (k) Details of works in the vicinity of hazardous substances facilities and how those works will be undertaken in a safe manner; and (l) Preparation of the CEMP is to include a process to invite feedback from directly affected parties, prior to the CEMP being submitted to the Council as part of an Outline Plan. The CEMP shall document the feedback received and the measures to be taken to address concerns, or reasons why specific comments cannot be addressed.
Safety audits	
15.	Prior to the commencement of construction activities, the Requiring Authority shall provide a copy of a detailed design safety audit to Auckland Council.
15A.	A safety audit with respect to the operation of U-turn arrangements at the Universal Drive and Central Park Drive intersections with Lincoln Road shall be undertaken within three months of the issue of the certificate of practical completion.
Accidental Discovery Protocol	
16.	In the event of an accidental discovery of archaeological material, the site manager must: (a) Cease work immediately within 10m of the discovery, and secure this area. (b) Notify the Council and Heritage New Zealand - Pouhere Taonga Regional archaeologist within one working day of the discovery. (c) Advise the NZ Police and Coroner if skeletal remains are uncovered. (d) Ensure that works within the secured area do not resume until all necessary statutory authorisations or consents have been obtained.
17.	If at any time during investigation, potential koiwi, archaeology or artefacts of Maori origin are discovered, the Requiring Authority will notify Mana Whenua. *Advice note: Works affecting archaeological sites are subject to a consent process under the Heritage New Zealand Pouhere Taonga Act 2014. An authority (consent) from Heritage New Zealand - Pouhere Taonga must be obtained for the work prior to commencement. It is an offence to damage or destroy a site for any purpose without an authority. The Heritage New Zealand Pouhere Taonga Act 2014 contains penalties for unauthorised site damage.*

Overland Flow	
18.	Prior to construction commencing, detailed design shall include an assessment of overland flow and flooding effects of the design, and demonstrate that any flooding effects on sites outside the designation are avoided or mitigated by the design.
Lighting	
19.	All street lighting will be designed to comply with AS/NZS 1158, and Auckland Transport's Code of Practice.
20.	The DUDLP required by Condition 21 shall include finalised proposed lighting specifications, locations, illumination levels, shielding and any relevant industry standards and demonstrate that lighting minimises light spill and glare for neighbouring residences, while being integrated with the public realm.
Landscape / Urban Design	
21.	A detailed Urban Design and Landscape Plan (DUDLP) shall be included in the Outline Plan submitted to Auckland Council. The DUDLP shall be prepared by a suitably qualified person taking into account the principles of the Urban Design, Landscape and Visual Assessment report submitted with the NoR, updated where necessary to take account of best practice and any changes to the environment along Lincoln Road since the NoR was confirmed. The DUDLP must include details of: (a) Locations for all tree and vegetation planting including number, sizes and species, consistent with Condition 22; (b) Replacement planting on private properties as designed in consultation with and as approved by the landowner(s) of each private property; (c) Replacement planting in Daytona Reserve of at least 3 Totara trees of PB 95 size, to be planted along the same alignment as the existing trees; and further planting in Te Pai Park as to be agreed with the Council; (d) Design of the new public space at 308-310 Lincoln Road, incorporating replacement trees; (e) Landscape treatment for the raised median buffer space beside the cycle lane and T3 lane and residual or new berm areas, complying with Condition 21 as necessary; (f) Design of retaining walls and batters. Where retaining walls are greater than 1m in height and will face residential activities, then specific designs should be identified that minimise impacts on residential amenity, including privacy and

	outlook, sunlight and daylight access and visual appearance, as well as minimising the height of the retaining wall where feasible. (g) Treatments of footpaths, pedestrian paths and cycle lane surfaces and alignments (including at vehicle crossings and pedestrian and cycle crossing points at intersections), to ensure the safety and convenience of pedestrians and cyclists, taking into account the location of other street elements and furniture. The design of T intersections should clearly signal to vehicle drivers that they are entering a low speed environment. (h) How the designs of (a) to (f) are compatible with the landscape treatment of the State Highway 16 Lincoln Road interchange, Te Pai Park and Daytona Reserve, as relevant. (i) How the detailed design addresses NZS 4121:2001 – 'Design for Access and Mobility – Buildings and Associated Facilities', RTS 14 – 'Guidelines for facilities for blind and vision - impaired pedestrians, and the principles set out in the National Guidelines for Crime Prevention Through Design in NZ; (j) A consistent palette of options for replacement fencing and landscape strips on land not part of the permanent designation (as to be agreed with landowners), including any acoustic fencing that may be required by condition 32; and (k) Lighting details required by condition 19.
Trees: New Planting	
22.	The DUDLP required by Condition 21 shall include details on the street tree planting, as follows: (a) As many suitable street trees as possible are to be planted in the raised median, remaining berm areas and where feasible in the footpaths in general accordance (including number and spacing) with the concept plan submitted with the NoR and as updated through the DUDLP Condition 21 taking into account the following factors: (i) The location of utilities and services and their protection from installation works and the on-going growth of trees. This could include possible relocation of services, if necessary; (ii) The design of engineered tree pits to ensure healthy growth of street trees, providing at least $20m^3$ of soil per tree. This is likely to include the design of structural tree pits which extend beyond the footprint of the median strip or road berm. Techniques should include use of: • Soil cells, or; • Vault or rafting, or; • Structural Soils,

	(iii) Pre-ordering appropriate nursery stock so that they can be trained to form an appropriate shape prior to installation within the median. (b) A maintenance plan setting out methods to maintain the trees in their establishment phase and once established, including irrigation, pruning and maintenance of ground cover and replacement of individual trees that do not thrive or are subsequently damaged; (c) Record of consultation with Watercare in respect of planting in proximity to their assets; and (d) The works arborist identified in Condition 24 to oversee the median tree planting works.
Trees: Works	
23.	Trees located within the (Temporary and Permanent) designation footprint may be removed, except for scheduled trees located within the road reserve outside 158 Lincoln Road (Himalayan Cedar) and 172 Lincoln Road (Rimu).
24.	Works in the driplines of trees (removal or alteration) is to occur under the supervision of a suitably experienced arborist ('Works Arborist') to be employed by the Requiring Authority for the duration of the project. The Works Arborist is to monitor, direct and supervise all tree removals and all works within the dripline of trees adjacent to the works site. The appointed Works Arborist must be experienced in tree protection systems and construction methodologies and be able to coordinate the site works to ensure that the approved tree protection methodology is correctly implemented.
25.	Where works occur within the dripline of trees (for trees either located within or adjacent to the designation footprint), an on-site determination as to whether a tree can be viably retained or shifted shall be undertaken by the Works Arborist. The Works Arborist shall consider the following criteria (and provide a copy of the assessment in writing) when making his/her determination: (a) Whether or not there any design solutions which would allow for a tree or trees to be retained; (b) Species' known tolerance to root pruning/disturbance; (c) Overall condition of the tree (vigour/vitality); (d) Actual confirmed distance between the tree and the proposed works; (e) Any known previous root pruning/disturbance;

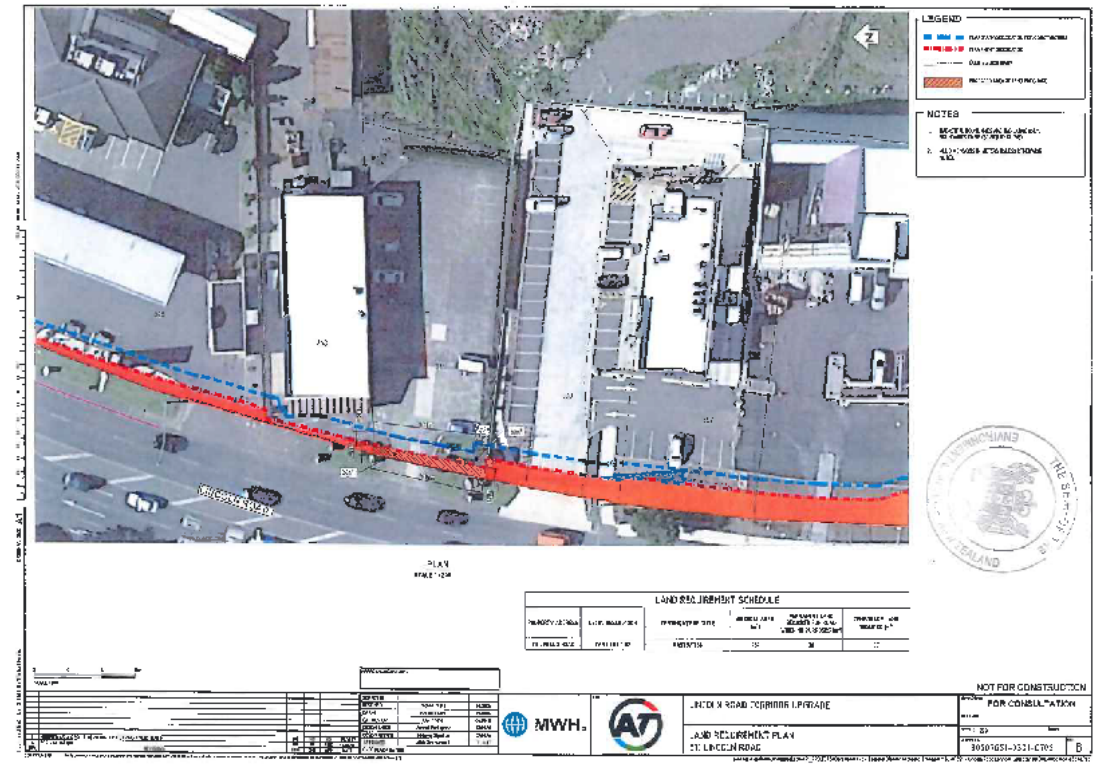
	(f) Numbers and diameters of roots which are required to be pruned; and (g) Size of the tree.
26.	The removal of any vegetation shall be undertaken in a manner which avoids any unnecessary damage or disturbance to any retained vegetation and their root zones (for example sectional felling in conjunction with modern rigging techniques where required).
27.	Works around retained trees shall be according to best arboricultural practices, in accordance with section 9 of the Arboricultural report from Amenity Tree Consultants Limited, titled Lincoln Road Corridor Improvements, dated May 2016, including methods to prune roots where necessary and avoidance of stockpiling of construction material machinery etc. in drip lines.
28.	Measures are to be taken to ensure that all contractors, subcontractors, and workers engaged in all activities covered by this designation are advised of the tree protection measures required as conditions upon this designation, and operate in accordance with them.
29.	Ten days prior to any work occurring within the dripline of the three notable trees located outside the properties at 158 Lincoln Road (Himalayan Cedar) and 172 Lincoln Road (Rimu), and within the property of 170 Lincoln Road (Rimu), details of the proposed works will be submitted to the Council for certification. The works shall follow best arboricultural practice, to avoid/minimise root loss by using non-dig construction options, and damage to the tree. The design should allow for permeable surfaces beneath the dripline where practicable.
30.	Regular monitoring reports and a completion report are to be submitted to the Council. The Requiring Authority shall prepare and submit to the Council's Consents Arborist and Monitoring Inspector compliance reports on a monthly basis throughout the course of the works. The compliance reports shall include: (a) A digital photographic record of the tree works undertaken from the appointed Works Arborist; and (b) Confirmation that the works to date have been in accordance with the conditions of this designation while under the direction of the Works Arborist. A completion report shall be provided by the Works Arborist to the Council's Resource Consents Arborist within one month of the finish of site works. The completion report shall confirm (or otherwise) that the works have been undertaken in accordance with the tree protection measures in the conditions and under the direction of the Works Arborist. The completion report shall also confirm

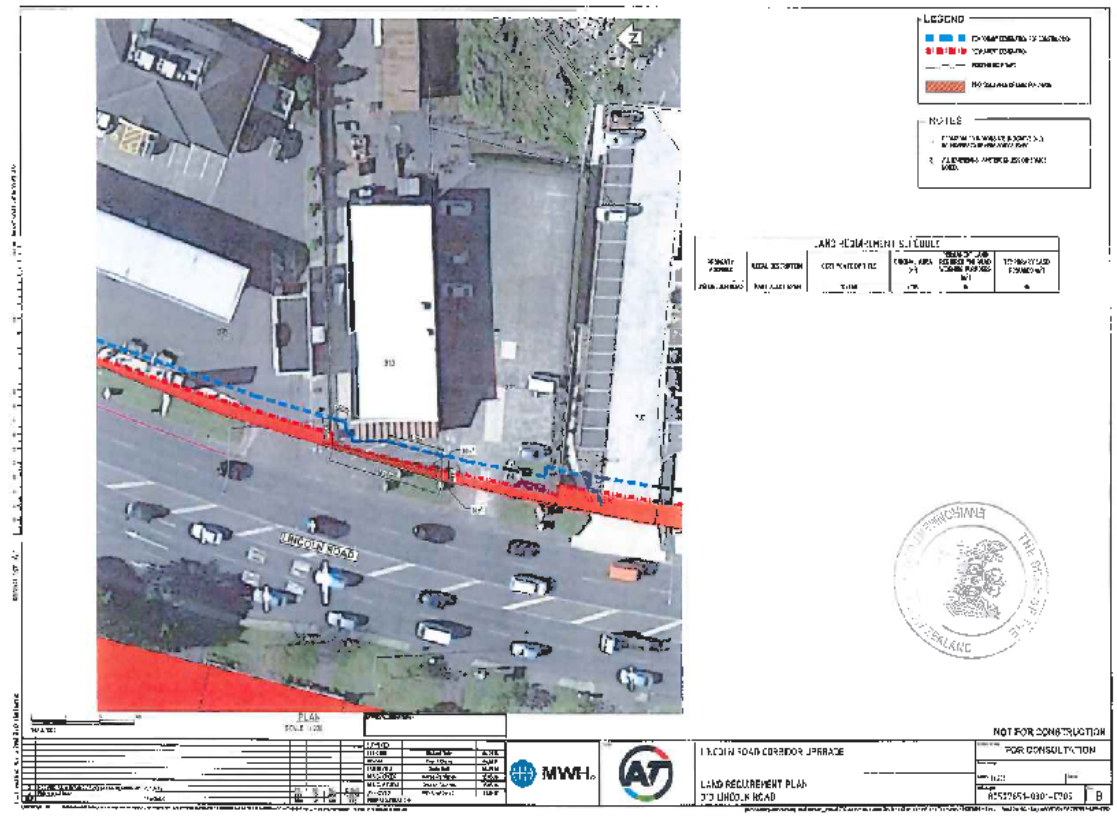
	(or otherwise) that the impact on the protected trees has been no greater than that afforded under the conditions.
Community Facilities and Local Business Management Plan	
31.	At least 3 months prior to the commencement of construction works, and prior to the submission to the Council of the Outline Plans listed in Condition 3, a Community Facilities and Local Business Management Plan (CFLBMP) shall be submitted to the Council and provided to stakeholders, for their information. The objective of the CFLBMP is to identify the potential effects of the construction works on local community facilities and local businesses, identify potential mitigation measures and how these will be implemented through the plans listed in Condition 3. The CFLBMP shall be developed in consultation with directly affected parties, local community facility operators and business owners. The CFLBMP shall document feedback received and the measures to be taken to address concerns, or reasons why specific feedback cannot be addressed. The CFLBMP shall identify the following: (a) Measures to avoid, remedy or mitigate (as far as reasonably practicable) disruption to access (including pedestrian, cycle, passenger transport and service/private vehicles) and operations for community facilities and local businesses as a result of construction activities; i. Temporary signage; ii. Provision of alternative car parking during construction; iii. Adequate notice of when and how construction will affect customer and delivery access in accordance with Condition 12(e); and iv. Timing and staging of the works during construction. (b) How the potential temporary loss of amenity for community facilities and businesses as a result of construction activities will be or have been mitigated through the CEMP.
Operational Noise	
32.	An Operational Noise Management Plan (ONMP) shall be prepared in accordance with NZS6806:2010 Acoustics - Road Traffic Noise - New and Altered Roads. The objective of the ONMP is to set out how the effects of road noise on PPFs existing prior to the designation being in place will be mitigated by the adoption of the Best Practicable Option.

	The ONMP shall: (a) identify how the Project will be designed and constructed so that using the best practicable option, predicted operational noise levels from the Project 10 years after opening; at the PPFs identified in Appendix D of the Styles Group report (Appendix D, "Table of Predicted Noise Levels", Operational Noise Assessment Report, June 2016); do not result in any upwards change to the specified "Noise Criteria Category" in Appendix D "Preferred Design Option" noise levels predicted by the acoustic modelling undertaken by Styles Group Acoustics and Vibration; and (b) detail the best practicable option for reducing noise levels for the PPFs in accordance with NZS6806:2010 and as agreed with the landowners where relevant.
33.	An independent acoustic expert shall prepare the ONMP to be submitted with the Outline Plan required by Condition 32.
Universal Drive pedestrian crossing	
34.	Subject to being able to meet any safety and operational requirements identified by the safety audit undertaken for the detailed design for the project, the detailed design for the permanent replacement signalised pedestrian crossing on Universal Drive, adjacent to 202-224 Lincoln Road shown on Sheet 13 in Appendix 21 of the NoR shall be amended so that the southern leg of the crossing aligns approximately with the existing pedestrian route through 202-224 Lincoln Road. Advice note: In the event that the revised crossing design required by Condition 34 is not able to meet Auckland Transport's safety and operational requirements, the Requiring Authority shall, in consultation with the owner of 202-224 Lincoln Road, use its best endeavours to realign the pedestrian route through 202-224 Lincoln Road to align with the replacement signalised crossing on Universal Drive.

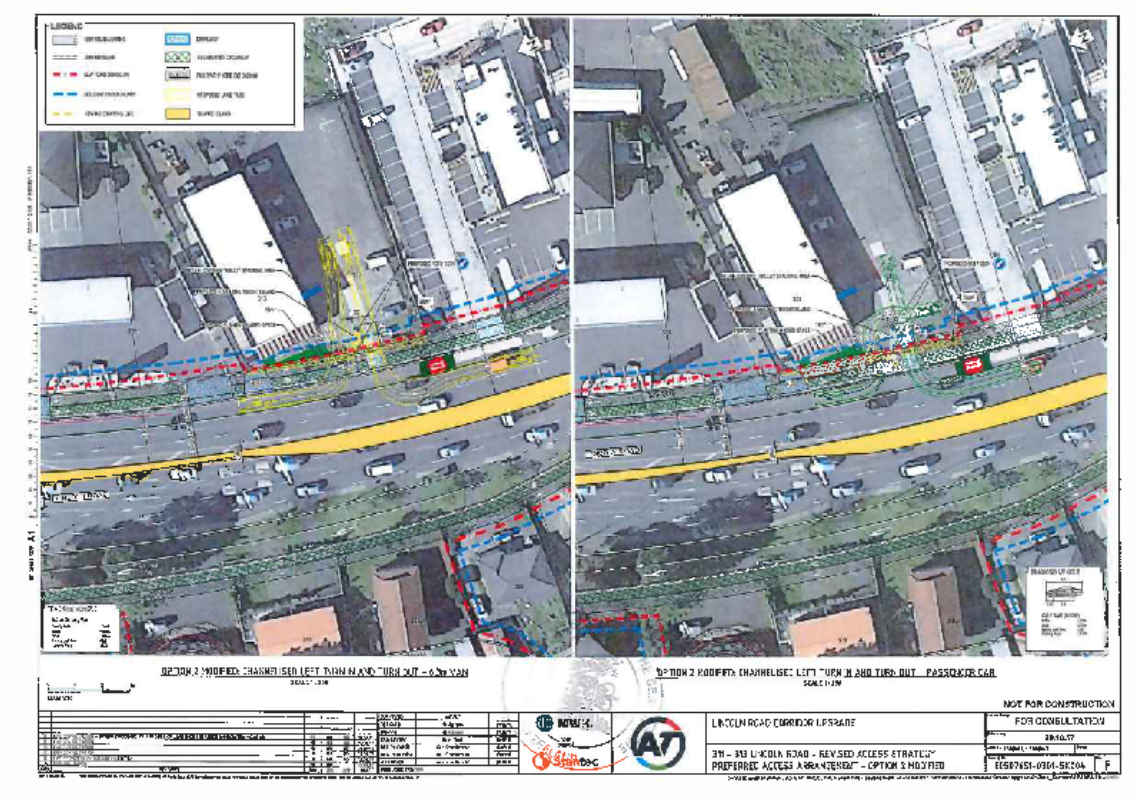
Attachments

Land Requirement Plan – 311/313 Lincoln Road (80507651-301-C706 Rev B and 80507651-0301-C705 Rev B)

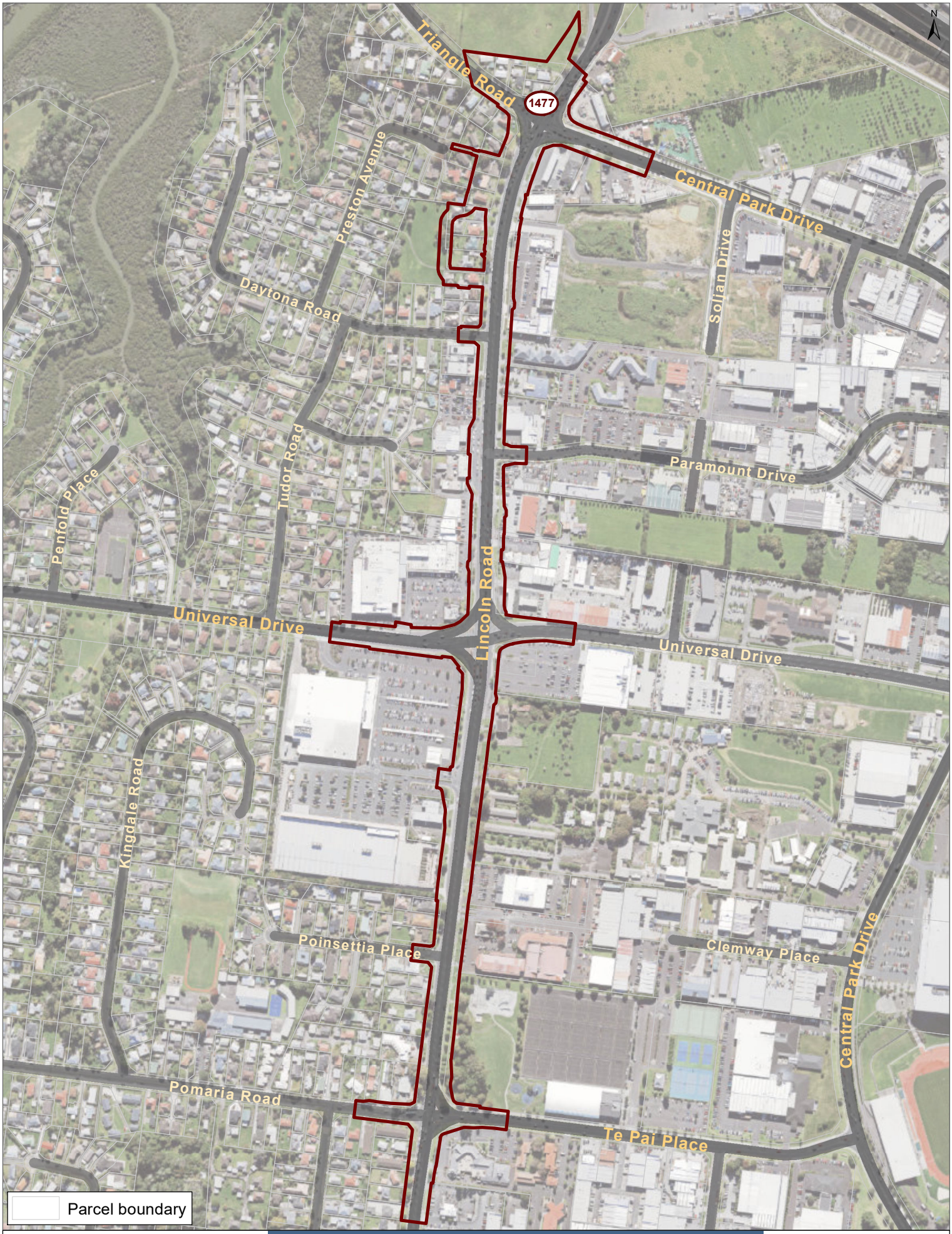




Access arrangement for 311/313 Lincoln Road (80507651-0301- SK004 Rev F)



Attachment 3 - Updated GIS Viewer D1477



0 45 90 180 Metres

Date: 13/11/2019

Lincoln Road Corridor Improvements - Major upgrade of Lincoln Road between Te Pai Place and the North Western Motorway (SH16)

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Plans and Places