Appendix 2: Short List Options

Plans of the options assessed as part of the MCA workshop.

D:DRAFT / P:PRELIMINARY / E:COUNCIL / T:TENDER / F:FINAL / C:CONSTRUCTION / A:AS-BUILT, RECORD / X:CANCELLED

I/R	DATE	DESCRIPTION	ISS BY
1	26/02/21	PRELIMINARY ISSUE	RMcA

DRAWN	DRAWING CHECK
DESIGNED	DESIGN REVIEW
APPROVED	APPROVED DATE

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the Alliance quality assurance system to ISO 9001. Printed copies of this document are UNCONTROLLED.

0 5 10 20 30 40m
1:500@A1

KEY PLAN

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

DRAWING STATUS: NOT FOR CONSTRUCTION

SHEET TITLE
EB4
STATION OPTION 4

SCALE	SHEET SIZE	DRAWING No.	REV
	A1	EB234-1-AR-SK-Z4-00004	1

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

Last Plotted: 15/02/2021 7:43:48 AM
Filename: C:\Users\Public\Documents\IA247900_EB4_CARRIER_DWGs_R20_stephen.tritchler.rvt

Printed on ___% Post-Consumer Recycled Content Paper

ISO A1 594mm x 841mm

EB4 BOTANY CENTRE STATION
OPTION 5 - OFFLINE TOWN CENTRE

LEGEND:
- PLATFORM
- RTC/BUS LANE
- OVERPASS

BOTANY TOWN CENTRE

EASTERN BUS BAYS

PICK UP AND DROP-OFF: 3 BAYS

55m

5m 10m 3m

35m

LOCAL BUS BAYS PICK UP

AND DROP-OFF: 4 BAYS

20m

35m

GRADE SEPERATED ACCESS

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

PARK WAY DR

TOWN CENTRE DRIVE

5m 10m 3m

15m 20m 54m

A2B BUS BAYS PICK UP

AND DROP-OFF: 2 BAY

LOCAL BUS BAYS PICK UP

AND DROP-OFF: 1 BAY

TE IRIRANGI DRIVE

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

TE KOHA RD

OPTION 5 - EB4 BOTANY STATION

I/R	DATE	DESCRIPTION	ISS BY
1	25/02/21	PRELIMINARY ISSUE	RMcA

DRAWN | DRAWING CHECK

DESIGNED | DESIGN REVIEW

APPROVED | APPROVED DATE

0 5 10 20 30 40m

1:500@A1

KEY PLAN

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

Fletcher acciona AECOM Jacobs

DRAWING STATUS: NOT FOR CONSTRUCTION

D DRAFT / P PRELIMINARY / E COUNCIL / T TENDER / F FINAL / C CONSTRUCTION / A AS-BUILT, RECORD / X CANCELLED

SHEET TITLE
EB4
STATION OPTION 5

SCALE	SHEET SIZE	DRAWING No.	REV
	A1	EB234-1-AR-SK-Z4-00005	1

EB4 BOTANY CENTRE STATION
OPTION 6 - OFFLINE TOWN CENTRE

LEGEND:
- PLATFORM
- RTC/BUS LANE
- RAISED MEDIAN
- OVERPASS
- WALKWAY
- PEDESTRIAN NETWORK
- CYCLE LANE
- PROPERTY BOUNDARY

BOTANY TOWN CENTRE

CRESCENT LANE

TOWN CENTRE DRIVE

EASTERN BUS BAYS PICK UP AND DROP-OFF: 3 BAYS

GRADE SEPERATED ACCESS

A2B BUS BAYS PICK UP AND DROP-OFF: 3 BAYS

PARK WAY DR

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

5.5m
7.5m
55m
36m
55m
5.5m
7.5m
3m
10m
15m
10m
3m

30m STACKING LENGTH

60m STACKING LENGTH

PEDESTRIAN AND CYCLE CROSSING

LOCAL BUS BAYS PICK UP AND DROP-OFF: 3 BAYS

LOCAL BUS BAYS PICK UP AND DROP-OFF: 3 BAYS

TE IRIRANGI DRIVE

HAVEN DR

GENERAL TRAFFIC LANES

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

TE KOHA RD

D DRAFT / P PRELIMINARY / C COUNCIL / T TENDER / F FINAL / C CONSTRUCTION / A AS-BUILT, RECORD TLX CANCELLED

ISS	DATE	DESCRIPTION	ISS BY
2	25/02/2021	PRELIMINARY ISSUE	RMcA
1	18/02/2021	PRELIMINARY ISSUE	RMcA

DRAWN	DRAWING CHECK
DESIGNED	DESIGN REVIEW
APPROVED	APPROVED DATE

0 5 10 20 30 40m
1:500@A1

KEY PLAN

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

DRAWING STATUS	NOT FOR CONSTRUCTION
SHEET TITLE	EB4 STATION OPTION 6B
SCALE	1:500
SHEET SIZE	A1
DRAWING No.	EB234-1-AR-SK-Z4-00006
REV	2

EB4 BOTANY CENTRE STATION
OPTION 8 - BUS STATION WITH ELEVATED PLATFORMS

I/R	DATE	DESCRIPTION	ISS BY
1	26/02/21	PRELIMINARY ISSUE	RMcA

DRAWN | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

0 5 10 20 30 40m
1:500@A1

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the Alliance quality assurance system to ISO 9001. Printed copies of this document are UNCONTROLLED.

KEY PLAN

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

D:DRAFT / P:PRELIMINARY / E:COUNCIL / T:TENDER / F:FINAL / C:CONSTRUCTION / A:AS-BUILT, RECORD / X:CANCELLED

DRAWING STATUS: NOT FOR CONSTRUCTION

SHEET TITLE
EB4
STATION OPTION 8

SCALE	SHEET SIZE	DRAWING No.	REV
	A1	EB234-1-AR-SK-Z4-00008	1

OPTION 9 - EB4 BOTANY STATION OFFLINE OPPOSING PLATFORMS GUYS RESERVE

I/R	DATE	DESCRIPTION	ISS BY
2	25/02/2021	PRELIMINARY ISSUE	RMcA
1	18/02/2021	PRELIMINARY ISSUE	RMcA

DRAWN | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the Alliance quality assurance system to ISO 9001. Printed copies of this document are UNCONTROLLED.

0 5 10 20 30 40m
1:500@A1

N

KEY PLAN

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

D:DRAFT / P:PRELIMINARY / E:COUNCIL / T:TENDER / F:FINAL / C:CONSTRUCTION / A:AS-BUILT, RECORD / X:CANCELLED

DRAWING STATUS: NOT FOR CONSTRUCTION

SHEET TITLE
EB4
STATION OPTION 9

SCALE	SHEET SIZE	DRAWING No.	REV
1:500	A1	EB234-1-AR-SK-Z4-00009	2

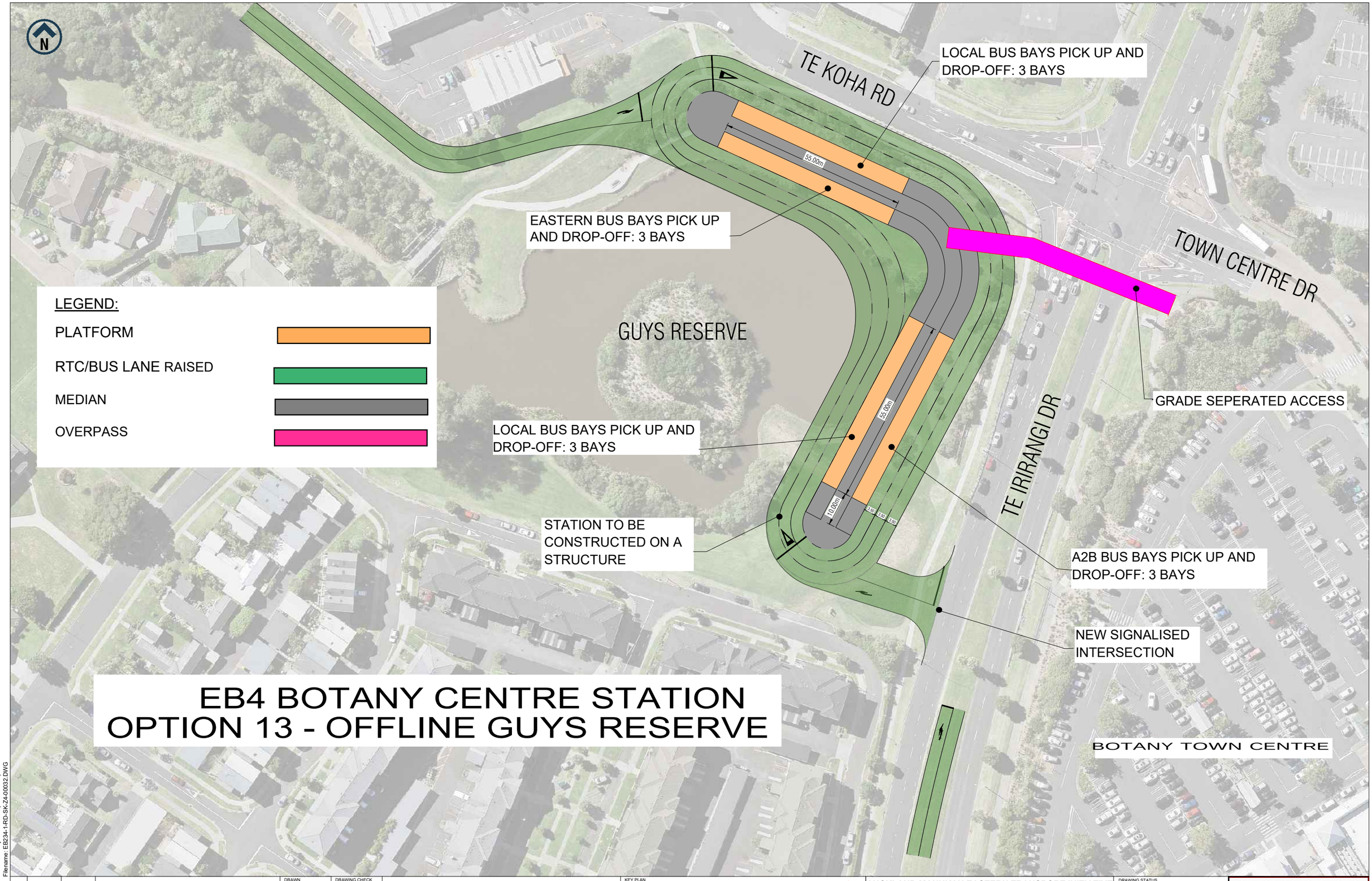
ISO A1 594mm x 841mm

Last Plotted: 15/02/2021 7:43:48 AM
Filename: C:\Users\Public\Documents\IA247900_EB4_CARRIER_DWGs_R20_stephen.tritchler.rvt

Printed on ___% Post-Consumer Recycled Content Paper

0 10 20 30 40 50 60 70 80 90 100mm

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.



EB4 BOTANY CENTRE STATION
OPTION 13 - OFFLINE GUYS RESERVE

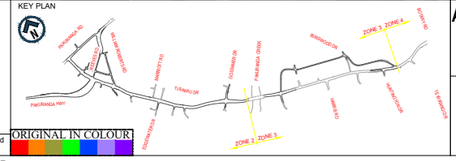
Last saved by: TAVILDAB(2021-03-04) Last Plotted: 2021-03-04
Filename: EB234-1-RD-SK-Z4-00032.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

0 12.5 25 m
1:500

KEY PLAN



ORIGINAL IN COLOUR

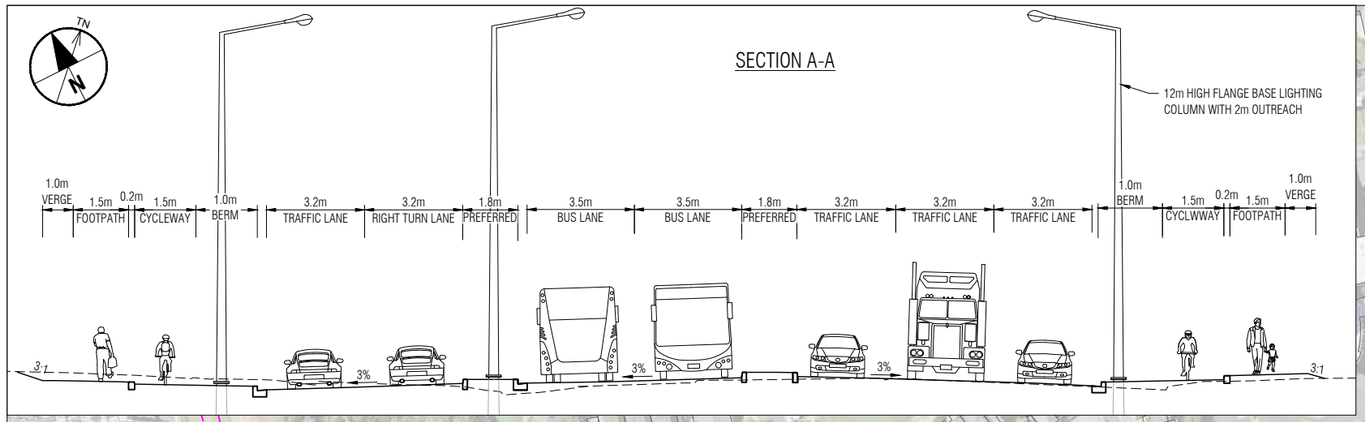
AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

DRAWING STATUS: DRAFT — NOT FOR CONSTRUCTION
DRAWING TITLE: ZONE 4 OPTION 13
SCALE: 1:500
SHEET SIZE: A1
DRAWING No: EB234-1-RD-SK-Z4-00032
REV

0 10 20 30 40 50 60 70 80 90 100mm

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.



TI RAKAU DRIVE

TE IRIRANGI DRIVE

GAS STATION

ACCESS TO BE RETAINED

ACCESS TO BE RETAINED

EXISTING RIGHT TURN TO BE REMOVED

A-A

TIE INTO EXISTING TE RAKAU RD AND EB3 COMMERCIAL TO BE CONFIRMED

EXISTING SIGNALISED INTERSECTION TO BE RETAINED

ACCESS TO BE REALIGNED

ACCESS TO BE RETAINED

TE KOHA ROAD

TOWN CENTRE DRIVE

EXISTING TRANSPOWER CABLES

GUYS RESERVE

LEGEND

- BUS LANE
- RAISED MEDIAN
- WALKWAY
- CYCLE LANE
- PLATFORM
- PROPERTY BOUNDARY

Last saved by: GKAMINSKA (2021-02-26) Last Plotted: 2021-02-26
Filename: EB234-1-RD-SK-Z4-00001.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

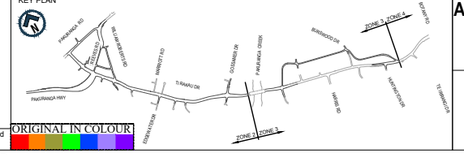
0 10 20 30 40 50 60 70 80 90 100mm

DRAWN M. Santos	DRAWING CHECK		
DESIGNED	DESIGN REVIEW		
APPROVED	APPROVED DATE		

0 25 50 m

0 2.5 5 m

KEY PLAN



ORIGINAL IN COLOUR

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

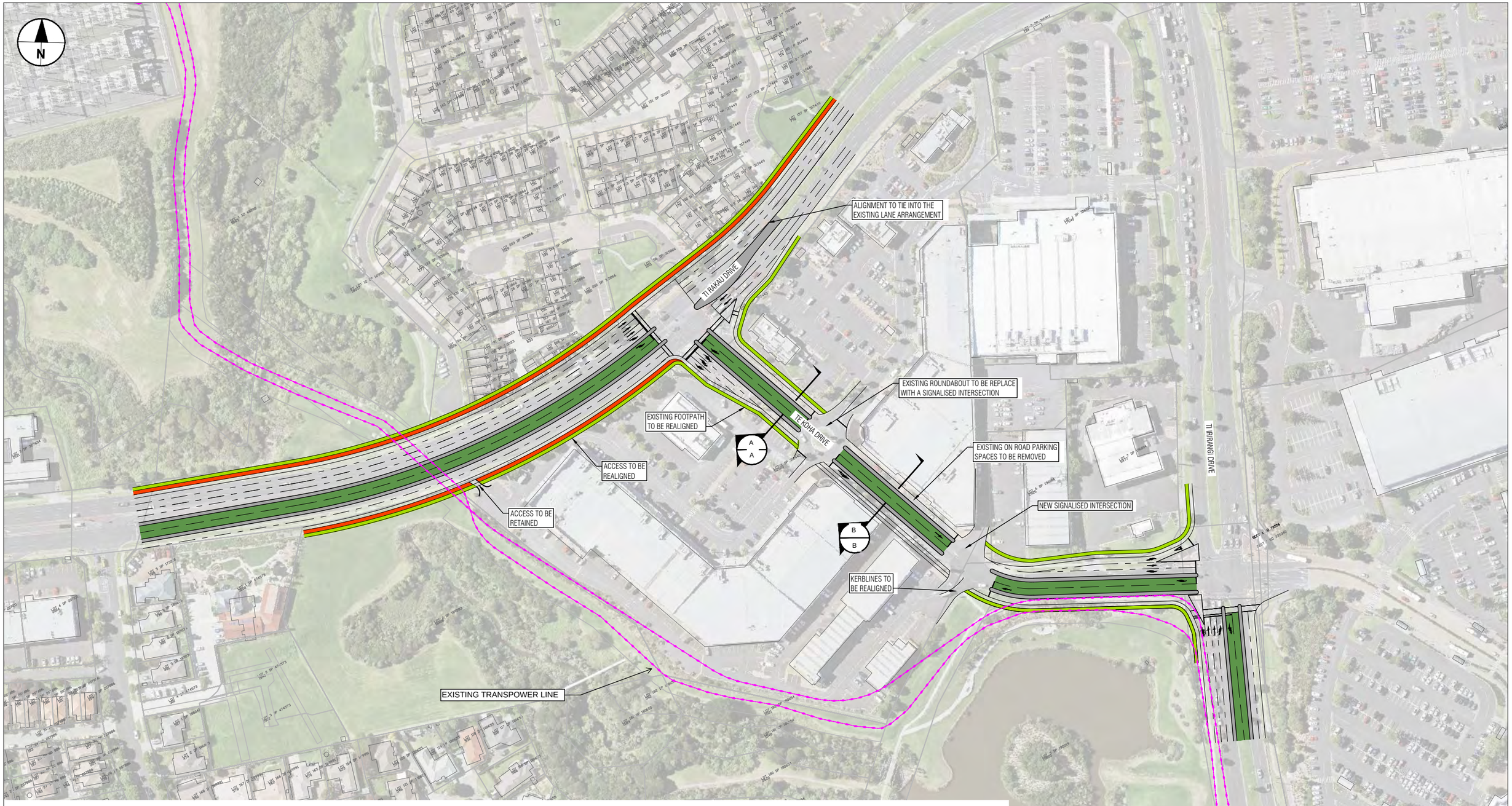
AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

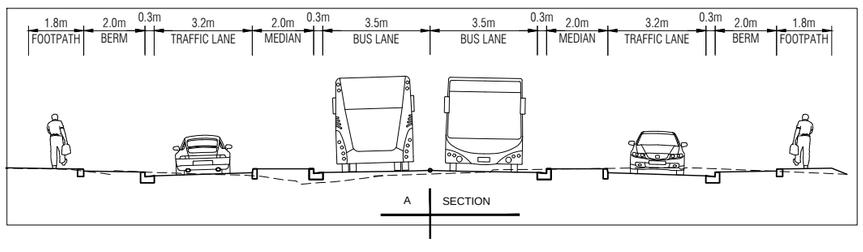
Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

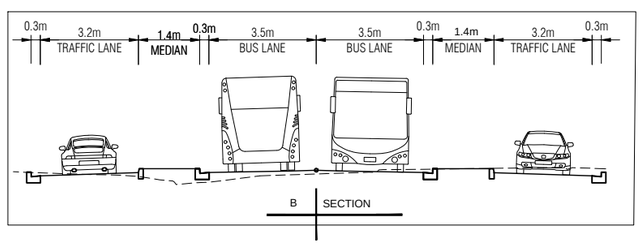
DRAWING STATUS: DRAFT — NOT FOR CONSTRUCTION

DRAWING TITLE
EB4
STATION LAYOUT - BUSWAY THROUGH TI RAKAU AND TE IRIRANGI LINK ROAD

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00001	







LEGEND
- BUS LANE
- RAISED MEDIAN
- CYCLE LANE
- WALKWAY
- PROPERTY BOUNDARY

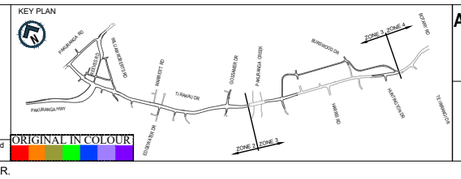
Last saved by: GKAMINSKA(2021-02-25) Last Plotted: 2021-02-25
Filename: EB234-1-RD-SK-Z4-00003.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN: M. Santos | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

0 12.5 25 m
0 2.5 5 m

KEY PLAN



ORIGINAL IN COLOUR

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the Alliance quality assurance system to ISO 9001. Printed copies of this document are UNCONTROLLED. Do not scale from this drawing.

0 10 20 30 40 50 60 70 80 90 100mm

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

DRAWING STATUS: DRAFT — NOT FOR CONSTRUCTION

DRAWING TITLE
EB4
BUS WAY ALONG TE KOHA DRIVE

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00003	

ALIGNMENT TO TIE INTO THE EXISTING LANE ARRANGEMENT

FOOTPATH AND CYCLE WAY TO CONTINUE ALONG TI RAKAU DR

EXISTING SIGNALISED INTERSECTION TO BE RETAINED

TIE INTO EXISTING TE RAKAU RD AND EB3 COMMERCIAL TO BE CONFIRMED

TI RAKAU DRIVE

PEDESTRIAN FACILITY TO BE REFINED FOLLOWING LOCATION OF LINK ROAD

TE KOHA DRIVE

TE IRIRANGI DRIVE

EXISTING LEFT OUT TO TI RAKAU DR TO BR RELOCATED FOLLOWING THE CONFIRMATION OF THE BUSWAY LINK

FOOTPATH AND CYCLE WAY TO CONTINUE ALONG TI RAKAU DR

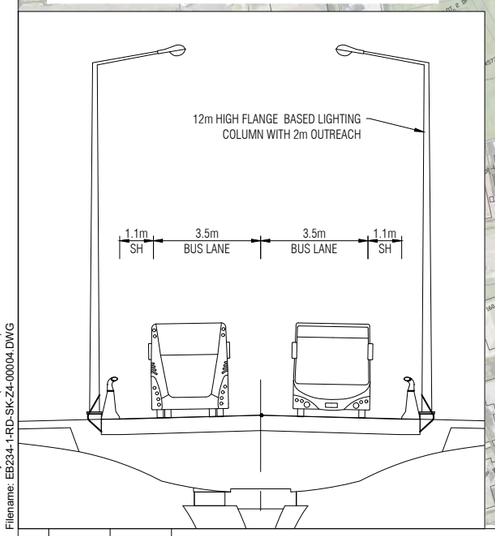
NEW SIGNALISED INTERSECTION

GUYS RESERVE

LINK ROAD TO BE CONSTRUCTED ON EMBANKMENT OR RETAINING STRUCTURES

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

INDICATIVE TYPICAL SECTION OF THE LINK ROAD



LEGEND

- BUS LANE
- RAISED MEDIAN
- CYCLE LANE
- WALKWAY
- PROPERTY BOUNDARY

Last saved by: GKAMINSKA(2021-02-26) Last Plotted: 2021-02-26
Filename: EB234-1-RD-SK-Z4-00004.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

0 10 20 30 40 50 60 70 80 90 100mm

DRAWN	DRAWING CHECK
M. Santos	
DESIGNED	DESIGN REVIEW
APPROVED	APPROVED DATE

0 25 50 m

0 2.5 5 m

KEY PLAN

ORIGINAL IN COLOUR

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

Fletcher acciona AECOM Jacobs

DRAWING STATUS: DRAFT — NOT FOR CONSTRUCTION

DRAWING TITLE
EB4
BUS WAY THROUGH GUYS RESERVE - 4A

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00004	

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

Appendix 3: Combined Options

Plans of the combined options assessed for EB4:

- Bus Station Option 6 + Link Road Option 3
- Bus Station Option 6 + Link Road Option 1
- Bus Station Option 13 + Link Road Option 3
- Bus Station Option 13 + Link Road Option 1

EB4 - BUSWAY ALONG GUYS RESERVE BOTANY CENTRE STATION OPTION 6 - OFFLINE TOWN CENTRE

TI RAKAU DR

TE KOHA RD

TOWN CENTRE DR

TE IRIRANGI DR

GUYS RESERVE

NEW SIGNALISED INTERSECTION

EXISTING SIGNALISED INTERSECTION TO BE AMENDED TO ACCOMMODATE BUSWAY LINK

TIE INTO EXISTING TI RAKAU RD AND EB3 COMMERCIAL TO BE CONFIRMED

PROPOSED ALIGNMENT OF BUSWAY - REFER TO DWG EB234-1-RD-SK-Z4-00004 FOR DETAILS

PROPOSED STATION OPTION 6 LAYOUT. REFER TO DWG EB234-1-AR-SK-Z4-00006 FOR DETAILS

LEGEND

- PLATFORM
- RTC/BUS LANE
- RAISED MEDIAN
- OVERPASS

Last saved by: GKAMINSKA(2021-03-12) Last Plotted: 2021-03-12
Filename: EB234-1-RD-SK-Z4-00033.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

0 25 50 m

KEY PLAN

ORIGINAL IN COLOUR

0 10 20 30 40 50 60 70 80 90 100mm

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

DRAWING STATUS: FINAL — NOT FOR CONSTRUCTION

DRAWING TITLE: ZONE 4
BUSWAY ALONG GUYS RESERVE AND STATION OPTION 6

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00033	

EB4 - BUSWAY ALONG GUYS RESERVE BOTANY CENTRE STATION OPTION 13 - OFFLINE GUYS RESERVE

Last saved by: GKAMINSKA(2021-03-12) Last Plotted: 2021-03-12
Filename: EB234-1-RD-SK-Z4-00034.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN | DRAWING CHECK
DESIGNED | DESIGN REVIEW
APPROVED | APPROVED DATE

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the Alliance quality assurance system to ISO 9001. Printed copies of this document are UNCONTROLLED. Do not scale from this drawing.

0 25 50 m

KEY PLAN

ORIGINAL IN COLOUR

0 10 20 30 40 50 60 70 80 90 100mm THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

DRAWING STATUS: FINAL

NOT FOR CONSTRUCTION

DRAWING TITLE:
ZONE 4
BUSWAY ALONG GUYS RESERVE AND STATION OPTION 13

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00034	

EB4 - BUSWAY ALONG TI RAKAU DR BOTANY CENTRE STATION OPTION 6 - OFFLINE TOWN CENTRE

EXISTING INTERSECTION TO BE AMENDED TO BE ACCOMMODATE THE BUSWAY AND THE STATION ACCESS

PROPOSED STATION OPTION 6 LAYOUT. REFER TO DWG EB234-1-AR-SK-Z4-00006 FOR DETAILS

TOWN CENTRE DR

TE IRIRANGI DR

PROPOSED BUSLINK. REFER TO DWG EB234-1-RD-SK-Z4-00001

GUYS RESERVE

EXISTING TRANSPOWER LINE

TE KOHA RD

PLATFORM

PLATFORM

LEGEND

- PLATFORM
- RTC/BUS LANE
- RAISED MEDIAN
- OVERPASS

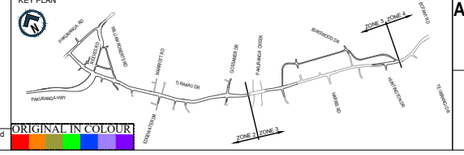
Last saved by: GKAMINSKA (2021-03-12) Last Plotted: 2021-03-12
Filename: EB234-1-RD-SK-Z4-00035.DWG

REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN	DRAWING CHECK
DESIGNED	DESIGN REVIEW
APPROVED	APPROVED DATE

0 25 50 m

KEY PLAN



ORIGINAL IN COLOUR

0 10 20 30 40 50 60 70 80 90 100mm

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance

Fletcher acciona AECOM Jacobs

DRAWING STATUS: FINAL — NOT FOR CONSTRUCTION

DRAWING TITLE: ZONE 4
BUSWAY ALONG TI RAKAU DR AND STATION OPTION 6

SCALE	SHEET SIZE	DRAWING No	REV
1:1000	A1	EB234-1-RD-SK-Z4-00035	

EB4 - BUSWAY ALONG TI RAKAU DR BOTANY CENTRE STATION OPTION 13 - GUYS RESERVE

PROPOSED BUSLINK REFER TO DWG EB234-1-RD-SK-Z4-00001

TOWN CENTRE DR

NEW SIGNALISED INTERSECTION

TE IRIRANGI DR

PROPOSED STATION OPTION 13 LAYOUT.REFER TO DWG EB234-1-RD-SK-Z4-00032 FOR DETAILS

GUYS RESERVE

TE KOHA RD

LEGEND

- PLATFORM
- RTC/BUS LANE
- RAISED MEDIAN
- OVERPASS

Last saved by: GKAMINSKA (2021-03-12) Last Plotted: 2021-03-12
Filename: EB234-1-RD-SK-Z4-00036.DWG

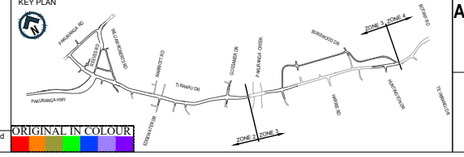
REV	DATE	DRAWN	REVISION DESCRIPTION

DRAWN	DRAWING CHECK
DESIGNED	DESIGN REVIEW
APPROVED	APPROVED DATE

0 10 20 30 40 50 60 70 80 90 100mm

0 25 50 m

KEY PLAN



ORIGINAL IN COLOUR

THIS DRAWING MAY CONTAIN COLOUR CONTENT. CORRECTLY PRINTED COPIES OF THIS DOCUMENT WILL DISPLAY ALLIANCE LOGO IN COLOUR.

AUCKLAND MANUKAU EASTERN TRANSPORT INITIATIVE
EASTERN BUSWAY STAGES 2, 3 AND 4
(PAKURANGA TO BOTANY)

Eastern Busway Alliance
Fletcher acciona AECOM Jacobs

DRAWING STATUS	FINAL — NOT FOR CONSTRUCTION
DRAWING TITLE	ZONE 4 BUSWAY ALONG TI RAKAU DR AND STATION OPTION 13
SCALE	1:1000
SHEET SIZE	A1
DRAWING No	EB234-1-RD-SK-Z4-00036
REV	

Appendix 4: MCA Framework and Assessment

The following information is provided:

A. Technical Assessors who undertook the assessment
B. Guidance/ Criteria provided to assessors
C. MCA assessment scoring outcome
D. Scoring sheets provided by Technical Assessors

Appendix 4A MCA Technical Assessors

Below are the Technical Assessors and the area of expertise who attended the MCA Workshop held on 10 March 2021.

Participant	Role/ Area of Expertise
Jarrod Snowsill	Facilitator
Alisdair Simpson	Facilitator
John Williamson	Project Objectives
Shane Doran	Busway and Bus Station Operations
Tim Brown	Traffic and Transport Effects – Temporary
	Traffic and Transport Effects – Permanent
Laura Laurenson	Legislative and Consenting
Andy Gibbard	Constructability
Simon Jones	Civil design and impact on utilities
Chris Bentley	Urban Design
	Landscape
	Visual
Fiona Davis	Freshwater and terrestrial ecology
Joe Grimes	Acoustics and Vibration
Bruce Clarke	Air Quality
Paul May	Stormwater and Flooding
John Daly	Social Impact
Fenella Fischer	Property Acquisition
Tim Grammer	Cost

Appendix 4B Assessment Guidance

Post-workshop guidance was provided to Technical Assessors. The following is a copy of the information that was provided.

The Assessment Guidance was issued on 1 March 2021.

Eastern Busway Alliance

Fletcher acciona AECOM Jacobs Let's get East Auckland moving

Guidance for EB4 Options Assessment Workshop

Document Number: EB234-1-PL-GL-Z4-00000-1

Guidance for EB4 Options Assessment Workshop

Document History and Status			
Rev	**Date**	**Author**	**Status**
A	01 March 2021	A Simpson	Draft for review
1	01 March 2021	A Simpson	For issue
2			
3			

Document Approval					
Rev	**Action**	**Name**	**Position**	**Date**	**Signature**
A	Reviewed by	Jarrod Snowsill/ Karyn Sinclair		1 March 2021	On file
1	Approved by	Karyn Sinclair		1 March 2021	On file
2					
3					

Table of Contents

Figures

Tables

Abbreviations and definitions

Abbreviation and definitions	Description
A2B	Airport to Botany Rapid Transport Route.
AMETI	Auckland Manukau Eastern Transport Initiative
AT	Auckland Transport
EB1	Eastern Busway 1 (Panmure to Pakuranga)
EB2	Eastern Busway 2 (Pakuranga Town Centre Station)
EB3	Eastern Busway 3 (Pakuranga to Botany)
EB4	Eastern Busway 4 (Botany Town Centre Station)
Elevated PT	EB3 Elevated Public Transport
MCA	Multi Criteria Assessment
RTN	Rapid Transit Network

1 Introduction

1.1 Project Overview

AMETI Eastern Busway will provide a multi-modal transport system to support population and economic growth in east Auckland. This involves the provision of improved transport choices and aims to enhance the safety, quality and attractiveness of public transport and walking and cycling environments. The dedicated busway will provide an efficient Rapid Transit Network (RTN) service between the Pakuranga and Botany town centres, while local bus networks will continue to provide more direct local connections within the town centre areas. The project also includes new walking and cycling facilities, as well as modifications and improvements to the road network.

The Eastern Busway will provide reliable journey times, providing East Auckland with a connection to the city's wider Rapid Transit Network (RTN). Stage 1 (EB1) from Panmure to Pakuranga is currently under construction, expected to be completed by mid-2021.

For the delivery of stages 2, 3 and 4 (EB2, EB3, and EB4) of the Project, the Eastern Busway Alliance (EBA) was established in October 2020. The Alliance aims to have the Project completed by 2025. Figure 1 shows the location of the Project and the phases of delivery/ construction.

Figure 1 Eastern Busway Project stages

EB2 is not subject to any further alternatives evaluation beyond that undertaken in previous phases. EB3 options assessment has already been undertaken.

1.2 EB4 Overview

EB4 will comprise a bus station at Botany and a link road between the bus station and the EB3 busway on Ti Rakau Drive at Huntington Drive/ Guys Reserve.

A total of five bus station options and three link road options are to be assessed. All options have been designed to meet the operational requirements of the intended pattern of service for Auckland Transport.

2 EB4 Options for Assessment

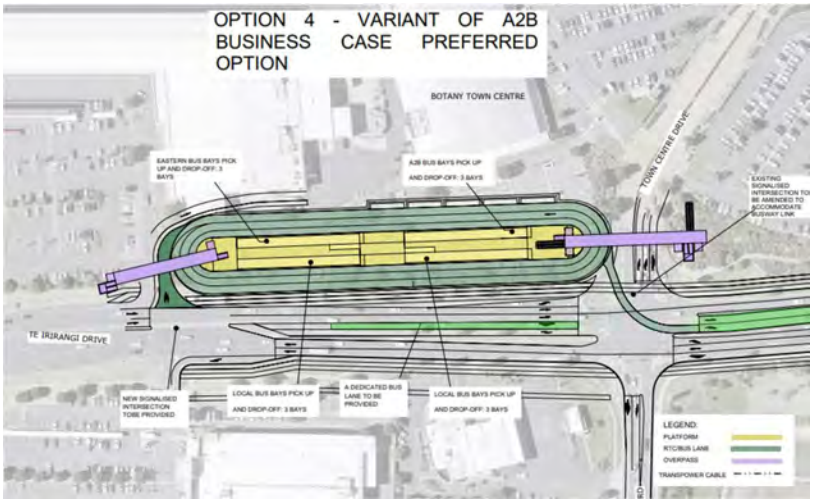
The following provides an overview of the alternative options that are to be assessed. Pre-workshop briefing sessions where held on the 19 February and 24 February by the EB4 design team. The following is an overview of the options presented.

Please note that Options 1 to 3, and 7 have been discounted from the long list assessment. The remaining options (Options 4 to 6, 8 and 9 remain for assessment).

Plans of the bus stations options provided in Appendix 4 and drawings of the link road options are provided in Appendix 5. The following sections provide an overview of the proposed options.

2.1 Botany Bus Station Options

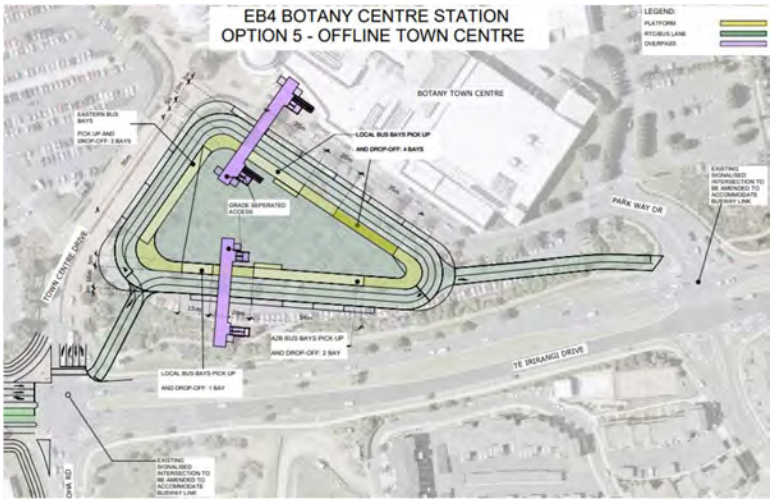
2.1.1 Option 4: Variant of A2B offline preferred



This option provides a bus station with an island platform located to the east of Te Irirangi Drive, to the north of Town Centre Drive. The bus station would be located on land that is currently used as car parking for Botany Town Centre. Buses will be provided access at the north and south ends of the station. Passenger overpasses would also be provided at the north and south ends of the station.

Due to the width of the bus station, existing buildings on the east side of Te Irirangi Drive will be impacted. The carriageway of Te Irirangi Drive will need to be realigned, towards the west. This will result in some land being required on the west side to accommodate the footpath/cycleway.

2.1.2 Option 5: Offline 'Hash Brown' in AMP site



The bus station would be located in land currently used as car parking for Botany Town Centre, positioned to the east of Te Irirangi Drive, to the south of Town Centre Drive. Access to the station for buses would be via the intersection of Te Irirangi Drive/ Town Centre Drive and the intersection of Te Irirangi Drive/ Park Way Drive. Two Passenger overpasses would be provided to connect to the surrounding area.

The bus station would be situated at the same level as Te Irirangi Drive (sitting below the existing ground level of the car park). No existing buildings are directly impacted by this station design, however a large area of car parking would be removed from the Town Centre.

2.1.3 Option 6: Central platform in AMP site

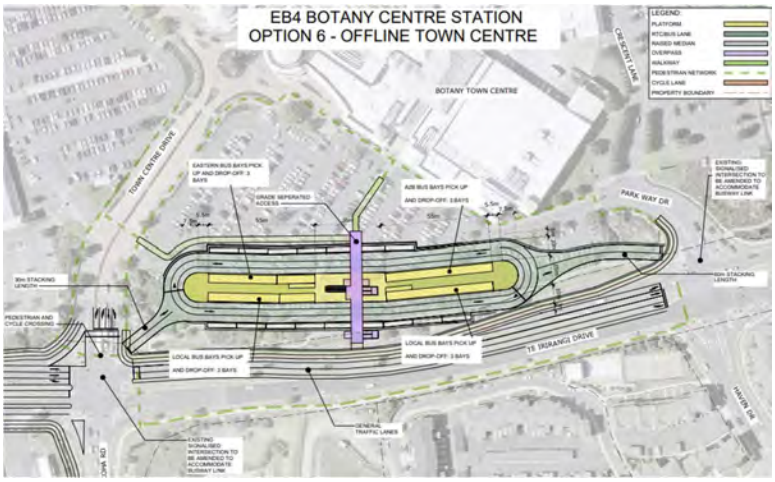


Figure 2 Bus station option 6

The bus station would be positioned in an area currently used as car parking for Botany Town Centre. The station is designed with a central platform, with access for buses to the north and south ends. The access for buses would connect to the existing intersections of Te Irirangi Dive/ Town Centre Drive and

Te Irirangi Drive/ Park Way Drive. Passenger overpass to access the station would be provided in the centre, connecting with Botany Town Centre.

No buildings would be directly impacted by the bus station. The carriageway of Te Irirangi Drive would need to be altered, however this can be accommodated within the existing western kerb line.

2.1.4 Option 8: Grade separated station

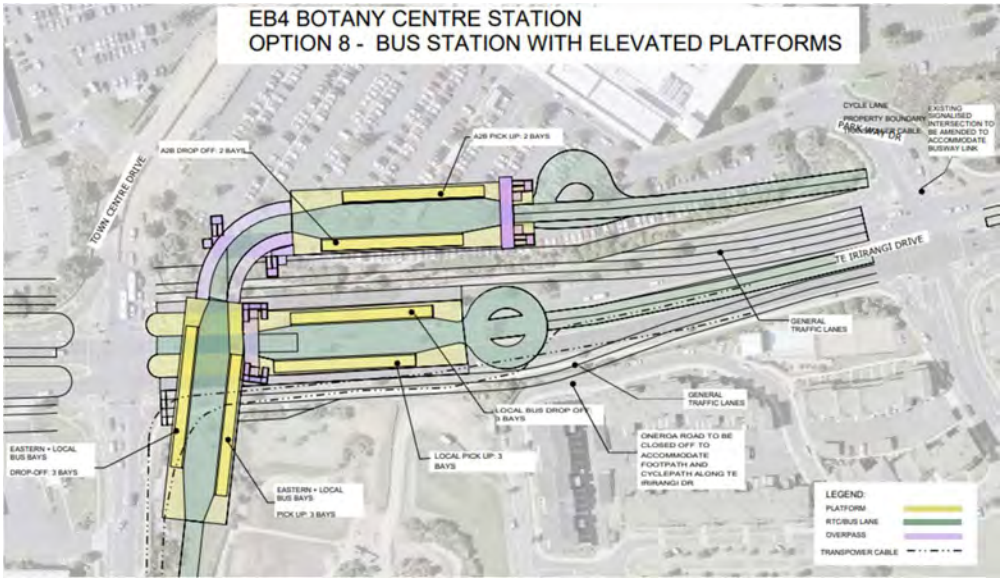


Figure 3 Bus station option 8

This station design would provide three sets of platforms. A set of platforms would be located within the centre of Te Irirangi Drive, another set would be to the east of Te Irirangi Drive (occupying land currently used as car parking), and another set are elevated above Te Irirangi Drive.

Buses travelling to/from the busway would enter the station of the west, using the elevated platforms above Te Irirangi Drive. Other bus services would access the bus station at existing intersections on Te Irirangi Drive.

The carriageway alignment of Te Irirangi Drive would be modified to provide for the online platforms, resulting in the road corridor being widened to the west. Varies passenger connections would be provided between the platforms and the town centre.

2.1.5 Option 9: Offline in Guy's Reserve

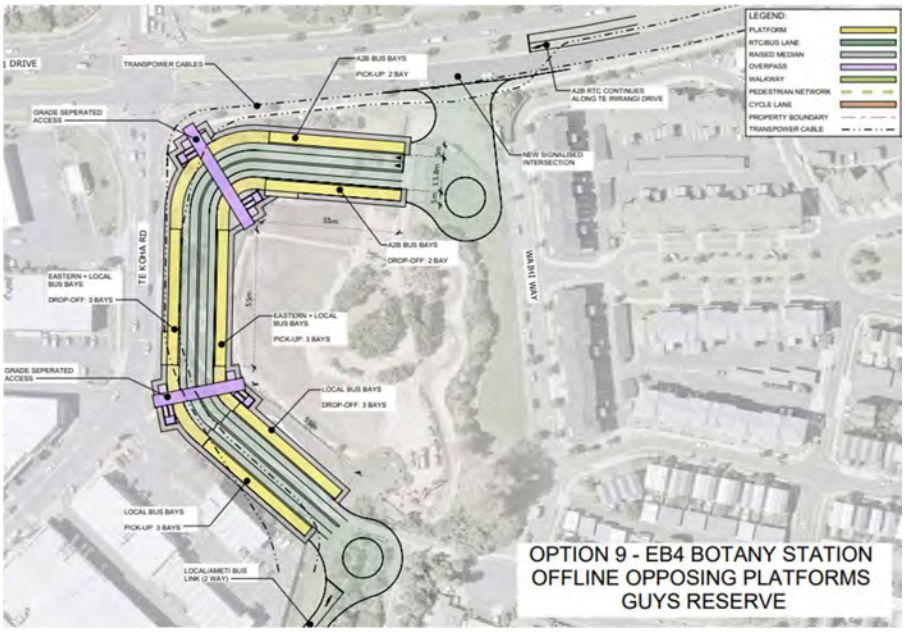


Figure 4 Bus station option 9

This option would provide a bus station located within Guy's Reserve, located adjacent to Te Koha Road. The bus station has been designed to site around the existing stormwater pond. Bus access to the station would be from the west (via link road to/from EB3) and the east with a new intersection on Te Irirangi Drive. Bus turnaround facilities are provided to the east and west of the bus station. The turn around facility to the west would be position over an existing stream. It has been assumed this would result in the stream being placed in a culvert to accommodate the turnaround facility.

Passenger overpasses would be provided at two points, providing a connect to Te Koha Road and Te Irirangi Drive.

2.2 Link Road Options

2.2.1 Ti Rakau Drive/ Te Irirangi Drive

Figure 5 Ti Rakau Drive/ Te Iriangi Drive link road

The busway link road would be positioned in the centre of Ti Rakau Drive and Te Iriangi Drive with the existing intersection between the two roads being increased in size. Walking and cycling facilities would be provided along both sides of the road.

Any widening to accommodate the busway along Ti Rakau Drive would be to the north. The properties impacted are already owned by Auckland Council.

This link road option is not compatible with Bus Station Option 8.

2.2.2 Te Koha Road

Figure 6 Te Koha Road link road

This option would provide the busway link in the centre of Ti Rakau Drive from EB3 to the intersection with Te Koha Drive. The busway would use the alignment of Te Koha Drive to link with Te Irirangi Drive.

Te Koha Drive would include the busway, vehicle lane in each direct, off road cycle facility and footpaths. The existing buildings would not be impacted.

This link road option is not compatible with Bus Station Option 8.

2.2.3 Guy's Reserve

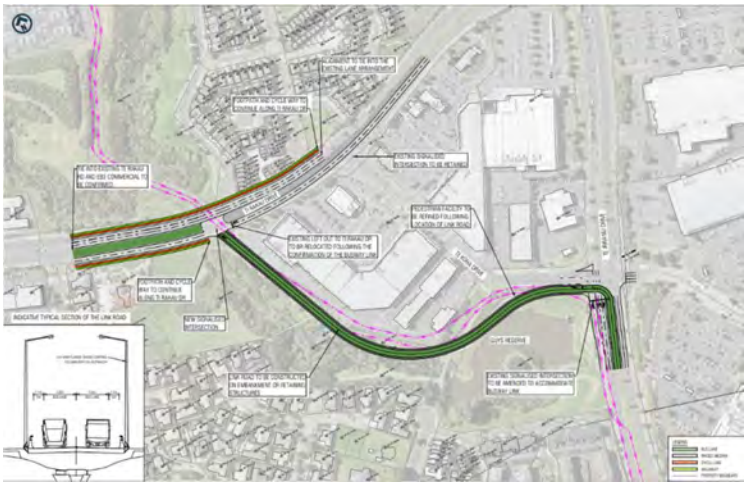


Figure 7 Guy's Reserve link road

This option would provide the busway link road along the northern edge of Guy's reserve, to the south of the existing retail development. The link road would be placed on a shallow structure to reduce impact upon the reserve.

A new intersection on Ti Rakau Drive would be provided to connect with the link road. On Te Irirangi Drive, the link road would use a modified intersection of Te Koha Road. Walking and cycling facilities would be provided along Ti Rakau Drive/ Te Irirangi Drive.

3 Workshop participants

The Technical Assessors are required to attend the workshop on the 10th March 2021. The Technical Assessors and the area of expertise's is noted in Table 1.

Table 1 MCA workshop participants

Participant	Role/ Area of Expertise
Jarrod Snowsill	Facilitator
Alisdair Simpson	Facilitator
John Williamson	Project Objectives
Shane Doran	Busway and bus station operations
Tim Brown	Traffic and Transport (temporary effects)
	Traffic and Transport (permanent effects)
Laura Laurenson	Legislative and consenting
Andy Gibbard	Constructability
Simon Jones	Civil design and impact on utilities
Chris Bentley	Urban Design
	Landscape and visual
Fiona Davis	Freshwater and terrestrial ecology
Joe Grimes	Acoustics and vibration
Bruce Clarke	Air Quality
Paul May	Stormwater/ Flooding
John Daly	Social impact
Fenella Fischer	Property
Tim Grammer	Cost

In addition to the above, representatives from the legal provider and Subject Matter Experts (SMEs) from Auckland Transport will be in attendance to provide comment where necessary.

4 Assessment and scoring of options

The following provides an overview of the assessment and scoring criteria to be used for the MCA workshop.

4.1 Scoring Criteria

Table 2 below details the scoring scale to be used for the assessment. The scale is an 11-point system, from -5 to +5.

Table 2 Scoring criteria

Score	Description/ indicators for assessment
-5 Very High Adverse Effect	**National or Greater**: Will have adverse effect on a nationally significant resource/ or may be experienced by a national scale audience; *and/or* May have a substantial/ complete effect (destruction) on the feature/ resource/ community identified; *and/or* **Long Term/ Permanent =** 20+ years.
-4 High Adverse Effect	**Regional**: Will have adverse effects on a regionally significant resource or may be experienced by a regional or wider audience; *and/or* May have a high extent of impact on features/ resource/ community identified; *and/or* **Long Term/ Permanent** = 10 -20+ years.
-3 Moderate Adverse Effect	**Local Area Level Impact**: Will have adverse effects on a locally significant resource (e.g. significant within an ecological district or within a catchment) or may impact on a local board community/ geographic scale; *and/or* May have a moderate extent of impact on the feature/ resource/ community identified; *and/or* **Medium term** = 5 -10 years
-2 Low Adverse Effect	**Local Area/ or Individual Level Impact**: Will have adverse effects on a locally prevalent resource (e.g. site specific significant within an ecological district but only local effect or within a catchment) or may impact on a local board community/ geographic scale; *and/or* May have some extent of impact on the feature/ resource/ community identified; *and/or* **Short term** = 1 -5 years
-1 Very Low Adverse Effect	**Individual level impact**: Will have adverse effects on resources not otherwise identified for their values or with otherwise innominate value or may impact a limited number of households (i.e. 20 households/ 50 people); *and/or* May have a low extent of impact on the feature/ resource/ community identified; *and/or* **Very Short Term =** <1 year.
0 Neutral Effect	Negligible effects from current situation/ natural
+1 Very Low Positive Effect	**Individual level benefit**: Benefits will be experienced for resources not otherwise identified for their values or with otherwise innominate value. Benefits may be experienced by a limited number of households (i.e. 20 households/ 50 people); *and/or* May have a very limited and confined extent of benefits on the feature/ resource/ community identified; *and/or* **Very Short Term** = < 1 year.

+2 Low Positive Effect	**Local level Benefits (2):** Benefits will be experienced by defined local environment or sub-catchment. Benefits may be on Census Area Unit or experienced by a limited number of households (i.e. 20-50 people); *and/or* May have a low extent of benefits on the feature/ resource/ community identified; *and/or* **Short Term** = 1-5 years.
+3 Moderate Positive Effect	**Local Level Benefits (1)**: Benefits will be experienced for values of an ecological district or within a catchment, or at a local board community/ geographic scale; And/or May have some extent of benefits on the feature/ resource/ community identified; And/or **Medium Term** = 5-10 years.
+4 High Positive Effect	**Regional Benefits**: Benefits will be experienced for a sub-regionally significant resource/ experienced by a sub-regional audience; *and/or* May have a high extent of benefits on the feature/ resource/ community identified (and confident of benefits being realised); *and/or* **Long Term Permanent** = 10-20+ years
+5 Very High Positive Effect	**Regional or Greater Benefit**: Benefits will be experienced by a whole region or across regions (including national) or may be to a regionally or nationally significant resource; *and/or* May have substantial benefits on features/ resources/ community identified. High degree of confidence of benefits being realised; *and/ or* **Long Term/ Permanent =** 20+ years.

4.2 MCA Criteria and Guidance

The following provides the assessment criteria and guidance that should be considered when undertaking the assessment of the options.

The following outlines the Project objectives and guidance to be considered when undertaking the assessment of the options. Technical Assessors are to consider the Project objectives when assessing the options in relation to their subject area.

Please consider the correct table when undertaking the assessment. Not all objectives and cost considerations apply to the link road options.

4.2.1 MCA Criteria and Guidance – EB4 Bus Station

Table 3 Bus Station Criteria and Guidance

EB4 Bus Station MCA Criteria and Guidance			
Objectives*		Matters for consideration	Assessor(s)
01	Provide a multimodal transport corridor that connects Pakuranga and Botany to the wider network and increases choice of transport options	• Access to key economic destinations by all modes • People - mode share (zone) • People throughput (corridor) • Spatial coverage (access) – residents (PT and cycle) or resident capacity • Spatial coverage (egress) – employees (PT and cycle) (or employee/activity density	Tim Brown
02	Provide transport infrastructure that integrates with existing land use and supports a quality, compact urban form	• A facility that integrates with adjoining land uses. • Enables growth, particularly a variety of urban densities • Enables higher quality living and working environments • Amenity – natural/built environment (potential redevelopment quality) • Townscape (urban realm quality) • Community Severance	Chris Bentley
03	Contribute to accessibility and place shaping by providing better transport connections between, within and to the town centres	• Network condition – walking and cycling • Ease and directness of connections between proposed station and Botany Town Centre and surrounding precinct (Ease of access)	Chris Bentley
04	Provide transport infrastructure that improves linkages, journey time and reliability of the public transport network	• Average travel time by mode • Travel time reliability for public transport • Intersection delays	Tim Brown/ Shane Doran
05	Provide transport infrastructure that is safe for everyone	• Safe connections to, and around the interchange centre including general traffic, cyclists and pedestrians (Safe Systems Assessment) • Perception of access and safety (CPTED/Passive Surveillance)	Tim Brown Chris Bentley
06	Safeguard future transport infrastructure required at (or in vicinity of) Botany Town Centre to support development of a strategic public transport connection to Auckland Airport	Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport • Customer Experience (including ease of transfer – might need to think about how we would describe this)	Tim Brown/ Shane Doran

		• Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048 • Flexibility – ease of staging the construction of the station	

Table 4 Bus Station effects considerations

EB4 Bus Station Effects Consideration			
Topic	Subject	Matters for consideration /guidance	Assessor(s)
Legislative and consenting considerations	Assessment against critical legislative requirements	Qualitative assessment of the consistency of the proposal with the Resource Management Act (1991), especially Part 2 matters, and high-level policy framework relevant to the Project e.g. NZCPS, NPS's, RPS, NES. Impacts on specifically scheduled and protected Archaeology, Built heritage, scheduled trees and features within AUP.	Laura Laurenson
Constructability	Can the option be constructed within reasonable and known construction constraints?	Constructability incl. volume/balance of earthworks, construction risks and general degree of difficulty Disruption to existing services and utilities Traffic management Programme Disruption - effects on network utilities and continuity of service	Andy Gibbard
	Impact on utilities and civil infrastructure	Requirements for relocation / design of alternative major infrastructure, including consideration of safety impacts of such requirements and risk of continuity of service over construction - e.g. Transpower National Grid, Watercare, Telecoms etc - account for cost of relocations if necessary	Simon Jones
Transportation effects	Temporary traffic and transport effects	Temporary intersection layouts, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc. PT reliability during construction phase	Tim Brown
	Permanent/ operational traffic and transport effects	Journey time improvement / Congestion/queue length within corridor / congestion and queue lengths outside of corridor / PT reliability Effects on existing network - positive and adverse Levels of service of key intersections Operational performance of busway Effects on surrounding network	Tim Brown

Natural environment/ ecological effects	Ecology	Freshwater ecology – adverse physical effects on freshwater receiving environment (any work within or in proximity to a stream or wetland)	Fiona Davies
		Extent of effects (and ability to manage effects) on indigenous vegetation	Fiona Davies
		Extent of effects on significant habitats of indigenous fauna (terrestrial)	Fiona Davies
		Extent of effects on landscapes and natural features including geological features, landform, vegetation (including trees), watercourses etc.	Fiona Davies
Built environment	Property implications	Qualitative assessment of the scale of likely / anticipated effects from land take. Reasonable necessity and requirement for operation and construction. Considering extent to which additional land required has already been acquired for the Project and risk of acquiring land still needed. Number of properties to be acquired. Degree of difficulty of property acquisition (includes nature of land use, consideration of common land acquisition i.e. land owned by multiple parties). Type of property e.g. commercial versus residential versus parks/heritage. Consideration of future land use (residual land use).	Fenella Fisher
	Stormwater and Flooding effects	The extent of the effects relating to stormwater and flooding generated by the proposal. Understanding of potential mitigation requirement.	Paul May
	Permanent effects – activities/ use	The extent of effects on (or compatibility with) surrounding activities, with particular regard to public activities (such as town centres), land use, and character.	Chris Bentley
	Permanent effects – visual amenity	The extent of effects on visual amenity taking into account the character and visibility (prominence) of the proposal, the proposed built form, the character of the existing environment, the sensitivity of audiences, duration of view, magnitude of visual change and the experience of future road users.	Chris Bentley
Social effects	Noise and Vibration	Operational noise and vibration effects upon sensitive receivers.	Joe Grimes
		Construction noise and vibration effects upon sensitive receivers.	Joe Grimes
	Air Quality – Operational	Scoring of potential operational air quality impacts of each option taking account of the following factors: • Relative scale of traffic emissions from each option characterised from: - Traffic volumes (whole fleet and HCV) - Level of service	Bruce Clarke

		• Relative scale of sensitivity of receiving environment for each option is this in a polluted/non-compliant airshed?	
	Social – community facilities/ open space	The extent to which community facilities in the study area (including educational, health and leisure facilities) will be affected. During construction and permanent.	John Daly
	Social – viability productivity of business land areas	Consideration of business disruption effects during construction and operation.	John Daly
	Social – social connectivity	Discussion on the potential impacts on patterns of movement or communities of interest that might be affected by the construction/operation works, such that there may be a loss of social cohesion or fragmentation of existing community structures (e.g. disruption or severance of school zones, electoral catchments, etc).	John Daly

Table 5 Bus Station cost considerations

EB4 Bus Station Cost Considerations			
Topic	Subject	Matters for consideration /guidance	Assessor(s)
Costs	Capital Costs	The cost to construct plus property costs of the option	Tim Grammer/ Fenella Fischer
	Bus Operating Costs	The bus operating costs associated with station form, driver rest and layover patterns of the option	Shane Doran
	Whole-of-life costs	Financial outlay	Shane Doran
	Present Day Value of whole-of-life costs	NPV of financial outlay	Shane Doran

4.2.2 MCA Criteria and Guidance – EB4 Link Road

Table 6 Link Road Criteria and Guidance

EB4 Link Road MCA Criteria and Guidance			
Objectives*		Matters for consideration	Assessor(s)
04	Provide transport infrastructure that improves linkages, journey time and reliability of the public transport network	• Average travel time by mode • Travel time reliability for public transport • Intersection delays	Tim Brown/ Shane Doran

		•	
05	Provide transport infrastructure that is safe for everyone	• Safe connections to, and around the interchange centre including general traffic, cyclists and pedestrians (Safe Systems Assessment) • Perception of access and safety (CPTED/Passive Surveillance)	Tim Brown Chris Bentley

Table 7 Link Road effects consideration

EB4 Link Road Effects consideration			
Topic	Subject	Matters for consideration /guidance	Assessor(s)
Legislative and consenting considerations	Assessment against critical legislative requirements	Qualitative assessment of the consistency of the proposal with the Resource Management Act (1991), especially Part 2 matters, and high-level policy framework relevant to the Project e.g. NZCPS, NPS's, RPS, NES. Impacts on specifically scheduled and protected Archaeology, Built heritage, scheduled trees and features within AUP.	Laura Laurenson
Constructability	Can the option be constructed within reasonable and known construction constraints?	Constructability incl. volume/balance of earthworks, construction risks and general degree of difficulty Disruption to existing services and utilities Traffic management Programme Disruption - effects on network utilities and continuity of service	Andy Gibbard
	Impact on utilities and civil infrastructure	Requirements for relocation / design of alternative major infrastructure, including consideration of safety impacts of such requirements and risk of continuity of service over construction - e.g. Transpower National Grid, Watercare, Telecoms etc - account for cost of relocations if necessary	Simon Jones
Transportation effects	Temporary traffic and transport effects	Temporary intersection layouts, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc. PT reliability during construction phase	Tim Brown
	Permanent/ operational traffic and transport effects	Journey time improvement / Congestion/queue length within corridor / congestion and queue lengths outside of corridor / PT reliability Effects on existing network - positive and adverse Levels of service of key intersections Operational performance of busway	Tim Brown

		Effects on surrounding network	
Natural environment/ ecological effects	Ecology	Freshwater ecology – adverse physical effects on freshwater receiving environment (any work within or in proximity to a stream or wetland)	Fiona Davies
		Extent of effects (and ability to manage effects) on indigenous vegetation	Fiona Davies
		Extent of effects on significant habitats of indigenous fauna (terrestrial)	Fiona Davies
		Extent of effects on landscapes and natural features including geological features, landform, vegetation (including trees), watercourses etc.	Fiona Davies
Built environment	Property implications	Qualitative assessment of the scale of likely / anticipated effects from land take. Reasonable necessity and requirement for operation and construction. Considering extent to which additional land required has already been acquired for the Project and risk of acquiring land still needed. Number of properties to be acquired. Degree of difficulty of property acquisition (includes nature of land use, consideration of common land acquisition i.e. land owned by multiple parties). Type of property e.g. commercial versus residential versus parks/heritage. Consideration of future land use (residual land use).	Fenella Fisher
	Stormwater and Flooding effects	The extent of the effects relating to stormwater and flooding generated by the proposal. Understanding of potential mitigation requirement.	Paul May
	Permanent effects – activities/ use	The extent of effects on (or compatibility with) surrounding activities, with particular regard to public activities (such as town centres), land use, and character.	Chris Bentley
	Permanent effects – visual amenity	The extent of effects on visual amenity taking into account the character and visibility (prominence) of the proposal, the proposed built form, the character of the existing environment, the sensitivity of audiences, duration of view, magnitude of visual change and the experience of future road users.	Chris Bentley
Social effects	Noise and Vibration	Operational noise and vibration effects upon sensitive receivers.	Joe Grimes
		Construction noise and vibration effects upon sensitive receivers.	Joe Grimes
	Air Quality – Operational	Scoring of potential operational air quality impacts of each option taking account of the following factors: • Relative scale of traffic emissions from each option characterised from: - Traffic volumes (whole fleet and HCV)	Bruce Clarke

		- Level of service • Relative scale of sensitivity of receiving environment for each option is this in a polluted/non-compliant airshed?	
	Social – community facilities/ open space	The extent to which community facilities in the study area (including educational, health and leisure facilities) will be affected. During construction and permanent.	John Daly
	Social – viability productivity of business land areas	Consideration of business disruption effects during construction and operation.	John Daly
	Social – social connectivity	Discussion on the potential impacts on patterns of movement or communities of interest that might be affected by the construction/operation works, such that there may be a loss of social cohesion or fragmentation of existing community structures (e.g. disruption or severance of school zones, electoral catchments, etc).	John Daly

Table 8 Link Road cost consideration

EB4 Link Road Cost Considerations			
Topic	Subject	Matters for consideration /guidance	Assessor(s)
Costs	Capital Costs	The cost to construct plus property costs of the option	Tim Grammer

5 Next Steps

An options assessment workshop will be held on March 10th 2021. All participants listed in section 3 above have been requested to confirm attendance.

Please note that two MCA will be undertaken at the workshop, one for the bus station and then one for the link road.

The following documents have been provided with this briefing pack:

- Agenda for 10th March 2021 (appendix 1)
- Assessment criteria/ guidance for workshop participants (this document)
- Scoring sheets to record assessment (appendix 2)
- Plans for each option being assessed (appendix 4 and 5)

The following actions are required to be undertaken by technical assessors:

Table 9 Actions required by workshop participants

Action	When
Review the information and drawings provided by the Alliance	Before 8th of March
Provide provisional scoring and assessment/ comments on each option. Please use the template provided in Appendix 2.	8th of March
Attend workshop. Please come prepared to explain your assessment and reasons for the score provided. Agenda for workshop is provided in Appendix 1.	10th of March

6 Site visit requirements

You may wish to undertake a site visit to help with your assessment. Prior to any site visit being undertaken, you must gain approval from Eastern Busway Alliance as well as any additional approvals you may require from your home organisation.

An approval to undertake a site must be submitted via Procore. Guidance on the process is provided in Appendix 3 of this document.

Whilst undertaking a site visit, please comply with the following:

- Always remain within public areas
- Do not enter private property
- Always remain on footpaths/ walkways
- Only crossroads at designated and/or safe crossing locations
- Comply with all health and safety requirements specified by EBA and your home organisation

If COVID-19 restrictions remain in place, site visits are not to be undertaken.

Appendix 1: MCA Workshop Agenda

EB4 MCA Workshop – Bus Station and Link Road

Date Wednesday 10 March 2021

Time 09:00hrs

Venue Microsoft Teams / TBC

Agenda item	Details	Time and duration
01	Welcome, purpose, expected outcomes and introductions	09:00 to 09:30
02	EB4 Bus Station Design (Simon Jones)	09:30 to 10:00
03	EB4 Bus station Assessors findings and questions	10:00 to 12:00
04	Lunch break	12:00 to 12:45
05	EB4 Link Road Design (Simon Jones)	12:45 to 13:15
06	EB4 Link road Assessors findings and questions	13:15 to 15:15
07	Opportunity for additional questions and clarifications	15:15 to 15:30

Post workshop actions: Each participant is required to review the provisional scoring and assessment provided and then:

A – Update the scores and assessment; or

B – Confirm that the provisional scores and assessment do not need to be updated.

Participants MUST do this by 12 noon 11 March 2021.

Appendix 4C MCA Scoring Outcome (non-combined)

The following is a copy of the scores provided by Technical Assessors for the Bus Station and Link Road Options.

The following score tables are provided:

- Non-weighted
- Equal weighted
- Safety weighted
- Transport weighted
- Environmental weighted
- Effects weighted
- Cost weighted

Non-weighted scoring

EB4 Bus Station Scores - non weighted													
No mitigation							With mitigation						
	Option 4 A2B	Option 5 Hash Brown	Option 6 Central Platform	Option 8 Grade Seperated	Option 9 Guy's Reserve	Option 13 Alt Guy's Reserve		Option 4 A2B	Option 5 Hash Brown	Option 6 Central Platform	Option 8 Grade Seperated	Option 9 Guy's Reserve	Option 13 Alt Guy's Reserve
Busway & bus station ops	2	4	5	2	3	3	Busway & bus station ops	4	5	5	2	3	3
Traffic & transport - temp	-3	-2	-2	-4	-1	-1	Traffic & transport - temp	-2	-2	-2	-3	-1	-1
Traffic & transport - permanent	2	1	3	2	4	4	Traffic & transport - permanent	2	1	3	2	4	4
Legsilative & consenting	3	2	2	1	-1	-1	Legsilative & consenting	4	3	3	3	0	0
Constructability	0	-1	-1	-3	-2	-2	Constructability	0	-1	0	-3	0	0
Civil design & utility impacts	-2	-3	-1	-4	-4	-4	Civil design & utility impacts	-2	-2	-1	-3	-3	-3
Urban design	-2	-3	-2	-4	-4	-4	Urban design	-2	-3	1	-4	-4	-3
Landscape	-1	-1	-1	-2	-4	-4	Landscape	-1	-1	1	-1	-3	-3
Visual	-2	-1	-2	-4	-4	-4	Visual	-2	-1	-1	-4	-3	-2
Ecology	-1	-1	-1	-3	-3	-2	Ecology	0	0	0	-2	-2	-1
Acoustics & vibration	0	0	0	-1	-1	-2	Acoustics & vibration	0	0	0	0	0	-1
Stormwater & flooding	-1	-5	-4	-4	-5	-2	Stormwater & flooding	0	-3	-1	-2	-3	-1
Social impact	1	2	2	-1	-2	-2	Social impact	2	3	3	0	0	0
Property	-5	-5	-3	-4	-2	-1	Property	-5	-5	-3	-4	-2	-1

EB4 Link Road Scores - non weighted							
No mitigation				With mitigation			
	Ti Rakau Drive	Te Koha Road	Guy's Reserve		Ti Rakau Drive	Te Koha Road	Guy's Reserve
Busway & bus station ops	2	2	4	Busway & bus station ops	2	2	5
Traffic & transport - temp	-4	-3	-1	Traffic & transport - temp	-3	-2	-1
Traffic & transport - permanent	1	-1	3	Traffic & transport - permanent	1	-1	3
Legsilative & consenting	3	1	-3	Legsilative & consenting	4	2	0
Constructability	-2	-1	-1	Constructability	-2	-1	-1
Civil design & utility impacts	-4	-3	-3	Civil design & utility impacts	-3	-2	-1
Urban design	-1	-3	-4	Urban design	1	-3	-4
Landscape	-2	-2	-3	Landscape	-2	-1	-2
Visual	-3	-2	-3	Visual	-2	-2	-2
Ecology	-1	-1	-3	Ecology	0	0	-2
Acoustics & vibration	-2	-2	-2	Acoustics & vibration	-1	-1	-1
Stormwater & flooding	-1	-1	-1	Stormwater & flooding	0	0	0
Social impact	1	1	0	Social impact	2	2	1
Property	-4	-4	-2	Property	-4	-4	-2

Equal weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	20		1.00	20.0	1.40	28.0	3.20	64.0	0.40	8.0	0.80	16.0	1.00	20.0
Safety	20		4.00	80.0	3.00	60.0	4.00	80.0	2.00	40.0	4.00	80.0	4.00	80.0
Environmental	20		1.33	26.7	1.33	26.7	1.33	26.7	-0.33	-6.7	-1.33	-26.7	-0.67	-13.3
Effects	20		-0.67	-13.3	-1.67	-33.3	0.00	0.0	-2.67	-53.3	-0.33	-6.7	0.00	0.0
Cost	20		4.00	80.0	1.00	20.0	5.00	100.0	1.00	20.0	4.00	80.0	5.00	100.0
	100	Score		193		101		271		8		143		187
		Rank		2		5		1		6		4		3

Safety weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	13		1.00	12.5	1.40	17.5	3.20	40.0	0.40	5.0	0.80	10.0	1.00	12.5
Safety	50		4.00	200.0	3.00	150.0	4.00	200.0	2.00	100.0	4.00	200.0	4.00	200.0
Environmental	13		1.33	16.7	1.33	16.7	1.33	16.7	-0.33	-4.2	-1.33	-16.7	-0.67	-8.3
Effects	13		-0.67	-8.3	-1.67	-20.8	0.00	0.0	-2.67	-33.3	-0.33	-4.2	0.00	0.0
Cost	13		4.00	50.0	1.00	12.5	5.00	62.5	1.00	12.5	4.00	50.0	5.00	62.5
	100	Score		271		176		319		80		239		267
		Rank		**2**		**5**		**1**		**6**		**4**		**3**

Transport weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	50		1.00	50.0	1.40	70.0	3.20	160.0	0.40	20.0	0.80	40.0	1.00	50.0
Safety	13		4.00	50.0	3.00	37.5	4.00	50.0	2.00	25.0	4.00	50.0	4.00	50.0
Environmental	13		1.33	16.7	1.33	16.7	1.33	16.7	-0.33	-4.2	-1.33	-16.7	-0.67	-8.3
Effects	13		-0.67	-8.3	-1.67	-20.8	0.00	0.0	-2.67	-33.3	-0.33	-4.2	0.00	0.0
Cost	13		4.00	50.0	1.00	12.5	5.00	62.5	1.00	12.5	4.00	50.0	5.00	62.5
	100	Score		158		116		289		20		119		154
		Rank		**2**		**5**		**1**		**6**		**4**		**3**

Environmental weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	13		1.00	12.5	1.40	17.5	3.20	40.0	0.40	5.0	0.80	10.0	1.00	12.5
Safety	13		4.00	50.0	3.00	37.5	4.00	50.0	2.00	25.0	4.00	50.0	4.00	50.0
Environmental	50		1.33	66.7	1.33	66.7	1.33	66.7	-0.33	-16.7	-1.33	-66.7	-0.67	-33.3
Effects	13		-0.67	-8.3	-1.67	-20.8	0.00	0.0	-2.67	-33.3	-0.33	-4.2	0.00	0.0
Cost	13		4.00	50.0	1.00	12.5	5.00	62.5	1.00	12.5	4.00	50.0	5.00	62.5
	100	Score		171		113		219		-7		39		92
		Rank		**2**		**3**		**1**		**6**		**5**		**4**

Effects weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	13		1.00	12.5	1.40	17.5	3.20	40.0	0.40	5.0	0.80	10.0	1.00	12.5
Safety	13		4.00	50.0	3.00	37.5	4.00	50.0	2.00	25.0	4.00	50.0	4.00	50.0
Environmental	13		1.33	16.7	1.33	16.7	1.33	16.7	-0.33	-4.2	-1.33	-16.7	-0.67	-8.3
Effects	50		-0.67	-33.3	-1.67	-83.3	0.00	0.0	-2.67	-133.3	-0.33	-16.7	0.00	0.0
Cost	13		4.00	50.0	1.00	12.5	5.00	62.5	1.00	12.5	4.00	50.0	5.00	62.5
	100	Score		96		1		169		-95		77		117
		Rank		**3**		**5**		**1**		**6**		**4**		**2**

Cost weighted

Stage 2 Criteria	Weighting		Options											
			Option 4		Option 5		Option 6		Option 8		Option 9		Option 13	
			Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Transportation Benefits	13		1.00	12.5	1.40	17.5	3.20	40.0	0.40	5.0	0.80	10.0	1.00	12.5
Safety	13		4.00	50.0	3.00	37.5	4.00	50.0	2.00	25.0	4.00	50.0	4.00	50.0
Environmental	13		1.33	16.7	1.33	16.7	1.33	16.7	-0.33	-4.2	-1.33	-16.7	-0.67	-8.3
Effects	13		-0.67	-8.3	-1.67	-20.8	0.00	0.0	-2.67	-33.3	-0.33	-4.2	0.00	0.0
Cost	50		4.00	200.0	1.00	50.0	5.00	250.0	1.00	50.0	4.00	200.0	5.00	250.0
	100	Score		271		101		357		43		239		304
		Rank		**3**		**5**		**1**		**6**		**4**		**2**

Appendix 4D: Technical Assessors score sheets

The following is a copy of the technical assessors score sheets, including reasons for the scores provided.

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Joe Grimes	Area of assessment: Acoustics
OPTION 4: A2B preferred	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road. • Drawing no. EB234-1-AR-SK-Z4-0004 • Existing acoustic environment at nearby residential receptors is dominated by road traffic noise Key matters of consideration: The option involves the widening of Ti Irirangi Drive and construction of bus lanes in the centre of the road. The bus station is located to the east of Te Iririrangi Drive and north of Town Centre Drive, in an area currently used as a car park. There are no residential receptors immediately impacted by this proposed layout and the noise environment at nearby residential receptors is not likely to change. Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP. Mitigation proposed (if any): • Quieter road surface than existing road • Localised screening around areas of buses parking and pulling away	
Score without mitigation applied: 0	Score with mitigation applied: 0
OPTION 5: 'Hash Brown' in AMP site	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road. • Drawing no. EB234-1-AR-SK-Z4-0005 • Existing acoustic environment at nearby residential receptors is dominated by road traffic noise Key matters of consideration: The bus station is located to the east of Te Irirangi Drive and south of Town Centre Drive, in an area currently used as a car park. There are no residential receptors immediately impacted by this proposed layout. The nearest noise sensitive receptors are located immediately to the west of Te Irirangi Drive on Waihi Way. The noise environment at nearby residential receptors is not likely to change perceptibly. Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP. Mitigation proposed (if any): • Quieter road surface than existing road • Localised screening around areas of buses parking and pulling away	
Score without mitigation applied:	Score with mitigation applied:

0	0

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-0006
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The bus station is located to the east of Te Irirangi Drive and south of Town Centre Drive, in an area currently used as a car park, but with a more elongated layout than Option 5. There are no residential receptors immediately impacted by this proposed layout. The nearest noise sensitive receptors are located immediately to the west of Te Irirangi Drive on Waihi Way, and it is assumed that the noise environment at this location is already dominated by road traffic noise from Te Irirangi Drive. The noise environment at nearby residential receptors is not likely to change perceptibly as a result of this proposal layout.

Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Localised screening around areas of buses parking and pulling away

Score without mitigation applied:	Score with mitigation applied:
0	0

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-0008
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The bus station is located to the east of Te Irirangi Drive and south of Town Centre Drive, and in the current location of Te Irirangi Drive. General traffic lanes are to be constructed to the west and east of Te Irirangi Drive.

The new general traffic lanes are closer to residential properties on Waihi Way. The layout brings road traffic noise closer to residential properties than the existing layout.

It is assumed that the noise environment at this location is already dominated by road traffic noise from Te Irirangi Drive, although the new road traffic lanes will elevate noise from the road at nearby receptors to the west. The noise environment at nearby residential receptors may change perceptibly as a result of this proposal layout, and noise barriers are recommended to mitigate this increase in traffic noise.

Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Localised screening around areas of buses parking and pulling away

• Noise barriers located to the west of new traffic lanes on Te Irirangi Drive	
Score without mitigation applied: -1	Score with mitigation applied: 0

OPTION 9: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-0009
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The bus station is located to the west of Te Irirangi Drive and south of Te Koha Road, north of Waihi Way in the area currently used as a reserve. Access to the site is from Te Irirangi Drive, immediately north of Waihi Way. The new access point north of Waihi Way may increase road traffic noise at some residential properties than the existing layout.

It is assumed that the noise environment at this location is already dominated by road traffic noise from Te Irirangi Drive, although the noise environment at a small number of residential receptors may change perceptibly as a result of this proposal layout, and noise barriers are recommended to the south of the access point to offset this increase in traffic noise.

Construction noise and vibration effects will be of limited duration and can be mitigated/managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Localised screening around areas of buses parking and pulling away
- Noise barriers located to the south of new access point off Te Irirangi Drive

Score without mitigation applied: -1	Score with mitigation applied: 0

Option 13: Offline Guys Reserve

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-RD-SK-Z4-000032
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The option includes the construction of bus lanes in the centre of Te Irirangi Drive and offline to the south of Te Koha Road. The bus drop off bays are located in an area currently used as a reserve. The noise environment at properties on Waihi Way may change perceptibly as a result of this option.

The offline busway will introduce road traffic noise/bus movements as a more dominant noise source than the existing situation at residential properties located in Huntingdon Park, primary those on Cottesmore Place and Kirikiri Lane. The existing acoustic environment at these residential properties may change perceptibly.

Noise barriers are recommended to the south of the accessway off Te Irirangi Drive and along offline bus route south of Te Koha Road. Commercial properties along Te Irirangi Drive and Te Koha Road are not noise sensitive.

Construction noise and vibration effects will be of limited duration and can be mitigated/managed through a CNVMP. Mitigation proposed (if any): • Quieter road surface than existing road • Noise barriers to be constructed along the offline busway to the south of Te Koha Drive and the accessway on Ti Irirangi Drive. • Localised screening around areas of buses parking and pulling away

Score without mitigation applied:	Score with mitigation applied:
-2	-1

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor:	Area of assessment:
Link Road Option 1: Ti Rakau Drive	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road. • Drawing no. EB234-1-AR-SK-Z4-00001 • Existing acoustic environment at nearby residential receptors is dominated by road traffic noise • Residential properties closest to the road on Tiger Drive, Nagle Place, Puma Drive and Spalding Rise will be demolished. Key matters of consideration: The option includes the construction of bus lanes in the centre of Ti Rakau Drive and Te Irirangi Drive. The general traffic lanes are therefore pushed outwards and the footprint of the road will increase. The new general traffic lanes and walkway/footpath will bring road traffic noise closer to receptors on Nagle Place, Tiger Drive, Spalding Rise and Puma Drive than the existing road layout. Residential properties behind those to be demolished will notice a perceptible change in the acoustic environment. Noise barriers are recommended along the northern edge of Ti Rakau Drive to mitigate the increase in road traffic noise levels at residential properties. Commercial properties along Te Irirangi Drive and to the south of Ti Rakau Drive are not noise sensitive. Construction noise and vibration effects will be of limited duration and can be mitigated/managed through a CNVMP. Mitigation proposed (if any): • Quieter road surface than existing road • Noise barriers located to the north of new traffic lanes on Te Rakau Drive	
Score without mitigation applied: -2	Score with mitigation applied: -1
Link Road Option 2: Te Koha Road	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road.	

- Drawing no. EB234-1-AR-SK-Z4-00003
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise
- Residential properties closest to the road on Tiger Drive, Nagle Place, Puma Drive and Spalding Rise will be demolished.

Key matters of consideration:

The option includes the construction of bus lanes in the centre of Te Rakau Drive, Te Irirangi Drive (south of Te Koha Drive) and Te Koha Rive. The general traffic lanes are therefore pushed outwards, and the footprint of the road will increase in size. The new general traffic lanes and walkway/footpath will bring road traffic noise closer to receptors on Nagle Place, Spalding Rise and Puma Drive than the existing road layout. Residential properties behind those to be demolished will notice a perceptible change in the acoustic environment.

Noise barriers are recommended along the northern edge of Ti Rakau Drive to mitigate the increase in road traffic noise levels at residential properties. Commercial properties along Te Irirangi Drive, Te Koha Road and to the south of Ti Rakau Drive are not noise sensitive.

Construction noise and vibration effects will be of limited duration and can be mitigated/managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Noise barriers located to the north of new traffic lanes on Te Rakau Drive

Score without mitigation applied:	Score with mitigation applied:
-2	-1

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-00004
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise
- Residential properties closest to the road on Tiger Drive and Spalding Rise will be demolished.

Key matters of consideration:

The option includes the construction of bus lanes in the centre of Te Rakau Drive, Te Irirangi Drive (south of Te Koha Drive) and an offline busway to the south/west of Te Koha Drive. The general traffic lanes on Ti Rakau Drive are therefore pushed outwards and the footprint of the road will increase in size. The new general traffic lanes and walkway/footpath will bring road traffic noise closer to receptors on Tiger Drive and Spalding Rise than the existing road layout. Residential properties behind those to be demolished will notice a perceptible change in the acoustic environment.

Noise barriers are recommended along the northern edge of Ti Rakau Drive to mitigate the increase in road traffic noise levels at residential properties. Commercial properties along Te Irirangi Drive, Te Koha Road and to the south of Ti Rakau Drive are not noise sensitive.

The offline busway will introduce road traffic noise as a more dominant noise source than the existing situation at residential properties located in Huntingdon Park, primary those on Cottesmore Place and Kirikiri Lane. The existing acoustic environment at these residential properties may change perceptibly.

Construction noise and vibration effects will be of limited duration and can be mitigated/managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Noise barriers located to the north of new traffic lanes on Te Rakau Drive

• Noise barriers to be constructed along the offline busway to the south of Te Koha Drive.	
Score without mitigation applied: -2	Score with mitigation applied: -1

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Simon Jones	Area of assessment: Civil design and impact on utilities
OPTION 4: A2B preferred	
Assumptions relied upon to undertake assessment: • Assumed that the existing terrain is generally in accordance with the crossfalls applied at stations (ie. flatter than 2%) • It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors. Key matters of consideration: • Significant impact on the adjacent buildings (Pak n Save and Briscoes), including potential impact to loading dock of Pak n Save building. Layout still shows modification to structure of Pak N Save building, without adjustment of the layout and its location within the available space between building, roadway and buildings on western side of Te Irirangi Dr • Utilities along both verges of Te Irirangi Dr will require relocation. Currently impacted services (total of both sides) include: o WaterCare 700mm dia Howick water main o Water distribution network o Sewer reticulation (300mm dia main) o Electrical distribution network & street and carpark lighting o Gas main o Telecommunication network • Option is stageable - it is possible to identify a smaller construction footprint for the Stage 1 works, which would aid affordability and provide for the necessary future expansion when the A2B project is approved for investment. Mitigation proposed (if any): • Avoidance of impacts to Pak n Save building will require the further adjustment of the alignment to the west, with potential to impact petrol station on cnr Te Koha Rd, with potential impacts on the petrol storage tanks (unknown). • The horizontal relocation of Te Irirangi Dr will be a significant exercise during construction (under traffic). Reconstruction of pavements likely, with potential grade amendments / corrections. • Construction techniques used with around the impacts of the major trunk infrastructure should be	
Score without mitigation applied: -2	Score with mitigation applied: -2 (considered the mitigation measures are as impactful as the unmitigated impacts

OPTION 5: 'Hash Brown' in AMP site	

Assumptions relied upon to undertake assessment:

- As noted in the guidance, station is located at level of Te Irirangi Drive. Te Irirangi Dr has a vertical sag in the road alignment, in between the intersections with Town Centre Drive and Parkway Drive. Presumably this is meant that the bus station is located at the lower levels of this sag curve, approximately 3.5m below the existing carpark level. Also assumed that the access roads can grade to reach these levels.
- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.

Key matters of consideration:

- Significant excavation of material required for the lowering of the carpark down to the Te Irirangi Dr level, disposal of material could be an issue, will require significant truck movements for haulage off site, increasing local traffic during construction.
- Loss of carparking in intermediate term is unlikely to be accepted by AMP & site owners, without mitigation. There are no vacant tracts of land that are able to be converted to additional carparking, so either there will be a need to accept a loss of parking or to reinstate parking over the top of the bus station, outside the vertical access points
- Utilities within the location of the bus station are minimal, however there are some that will require relocation. These principally are local connections to service the shopping centre and are not typically suburb-wide trunk services. Currently impacted services include:
    - Sewer reticulation (225mm dia)
    - Electrical distribution network & carpark lighting
    - Gas main
    - Telecommunication network
    - Potentially other domestic connections for shopping centre
- Option is not particularly stageable, requiring what is considered a large up-front investment
- Potential for stormwater inundation

Mitigation proposed (if any):

- As noted above, mitigation of loss of carparking likely to require construction of new / replacement parking over the top of the station.

Score without mitigation applied: -3	Score with mitigation applied: -2

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- No guidance given in the materials regarding the level relationship of this option with Te Irirangi Dr. It has been assumed for this assessment that the station is at the level of the carpark, not down at Te Irirangi Dr level.
- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.

Key matters of consideration:

- There is some loss of carparking, however significantly less than Option 5. With the station located at surface level, replacement carparking overhead is not feasible.
- Utilities within the location of the bus station are minimal, however there are some that will require relocation. These principally are local connections to service the shopping centre and are not typically suburb-wide trunk services. Currently impacted services includes:
    - Sewer reticulation (225mm dia)
    - Electrical distribution network & street and carpark lighting
    - Telecommunication network
    - Potentially other domestic connections for shopping centre

- Option is stageable - it is possible to identify a smaller construction footprint for the Stage 1 works, which would aid affordability and provide for the necessary future expansion when the A2B project is approved for investment

Mitigation proposed (if any):

- No proposed mitigation measures

Score without mitigation applied: -1	Score with mitigation applied: N/A

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- It is assumed that the station platforms that are 'offline' (outside of the Te Irirangi Dr carriageway) are built on structure across Whaka Maumahara / Guy's Reserve and Te Irirangi Dr. The platforms over the carpark are to be built on retained earth structure.
- The structure in Guy's Reserve / Whaka Maumahara would convert from retained embankment to structure once economically efficient to do so. Typically this would be ~6-8m clearance
- The widened cross section of Te Irirangi Dr would be retain the current vertical geometry of the existing roadway, widening into the embankment to the Botany Town Centre carpark at the same level of road, with construction of a retaining wall and into Guy's Reserve / Whaka Maumahara stormwater basin with structure.
- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.

Key matters of consideration:

- There is some loss of carparking, however significantly less than Option 5. With the station located above ground level on embankment, replacement carparking overhead is not possible beneath the structure.
- Utilities along both verges of Te Irirangi Dr will require relocation. Currently impacted services (total of both sides) includes:
    - TransPower 22kV lines (two – one in 1800mm dia conduit and one direct buried)
    - WaterCare 700mm dia Howick water main
    - Sewer reticulation (300mm dia main)
    - Electrical distribution network & street and carpark lighting
    - Gas main
    - Telecommunication network

- Option is not particularly stageable, requiring what is considered a large up-front investment

Mitigation proposed (if any):

- The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.

Score without mitigation applied: -4	Score with mitigation applied: -3

OPTION 9: Guy's Reserve	
Assumptions relied upon to undertake assessment: • It is assumed that the construction of the station platforms on embankment would have an unacceptable flooding impact on the surrounding region. As such, it has been assumed that significant extents of this station would be constructed on structure spanning at a similar ground level to the roadways over the bank of the stormwater pond. • It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors. Key matters of consideration: • This option utilises land not currently occupied by carpark, thus has no parking displacement. Impacts on actual use assumed to be covered by other disciplines • Construction of a significant structure within the flood zone of a stormwater retention pond carries risk of inundation of worksite during construction. Level of station would need to be set such that operations aren't unduly impacted. • Utilities along both verges of Te Irirangi Dr will require relocation. Currently impacted services (total of both sides) includes: o TransPower 22kV lines (two – one in 1800mm dia conduit and one direct buried) o WaterCare 700mm dia Howick water main o Sewer reticulation (300mm dia main) o Electrical distribution network o Gas main o Telecommunication network • There is a high risk of construction around the water main and TransPower assets, which is significantly higher than the other options, due to the fact that this station option builds along the alignments of these services, not across.	
 • Option is not particularly stageable, requiring what is considered a large up-front investment Mitigation proposed (if any): • The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.	
Score without mitigation applied: -4	Score with mitigation applied: -3

OPTION 13: Guy's Reserve	

Assumptions relied upon to undertake assessment:

- It is assumed that the construction of the station platforms on embankment would have an unacceptable flooding impact on the surrounding region. As such, it has been assumed that significant extents of this station would be constructed on structure spanning at a similar ground level to the roadways over the bank of the stormwater pond.
- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.

Key matters of consideration:

- This option utilises land not currently occupied by carpark, thus has no parking displacement. Impacts on actual use assumed to be covered by other disciplines
- Construction of a significant structure within the flood zone of a stormwater retention pond carries risk of inundation of worksite during construction. Level of station would need to be set such that operations aren't unduly impacted.
- Utilities along both verges of Te Irirangi Dr will require relocation. Currently impacted services (total of both sides) includes:
    - TransPower 22kV lines (two – one in 1800mm dia conduit and one direct buried)
    - WaterCare 700mm dia Howick water main
    - Sewer reticulation (300mm dia main)
    - Electrical distribution network
    - Gas main
    - Telecommunication network
- There is a high risk of construction around the water main and TransPower assets, which is significantly higher than the other options, due to the fact that this station option builds along the alignments of these services, not across.

- Option is not particularly stageable for services other than EB, requiring what is considered a large up-front investment, or a higher level of OPEX.

Mitigation proposed (if any):

- The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.

Score without mitigation applied: -4	Score with mitigation applied: -3

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Simon Jones	Area of assessment: Civil design and impact on utilities

Link Road Option 1: Ti Rakau Drive

Assumptions relied upon to undertake assessment:

- Safe operation of the intersection is a concern – the safety and operations of the intersection of Ti Rakau Dr and Te Irirangi Dr is assumed to be covered by other assessors.
- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.
- It is assumed that the intersection missing from the access to Botany Hub on Ti Rakau Dr will widen the road to the north, further impacting properties on that side of the road

Key matters of consideration:

- There is a significant expanse of pavement widening to be constructed and widening will occur on all four corners of the intersection, having significant impact on utilities. A central running busway will make use of both the unformed median and the carriageway lanes, adding to the complexity of construction as a result of the construction works.
- Utilities along both verges of Te Irirangi Dr and Ti Rakau Dr will require relocation. Currently impacted services (total of both sides) include:
    - WaterCare 700mm dia Howick water main the length of the Te Irirangi Dr length
    - Water distribution network
    - Sewer reticulation (300mm dia main)
    - Electrical distribution network & street and carpark lighting
    - Gas main
    - Telecommunication network

  The major trunk water main runs along the alignment for the portion of upgrade to Te Irirangi Dr, works would be undertaken along and on top of this service

- Construction of the road widening will be complicated by the accesses to the shopping centres (nine accesses to Botany Hub and three accesses to Botany Town Centre within the works zone) needing to remain open for traffic accessing the shopping centres.

Mitigation proposed (if any):

- The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.

Score without mitigation applied: -4	Score with mitigation applied: -3

Link Road Option 2: Te Koha Road

Assumptions relied upon to undertake assessment:

- It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors.
- It is assumed that the pavement within the private road component will require full depth reconstruction.

Key matters of consideration:

- The construction of the pavements and the intersections within the Botany Hub area will need to be done under traffic, maintaining traffic access through the works zones during construction
- Pavement works will need to be constructed throughout, including installation to two new signalised intersections.
- Utilities along Te Koha Rd will require relocation. Currently impacted services include:
  - TransPower 22kV lines (two – one in 1800mm dia conduit and one direct buried)
  - WaterCare 700mm dia Howick water main
  - Water distribution network
  - Sewer reticulation (300mm dia main)
  - Electrical distribution network & street and carpark lighting
  - Gas main
  - Telecommunication network

  The two major trunk services run along the alignment for the portion of upgrade to Te Koha Road, works would be undertaken along and on top of this service

Mitigation proposed (if any):

- The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.

Score without mitigation applied: -3	Score with mitigation applied: -2

Link Road Option 3: Guy's Reserve	
Assumptions relied upon to undertake assessment: • It is assumed for all options that existing SWD assets currently inground are considered by the stormwater assessors. Key matters of consideration: • Utilities adjacent Te Koha Rd will require relocation. Currently impacted services include: o TransPower 22kV lines (two – one in 1800mm dia conduit and one direct buried) o WaterCare 700mm dia Howick water main the length of the Te Irirangi Dr length o Water distribution network o Sewer reticulation (300mm dia main) o Electrical distribution network & street lighting (in Te Koha Road)  • Construction works will be undertaken offline and will not be disrupted by working under traffic Mitigation proposed (if any): • The two trunk services of the Howick water main and the 2x220V TransPower mains service a large portion of the suburb and the potential disruption due to an accidental strike would be significant. Typical controls around significant utility assets would apply.	
Score without mitigation applied: -3	Score with mitigation applied: -1

IPAA SHORTLISTED SCHEMES CONSTRUCTION MCA **STATIONS**

Eastern Busway Alliance — Fletcher, acciona, AECOM, Jacobs — Let's get East Auckland moving

Item	Topic	Weighting	Description	Option 4 - 'Sausage' adjacent to Pak 'n' Save & Briscoes		Option 5 - 'Hashbrown' at Town Centre entrance		Option 6 - 'Sausage' at Town Centre entrance		Option 8 - Elevated platforms		Option 9 - Guys Reserve - Opposing platforms		Option 13 - Guys Reserve - offline		Weighted score					
				Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Option 4	Option 5	Option 6	Option 8	Option 9	Option 13
1	**Health & Safety**	12	Assess level of HSE risk in construction activities required in the option beyond BAU risks (i.e. option requires considerable additional working at height, working close to live traffic and live services etc.)	-1	Working at heights, pedestrian bridges	-2	2m excavation, material movements, temporary retaining walls etc.	-2	Working at heights, pedestrian bridges. Embankment / retaining wall	-4	High risk works close to live traffic.	-2	Working over water. Potentially pump down pond.	-3	Working over water. Potentially pump down pond. Footbridge over Te Irirangi.	-12	-24	-24	-48	-24	-36
2	**Quality**	6	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving Quality requirements (further costs or resources)	-1		-2	Cut and trimming of earthworks	-2	Additional embankment, differential settlement	-4	Close to traffic, high risk elevated structures in limited windows of opportunity	-1	Constructing structural works over water, ability to inspect and finish compromised	-1	Constructing structural works over water, ability to inspect and finish compromised	-6	-12	-12	-24	-6	-6
3	**Environmental**	6	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving and maintaining Environmental compliance (further costs or resources)	0		-1	Creation and containment of spoil, managing water in base of excavation	0		0		-2	Impacts on basin and reserve	-2	Impacts on basin and reserve	0	-6	0	0	-12	-12
4	**Resourcing**	2	Assess level of risk in availability of key resources (plant items, trade skills etc.) required to construct option	0		-1		0		-2	Elevated structure, heavy lifts	-1		-1		0	-2	0	-4	-2	-2
		2	Assess level of risk in availability of key subcontractors required in the option	-1	Escalators and lifts etc. in all options	-1		-1		-2	Lifts & working over road during closures creates constraints	-1		-1		-2	-2	-2	-4	-2	-2
		2	Assess level of risk in availability of key materials required in the option	-1	Escalators and lifts etc. in all options	-1		-1		-2		-1		-1		-2	-2	-2	-4	-2	-2
5	**COVID Risk**	6	Assess level of risk in acquiring any key overseas resources (non-availability due to restrictions)	-1	Escalators and lifts etc. in all options	-1		-1		-2	Potentially additional lifts and elevators	-1		-1		-6	-6	-6	-12	-6	-6
6	**Access**	2.7	Does the options access points result in restrictions to any current traffic movements or access to public areas	-3	Restrict access and parking to Botany Town Centre	-3	Restrict access and parking to Botany Town Centre	-2	Restrict access and parking to Botany Town Centre	-4	Highly restrictive, Te Irirangi and Town Centre	-1	Less restrictions - offline	-1	Less restrictions - offline	-8	-8	-5	-11	-3	-3
		2.7	Does the options construction footprint restrict access (consider deliveries to commercial properties, access to amenities, residential properties)	-4	Loading zone for Pak n Save and Briscoes / Rebel etc.	-3	Immediately adjacent Town Centre entrance	-2	Slightly offset from Town Centre entrance. Less parking spaces required.	-2	Access to Town Centre Drive	-1	Small scale retrictions on Te Koha	-1	Small scale retrictions on Te Koha	-11	-8	-5	-5	-3	-3
		2.7	Does the option have access, work area or method constraints that result in a reduction in productivity (increased cost)	-3		-2	Considerable traffic movements with cartage of excavation arisings	-2	Isolated work area'	-4	Elevated structure, heavy lifts	-2	Longer area needed to construct. Assumes no elevated footbridge over Te Irirangi	-1	Slighly more compact. Lifting in footbridge over Te Irirangi	-8	-5	-5	-11	-5	-3
7	**Out of Hours works**	8	Does the option require considerable nightshift or weekend works to construct	0		0		0		-4	Substantial night works / road closures to rect structure	0		-1	Erecting overhead footbridge / full closure	0	0	0	-32	0	-8
8	**Proximity to residential and commercial buildings**	10	Does the option require construction works in close proximity to existing commercial and residential buildings (vibration, noise, dust, settlement risk etc.)	-3		-4	Digging immediately adjecent to town centre entrance	-2	Construction adjacent shopping cenre	-1		-1		-1		-30	-40	-20	-10	-10	-10
9	**Services**	10	Does the option involve interfacing with live services that cannot be eliminated or isolated	-2	Sewer and comms	-2	Sewer and comms	-1	Smaller impact on sewer and comms	-3	Underground HV	-3	Underground HV	-3	Underground HV	-20	-20	-10	-30	-30	-30
10	**Ground Conditions**	4	Does the option increase the likelihood of unforeseen ground conditions (requiring additional ground improvement works)	-1	Cut	-1	Cut	-2	Could need a settlement period for embankment - fill area	-2	Unknown ground conditions, 1 embankment	-3	Unknown ground conditions	-3	Unknown ground conditions	-4	-4	-8	-8	-12	-12
11	**Programme**	5.0	Assess the overall programme duration for the option	0	~Q1 2025	-1	~Q2 2025	0	~Q1 2025	-2	~Q1 2026	-2	~Q1 2026. Assumes no pedestrian bridge over Te Irirangi Dr	-3	~Q3 2026	0	-5	0	-10	-10	-15
		2.5	Does the programme for the option have flexibility to adjust should constraints arise (ability to amend the critical path)	0		-1	Linear in needing to excavate first	-1	Settlement period on embankment	-4	All 'online', substructure works follwed by superstructure works	-2	Substructure works follwed by superstructure works	-2	Substructure works follwed by superstructure works	0	-3	-3	-10	-5	-5
		2.5	Is the resource levelling for the options programme manageable	0		0		0		-2	Linear in construction	0		0		0	0	0	-5	0	0
12	**Traffic**	2.5	What are the perceived vehicle traffic / pedestrian / cyclist impacts associated with this scheme? eg. significant road or lane closures, increased congestion, delays, disruptions; for both private vehicles and PT etc.	-2	Close to Te Irirangi	-2	More construction traffic - spoil movements	-2	May need to locally close footpath	-3	Closures of Te Irirangi Dr	-1		-2	Night closure for erecting pedestrian bridge	-5	-5	-5	-8	-3	-5
		2.5	Does there appear to be excessive temporary pavements required for traffic staging / traffic switches?	0		0		0		-1	Traffic staging / switching required	0		0		0	0	0	-3	0	0
		2.5	Does the scheme result in considerable 'ghost marking' or cost to manage 'ghost arking' due to traffic staging / switches?	0		0		0		-1	Traffic staging / switching required	0		0		0	0	0	-3	0	0
		2.5	Does the scheme require perceived prolonged weekend and night closures and major traffic diversions over extended periods?	-1	Pedestrian Bridge over Town Centre Drive	0		0		-3	Night closures for erecting structure	0		-1	Night closure for erecting pedestrian bridge	-3	0	0	-8	0	-3
13	**Constructability**	2	Can the scheme be easily built with conventional and traditional methods and with local expertise and materials? Does it appear simple?	0		-2	Manage surface run off water, sumps, sedimentation ponds	-1	Embamkment works	-3	Staging complex to manage impacts on traffic movements	-2	More structures and management of environmental controls adjacent watercourse	-2	More structures and management of environmental controls adjacent watercourse	0	-4	-2	-6	-4	-4
		2	Does the scheme present opportunities for repetition and re-use of materials if planned correctly? Is it smart and logical?	0		-1	Retaining structure, additonal water controls / drainage	0		-3	Doesn't appear logical ? Less repititon	0		0		0	-2	0	-6	0	0
		100														-116	-158	-110	-260	-138	-166
																-110					

IPAA SHORTLISTED SCHEMES CONSTRUCTION MCA ROADS **LINK**

Eastern Busway Alliance — Fletcher — acciona — AECOM — Jacobs — Let's get East Auckland moving

Item	Topic	Weighting	Description	Option 1 - Ti Rakau / Te Irirangi Dr		Option 2 - Te Koha Rd		Option 3 - Guys Reserve		Weighted score		
				Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Option 1	Option 2	Option 3
1	**Health & Safety**	**12**	Assess level of HSE risk in construction activities required in the option beyond BAU risks (i.e. option requires considerable additional working at height, working close to live traffic and live services etc.)	-3	Very busy intersection	0	Smaller scale road, low volume. Least interaction with services. Shortest distance	-2	Working at height on bridge build, lifting heavy objects. Live underground services	-36	0	-24
2	**Quality**	**6**	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving Quality requirements (further costs or resources)	-3	Working in confined areas under time pressures (overnight closures for asphalt & tie ins)	-1	Working adjacent to buildings, using smaller plant & equipment	-2	Quality control introducing structures and MSE walls, however BAU tasks	-18	-6	-12
3	**Environmental**	**6**	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving and maintaining Environmental compliance (further costs or resources)	0		0		-2	Working adjacent to wetlands, reserve etc. Can contain works within construction site - elevated risk adjacent Guys reserve	0	0	-12
4	**Resourcing**	**2**	Assess level of risk in availability of key resources (plant items, trade skills etc,) required to construct option	-1	Sourcing quantity of steel traffic barriers to isolate work areas from live traffic	0		-1	Specialist resource building structures and MSE walls. Will already be on project	-2	0	-2
		2	Assess level of risk in availability of key subcontractors required in the option	-1	Traffic Management subcontractors for busy intersection	0		-1		-2	0	-2
		2	Assess level of risk in availability of key materials required in the option	0		0		-1	Quantum of structural materials (piling cages, liners, falsework etc)	0	0	-2
5	**COVID Risk**	**6**	Assess level of risk in acquiring any key overseas resources (non-availability due to restrictions)	0		0		-1	Installing Temporary/sheetpile walls if required	0	0	-6
6	**Access**	**2.7**	Does the options access points result in restrictions to any current traffic movements or access to public areas	-4	Closures to Ti-Rakau/Te Irirangi intersection for switches, major impacts on Ti Rakau Drive/Te Irirangi Drive including lane occupations for widening	-2	Disturbance to commercial access points	-2	Disturbance to commercial and public area; Guys Reserve	-11	-5	-5
		2.7	Does the options construction footprint restrict access (consider deliveries to commercial properties, access to amenities, residential properties)	-3	Restricts access to residential & commercial, deliveries to Botany Town Centre	-3	Restrictions to local commercial businesses, confined access	-1	Minor impacts to residential properties adjacent	-8	-8	-3
		2.7	Does the option have access, work area or method constraints that result in a reduction in productivity (increased cost)	-4	Staged sequencing stop / start. Multiple stages in intersection	-2	Long term temporary lane closures	-2	Create the platform at rear of Commercial (on top of live cable)	-11	-5	-5
7	**Out of Hours works**	**8**	Does the option require considerable nightshift or weekend works to construct	-4	Local residents and large scale commercial	-3	Night works to allow access for public and commercial	-1	Beam deliveries required at night, minor access impacts	-32	-24	-8
8	**Proximity to residential and commercial buildings**	**10**	Does the option require construction works in close proximity to existing commercial and residential buildings (vibration, noise, dust, settlement risk etc.)	-3	Local residents and large scale commercial, but further away than Te Koha option	-3	Close to commerical buildings on Te Koha and residential properties on Ti Rakau	-1	Away from residential	-30	-30	-10
9	**Services**	**10**	Does the option involve interfacing with live services that cannot be eliminated or isolated	-3	Sewer, Water and Comms	-1	Sewer, Water and Comms	-4	Undreground HV, Sewer and water	-30	-10	-40
10	**Ground Conditions**	**4**	Does the option increase the likelihood of unforeseen ground conditions (requiring additional ground improvement works)	-2	Length of pavement works compared to Te Koha	-1		-3	Unknown ground conditions 'offline'	-8	-4	-12
11	**Programme**	**5.0**	Assess the overall programme duration for the option	-2	~Q4 2023 finish. Working around live traffic	-2	~Q3 2023 finish. Remove roundabout and signalise	-4	~Q4 2024 finish. Build structures	-10	-10	-20
		2.5	Does the programme for the option have flexibility to adjust should constraints arise (ability to amend the critical path)	-4	Staging based on strategy, not easy to adjust traffic switches when arranged	-2	Can be managed given low volumes of traffic	-1	Bring in extra crews working 'offline'	-10	-5	-3
		2.5	Is the resource levelling for the options programme manageable	-2	Highly dependent on swtiches and staging	-1	Moderately dependent on swtiches and staging	0	Can balance resources working' offline'	-5	-3	0
12	**Traffic**	**2.5**	What are the perceived vehicle traffic / pedestrian / cyclist impacts associated with this scheme? eg. significant road or lane closures, increased congestion, delays, disruptions; for both private vehicles and PT etc.	-4	Significant impacts. Major arterial routes	-2	Moderate impacts on low volume road	-1	Less impact building 'offline'	-10	-5	-3
		2.5	Does there appear to be excessive temporary pavements required for traffic staging / traffic switches?	-2	Temp pavements on median on Ti Rakau and Te Irirangi	0		-1	Tie ins to Ti Rakau and Te Irirangi	-5	0	-3
		2.5	Does the scheme result in considerable 'ghost marking' or cost to manage 'ghost arking' due to traffic staging / switches?	-3	Considerable ghost marking risk with multiple small traffic alignment shifts likely	-1	Low volume on private road	0	Small level on tie ins to Ti Rakau and Te Irirangi	-8	-3	0
		2.5	Does the scheme require perceived prolonged weekend and night closures and major traffic diversions over extended periods?	-3	Considerable night and weekend works required for minor widening (kerb installs, pavement & surfacing works)	-2	Small stretch on Te Koha	0	Lifts of large elements, but materials will be delivered at night	-8	-5	0
13	**Constructability**	**2**	Can the scheme be easily built with conventional and traditional methods and with local expertise and materials? Does it appear simple?	0	Conventional construction methods	0	Conventional construction methods	-1	Potential for ground improvement works	0	0	-2
		2	Does the scheme present opportunities for repetition and re-use of materials if planned correctly? Is it smart and logical?	0	Conventional construction methods - minimal opportunity for re-use	0	Conventional construction methods - minimal opportunity for re-use	-1	Parts on strucuture and embankments, different trades	0	0	-2
		100								**-242**	**-123**	**-175**
											-123	

Appendix 2: MCA Scoring Sheet

<table>
<tr><th colspan="2">MCA Scoring Sheet
EB4 Bus Station Assessment</th></tr>
<tr><td>Assessor: Fiona Davies and Caitlin Smith</td><td>Area of assessment: Natural Environment/Ecological Effects</td></tr>
<tr><td colspan="2">OPTION 4: A2B offline preferred</td></tr>
<tr><td colspan="2">Assumptions relied upon to undertake assessment:
Assume no impact to the piped stream crossing.
Key matters of consideration:
One piped stream was identified to be crossing the car parking area and Te Irirangi Drive (from Logan Carr Reserve to the stormwater ponds at Guys Reserve) - unlikely to be impacted.
Vegetation along the parking area at Botany Town Centre will be removed – amenity plantings and likely of low ecological value.
Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).
Mitigation proposed (if any):
Landscape planting with ecological enhancements.
Avoid bird nesting season (September to February) during vegetation removal, where possible.
Appropriate erosion and sediment control measures must be in place during construction.</td></tr>
<tr><td>Score without mitigation applied:
-1</td><td>Score with mitigation applied:
0</td></tr>
<tr><td colspan="2">OPTION 5: ‘Hash Brown’ in AMP site</td></tr>
</table>

Assumptions relied upon to undertake assessment:

- Assume no impact to the piped stream crossing.

Key matters of consideration:

- One piped stream was identified crossing the car parking area and Te Irirangi Drive to the stormwater detention ponds - unlikely to be impacted.
- Vegetation along the parking area will be removed – amenity plantings and likely of low ecological value.
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.

Score without mitigation applied:	Score with mitigation applied:
-1	0

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- Assume no impact to the piped stream crossing.

Key matters of consideration:

- One piped stream identified that crosses the car parking area and Te Irirangi Drive to the stormwater detention ponds - unlikely to be impacted.
- Vegetation along the parking area will be removed – amenity plantings and likely of low ecological value.
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.

Score without mitigation applied:	Score with mitigation applied:
-1	0

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- Assume that the piped streams will not be impacted.
- The bus lane runs adjacent to the stormwater detention ponds. Assume the stormwater detention ponds will not be significantly impacted and will remain operational.

- Assume the stream within Guys Reserve will be culverted. Approximately 30m of stream will be impacted by the proposed turnaround area. Assume fish passage will be provided.

Key matters of consideration:

- Two piped streams identified that cross over Te Irirangi Drive and flow to the stormwater detention ponds. The busway will encroach into the stream within Guys Reserve (where turnaround area will be constructed). This is a moderate to high impact. There are potential NPS-FM natural wetlands present alongside the stream (these have been identified at the nearby downstream Burswood Reserve), but wetland delineation is required to determine if there are any NPS-FM natural wetlands.
- Terrestrial vegetation is made up of a mixture of exotic and native – roadside and amenity plantings – low ecological value.
- Lizard habitat – one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The nearby constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and Zealand Dabchick (*Poliocephalus rufopectus*), 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus)* and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate to high (particularly if vegetation removal is timed to be completed outside of the nesting season).
- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus*) within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the bus station is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effects to fish habitat is considered to be moderate to high as a result of the structure within the stream.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Consideration should be given to moving the bus lane turnaround area as far out of the stream as possible. But it is understood this is unlikely.
- Design of the structure within the stream should be hydrologically sensitive and allow the natural flow of the stream and fish passage.

Score without mitigation applied:	Score with mitigation applied:
-3	-2

OPTION 9: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Assume that the piped streams will not be impacted.
- The bus lane runs adjacent to the stormwater detention ponds. Assume the stormwater detention ponds will not be significantly impacted and will remain operational.
- Assume the stream within Guys Reserve will be culverted. Approximately 40m of stream will be impacted by the proposed turnaround area. Assume fish passage will be provided.

Key matters of consideration:

- Two piped streams are identified that cross over Te Irirangi Drive to the stormwater detention ponds. The busway will encroach into the stream within Guys Reserve (where turnaround area will be constructed). This is considered a moderate to high impact. There are potential NPS-FM natural wetlands present alongside the stream (these have been identified at the nearby downstream Burswood Reserve), but wetland delineation is required to confirm if there are any NPS-FM natural wetlands.
- Terrestrial vegetation is made up of a mixture of exotic and native – roadside and amenity plantings – low ecological value.
- Lizard habitat – one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The nearby constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and Zealand Dabchick (*Poliocephalus rufopectus*), 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus)* and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate to high (particularly if vegetation removal is timed to be completed outside of the nesting season).
- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the bus station is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effects to fish habitat considered to be moderate to high as a result of the structure within the stream.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Consideration should be given to moving the bus lane turnaround area as far out of the stream as possible. But it is understood this is unlikely.
- Design of the structure within the stream should be hydrologically sensitive and allow the natural flow of the stream and fish passage.

Score without mitigation applied:	Score with mitigation applied:
-3	-2

OPTION 13 - Offline Guys Reserve

Assumptions relied upon to undertake assessment:

- Assume that piped streams will not be impacted.
- The bus station is located on a structure over the stormwater detention ponds. Assume the stormwater detention ponds will remain operational.

Key matters of consideration:

- Two piped streams identified that flow into the stormwater detention ponds.
- Terrestrial vegetation is made up of a mixture of exotic and native – roadside, amenity plantings. Likely of low ecological value.
- Lizard habitat - one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').

- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The nearby constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and Zealand Dabchick (*Poliocephalus rufopectus),* 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus*) and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate to high (particularly if vegetation removal is timed to be completed outside of the nesting season).
- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the bus station is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effect to fish habitat considered to be low.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Fish salvage.

Score without mitigation applied:	Score with mitigation applied:
-2	-1

MCA Scoring Sheet **EB4 Link Road Assessment**	
Assessor: Fiona Davies and Caitlin Smith	Area of assessment: Natural Environment/Ecological Effects
Link Road Option 1: Ti Rakau Drive	

Assumptions relied upon to undertake assessment:

- Assume no impact to the piped stream.

Key matters of consideration:

- One piped stream was identified, crossing Te Irirangi Drive – unlikely to be impacted.
- Vegetation within the roading corridor will be removed – close cropped grassy vegetation and a mixture of native and exotic vegetation (roadside, amenity plantings) – low ecological value.
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.

Score without mitigation applied: -1	Score with mitigation applied: 0

Link Road Option 2: Te Koha Road

Assumptions relied upon to undertake assessment:

- Assume no impact to the piped stream.

Key matters of consideration:

- One piped stream was identified, crossing Te Irirangi Drive – unlikely to be impacted.
- Vegetation within the roading corridor will be removed – close cropped grassy vegetation and a mixture of native and exotic vegetation (roadside, amenity plantings) – low ecological value.
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.

Score without mitigation applied: -1	Score with mitigation applied: 0

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Assume that piped streams will not be impacted.
- The bus lane runs adjacent to the stormwater detention ponds. Assume the stormwater detention ponds will remain operational.
- Assume that the stream within Guys Reserve will be impacted (approximately 90m of stream impacted). Unconfirmed if it will be culverted. Assume fish passage will be provided.

Key matters of consideration:

- One piped stream is identified that crosses over Te Irirangi Drive to the stormwater detention ponds. The busway will encroach into the stream within Guys Reserve (with a structure within the stream). This is considered a moderate to high impact. There are potential NPS-FM natural wetlands present alongside the stream (these have been identified at the nearby downstream Burswood Reserve), but wetland delineation is required to confirm if there are any NPS-FM natural wetlands.
- Terrestrial vegetation is made up of a mixture of exotic and native - roadside and amenity plantings – low ecological value.
- Lizard habitat - one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The nearby constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and Zealand Dabchick (*Poliocephalus rufopectus*), 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus)* and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate (particularly if vegetation removal is timed to be completed outside of the nesting season).

- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the busway is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effects to fish habitat considered to be moderate to high as a result of the structure within the stream.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Consideration should be given to moving the bus lane out of the stream area (although it is understood this unlikely).
- Design of the structure within the stream should be hydrologically sensitive and allow natural stream flow and fish passage.

Score without mitigation applied:	Score with mitigation applied:
-3	-2

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Laura Laurenson	Area of assessment: Statutory Legislation
OPTION 4: A2B preferred	

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises existing road alignment within an existing transport corridor
- Includes use of previously developed land
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking)
- Provision of infrastructure on land zoned for commercial use/development
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha) and flood plains (note functional need to be in these areas)
- Project area does not include:
  - coastal, wetland, river and/or stream environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use – comparatively small area.
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +3	Score with mitigation applied: +4

OPTION 5: 'Hash Brown' in AMP site

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure

  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking) (more so than Option 4 – less efficient use of existing transport corridor)
- Provision of infrastructure on land zoned for commercial use/development
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - coastal, wetland, river and/or stream environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use (larger area than Option 4). Less efficient use of existing transport corridor
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge

- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +2	Score with mitigation applied: +3

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking) (more so than Option 4 – less efficient use of existing transport corridor)
- Provision of infrastructure on land zoned for commercial use/development
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - coastal, wetland, river and/or stream environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:

- Business – metropolitan centre zone

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use (larger area than Option 4 and less than option 5 – better use of existing transport corridor than Option 5)
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +2	Score with mitigation applied: +3

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
- Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)

- Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
- Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
- Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land and green space/conservation
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking) (more so than Option 4/like 6 with use of existing transport corridor)
- Provision of infrastructure on land zoned for commercial use/development and land zoned for conservation/open space.
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open space – conservation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use (larger area than Option 4 and less than option 5 – better use of existing transport corridor than Option 5)
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +1	Score with mitigation applied: +3

OPTION 9: Guy's Reserve

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land and green space/conservation
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Provision of infrastructure on land zoned for conservation/open space
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in wetland/stream environment, overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage

- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open space – conservation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use (larger area than Option 4 and less than option 5 – better use of existing transport corridor than Option 5)
- NPS for Freshwater Management 2020: Watercourse present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater. Indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in wetland/stream, open space/conservation area. commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains.

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -1	Score with mitigation applied: 0

OPTION 16: Guy's Reserve
Assumptions relied upon to undertake assessment: • All options will result in positive effect experienced by a sub-regional audience • All options require the use of natural resources • No demolition of commercial buildings is required

- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land and green space/conservation
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Provision of infrastructure on land zoned for conservation/open space
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in wetland/stream environment, overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open space – conservation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use (larger area than Option 4 and less than option 5 – better use of existing transport corridor than Option 5)
- NPS for Freshwater Management 2020: Watercourse present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater. Indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in wetland/stream, open space/conservation area. commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains.

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -1	Score with mitigation applied: 0

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Laura Laurenson	Area of assessment: Statutory Legislation
Link Road Option 1: Ti Rakau Drive	

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises existing road alignment within an existing transport corridor
- Includes use of previously developed land
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial and residential property
- Provision of infrastructure on land zoned for commercial and residential use/development

- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha) and flood plains
- Project area does not include:
  - coastal, wetland, river and/or stream environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Residential – terrace housing and apartment building
  - Open space – informal recreation
  - Designations: 8516, Electricity transmission - Transpower New Zealand Ltd

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial and residential use – comparatively small area.
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- NPS on Electricity Transmission and NES for Electricity Transmission Activities: Option impacts national grid yard/overhead and underground transmission cables. Impacts limited to construction and can be managed/mitigated
- Auckland Unitary Plan: Includes provision of infrastructure in residential and commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Minimal works in open space.

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any): • No specific options considered	
Score without mitigation applied: +3	Score with mitigation applied: +4
Link Road Option 2: Te Koha Road	

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises existing road alignment within an existing transport corridor
- Includes use of previously developed land with minimal impacts to open space
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial and residential property
- Provision of infrastructure on land zoned for commercial and residential use/development
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Potential to impact wetland, river and/or stream environment(s) but likely to be avoidable/minimal
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha) and flood plains
- Project area does not include:
  - coastal environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Residential – terrace housing and apartment building
  - Open space – informal recreation
  - Designations: 8516, Electricity transmission - Transpower New Zealand Ltd

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial, residential use and open space – comparatively small area along edge of existing transport corridor.
- NPS for Freshwater Management 2020: Watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Minimal direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- NPS on Electricity Transmission and NES for Electricity Transmission Activities: Option impacts national grid yard/overhead and underground transmission cables. Impacts limited to construction and can be managed/mitigated
- Auckland Unitary Plan: Includes provision of infrastructure in residential, open space and commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Minimal works in open space – limited to edge.

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +1	Score with mitigation applied: +2

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)

  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises existing road alignment within an existing transport corridor
- Impacts to open space – alignment follows stream through reserve
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- No/minimal impacts to commercial and residential property
- Provision of infrastructure on land zoned for open space and conservation
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Impacts to impact wetland, river and/or stream environment(s)
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha) and flood plains
- Project area potentially includes significant indigenous vegetation and significant habitats for indigenous fauna
- Project area does not include:
  - coastal environment(s)
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Residential – terrace housing and apartment building
  - Open space – informal recreation
  - Designations: 8516, Electricity transmission - Transpower New Zealand Ltd (significant compared to other options)

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial, space – comparatively small.
- NPS for Freshwater Management 2020: Watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall

- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- NPS on Electricity Transmission and NES for Electricity Transmission Activities: Option impacts national grid yard/overhead and underground transmission cables. Impacts limited to construction and can be managed/mitigated
- Auckland Unitary Plan: Includes provision of infrastructure in open space and commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Minimal works in open space – limited to edge. Works required in streams and wetland.

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -3	Score with mitigation applied: 0

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Shane Doran	Area of assessment: Busway and Bus Station Operations
OPTION 4: A2B preferred	

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 4 Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 4 supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 135m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and ultimately offers a high level of customer experience. Location of station on northern side of Town Centre is considered to slightly diminish customer experience.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  Limited availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

  Lack of entry and exit distance between bus station and Te Irirangi Drive – Town Centre Drive intersection reduces reliability and would add additional phase to intersection at Te Irirangi Drive – Town Centre Drive.

  Only one entry/exit to the station reduces resilience in the event of an incident within the station.

- Bus Operations efficiency

  Bus Station has third lowest operating costs in terms of bus kilometres of 6 options considered (PV = $63M) (6 options range from PV = $48M to $76M) made up of:

  $125k Annually – Schedule Adherence
  $625k Annually – Bus Driver Rest Stop
  $2.4M Annually - Station Circulation
  $3.1M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Move station North to provide an entry link between Te Irirangi – Town Centre Drive intersection and busway station. Provision of entry point at northern end of station would also improve resilience of station.

Score without mitigation applied: +2	Score with mitigation applied: +4

OPTION 5: 'Hash Brown' in AMP site

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 5 Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 5 supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 150m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and ultimately offers a high level of customer experience. Location of station on southern side of Town Centre with direct access to Town Centre enhances customer experience.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 20% with reduced reliability).

Provision of schedule adherence bays and bus driver rest stops results in reduced operational costs and increases resilience of option.

- Bus Operations efficiency

  Bus Station has second lowest operating costs in terms of bus kilometres of 6 options considered (PV = $58M) (6 options range from PV = $48M to $76M) made up of:

  $210k Annually – Schedule Adherence
  $194k Annually – Bus Driver Rest Stop
  $2.5M Annually - Station Circulation
  $2.9M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is not able to be staged easily due to its configuration.

Mitigation proposed (if any):
Integrated concourse development with development of station which allows improved circulation for customers and station facilities such as retail outlets and provision of ultimate station.

Score without mitigation applied: +4	Score with mitigation applied: +5

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 6 Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 6 supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 135m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and ultimately offers a high level of customer experience. Location of station on southern side of Town Centre with direct access to Town Centre enhances customer experience.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  Provision of schedule adherence bays and bus driver rest stops results in reduced operational costs and increases resilience of option.

- Bus Operations efficiency

  Bus Station has lowest operating costs in terms of bus kilometres of 6 options considered (PV = $48M) (6 options range from PV = $48M to $76M) made up of:

  $184k Annually – Schedule Adherence
  $170k Annually – Bus Driver Rest Stop
  $2.1M Annually - Station Circulation
  $2.5M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: +5	Score with mitigation applied: +5

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 8 Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping
- A2B services use the platforms within the AMP site, with Eastern Busway Services (70, 351, 353) using the elevated platforms over Te Irirangi Drive and all other services using the platforms within Te Irirangi Drive.

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 8 supports connection to Auckland Airport. Future extension of bus services from the airport to north of Botany would require a reallocation of A2B services to the Te Irirangi Drive platforms. While this is achievable it would result in significantly higher operating costs due to the additional distances some of the local services would be required to travel.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration requiring multiple level changes and relatively large distances for customers to interchange between one service and another. Distances for customers to travel to interchange range from between 0 m (same bay – very limited no. of services) and a maximum of 185m including 3 vertical level changes using lifts or stairs (approx. 3.5 to 4 mins of travel). Multiple platforms for boarding and alighting customers would result in a difficult to understand and use station for customers and would offer a poor customer experience. Location of platforms in the middle of Te Irirangi Drive is considered to also offer a lower quality customer experience than other station platform locations.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility, however configuration limits the ability for some services to be efficiently allocated to any platform. Reasonable level of resilience and some capacity (<10%) for increased bus demand beyond 2048.

  No availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

- Bus Operations efficiency

  Bus Station has third highest operating costs in terms of bus kilometres of 6 options considered (PV = $68M) (6 options range from PV = $48M to $76M) made up of:

  $577k Annually – Schedule Adherence
  $624k Annually – Bus Driver Rest Stop
  $2.2M Annually - Station Circulation
  $3.4M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 4 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: +2	Score with mitigation applied:

OPTION 9: Guy's Reserve – Parallel Platforms

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 9 Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 9 supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides some same level connections between platforms while other interchanges require multiple level changes. Distances for customers to interchange between services range from 0 m (same bay) and a maximum of 200m and two vertical level changes (Approx. 3.5 to 4 minutes). Boarding and alighting for passengers in direction of travel provides a simple to use station for customers and allows simple station way finding signage and offers a high level of customer experience. Location of station on western side of Te Irirangi Drive is considered to diminish customer experience with potential CPTED issues due to isolation.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility. Reasonable level of resilience and some capacity (<10%) for increased bus demand beyond 2048.
  No availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

- Bus Operations efficiency

  Bus Station has highest operating costs in terms of bus kilometres of 6 options considered (PV = $76M) (6 options range from PV = $48M to $76M) made up of:

  $577k Annually – Schedule Adherence
  $588k Annually – Bus Driver Rest Stop
  $2.7M Annually - Station Circulation
  $3.9M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: +3	Score with mitigation applied:

OPTION 13: Guy's Reserve – Sausage Platforms

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 13 Station layout.
- Platform Capacity Assessment

- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option 13 supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 155m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and offers a high level of customer experience. Location of station on western side of Te Irirangi Drive diminishes customer experience with potential CPTED issues due to isolation.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).
  No availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

- Bus Operations efficiency

  Bus Station has second highest operating costs in terms of bus kilometres of 6 options considered (PV = $69M) (6 options range from PV = $48M to $76M) made up of:

  $577k Annually – Schedule Adherence
  $588k Annually – Bus Driver Rest Stop
  $2.3M Annually - Station Circulation
  $3.5M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: +3	Score with mitigation applied:

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Shane Doran	Area of assessment: Busway and Bus Station Operations
Link Road Option 1: Ti Rakau Drive / Te Irirangi Drive	
Assumptions relied upon to undertake assessment: • Drawing of proposed Option 1 Link Road layout. • Workshop participation • Specialist knowledge Key matters of consideration: • Bus Operations efficiency Option 1 supports a multi-modal connection Busway proposed to be separated in middle of corridor Bus operations are likely to experience unreliable travel times due to need for buses to pass through at least three and potentially four intersections from EB3 including the very large and congested Ti Rakau Drive / Te Irirangi Drive intersection. Travel distance from EB3 is in the order of 0.85km. Mitigation proposed (if any): Nil	
Score without mitigation applied: +2	Score with mitigation applied:
Link Road Option 2: Te Koha Road	
Assumptions relied upon to undertake assessment: • Drawing of proposed Option 2 Link Road layout • Workshop participation • Specialist knowledge Key matters of consideration: • Bus Operations efficiency Option 2 supports a busway connection however does not provide for cyclists Busway proposed to be separated in middle of corridor Bus operations are likely to experience unreliable travel times due to need for buses to pass through at least four and potentially five intersections from EB3 including passing through 2 intersections within the Hub where the busway is likely to receive limited green time/priority.	

Travel distance from EB3 is in the order of 0.54km.

Mitigation proposed (if any):
Nil

Score without mitigation applied: +2	Score with mitigation applied:

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option 3 Link Road layout
- Workshop participation
- Specialist knowledge

Key matters of consideration:

- Bus Operations efficiency

Option 3 supports a busway connection however does not provide for cyclists

Busway proposed to be separated in new green fields corridor

Bus operations are likely to experience reliable travel times with buses only required to pass through one or two intersections depending on final bus station location. Alignment of busway is constrained in some locations to minimise impacts on Guy's Reserve and Whaka Maumahara.

Travel distance from EB3 is in the order of 0.5km.

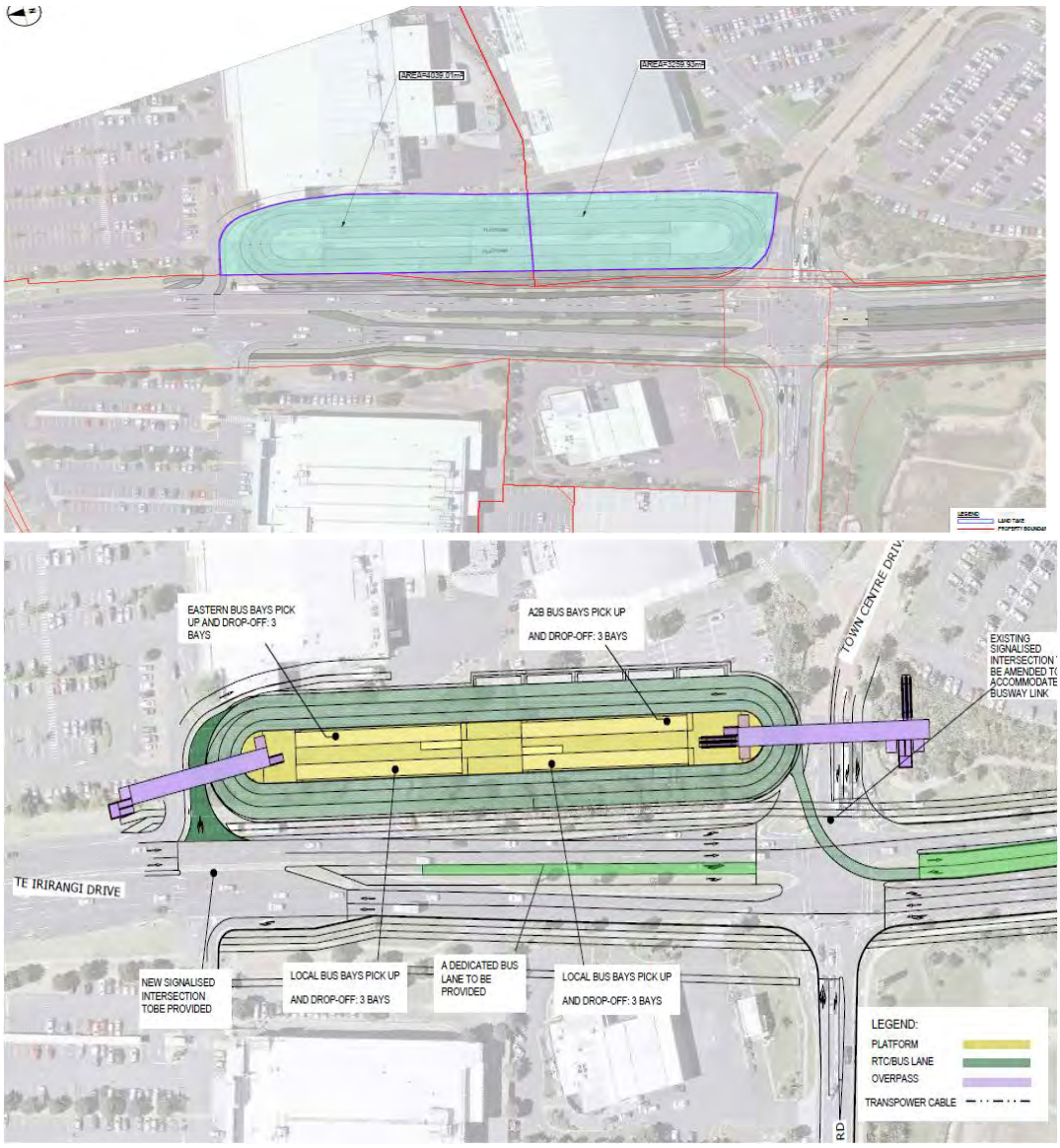
Mitigation proposed (if any):
Provision of bus schedule adherence bays along length of link between Te Koha Road and Ti Rakau Drive (approx. 75 m – 5 bays)

Score without mitigation applied: +4	Score with mitigation applied: +5

Option	Description	Link Road	Operating Cost In Service kms ($M)	Operating Cost Schedule + Rest Stop ($M)
4	Offline Central (A2B Preferred Option 2) **with** Schedule Stops (**No** Bus Driver Rest Stops)	Guys Reserve	47.00	16.00
5b	Offline Hash Brown Sth - **With** Shedule and Bus Driver Rest Stops	Guys Reserve	50.00	8.00
6b	Offline Sausage - Sth Town Centre Drive - **With** Shedule and Bus Driver Rest Stops	Guys Reserve	41.00	7.00
8	Elevated Station Sth Te Koha - **Without** Shedule and Bus Driver Rest Stops	Guys Reserve	45.00	23.00
9	Parallel Station Around Detention Basin - **Without** Schedule and Bus Driver Rest Stops	Guys Reserve	53.00	23.00
13	Sausage Around Detention Basin - **Without** Schedule and Bus Driver Rest Stops	Guys Reserve	46.00	23.00

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Fenella Fischer	Area of assessment: Property
OPTION 4: A2B preferred	



Assumptions relied upon to undertake assessment:

588 - affects staff/customer parking, vehicle access situated on road frontage.

501 – staff/customer parking affected, vehicle access, goods delivery loading bay and building affected, this will need to be redesigned, have assumed this is possible or else would require a full purchase.

Key matters of consideration:

EB4	Partial	Full	AC Reserves	Total
Option 4	2	0	0	2

588 - freehold site,

501 a stratum freehold site (4 units – common area) – costly, timely and can be expensive acquisitions with multiple ownerships.

Large mitigation costs – reconfigure loading bay, building

Business disturbance/disruption will be significant when rebuilding loading bay and building.

Property forecast circa $54M, does not including mitigation work of rebuilding loading bay/building.

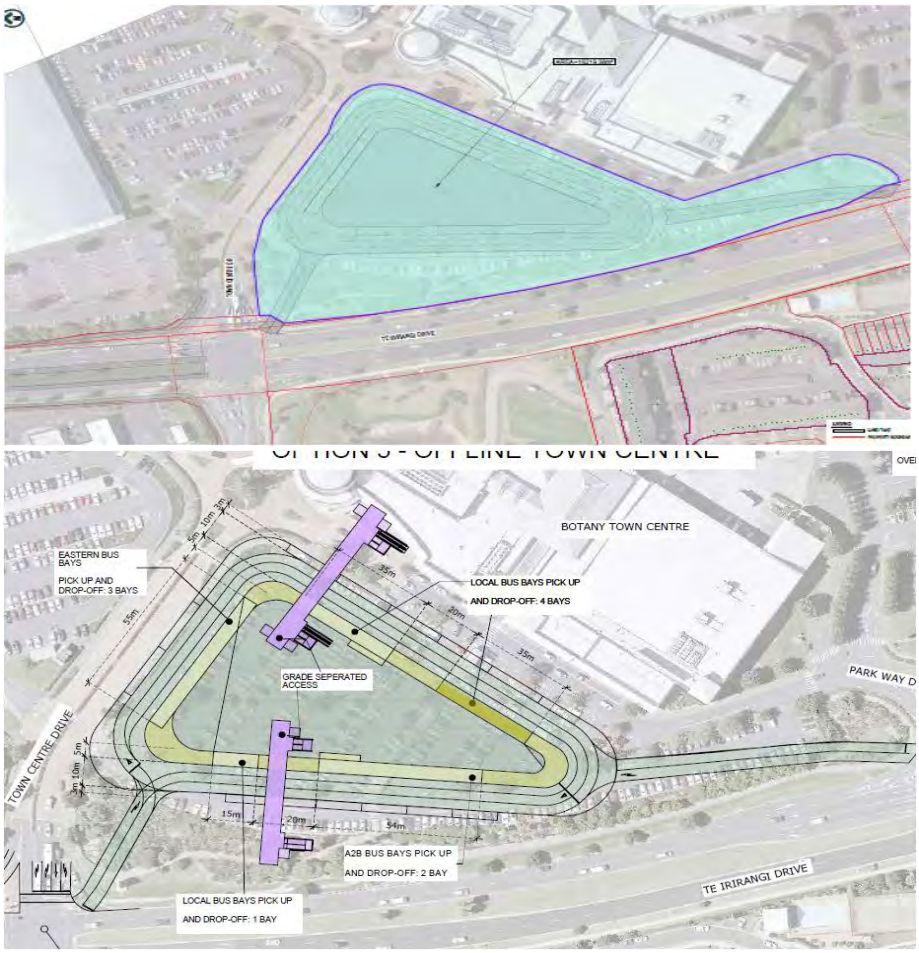
588 - impairment of the visual sight lines to main entrance to the centre.

Loss of future development potential

Mitigation proposed (if any):

Score -5	

OPTION 5: 'Hash Brown' in AMP site



Assumptions relied upon to undertake assessment:
Have assumed worst case scenario, i.e. Owners do not want to enter into any development agreement.

Takes out main front carparks, overpass sits near building affecting retailing entrance.

Assume carparks can still access through Park Way Drive.

Alienates retailing frontage to one end of site. Large loss in further development potential of site.

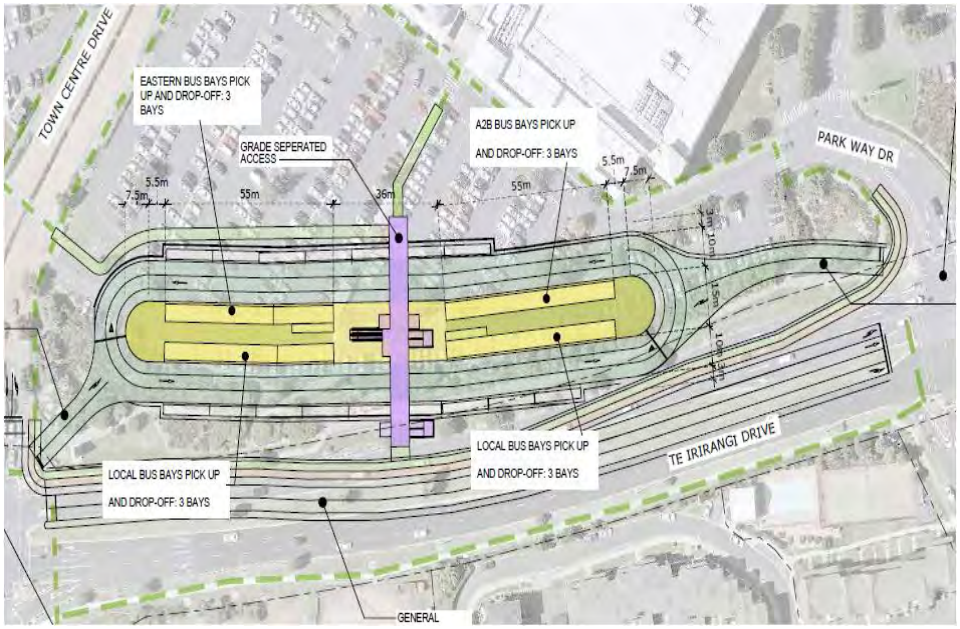
Key matters of consideration:

EB4	Partial	Full	AC Reserves	Total
Option 5 - Hash Brown – 588 Chapel	1	0	0	1

High level forecast circa $117M
Large loss of carparks, and development potential of land.
Mitigation proposed (if any):

Score without mitigation applied: -5	Score with mitigation applied:

OPTION 6: Central platform in AMP site



Assumptions relied upon to undertake assessment:

Have assumed worst case scenario, i.e. Owners do not want to enter into any development agreement.

Removes front carparks, advised cars can still circulate around Park Way and in front of the Mall into Town Centre Drive.

Loss in further development potential of site.

Key matters of consideration:

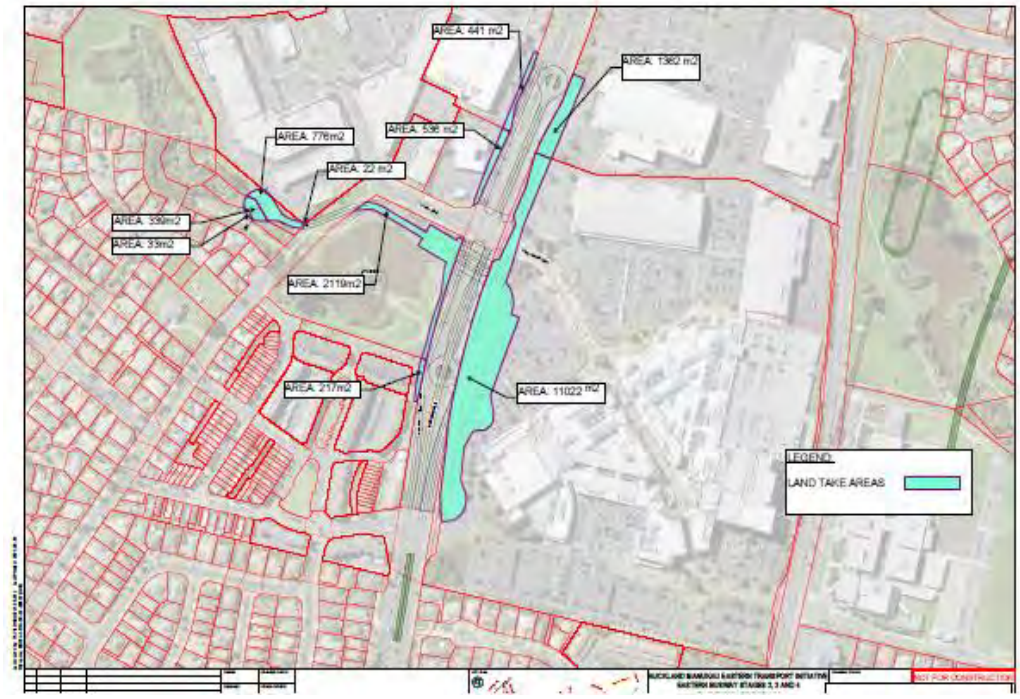
EB4	Partial	Full	AC Reserves	Total
Option 6	1	0	0	1

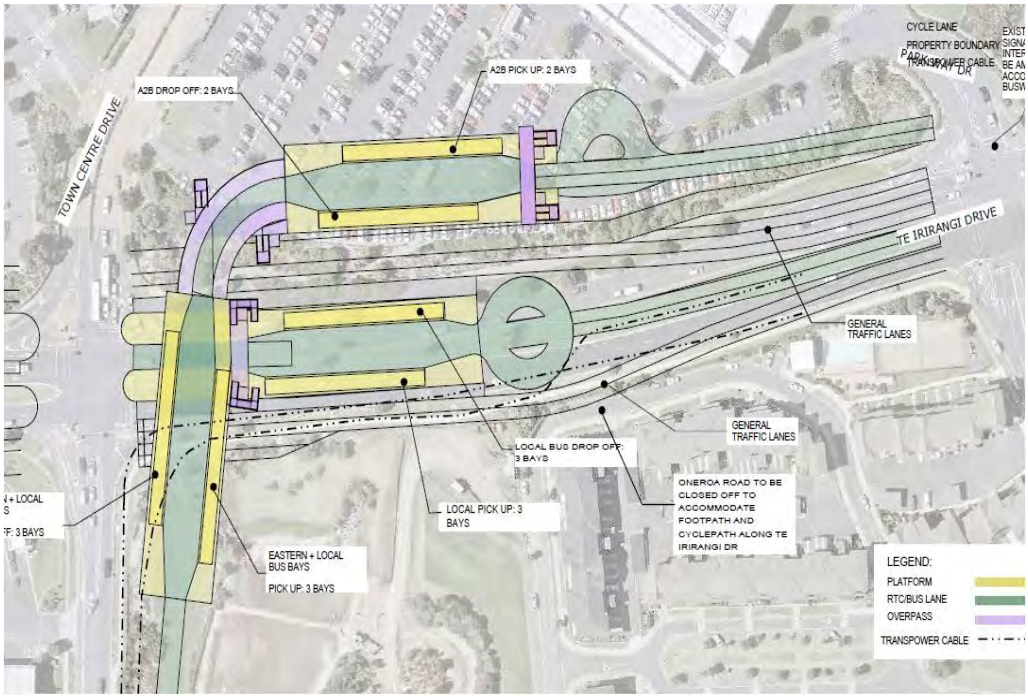
1 landowner – freehold site, multiple tenants.
High level forecast circa $48M,
Land required circa 12,783 sqm

Mitigation proposed (if any):

Score -3	

OPTION 8: Grade separated station





Assumptions relied upon to undertake assessment:

Opito Way – assume only common area affected no Units or AU and area/road can be re-configured.

588 Chapel – loss of carparks and further development potential

501 Chapel – assume no restriction to loading bay.

475 Ti Rakau – access to site narrowed/restricted, 14 carparks affected

550 Te Irirangi – restrictions to drive through site, 8 carparks affected.

Key matters of consideration:

EB4	Partial	Full	AC Reserves	Total
Option 8	5	0	2	7

Number of properties affected.

Multi tenanted- 550 Te Irirangi, 475 Ti Rakau, may have interest in the carparks being removed (if leases include carparks).

501 – Stratum site, complex, costly and timely with number of owners involved.

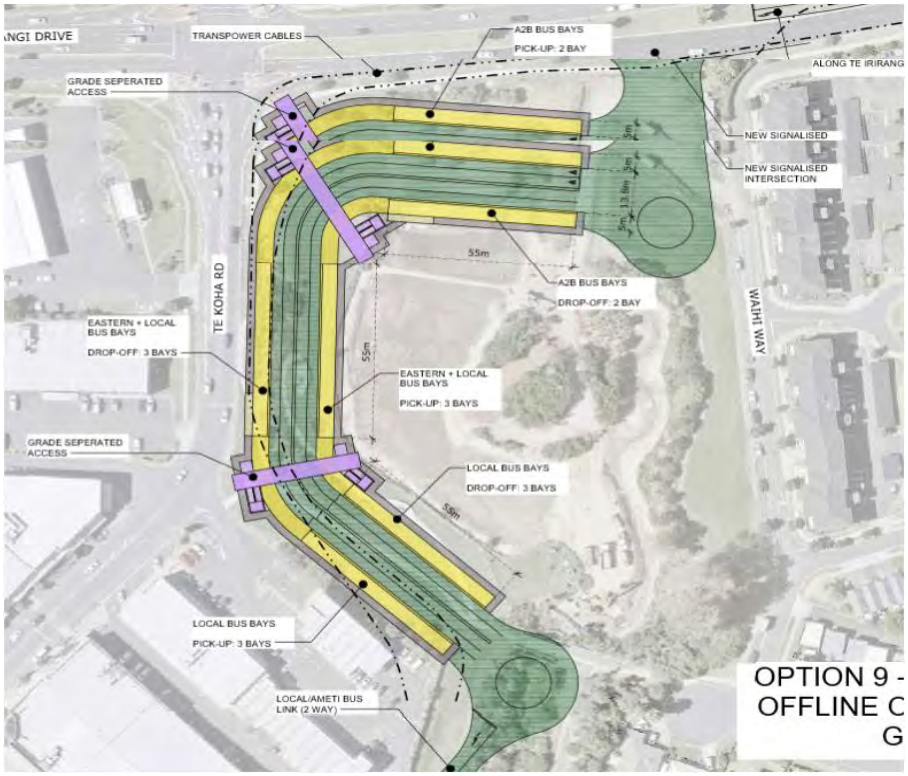
High level forecast circa $58M.

Loss of development potential to sites, particularly 588.

Mitigation proposed (if any):

Score -4	

OPTION 9: Guy's Reserve



Assumptions relied upon to undertake assessment:

451 Ti Rakau – assumed VTNZ building no carparks affected and land requirement falls in common landscaped area.

Reserve land requires the approval of IWI, DOC, AC and Local Board, assumed this will be obtained.

Transpower have an easement over AC land at 181R and 204R, 400R assume easement area is accessible and Transpower consent to the proposed busway/road. Have assumed measures will be considered in the construction of the busway to allow Transpower to continue to have practical access to its infrastructure for the purposes of repair, maintenance, alteration, replacement and upgrading.

Key matters relied upon to undertake assessment:

EB4	Partial	Full	AC Reserves	Total
Option 9	1		2	3

Potentially large mitigation costs with Park and Reserve.

451 Ti Rakau – multiple ownership (23 owners) which can be complex, costly and timely acquisitions.

Transpower's consent required.

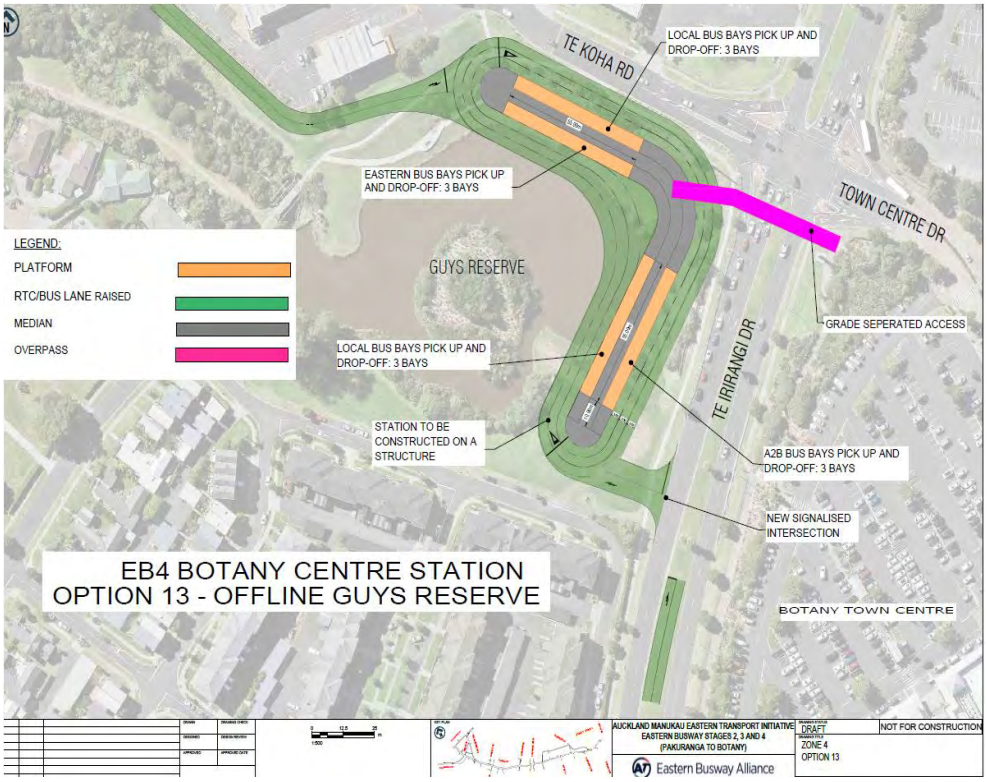
High level forecast circa $1.83M, no mitigation costs included which will be significant

Key matters of consideration

Mitigation proposed (if any):

Score -2	

OPTION 13: Guy's Reserve LRP 000032 Bus Station



Assumptions relied upon to undertake assessment:

588 Chapel – Partial acquisition in landscaped area.

Reserve land requires the approval of IWI, DOC, AC and Local Board, assumed this will be obtained.

Transpower have an easement over AC land at 181R and 204R, 400R assume easement area is accessible and Transpower consent to the proposed busway/road and any measures that will need to be considered in construction of the busway to allow Transpower to continue to have practical access to its infrastructure for the purposes of repair, maintenance, alteration, replacement and upgrading.

Key matters relied upon to undertake assessment:

EB4	Partial	Full	AC Reserves	Total
Option 13	1	0	1	2

Potentially large mitigation costs with Park and Reserve.

Transpower's consent required.

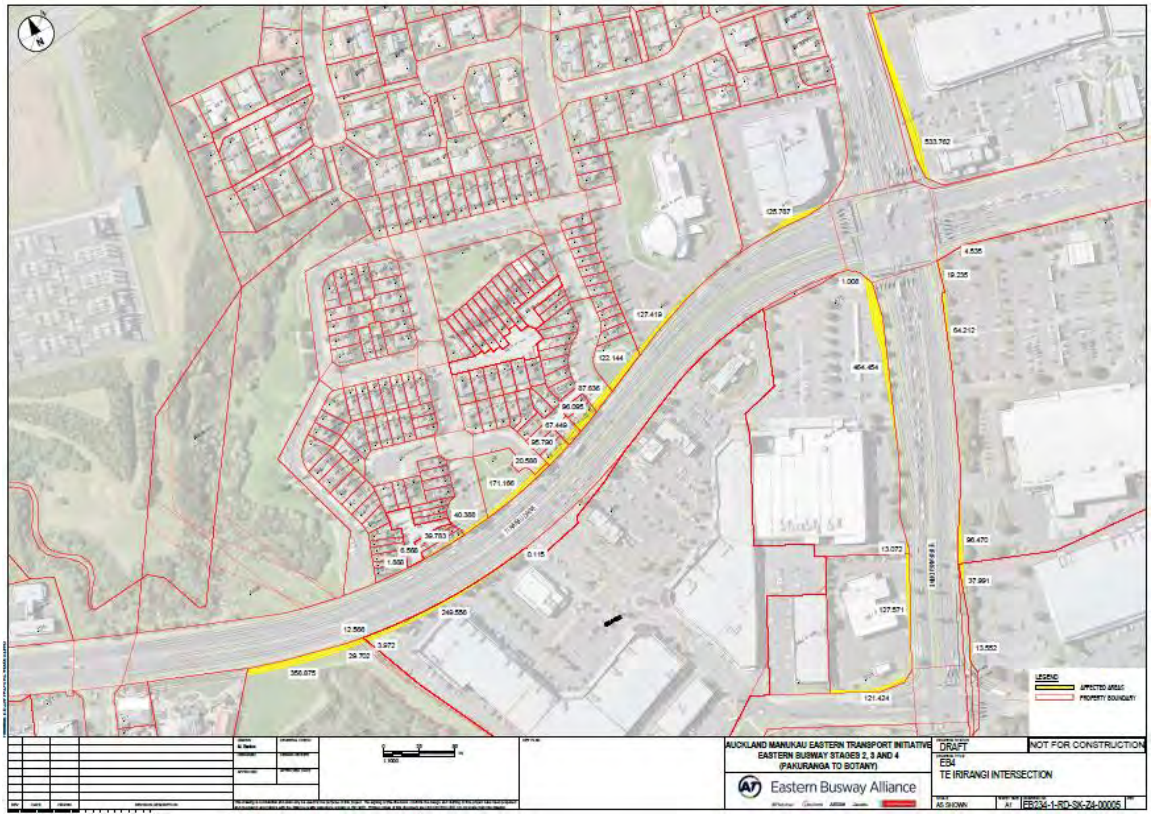
High level forecast circa $1.7M, no mitigation included which will be significant

Key matters of consideration

Mitigation proposed (if any):

Score -1	

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Fenella Fischer	Area of assessment: Property
Link Road Option 1: Ti Rakau Drive Land plan 00005	



Assumptions

451 Ti Rakau – no carparks affected – common area – stratum site – 23 owners

475 Ti Rakau – approx. 6 carparks affected - freehold

550 Te Irirangi – approx. 8 carparks affected – Z Petrol station - freehold

588 Chapel Rd – no carparks affected - freehold

501 Ti Rakau – no carparks affected, assume consent 588 given for ROW easement, common area – stratum site – 4 owners

500 Ti Rakau – approx. 35 carparks affected, design team confirmed kerb lines will be realigned to maintain access. Freehold site multi tenanted.

490 Ti Rakau - no carparks – freehold site

480 Ti Rakau – no carparks – freehold site

53 Huntingtree and 47C Huntingtree have been designed out, been included in EB3 commercial.

Key matters relied upon to undertake assessment:

Link Option	Partial	Reserve	Full
Z4-00005	8	3	0

Key matters of consideration:

451 Stratum Freehold site- multiple ownership – often complex, costly acquisitions – 23 units

501 Stratum Freehold site – multiple ownership – often complex, costly acquisitions – 4 units anchor commercial/retail tenants. e.g. PaknSave

Lessee interests may also need compensating under PWA.

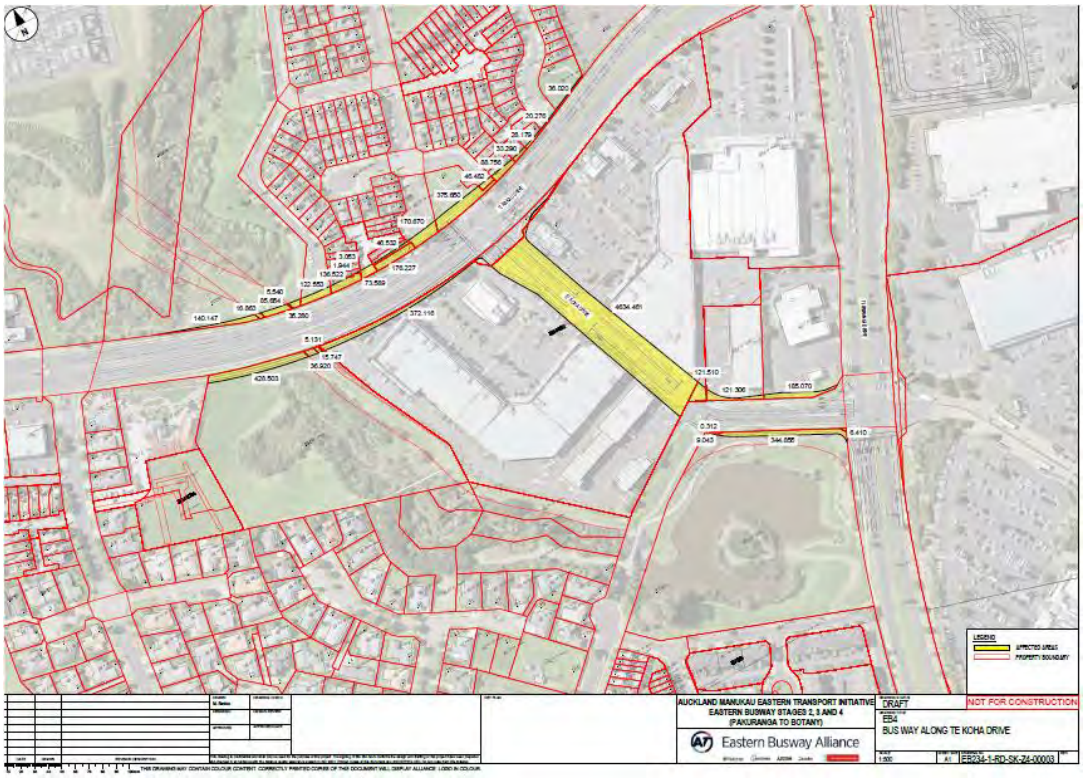
500 Ti Rakau – approx. 35 carparks affected, design team confirmed kerb lines will be realigned to maintain access – Large business park with multiple tenancies, McD's, ASB, Bayleys etc –could involve Lessee interest to compensate.

High level forecast circa $10.15m

Mitigation proposed (if any):

Score -4	

Link Road Option 2: Te Koha Road land take plan 000003



Assumptions relied upon to undertake assessment:

451 Ti Rakau - Significant impact to parking (40-46 carparks) and operation of common area, Wendy Drive through impacted (potentially bus disturbance while this mitigated). Assume buildings not impacted.

Wendy's drive will be mitigated and will be operational.

550 Te Irirangi – no effect on operation of petrol station.

Assumed 74 Tiger which is an attached unit, can be mitigated when 76 Tiger is demolished or else will need to acquire 74 and 72.

Link Option	Partial	Reserve	Full
Z4-00003	3	5	0

Key matters of consideration:

451 Ti Rakau - Significant impact to parking (40-46) and operation of common area, Wendy Drive through impacted (business disturbance) Assume buildings not impacted.

5 Te Koha – 6 carparks affected, may have compensate lessee – (Hunting and Fishing)

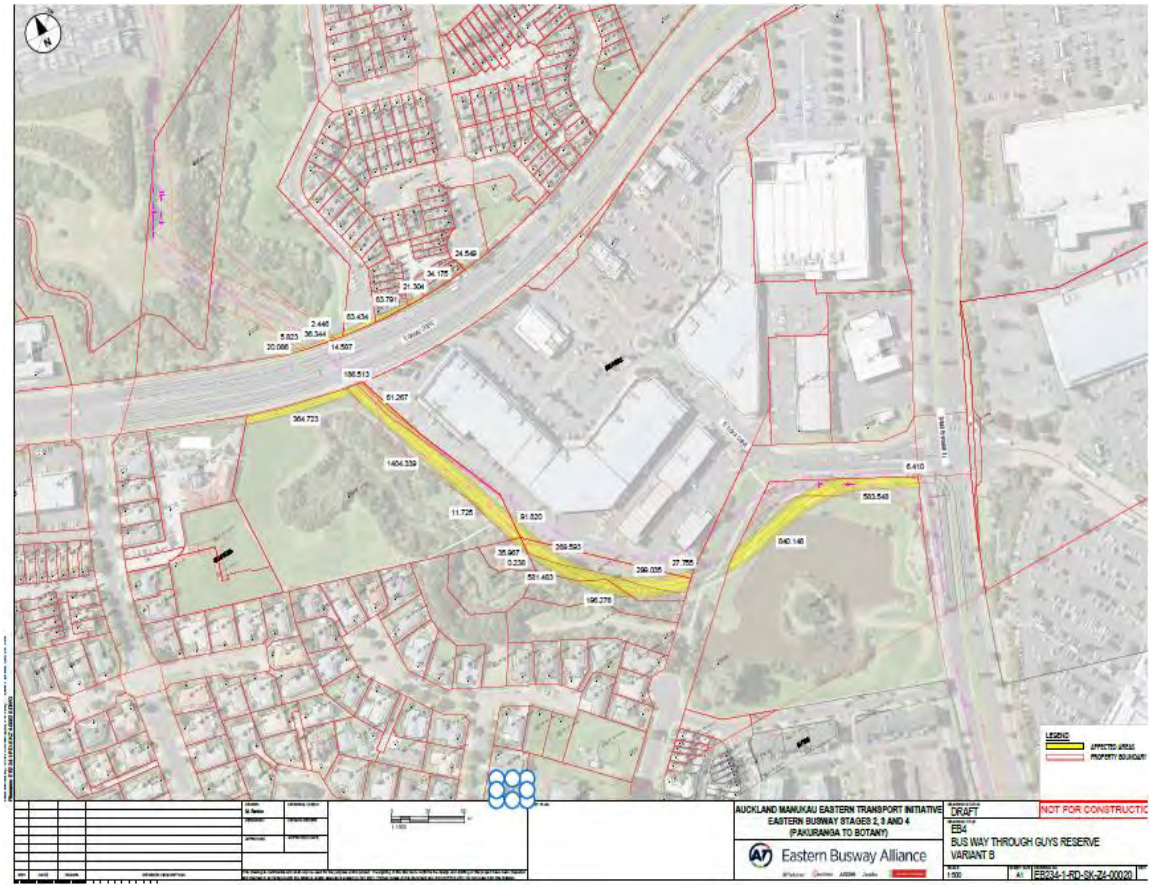
Transpower have an easement over AC land at 181R and 204R, 400R assume easement area is accessible and Transpower consent to the proposed busway/road. Have assumed measures will be considered in the construction of the busway to allow Transpower to continue to have practical access to its infrastructure for the purposes of repair, maintenance, alteration, replacement and upgrading.

High level forecast circa $37M

Mitigation proposed (if any):

Score : -4	

Link Road Option 3: Guy's Reserve - Land take plan 000020



Assumptions relied upon to undertake assessment:

451 Ti Rakau Drive – small partial along western boundary site - no carparking affected.

53 Huntingtree and 47C Huntingtree have been designed out, been included in EB3 commercial.

Reserve land requires the approval of IWI, DOC, AC and Local Board, assumed this will be obtained.

Transpower have an easement over AC land at 181R and 204R, 400R assume easement area is accessible and Transpower consent to the proposed busway/road. Have assumed measures will be considered in the construction of the busway to allow Transpower to continue to have practical access to its infrastructure for the purposes of repair, maintenance, alteration, replacement and upgrading.

Link Option	Partial	Reserve	Full
Z4-00020	1	3	0

Key matters of consideration:
Potential large mitigation costs with Park and Reserve.

Transpower consent required

High level forecast circa $1.3M,

Mitigation proposed (if any):

Score without mitigation applied: -2	Score with mitigation applied:

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: John Daly	Area of assessment: Social Impact
OPTION 4: A2B preferred	

Comments / Assumptions

- Walking / cycle path is provided either side of Te Irirangi Drive.
- I have considered PackNSave and Countdown supermarket to be a 'community facility' as it is an essential service providing basic necessities to the community.
- Assumed small side building attached to PackNSave will be impacted. Assumed PackNSave will remain open during construction.
- Car parking to the west of Botany Town Centre will be lost.
- Internal access way and service lane between PackNSave and Botany Town Centre will be impacted.

Impacts upon Community Facilities / Open Space

Construction Phase

- No community facilities or park/recreation areas are located within the construction footprint which would be directly impacted by construction activities.
- Carparking impacted east of Te Irirangi Dr and access to supermarket via Te Irirangi Dr impacted – reduced accessibility to supermarket, retail and community facilities within Botany Town Centre.
- Construction required inside roading corridor of Te Irirangi Drive.
    - Limited impact on accessibility to Guys Reserve / Whaka Maumahara, located south of Te Koha Road (southwest of proposed bus station).
    - Difficult to cross Te Irirangi Drive and access facilities within the Botany Town Centre.

Permanent

- No community facilities or park/recreation areas directly impacted.
- Southern overpass provides a direct linkage to existing signalised intersection.
    - This signalised intersection provides a safe crossing point to Guys Reserve / Whaka Maumahara.
- A signalised crossing is provided, providing a safe crossing option from east to west of Te Irirangi Drive.
- Bus station provides enhanced PT access to Botany Town Centre / PackNSave and shops west of Te Irirangi Dr (including Countdown).

Impacts upon viability / productivity of business land areas

Construction Phase

- Significant disruption to PackNSave and Botany Town Centre (east side of road).
    - Potential acquisition of PackNSave land required
    - Reduced access to service lane between buildings.
    - Disruption to access to Z petrol station and Countdown service yard (westside of road).
    - Loss of carparking.
    - Internal accessway / service lane removed.
        - This provides service access and public access to several businesses east of Te Irirangi Drive.
- Disruption along Te Irirangi Drive meaning accessing businesses either on the route, or north or south of the route will become more difficult. Detour is likely required, resulting in increase in travel times.

Permanent

- Business disruption:
  - Land occupied by PackNSave potentially acquired.
  - Internal vehicle accessway and car parking on eastern side of Te Irirangi Drive is permanently removed.
    - Significant impacts to PackNSave and many businesses who utilise this service lane.
  - Parking for businesses on western side of Te Irirangi Drive are permanently removed.
- Enhanced PT access to all Botany Town Centre shops (which are located within 400m of bus station).
- Safe egress of pedestrians (via overpass) from bus station over both north and south vehicle exit/access points. Enhanced access to businesses located in these directions.
  - New signalised intersection provided – enhanced pedestrian access to countdown and shops west of Te Irirangi Drive.

Impacts upon social connectivity

Construction Phase:

- Severance issue exacerbated between east and west side of Te Irirangi Drive due to construction activities. harder for pedestrians to cross from one side of the street to the other.

Permanent

- Safe crossing point is provided through the implementation of a new signalised intersection. A safe crossing option did not exist in this location previously.
- Safe egress of pedestrians (via overpass) from bus station over both north and south vehicle exit/access points via Te Irirangi Drive.
- Southern overpass connects to existing signalised intersection which connects to Guys reserve / Whaka Maumahara.
- Walking / cycle lane provided along Te Irirangi Dr – enhanced travel choice.
- PT provides enhanced access to Botany Town Centre.

Reason for Score

- Significant Business disruption and land acquisition required, resulting in a negative score for businesses.
  - Significant disruption to PackNSave. Part of building, internal accessway to BTC and service yard to several businesses will be impacted.
  - PackNSave and Botany Town Centre service lane will be blocked by the station, reducing accessibility, and giving rise to operational impacts on businesses.

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Refinements to road widening and alignment to avoid impacts to PackNSave and Countdown.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Travel plans and survey to manage loss of carparking.

Score without mitigation applied: 1	Score with mitigation applied: 2

OPTION 5: 'Hash Brown' in AMP site

Comments / Assumptions

- Land inside bus station will be used for a purpose (i.e. retail space).
- No dedicated cycle lane constructed as part of the option.
- Would like to understand how carparking is used in the locality – is it often full, or not?
- Impact to vegetation east of Te Irirangi Dr is avoided.

Impacts upon Community Facilities / Open Space

Construction Phase

- Bus station is located outside of road corridor (Te Irirangi Drive).
  - minimising impact to transport environment during construction and therefore the ability to access facilities along this alignment.
- Significant loss of carparking servicing Botany Town Centre.
  - Impacts accessibility to community facilities located within the Town Centre (Botany library, Doctors, International Travel College of New Zealand, New Zealand Institute of Education (NZIE) - Botany Campus).
- No impact to open space.

Permanent

- Permanent loss of public carparking servicing Botany Town Centre
  - Impacts vehicle access to the town centre and community facilities.
- Enhanced PT accessibility to Botany Town Centre and community facilities.
  - Overpass provides direct linkage from bus station into town centre.
- Western overpass provides closer linkage from bus station to Guys Reserve / Whaka Maumahara.

Impacts upon viability / productivity of business land areas

Construction Phase

- Significant loss of public carparking servicing Botany Town Centre.
  - Reduces private vehicle access to town centre.
- Businesses adjacent to/ and fronting, construction area within the Botany Town Centre will experience disruption and likely loss of customers / revenue.
- No permanent acquisition of private land occupied by commercial buildings is required (only land acquisition used as a public carparking space).

Permanent

- Significant loss of carparking servicing Botany Town Centre.
  - Reduces accessibility to businesses and amenities by private vehicle.
- PT access to Botany Town Centre enhanced.
  - Further enhanced by direct linkage from Bus Station into town centre from the overpass.
  - Enhanced PT access to all of Botany Town Centre, which is located within 400m of the proposed bus station.

Impacts upon social connectivity

Construction Phase:

- No construction will take place within Te Irirangi Drive.
  - No further severance created. Minimises disruption experienced along Te Irirangi Drive.
  - Little to no change to normal traffic movements along Te Irirangi Dr during construction.
- Loss of carparking
  - Will make it more difficult to access Botany Town Centre, by private vehicle.

- Construction area means people must park further away or walk further (around construction area) to access Botany Town Centre.

Permanent

- Signalised crossing points (intersection with Te Irirangi Drive / Te Koha Road, and Park Way Drive / Te Irirangi Drive) will remain. It is assumed this will be enhanced to provide priority to busses.
- No direct pedestrian cycle linkage from Guys Reserve / Whaka Maumahara, to bus station site. People will have to cross at existing signalised crossing intersection at Te Irirangi Dr / Te Koha Rd.
- Improved connectivity from bus station into Town Centre – significant improvement to public transport access to this site.
- No dedicated cycleway provided, reducing accessibility to Botany Town Centre and surrounding amenities / community facilities by active means.
- Residential areas west of Te Irirgangi Drive close to bus station, enhancing use of PT by these people.

Reason for Score

- Minimal disruption to Te Irirangi Drive during construction and operation, therefore minimal disruption to normal traffic movements within the community.
- No permanent impacts on local businesses – only land used as car parking is required.
- Provision of additional space inside bus station, potential business land use.
- Direct linkage from bus station into Botany Town Centre.
- No impact to Guys Reserve / Whaka Maumahara.
- No cycle lane provided.
- Significant uptake of public carparking space.

Mitigation proposed (if any):

- Advised a parking survey is undertaken to understand utilisation of carparking.
- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Travel plans and survey to manage loss of carparking.

Score without mitigation applied: 2	Score with mitigation applied: 3

OPTION 6: Central platform in AMP site

Comments / Assumptions

- Approx. 50% of the car parking area south of Town Centre Drive (which services Botany Town Centre) will need to be acquired. This leaves 50% remaining for the public to use (either as ParkNRide or to access Botany Town Centre).

Impacts upon Community Facilities / Open Space

Construction Phase

- Eastern side of Te Irirangi Drive (including traffic lanes and adjacent foot path/ carparking) impacted.
- On road works will disrupt accessibility to Town Centre Drive.
    - Reduced accessibility to Botany Town Centre by private vehicle.
    - Reduced accessibility to Guys Reserve / Whaka Maumahara to the west due to construction within Te Irirangi Drive (severance).

Permanent

- Parking acquisition.
    - Reduces access to services within Botany Town Centre by Private Vehicle, however, effect not as significant as Option 5.
- Enhanced PT access to services within Botany Town Centre.
    - Over pass provides direct link from bus station into town centre and improves accessibility to Guys Reserve.
- Cycleway along eastern side of Te Irirangi Drive
    - Enhanced cycle access to Guys Reserve / Whaka Maumahara, and community facilities within Botany Town Centre by active means.

Impacts upon viability / productivity of business land areas

Construction Phase

- No land occupied by existing buildings is impacted (only car parking servicing these businesses).
- Reduction in carparking will impact accessibility to Botany Town Centre
- On road works impacting access via Town Centre Drive, and creating an additional barrier for pedestrians to cross (widening of and improvements to Te Irirangi Drive).
- Distance of construction area from shops on western side of Botany Town Centre will reduce disruption experienced by these adjacent businesses during construction.

Permanent

- No permanent acquisition of land occupied by existing buildings is required (only carparking servicing Botany Town Centre).
- Enhanced PT access to Town Centre. Direct linkage provided from Bus station into Botany Town Centre.
- Some car parks remain with this option.
- Cycle/walking path provides travel choice to Town Centre.

Impacts upon social connectivity

Construction Phase:

- Additional barrier during construction for those accessing Botany Town Centre.
    - Will need to use the existing signalised intersections and walk around construction site to access Botany Town Centre.
- Two lanes look to remain on Ti Ririangi Dr during construciotn. This reduces the transport disruption experienced along this route.
- Intersection upgrade will temporarily impact access along Te Irirangi Drive and Town Centre Drive.

Permanent

- Walking and cycling lanes provided,
    - Dedicated cycle lanes encourage active travel and provides enhanced access along Te Irirangi Drive, and to Botany Town Centre (travel choice).
- Enhanced pedestrian linkages to all areas of Botany Town Centre. Overpass provides direct linkage into botany Town Centre. Walking lanes provide safe walking areas free from vehicle conflict.
- Western access along Te Irirangi Drive improved (although not a direct link).
    - Improves accessibility from eastern side of Te Irirangi Drive to the western side, including Guys Reserve / Whaka Maumahara.

Reason for Score

- Minimal business disruption – only land used by car parking required.
    - Less carpark uptake compared to Option 5.
    - Less disruption to businesses during construction compared to Option 5 (bigger speperation distance).
- Lanes along Te Irirangi Dr remain during construction – reducing impact to transport environment.
- Pedestrian and cycle lane implemented – offering travel choice and encouraging active travel.
- Direct linkage from Botany town centre to eastern side of Te Irirangi Drive via overpass, enhancing access to this space by alternative transport means.
- No impact to Guys Reserve / Whaka Maumahara.
- Significant PT enhancements with direct pedestrian linkages and minimal disruption to businesses / community facilities / open space.

Mitigation proposed (if any):

- As same with previous options, advised a parking survey is undertaken to understand utilisation of carparking.
- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.

Score without mitigation applied: 2	Score with mitigation applied: 3

OPTION 8: Grade separated station

Comments / Assumptions

- Cycling and pedestrian footpath provided along Te Irirangi Road.
- Grade separation allows people to walk under bus lane where it traverses through Guys Reserve (south of Te Koha Dr).
- No apparent mitigation for elevated structures.

Impacts upon Community Facilities / Open Space

Construction Phase

- Guys Reserve / Whaka Maumahara impacted (however, less than option 9).
  - Enjoyment of this space significantly impacted and dominated by elevated structures.
- Te Irirangi Drive will be significantly impacted by the construction activities.
  - Detours likely required.
  - Access to community facilities located within Botany Town Centre and/or along the alignment will be significantly impacted due to increased travel times.
- Private parking and access to Botany Town Centre from Te Irirangi Drive will be impacted in short medium term.
  - Access by private vehicle and active means impacted.

Permanent

- Area of Guys Reserve / Whaka Maumahara will be permanently impacted.
  - Enjoyment of this area significantly impacted due low amenity environment from the Busway structure.
- Safe crossing overpass provided over Te Irirangi Drive.
  - No conflict between pedestrians and cars/busses.
  - Provides direct and safe linkage to Guys Reserve / Whaka Maumahara, enhancing accessibility to this open space.
- Bus station location will enhance PT access to community facilities within the Botany Town Centre.
  - Overpass provides direct linkage from bus station into the town centre.

Impacts upon viability / productivity of business land areas

Construction Phase

- No land occupied by buildings is required.
- Significant disruption to Te Irirangi Drive due to construction footprint.
- Carparking servicing Botany Town centre acquired.
  - Significant disruption to accessibility of town centre experienced during construction phase.
- Potential disruption to businesses located on east side of Town Centre building due noise/ vibration/ construction activities.

Permanent

- No permanent acquisition of land occupied by commercial buildings is required (only loss of carparking).
- Fast direct PT link to Botany Town Centre (signalised intersection at Te Irirangi / Te Koha / Town Centre Dr is avoided). Overpass provides link to botany town Centre.
- Cycle lane provides travel choice to businesses in the area.

Impacts upon social connectivity

Construction Phase:

- Significant disruption to normal traffic movements along Te Irirangi Drive.

- Significant severance issue created during construction due to construction works, involving street widening, within Te Irirangi Dr corridor.
- Additional severance created south of Te Koha Road due to new bus way.
- Significant disruption to residential addresses close to western side of Te Irirangi Drive.
- Movement along Te Irirangi Drive significantly impacted due to construction footprint.

Permanent

- Significant disruption to normal traffic movements along Te Irirangi Drive. Traffic layout significantly altered to provide priority to busses.
- Severance issue reduced along Te Irirangi Drive due to overpass.
- Additional severance issue created south of Te Koha Rd due to new bus way.
    - However, it is assumed pedestrians are able to pass beneath the bus way without conflict.
- Enhanced PT access to Botany Town Centre.
    - busway alignment avoids conflict by avoiding the Te Irirangi / Te Koha / Town Centre Dr intersection.
- Cycleway enhances active travel means and provides travel choice along Te Irirangi Drive.

Reason for Score

- Permanent impacts;
- Significant and permanent disruption to Guys Reserve / Whaka Maumahara. Significantly reduces the amenity value and useability of this space, as it is locked in two sides by the new busway.
- Significant disruption to Te Irirangi Road – this will be utilised by busway. Will significantly disrupt the communities normal travel movements.
- Significant widening of Te Irirangi Road – increases severance issue. Overpasses are provided, buy linkage isn't direct.
- Significant disruption to amenity of residential area (located west of Te Irirangi Road and south of Guys Reserve / Whaka Maumahara).

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.

Score without mitigation applied: -1	Score with mitigation applied: 0

OPTION 9: Guy's Reserve

Comments / Assumptions

- Overpass is able to be used by cyclists.
- VTNZ business will need to be acquired / relocated.
- No impacts to efficiency of stormwater pond.
- Construction will not impact Te Koha Dr.

Impacts upon Community Facilities / Open Space

Construction Phase

- Significant impacts to Guys Reserve / Whaka Maumahara. Use of this space significantly impacted during construction.
- Vegetation removal.
- Construction not required inside roading corridor.
    - Minimal impact to Te Irirangi Drive.
    - Access to community facilities along this alignment retained during construction.

Permanent

- Permanent acquisition of over half of the Guys Reserve open space area required.
    - Significant and permanent impacts to usability of this space.
    - Enjoyment of space and vegetated areas reduced.

Impacts upon viability / productivity of business land areas

Construction Phase

- VTNZ business acquired (or would be significantly disrupted).
- Businesses north of Te Koha Rd disrupted by construction activities (noted these businesses do not afford a high level of amenity to operate).
- Assumed some construction disruption would be experienced along Te Irirangi Drive/Te Koha Dr, making accessibility to businesses located along this route more difficult.

Permanent

- Permanent acquisition of VTNZ site required.
- Bus station provides overpass directing PT users to businesses north of Te Koha Road.
- Bus station provides overpass directing PT users to existing signalised intersection / safe crossing connecting to the Botany Town Centre (East of Te Irirangi Dr).
- Generally less business disruption compared to other options.

Impacts upon social connectivity

Construction Phase:

- Disruption to peoples normal movement going north.
- Additional severance created for Te Koha Road
    - construction area will also need to be crossed in addition to Te Koha Road.
- Similar to west of Te Irirangi Drive. Additional severance issues created.
- Residential area south of Guys Reserve / Whaka Maumahara locked in by busway construction. Significant reduction in amenity and wellbeing. Loss of access path.

Permanent

- New intersection on Te Irirangi Drive.
    - provides a new safe crossing

- however, also provides an additional conflict point for busses / cyclists / pedestrians and vehicles.

- Severance issue south of Te Koha Road,
  - however, overpasses provides a safe crossing option for pedestrians. More difficult for pedestrian wanting to head south along Te Irirangi Dr.
- Residential are permanently 'lock in' by busway, which occupies three sides of the Guys Reserve / open space area.

Reason for Score

- Significant and permanent disruption to Guys Reserve / Whaka Maumahara.
- Permanent loss of amenity for residential areas south of Guys Reserve / Whaka Maumahara.
- Permanent acquisition / disruption to VTNZ site.
- Minimal disruption to transport environment along Te Irirangi Road.

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Additional landscaping to offset vegetation loss.

Score without mitigation applied: -2	Score with mitigation applied: 0

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: John Daly	Area of assessment: Social Impact
Link Road Option 1: Ti Rakau Drive	

Comments / Assumptions

Impacts upon Community Facilities / Open Space

Construction Phase

- Impacts to Guys Reserve / Whaka Maumahara avoided.
- Significant disruption along Te Irirangi Drive and Ti Rakau Drive.
    - Impacts accessibility to community facilities located along this route (notably those located within Botany Town Centre).

Permanent

- Impacts to Guys Reserve avoided.
- Transport choice provided (PT, Cycle, Walking).
    - Enhancing accessibility to community facilities along the route (notably those located within Botany Town Centre).

Impacts upon viability / productivity of business land areas

Construction Phase

- Significant disruption along Te Irirangi Drive and Ti Rakau Drive.
    - Impacts to businesses along this route (reduced accessibility, loss of customers / revenue, reduced amenity). Level of disruption is largely dependent on the staging of the works.
- No land occupied by commercial buildings looks to be impacted by road widening.
- Car parking areas used by Paradise ice skating, and east of Countdown / Z Station potentially impacted.

Permanent

- Connected walking cycle path along Te Irirangi Drive and Ti Rakau Drive providing travel choice to businesses.
- Paradise ice-skating - some parking looks to be acquired, impacting customer parking for this business.
- Car parking used on western side of Te Irirangi Road looks to be impacted (including parking / access lane outside Z petrol station, parking east of countdown and parking north of countdown).

Impacts upon social connectivity

Construction Phase:

- Significant widening of Te Irirangi Road and Ti Rakau Drive.
    - Significant severance issue created during construction.
    - Significant change to normal traffic movements along Ti Rakau / Te Irirangi Drive, impacting many people in the surrounding area.
- Construction disruption for residential area north of Ti Rakau.

Permanent

- Significant improvements to travel choice (walking/ cycling/ PT).
- Plans do not indicate additional signalised crossing points along widened roads – assumed existing crossing points will remain as the only safe ways to cross.
    - Creates significant severance issues between west and east side of Te Irirangi Road

        - Vehicles exiting Botany Town Centre (east side of Te Irirangi Drive) have to turn left and travel south.
    - Residential areas north of Ti Rakau Drive have to use existing signalised crossing at Te Koha / Ti Rakau intersection. This is considered as an unsafe / inefficient crossing area.
    - 7+ residential properties look to be affected by widened Ti Rakau Drive.
- Ti Rakau / Te Irirangi Intersection upgraded
    - Enhanced safe crossing option.

Reason for Score

- Significant construction disruption along Te Irirangi Drive and Ti Raku Drive. Significant impacts to normal traffic movements for surrounding community (temporary only).
- Severance issues relating to Te Irirangi Dr and Ti Rakau Dr, with no additional safe crossing points provided.
- Significant construction disruption to businesses, however, minimal permanent disruption to businesses.
    - Slight impact to parking areas (Countdown, Z Station and Paradise Ice Skating) – otherwise businesses largely unaffected once link road is operational.
- Loss of 7+ residential dwellings (noted these are owned by Auckland Council).
- Significant improvement to travel choice (walking / cycling/ PT).

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Relocation strategy for displaced residents.
- Mitigation to manage and ensure access and deliveries for customers and businesses is retained.

Score without mitigation applied: 1	Score with mitigation applied: 2

Link Road Option 2: Te Koha Road

Comments / Assumptions

- Assumed that cycle and pedestrian lane is provided along Te Koha Drive (guidance indicates this is the case, plans do not).
- Businesses along Te Koha Road will be unaffected (i.e. no property acquisition required).
- Existing on street parking along Te Koha Road will be removed.

Impacts upon Community Facilities / Open Space

Construction Phase

- Impact to small area of Guys Reserve / Whaka Maumahara (south of Te Koha Dr and south of Ti Rakau Dr).
- Minimal disruption to Te Irirangi Drive – access retained to community facilities located within Botany Town Centre.

Permanent

- Minimal disruption to community facilities / open space.
- Enhanced travel choice (PT / Walking / Cycling) along Ti Rakau and Te Koha – closer linkages to community facilities within town centre.

Impacts upon viability / productivity of business land areas

Construction Phase

- On street parking along Te Koha Drive will be removed
  - impacting customer parking for surrounding businesses.
- No commercial buildings will be impacted.
  - However will substantial impacts to accessibility to these businesses during construction along Te Koha Drive.
- No construction disruption along Te Irirangi Drive, meaning access along this route is largely unaffected.

Permanent

- No permanent impacts to businesses – aside from removal of on street car parking along Te Koha Dr.
- Additional intersection provided west of Te Koha St – provides a more efficient route to Botany Town Centre. This may potentially foster customer growth.
- Safe crossing point for residents located north of Ti Rakau Dr due to new intersection. Easier access for these residents to access businesses along Te Koha Drive and Bus station).

Impacts upon social connectivity

Construction Phase:

- Minimal disruption to Te Irirangi Drive, north of Te Koha intersection.
- Widening of Ti Rakau Drive – results in severance between community north of Ti Rakau, and businesses / services amenities to the south.
- 10+ residential units look to be impacted.
- Significant disruption to Te Koha Dr during construction.
  - Assumed Guys Reserve can continue to be used as a through route for pedestrians.

Permanent

- New signalled intersection (Te Koha / Ti Rakau intersection) provides for safe crossing option.
  - Severance issues reduced between residential area north of Ti Rakau and businesses located south.

- Connected cycle lane from east of Te Koha to along Ti Rakau provides travel choice for residents.
    - Connected cycleway means residents north of Ti Rakau can easily access bus station without using a car.
- Dedicated bus lanes and cycles lanes and new signalised intersection provides a safer environment for cyclists / pedestrians and enhanced PT network. Reduces reliance on private vehicles and provides travel choice.

Reason for Score

- Minimal disruption to Te Irirangi Drive, north of Te Koha Dr intersection.
- Significant disruption to businesses along Te Koha Drive during construction.
    - On street parking along Te Koha St removed.
- Improved cycle / pedestrian connection from Ti Rakau to proposed bus station site and Botany Town Centre via Te Koha Dr.
    - Also is a more efficient route for busses as they avoid the Ti Rakau / Te Irirangi intersection.
- New intersection provides safer and more efficient crossing option for pedestrians.
    - Will encourage accessing businesses / Botany town centre via cycling or walking (particularly for residential area north of Ti Rakau).
- 10+ residential units north of Te Rakau Dr impacted (noting these are owned by Auckland Council).
- Minor permanent impact to Guys Reserve.

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.

Note, this option has opportunity for integration with Te Koha Dr if Bus stops located along this route.

Score without mitigation applied: 1	Score with mitigation applied: 2

Link Road Option 3: Guy's Reserve

Comments / Assumptions

- Minimal disruption to existing businesses, particularly those located along Te Koha Dr.
- Guys reserve is used as a through route by pedestrians. Would like more evidence indicating how Guys reserve is used by the public.

Impacts upon Community Facilities / Open Space

Construction Phase

- Impacts Guys reserve.
    - Busway alignment extends from north-eastern section of Guys Reserve, along area south of the Te Koha Businesses, before joining Ti Rakau Dr. Involves uptake of reserve land and removal of native vegetation.
    - Results in impacts to the usability, amenity and enjoyment of this space.
- Minimal construction impacts to Te Koha Drive – through access to Te Irirangi Dr maintained during construction (and access to facilities within Botany Town Centre).

Permanent

- Permanent impacts to amenity and enjoyability of Guys Reserve. Removal of native vegetation required.
- Efficient bus network with no conflict points providing improved PT access to facilities within Botany Town Centre.

Impacts upon viability / productivity of business land areas

Construction Phase

- Minimal disturbance to businesses, as new route created south of existing businesses along Te Koha Dr.
- VTNZ potentially disrupted during construction.
- Cycleway and walkway looks to intersect Picolo Park play entre.

Permanent

- Alignment avoids permanent impacts to businesses – with the exception of the front yard of Picolo Play Centre, which will be occupied by the walking/cycling path.

Impacts upon social connectivity

Construction Phase:

- Minimal disruption to normal traffic movements during construction (particularly compared to other options).
- Minimal disruption to Te Irirangi Road during construction.
    - Minimal impact to surrounding transport environment.
- Widening of Ti Raku required, with new intersection south west of Te Koha Dr.
- Potential for short / medium term construction severance along Ti Raku Dr.

Permanent

- Additional signalised intersection provided along Ti Rakau Drive – results in an additional safe crossing point for pedestrians.
- Walking/cycle lane provided along Ti Rakau – however this does not link with the proposed bus route. Pedestrians / cyclists instead will have to walk along Te Koha St (no dedicated cycle lane provided).
- Removal of area of Guys reserve – this was potentially used as a through route by pedestrians.
- Bus way with no conflict points – efficient PT service towards Botany own Centre.
    - However, no cycle lane / pedestrian walkway provided adjacent to this busway.

- Additional conflict point along Ti Rakau Drive – will impact travel by private vehicle.

Reason for Score

- Efficient PT network with minimal conflict points, however, lacks pedestrian / cycle improvements.
- Acquisition of Guys reserve land required – impacts usability and amenity of this land. Potential removal of through route used by pedestrians.
- Minimal impact to existing businesses during construction.
- Additional signalised crossing point – providing another safe crossing area for pedestrians along Ti Rakau Dr.

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.

Note, this option has an efficient bus route with minimal stops / conflict points. However, there are significant and permanent impacts upon Guys Reserve.

Score without mitigation applied: 0	Score with mitigation applied: 1

OPTION 13: Offline Guy's Reserve

Comments / Assumptions

- Overpass is able to be used by cyclists.
- VTNZ business will not need to be acquired / relocated and can continue operating during construction.
- No impacts to efficiency of stormwater pond.
- Construction will not impact Te Koha Dr.

Impacts upon Community Facilities / Open Space

Construction Phase

- Significant impacts to Guys Reserve / Whaka Maumahara. Use of this space significantly impacted during construction. Walkway completely removed.
- Vegetation removal.
- Construction not required inside roading corridor.
    - Minimal impact to Te Irirangi Drive and Te Koha Drive
    - Access to community facilities along this alignment retained during construction.

Permanent

- Permanent acquisition of over half of the Guys Reserve open space area required.
    - Significant and permanent impacts to usability of this space.
    - Enjoyment of space and vegetated areas reduced.
- Overpass provided across Te Irirangi Drive.
    - Enhanced access to services, businesses and community facilities within Botany Town Centre.

Impacts upon viability / productivity of business land areas

Construction Phase

- VTNZ will be disrupted by proposed busway. Assumed can still operate throughout construction.
- Minimal disruption to Te Koha Rd and businesses north of Te Koha Rd.
- Assumed some construction disruption would be experienced along Te Irirangi Drive/Te Koha Dr, making accessibility to businesses located along this route more difficult.

Permanent

- Bus station provides overpass directing PT users to businesses East of Te Irirangi Drive.
- Generally less business disruption compared to other options.

Impacts upon social connectivity

Construction Phase:

- Disruption to peoples normal movement going north.
- Additional severance created for Te Koha Road
    - construction area will also need to be crossed in addition to Te Koha Road.
- Similar to west of Te Irirangi Drive. Additional severance issues created.
- Residential area south of Guys Reserve / Whaka Maumahara locked in by busway construction. Significant reduction in amenity and wellbeing. Loss of access path.

Permanent

- New intersection on Te Irirangi Drive.
    - provides a new safe crossing
    - however, also provides an additional conflict point for busses / cyclists / pedestrians and vehicles.

- Severance issue south of Te Koha Road,
    - however, overpasses provides a safe crossing option for pedestrians over Te Irirangi Drive.
- Residential are permanently 'lock in' by busway, which occupies three sides of the Guys Reserve / open space area.

Reason for Score

- Significant and permanent disruption to Guys Reserve / Whaka Maumahara.
- Permanent loss of amenity for residential areas south of Guys Reserve / Whaka Maumahara.
- Minimal disruption to transport environment along Te Irirangi Road.
- Safe corssing option over Te Irirangi Drive.

Mitigation proposed (if any):

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Additional landscaping to offset vegetation loss.

Score without mitigation applied: -2	Score with mitigation applied: 0

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Tim Brown	Area of assessment: Objective 1: Provide a multimodal transport corridor that connects Pakuranga and Botany to the wider network and increases choice of transport options
Bus Station Options – All	

<u>Information relied upon</u>

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Accessibility mapping

<u>Assumptions</u>

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Intersection detailing yet to be developed to a level that enables a more detailed evaluation; however the assumption is that left turn slip lanes are removed.

<u>Key Elements</u>

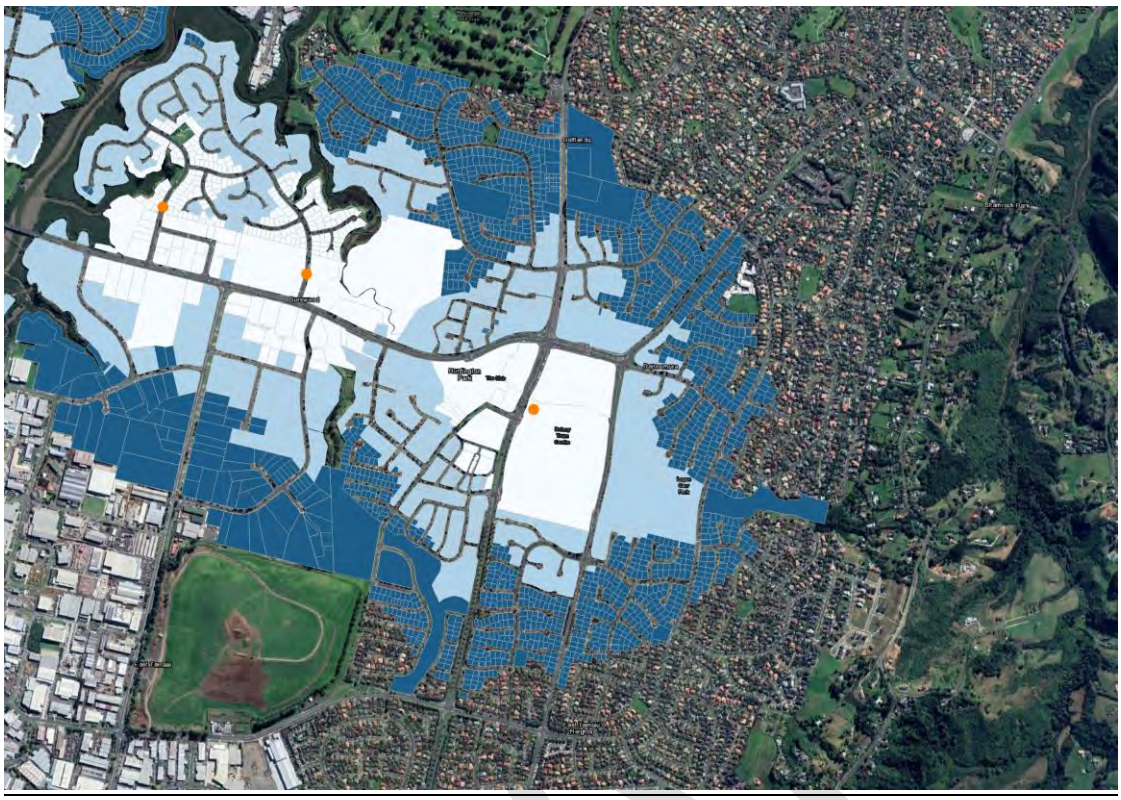
- Option 4: Offline island interchange between Pak'n'Save and Town Centre Drive. Includes new signalised intersection at Pak'n'Save, internal circulation lanes. Option 4 requires realigning Te Irirangi Dr. The station has a design speed of 30km/h and 50 km/h along Te Irirangi Dr until Town Centre Drive.
- Option 5: Offline 'hash brown' interchange south of Town Centre Dr, Includes new signalised intersection at Pak'n'Save, internal circulation lanes with a design speed of 30km/h.
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Option 8: Online interchange along Te Irirangi Dr between Town Centre Drive and Haven Dr. Eastern Busway platform would be elevated and perpendicular to Te Irirangi Dr, platform for A2B would be offline and local bus service platform would be in the middle of Te Irirangi Dr. Access to platforms would be grade separated with a design speed of 30km/h. Interchange would connect to the existing Town Centre Drive and Haven Dr intersections.
- Option 9: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/hDesign speed of 50kph and 30kph approaching the stations (Option 13 is a variant – slightly different form of interchange)
- Layouts as per the plans provided

<u>Matters for consideration:</u>

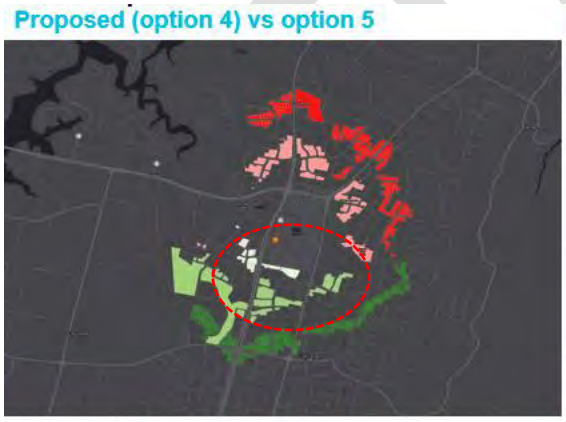
<u>· Spatial coverage (access) – residents (PT and cycle) or resident capacity</u>

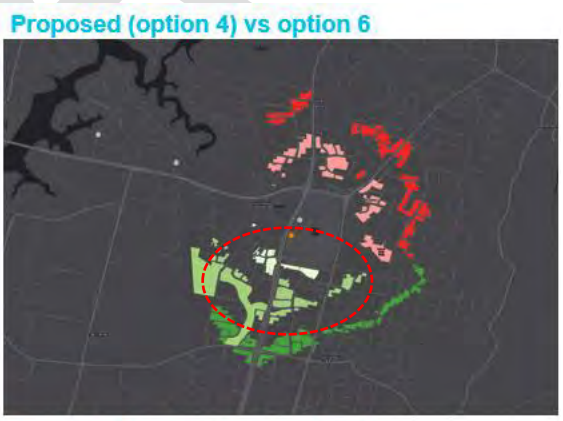
· Spatial coverage (egress) – employees (PT and cycle) (or employee/activity density)

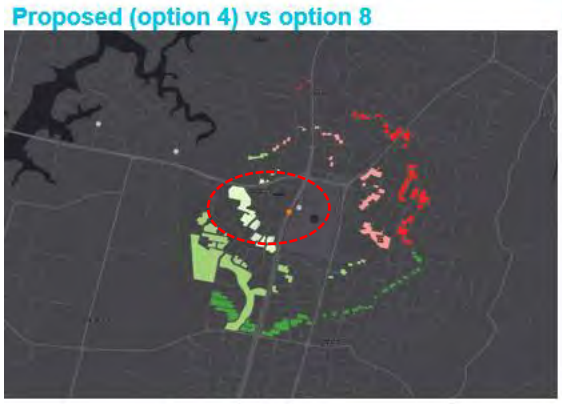
Option 4

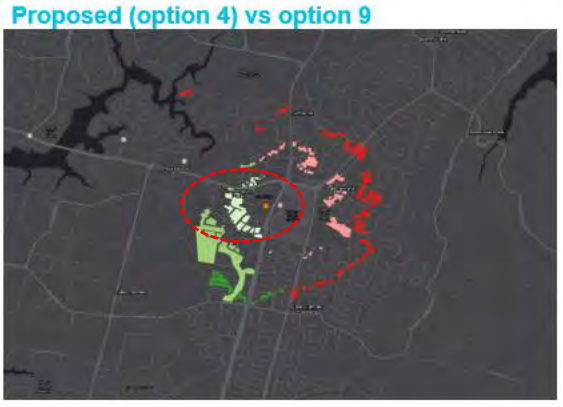


Relative Accessibility for Options 5, 6, 8, 9/13









General comments:

- All options provide a similar 5 minute walking catchment area
- There isn't much to differentiate between the station location options except by proximity to the centre of activity. Option 4 is closest to the centroid of the Metropolitan Area, with Option 5 and 6 being closer to Botany Town Centre – however, The Hub is within a 5 minute walk of any location.
- Options 5 and 6 provide better access to the RTN from the south which is not well served by public transport (notably the future RTN).
- Options 8 and 9 provide better access to the RTN from the residential area (THAB) just to the south-west of the Botany Metropolitan Area.
- Options 8 and 9 compare more favourably to Option 4 in the northern end of the Metropolitan Area; however these areas are served by frequent bus routes, as is Chapel Road.
- Scoring has placed a higher consideration on improving accessibility from Te Irirangi Drive to close the gap in accessibility with the RTNs and proximity to the centre of the Metropolitan Area, noting that all except for the northern end of Huntington Drive is served by public transport which is only 1 or 2 stops away from the Bus Station.

Mitigation proposed (if any):

- Improve pedestrian connections to cul-de-sac type developments to improve permeability.

	Score without mitigation applied	Score with mitigation applied
Option 4	+4	Not scored
Option 5	+5	
Option 6	+5	
Option 8	+4	
Option 9/13	+4	

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Tim Brown	Area of assessment: Objective 5: Provide infrastructure that is safe for everyone
Bus Station Options - All	

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Safe Systems Assessment (Draft)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment

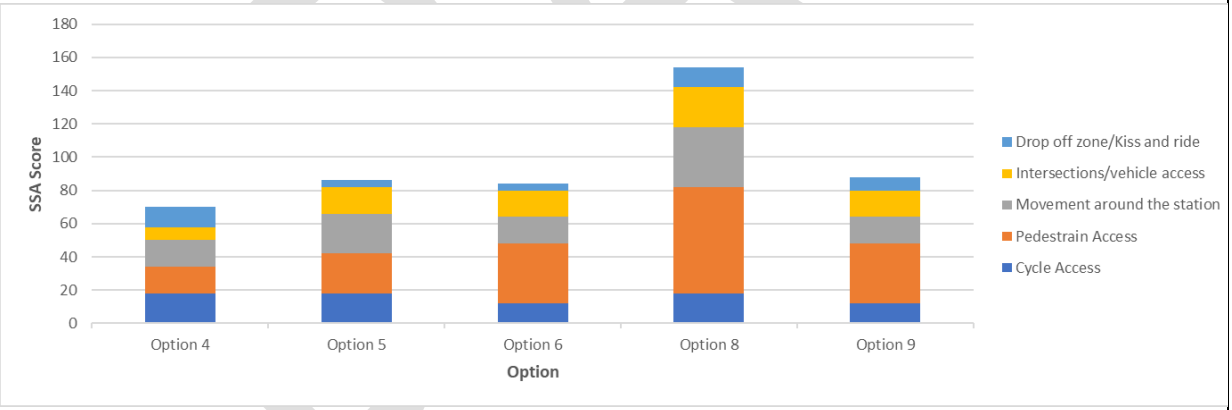
- Intersection detailing yet to be developed to a level that enables a more detailed evaluation; however the assumption is that left turn slip lanes are removed.

Key Elements

- Option 4: Offline island interchange between Pak'n'Save and Town Centre Drive. Includes new signalised intersection at Pak'n'Save, internal circulation lanes. Option 4 requires realigning Te Irirangi Dr. The station has a design speed of 30km/h and 50 km/h along Te Irirangi Dr until Town Centre Drive.
- Option 5: Offline 'hash brown' interchange south of Town Centre Dr, Includes new signalised intersection at Pak'n'Save, internal circulation lanes with a design speed of 30km/h.
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Option 8: Online interchange along Te Irirangi Dr between Town Centre Drive and Haven Dr. Eastern Busway platform would be elevated and perpendicular to Te Irirangi Dr, platform for A2B would be offline and local bus service platform would be in the middle of Te Irirangi Dr. Access to platforms would be grade separated with a design speed of 30km/h. Interchange would connect to the existing Town Centre Drive and Haven Dr intersections.
- Option 9: Offline 'half donut' interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/hDesign speed of 50kph and 30kph approaching the stations
- Layouts as per the plans provided

Matters for consideration:

Safe connections to, and around the interchange centre including general traffic, cyclists and pedestrians (Safe Systems Assessment)



For the shortlist interchange options, the options which provide an offline interchange returned a lower SSA score compared to the online option (Option 8). This is because these options reduced the complexity of the interchanges through providing greater separation between the interchange and Te Irirangi Drive. This resulted in these options providing a slower speed environment and increased space for the circulation of people and vehicles in the interchange.

For the offline options the SSA identified that Options 6 and 9 are likely to be more favourable due to simplified circulation patterns and access requirements. Whilst Option 5 also provides for an offline interchange it returned a higher SSA score due to its increased size which may result in passengers attempting to cross the busway/access to get to and from the various platforms. This option may also have increased CPTED requirements due to the dispersed nature of platforms resulting in lower levels of pedestrian activity.

Mitigation proposed (if any):

- Refer to Safe Systems Assessment (Draft) attached

	Score without mitigation applied	Score with mitigation applied
Option 4	+3	+4
Option 5	+2	+3
Option 6	+3	+4
Option 8	1	+2
Option 9/13	+3	+4

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Tim Brown	Area of assessment: Transport Effects (Permanent)
Bus Station Options – All	

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Initial modelling

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Intersections at the station connection are included as part of this assessment; however the effects of the link have not been.
- All station options allow for grade separation to the station platform(s).

Key Elements

- Option 4: Offline island interchange between Pak'n'Save and Town Centre Drive. Includes new signalised intersection at Pak'n'Save, internal circulation lanes. Option 4 requires realigning Te Irirangi Dr. The station has a design speed of 30km/h and 50 km/h along Te Irirangi Dr until Town Centre Drive.
- Option 5: Offline 'hash brown' interchange south of Town Centre Dr, Includes new signalised intersection at Pak'n'Save, internal circulation lanes with a design speed of 30km/h.
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Option 8: Online interchange along Te Irirangi Dr between Town Centre Drive and Haven Dr. Eastern Busway platform would be elevated and perpendicular to Te Irirangi Dr, platform for A2B would be offline and local bus service platform would be in the middle of Te Irirangi Dr. Access to platforms would be grade separated with a design speed of 30km/h. Interchange would connect to the existing Town Centre Drive and Haven Dr intersections.
- Option 9: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h. (Option 13 is a variant – slightly different form of interchange)
- Layouts as per the plans provided

Matters for consideration:

- Objective 2
- Objective 4
- Objective 5
- Impacts
  - Property access/Access to the road network
  - Loss of parking
  - Loss of connectivity

General comments:

- Assessment against the objectives 2 and 4 has been outlined as covered
- Objective 5 relates to access from the bus station to the wider network (the intersections). Compared to the do-minimum it is anticipated that delay to access the road network or RTN for Options 4, 5 and 6 will either be neutral or slightly worse than the do-minimum because of the extra dedicated phase(s) required at the intersections.
- The plans for Option 5 and 6 do not cater for a connection to Parkway Drive as they are currently presented; however this will be required.
- Options 8, 9 and 13 do not have the same issues associated with the delays.
- Impacts:
  - In all options property access can be maintained albeit with additional delays. Under Option 4 the entrance to Pak 'n' Save would need to be signalised.
  - Options 4, 5, 6 and 8 will have a significant loss of parking on-site, with Option 4 potentially affecting deliveries (unless this function is no longer required)

Mitigation proposed (if any):

- Not considered

	Objective 1: Catchment	Objective 4: Access to network	Objective 5: Safety	Loss of parking/local circulation	Loss of property access	Overall score
Option 4	+4	0	+4	-2	0	+6 (+2)
Option 5	+4	0	+3	-3	0	+4 (+1)
Option 6	+5	0	+4	-2	0	+7 (+3)
Option 8	+5	+1	+2	-2	0	+6 (+2)
Option 9/13	+4	+2	+4	0	0	+10 (+4)

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Tim Brown	Area of assessment: Transport Effects (Temporary)
Bus Station Options - All	

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Intersections at the station connection are included as part of this assessment; however the effects of the link have not been.

Key Elements

- Option 4: Offline island interchange between Pak'n'Save and Town Centre Drive. Includes new signalised intersection at Pak'n'Save, internal circulation lanes. Option 4 requires realigning Te Irirangi Dr. The station has a design speed of 30km/h and 50 km/h along Te Irirangi Dr until Town Centre Drive.
- Option 5: Offline 'hash brown' interchange south of Town Centre Dr, Includes new signalised intersection at Pak'n'Save, internal circulation lanes with a design speed of 30km/h.
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Option 8: Online interchange along Te Irirangi Dr between Town Centre Drive and Haven Dr. Eastern Busway platform would be elevated and perpendicular to Te Irirangi Dr, platform for A2B would be offline and local bus service platform would be in the middle of Te Irirangi Dr. Access to platforms would be grade separated with a design speed of 30km/h. Interchange would connect to the existing Town Centre Drive and Haven Dr intersections.
- Option 9: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/hDesign speed of 50kph and 30kph approaching the stations (Option 13 is a variant – slightly different form of interchange)
- Layouts as per the plans provided

Matters for consideration:

Temporary intersection layouts, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc.

General comments:

- Option 4 in requiring works on Te Irirangi Drive is likely to have a significant effect during construction; however there are alternative routes (Chapel Road). Option 4 as shown is dependent on whether a section of central running busway is required between the northern exit/entry and Te Koha Road (refer to link assessment)
- Options 5 and 6 are off-line but have a significant impact on the parking available in Botany Town Centre to facilitate construction. Access will be required from Te Irirangi Drive, which in itself is likely to have a localised impact.
- Option 8 requires major construction on Te Irirangi Drive and in the carpark area. Potential for significant adverse effects (more than Option 4)
- Options 9 (and 13) are off-line but have a minor impact regarding construction site access.

Mitigation proposed (if any):

- A demand management and communication strategy that includes measures to manage the private vehicle demand during peak periods, by encouraging people to re-route, re-mode or re-time their trips to offset the potential effects of the construction activity. Measures could include:
    - Increased public transport services (including ferries from Half Moon Bay and bus services to either Panmure, Otahuhu train station or Half Moon bay ferry)
    - Either retention of or increasing public transport priority measures along Ti Rakau Drive and Pakuranga Road (for example peak time Transit Lanes)
    - Ride-sharing and/or public transport incentives
    - Provide Park 'n' Ride opportunities
    - Traveller information systems and real time monitoring and display of traveller information (either on-road or through Auckland Transport channels)

	Score without mitigation applied	Score with mitigation applied
Option 4	-3	-2
Option 5	-2	-2
Option 6	-2	-2
Option 8	-4	-3
Option 9/13	-1	-1

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Tim Brown	Area of assessment: Objective 4: Provide transport infrastructure that improves linkages, journey time and reliability of the public transport network
Link Road Option 1: Ti Rakau Drive/Te Irirangi Drive	

<u>Information relied upon</u>

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (AIMSUN and SIDRA)

<u>Assumptions</u>

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option can connect to all bus station options except Option 8
- Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.

<u>Key Elements</u>

- Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Reduced traffic lanes on Ti Rakau Drive in the westbound direction (3 lanes down to 2)
- Access to Bus station option 4 at two entry points, one near the existing entrance to the Pak 'n' Save carpark, and the other via a new (5th arm) at the Te Irirangi/Te Koha intersection
- Access to Bus station options 5 and 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive
- Access to Option 9 via new T-intersection between Te Koha Road and Te Irirangi Drive.

<u>Matters for consideration:</u>

<u>Bus Travel Time and Reliability (+2)</u>

- Busway passes through 3 intersections (up to a 4th if the existing access to Pak 'n' Save is retained and signalised). At the major intersections, they would have a separate phase if all services are using the busway.
- Good benefits in the morning peak period (westbound) (up to 2 mins), with marginal/negligible benefits in the other peak periods and directions – primarily due to the intersections at Te Irirangi Drive/Ti Rakau and Te Irirangi Drive/Te Koha where shorter dedicated busway phase(s) replace buses running with longer mixed traffic phases.

<u>Travel times and reliability for cars and trucks (-1)</u>

- In the peak periods, it is likely that there is an additional 1-1.5 mins delay as a result of the intersection operation in the peak direction, and up to 0.5 minute delay in the opposite direction.

- Reduction of westbound traffic lanes impacts on the general traffic and freight performance.

Mitigation proposed (if any):

- Local bus services to/from Howick and Half Moon Bay do not use the busway between Te Irirangi Drive/Ti Rakau and the bus station. This will improve the reliability of the Eastern Busway services and reduce the impact on other users by keeping the existing traffic signal phasing (4-phase).
- Retention of existing 3 lanes westbound.

Score without mitigation applied:	Score with mitigation applied:
+1	+3

Link Road Option 2: Te Koha Road

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option only connects to the bus station options on the eastern side of Te Irirangi Drive (Options 4, 5, and 6)
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections
- Journey time and reliability only considered for public roads.

Key Elements

- Central running busway between the end of the EB3 off-line alignment Te Koha Road then central running along Te Koha Road to the intersection of Te Irirangi Drive/Te Koha Road.
- Design speed of 50kph and 30kph approaching the stations
- Access to Bus station option 4 at two entry points, one near the existing entrance to the Pak 'n' Save carpark, and the other via a new (5th arm) at the Te Irirangi/Te Koha intersection
- Access to Bus station options 5 and 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive

Matters for consideration:

Bus Travel Time and Reliability (0)

- Busway passes through 5 intersections. 2 minor intersections on Te Koha Road would be 5 phase, as there is no provision for right turning lanes to cross the busway.
- Te Irirangi Drive/Te Koha Road likely to be a 6 phase intersection (4 traffic phases and 2 bus phases)
- Likely outcome is journey times and reliability for public transport is similar to the do-minimum

Travel times and reliability for cars and trucks (-1)

- With the exception of the intersection of Te Irirangi/Te Koha Road the impact of the busway through Te Koha Road is likely to be more influential on carpark circulation than on the journey times and reliability on the public roads (e.g. Te Irirangi Drive and Ti Rakau Drive)

Mitigation:

- Bus priority/paired traffic signals to "guarantee" reliability through Te Koha Road.

Score without mitigation applied:	Score with mitigation applied:
-1	+1

Link Road Option 3: Guy's Reserve

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option only connects to the bus station options on the eastern side of Te Irirangi Drive (Options 4, 5, and 6)
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive .
- Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Key Elements

- Central running busway between the end of the EB3 off-line alignment Te Koha Road then central running along Te Koha Road to the intersection of Te Irirangi Drive/Te Koha Road.
- Design speed of 50kph and 30kph approaching the stations
- Access to Bus station option 4 at two entry points, one near the existing entrance to the Pak 'n' Save carpark, and the other via a new (5th arm) at the Te Irirangi/Te Koha intersection
- Access to Bus station options 5 and 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive
- Direct access to Option 8, 9 and 13.

Matters for consideration:

Bus Travel Time and Reliability (+4)

- The busway would effectively be unimpeded between Ti Rakau Drive (crossing over to the EB3 off-line alignment) and the station entry.
- Travel time (to Options 8, 19, 13) expected to be in the order of 2 minutes (all peaks, both directions) which is between 1.5 and 3 minutes average benefit. Significantly less variability.

Travel times and reliability for cars and trucks (-1)

With the exception of the intersection of Te Irirangi/Te Koha Road the impact of the busway through Te Koha Road is likely to be more influential on carpark circulation than on the journey times and reliability on the public roads (e.g. Te Irirangi Drive and Ti Rakau Drive)

Mitigation:

- Pair with Option 8, 9 or 13.

Score without mitigation applied:	Score with mitigation applied:
+3	+4

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Tim Brown	Area of assessment: Objective 5: Provide transport infrastructure that is safe for everyone
Link Road Option: All options	

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Safe Systems Assessment (Draft)

Assumptions

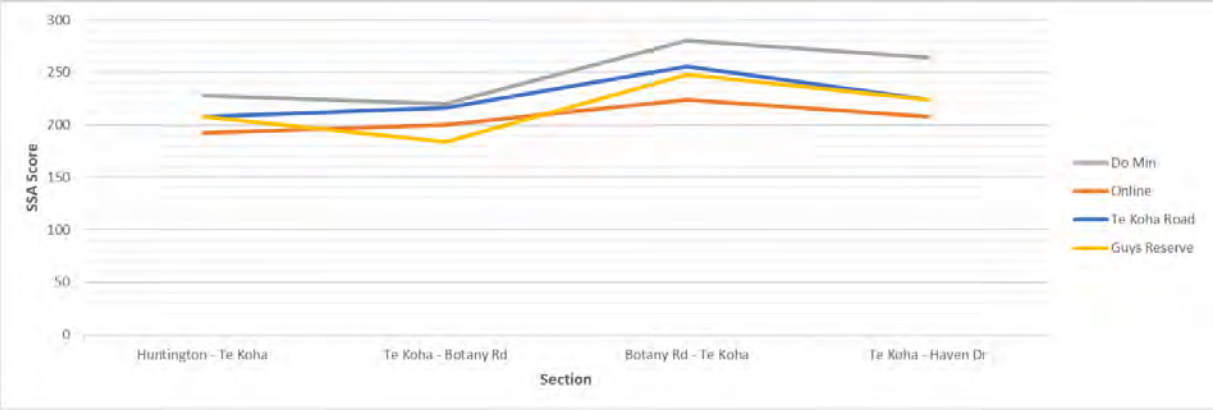
- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Intersection detailing yet to be developed to a level that enables a more detailed evaluation; however the assumption is that left turn slip lanes are removed.

Key Elements

- Option 1: Online busway and separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h,
- Option 2: Online busway along Te Koha Rd, separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h,
- Option 3: Offline busway through Guys Reserve, separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Layouts as per the plans provided

Matters for consideration:

Safe connections to, and around the interchange centre including general traffic, cyclists and pedestrians (Safe Systems Assessment)



For the link busway all options provide increased safety improvements compared to the do minimum. Whilst all shortlist options provided a reduction in the posted speed limit along Ti Rakau Dr and Te Irirangi Dr, the main difference between the options relates to the complexity of intersections. This is particularly relevant for the Te Koha Rd and Guys Reserve options.

Whilst there is additional complexity and conflict at the Te Irirangi Drive/Ti Rakau Drive intersection with the on-line option, it is the only option where the intersection layout is modified to improve vulnerable user exposure. The on-line option is also the only one that moves in part to creating a lower speed environment (outside of speed limit reductions), although it is assumed that walking and cycling would be provided in any of the options. It is for this reason that the SSA score is higher.

Within the first section of the busway (Huntington Dr – Te Koha Rd), both the Te Koha Rd and Guys Reserve options return a SSA score higher than the online option due to increased movements and conflicts at the intersections, and there has not been anything proposed to improve safety at the end of Ti Rakau Drive and the northern part of Te Irirangi Drive.

For the remainder of the sections the Te Koha Road option returned a higher SSA score due to the constrained nature of this option and increased side friction as all modes are concentrated in a narrow corridor. The nature of surrounding land uses (commercial centre) also results in increased pedestrian activity and subsequent increased pedestrian risk as the busway would impact on existing pedestrian desire lines within the centre.

The result of the SSA score for the remainder of the sections relates to how the busway will connect with Te Irirangi Dr, intersection design the ability to create a safe and predictable environment for all road users.

Although an initial SSA assessment has been undertaken, a more detailed safety assessment will need to be completed once the preferred options for both the busway link and interchange are identified.

Mitigation proposed (if any):

- Option 1: Signalised crossing near Pak 'n' Save.
- Option 1: Low raised tables at the major intersection(s) for general traffic and freight
- Option 2 and 3: As per Option 1 to manage the speed environment to provide a safer outcome, and address existing deficiencies at Te Irirangi Drive.
- Option 2: Reduce running speed to 30kph due to concentration of activity
- Option 2: Pedestrian connectivity and priority
- Option 3: Reduce complexity of Te Irirangi/Te Koha intersection
- Option 3: Cross-over to EB3 commercial alignment rather than staggered T.

	Draft Score without mitigation applied:	Draft Score with mitigation applied:
Link Road Option 1: Ti Rakau/Te Irirangi Drive	+1	+3
Link Road Option 2: Te Koha Road	-1	+1
Link Road Option 3: Guy's Reserve	0	+3

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Tim Brown	Area of assessment: Transport Effects (Permanent)
Bus Station Options – All	

Information relied upon

- Plans issued as part of the MCA Package

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Initial modelling

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Intersections at the station connection are included as part of this assessment; however the effects of the link have not been.
- All station options allow for grade separation to the station platform(s).

Key Elements

- Option 4: Offline island interchange between Pak'n'Save and Town Centre Drive. Includes new signalised intersection at Pak'n'Save, internal circulation lanes. Option 4 requires realigning Te Irirangi Dr. The station has a design speed of 30km/h and 50 km/h along Te Irirangi Dr until Town Centre Drive.
- Option 5: Offline 'hash brown' interchange south of Town Centre Dr, Includes new signalised intersection at Pak'n'Save, internal circulation lanes with a design speed of 30km/h.
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Option 8: Online interchange along Te Irirangi Dr between Town Centre Drive and Haven Dr. Eastern Busway platform would be elevated and perpendicular to Te Irirangi Dr, platform for A2B would be offline and local bus service platform would be in the middle of Te Irirangi Dr. Access to platforms would be grade separated with a design speed of 30km/h. Interchange would connect to the existing Town Centre Drive and Haven Dr intersections.
- Option 9: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h. (Option 13 is a variant – slightly different form of interchange)
- Layouts as per the plans provided

Matters for consideration:

- Objective 4 – Reliability (multi-modal)
- Objective 5 – Safety (includes impacts of severance)
- Impacts
    - Property access/connectivity
    - Loss of parking/internal circulation

General comments:

- Assessment against the objectives 4 and 5 has been outlined previously
- In terms of journey time reliability, Option 3 is the best performing option for network reliability by providing a faster "conflict-free" link with little interface or impact with the road network. Option 2 is unlikely to be significantly better than the do-minimum.
- Impacts:
    - Option 1 – loss of parking along the corridor. The assumption is that the entrance to Pak 'n' Save would be retained, not removed due to delivery needs (however this is also dependent on the Station option shown
    - Option 2 – some loss of parking. Changes the corridor from being a "Town Centre" to a strategic public transport corridor. Local circulation more difficult due to signalised intersections (which could be 5-6 phases each)

Mitigation proposed (if any):

- Various

	Objective 4: Reliability	Objective 5: Safety	Loss of parking/local circulation and access	Overall score (Avg of objectives – avg of impacts)
Option 1: Ti Rakau/Te Irirangi Drive	+1	+3	-1	+1
Option 2: Te Koha	0	+1	-2	-1
Option 3: Guy's Reserve	+3	+3	0	+3

MCA Scoring Sheet
EB4 Link Assessment

Assessor: Tim Brown	Area of assessment: Transport Effects (Temporary)

Bus Station Options - All

Information relied upon

- Plans issued as part of the MCA Package
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Access to properties will be maintained but with potentially lower level of service than current.

Key Elements

- Option 1: Online busway and separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h,
- Option 2: Online busway along Te Koha Rd, separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h,
- Option 3: Offline busway through Guys Reserve, separated cycleway along Ti Rakau Dr and Te Irirangi Dr. Design speed of 50km/h
- Design speed of 50kph and 30kph approaching the stations
- Layouts as per the plans provided

Matters for consideration:

Temporary intersection layouts, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc.

General comments:

- Option 1 will have significant impacts on approximately 90,000 vehicles per day that use either Ti Rakau Drive or Te Irirangi Drive. Staging of works and temporary intersection arrangements will be complex and likely to have significant impacts. Pedestrian and cyclist connectivity and safety during construction is likely to be difficult to maintain; however this could be an early construction activity (along with services diversion/relocation) to mitigate the impact of the major construction works.
- Option 2 is likely to a significant impact on the parking supply and operation in "The Hub" and on Ti Rakau Drive to facilitate construction of the busway. Night works through here likely.
- Option 3 is likely to have localised impacts around the site access points on Ti Rakau Drive and potentially Te Koha Road.
- In all options there are alternative routes available for people to choose their route (Smales Road, Cascades Road, Chapel Road etc) which may dampen the effects.

Mitigation proposed (if any):

- A demand management and communication strategy that includes measures to manage the private vehicle demand during peak periods, by encouraging people to re-route, re-mode or re-time their trips to offset the potential effects of the construction activity. Measures could include:
    - Increased public transport services (including ferries from Half Moon Bay and bus services to either Panmure, Otahuhu train station or Half Moon bay ferry)
    - Either retention of or increasing public transport priority measures along Ti Rakau Drive and Pakuranga Road (for example peak time Transit Lanes)
    - Ride-sharing and/or public transport incentives
    - Provide Park 'n' Ride opportunities
    - Traveller information systems and real time monitoring and display of traveller information (either on-road or through Auckland Transport channels)
- Construction Management Plan may restrict working times to mitigate impact to business operation for Option 2.

	Score without mitigation applied	Score with mitigation applied
Option 1: Ti Rakau Drive/Te Irirangi Drive	-4	-3
Option 2: Te Koha Road	-3	-2
Option 3: Guy's Reserve	-1	-1

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Chris Bentley	Area of assessment: Urban Design/ Landscape and Visual
OPTION 4: A2B preferred	

Assumptions relied upon to undertake assessment:

Conceptual sketch plans. Bus station is at grade.

I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Reasonably compact.
- The scale of the bus station and juxtaposition, dominates existing buildings yet disconnected by bus circulation.
- Impact on property eg Pack n Save.

03 Accessibility and place shaping;

- Pedestrian access restricted to each end of the platform via over bridges.

05 PT Infrastructure that is safe for everyone;

- Potential CPTED issues with the platform isolated by bus circulation and access via overbridges.

LANDSCAPE

- Loss of trees Te Irirangi Drive and within carparking area.

VISUAL

- No landscape separation between traffic lanes (Te Irirangi Drive) and busway creates a very wide transport corridor. With adverse visual effects on people traveling through and visiting the adjacent retail centres.

Mitigation proposed (if any):

All options are a high level concept which makes it difficult to consider mitigation.

Urban Design Score without mitigation applied: -2	Urban Design Score with mitigation applied: -2
Landscape Score without mitigation applied: -1	Landscape Score with mitigation applied: -1
Visual Score without mitigation applied: -2	Visual Score with mitigation applied: -2

OPTION 5: 'Hash Brown' in AMP site

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- Bus station is at grade.
- I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Large footprint with loss of parking and potentially sterilised land in the centre.
- The scale of the bus station is not compact, takes up too much land.
- Dominates frontage of Botany Town Centre.
- Difficult and expensive to build over the bus station.

03 Accessibility and place shaping;

- Pedestrian access to the platforms restricted via over bridges.
- Set back from Te Irirangi Drive so less opportunity to have a strong presence.
- Visibility / presence from Te Irirangi Drive is limited to lift and stairwell structure.

05 PT Infrastructure that is safe for everyone;

- Passive observation from Botany Town Centre frontage overlooking the platform's.

LANDSCAPE

- Loss of trees Te Irirangi Drive and within carparking area.

VISUAL

- Impact on visitors to Botany Town Centre.

Mitigation proposed (if any):

- All options are a high level concept which makes it difficult to consider mitigation.

Urban Design Score without mitigation applied: -3	Urban Design Score with mitigation applied: -3
Landscape Score without mitigation applied: -1	Landscape Score with mitigation applied: -1
Visual Score without mitigation applied: -1	Visual Score with mitigation applied: -1

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- Bus station is at grade.
- I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Bus station located beside Te Irirangi Drive. Reasonably compact form.
- Loss of parking.
- Opportunity for AMP to build over carpark area with a building frontage / retail addressing the bus station.

03 Accessibility and place shaping;

- Pedestrian access to platform via a central over bridge that aligns with the main entrance to Botany Town Centre.
- Located close to and parallel with Te Irirangi Drive so will have a strong street presence.

05 PT Infrastructure that is safe for everyone;

- Passive observation from Te Irirangi Drive and Botany Town Centre carpark and or future building overlooking the platform's. Access via elevated platforms presents some CPTED issues.

LANDSCAPE

- Loss of trees along Te Irirangi Drive and within carparking area.

VISUAL

- Viewing audiences are the retirement village north of Haven Drive and visitors to Botany Town Centre.

Mitigation proposed (if any):

- Build over carpark integrating retail with the bus station.
- Shift the bus layby areas to the north west of Town Centre Drive making the station more legible.
- Opportunity for tree planting along Ti Irirangi Drive edge.

Urban Design Score without mitigation applied: -2	Urban Design Score with mitigation applied: 1
Landscape Score without mitigation applied: -1	Landscape Score with mitigation applied: -1
Visual Score without mitigation applied: -2	Visual Score with mitigation applied: -1

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- Bus station is elevated.
- I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Bus station spans Botany Town Centre, Te Irirangi Drive and Whaka Maumahara Reserve (The Hub). This is the least compact form.
- Loss of open space.

03 Accessibility and place shaping;

- Pedestrian access restricted to a range of lifts and over bridges.
- Dominates Te Irirangi Drive.

05 PT Infrastructure that is safe for everyone;

- Access via elevated platforms presents some CPTED issues.

LANDSCAPE

- Loss of trees along Te Irirangi Drive and within carparking area.
- Impact on Whaka Maumahara Reserve.

VISUAL

- Viewing audiences are the retirement village/ housing estate off Oneroa Road and Waihi Way with, elevated structures and Loss of trees along BTC edge with Te Irirangi Drive resulting in significant adverse visual effects.

Mitigation proposed (if any):

All options are a high level concept which makes it difficult to consider mitigation.

Urban Design Score without mitigation applied: -4	Urban Design Score with mitigation applied: -4
Landscape Score without mitigation applied: -2	Landscape Score with mitigation applied: -1
Visual Score without mitigation applied: -4	Visual Score with mitigation applied: -4

OPTION 9: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- Bus station is at grade but may need to be elevated to avoid flooding.
- I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Bus station dominates Whaka Maumahara Reserve. Loss of public open space.
- Its curved linear form is not particularly compact.

03 Accessibility and place shaping;

- Pedestrian access restricted to a range of lifts and over bridges. No access to Botany Town Centre other than street level pedestrian crossing.
- Bus station fronts onto Te Irirangi Drive.

05 PT Infrastructure that is safe for everyone;

- Access via elevated platforms presents some CPTED issues.

LANDSCAPE

- Impact on Whaka Maumahara Reserve including loss of trees.

VISUAL

- The main effected viewing audiences are the retirement village / housing estate off Oneroa Road/ Waihi Way. They currently lookout over Whaka Maumahara Reserve. The Bus station will potentially have significant visual effects on the retirement village

Mitigation proposed (if any):

- Planting within Whaka Maumahara Reserve to screen the bus station from the retirement village. Very hard to screen and remove its presence given its scale and proximity to the retirement village.
- Redevelopment of Guys Reserve to improve it visual amenity and incorporate it with the bus station.

Urban Design Score without mitigation applied: -4	Urban Design Score with mitigation applied: -4
Landscape Score without mitigation applied: -4	Landscape Score with mitigation applied: -3
Visual Score without mitigation applied: -4	Visual Score with mitigation applied: -3

OPTION 13: Offline Guy's Reserve

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- Bus station is at grade but may need to be elevated to avoid flooding.
- I have assumed all options provide improved PT. I have not considered this in my assessment. I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

02 Integrates with existing landuses and supports a compact urban form;

- Bus station dominates Whaka Maumahara Reserve.
- Loss of public open space.
- Limits access from Whaka Maumahara Reserve to the HUB retail centre.
- It is more compact than Option 9 but is not particularly compact.

03 Accessibility and place shaping;

- Pedestrian access restricted to a range of lifts and over bridges.
- Bus station fronts onto Te Irirangi Drive.

05 PT Infrastructure that is safe for everyone;

- Access via elevated platforms presents some CPTED issues.

LANDSCAPE

- Impact on Whaka Maumahara Reserve including the stormwater pond/ wetland.

VISUAL

- The main effected viewing audiences are the retirement village/ housing estate off Waihi Way. They currently lookout over Whaka Maumahara Reserve. The Bus station will potentially have significant visual effects on the retirement village.

Mitigation proposed (if any):

- Planting within Whaka Maumahara Reserve to screen the bus station from the retirement village.
- Redevelopment of Whaka Maumahara Reserve to improve it visual amenity and incorporate it with the bus station.

Urban Design Score without mitigation applied: -4	Urban Design Score with mitigation applied: -3
Landscape Score without mitigation applied: -4	Landscape Score with mitigation applied: -3
Visual Score without mitigation applied: -4	Visual Score with mitigation applied: -3

MCA Scoring Sheet EB4 Link Road Assessment	
Assessor: Chris Bentley	Area of assessment: Urban Design/ Landscape / Visual
Link Road Option 1: Ti Rakau Drive	

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

Built Environment, activities and uses;

- Utilises Ti Rakau Drive and Te Irirangi Drive.
- Provides good access to existing retail.
- Provides convenient active mode connections, ie extension of EB1-3 cycleway and footpaths to the end of Ti Rakau Drive and down Te Irirangi Drive to connect with the retail centres and bus station options.

LANDSCAPE

- May result in loss of street trees but they can be potentially be replaced.

VISUAL

- Potential visual amenity impact on housing to north of Ti Rakau Drive.
- The road corridor becomes very wide resulting in adverse visual effects for road users.

Mitigation proposed (if any):

- All options are a high level concept which makes it difficult to consider mitigation.
- Highlight the busway eg with colour, poles and banners etc to visually break the carriageway into sections (a finer grain) thereby reducing the apparent width.

Urban Design Score without mitigation applied: -1	Urban Design Score with mitigation applied: 1
Landscape Score without mitigation applied: -2	Landscape Score with mitigation applied: -2
Visual Score without mitigation applied: -3	Visual Score with mitigation applied: -2

Link Road Option 2: Te Koha Road

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:`

URBAN DESIGN

Built Environment, activities and uses;

- The road corridor becomes very wide.
- The busway extends through the centre of The Hub limiting pedestrian access and connectivity.

LANDSCAPE

- Utilises Te Koha Road impacting on footpaths widths and streetscape.

VISUAL

- Potential visual impact on housing to north of Ti Rakau Drive.
- The road corridor becomes very wide resulting in adverse visual effects for road users.

Mitigation proposed (if any):

- All options are a high level concept which makes it difficult to consider mitigation.

Urban Design Score without mitigation applied: -3	Urban Design Score with mitigation applied: -3
Landscape Score without mitigation applied: -2	Landscape Score with mitigation applied: -1
Visual Score without mitigation applied: -2	Visual Score with mitigation applied: -2

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Conceptual sketch plans
- I have focussed on the relevant objectives and matters for consideration outlined in the MCA Criteria and Guidance Notes.

Key matters of consideration:

URBAN DESIGN

Built Environment, activities and uses;

- Impact on open space, Guys Reserve.
- Potentially limits pedestrian connectivity between Guys Reserve and The Hub retail centre.

LANDSCAPE

- Amenity effects on Guys reserve.
- Potential loss of vegetation.

VISUAL

- Potential visual effects on residential dwellings west of Guys Reserve.

Mitigation proposed (if any):

- All options are a high level concept which makes it difficult to consider mitigation.

Urban Design Score without mitigation applied: -4	Urban Design Score with mitigation applied: -4
Landscape Score without mitigation applied: -3	Landscape Score with mitigation applied: -2
Visual Score without mitigation applied: -3	Visual Score with mitigation applied: -2

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Bus Station Assessment	
Assessor: Paul May	Area of assessment: Stormwater / Flooding
OPTION 4: A2B preferred	
Assumptions relied upon to undertake assessment: • Preliminary flood modelling results for existing situation (pre-development scenario with Maximum probable development land use) predicts up to 0.5 m^3/s during 100-year average return interval (ARI) event within the overland flow path through the proposed site. The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore expected the overland flow path is active for events greater than 2-year ARI. • Station is at grade (existing surface levels). • The site of interest crosses a large culvert not shown on AC GIS. However, AC GIS does show the upstream section under the building which 1600 mm and the downstream section under Te Irirangi Drive which is 2100 mm). Auckland Council normally requires the diversion of any asset located where a building is proposed to be constructed (preferred) or they require any structure to bridge over the pipe to avoid any additional load on the pipe. • Score reflects impacts on the bus station as well as surround property/buildings etc. • Scored on the basis the drainage design addresses rainfall on the bus station only (i.e. does not provide solution for overland flow paths which are covered by proposed mitigation. **Key matters of consideration:** • Northern part of Bus Station sits within overland flow path. • Northern entrance of grade separated pedestrian access to station is within an overland flow path. • Southern entrance of grade separated pedestrian access to station is not within an overland flow path or an area of flooding. • Station (southern end) crosses a large culvert. • Geometric design of Busway within Te Irirangi Drive has potential to impact overland flow paths. • It should be possible to avoid impacts on the building (i.e. Pak'n'Save) via appropriate geometric and if require additional mitigation. **Mitigation proposed (if any):** • Locally divert overland flow path (to Te Irirangi Drive) at the northern end of station through earthworks and geometric design. Alternatively, pipe (approximately between 750 to 1050 mm) overland flow for 178 m to existing 2100 mm culvert (if it has spare capacity) or 290 m to Whake Maumahara (pond).	
Score without mitigation applied: -1	Score with mitigation applied: 0
OPTION 5: 'Hash Brown' in AMP site	
Assumptions relied upon to undertake assessment: • Preliminary flood modelling results for existing situation (pre-development scenario) predicts flows of up to 1.2 m^3/s and 3.9 m^3/s during 100-year average return interval (ARI) event for the northern (through the car park) and southern (through the Park Way Drive near Te Irirangi Drive) overland flow paths respectively. The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore expected the overland flow path is active for events greater than 2-year ARI.	

- An 1800 mm culvert crosses the proposed site. Auckland Council normally requires the diversion of any asset located where a building is proposed to be constructed (preferred) or they require any structure to bridge over the pipe to avoid any additional load on the pipe.
- Station is lowered to be at grade with Te Irirangi Drive.
- Score reflects impacts on the bus station as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only (i.e. does not provide solution for overland flow paths which are covered by proposed mitigation.

Key matters of consideration:

- Northern part of Bus Station will be inundated by a 1.2 m^3/s overland flow path during a 100-year event and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event).
- The southern bus access crosses the southern (3.9 m^3/s) overland flow path and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event). The overland flow then flows along the eastern carriageway northwards to Whake Maumahara (pond) and therefore has the potential to enter the adjacent bus station.
- Western entrance of grade separated pedestrian access has potential to be inundated by the southern overland flow path (3.9 m^3/s).
- Eastern entrance of grade separated pedestrian access has potential to be inundated by the northern overland flow path (1.2 m^3/s).
- Station (southern end) crosses a large culvert. 1800 mm culvert will need to be diverted around the bus station which may result in the need for a large culvert size due to increase head losses. The new diversion pipe (between 250 m and 310 m) will start by the building and end at the manhole on the eastern side of Te Irirangi (if same pipe size is sufficient) or at Whake Maumahara (pond) if large pipe size required.
- Geometric design of Busway within Te Irirangi Drive has potential to impact overland flow paths.
- It could be very complex to avoid impacts on the Botney Town Centre building (i.e. Pak'n'Save) or on the proposed bus station. Geometric design is unlikely to be sufficient avoid the impacts.

Mitigation proposed (if any):

- Mitigation is likely to be complex and/or expensive and could indicatively involve:
    - 330 m of 1200-1500 mm pipe with large inlet capacity within carpark on the eastern side of Town Centre Drive and outlet into Whake Maumahara (pond).
    - 350 to 500 m of a single or twin barrelled 2100 m culvert with large manholes and large inlet structures and outlet to Whake Maumahara (pond).
    - Earthworks and geometric design.
    - Flood walls.
    - Grated interception drains.
    - Modification to carpark to the east of Town Centre Drive and around buildings.

Score without mitigation applied: -5	Score with mitigation applied: -3

OPTION 6: Central platform in AMP site

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts flows of up to 1.2 m^3/s and 3.9 m^3/s during 100-year average return interval (ARI) event for the northern (through the car park) and southern (through the Park Way Drive near Te Irirangi Drive) overland flow paths respectively. The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore expected the overland flow path is active for events greater than 2-year ARI.
- An 1800 mm culvert crosses the proposed site. Auckland Council normally requires the diversion of any asset located where a building is proposed to be constructed (preferred) or they require any structure to bridge over the pipe to avoid any additional load on the pipe.
- Station is lowered to be at grade with Te Irirangi Drive.
- Score reflects impacts on the bus station as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only (i.e. does not provide solution for overland flow paths which are covered by proposed mitigation.

Key matters of consideration:

- Northern part of Bus Station will be inundated by a 1.2 m^3/s overland flow path during a 100-year event and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event).
- The southern bus access crosses the southern (3.9 m^3/s) overland flow path and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event). The overland flow then flows along the eastern carriageway northwards to Whake Maumahara (pond) and therefore has the potential to enter the adjacent bus station. Works in Te Irirangi Drive have the potential to impact both overland flow paths (1.2 m^3/s and 3.9 m^3/s).
- Western entrance of grade separated pedestrian access is within the overland flow path (where the two overland flow paths combine) and be inundated (3.9 m^3/s).
- Eastern entrance of grade separated pedestrian access appears to be outside of the northern overland flow path (1.2 m^3/s).
- Station (southern end) crosses a large culvert. 1800 mm culvert will need to be diverted around the bus station which may result in the need for a large culvert size due to increase head losses. The new diversion pipe (between 250 m and 310 m) will start by the building and end at the manhole on the eastern side of Te Irirangi (if same pipe size is sufficient) or at Whake Maumahara (pond) if large pipe size required.
- Geometric design of Busway within Te Irirangi Drive has potential to impact overland flow paths.
- It could be very complex to avoid impacts on the Botney Town Centre building (i.e. Pak'n'Save) or on the proposed bus station. Geometric design is unlikely to be sufficient avoid the impacts.

Mitigation proposed (if any):

- Mitigation is likely to be less complex and/or expensive as for Option 5, although the mitigation appears similar except works are less likely to be required in the carpark on the eastern side of Town Centre Drive car. Indicative migration works involve:
    - 330 m of 1200-1500 mm pipe with large inlet capacity within carpark on the western side of Town Centre Drive adjacent to the proposed station and outlet into Whake Maumahara (pond).
    - 350 to 500 m of a single or twin barrelled 2100 m culvert with large manholes and large inlet structures and outlet to Whake Maumahara (pond).
    - Earthworks and geometric design.
    - Flood walls.
    - Grated interception drains.
    - Modification to carpark to the west of Town Centre Drive and around buildings.

Score without mitigation applied: -4	Score with mitigation applied: -1

OPTION 8: Grade separated station

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts the following overland flow paths and issues relevant to the option:
    - Northern overland flow path (as for Options 5 and 6) with flows of up to 1.2 m^3/s during 100-year average return interval (ARI) event.
    - Southern overland flow path (as for Options 5 and 6) with flows of up to 3.9 m^3/s during 100-year average return interval (ARI) event.
    - Northern and Southern combined overland flow path crossing Te Irirangi Drive to Whake Maumahara (pond) with flows of up to 3.8 m^3/s during 100-year average return interval (ARI) event.
    - The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore expected the overland flow path is active for events greater than 2-year ARI.
- Station within carpark on the western side of Town Centre Drive is not lowered to be at grade or above existing carpark level.
- The Te Irirangi Drive entrance to A2B grade separated Pedestrian access is very close to or over 1800 mm cover which could require diversion. It is assumed the structures foundations are not over the 1800 and are far enough away for the pipe to be protected or the structure is moved/redesigned to avoid diversion of the culvert.
- Score reflects impacts on the bus station as well as surround property/buildings etc.

- Scored on the basis the drainage design addresses rainfall on the bus station only (i.e. does not provide solution for overland flow paths which are covered by proposed mitigation.

Key matters of consideration:

- Eastern A2B pickup/drop off will be inundated by a 1.2 m^3/s (Northern) overland flow path during a 100-year event and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event).
- The southern bus access crosses the southern (3.9 m^3/s) overland flow path and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event).
- The Local pickup/drop off station will be inundated by a 3.8 m^3/s (Northern and Southern combined) overland flow path during a 100-year event and is likely to be regularly inundated by more frequent events (i.e. greater than 2-year event).
- Works in Te Irirangi Drive have the potential to impact the Northern, Southern and combined overland flow paths.
- The Te Irirangi Drive entrance to A2B grade separated Pedestrian access is within the overland flow path and will be inundated (3.9 m^3/s).
- Geometric design of Busway and Station within Te Irirangi Drive has potential to impact overland flow paths.
- It could be very complex to avoid impacts on private property due to station configuration (three separate stations). If the A2B station is on fill, then the same applies to impacts on Botney Town Centre building although there is room in the carpark to better manage these. Geometric design is unlikely to be sufficient avoid the impacts.

Mitigation proposed (if any):

- Mitigation is likely to be similar as for Option 6 with outcome similar to Option 5. Indicative migration works involve:
    - 330 m of 1200-1500 mm pipe with large inlet capacity within carpark on the western side of Town Centre Drive adjacent to the proposed station and outlet into Whake Maumahara (pond).
    - 350 to 500 m of a single or twin barrelled 2100 m culvert with large manholes and large inlet structures and outlet to Whake Maumahara (pond).
    - Earthworks and geometric design.
    - Flood walls.
    - Grated interception drains.
    - Modification to carpark to the west of Town Centre Drive and around buildings.

Score without mitigation applied: -4	Score with mitigation applied: -2

OPTION 9: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts flows of approximately 38 m^3/s during the 100-year average return interval (ARI) event for the waterway where the western roundabout it proposed.
- Waterway is to be culverted as part of the option. Maximum allowable head on culvert is 3 m minus the culvert depth.
- It has been assumed that the bus station is located on a shallow structure to reduce the impact on the reserve which is consistent with the Guy's Reserve Link Road. It is also assumed the roundabouts are on fill with retaining walls. This reduces the impact of obstructing overland flow from Te Koha Road and adjacent commercial land into Whake Maumahara (pond).
- The flow through the pond at 38 m^3/s is large and minor changes to storage volume of the pond may or may not have a significant impact on upstream flooding. If there is a significant impact it could be complex to mitigate. For the purpose of this scoring assessment the impact of the two roundabouts and the piers of the shallow bridge structure is assumed to be significant in the absence of detailed flood modelling. This mainly relates to the roundabouts but also the installation of a culvert.
- Score reflects impacts on the bus station as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only except for the large culvert under the roundabout in Guy's Reserve/outlet of Whake Maumahara (pond). Mitigation relates to addressing impact of storage volume reductions and obstruction of overland flow paths on Te Irirangi Drive.

Key matters of consideration:

- The required culvert for a 100-year ARI event (38 m^3/s) is likely to consist of a twin barred boxed culvert embedded by 0.5 m for fish passage and contain waterway bed material in the base on the culvert. Each box culvert unit will be approximately 2 m high by 4 m wide (i.e. approximately equivalent to a 2m high and 8 m wide box culvert) which would need to be designed as a bridge under the Bridge Manual. Note the indicative size of the culvert takes into account it would be critical infrastructure, designed under the Bridge Manual to a higher design event then a 100-year ARI capacity by increasing the design flow by 50% and limited the head at the inlet (to address upstream flood impacts).
- At the location of the Te Irirangi Drive roundabout, a new overland flow path into Whake Maumahara (pond) will need to be formed and coordinated with flood modelling. This is a combination of road level lowering and installation of new culverts across Te Irirangi Drive. The indicative culvert size is a 76 m long single or twin barrelled 2100 mm culvert.

Mitigation proposed (if any):

- The impact of the two roundabouts and the piers of the shallow bridge structure could be potentially significant. However, the level of impact remains unknow at this time and requires detailed flood modelling of the option and associated link road. It is possible stormwater network drainage along Te Koha Road and/or the VTNZ site will be required as part of the mitigation.
- 80 m of a single or twin barrelled 2100 m culvert with large manholes and large inlet structures and outlet to Whake Maumahara (pond).
- Pier locations adjacent to VTNZ site and ground levels around their site and the adjacent reserve will need to be coordinated with flood modelling to reduce impact on the overland flow path into Whake Maumahara (pond). It is possible stormwater network drainage along Te Koha Road will be required as part of the mitigation.
- Pier locations adjacent to Te Koha Road and ground levels along the road and the adjacent reserve will need to be coordinated with flood modelling to reduce impact on the overland flow path into Whake Maumahara (pond). It is possible stormwater network drainage along Te Koha Road and Te Irirangi Drive will be required as part of the mitigation.

Score without mitigation applied: -5	Score with mitigation applied: -3

OPTION 13 Offline Guy's Reserve

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts the following overland flow paths and issues relevant to the option:
  - Northern and Southern combined overland flow path crossing Te Irirangi Drive to Whake Maumahara (pond) with flows of up to 3.8 m^3/s during 100-year average return interval (ARI) event.
  - Te Koha Road overland flow path along Te Koha Road (from Te Irirangi Drive) adjacent Hunting and Fishing entering Whake Maumahara (pond) with flows up to 0.3 m^3/s during 100-year average return interval (ARI) event.
  - Te Koha Road through VTNZ site entering Whake Maumahara (pond) with flows up to 0.3 m^3/s during 100-year average return interval (ARI) event.
  - Te Irirangi Drive (Eastern carriageway north of Town Centre Drive with flows up to 0.4 m^3/s during 100-year average return interval (ARI) event.
  - The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore expected the overland flow path is active for events greater than 2-year ARI.
- The bus station and circulation lanes are on a shallow bridge structure to reduce impacts of Whake Maumahara (pond).
- The flow through the pond at 38 m^3/s is large and minor changes to storage volume of the pond may or may not have a significant impact on upstream flooding. However, this is mostly mitigated by the assumption the bus station and circulation lanes are on a shallow bridge structure leaving only pier and tie-in at Te Irirangi Drive to create obstructions. Although it is noted any impact would be complex to resolve.
- Score reflects impacts on the bus station as well as surround property/buildings etc.

- Scored on the basis the drainage design addresses rainfall on the bus station only and excludes overland flow obstruction since it is assumed the station is on a shallow bridge structure. Mitigation relates to addressing impact of storage volume reductions and potential overland flow obstruction on Te Irirangi Drive.

Key matters of consideration:

- Obstruction to overland flow at Te Irirangi Drive entrance to bus station may require culverting overland flow across Te Irirangi Drive.
- Reduction in pond volume is small and only relates to bridge piers.
- The grade separated pedestrian access on the eastern side of Te Irirangi Drive are located within an over land flow path with up to 0.4 m^3/s during a 100-year ARI event. This could be designed out by moving the location and tie into higher ground levels.

Mitigation proposed (if any):

- Pier locations adjacent to Te Irirangi Drive will need to be coordinated with flood modelling to reduce impact on the overland flow path into Whake Maumahara (pond).
- Pier locations adjacent to Te Koha Road will need to be coordinated with flood modelling to reduce impact on the overland flow path into Whake Maumahara (pond).

Score without mitigation applied: -2	Score with mitigation applied: -1

MCA Scoring Sheet **EB4 Link Road Assessment**	
Assessor:	Area of assessment:
Link Road Option 1: Ti Rakau Drive	

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts the following overland flow paths and issues relevant to the option:
    - Guy's Reserve overland flow path crossing Ti Rakau Drive with flows of up to 0.1 m^3/s during 100-year average return interval (ARI) event.
    - Intersection of Ti Rakau Drive and Te Irirangi Drive flow path along Te Irirangi Drive with flows up to 0.5 m^3/s during 100-year average return interval (ARI) event.
    - The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore possible the overland flow path is active for events greater than 2-year ARI although these are smaller overland flows.
- Assume drainage network is provided for the busway and new road width on northern side of Ti Rakau Drive.
- Stormwater treatment is provided for the busway and new road width on northern side of Ti Rakau Drive.
- Score reflects impacts on the busway link as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only and excludes addressing overland flow crossing busway. Mitigation relates to addressing overland flow paths to improve level of service for busway.

Key matters of consideration:

- There are opportunities for green infrastructure.
- Existing stormwater network have 2-year capacity.
- Two small overland flow paths.

Mitigation proposed (if any):

- Upgrade drainage (minor) at overland flow paths.

Score without mitigation applied: -1	Score with mitigation applied: 0
Link Road Option 2: Te Koha Road	

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts the following overland flow paths and issues relevant to the option:
    - Guy's Reserve overland flow path crossing Ti Rakau Drive with flows of up to 0.1 m^3/s during 100-year average return interval (ARI) event.
    - Te Koha Road to Whake Maumahara (pond) overland flow path with flows up to 0.7 m^3/s during 100-year average return interval (ARI) event.
    - Te Irirangi Drive to Te Koha Road then to Whake Maumahara (pond) overland flow path with flows up to 0.1 m^3/s during 100-year average return interval (ARI) event.
    - The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore possible the overland flow path is active for events greater than 2-year ARI although these are smaller overland flows.
- Assume drainage network is provided for the busway and new road width on northern side of Ti Rakau Drive and along Te Koha Drive.
- Stormwater treatment is provided for the busway and new road width on northern side of Ti Rakau Drive and along Te Koha Drive.
- Score reflects impacts on the busway link as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only and excludes addressing overland flow crossing busway. Mitigation relates to addressing overland flow paths to improve level of service for busway.

Key matters of consideration:

- Limited opportunities for green infrastructure.
- Existing stormwater network have 2-year capacity.
- Two small overland flow paths.

Mitigation proposed (if any):

Upgrade drainage (minor) at overland flow paths.

Score without mitigation applied: -1	Score with mitigation applied: 0

Link Road Option 3: Guy's Reserve

Assumptions relied upon to undertake assessment:

- Preliminary flood modelling results for existing situation (pre-development scenario) predicts the following overland flow paths and issues relevant to the option:
    - Intersection of Te Irirangi Drive and Te Koha Road overland flow path to Whake Maumahara (pond) with flows up to 0.3 m^3/s during 100-year average return interval (ARI) event.
    - The wider catchment stormwater networks have a capacity that is approximately equal to a 2-year ARI event. It is uncertain what design storm the large culverts were designed to convey. In addition, preliminary model results for EB2 and EB3 predict similar extents and depths of flooding for a 10-year ARI event as that for a 100-year ARI event. It is therefore possible the overland flow path is active for events greater than 2-year ARI although these are smaller overland flows.
- Drainage network is only required for busway.
- Stormwater treatment is provided for the busway.
- Score reflects impacts on the busway link as well as surround property/buildings etc.
- Scored on the basis the drainage design addresses rainfall on the bus station only and excludes addressing overland flow crossing busway. Mitigation relates to addressing overland flow paths to improve level of service for busway.

Key matters of consideration:

- Limited opportunities for green infrastructure.
- Existing stormwater network have 2-year capacity.
- Two small overland flow paths.
- Bridge Piers are located within Whake Maumahara (pond) 100-year flood extent.

Mitigation proposed (if any):

Upgrade drainage (minor) at overland flow path and minor reshaping in Whake Maumahara (pond) to re-establish stormwater storage volume.	
Score without mitigation applied: -1	Score with mitigation applied: 0

Appendix 5: Combined MCA Framework and Assessment

The following information is provided:

A. Technical Assessors who undertook the assessment
B. MCA assessment scoring outcome
C. Scoring sheets provided by Technical Assessors

Appendix 5A: Technical Assessors

The following are the technical assessors who undertook assessments of the combined options for EB4.

Assessors	Area of Expertise
Shane Doran	Busway and Bus Station Operations
Tim Brown	Traffic and Transport (temporary effects)
	Traffic and Transport (permanent effects)
Laura Laurenson	Legislative and Consenting
Andy Gibbard	Constructability
Chris Bentley	Urban Design
	Landscape and visual
Fiona Davies	Ecological effects
Joe Grimes	Acoustics and vibrations
John Daly	Social Impact

Appendix 5B: Combined assessment scoring outcome

Combined Option Scores (raw)				
Area of Expertise	Option A	Option B	Option C	Option D
Busway & bus station operations	5	3	3	2
Temp traffic & transport effects	-2	-3	-1	-2
Permanent traffic & transport effects	3	2	4	3
Legislative and consenting	0	4	-2	0
Constructability	-2	-2	-2	-3
Urban Design	-2	1	-4	-3
Landscape	-1	0	-2	-2
Visual	-2	-2	-3	-2
Freshwater and terrestrial ecology	-2	0	-2	-1
Acoustics and vibration	-1	-1	-1	-1
Social impact	3	3	1	1

Appendix 5C: Combined scoring sheets

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet	
Assessor: Tim Brown	Area of assessment: Objective 1: Provide a multimodal transport corridor that connects Pakuranga and Botany to the wider network and increases choice of transport options

OPTION A (Bus Station Option 6 with Link Road Option 3)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA/AIMSUN)
- Previous assessments

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive .
- Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Key Elements

- Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Access to Bus station Option 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.

Matters for consideration:

Bus Travel Time and Reliability – as a proxy for access to destinations within a prescribed time (+3)

- The busway would effectively be unimpeded between Ti Rakau Drive (crossing over to the EB3 off-line alignment) and the station entry.
- Travel time expected to be in the order of 2 minutes from the crossover to the station but ~1 min extra due to extra distance and Te Irirangi/Te Koha intersection compared with Option C.

Mitigation:

Bus priority at signals

Element	Score without mitigation	Score with mitigation applied:
Access	**+5**	**+5**
Reliability	**+3**	**+4**
Overall Score	**+4**	**+4 (high)**

OPTION B (Bus Station Option 6 with Link Road Option 1)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (AIMSUN and SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option can connect to all bus station options except Option 8
- Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.

Key Elements

- Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Reduced traffic lanes on Ti Rakau Drive in the westbound direction (3 lanes down to 2)
- Access to Bus station Option 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive
- Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.

Matters for consideration:

Bus Travel Time and Reliability (+2)

- Busway passes through 3 intersections (up to a 4th if the existing access to Pak 'n' Save is retained and signalised). At the major intersections, they would have a separate phase if all services are using the busway.
- Good benefits in the morning peak period (westbound) (up to 2 mins), with marginal/negligible benefits in the other peak periods and directions – primarily due to the intersections at Te Irirangi Drive/Ti Rakau and Te Irirangi Drive/Te Koha where shorter dedicated busway phase(s) replace buses running with longer mixed traffic phases.

Spatial coverage (access) – residents (PT and cycle) or resident capacity and Spatial coverage (egress) – employees (PT and cycle) (or employee/activity density) (+5)

- All options provide a similar 5 minute walking catchment area
- Option 6 provides better access to the RTN from the south which is not well served by public transport (notably the future RTN) and is closer to Botany Town Centre as a destination which

accounts for approximately half the alightings during the day (outside of peak) according to Auckland Transport.

Mitigation proposed (if any):

- Local bus services to/from Howick and Half Moon Bay do not use the busway between Te Irirangi Drive/Ti Rakau and the bus station. This will improve the reliability of the Eastern Busway services and reduce the impact on other users by keeping the existing traffic signal phasing (4-phase).
- Retention of existing 3 lanes westbound.

Element	Score without mitigation	Score with mitigation applied:
Access	**+5**	**+5**
Reliability	**+2**	**+3**
Overall Score	**+3**	**+4**

OPTION C (Bus Station Option 13 with Link Road Option 3)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option only connects to the bus station options on the eastern side of Te Irirangi Drive (Options 4, 5, and 6)
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive .
- Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Key Elements

- Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Option 13: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h

Matters for consideration:

Bus Travel Time and Reliability (+4)

- The busway would effectively be unimpeded between Ti Rakau Drive (crossing over to the EB3 off-line alignment) and the station entry.
- Travel expected to be in the order of 2 minutes (all peaks, both directions) which is between 1.5 and 3 minutes average benefit. Significantly less variability.

Spatial coverage (access) – residents (PT and cycle) or resident capacity and Spatial coverage (egress) – employees (PT and cycle) (or employee/activity density) (+4)

- All options provide a similar 5 minute walking catchment area
- Option 13 provide better access to the RTN from the residential area (THAB) just to the south-west of the Botany Metropolitan Area,
- Option 13 is further away from the Botany Town Centre as a destination that Option 6 which accounts for approximately half of the alighting during the day.
- Closes the gap in accessibility to the RTN for residential areas to the south

Mitigation:

Bus Priority at the signalised crossover

Element	Score without mitigation	Score with mitigation applied:
Access	**+4**	**+4**
Reliability	**+4**	**+5**
Overall Score	**+4**	**+4 (high)**

OPTION D (Bus Station Option 13 with Link Road Option 1)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (AIMSUN and SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option can connect to all bus station options except Option 8
- Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.

Key Elements

- Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Reduced traffic lanes on Ti Rakau Drive in the westbound direction (3 lanes down to 2)
- Access to Bus station via single entry point on Te Irirangi Drive

Matters for consideration:

Bus Travel Time and Reliability (+2)

- Similar to Option B

Spatial coverage (access) – residents (PT and cycle) or resident capacity and Spatial coverage (egress) – employees (PT and cycle) (or employee/activity density) (+4)

- Same as Option C

Mitigation proposed (if any):

- Local bus services to/from Howick and Half Moon Bay do not use the busway between Te Irirangi Drive/Ti Rakau and the bus station. This will improve the reliability of the Eastern Busway services and reduce the impact on other users by keeping the existing traffic signal phasing (4-phase).
- Retention of existing 3 lanes westbound on Ti Rakau Drive.

Element	Score without mitigation	Score with mitigation applied:
Access	**+4**	**+4**
Reliability	**+2**	**+3**
Overall Score	**+3**	**+4**

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet	
Assessor:	Area of assessment: Objective 4: Provide transport infrastructure that improves linkages, journey time and reliability of the public transport network

OPTION A (Bus Station Option 6 with Link Road Option 3)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA/AIMSUN)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive .
- Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Key Elements

- Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Access to Bus station Option 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive

Matters for consideration:

Bus Travel Time and Reliability (+3)

- The busway would effectively be unimpeded between Ti Rakau Drive (crossing over to the EB3 off-line alignment) and the station entry.
- Travel time expected to be in the order of 2 minutes from the crossover to the station but ~1 min extra due to extra distance and Te Irirangi/Te Koha intersection compared with Option C.

Travel times and reliability for cars and trucks (-1)

With the exception of the interaction between the busway and the station with Ti Rakau Drive and Te Irirangi Drive, there are no significant impacts expected

Mitigation:

Bus priority at signals

Score without mitigation applied:	Score with mitigation applied:

+2	+3

OPTION B (Bus Station Option 6 with Link Road Option 1)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (AIMSUN and SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option can connect to all bus station options except Option 8
- Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.

Key Elements

- Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Reduced traffic lanes on Ti Rakau Drive in the westbound direction (3 lanes down to 2)
- Access to Bus station Option 6 at two entry points via the existing intersections at Te Irirangi Drive/Te Koha Road and Te Irirangi Drive/Parkway Drive/Haven Drive

Matters for consideration:

Bus Travel Time and Reliability (+2)

- Busway passes through 3 intersections (up to a 4th if the existing access to Pak 'n' Save is retained and signalised). At the major intersections, they would have a separate phase if all services are using the busway.
- Good benefits in the morning peak period (westbound) (up to 2 mins), with marginal/negligible benefits in the other peak periods and directions – primarily due to the intersections at Te Irirangi Drive/Ti Rakau and Te Irirangi Drive/Te Koha where shorter dedicated busway phase(s) replace buses running with longer mixed traffic phases.

Travel times and reliability for cars and trucks (-1)

- In the peak periods, it is likely that there is an additional 1-1.5 mins delay as a result of the intersection operation in the peak direction, and up to 0.5 minute delay in the opposite direction.
- Reduction of westbound traffic lanes impacts on the general traffic and freight performance.

Mitigation proposed (if any):

- Local bus services to/from Howick and Half Moon Bay do not use the busway between Te Irirangi Drive/Ti Rakau and the bus station. This will improve the reliability of the Eastern Busway services and reduce the impact on other users by keeping the existing traffic signal phasing (4-phase).
- Retention of existing 3 lanes westbound.

Score without mitigation applied:	Score with mitigation applied:
+1	+2

OPTION C (Bus Station Option 13 with Link Road Option 3)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option only connects to the bus station options on the eastern side of Te Irirangi Drive (Options 4, 5, and 6)
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive .
- Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Key Elements

- Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Option 13: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h

Matters for consideration:

Bus Travel Time and Reliability (+4)

- The busway would effectively be unimpeded between Ti Rakau Drive (crossing over to the EB3 off-line alignment) and the station entry.
- Travel expected to be in the order of 2 minutes (all peaks, both directions) which is between 1.5 and 3 minutes average benefit. Significantly less variability.

Travel times and reliability for cars and trucks (-1)

With the exception of the interaction between the busway and the station with Ti Rakau Drive and Te Irirangi Drive, there are no significant impacts expected

Mitigation:

Bus Priority at the signalised crossover

Score without mitigation applied:	Score with mitigation applied:
+3	+4

OPTION D (Bus Station Option 13 with Link Road Option 1)

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation

- Specialist knowledge
- Preliminary Transport Modelling (AIMSUN and SIDRA)

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- This option can connect to all bus station options except Option 8
- Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.

Key Elements

- Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Design speed of 50kph and 30kph approaching the stations
- Walking and cycling infrastructure provided on both Ti Rakau Drive and Te Irirangi Drive.
- Reduced traffic lanes on Ti Rakau Drive in the westbound direction (3 lanes down to 2)
- Option 13: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h

Matters for consideration:

Bus Travel Time and Reliability (+2)

- Similar to Option B

Travel times and reliability for cars and trucks (-1)

- Similar to Option B

Mitigation proposed (if any):

- Local bus services to/from Howick and Half Moon Bay do not use the busway between Te Irirangi Drive/Ti Rakau and the bus station. This will improve the reliability of the Eastern Busway services and reduce the impact on other users by keeping the existing traffic signal phasing (4-phase).
- Retention of existing 3 lanes westbound on Ti Rakau Drive.

Score without mitigation applied:	Score with mitigation applied:
+1	+2

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Assessment – Combined Options	
Assessor: Tim Brown	Area of assessment: Transport Effects (Permanent)
Bus Station Options – All	

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA/AIMSUN)
- Previous assessments

Options:

- Option A - Bus Station Option 6 with Link Road Option 3, Guys Reserve
- Option B - Bus Station Option 6 with Link Road Option 1, Te Irirangi Drive/Ti Rakau Drive
- Option C - Bus Station Option 13 with Link Road Option 3, Guys Reserve
- Option D - Bus Station Option 13 with Link Road Option 1, Te Irirangi Drive/Ti Rakau Drive

Key Elements

- Link Option 1: Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Link Option 3: Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Station Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Station Option 13: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive – this is considered mitigation for Link Option 3 along with other safety improvements such as speed management.
- Station Option 13: Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- Link Option1: Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Matters for consideration:

- Objective 1
- Objective 4
- Objective 5
- Impacts
    - Property access/Access to the road network
    - Loss of parking/circulation/connectivity

General comments:

- Refer to assessments of the options against the objectives.
- Generally, it becomes a decision on the location of the station to provide access (and to a degree safety considerations) versus the reliability/travel time for buses.
- Impacts:
    - In all options property access can be maintained albeit with additional delays
    - The options with Station Option 6 will have a significant loss of parking on-site, which is not applicable to the options with Station Option 13.

Mitigation proposed (if any):

- Refer to individual assessments against the objectives.

Unmitigated scores	Objective 1	Objective 4	Objective 5	Loss of parking/local circulation	Loss of property access	Overall score
Option A	+4	+2	+1	-2	-1[1]	+4 (+2)
Option B	+3	+1	+2	-2	-1	+3 (+2)
Option C	+4	+3	+2	0	0	+9 (+4)
Option D	+3	+1	+2	0	0	+6 (+3)
Mitigated scores	**Objective 1**	**Objective 4**	**Objective 5**	**Loss of parking/local circulation**	**Loss of property access**	**Overall score**
Option A	+4 (high)	+3	+3	-2	0	+8 (+3)
Option B	+4	+2	+3	-2	0	+7 (+2)
Option C	+4 (high)	+4	+4	0	0	+12 (+4)
Option D	+4	+2	+3	0	0	+9 (+3)

[1] Assumes that the existing right turn movement from Te Irirangi to Pak 'n' Save is removed. Option would score 0 if this is retained with a new signalised intersection.

MCA Scoring Sheet **EB4 Assessment – Combined Options**	
Assessor: Tim Brown	Area of assessment: Transport Effects (Temporary)

Bus Station Options - All

Information relied upon

- Plans issued via email on 16 March 2021
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Preliminary Transport Modelling (SIDRA/AIMSUN)
- Previous assessments

Options:

- Option A - Bus Station Option 6 with Link Road Option 3, Guys Reserve
- Option B - Bus Station Option 6 with Link Road Option 1, Te Irirangi Drive/Ti Rakau Drive
- Option C - Bus Station Option 13 with Link Road Option 3, Guys Reserve
- Option D - Bus Station Option 13 with Link Road Option 1, Te Irirangi Drive/Ti Rakau Drive

Key Elements

- Link Option 1: Central running busway between the end of the EB3 off-line alignment and the proposed Botany Town Centre station.
- Link Option 3: Offline busway between the end of the EB3 off-line alignment through Guy's Reserve.
- Design speed of 50kph and 30kph approaching the stations
- Station Option 6: Offline island interchange south of Town Centre Dr, grade separated pedestrian access, design speed of 30km/h and connections into the existing Town Centre Drive and Haven Dr intersections.
- Station Option 13: Offline interchange in Guys Reserve. Includes new signalised intersection on Te Irirangi Dr approx. 150m to the South of Te Koha Rd. Access to platforms would be grade separated with a design speed of 30km/h

Assumptions

- The assessment was based on the design at the time of preparation, and further measures to improve safety (particularly speed management measures) have not been considered as part of this assessment
- Walking and cycling infrastructure provided on both Te Koha Road and Ti Rakau Drive, but not on the remaining section of Ti Rakau Drive and Te Irirangi Drive – this is considered mitigation for Link Option 3 along with other safety improvements such as speed management.
- Station Option 13: Footpath connecting "The Hub" with the residential area south of the pond via the paper road is retained.
- Link Option1: Use of busway by local services entering and exiting the station to head to/from Howick or Half Moon Bay has not yet been confirmed.
- No other changes to the road layout except to facilitate access between the busway and the station at the intersections

Matters for consideration:

Temporary intersection layouts, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc.

General comments:

- Station Option 6 are off-line but have a significant impact on the parking available in Botany Town Centre to facilitate construction. Access will be required from Te Irirangi Drive, which in itself is likely to have a localised impact.
- Station Option 13 is off-line but have a minor impact regarding construction site access.
- Link Option 1 will have significant impacts on approximately 90,000 vehicles per day that use either Ti Rakau Drive or Te Irirangi Drive. Staging of works and temporary intersection arrangements will be complex and likely to have significant impacts. Pedestrian and cyclist connectivity and safety during construction is likely to be difficult to maintain; however this could be an early construction activity (along with services diversion/relocation) to mitigate the impact of the major construction works.
- Option 3 is likely to have localised impacts around the site access points on Ti Rakau Drive and potentially Te Koha Road.
- In all options there are alternative routes available for people to choose their route (Smales Road, Cascades Road, Chapel Road etc) which may dampen the effects.

Mitigation proposed (if any):

- A demand management and communication strategy that includes measures to manage the private vehicle demand during peak periods, by encouraging people to re-route, re-mode or re-time their trips to offset the potential effects of the construction activity. Measures could include:
    - Increased public transport services (including ferries from Half Moon Bay and bus services to either Panmure, Otahuhu train station or Half Moon bay ferry)
    - Either retention of or increasing public transport priority measures along Ti Rakau Drive and Pakuranga Road (for example peak time Transit Lanes)
    - Ride-sharing and/or public transport incentives
    - Provide Park 'n' Ride opportunities
    - Traveller information systems and real time monitoring and display of traveller information (either on-road or through Auckland Transport channels)

Unmitigated scores	Score without mitigation applied	Score with mitigation applied
Option A	**-2**	**-2**
Option B	**-4**	**-3**
Option C	**-1**	**-1**
Option D	**-3**	**-2**

EB4 Combined Options Score Sheets (safety)

EB4 Combined Option Score Sheet	
Assessor: Tim Brown	Area of assessment: Objective 5: Provide infrastructure that is safe for everyone

OPTION A (Bus Station Option 6 with Link Road Option 3, Guys Reserve)

Assumptions relied upon to undertake assessment:

- 30 km/h speed environment around station and 50km/h on Guys reserve busway and existing roads (Ti Rakau Dr and Te Irirangi Dr)
- Cycle connection provided on existing roads Ti Rakau Dr and Te Irirangi Dr
- Concept layout plans
- Previous EB4 Safe System Assessment

Key matters of consideration:

- Safe operation of the proposed option and existing road environment
- If the proposed option is able to reinforce safe speeds (speed limit is reduced from 80km/h to 50km/h)
- Provision of safe cycle and pedestrian facilities
- Safety/accessibility considerations of enlarged town centre drive intersection
- Development of the walking/cycle network and access to the bus station

Mitigation proposed (if any):

- Continuation of the busway through the reserve north of Ti Rakau Dr as avoids the need for central busway on Ti Rakau
- Move bus station access (for buses) so not directly off the intersection

Creation of a safe speed environment through:

- Removal of slip lanes at intersections/ or raised table/signalisation
- New midblock ped crossing by Countdown/Pak'n'Save (ped crash cluster and promotes slower approach speed towards station and town centre drive
- Possibility of a SUP through reserve (reduces the amount of speed management needed on the northern part of Ti Rakau/Te Irirangi

General comments: option scores +1 due to reduction in posted speed limit and intersection improvements for peds and cyclists. Offline busway options are likely to have a stronger safety outcome *if* recommended mitigation is provided. Concern with this option is that as the main (bus) access to the station is from the town centre drive intersection peds, cyclists etc might see this as a convenient way to access the station.

With mitigation if the cycleway is provided along Ti Rakau and Te Irirangi Drives *then* the mitigation aspects identified above are considered necessary to enable the cycle facility to be developed and used in a safe manner. *If* the cycle connection can go through the reserve then the amount of on line safety improvements (to reinforce the decreased speed limit becomes a scope question as a busway and cycleway are already provided.

Option scores lower than Option C due to proximity to Botany Town Centre carpark increasing risk for pedestrians and cyclists due to increased vehicle movements

Elements	Score without mitigation applied:	Score with mitigation applied:
Station	**+2**	**+3**
Link	**0**	**+3**
Overall	**+1**	**+3**

OPTION B (Bus Station Option 6 with Link Road Option 1, Online)

Assumptions relied upon to undertake assessment:

- 30 km/h speed environment around station and 50km/h on Guys reserve busway and existing roads (Ti Rakau Dr and Te Irirangi Dr)
- Cycle connection provided on existing roads Ti Rakau Dr and Te Irirangi Dr
- Concept layout plans
- Previous EB4 Safe System Assessment

Key matters of consideration:

- Safe operation of the proposed option and existing road environment
- If the proposed option is able to reinforce safe speeds (speed limit is reduced from 80km/h to 50km/h)
- Provision of safe cycle and pedestrian facilities
- Safety/accessibility considerations of enlarged town centre drive intersection
- Development of the walking/cycle network and access to the bus station

Mitigation proposed (if any):

- Limited mitigation options with online option due to increased corridor footprint
- Move bus station access (for buses) so not directly off the intersection

General comments: Option scores with mitigation due to reduction in the posted speed limit, additional safety improvements are limited due to more complex road environment and increased conflicts at intersections. Limited mitigation opportunities with the online option.

Elements	Score without mitigation applied:	Score with mitigation applied:
Station	**+2**	**+3**
Link	**+1**	**+2**
Overall	**+2**	**+3**

OPTION C (Bus Station Option 13 with Link Road Option 3, Guys Reserve)

Assumptions relied upon to undertake assessment:

- 30 km/h speed environment around station and 50km/h on Guys reserve busway and existing roads (Ti Rakau Dr and Te Irirangi Dr)
- Cycle connection provided on existing roads Ti Rakau Dr and Te Irirangi Dr
- Concept layout plans
- Previous EB4 Safe System Assessment
- How walk up bus station access (from west side of Te Irirangi) will be provided for
- Development of the walking/cycle network and access to the bus station

Key matters of consideration:

- Safe operation of the proposed option and existing road environment
- If the proposed option is able to reinforce safe speeds (speed limit is reduced from 80km/h to 50km/h)
- Provision of safe cycle and pedestrian facilities
- Safety/accessibility considerations of enlarged town centre drive intersection

Mitigation proposed (if any):

- Continuation of the busway through the reserve north of Ti Rakau Dr as avoids the need for central busway on Ti Rakau

Creation of a safe speed environment through:

- Removal of slip lanes at intersections/ or raised table/signalisation

- New midblock ped crossing by Countdown/Pak'n'Save (ped crash cluster and promotes slower approach speed towards station and town centre drive
- Possibility of a SUP through reserve (reduces the amount of speed management needed on the northern part of Ti Rakau/Te Irirangi

General comments: option scores +1 due to reduction in posted speed limit and intersection improvements for peds and cyclists. Offline busway options are likely to have a stronger safety outcome *if* recommended mitigation is provided. Development of this option will need to consider how the option caters for people accessing the bus way at grade (e.g. from Te Irirangi Dr).

With mitigation if the cycleway is provided along Ti Rakau and Te Irirangi Drives *then* the mitigation aspects identified above are considered necessary to enable the cycle facility to be developed and used in a safe manner. *If* the cycle connection can go through the reserve then the amount of on line safety improvements (to reinforce the decreased speed limit becomes a scope question as a busway and cycleway are already provided.

Elements	Score without mitigation applied:	Score with mitigation applied:
Station	**+3**	**+4**
Link	**0**	**+3**
Overall	**+2**	**+4**

OPTION D (Bus Station Option 13 with Link Road Option 1, Online)

Assumptions relied upon to undertake assessment:

- 30 km/h speed environment around station and 50km/h on Guys reserve busway and existing roads (Ti Rakau Dr and Te Irirangi Dr)
- Cycle connection provided on existing roads Ti Rakau Dr and Te Irirangi Dr
- Concept layout plans
- Previous EB4 Safe System Assessment

Key matters of consideration:

- Safe operation of the proposed option and existing road environment
- If the proposed option is able to reinforce safe speeds (speed limit is reduced from 80km/h to 50km/h)
- Provision of safe cycle and pedestrian facilities
- Safety/accessibility considerations of enlarged town centre drive intersection
- Safe operation of the bus station and proposed Te Irirangi Dr intersection
- Development of the walking/cycle network and access to the bus station

Mitigation proposed (if any):

- Linking of Town Centre Drive and new bus station signals
- limited options for mitigation due to online busway and more complex road environment

General comments: Score with mitigation due to reduction in the posted speed limit, additional safety improvements are limited due to more complex road environment and increased conflicts at intersections. Limited mitigation opportunities with the online option

Elements	Score without mitigation applied:	Score with mitigation applied:
Station	**+3**	**+4**
Link	**+1**	**+2**
Overall	**+2**	**+3**

MCA Scoring Sheet

MCA Scoring Sheet	
Assessor: Joe Grimes	Area of assessment: Acoustics
EB4 Busway along Guys Reserve, Botany Centre Station Option 6	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road. • Drawing no. EB234-1-RD-SK-Z4-00033 • Existing acoustic environment at nearby residential receptors is dominated by road traffic noise **Key matters of consideration:** The option involves the construction of the bus station to the east of Te Irirangi Drive and an offline busway to the west of Te Koha Road. Ti Rakau Drive is widened to accommodate the new bus lanes. The acoustic environment at residential receptors to the north of Ti Rakau Drive and to the west of the offline busway on Cottesmore Place may change perceptibly with this layout. Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP. **Mitigation proposed (if any):** • Quieter road surface than existing road • Localised screening around areas of buses parking and pulling away • Noise barriers installed along the offline busway and Ti Rakau Drive	
Score without mitigation applied: -2	Score with mitigation applied: -1
EB4 Busway along Guys Reserve, Botany Centre Station Option 13	
Assumptions relied upon to undertake assessment: • Quieter road surface than existing road. • Drawing no. EB234-1-RD-SK-Z4-00034 • Existing acoustic environment at nearby residential receptors is dominated by road traffic noise **Key matters of consideration:** The option involves the construction of the bus station to the west of Te Irirangi Drive in what is currently Guys Reserve, and an offline busway to the south of Te Koha Road. Ti Rakau Drive is widened to accommodate the new bus lanes. Residential receptors to the north of Ti Rakau Drive and to the west of the offline busway (on Cottesmore Place) will be impacted by the proposed layout. The acoustic environment at residential receptors on Waihi Way may also change perceptibly from the current situation with the station accessway located directly to the north. Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP. **Mitigation proposed (if any):** • Quieter road surface than existing road • Localised screening around areas of buses parking and pulling away	

- Localised screening around access point to bus station, north of Waihi Way
- Noise barriers installed along the offline busway and Ti Rakau Drive

Score without mitigation applied:	Score with mitigation applied:
-2	-1

EB4 Busway along Ti Rakau Drive, Botany Centre Station Option 6

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-00035
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The bus station is located to the east of Te Irirangi Drive and south of Town Centre Drive, in an area currently used as a car park. There are no residential receptors immediately impacted by this proposed location of the bus station.

The widening of Ti Rakau Drive and removal of properties currently located adjacent to Ti Rakau Drive may perceptibly change the acoustic environment at residential receptors on Puma Drive, Nagle Place, Spalding Rise and Tiger Drive.

Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road
- Localised screening around areas of buses parking and pulling away
- Noise barriers located to the north of Ti Rakau Drive.

Score without mitigation applied:	Score with mitigation applied:
-2	-1

EB4 Busway along Ti Rakau Drive, Botany Centre Station Option 13

Assumptions relied upon to undertake assessment:

- Quieter road surface than existing road.
- Drawing no. EB234-1-AR-SK-Z4-00036
- Existing acoustic environment at nearby residential receptors is dominated by road traffic noise

Key matters of consideration:

The bus station is in Guys Reserve to the west of Te Iririrangi Drive. The acoustic environment at residential properties on Waihi Way may perceptibly change as a result of the layout.

The widening of Ti Rakau Drive and removal of properties currently located adjacent to Ti Rakau Drive may perceptibly change the acoustic environment at residential receptors on Puma Drive, Nagle Place, Spalding Rise and Tiger Drive.

Construction noise and vibration effects will be of limited duration and can be mitigated/ managed through a CNVMP.

Mitigation proposed (if any):

- Quieter road surface than existing road

• Localised screening around areas of buses parking and pulling away • Localised screening around access point to bus station, north of Waihi Way	
Score without mitigation applied: -2	Score with mitigation applied: -1

Appendix 2: MCA Scoring Sheet

MCA Scoring Sheet EB4 Combined Bus Station and Link Road Assessment	
Assessor: Laura Laurenson	Area of assessment: Statutory Legislation
EB4 Option 6 and Busway Along Guys Reserve:	

Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered
- Utilises previously developed land for bus station
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking), open space and streams and/or wetlands
- Provision of infrastructure on land zoned commercial property (car parking), recreation and conservation

- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - Coastal environment(s)
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open Space – conservation
  - Open Space – informal recreation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use
- NPS for Freshwater Management 2020: Watercourses and wetland present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater. Indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts
- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered

Other information relied upon:

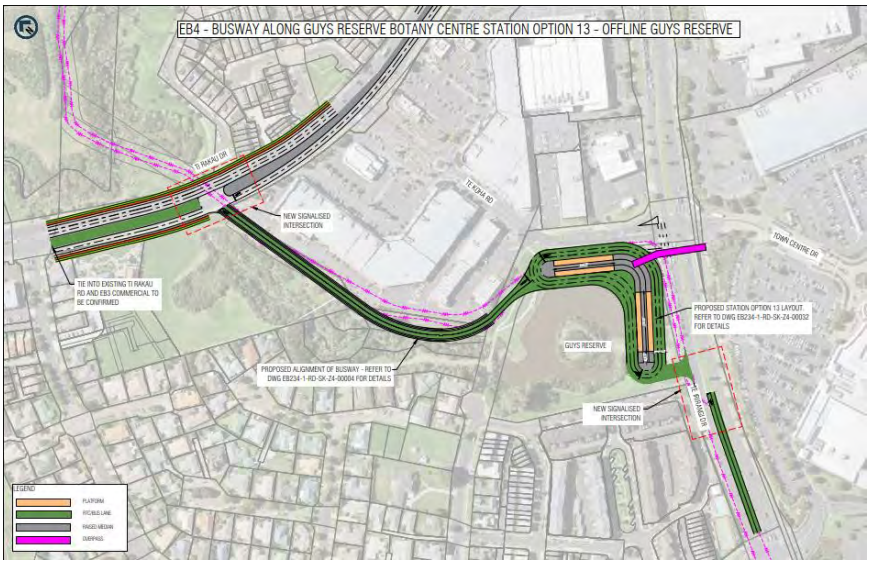
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -3	Score with mitigation applied: +0

EB4 Option 13 and Busway Along Guys Reserve



Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered
- Utilises previously developed land for bus station
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking), open space and streams and/or wetlands
- Provision of infrastructure on land zoned commercial property (car parking), recreation and conservation
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)

- Project area does not include:
  - Coastal environment(s)
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open Space – conservation
  - Open Space – informal recreation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use
- NPS for Freshwater Management 2020: Watercourses and wetland present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater. Indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts
- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered

Other information relied upon:

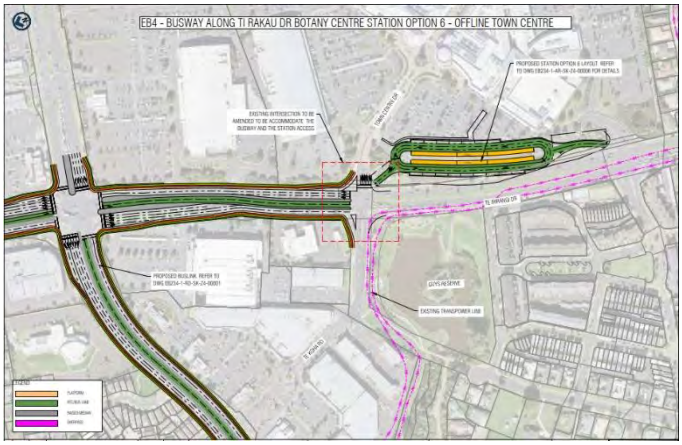
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -4	Score with mitigation applied: -2

EB4 Option 6 and Busway Along Tui Rakau Drive



Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Utilises previously developed land and existing transport corridor
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking) (more so than Option 4 – less efficient use of existing transport corridor)
- Provision of infrastructure on land zoned for commercial use/development and residential
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - coastal, wetland, river and/or stream environment(s)
  - outstanding natural features and/or landscape(s)
  - significant indigenous vegetation and significant habitats for indigenous fauna
  - cultural/historic heritage
- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Residential – terrace housing and apartment building

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use and residential
- NPS for Freshwater Management 2020: No watercourses present in project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: No direct impacts to freshwater and indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts

Other information relied upon:

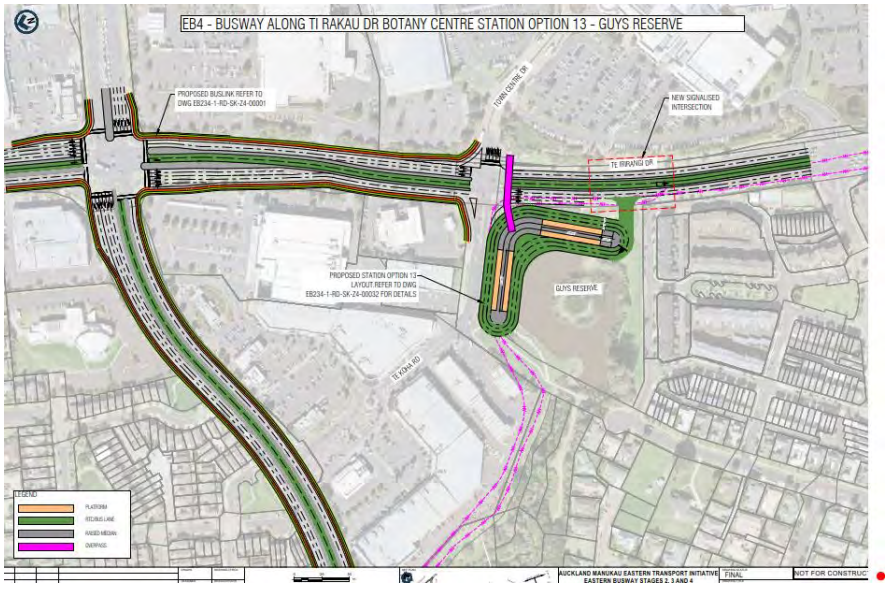
- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: +3	Score with mitigation applied: +4

EB4 Option 13 and Busway Along Ti Rakau Drive



Assumptions relied upon to undertake assessment:

- All options will result in positive effect experienced by a sub-regional audience
- All options require the use of natural resources
- No demolition of commercial buildings is required
- The following will be managed accordingly (construction and operation):
  - Potential adverse effects to freshwater and coastal environments (i.e. potential adverse effects resulting from stormwater (quality/quantity)
  - Potential adverse effects (including temporary disruption during construction) to national telecom facilities/network
  - Potential adverse effects (including temporary disruption during construction) to the national grid/overhead electricity transmission infrastructure
  - Potential discharges resulting from the disturbance of contaminated soil

Key matters of consideration:

- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered.
- Utilises existing transport corridor
- Provides improved public transport connections/opportunity to a sub-region of Auckland because of a dedicated busway
- Increased use of public transport will support an overall reduction in traffic volume, particularly single-occupant private vehicles
- Impacts commercial property (car parking), open space and wetlands
- Provision of infrastructure on land zoned commercial property (car parking) and recreation
- Will contribute to a reduction in the effects of climate change through bus station serving dedicated busway.
- No direct/indirect impacts to the coastal environment
- Includes provision of infrastructure in overland flow paths (2000m2 to >3ha), flood prone areas and flood plains (note functional need to be in these areas)
- Project area does not include:
  - Coastal, stream or wetland environment(s)
  - outstanding natural features and/or landscape(s)
  - cultural/historic heritage

- Works are anticipated to be required in the following relevant Auckland Unitary Plan zones/overlays/designations:
  - Business – metropolitan centre zone
  - Open Space – informal recreation

Summary of outcomes

- NPS on Urban Development 2020: Includes use of land zoned for commercial use
- NPS for Freshwater Management 2020: Watercourses and wetland connected to project area. Stormwater will be managed appropriately (all options). Potential for water quality to be improved overall
- NZ Coastal Policy Statement: All options will manage stormwater and other indirect effects to CMA. No works required in CMA. Potential for water quality to be improved overall
- NES for Freshwater: Direct impacts to freshwater. Indirect impacts (e.g. stormwater discharge and associated contaminants) can be managed
- NES for Air Quality: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Telecommunications Facilities: Impacts can be managed to achieve requirements during both construction and operation overall
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health: Impacts can be managed to achieve requirements during both construction and operation overall. Potential for remediation
- Auckland Unitary Plan: Includes provision of infrastructure in commercially zoned land, overland flow paths (2000m2 to >3ha), and flood plains. Engineering options can mitigate potential adverse impacts
- Cumulative effects associated with focus re-developing reserves/open space and effects associated with works in stream/wetlands. Represents a level of risk that should be considered

Other information relied upon:

- Knowledge and review of the critical elements of the project
- Workshop participation
- Specialist knowledge
- Eastern Busway Alliance's Geocortex Viewer
- Auckland Council's GeoMaps
- The Resource Management Act (RMA) 1991 (specifically Part 2 matters)
- High level policy documents/frameworks relevant to the project e.g. NZCPS and relevant NPS, RPS and NES
- The Auckland Unitary Plan: Operative in Part

Mitigation proposed (if any):

- No specific options considered

Score without mitigation applied: -1	Score with mitigation applied: 0

IPAA SHORTLISTED SCHEMES CONSTRUCTION MCA

Eastern Busway Alliance — Fletcher · acciona · AECOM · Jacobs — Let's get East Auckland moving

Item	Topic	Weighting	Description	Option A - Station 6 + Link Rd 3		Option B - Station 6 + Link Rd 1		Option C - Station 13 + Link Rd 3		Option D - Station 13 + Link Rd 1		Weighted score			
				Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Score	Notes / Comments	Option A	Option B	Option C	Option D
1	Health & Safety	12	Assess level of HSE risk in construction activities required in the option beyond BAU risks (i.e. option requires considerable additional working at height, working close to live traffic and live services etc.)	-2		-3	Works on major instersection Te Irirangi and Ti Rakau	-4	Elevated bus station. Working at heights	-4	Works on major instersection Te Iriranagi and Ti Rakau and Elevated bus station. Working at heights	-24	-36	-48	-48
2	Quality	6	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving Quality requirements (further costs or resources)	-2		-3	Harder to maintain quality around major intersection	-2		-3		-12	-18	-12	-18
3	Environmental	6	Does the option require construction methods or contains constraints that results in a higher risk profile in achieving and maintaining Environmental compliance (further costs or resources)	-2		-2		-4		-3	Major works in Reserve area	-12	-12	-24	-18
4	Resourcing	2	Assess level of risk in availability of key resources (plant items, trade skills etc,) required to construct option	-2		-2		-3	Marine works	-3	Marine works	-4	-4	-6	-6
		2	Assess level of risk in availability of key subcontractors required in the option	-2		-2		-3		-3		-4	-4	-6	-6
		2	Assess level of risk in availability of key materials required in the option	-1		-1		-2		-2		-2	-2	-4	-4
5	COVID Risk	6	Assess level of risk in acquiring any key overseas resources (non-availability due to restrictions)	-2		-2		-2		-2		-12	-12	-12	-12
6	Access	2.7	Does the options access points result in restrictions to any current traffic movements or access to public areas	-3	Restricting carparks	-4	Restricting carparks and restrictions around major intersection	-1	Restricting reserve access	-2	Restricting reserve area and restrictions around major intersection	-8	-11	-3	-5
		2.7	Does the options construction footprint restrict access (consider deliveries to commercial properties, access to amenities, residential properties)	-3	May reduce goods inwards into Town Centre	-4	May reduce goods inwards into Town Centre and goods accessing Town centre via main arterial intersection	-1		-2	Restrictions on goods accessing Town Centre via main arterial intersection	-8	-11	-3	-5
		2.7	Does the option have access, work area or method constraints that result in a reduction in productivity (increased cost)	-2	Potential restrcited access by AMP	-3	Potential restrcited access by AMP and around major intersection	-4	Reduced productivity due to lake access	-4	Reduced productivity due to lake access and working around major intersection	-5	-8	-11	-11
7	Out of Hours works	8	Does the option require considerable nightshift or weekend works to construct	-1	Nightworks for tie in / working across Te Irirangi	-3	Night works around major intersection	-2	Nightworks for footbridge and new signalised intersection	-4	Night works around major intersection and nightworks for footbridge and new signalised intersection	-8	-24	-16	-32
8	Proximity to residential and commercial buildings	10	Does the option require construction works in close proximity to existing commercial and residential buildings (vibration, noise, dust, settlement risk etc.)	-3	Works within Town Centre	-3	Works within Town Centre and commercial buildings at intersection	-1		-2	Works near commercial buildings at intersection	-30	-30	-10	-20
9	Services	10	Does the option involve interfacing with live services that cannot be eliminated or isolated	-2	More flexibility to locally change route	-3		-4		-4		-20	-30	-40	-40
10	Ground Conditions	4	Does the option increase the likelihood of unforeseen ground conditions (requiring additional ground improvement works)	-1	Engineered fill in car park area	-1	Engineered fill in car park area and intersection materials known	-2	Working in the reserve area	-2	Working in the reserve area	-4	-4	-8	-8
11	Programme	5.0	Assess the overall programme duration for the option	-2	Restricted working areas	-3	Restricted working areas; intersection and Town Centre	-3	More structures	-4	Structures and working around major intersection	-10	-15	-15	-20
		2.5	Does the programme for the option have flexibility to adjust should constraints arise (ability to amend the critical path)	-1		-2	Restricted due to major intersection works	-3	Restricted by structures and limited space	-3	Restricted by structures and limited space	-3	-5	-8	-8
		2.5	Is the resource levelling for the options programme manageable	-1	Shift resources to multiple work fronts	-2		-3		-3		-3	-5	-8	-8
12	Traffic	2.5	What are the perceived vehicle traffic / pedestrian / cyclist impacts associated with this scheme? eg. significant road or lane closures, increased congestion, delays, disruptions; for both private vehicles and PT etc.	-3	Logistics of working within Town Centre - not an 'isolated' work area	-4	Logistics of working within Town Centre - not an 'isolated' work area and around major intersection	-3	Pedestrian bridge works and Te Irirangi works	-4	Logistics of working tight reserve, Pedestrian bridge works, Te Irirangi works and major intersection works	-8	-10	-8	-10
		2.5	Does there appear to be excessive temporary pavements required for traffic staging / traffic switches?	-1		-2	Te Irirangi and Ti Rakau Dr intersection	-1		-2	Te Irirangi and Ti Rakau Dr intersection	-3	-5	-3	-5
		2.5	Does the scheme result in considerable 'ghost marking' or cost to manage 'ghost arking' due to traffic staging / switches?	-1		-2	Te Irirangi and Ti Rakau Dr intersection	-1		-2	Te Irirangi and Ti Rakau Dr intersection	-3	-5	-3	-5
		2.5	Does the scheme require perceived prolonged weekend and night closures and major traffic diversions over extended periods?	-1		-2	Te Irirangi and Ti Rakau Dr intersection	-1		-3	Te Irirangi and Ti Rakau Dr intersection, pedestrian bridge build	-3	-5	-3	-8
13	Constructability	2	Can the scheme be easily built with conventional and traditional methods and with local expertise and materials? Does it appear simple?	-1		-1		-2	More structures	-2		-2	-2	-4	-4
		2	Does the scheme present opportunities for repetition and re-use of materials if planned correctly? Is it smart and logical?	-1	Longer bridge leading to more repitition	-2	Difficult with major intersection	-3		-4	Very difficult on both fronts; reserve works and major intersection works	-2	-4	-6	-8
		100										-187	-261	-257	-308

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet	
Assessor: Fiona Davies and Caitlin Smith	Area of assessment: Natural Environment/Ecological Effects

OPTION A (Bus Station Option 6 with Link Road Option 3)

Assumptions relied upon to undertake assessment:

- Assume that piped streams will not be impacted.
- The bus lane runs adjacent to the stormwater detention ponds. Assume the stormwater detention ponds will remain operational.
- Assume that the stream within Guys Reserve will be impacted (approximately 90m of stream impacted) by a structure. Assume fish passage will be provided.

Key matters of consideration:

- Two pipes streams identified – unlikely to be impacted. The busway will encroach into the stream within Guys Reserve (with a structure within the stream). This is considered a moderate to high impact. There are potential NPS-FM natural wetlands present alongside the stream (these have been identified at the nearby downstream Burswood Reserve), but wetland delineation is required to confirm if there are any NPS-FM natural wetlands.
- Terrestrial vegetation is made up of a mixture of exotic and native - roadside and amenity plantings – low ecological value.
- Lizard habitat - one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The nearby constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and New Zealand Dabchick (*Poliocephalus rufopectus*), 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus)* and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate (particularly if vegetation removal is timed to be completed outside of the nesting season).
- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the busway is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effects to fish habitat considered to be moderate to high as a result of the structure within the stream.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Consideration should be given to moving the bus lane out of the stream area (although it is understood this is unlikely).

• Design of the structure within the stream should be hydrologically sensitive and allow natural stream flow and fish passage.	
Score without mitigation applied: -3	Score with mitigation applied: -2

OPTION B (Bus Station Option 6 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Assume no impact to the piped streams.

Key matters of consideration:

- Two piped streams identified that cross the car parking area (where bus station option 6 is located) and Te Irirangi Drive to the stormwater detention ponds - unlikely to be impacted.
- Vegetation along the parking area and within the road corridor will be removed – amenity plantings and likely of low ecological value.
- Some of the vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native – not threatened'. Effects to terrestrial avifauna considered to be low (particularly if vegetation removal is timed to be completed outside of the nesting season).

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.

Score without mitigation applied: -1	Score with mitigation applied: 0

OPTION C (Bus Station Option 13 with Link Road Option 3)

Assumptions relied upon to undertake assessment:

- Assume that piped streams will not be impacted.
- Assume that the stream within Guys Reserve will be impacted with construction of a structure (approximately 90m of stream impacted). Assume fish passage will be provided.
- The bus station is located on a structure over the stormwater detention ponds. Assume the stormwater detention ponds will remain operational.

Key matters of consideration:

- Two piped streams identified that cross Te Irirangi Drive to the stormwater detention ponds – unlikely to be impacted. The busway will encroach into the stream within Guys Reserve (with a structure within the stream). This is considered a moderate to high impact. There are potential NPS-FM natural wetlands present alongside the stream (these have been identified at the nearby downstream Burswood Reserve), but wetland delineation is required to confirm if there are any NPS-FM natural wetlands.
- Terrestrial vegetation is made up of a mixture of exotic and native - roadside and amenity plantings – low ecological value.
- Lizard habitat - one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not

threatened'. The constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and New Zealand Dabchick (*Poliocephalus rufopectus*), 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus)* and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate to high (particularly if vegetation removal is timed to be completed outside of the nesting season).

- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the busway is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.
- Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effects to fish habitat considered to be moderate to high as a result of the structure within the stream.

Mitigation proposed (if any):

- Landscape planting with ecological enhancements.
- Avoid bird nesting season (September to February) during vegetation removal, where possible.
- Appropriate erosion and sediment control measures must be in place during construction.
- Consideration should be given to moving the bus lane out of the stream area (although it is understood this is unlikely).
- Design of the structure within the stream should be hydrologically sensitive and allow natural stream flow and fish passage.

Score without mitigation applied:	Score with mitigation applied:
-3	-2

OPTION D (Bus Station Option 13 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Assume that piped streams will not be impacted.
- The bus station is located on a structure over the stormwater detention ponds. Assume the stormwater detention ponds will remain operational.

Key matters of consideration:

- Two piped streams identified that flow into the stormwater detention ponds – unlikely to be impacted.
- Terrestrial vegetation is made up of a mixture of exotic and native – roadside, amenity plantings. Likely of low ecological value.
- Lizard habitat - one lizard species is potentially present within this habitat type – copper skink (*Oligosoma aeneum*; threat status = 'not threatened').
- Some of vegetation present may provide some roosting and/or nesting habitat for birds; although most bird species identified as potentially present are either 'introduced or naturalised' or 'native - not threatened'. The constructed freshwater ponds (stormwater ponds) may provide foraging habitat for 'at risk-recovering' Pied Shag (*Phalacrocorax varius*) and New Zealand Dabchick (*Poliocephalus rufopectus),* 'At-risk declining' Red-billed Gull (*Larus novaehollandiae scopulinus*) and 'At risk - naturally uncommon' Little Black Shag (*Phalacrocorax sulcirostris*). Effects to terrestrial avifauna considered to be moderate to high (particularly if vegetation removal is timed to be completed outside of the nesting season).
- The closest known population of native bat is a population of long-tailed bat (*Chalinolobus tuberculatus)* within the Clevedon Scenic Reserve; approximately 12 km east of the busway footprint. However, as the bus station is located within a heavily developed area in which long-tailed bats are unlikely to be active, effects to native bat populations are considered to be negligible.

• Nearby fish records list eight species within the Pakuranga Creek. Of these, three are 'introduced and naturalised', three are 'not threatened' (banded kokopu [*Galaxias fasciatus*], common bully [*Gobiomorphus cotidianus*] and shortfin eel [*Anguilla australis*]) and two are 'at risk - declining' (longfin eel [*Anguilla dieffenbachii*] and inanga [*Galaxias maculatus*]). Effect to fish habitat considered to be low. Mitigation proposed (if any): • Landscape planting with ecological enhancements. • Avoid bird nesting season (September to February) during vegetation removal, where possible. • Appropriate erosion and sediment control measures must be in place during construction.	
Score without mitigation applied: -2	Score with mitigation applied: -1

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet	
Assessor: Shane Doran	Area of assessment: Busway and Bus Station Operations

OPTION A (Bus Station Option 6 with Link Road Option 3)

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option A Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option A (Option 6 + Guys Reserve Link) supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 135m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and ultimately offers a high level of customer experience. Location of station on southern side of Town Centre with direct access to Town Centre enhances customer experience.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  Provision of schedule adherence bays and bus driver rest stops results in reduced operational costs and increases resilience of option.

  Guy's Reserve link provides a congestion free dedicated link for buses offering high reliability and fast travel times. Travel distance from EB3 is in the order of 0.5km.

- Bus Operations efficiency

  Bus Station and Guy's Reserve link has lowest operating costs in terms of bus kilometres of the four options considered (PV = $48M) (Four options range from PV = $48M to $83M) made up of:

$184k Annually – Schedule Adherence
$170k Annually – Bus Driver Rest Stop
$2.1M Annually - Station Circulation
$2.5M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: 5	Score with mitigation applied:

OPTION B (Bus Station Option 6 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option B Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

  Option B (Option 6 + Ti Rakau / Te Irirangi Drive Link) supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 135m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and ultimately offers a high level of customer experience. Location of station on southern side of Town Centre with direct access to Town Centre enhances customer experience.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  Provision of schedule adherence bays and bus driver rest stops results in reduced operational costs and increases resilience of option.

Ti Rakau / Te Irirangi Drive link provides a separated link in middle of corridor.

Bus operations are likely to experience unreliable travel times due to need for buses to pass through four intersections from EB3 including the very large and congested Ti Rakau Drive / Te Irirangi Drive intersection.

Travel distance from EB3 is in the order of 0.85km.

- Bus Operations efficiency

Bus Station and Ti Rakau / Ti Irirangi Drives link has second lowest operating costs in terms of bus kilometres of the four options considered (PV = $57M) (Four options range from PV = $48M to $83M) made up of:

$184k Annually – Schedule Adherence
$170k Annually – Bus Driver Rest Stop
$2.5M Annually - Station Circulation
$2.9M Annually - Total

- Flexibility – ease of staging the construction of the station:

Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: 3	Score with mitigation applied:

OPTION C (Bus Station Option 13 with Link Road Option 3)

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option C Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

Option C (Sausage Pond + Guy's Reserve) supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 155m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting

customers results in a very simple to use station for customers and allows simple station way finding signage and offers a high level of customer experience. Location of station on western side of Te Irirangi Drive diminishes customer experience with potential CPTED issues due to isolation.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  No availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

  Guy's Reserve link provides a congestion free dedicated link for buses offering high reliability and fast travel times. Travel distance from EB3 is in the order of 0.5km.

- Bus Operations efficiency

  Bus Station has second highest operating costs in terms of bus kilometres of four options considered (PV = $69M) (Four options range from PV = $48M to $83M) made up of:

  $577k Annually – Schedule Adherence
  $588k Annually – Bus Driver Rest Stop
  $2.3M Annually - Station Circulation
  $3.5M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: 3	Score with mitigation applied:

OPTION D (Bus Station Option 13 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Drawing of proposed Option D Station layout.
- Platform Capacity Assessment
- Workshop participation
- Specialist knowledge
- Accessibility mapping

Key matters of consideration:

- Does the proposed design of the bus station support a strategic public transport connection to Auckland Airport:

Option D (Sausage Pond + Ti Rakau / Te Irirangi)supports connection to Auckland Airport and allows future extension of bus services from the airport to north of Botany.

- Customer Experience (legibility; ease of interchanging – distance between platforms, number of vertical changes; proximity to key generators/attractors; crossing points of main and local roads; circulation and queueing space, surrounding infrastructure – eg in the middle of the road):

  Station configuration is legible and provides same level connections between platforms with customers needing to travel between 0 m (same bay) and a maximum of 155m to interchange between services, as well as not needing to cross roads, bus lanes or use lifts or stairs. Same platform for boarding and alighting customers results in a very simple to use station for customers and allows simple station way finding signage and offers a high level of customer experience. Location of station on western side of Te Irirangi Drive diminishes customer experience with potential CPTED issues due to isolation.

- Resilience and capacity - Meets forecast public transport services demand and provides operational flexibility that supports alternative bus operating strategies and growth beyond 2048:

  Station configuration provides for operational flexibility and with stopping, propping and circulating lanes offers a high level of reliability and resilience. Station has capacity for increased bus demand beyond 2048 (approx. 30% with reduced reliability).

  No availability for schedule adherence bays and bus driver rest stops results in increased operational costs and reduces resilience of option.

  Busway proposed to be separated in middle of corridor

  Bus operations are likely to experience unreliable travel times due to need for buses to pass through five intersections from EB3 including the very large and congested Ti Rakau Drive / Te Irirangi Drive intersection.

  Travel distance from EB3 is in the order of 0.85km.

- Bus Operations efficiency

  Bus Station has highest operating costs in terms of bus kilometres of four options considered (PV = $83M) (Four options range from PV = $48M to $83M) made up of:

  $577k Annually – Schedule Adherence
  $588k Annually – Bus Driver Rest Stop
  $3.1M Annually - Station Circulation
  $4.3M Annually - Total

- Flexibility – ease of staging the construction of the station:

  Station is able to be staged with 2 platforms of 3 bays provided as an interim stage if 2 door boarding is allowed.

Mitigation proposed (if any):
Nil

Score without mitigation applied: 2	Score with mitigation applied:

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet	
Assessor: John Daly	Area of assessment: Social Impact
OPTION A (Bus Station Option 6 with Link Road Option 3)	

Assumptions relied upon to undertake assessment:

- No walking cycle lanes are provided along Link Road – opportunity to provide this, but larger impacts on vegetation and open space within Guys Reserve.
- Approx. 50% of the car parking area south of Town Centre Drive (which services Botany Town Centre) will need to be acquired. This leaves 50% remaining for the public to use (either as ParkNRide or to access Botany Town Centre).
- East/west walking connection through Guys Reserve is retained (walking track traverses north of properties on Cottesmore Ave).
- Impacts on service lane for businesses south of Te Koha Rd are avoided.
- Minimal visual impacts to residents south of Te Koha Road. Anticipated busway will be near level with ground.

Key matters of consideration:

Community Facilities / Open Space

- Permanent impacts upon Guys Reserve.
    - Removal of native vegetation.
    - Permanent impacts to the usability, amenity and enjoyment of this space.
    - Walkway connection, from Guys Road, north through Guys Reserve, connecting to Te Koha Road (north) or Ti Rakau Drive (west) permanently severed. Connection no longer possible (unless underpass or similar provided).

Impacts upon viability / productivity of business land areas

- Minimal impacts to existing businesses, both during construction and operation.
    - Accessways to businesses unaffected. Minor impacts to Botany Town Centre during bus station construction.
    - Service lanes for businesses south of Te Koha Rd unaffected.
    - Loss of car parking but offset by new PT provision.

Impacts upon social connectivity

- Connectivity impacts.
    - Walkway connections north/south through Guys Reserve permanently severed.
        - Looks to be an east/west walking connection through Guys Reserve, which traverses north of properties on Cottesmore Ave (this will be retained / unaffected).
    - Additional signalised crossing along Ti Rakau – improves severance issues experienced by residents to the north.
    - Efficient PT network with minimal conflict points. Reduces travel times for PT users and improved connectivity for the community.
    - Walking cycling provided along Ti Rakau and Te Irirangi, however none provided along proposed bus route through Guys Reserve. Key link connection missing – would improve connectivity score if this was provided.
- Displaced residents north of Ti Rakau Drive.

Improvements proposed

- Retention of Guys Reserve Walkway. North/south connection from Guys Road to Te Koha Rd retained (via underpass or something similar).
- Walking and Cycling route provided adjacent to proposed bus route. Would mitigate/improve the loss of Guys Reserve as a result of Link Road. Would connect to walking / cycling connection improvements made to Te Irirangi Dr and Ti Rakau Dr to make connecting link.
- Replacement vegetation provided west of the station (east side of Te Irirangi Road) following construction to serve as amenity and noise buffer.

Mitigation proposed

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Planting mitigation to soften visual impacts from Busway through Guys Reserve, and to offset loss of vegetation required for construction.
- Strategy for displaced residents north of Ti Raku.

Score without mitigation applied: 1	Score with mitigation applied: 3
Given efficient bus route, utilising area of largely unused open space land. However, score is dependent on: • *Useability of the space which will be occupied by proposed Bus route,* • *Impacts to native vegetation.* • *Whether underpass or similar can be provided to resolve north/south severance issue created by bus route.*	*Provided walking cycling connection is provided along proposed bus route through Guys Reserve, and severance issue through Guys Reserve is resolved via underpass or similar (to retain north/south connection from Guys Road to Te Koha Road.* *Retained areas of Guys reserve are enhanced / footprint and effects are minimised.*

OPTION B (Bus Station Option 6 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Significant construction impacts upon Ti Rakau Dr and Te Irirangi Dr. Major impacts to accessways to businesses along these routes.
- Significant disruption to residents north of Ti Rakau Drive – displacement of residents and noise issues.
- Major construction related impacts, but minimal operational impacts. Construction impacts assumed to be more severe given construction period assumed to be longer (due to option being online).

Key matters of consideration:

Community Facilities / Open Space

- No construction related or permanent impacts to Guys Reserve.
- Walking cycling connections along Te Irirangi Drive directly connects into Town Centre Drive – greater transport choice to services, businesses, and community facilities within Botany Town Centre.

Impacts upon viability / productivity of business land areas

- Significant construction related impacts to several businesses located along Te Irirangi Dr and Ti Rakau Dr. Accessways and normal vehicle traffic significantly impacted.

Impacts upon social connectivity

- Enhanced walking cycling link north-south along Te Irirangi Drive
  - Transport choice / enhanced access to bus station for residents located along / near this route.
- More conflict points for bus route. Further distance to travel compared to Link Option 3. Results in longer travel times for PT users.
- No additional signalised crossings – widened road with multiple transport options results in severance for pedestrians.

Improvement proposed

- Enhance crossing points on Te Irirangi Rd to Ti Rakau Dr to reduce severance effects of additional infrastructure within the road corridor.

Mitigation proposed

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Relocation strategy for displaced residents.
- Mitigation to manage and ensure access and deliveries for customers and businesses is retained.

Score without mitigation applied: 1	Score with mitigation applied: 3
Significant construction impacts (impacting social connectivity and business viability during construction). However little permanent impacts on resource valued by communities (i.e. Open Space). *Walking/cycling connection through Guys Reserve would improve social connectivity score.*	

OPTION C (Bus Station Option 13 with Link Road Option 3)

Assumptions relied upon to undertake assessment:

- Significant loss of public Open Space. This is considered an Inefficient use of land in comparison to Option 6, which utilises a carparking space of little community value.
- No walking and cycling connection is provided through Guys Reserve.
- Significant loss of Guys Reserve Open Space, and significant visual impacts from proposed bus station. Significant loss of amenity for residents south of Guys Reserve.
- Construction will not impact Te Koha Dr (or businesses).

Key matters of consideration:

Community Facilities / Open Space

- Significant permanent impacts upon Guys Reserve.
- Significant visual impacts upon residents south of Guys Reserve.

Impacts upon viability / productivity of business land areas

- Minimal business impacts.
    - Assumed VTNZ will be able to operate throughout construction periods.
    - No permanent impacts to businesses. (exception is Picolo Park on Ti Rakau; some land will need to be acquired for Walking/cycling path).

Impacts upon social connectivity

- Significant permanent impacts upon Guys Reserve.
    - Permanent severance of walkway. North south connection through Guys Reserve permanently removed. East/west connection through Guys Reserve permanently removed.
        - Little or no opportunity to mitigate this loss of connectivity.
        - Looks to be an east west walking connection through Guys Reserve, which traverses north of properties on Cottesmore Ave (this will be retained / unaffected).
- Efficient Bus route with minimal conflict points – reduced travel time for PT users.
- Overpass over Ti Irirangi Drive from Guys Reserve Bus Station – improves severance issue and provides direct connection to Botany Town Centre.

Improvement proposed

- A bridge or access to maintain access from residential to Te Koha Road and to the station would maintain / improve social connectivity. However, this may require further open space land to construct, therefore impacting negatively on the communal public open space.
- Walking/cycling path through Guys Reserve (south of Te Koha business service lane) providing transport choice to bus station.

Mitigation proposed

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Significant revegetation Plan to soften visual impacts of bus station and link road, and to offset loss of vegetation removed for construction.

Score without mitigation applied: 0	Score with mitigation applied: 1 *given significant permanent impacts to Guys reserve.* *Provided walking cycling connection is provided along proposed bus route through Guys Reserve, and severance issue through Guys Reserve is resolved via underpass or similar (to retain north/south connection from Guys Road to Te Koha Road.*

OPTION D (Bus Station Option 13 with Link Road Option 1)

Assumptions relied upon to undertake assessment:

- Significant loss of public Open Space. This is considered an Inefficient use of land in comparison to Option 6, which utilises a carparking space of little community value.
- No walking and cycling connection is provided through Guys Reserve
- Significant loss of Guys Reserve Open Space, and significant visual impacts from proposed bus station. Significant loss of amenity for residents south of Guys Reserve.
- Construction will not impact Te Koha Dr (or businesses).

- Indirect bus route, needs to follow existing road alignment, as opposed to short cutting through Guys Reserve.

Key matters of consideration:

Community Facilities / Open Space

- Significant permanent impacts to Guys Reserve.
  - Use of this space significantly impacted
  - Walkway connections removed and/or severed.
- Vegetation removal.

Impacts upon viability / productivity of business land areas

- Significant construction related impacts to several businesses located along Te Irirangi Dr and Ti Rakau Dr. Accessways and normal vehicle traffic significantly impacted.

Impacts upon social connectivity

- Significant permanent impacts upon Guys Reserve.
  - Severance of walkway. North south connection through Guys Reserve
    - Looks like a connection can still be made onto Te Koha Rd.
    - Looks to be an east west walking connection through Guys Reserve, which traverses north of properties on Cottesmore Ave (this will be retained / unaffected).
- Enhanced walking cycling link north-south along Te Irirangi Drive
  - Transport choice / enhanced access to bus station for residents located along / near this route.
- Overpass over Ti Irirangi Drive from Guys Reserve Bus Station – improves severance issue.
- Impacts to and displacement of residents north of Ti Raku Drive.

Improvement proposed

- A bridge over Guys Reserve stormwater pond which connects to bus station overpass would improve social connectivity. However, this may require further open space land to construct, therefore impacting negatively on the communal public open space.
- Walking/cycling path through Guys Reserve (south of Te Koha business service lane) providing transport choice to bus station.

Mitigation proposed

- Regular communication with affected community facilities / business owners (CLG).
- Provision of Traffic Management Plans (TMPs) to ensure access to key facilities are provided throughout construction. Construction Management Plan (CMP's) to limit disruption impacts. Development response initiatives.
- Restrictions to hours of operation / restrictions during sensitive hours in order to reduce impacts during construction.
- Significant revegetation Plan to soften visual impacts of bus station and link road, and to offset loss of vegetation removed for construction.

Score without mitigation applied: 0	Score with mitigation applied: 1
Significant and permanent impacts to Guys Reserve, without the benefit of a reduced travel time.	*Significant permanent impacts to Guys reserve.* *Provided walking cycling connection is provided along proposed bus route through Guys Reserve, and severance issue through Guys Reserve is resolved via underpass or*

Significant construction impacts along major transport routes, resulting in significant construction related impacts to businesses and travel times. *Inefficient use of land (Bus Station).*	*similar (to retain north/south connection from Guys Road to Te Koha Road.*

EB4 Combined Options Score Sheets

EB4 Combined Option Score Sheet
Assessor and areas of assessment: Chris Bentley Project Objectives 2 and 3, Urban Design Effects and Visual Effects
Assumptions/comments etc applicable to all options:

OPTION A (Bus Station Option 6 with Link Road Option 3)

URBAN DESIGN

Project Objective 2: Integrates with existing landuses and supports a compact urban form;

- Bus station located beside Te Irirangi Drive. Reasonably compact form.
- Opportunity for Botany Town Centre to build up to the bus station and integrate PT with retail.

Project Objective 3: Accessibility and place shaping;

- Pedestrian access to platform via a central over bridge that aligns with the main entrance to Botany Town Centre.
- Located close to and parallel with Te Irirangi Drive so will have a strong street presence.
- Impact on Guys Reserve with potential loss of open space.
- Reduced connectivity for reserve uses and community to the south to access the HUB retail centre.

LANDSCAPE

- Impact on vegetation in Guys Reserve and on wetland/ stormwater pond.

VISUAL

- Visual impact on the retirement village north of Haven Drive and properties south of Guys Reserve.

Area of Assessment	Score without mitigation applied:	Score with mitigation applied:
Urban Design effects	-3	-2
Landscape effects	-2	-1
Visual effects	-3	-2

OPTION B (Bus Station Option 6 with Link Road Option 1)

URBAN DESIGN

Project Objective 2: Integrates with existing landuses and supports a compact urban form;

- Compact form.
- Utilises existing road corridor and connections to the HUB and Botany Town Centre.
- Opportunity for Botany Town Centre to build up to the bus station and integrate PT with retail.

Project Objective 3: Accessibility and place shaping;

- Provides convenient active mode connections, ie extension of EB1-3 cycleway and footpaths to the end of Ti Rakau Drive and down Te Irirangi Drive to connect with the retail centres and bus station options.

LANDSCAPE

- Impact on vegetation in Ti Rakau and Te Irirangi Drive.

VISUAL

- Potential visual amenity impact on housing to north of Ti Rakau Drive.
- The road corridor becomes very wide resulting in adverse visual effects for road users.
- Visual impact on the retirement village north of Haven Drive.

Area of Assessment	Score without mitigation applied:	Score with mitigation applied:
Urban Design effects	-1	1
Landscape effects	-1	0
Visual effects	-3	-2

OPTION C (Bus Station Option 13 with Link Road Option 3)

URBAN DESIGN

Project Objective 2: Integrates with existing landuses and supports a compact urban form;

- Reasonably compact form.
- Bus station dominates Whaka Maumahara Reserve.
- Loss of public open space.

Project Objective 3: Accessibility and place shaping;

- Limits access from Whaka Maumahara Reserve to the HUB retail centre.
- Pedestrian access restricted to a range of lifts and over bridges.

LANDSCAPE

- Impact on Whaka Maumahara Reserve including the stormwater pond/ wetland.

VISUAL

- The main effected viewing audiences are the retirement village/ housing estate off Waihi Way. They currently lookout over Whaka Maumahara Reserve. The Bus station will potentially have significant visual effects on the retirement village.
- Potential visual effects of the link road residents south of Guys Reserve.

Area of Assessment	Score without mitigation applied:	Score with mitigation applied:
Urban Design effects	-4	-4
Landscape effects	-3	-2
Visual effects	-4	-3

OPTION D (Bus Station Option 13 with Link Road Option 1)

URBAN DESIGN

Project Objective 2: Integrates with existing landuses and supports a compact urban form;

- Reasonably compact form.
- Bus station dominates Whaka Maumahara Reserve.
- Loss of public open space.
- Utilises Ti Rakau Drive and Te Irirangi Drive.
- Provides good access to existing retail.

Project Objective 3: Accessibility and place shaping;

- Provides convenient active mode connections, ie extension of EB1-3 cycleway and footpaths to the end of Ti Rakau Drive and down Te Irirangi Drive to connect with the retail centres and bus station options.
- Bus station fronts onto Te Irirangi Drive.

LANDSCAPE

- Impact on Whaka Maumahara Reserve including the stormwater pond/ wetland.

VISUAL

- Potential visual amenity impact on housing to north of Ti Rakau Drive.
- The road corridor becomes very wide resulting in adverse visual effects for road users.
- The main effected viewing audiences are the retirement village/ housing estate off Waihi Way. They currently lookout over Whaka Maumahara Reserve. The Bus station will potentially have significant adverse visual effects on the retirement village.

Area of Assessment	Score without mitigation applied:	Score with mitigation applied:
Urban Design effects	-3	-3
Landscape effects	-3	-2
Visual effects	-3	-2

Appendix 6: Presentation to Mana whenua

Mana whenua hui

Eastern Busway Alliance - 25 March 2021

Eastern Busway Alliance

Fletcher | acciona | AECOM | Jacobs

Let's get East Auckland moving

Agenda

- Welcome and introductions
- Botany Station and Link Road (EB4) MCA
- Feedback on options from environmental science, urban design and transportation specialists
- Guys Reserve update
- Geotech site investigation – blessing and monitoring

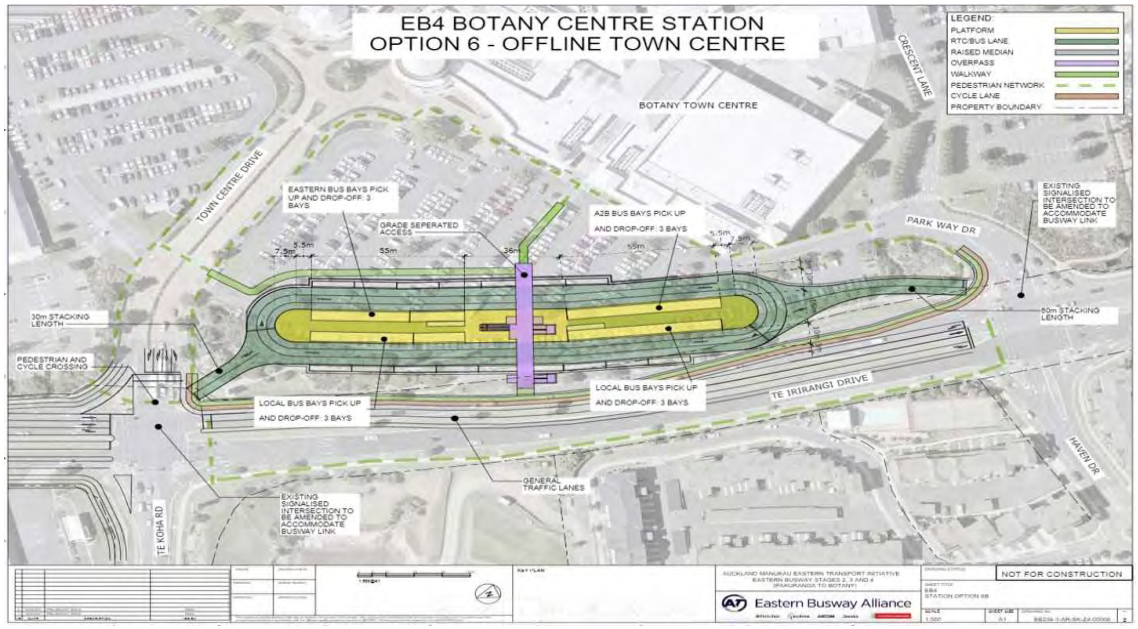
EB4 MCA Process

- Hui at Pakuranga Library on Tuesday 9 March
- MCA online via MS Teams on Wednesday 10 March
- Assessed 6 station options / 3 link road options
- Heard from 12 assessors on range of areas

EB4 link road - technically preferred option

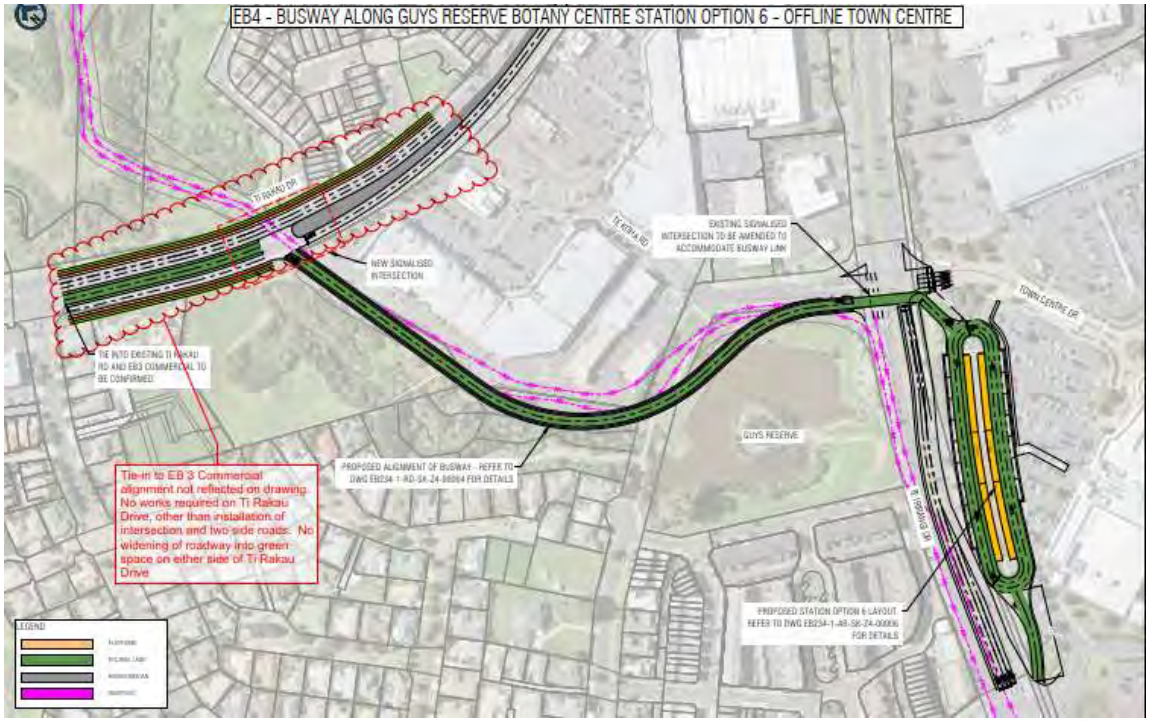
- Link Rd alignment through Guys Reserve
- Greater efficiency and reliability for buses
- Reduces the works required on Ti Rakau Dr
- Transpower cables close by
- Adjacent to existing stormwater pond

EB4 station – technically preferred option



- This shows the ultimate station solution for the Airport to Botany project
- This station layout can be staged to provide only what is required for Eastern Busway
- Located within Botany town centre
- Includes on site layover areas
- Grade separated pedestrian access

EB4 station and link road – technically preferred



Eastern Busway Alliance

Fletcher | acciona | AECOM | Jacobs

Let's get East Auckland moving

Environmental Science – Caitlin Smith

- Current environment
- Assessment of options
- Issues and mitigation opportunities

Terrestrial and Freshwater Ecology

The **MCA options assessment** (terrestrial and freshwater ecology) was guided by:

- Effects on the **freshwater** receiving environment (streams, wetlands) from road construction and operation
- Effects on indigenous **vegetation** from road construction
- Effects on habitats of indigenous **fauna** (birds, skinks, geckos, bats) from road construction and operation

Terrestrial and Freshwater Ecology

The **existing** environment:

- **Vegetation** - roadside native trees, residential, amenity plantings, parkland trees.
- **Streams** within Burswood Reserve and Guys Reserve.
- **Wetlands** within Burswood Reserve and possibly Guys Reserve
- **Birds** – mainly ‘introduced or naturalised' or 'native - not threatened’. Guy’s Reserve stormwater ponds may provide foraging habitat for 'at risk-recovering' Pied Shag, New Zealand Dabchick, ‘At-risk declining’ Red-billed Gull and 'At risk - naturally uncommon' Little Black Shag.
- **Lizards** – potential habitat for native copper skink.

Terrestrial and Freshwater Ecology

Mitigation options:

- Sensitive bridge design over streams
  - bridge piers placed out of active stream channel and riparian margin, and bridge piers designed to minimize erosion and scour.
- Groundwater charge maintained to any adjacent wetlands.
- Offset/compensation for loss in ecological value due to stream realignment or loss.
- Landscape planting with ecological enhancements.
- Appropriate erosion and sediment control measures during construction.
- ISCA will push mitigation further into enhancement space.

Urban Design – Chris Bentley

- Current environment
- Assessment of options
- Issues and mitigation opportunities

Urban Design- Current Environment

- Ti Rakau Drive and Te Irirangi Drive
- Guys / Whaka Maumahara Reserve
- The HUB and Botany Town Centre
- Residential dwellings to the south

Urban Design- Current Environment

Urban Design Assessment Methodology

02 Provide transport infrastructure that integrates with existing landuses & supports quality compact form

- Integrates with adjoining town centers
- Enables growth
- Enables higher quality living & working environments
- Amenity –natural environment
- Townscape (quality of urban center)
- Community severance
- Walking & cycling
- Ease of access between bus station & surrounding retail

03 Contribute to accessibility & place shaping by providing better transport connections between, within & to the town centers

Urban Design Issues & Opportunities

- Active mode connectivity
- Impacts on Guys Reserve
- Visual effects from the south
- Bus station integration

Transportation – Tim Brown

- Current environment
- Assessment of options
- Issues and mitigation opportunities

Guys Reserve Stormwater Pond

- Reserve status – local purpose drainage reserve
- Healthy Waters consent (to be updated)
- Operation and maintenance plan

Geotech site investigations

- Largely in and around EB3 Commercial zone
- EB4 detailed locations still to be determined
- **Estimated depth 3m to 30m**
- Boreholes stored off-site in storage container
- Indicative programme to start early-mid May
- Next steps for blessing and monitoring

Future hui

- Stormwater
- ULDF
- Cultural induction for the alliance
- Joint site visit with environmental specialists
- Construction and safe site processes

High level programme

- Late April 2021 - AT Board approval
- Mid 2021 – Property and community consultation
- Late 2021 – Consenting process
- 2022 – Construction commences
- 2025 – Construction completed

Action register

Action	Status	
Residual land and future development – is there opportunity to influence standards and developer responsibilities?	Initial discussion with AT and Panuku	
Guys Reserve – where did the name Whaka Maumahara come from?	Manukau City Council, 1990's AC archives are finding out more info	
Guys Reserve – status and operation / management of the pond	Local purpose drainage reserve. Some design details with more investigation required	
Geotech borehole protocols for storage.	Depths – 3 to 30m. Stored offsite. More detail to come.	
Size of Manukau Station in comparison to Botany	Similar size, volume of buses that it will service will be significantly more	
Want to be significantly involved in the design and naming of stations	Noted – future hui discussion topic	
Stormwater – flooding at Gossamer Drive, Pakuranga Creek is currently poor environment, opportunity for treatment	Noted – future hui discussion topic	

Thank you.

Eastern Busway Alliance

Fletcher | acciona | AECOM | Jacobs

Let's get East Auckland moving