# GARTNERROSE



WAITARA STATION UPGRADE

# **ROAD SAFETY AUDIT**

#### FOR TfNSW TRANSPORT ACCESS PROGRAM 3

CONTRACT NO. ISD-18-7553G JOB NO. 622 DOCUMENT NO. TAP3150320-AECM-WAI-TF-RPT-000001 REVISION A





Prepared for Gartner Rose PTY LTD ABN: 31 059 738 242



# Road Safety Audit

#### Transport Access Program - Waitara Station

25-May-2022 TAP Waitara Station Doc No. TAP3150320-AECM-WAI-TF-RPT-000001



Delivering a better world

#### Road Safety Audit

Transport Access Program - Waitara Station

#### Client: Gartner Rose PTY LTD

ABN: 31 059 738 242

Prepared by

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25-May-2022

Job No.: 60679984

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#### **Quality Information**

Document	Road Safety Audit
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Ref 60679984

Date 25-May-2022

Prepared by The Transport Planning Partnership

Reviewed by Hugh Harrington

#### **Revision History**

Rev	Revision Date	Details	Authorised		
Nev Nevision Date			Name/Position	Signature	
A	25-May-2022	RSA Concept Design (Pre-Construction) as based on SDR submission	Michael Boy Design Manager	B	
				U	



# Waitara Station Precinct Accessibility Upgrade Concept Design (Pre-Construction) Road Safety Audit

Prepared for:

AECOM

24 May 2022

The Transport Planning Partnership



# Waitara Station Precinct Accessibility Upgrade Concept Design (Pre-Construction) Road Safety Audit

Client: AECOM

Version: 02

Date: 24 May 2022

TTPP Reference: 22159

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
01	23/5/2022	Doris Lee	Wayne Johnson	Wayne Johnson	-
01	24/5/2022	Doris Lee	Wayne Johnson	Wayne Johnson	Wehn



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#### **APPENDICES**

A. DESIGN PLANS



### 1 Road Safety Audit Summary

Audited project:	Waitara Station Precinct Accessibility Upgrade
Client:	AECOM
Project manager:	Cameron Ward
Email address:	cameron.ward@aecom.com
Telephone:	0404 159 916
Audit Team:	Wayne Johnson (level 3 lead road safety auditor) Doris Lee (level 3 road safety auditor)
Audit type:	Concept Design (Pre-Construction)
Commencement meeting:	N/A
Audit date:	16 and 19 May 2022
Completion meeting:	N/A

The objective of this road safety audit is to examine and identify road safety concerns for the Waitara Station Precinct Accessibility Upgrade project. The findings of the road safety audit have been detailed in Section 4.3 of this report.



### 2 Introduction

#### 2.1 Background

This Road Safety Audit report relates to the concept design of the Waitara Station Precinct Accessibility Upgrade. The design essentially involves the following key features to be delivered as part of the Transport Access Program, as shown in Figure 2.1 and an enlargement in Appendix A:

- Upgraded station entries ensuring accessible paths of travel
- New accessible pathways on Alexandria Parade, including a new compliant pedestrian road crossing and new compliant underpass forecourt
- New ramp pathways within the station car park
- Two new accessible parking spaces on Alexandria Parade
- Two new Kiss-and-Ride spaces and two accessible spaces within the station carpark.



#### Figure 2.1 Proposed Works

Access to the station car park is via The Pacific Highway and Waitara Avenue intersection. Configuration of the station car park will remain unchanged except for the additional Kissand-Ride and accessible parking spaces. An extension of the handstand to the north-west of the station car park is to provide an underpass forecourt to accommodate the stairs, lift and bicycle parking.



Changes on Alexandria Parade involve conversion of the existing road hump to a raised pedestrian crossing and provision of two accessible parking and an accessible path to the underpass forecourt.

The design plans which are the subject of this Road Safety Audit is provided in Appendix A.

#### 2.2 Audit Objective

The objective of this Audit is to examine the road safety issues associated with the proposed accessibility improvement in the station car park and Alexandra. It is noted that the proposed works within the station platform and underpass have been excluded from the road safety audit. The focus of the Audit is the proposed changes at the station car park and Alexandria Parade.

#### 2.3 Procedures and Reference Material

The procedures used are described in the following guidelines:

- Roads and Maritime Services' 2011 Guidelines for Road Safety Audit Practices
- Austroads Guide to Road Safety 2019: Part 6 Managing Road Safety Audits
- Austroads Guide to Road Safety 2022: Part 6 Managing Road Safety Audits

#### 2.4 Audit Team

The RSA was carried out by the following team:

- Wayne Johnson (RSA-02-0769) level 3 road safety auditor (lead auditor)
- Doris Lee (RSA-02-0128) level 3 road safety auditor (team member).

Both Wayne and Doris are registered road safety auditors with the NSW Centre for Road Safety and experienced in traffic engineering and design/ inspection of traffic management schemes.



### 3 Road Safety Audit Program

#### 3.1 Commencement Meeting

A formal meeting was not held.

#### 3.2 Site and Field Audit

A site inspection was undertaken on 16 and 19 May 2022. Weather on both days was fine and visibility was excellent.

The audited station car park and road section were driven and walked over in each direction to identify possible road safety concerns. A number of photographs and video footage were taken.

#### 3.3 Completion Meeting

A completion meeting is not required.



# 4 Road Safety Audit Findings

#### 4.1 Introduction

Table 4.1 provides specific details of the audit findings and a risk rating as high, medium or low. The risk ratings have been based on the risk matrix presented in Table 4.1, which has been adopted from the standard Austroads Risk Matrix.

Likelihood	Highly probable	Occasional	Improbable
Severity	~		
Major	High		Medium
Moderate	High	Medium	Low
Minor	Medium	Low	Low

#### Table 4.1: Risk Matrix

The terms in Table 4.1 are described below.

Likelihood:

- Highly probable: It is likely that more than one crash of this type could occur within a fiveyear period.
- Occasional: It is likely that less than one crash of this type could occur within a five-year period.
- Improbable: Less than one crash of this type could occur within a 10-year period.

Severity:

Major: The crash is likely to result in a fatality or serious injuries

For example, high/medium speed vehicle collision, high/medium speed collision with a fixed object, pedestrian struck at high speed, and cyclist hit by car.

- Moderate: The crash is likely to result in minor injuries or large scale of property damage
   For example, some slow speed vehicle collisions, cyclist falls, and rear end crashes.
- Minor: The crash is likely to result in minor property damage or many near miss crash events

For example, some slow speed collisions, pedestrian walks into object (no head injury), and car reverses into post.

Priority:

- High: Very important, and needs to be addressed urgently.
- Medium: Important, and needs to be addressed as soon as possible.
- Low: Needs to be considered as part of regular maintenance/planning program.



#### 4.2 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for the road rests with the project manager, not with the auditor. The project manager is under no obligation to accept the audit findings. Neither is it the role of the auditor to agree to, or approve the project manager's responses to the audit.

The audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager in conjunction with all other project considerations.

#### 4.3 Road Safety Audit Findings

The audit findings are documented in Table 4.2 which provides:

- specific details of the road safety issues identified during the audit
- a risk level rating for each of the road safety audit findings.

It should be acknowledged that positive attributes of the audited road section have not been discussed. Deficiencies that do not cause a safety problem are also not listed.

In-line with TfNSW's best practice recommendations have not been included in the road safety audit findings.



#### Table 4.2: Road Safety Audit Findings

ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
1.	Alexandria Parade, in vicinity of Orara Street	Pedestrian desire line across Alexandria Avenue is expected to be north-west of Orara Street between the underpass and the north side of Alexandria Avenue, considering the pedestrian catchment to/from the south- east would be accommodated by the existing signalised crossing at the Alexandria Avenue and Waitara Avenue intersection. As such, the proposed pedestrian crossing is not aligned with the pedestrian desire lines to/from the north- west of the underpass as shown by the red arrow on the diagram. This may result in pedestrians crossing Alexandria Avenue outside the proposed facility which would increase the likelihood of collisions involving pedestrians in the 40km/h zone.		Occasional	Moderate	Medium	The transformer has been relocated to the Western side of the new underpass which with the incorporation of the revised retaining walls around this transformer it is expected that the pedestrian desire line will be to the east. Additionally the majority of the residential developments are on the North-East side of Alexandria Pde and as such the desire lines are predominantly likely to be towards the North-East side (about 65%). There are a few residential towers towards the North- west, mainly along Romsey St and Thomas St. There are no further developments in this direction and leads to a rail over bridge (with a narrow footpath on one side) with areas to be served by pedestrian movement via the car park entry. Considering the above, the proposed location of the pedestrian crossing is considered to be suitable and as such the crossing location is proposed to remain in location currently shown.



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
2.	Alexandria Parade, south-east of Orara Street	The design involves removal of the existing kerb buildout and conversion of the road hump into a raised pedestrian crossing. There is no provision of a No Stopping zone to prohibit parking on both sides of the pedestrian crossing, in accordance with the TfNSW Technical Direction TDT 2002/12c. The following safety concerns are raised: • No physical separation for pedestrians adjacent to parking space which may result in pedestrians being struck by a vehicle manoeuvring into/out of the adjacent parking spaces located on both sides of the crossing. • Impeded crossing sight distance from the kerb by the parked vehicles adjacent to the crossing. This would increase the likelihood of a crash	LIFT LOBBY SHOWN DASHED NEW BENCH AND WHEELCHAIR WATING SPACES	Occasional	Moderate	Medium	Agreed with comment. Upcoming submission to include build up of curb to improve sightlines.
		<ul> <li>A longer crossing distance may increase the safety</li> </ul>	ORARA	T			
		risk especially for elderly pedestrians.	POTENTIAL LOCATION				



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
3.	Alexandria Parade, south-east of Orara Street	The proposed pedestrian crossing on Alexandria Parade is about 3m wide which is less than the required 3.6m in accordance with TfNSW Supplement to Austroads Guide (Part 10). A narrow width would result in pedestrian walking outside the designated crossing, especially this is outside a train station where pedestrian demand would be high.	POTENTIAL LOCATION FOR ZEBRA CROSSING	-	-	Note only	Agreed with comment. Upcoming submission to reflect the 3.6m crossing width.



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
4.	South side of Alexandria Avenue	Currently there is no provision to separate pedestrians from traffic on the south side of Alexandria Parade. Pedestrians are to walk within the manoeuvring area between the 90 degree parking spaces and travel lane. As such, pedestrians are exposed to passing traffic and parking movements without any physical separation for protection. The proposed short footpath on the north side of the underpass would not provide sufficient protection to pedestrians to access all the 90 degree parking spaces on Alexandria Avenue. Given most pedestrians tend	<image/>	Improbable	Moderate	Low	The current scope of this project does not include the provision for an additional pedestrian footpath towards the existing southern underpass. However we note that the current footpath does allow for a future extension at a later date.
		to take the shortest walking route, they are less likely to take a longer walking route via the proposed pedestrian crossing and the footpath on the opposite side of the road and back to the 90 degree parking space (and vice versa for the opposite direction). As such, they may continue to walk along the manoeuvring area. This may result in a pedestrian being struck by passing traffic and/or a vehicle manoeuvring into/out of the parking space.	ADDITIONAL LOCATION NET WAS NOT THAN ADDITIONAL THAN ADDITION				



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
5.	Intersection of Alexandria Parade and Orara Street	The proposed accessible spaces are located within the intersection of Alexandria Parade and Orara Street. There is a risk of collisions involving vehicles manoeuvring into/out of the parking space and the passing vehicles.	TACTILES AND NOSING UNDERPASS LIF OPENING TO ALEXANDRIA PA ALEXANDRIA PA DOPENING TO ALEXANDRIA PA STREET ORARA STREET	Improbable	Minor	Low	The DDA parking spaces are intended to be located directly adjacent to or in front of the entrances to improve the visibility and sightlines of the entrance. We note that relocating the DDA parking spaces will not remove the risk, but rather change the type of vehicles that may be deemed at risk. As the risk rating is low here, the benefit to the accessibility is deemed more advantageous, as such it is not proposed to relocate these spaces. However we will assess the feasibility of relocating these spaces to the West of the entrance in front of the transformer.



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
6.	Station car park	Existing width of the parking aisle varies between 3m and 6m which does not meet the AS2890.1 minimum requirement of 6.2m for User Class 1 (long term parking). The parking aisle narrows to		Occasional	Minor	Low	The current scope of this project does not include an upgrade to the commuter car park. We note that there is an option (SS-WAI-SRS- 022A) under the
		3m towards north-west where the proposed Kiss-and-Ride and accessible parking spaces are located.	29m				contract to upgrade this commuter car park which would address this comment.
		An increase in traffic flow to the Kiss-and-Ride spaces may increase the likelihood of crashes associated with parking manoeuvres and the two-way traffic in the narrow parking aisle.					
		N.B. However, we are of the view motorists will continue to drop and pick up passengers in Waitara Avenue (south side) than utilise the proposed kiss and ride car spaces within the commuter car park.					



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
7.	Turning area of the station car park	The existing turning area cannot accommodate the turning movement of a vehicle in one manoeuvre and hence reverse movements are required to complete the turn. Given the turning area would be reduced to make way for a pedestrian path, additional manoeuvres would be required to complete the turning movement at the turning area. Reverse movements would create conflict points with the parking manoeuvres to/from the proposed accessible parking spaces located at the back of the turning area.	K&R PARKING NO 2	Improbable	Minor	Low	The current scope of this project does not include an upgrade to the commuter car park. We note that there is an option (SS-WAI-SRS- 022A) under the contract to upgrade this commuter car park which would address this comment.
8.	Station car park	Kiss-and-Ride parking No. 1 is measured as approximately 5.8m in length which is less than the required 6.3m in accordance with AS2890.1. As such, the space length is too short for a vehicle to manoeuvre.	K&R PARKING NO 1 5.80 m	-	-	Note only	Noted. The length will be increased to 6.3m in the upcoming CDR main works package.



ltem No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Comment
9.	Station car park	The existing lighting along the station car park is dim during the night time. Considering the increase in pedestrian activities in this section of the station car park, sufficient lighting would increase visibility of pedestrians during the night time.	<image/>	-	-	Note only	The current scope of this project does not include an upgrade to the commuter car park. We note that there is an option (SS-WAI-SRS- 022A) under the contract to upgrade this commuter car park which would address this comment.



# 5 Concluding Statement

The findings and opinions in the report are based on the examination of the specific road and environs, and might not address all concerns existing at the time of the audit.

The auditors have endeavoured to identify features of the road that could be modified in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to the Auditors.

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Wayne Johnson Level 3 Lead Road Safety Auditor The Transport Planning Partnership

Doris Lee Level 3 Road Safety Auditor The Transport Planning Partnership



# Appendix A

Design Plans



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