Appendix 7

Ardmore Park Quarry – Modification 3

Road Safety Audit
Jerrara Road Upgrade

prepared by

Rigore Engineering Services

(Total No. of pages including blank pages = 36)

April 2018

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RIGORE
ENGINEERING SERVICES

Road Safety Audit Report – Jerrara Road Upgrade

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ABOUT THIS RELEASE

Title:	Road Safety Audit Report – Jerrara Road Upgrade
Author:	J. Gorrie
Authorised by:	J. Gorrie

Issue	Date	Revision description
1.0	29/03/2018	Draft Issued
2.0	14/04/2018	Final Issued

CONTENTS

1. AUDIT STATEMENT

Project Name:

Audit Stage: Post Completion

[Audit ID if application]

Client:	Goulburn Mulwaree Council		
Client address:	Locked Bag 22 Goulburn NSW 2580		
Client Representative:	Tracey Norberg		
Phone:	02 4823 4510		
Audit team Leader:	James Gorrie	Level	3
Audit leader phone:	0438 223 535		

Audit Statement

We, the undersigned, declare that we have reviewed the material and data listed in this report and identified the risks to road safety listed in the Table 4. Reasons are given to explain why an identified item is considered a risk to road safety. The auditors listed are independent to the project.

Design or construction deficiencies that do not cause a safety problem are not listed.

It should be noted that while every effort has been made to identify potential safety problems, no guarantee can be made that every problem or deficiency has been identified.

It is recommended that identified risks to road safety be investigated and corrective actions implemented.

James Gorrie Lead Safety Auditor Date: 17/4/18

Dean Howard Road Safety Auditor Date: 17/4/18

2. AUDIT DETAILS

2.1 Description of project

The Jerrara Road project is an upgrade of the existing Jerrara road, Oallen Ford Road and construction of the new Bungonia Bypass Road. This project is currently under construction due to the conditions of consent imposed onto a local quarry operator looking to expand its operation. These conditions of consent have stipulated that the upgrade must be complete prior to allowing full operation of the quarry. At the time of the audit the quarry operator had permission to run 20 trucks (in and out) per day. Upon completion of Stage 3 roadworks this is due to increase 56. The operator is seeking an early increase in these movements. This audit will assist Council to determine the suitability of this request.

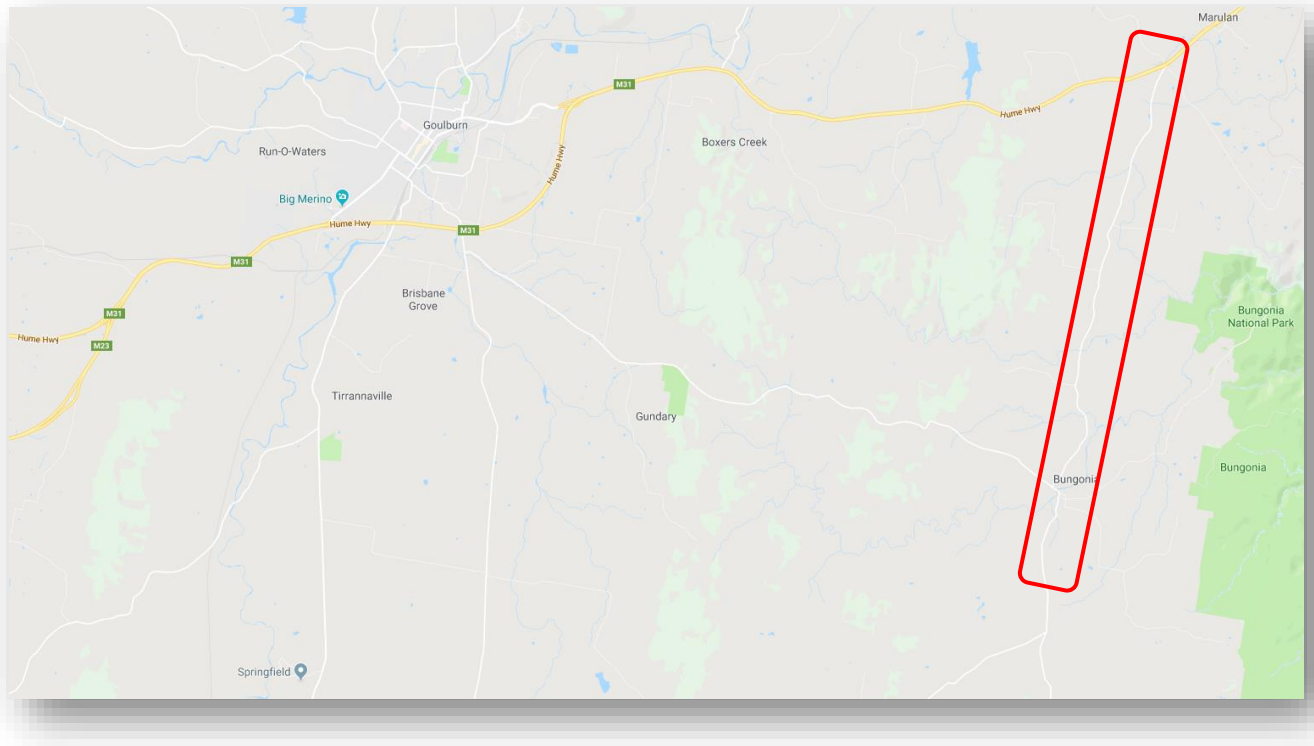
The Jerrara Rd Project is approximately 20km in length and includes:

- Shoulder widening on both side of the road alignment including spray seal of widened shoulder
- Extension of stormwater structures
- Intersection upgrades
- Installation of safety barrier
- Linemarking
- Construction of the Bungonia Bypass Road

For the purpose of this audit the project was split into 5 sections;

- Section 1 - Oallen Ford Road (Quarry access to Bungonia bypass road)
- Section 2 - Bungonia Bypass Road
- Section 3 - Mountain Ash Road Intersections (Bungonia Bypass Road and Jerrara Road)
- Section 4 - Jerrera Road (Intersection of Mountain Ash Road to start of workzone)
- Section 5 - Jerrera Road (workzone)

The audit linear reference has commenced at the Quarry access and continues north.



2.2 Type of audit

The type of audit is shown in Table 1:

Project phase	Type of Road Safety Audit	Tick relevant type
Pre-construction	Strategic Design	☐
	Concept Design	☐
	Detailed design	☐
Construction	Roadworks	☑
	Pre-opening	☐
Post construction	Finalisation	☐
	Existing road	☐

TABLE 1: AUDIT TYPE

2.3 Scope of audit

The objective of this road safety audit is to identify any potential safety hazards which may arise as a result of the recent/ongoing construction activities and future operation of the road network.

2.4 Reference Material

The following list or references provided background information during the audit process:

- TNSW Guidelines for Road Safety Audit Practices (2011)
- Austroads: Guide to Road Safety Part 6: Road Safety Audit (2009)
- Austroads: Guide to Road Design and RMS Supplements
- Australian Standards AS1742 – Manual of Uniform Traffic Control Devices and RMS Supplements

2.5 Information supplied

The list of information supplied is shown in Table 2:

Documentation	Document Title/Reference
Conditions of consent	Ardmore Park Quarry Mod_2_Consolidated Approval.pdf

TABLE 2: INFORMATION SUPPLIED

2.6 Exclusions

A road safety audit:

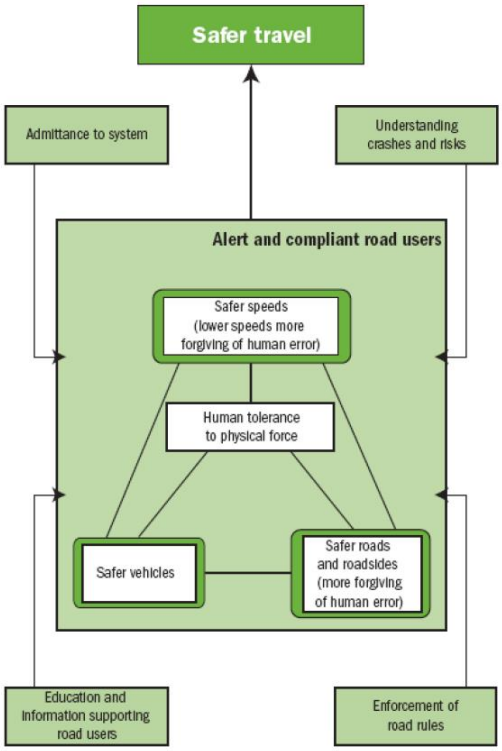
- is **not** a way of assessing or rating a project as good or poor
- is **not** a means of ranking or justifying one project against others in a works program
- is **not** a way of rating one option against another
- is **not** a check of compliance with standards
- is **not** a substitute for design checks
- is **not** a crash investigation
- is **not** a redesign of a project
- is **not** to be applied only to high-cost projects or only to projects involving safety problems
- is **not** the name used to describe informal checks, inspections or consultation.

2.7 Considerations

The identification and removal or treatment of road elements which may contribute to crash occurrence or crash severity is a key component of the *safe system* approach to road safety. A safe system acknowledges that human error within the transport system is inevitable, and that when it does occur the system makes allowance for these errors so as to minimise the risk of serious injury or death. In a safe system, therefore, roads (and vehicles) should be designed to reduce the incidence and severity of crashes when they inevitably occur.

The safe system approach requires, in part (Australian Transport Council, 2006):

- Designing, constructing and maintaining a road system (roads, vehicles and operating requirements) so that forces on the human body generated in crashes are generally less than those resulting in fatal or debilitating injury
- Improving roads and roadsides to reduce the risk of crashes and minimise harm: measures for higher speed roads including dividing traffic, designing 'forgiving' roadsides, and providing clear driver guidance. In areas with large numbers of vulnerable road users or substantial collision risk, speed management supplemented by road and roadside treatments is a key strategy for limiting crashes
- Managing speeds, taking into account the risks on different parts of the road system.



Safer road user behaviour, safer speeds, safer roads and safer vehicles are the four key elements that make up a safe system. In relation to speed the Australian Transport Council (2006) reported that:

- Speed in urban areas greater than 5 km/h above average and 10 km/h above average in rural areas doubles the risk of an injury crash.
- Reductions of as little as 1 to 2% in average speed result in substantially greater reductions in fatalities and serious injuries.
- Chances of surviving a crash decrease markedly above certain speeds, depending on the type of crash i.e.:
    - Pedestrian struck by vehicle 20 to 30km/h
    - Motorcyclist struck by vehicle (or falling off) 20 to 30km/h
    - Side-impact vehicle striking a pole or tree 30 to 40 km/h
    - Side-impact vehicle to vehicle 50 km/h
    - Head-on vehicle to vehicle (equal mass) 70km/h

2.8 Audit team

Audit team and project sponsor details are shown in Table 2.

Role	Name	
Project sponsor name	Tracey Norberg (Goulburn Mulwaree Council)	
Lead auditor	James Gorrie	Lead auditor
Audit team member	Dean Howard	Audit team member

TABLE 3: AUDIT TEAM AND CLIENT DETAILS

2.9 Audit process

This road safety audit was carried in accordance with Transport for NSW 'Guidelines for Road Safety Audit Practices'.

2.10 Audit program

Activity	Date
Commencement meeting	23/03/2018
Site inspection	23/03/2018
Night inspection	23/03/2018
Additional meetings	Nil
Draft report issued	29/03/2018
Completion meeting	10/04/2018
Final report issued	17/04/2018

TABLE 4: AUDIT PROGRAMME

2.11 Commencement meeting

The commencement meeting was held at the Goulburn Mulwaree Hetherington Street Depot between 4:00pm and 4:30pm on Friday 23th March 2018. In attendance were Tracey Norberg (Client), James Gorrie (Lead Auditor) and Dean Howard (Auditor).

Tracey provided the audit team with the project overview, and issues related to this project, including the ongoing construction activities along the length requiring the audits. The audit team advised that they will endeavor to inspect the site under normal traffic conditions pending traffic control arrangements. The condition of consent and background information was provided to the audit team as per table 2.5.

2.12 Site inspection – General Observations

The site inspection took place on Friday 23th March 2018. The weather was mild and the road surface was dry during the site audit.

The daytime inspection took place between 5:00pm and 7:30pm in good light conditions. The night audit commenced at 7:30pm (sunset) and concluded 8:15pm.

Due to the nature of the road and the construction activities it was difficult to pull over and walk the length. Majority of the audit was conducted from the car and where suitable on foot. Where required the audit team pulled over and photographed and measured road features as required.

The night audit comprised a drive through in both directions adopting normal driving conditions, at posted speed/advisory (with the exception of lengths with reduced speed limits due to construction activities on adjacent project), use of headlights and flashing light turned off.

Construction activities, traffic control, driver behaviour, traffic mix and operating speeds were also observed.

The following general points were noted while conducting the audit which are not covered through corrective action requests;

- Some barrier lengths were missing throughout the workzone. The audit team assumed these will be completed as this stage progresses. It is advised this is checked prior to final approval.
- In the attached CAR table some photographs are missing. Due to the nature of the construction activity and lack of safe stopping areas is was difficult to get photographs of all sites.

2.13 Completion meeting

The completion meeting took place on Tuesday 10th April 2018 via phone meeting 11:30am and 12:15pm. In attendance were Tracey Norberg (Council), Stephen Wall (Multiquip) and James Gorrie (Lead Auditor).

All audit findings related to this project were discussed, with both short and long term mitigation measures being proposed by Multiquip. The conditions of consent and background information were discussed and at times influenced the proposed mitigations.

3. RISK ASSESSMENT

The Resultant Level of Risk

		Frequency of Crash Occurring				
		Frequent	Probable	Occasional	Infrequent	Rare
Likelihood of Crash resulting in FSI*	Very Likely	Intolerable	Intolerable	Intolerable	High	Medium
	Likely	Intolerable	Intolerable	High	Medium	Low
	Possible	Intolerable	High	Medium	Low	Very Low
	Unlikely	High	Medium	Low	Very Low	Very Low
	Very Unlikely	Medium	Low	Very Low	Negligible	Negligible

*Fatal or serious injury

Likely Frequency with which associated crash will occur

Frequency	**Description**
Frequent	Once or more per week (>50 crashes per year)
Probable	Once or more per year (a crash cluster)
Occasional	Once every one to five years
Infrequent	Once every five to ten years
Rare	Less than once every ten years

Suggested level of prioritisation based on risk rating

Risk Rating	**Level of prioritization**
Intolerable	Must be corrected immediately
High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
Low	Should be corrected at a suitable time, if cost is low.
Very Low	Should be treated when costs are very low, such as during regular maintenance.
Negligible	Should be rectified if the number minor injuries and or property damage is considered to be an issue.

4. ROAD SAFETY RISKS AND RESPONSE

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
Section 1 - Oallen Ford Road (Quarry access to Bungonia bypass road)								
1			Incorrect and misleading linemarking of the deceleration lane into the Quarry access. **The current linemarking may encourage drivers to utilise the widened pavement in additional to the through lane. This could result in run off road and/or numerous intersection type crashes.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
2			Edgeline and raised reflective pavement markers (RRPM's) missing along this section. **This limits a road user's ability to interpret the road alignment (particularly at night or in heavy fog) and could result in run-off road type crashes at high speed.**	Likely	Occasional	Once every one to five years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
3			There are lengths along this section with inconsistent and narrow lane widths. Some lanes are down to about 3.0m in places. The formation width allows for 2 x 3.5m lanes but the centreline has not be re-done, or done incorrectly after the shoulder widening has been completed. **These narrow lanes increase the likelihood of sideswipe and head on accidents.**	Likely	Occasional	Once every one to five years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
4	**1.8km**		There is an unprotected culvert structure with large vertical drop off on the Eastern side. **This could result in a rollover and run-off road hit object type crash at high speed.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
5			Several curves and crests on this section have no additional warning signage or CAMS. **This could result in run off road and hit object type crashes at these locations.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
6		Numerous locations	Blacked out linemarking still visible at night. In some cases the line types are different to the new linemarking. **This is confusing for drivers at night and may lead to unsafe overtaking and encroachment into opposing traffic lanes. This could lead to head on and side swipe accidents.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
7	**2.4km**	This area was too dangerous to safely pull over to take photograph.	There is an unprotected culvert structure with large vertical drop off on the western side. **This could result in a rollover and run-off road hit object type crash at high speed.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
8			Several trees along this length have been cut down but the stumps remain within the clearzone **This could result in arun-off road hit object type crash at high speed.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
9			Hazard board used for a curve advisory. **This is misleading to drivers and may cause them to think they are coming up to T-Intersection. This could result in run off road and/or numerous intersection type crashes.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
Section 2 - Bungonia Bypass Road								
10			No speed limit signs in place on either end of the Bungonia Bypass Road. **This may allow vehicles to travel too fast for the road environment causing several accidents types.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
11			No barrier on approach to bridge structure to protect steep drop off. **This could result in run off road and hit object type crashes. It may also cause damage to the structural integrity of the bridge if struck.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
12			This section does not have any RRPM's and guideposts are widely spaced. **This limits a road user's ability to interpret the road alignment (particularly at night or in heavy fog) and could result in run-off road type crashes.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
13			Several curves on this section have no advance curve warning signage or chevron alignment markers (CAMS). **This could result in run off road and hit object type crashes**.	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
14	**4.3km**		No controlled access for the stockpile site. **This allows unsafe movements in and out of the stockpile which may cause accidents with through traffic**.	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
15	**4.5km**		Southbound vehicles have a tight right hand curve which tightens further into the curve. The curve has no curve advisory and chevron alignment markers (CAMS) signage or barrier protecting the high and steep embankment. **This could result in roll over and run off road and hit object type crashes.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
16			Both intersections are lacking advance warning signage for the approaching T-Intersection. **This could result in vehicles misjudging the intersections and encroaching into through lanes causing right angle type crashes. This is of particular concern for loaded heavy vehicles with reduced stopping ability on downgrades.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
Section 3 - Mountain Ash Road Intersections (Bungonia Bypass Road and Jerrara Road)								
17		 	Vegetation restricts sight distance at both intersections for vehicles entering Mountain Ash Road. **This could result in vehicles pulling out in front of fast moving through traffic causing rear end and right angle type crashes.**	Likely	Occasional	Once every one to five years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
18			Bungonia Bypass Road intersection is lacking hazard board. **This may lead to cars misjudging the intersections and leading to right angle crashes.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
19			The intersection linemarking is generally in poor conditions and turning lanes are missing painted turn arrows. **This delineation assists in identifying the purpose of the additional lane. This may lead to through traffic incorrectly utilising this lane and could reuslt in numerous crash types.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
Section 4 - Jerrara Road (Intersection to start of work zone)								
20			Several curves and crests on this section have no advisory warning signage or chevron alignment markers (CAMS). **This could result in run off road and hit object type crashes.**	Likely	Occasional	Once every one to five years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
21			There are lengths along this section with inconsistent and narrow lane widths. Some lanes are down to about 3.0m in places. The formation width allows for 2 x 3.5m lanes but the centreline has not be re-done, or done incorrectly after the shoulder widening has been completed. **These narrow lanes increase the likelihood of sideswipe and head on accidents.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
22	**0.9km**	This area was too dangerous to safely pull over to take photograph.	There is an unprotected culvert structure with large vertical drop off. **This could result in a rollover and run-off road hit object type crash at high speed.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
23			Edgeline and raised reflective pavement markers (RRPM's) missing along this section. **This limits a road user's ability to interpret the road alignment (particularly at night or in heavy fog) and could result in run-off road type crashes at high speed.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
24	**2.6km**	This area was too dangerous to safely pull over to take photograph.	There is an unprotected culvert structure with large vertical drop off located on the outside of a curve. **This could result in a rollover and run-off road hit object type crash at high speed.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
25	**3.0km-3.3km**	This area was too dangerous to safely pull over to take photograph.	There is a length of steep embankment with a drop off of about 3.0m high. In this location the lanes width is also reduced. **This could result in rollover and run off road hit object type crashes.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
26	**Fisher Road**		Fisher Road intersection has a large uncontrolled area located adjacent to the turning lane. This area is not defined and could be used as a parking/pullover area. **There may be a conflict between turning vehicles and vehicles using this area to pull over.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
Section 5 - Jerrara Road Work zone								
27	**4.0km**	This area was too dangerous to safely pull over to take photograph.	There is a length on a back of the curve where: - Embankments are steep (non-traversable/recoverable) - no curve advisory or chevron alignment markers (CAMS) - narrow lanes. **This could result in rollover and run-off road hit object type crashes.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
28		Numerous locations	Several property accesses have non driveable headwalls close to the travel lanes. **This could result in run off road and hit object and roll-over type accidents.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
29	**Billabong Road**		Billabong Road intersection is lacking any delineation and signage. **This makes is difficult for vehicles to identify the intersection and where they should be stopping and where to Give Way. This could result in numerous intersection type crashes.**	Possible	Infrequent	Once every five to ten years	Low	Should be corrected at a suitable time, if cost is low.
30		Numerous locations	Throughout the work zone there are several speed changes. It is difficult to determine what speed you should be travelling through the work zone. **This could result in vehicles travelling faster than expected and approach a work area a too great a speed endangering workers.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
31			In some locations the signage conflicts the traffic control. In one location the temporary signals and stop sign were present but a Give-Way sign was also located further into the work zone. **This could lead to vehicles entering controlled areas of the work zone when not permitted causes head on type accidents or endangering workers.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
32	**9.5km**		Drainage structure currently under construction without any traffic control. The road width in this locations is about 4-5m which does not allow vehicles to pass. This is inconsistent with other areas of a similar work which are controlled under stop/go or temporary signals. This issues was excentuated at night. **This could cause head on type accidents**.	Very Likely	Occasional	Once every one to five years	Intolerable	Must be corrected immediately

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
33	10.1-10.7km		Centreline scrubbed out and not clearly visible. **This could lead to vehicles encroaching into oncoming lanes or overtaking in unsuitable locations.**	Likely	Rare	Less than once every ten years	Low	Should be corrected at a suitable time, if cost is low.
34			Power poles located within the clearzone, approximately 2.0m from edgeline. **This could cause run off road hit object type crashes.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
35			Temporary water filled barriers not filled with water. **This barrier doesn't not serve any protection for workers and can allow serious injury if vehicle were to hit the barrier while workers are present.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
36			Reduced sight distance on approach to some temporary traffic signals. **This could cause rear end accidents and vehicles entering the work zone under red light conditions.**	Very Likely	Infrequent	Once every five to ten years	High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
37			Several curves and crests on this section have no additional warning signage or chevron alignment markers (CAMS). **This could result in run off road and hit object type crashes.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
38		 	Several lengths of new barrier are not long enough to protect the entire hazard and required run out angles. **This could result in run off road and hit object type crashes.**	Possible	Occasional	Once every one to five years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

CAR	Location	Photos	Description of Deficiency & Likely Consequence	Likelihood of FSI	Frequency	Frequency Description	Risk Level	Level of Prioritisation
39			Several trees along this length have been cut down but the stumps remain within the clearzone **This could result in arun-off road hit object type crash at high speed.**	Likely	Infrequent	Once every five to ten years	Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.

5. COMPLETING THE ROAD SAFETY AUDIT

The project sponsor is recommended to take the following steps to complete the road safety audit process:

- Attend the completion meeting
- Accept the Road Safety Audit report
- Review the report
- Produce a corrective action program
- Implement corrective actions
- Close the corrective action program.

Further details are available in the Guidelines for Road Safety Audit Practices.

6. CONFIDENTIALITY AND COPYRIGHT

The information in this Road Safety Audit Report is confidential and copyrighted. This document does not form part of a contract.

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