

# **Appendix 3**

**Checklist and guide for assessing RAV applications**

# RAV Assessment Checklist

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## 1. Restricted Access Vehicle Route Assessment Form

This document should be used when completing any Restricted Access Vehicle (RAV) route assessment in conjunction with the *Standard RAV Route Assessment Guidelines* or *Tri Drive Route Assessment Guidelines*. Information is sourced from MRWA and adjusted to suit the specific requirements of Town of Port Hedland in assessing temporary and permanent RAV application referrals from Main Roads Western Australia.

The form is meant to be used by both applicants and town officers as per legend below:

On site information	Applicable minimum value	Guideline values*
example text	example text	example text

\*Where the guideline values have not been provided please refer to *Standard RAV Route Assessment Guidelines* or *Tri Drive Route Assessment Guidelines*. SSD, SISD and ASD values may need to be verified in *Austrroads Guide to Road Design* and relevant MRWA supplements for non-standard configurations.

### 1.1 General information

Applicant details	
Company	
Address	
Name of relevant person	
Full route description (inclusive of parts outside ToPH)	
Route is traversing following localities within ToPH	<input type="checkbox"/> Boodarie <input type="checkbox"/> De Grey <input type="checkbox"/> Indee <input type="checkbox"/> Marble Bar <input type="checkbox"/> Mundabullangana <input type="checkbox"/> Pippingarra <input type="checkbox"/> De Grey <input type="checkbox"/> Port Hedland <input type="checkbox"/> Redbank <input type="checkbox"/> South Hedland <input type="checkbox"/> Strelley <input type="checkbox"/> Wallareenya <input type="checkbox"/> Wedgefield

Road Details			
Road Owner(s)		Main Roads Region	
Road Name(s)		Road Number(s)	
SLK From		SLK To	
Description From		Description To	
Total Distance:		AADT:	
Is this a Built Up Area?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Is this a School Bus Route?	<input type="checkbox"/> Yes <input type="checkbox"/> No

AADT: Annual Average Daily Traffic is determined by the total yearly two-way traffic volume divided by 365, expressed as vehicles per day (VPD)

Assessment Request Details	
RAV Network Level Proposed	
Expected frequency of access	
Length of largest vehicle	
Width of largest vehicle	
Height of largest vehicle	
Products/Restrictions	
<b>Current RAV Network Level</b>	

## 1.2 Road Width and Features

### 1.2.1 Rural Roads

*All roads that provide a secondary network of National, State and local Government roads connecting cities and towns.*

**Can any portion of the proposed route be classified as a Rural Road?**  Yes  No

*(If no, please move on to Urban Roads and Town Site Roads – Section 1.2.2)*

If yes, please complete the following table

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Road name					
Criteria	Road Section 1	Road Section 2	Road Section 3	Road Section 4	Road Section 5
Road Surface	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed
Carriageway Width (m)					
Sealed Width (m)					
Location (SLK-SLK)					
Posted Speed Limit (km/h)					
<p><b>Carriageway Width:</b> That portion of a road or structure devoted particularly to the use of vehicles that is between guide posts, kerbs or barriers where these are provided, inclusive of shoulders and auxiliary lanes.</p> <p><b>Seal Width:</b> Width between edges of sealed surface or between edge lines (where installed on undivided carriageways), whichever is less.</p>					
<b>Minimum guideline requirement</b>					
Criteria	Road Section 1	Road Section 2	Road Section 3	Road Section 4	Road Section 5
Road Width Requirement					
<b>RURAL ROAD MINIMUM WIDTHS</b>					
	60 to 70 km/h		80 to 100 km/h		
	Carriageway Width* (m)	Sealed Width** (m)	Carriageway Width* (m)	Sealed Width** (m)	
<b>0 to 150 AADT / VPD ***</b>					
	RAVs Categories 2-4	7.6	3.3	7.9	3.4
	RAVs Categories 5-8	7.7	3.4	8.0	3.5
	RAVs Categories 9-10	8.2	3.8	8.6	3.9
<b>150 to 500 AADT / VPD</b>					
	RAVs Categories 2-4	7.6	5.6	7.9	5.9
	RAVs Categories 5-8	7.7	5.7	8.0	6.0
	RAVs Categories 9-10	8.2	6.1	8.6	6.4
<b>500 to 1 000 AADT</b>					
	RAVs Categories 2-4	7.9	6.1	8.2	6.4
	RAVs Categories 5-8	8.0	6.2	8.3	6.5
	RAVs Categories 9-10	8.6	6.6	9.0	6.9
<b>More than 1 000 AADT</b>					
	RAVs Categories 2-4	9.6	6.8	9.9	7.1
	RAVs Categories 5-8	9.7	6.9	10.0	7.2
	RAVs Categories 9-10	10.6	7.6	11.0	8.0
<p>*The carriageway widths given in the above table should be used for assessing usable width on gravel roads.</p> <p>** A road should be sealed if AADT over 150 and annual freight tonnage over 300,000 tpa. In the absence of any data, the following parameters may be a guide:</p> <ul style="list-style-type: none"> <li>• uniform annual loaded RAV traffic volume more than 10 vehicles per day; or</li> <li>• loaded RAV traffic volume more than 60 vehicles per day over a seasonal two month period.</li> </ul> <p>*** When the road width is below the above values and traffic volume is no more than 75 VPD, the route may be suitable for RAVs Categories 2-10 (excluding 8) access as a low volume road.</p>					

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Low Volume	<input type="checkbox"/> Type A <input type="checkbox"/> Type B	<input type="checkbox"/> Type A <input type="checkbox"/> Type B	<input type="checkbox"/> Type A <input type="checkbox"/> Type B	<input type="checkbox"/> Type A <input type="checkbox"/> Type B	<input type="checkbox"/> Type A <input type="checkbox"/> Type B
Recommended Speed	<input type="checkbox"/> 40 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h <input type="checkbox"/> 100 km/h	<input type="checkbox"/> 40 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h <input type="checkbox"/> 100 km/h	<input type="checkbox"/> 40 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h <input type="checkbox"/> 100 km/h	<input type="checkbox"/> 40 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h <input type="checkbox"/> 100 km/h	<input type="checkbox"/> 40 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h <input type="checkbox"/> 100 km/h
<b>TYPE A LOW VOLUME RURAL ROAD (SUITABLE FOR TWO-WAY RAV TRAFFIC)</b>					
			<b>40 km/h</b>	<b>60 km/h</b>	
			<b>Carriageway Width (m)</b>		<b>Carriageway Width (m)</b>
<b>Sight distance above 250 m</b>					
RAVs Categories 2-7			5.8	6.1*	
RAVs Categories 9-10			5.9	6.3*	
<b>Sight distance below 250 m</b>					
RAVs Categories 2-7			6.1	6.4*	
RAVs Categories 9-10			6.2	6.6*	
<p>*if a road is at least 1.0 m wider than these widths, an 80km/h speed restriction should be considered. A speed restriction above 80km/h should only be considered if the road is sealed, has good sight distance and presents no significant safety concern.            For Type A low volume roads, the following operating conditions apply automatically as a condition of permit.</p> <ul style="list-style-type: none"> <li>• When travelling at night, the RAV must travel at a maximum speed of 40km/h and display an amber flashing warning light on the prime mover.</li> <li>• No operation on unsealed road segment when visibly wet, without Road Owners approval.</li> <li>• Headlights must be switched on at all times.</li> <li>• Speed restrictions (40 km/h or 60 km/h depending on road type)</li> <li>• Direct radio contact must be maintained with other RAVs to establish their position on or near the road (suggested UHF Ch 40).</li> <li>• Operation is not permitted while the school bus is operating on the road. Operators must contact the relevant schools and obtain school bus timetables; or where direct contact can be made with the school bus driver, operation is permitted once the school bus driver confirms all school drop offs/ pick-ups have been completed on the road.</li> <li>• Current written approval from the Road Owner, endorsing use of the road, must be obtained, carried in the vehicle and produced upon request.</li> </ul>					
<b>TYPE B LOW VOLUME RURAL ROAD (UNSUITABLE FOR TWO-WAY RAV TRAFFIC)</b>					
			<b>40 km/h</b>		
			<b>Carriageway Width (m)</b>		
RAVs Categories 2-7			3.5		
RAVs Categories 9-10			3.5		
<p>For Type B low volume roads, the following operating condition applies automatically as a condition of permit in addition to all the conditions listed for Type A low volume roads:</p> <ul style="list-style-type: none"> <li>• For a single lane road, the road must not be entered until the driver has established via radio contact that there is no other RAV on the road travelling in the oncoming direction.</li> </ul>					
Does the Rural Road meet the requirements? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Comments:					

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**1.2.2 Urban Road or Town Site Road**

All roads within a populated area of established dwellings, a central place of trade and recognised as a distinct place. Generally, the area will act as a central hub of activity for the community. The most prominent residential areas within the Town of Port Hedland are Port Hedland and South Hedland.

**Can any portion of the proposed route be classified as an Urban Road or a Town Site Road?**

Yes  No

(If no, please move on to Road Geometry – Section 1.3)

If yes, please complete the following table

Configuration of the road can be described as (tick the most appropriate):					
<input type="checkbox"/> Undivided Carriageway 1 Way			<input type="checkbox"/> Divided Carriageway Single Lane		
<input type="checkbox"/> Undivided Carriageway 2 way			<input type="checkbox"/> Divided Carriageway 2 lanes		
<input type="checkbox"/> Undivided Carriageway 2 lanes each way			<input type="checkbox"/> Multiple Carriageway: 3+ lanes		
<b>Width Measurement:</b>					
<i>(Undivided carriageway – 2 Way) Width between sealed edge and road centre (m)</i>					
<i>(Divided carriageway – single lane) Width between sealed edge and edge of median or traffic island (m)</i>					
<i>(Undivided carriageway – 2 lanes) Width between sealed edge and road centre (m)</i>					
<i>(Divided carriageway – 2 lanes) Width between sealed edge and edge of median or traffic island (m)</i>					
<i>(Multiple Lane Carriageways – 3 or more lanes) Width of additional through lane (m)</i>					
Road name					
Criteria	Road Section 1	Road Section 2	Road Section 3	Road Section 4	Road Section 5
Direction of Travel					
Width (m)					
Location (SLK-SLK)					
Marked Separation line	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Posted Speed Limit (km/h)					
Road Features					
<i>Dedicated Cycle Lanes, Parallel Parking, Regular Angle Parking</i>					
Road name					
Criteria	Road Feature 1	Road Feature 2	Road Feature 3	Road Feature 4	Road Feature 5
Feature					
Location (SLK-SLK)					
Width (m)					
Minimum guideline requirement					
Criteria	Road Feature 1	Road Feature 2	Road Feature 3	Road Feature 4	Road Feature 5
Road Width Requirement					
Does the Urban Road or the Town Site Road meet this requirement? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Comments:					



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<b>URBAN AND TOWNSITE ROAD MINIMUM WIDTHS</b>						
<b>Feature</b>	<b>RAVs Categories 2-4</b>		<b>RAVs Categories 5-8</b>		<b>RAVs Categories 9-10</b>	
	<b>60 - 70</b>	<b>80-100</b>	<b>60 - 70</b>	<b>80-100</b>	<b>60 - 70</b>	<b>80-100</b>
	<b>km/h</b>	<b>km/h</b>	<b>km/h</b>	<b>km/h</b>	<b>km/h</b>	<b>km/h</b>
<b>(Undivided carriageway – 2 Way) Width between sealed edge and road centre (m)</b>						
<i>basic</i>	3.2	3.5	3.3	3.7	3.6	4.1
<i>with marked separation line</i>	3.5	3.8	3.6	4.0	3.9	4.4
<i>with dedicated cycle lane</i>	4.7	5.5	4.8	5.7	5.1	6.1
<i>with regular parallel parking</i>	5.7	NA	5.8	NA	6.1	NA
<i>with regular angle (45°) parking</i>	9.2	NA	9.3	NA	9.6	NA
<b>(Divided carriageway – single lane) Width between sealed edge and edge of median or traffic island (m)</b>						
<i>basic</i>	3.5	3.8	3.6	4.0	3.9	4.4
<i>with dedicated cycle lane</i>	5.0	5.8	5.1	6.0	5.4	6.4
<i>with regular parallel parking</i>	6.0	NA	6.1	NA	6.4	NA
<i>with regular angle (45°) parking</i>	9.5	NA	9.6	NA	9.9	NA
<b>(Undivided carriageway – 2 lanes) Width between sealed edge and road centre (m)</b>						
<i>basic</i>	6.6	7.0	6.7	7.1	7.0	7.5
<i>with dedicated cycle lane</i>	8.1	9.0	8.2	9.1	8.5	9.5
<i>with regular parallel parking</i>	9.1	NA	9.2	NA	9.5	NA
<b>(Divided carriageway – 2 lanes) Width between sealed edge and edge of median or traffic island (m)</b>						
<i>basic</i>	6.6	7.0	6.7	7.1	7.0	7.5
<i>with dedicated cycle lane</i>	8.1	9.0	8.2	9.1	8.5	9.5
<i>with regular parallel parking</i>	9.1	NA	9.2	NA	9.5	NA
<b>(Multiple Lane Carriageways – 3 or more lanes) Width of additional through lane (m)</b>						
<i>basic</i>	3.2	3.4	3.3	3.5	3.4	3.6

### 1.3 Road Geometry

#### 1.3.1 Road Alignment

Are there any significant curves/bends on the road?  Yes  No

*(If no, please move on to Gradients – Section 1.3.2)*

If yes, please complete the following table

SLK	Signage	Swept Path Completed	Lane Correct	Direction of Travel	Sight Distance	Direction of Travel	Sight Distance
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
	<input type="checkbox"/> Warning Sign <input type="checkbox"/> Advisory Speed	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
<b>Additional Comments</b>							
RAV is able to stay lane correct <input type="checkbox"/> Yes <input type="checkbox"/> No							
Sight distance available on the bend meets the requirement? <input type="checkbox"/> Yes <input type="checkbox"/> No							
Comments							

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**1.3.2 Gradients**

Does the proposed route features steep gradients (above 3% for unsealed roads or 5% for sealed roads)?

Yes       No

*(If no, please move on to Road Obstacles – Section 1.4)*

If yes, please complete the following table

Road name				
Criteria	Grade 1	Grade 2	Grade 3	Grade 4
Road Surface	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed
Location (SLK)				
Grade (%)				
Length (m)				
Maximum Guideline requirement for gradient (%):		RAV 2-6	RAV 7-8	RAV 9-10
Sealed		<input type="checkbox"/> 8%	<input type="checkbox"/> 6%	<input type="checkbox"/> 5%
Unsealed		<input type="checkbox"/> 5%	<input type="checkbox"/> 4%	<input type="checkbox"/> 3%
Meets Guidelines	Grade 1 <input type="checkbox"/> Yes <input type="checkbox"/> No	Grade 2 <input type="checkbox"/> Yes <input type="checkbox"/> No	Grade 3 <input type="checkbox"/> Yes <input type="checkbox"/> No	Grade 4 <input type="checkbox"/> Yes <input type="checkbox"/> No
Comments:				

## 1.4 Road Obstacles: Bridges, Culverts, Floodway's, Overhead Clearance and Railway Crossings

### 1.4.1 Bridges

*For purposes of this assessment, a bridge is defined as a structure (with the exception of gantries) having a clear opening in any span of greater than 3 metres measured between the faces of piers and/or abutments or structures of a lesser span with a deck supported on timber stringers.*

Does the proposed route include any bridges?  Yes  No

*(If no, please move on to Culverts and Floodways – Section 1.4.2)*

If yes, please complete the following table:

Road name				
Criteria	Bridge 1	Bridge 2	Bridge 3	Bridge 4
Structure Number				
Surface	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed	<input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed
Width between kerbs (m)				
Location (SLK)				
Central Line Marking?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sight Distance 1 and direction of travel (m)				
Sight Distance 2 and direction of travel (m)				
Have all measurements been taken at Truck Driver height of 2.4m <input type="checkbox"/> Yes <input type="checkbox"/> No				
<b>Minimum Guideline requirement for width between kerbs (m):</b>				
<b>Meets Guidelines:</b>	<b>Bridge 1</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Bridge 2</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Bridge 3</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Bridge 4</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b>				

**1.4.2 Culverts and Floodways**

**Culvert:** A structure under a road having only clear openings of less than or equal to 3 metres measured between the faces of piers and/or abutments or a pipe shaped structure of any diameter.

**Floodway:** A roadway across a shallow depression subject to flooding, specifically designed to overtop and constructed to resist the damaging effects of overtopping.

Have any culverts or floodways that impact carriageway on the proposed route been identified?

Yes  No

(If no, please move on to Overhead Clearance – Section 1.4.3)

If yes, please complete the following table:

Road name						
Feature	Location (SLK)	Width (m)	Direction of Travel	Sight Distance (m)	Direction of Travel	Sight Distance (m)
<input type="checkbox"/> Culvert <input type="checkbox"/> Floodway						
<input type="checkbox"/> Culvert <input type="checkbox"/> Floodway						
<input type="checkbox"/> Culvert <input type="checkbox"/> Floodway						
<input type="checkbox"/> Culvert <input type="checkbox"/> Floodway						
<input type="checkbox"/> Culvert <input type="checkbox"/> Floodway						
<b>Comments</b>						

AADT	Minimum Width Between Kerbs/carriageway (m)	Quality of Approaches
Less than 75	3.5*	Structures with adequate Stopping Sight Distance (SSD)**.
75 to 150	5.3	Structures with adequate SSD, clearly signed and road clearly marked.
	7.0	Structures that have inadequate SSD, inadequate signage or no road markings.
150 to 500	5.8	Structures with adequate SSD, clearly signed and road clearly marked.
	7.2	Structures that have inadequate SSD, inadequate signage or no road markings.
More than 500	7.2	All structures at this traffic volume

\*Conditions apply, refer to section 1.2.1.  
 \*\*RAV SSD should be measured from a truck driver's eye height of 2.4 m. Minimum requirements for SSD refer to section 1.5.4.

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**1.4.3 Overhead Clearance**

Have any overhead power lines been identified?  Yes  No

*(Do not attempt to measure power line heights – approval will be sought by HVS from the cable operator)*

Have any other overhead obstructions been identified?  Yes  No

*(If no, please move on to Railway Crossings – Section 1.4.4)*

If yes, please complete the following table:

Criteria	Overhead Obstruction 1	Overhead Obstruction 2	Overhead Obstruction 3	Overhead Obstruction 4
What is the overhead obstruction <i>(e.g. tree, bridge, gantry sign)</i>				
Minimum Clearance (m) <i>(from ground to lowest point of structure over the carriageway)</i>				
SLK Location				
<b>Minimum Guideline requirement for overhead obstructions (m): 4.9m</b>				
<b>Meets Guidelines:</b>	Overhead Obstruction 1 <input type="checkbox"/> Yes <input type="checkbox"/> No	Overhead Obstruction 2 <input type="checkbox"/> Yes <input type="checkbox"/> No	Overhead Obstruction 3 <input type="checkbox"/> Yes <input type="checkbox"/> No	Overhead Obstruction 4 <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b>				

**1.4.4 Railway Crossings**

*Warning Devices and signage for Railways:*

- No Protection
- Give Way Sign
- Stop Sign
- Flashing Lights
- Flashing Lights and Boom Gate
- Advanced warning flashing amber lights

Are there any rail crossings on the proposed route?  Yes  No

*(If no, please move on to Intersections – Section 1.5)*

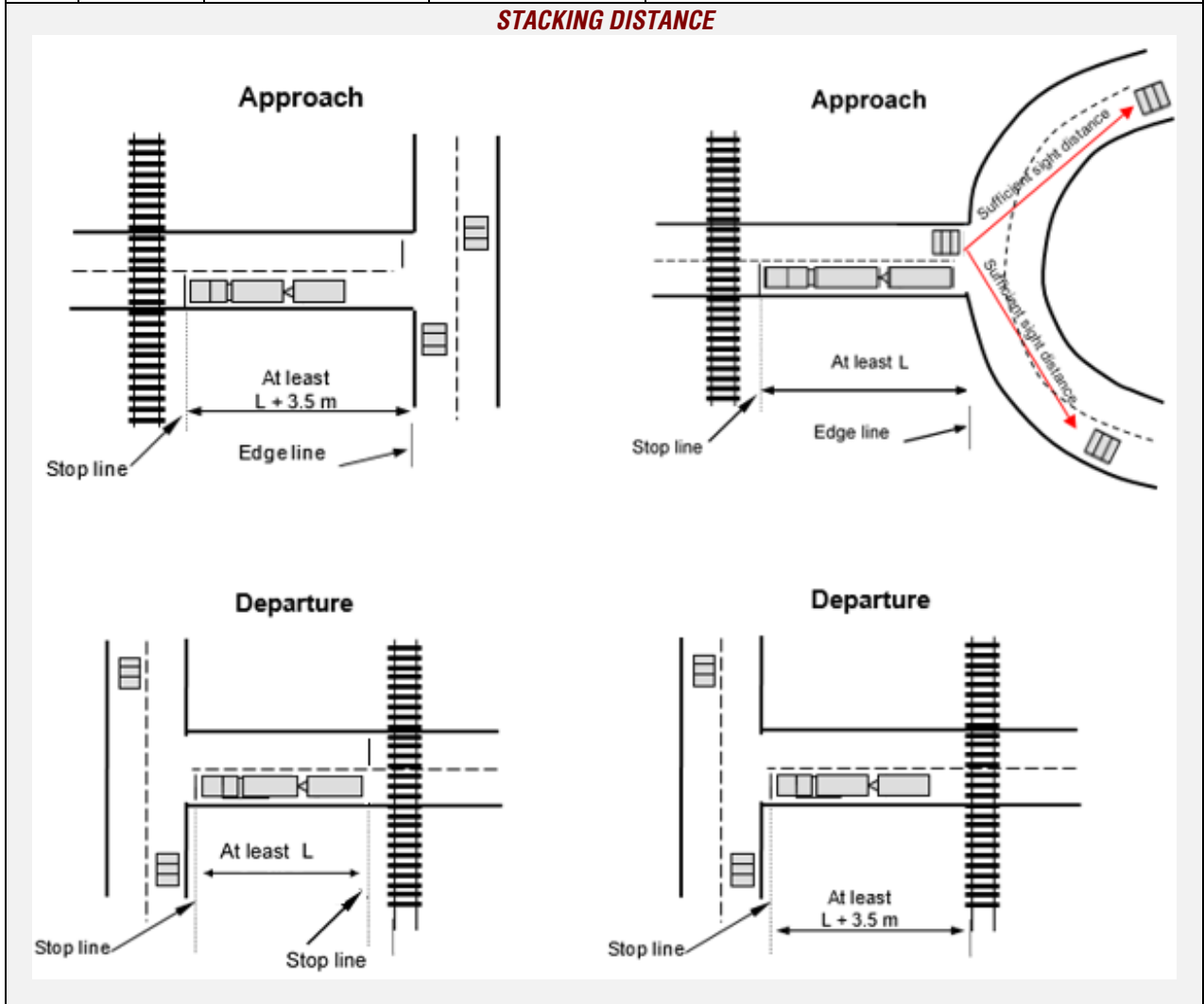
If yes, please complete the following table:

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<p align="center"><b>Railway Features</b></p> <p align="center"><i>For crossings protected by Give Way or Stop Signs, complete ALL fields.</i></p> <p align="center"><i>For crossings protected by boom gates or flashing lights, Approach Sight Distance only applicable.</i></p>													
SLK	Direction of Travel	Road Speed Limit	Warning Devices and Signage	Approach Sight Distance (m)	Sight Distance Along Rail (S3)		Sight Distance Along Rail (S3)		Train Speed (Km/h) (Vt)	Angle Between Road and Rail (Degrees) (Z)	Distance From Stop Line to Rail Track (m) (Cv)	Road Width at Crossing (m) (Wr)	Width of Rail Track (m) (Wt)
					Direction	(m)	Direction	(m)					
Have all measurements been taken at Truck Driver height of 2.4m <input type="checkbox"/> Yes <input type="checkbox"/> No													
Are there any features restricting sight distance? <i>(e.g. trees, shrubs, signage)</i>													
Minimum Guideline Requirement for Approach Sight Distance				Meets Requirements:		Guideline		<input type="checkbox"/> Yes <input type="checkbox"/> No					
Sight Distance Requirement as per the S <sub>3</sub> * Formula				Meets Requirements:		S <sub>3</sub> * Formula		<input type="checkbox"/> Yes <input type="checkbox"/> No					
* The S <sub>3</sub> calculation including factors and coefficients can be found in AS 1742.7													
Comments													

<b>Stacking Distances</b> <i>(If the railway crossing is near to an intersection/T-junction, please specify stacking distance measurements)</i>				
SLK	Direction of Travel	Name of Intersecting Road	Approach Stacking Distance (m)	Departure Stacking Distance (m)



Meets Guideline Requirements for Stacking Distance:  Yes  No

Level Crossing Safety Officer Response:

Comments:



## 1.5 Intersections

### 1.5.1 Intersection Layout

*Note \* - Intersection layout to be checked only for intersections where the proposed RAV will perform turning movements.*

Intersection (names of intersecting roads and SLK)	Kerbing	Islands	Free of Loose Gravel	Adjacent Infrastructure / Obstacles
	<input type="checkbox"/> Mountable <input type="checkbox"/> Painted <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Mountable <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Vegetation <input type="checkbox"/> Poles/Signs <input type="checkbox"/> Letter boxes <input type="checkbox"/> Culverts <input type="checkbox"/> Other (list below)
	<input type="checkbox"/> Mountable <input type="checkbox"/> Painted <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Mountable <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Vegetation <input type="checkbox"/> Poles/Signs <input type="checkbox"/> Letter boxes <input type="checkbox"/> Culverts <input type="checkbox"/> Other (list below)
	<input type="checkbox"/> Mountable <input type="checkbox"/> Painted <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Mountable <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Vegetation <input type="checkbox"/> Poles/Signs <input type="checkbox"/> Letter boxes <input type="checkbox"/> Culverts <input type="checkbox"/> Other (list below)
	<input type="checkbox"/> Mountable <input type="checkbox"/> Painted <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Mountable <input type="checkbox"/> Semi-Mountable <input type="checkbox"/> Non-Mountable <input type="checkbox"/> None	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Vegetation <input type="checkbox"/> Poles/Signs <input type="checkbox"/> Letter boxes <input type="checkbox"/> Culverts <input type="checkbox"/> Other (list below)
Centre Traffic Islands				
Intersection	Islands		Stacking Distance (m)	
	<input type="checkbox"/> Mountable <input type="checkbox"/> Non-Mountable	<input type="checkbox"/> Semi-Mountable <input type="checkbox"/> None		
	<input type="checkbox"/> Mountable <input type="checkbox"/> Non-Mountable	<input type="checkbox"/> Semi-Mountable <input type="checkbox"/> None		
	<input type="checkbox"/> Mountable <input type="checkbox"/> Non-Mountable	<input type="checkbox"/> Semi-Mountable <input type="checkbox"/> None		
Are all intersections suitable for RAV Access?			<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:				

**1.5.2 Swept Paths**

Where there is any possibility that the RAV may have insufficient clearance from kerbs or other nearby objects, standard turning templates shall be used to accurately check the swept path of the RAV. Using appropriate software, relevant vehicle combination must be used to check all turning movements at all required intersections and any clearance problems should be noted.

Has a Swept Path analysis been conducted for each intersection and roundabout?

Yes  No

<b>Vehicle Combination Used for Swept Paths:</b>	
<b>Are all Swept Paths on trafficable ground?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Do all Swept Paths have sufficient clearance from non-mountable kerbing?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Do all Swept Paths have sufficient clearance from all nearby objects?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><i>The wheel paths of the rear trailer of the RAV must not come any closer than 200 mm from the face of any kerb, unless the kerb is designed to be mounted, in which case the 200 mm clearance is not applied.</i></p> <ul style="list-style-type: none"> <li>– <i>If there is no kerb (such as a gravel road), the edge of the road formation can be taken as the kerb;</i></li> <li>– <i>The overhang path must not come any closer than 200 mm to a nearby object;</i></li> <li>– <i>For a left turn, the wheel paths must not cross into the path of oncoming traffic. An exception is for a left turn into a road with single broken central line marking or no central line marking, where encroachment over the centreline may be acceptable where traffic volumes are relatively low and/or the roads are within a heavy industrial area where other road users are familiar with the operation of multi-combination vehicles, provided the sight distances to all directions of the intersection are adequate.</i></li> </ul>	
<b>Do any left or right turn swept paths cross the centreline of the road? If so, are sight distance sufficient in all directions</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Comments:</b>	

<b>STANDARD TURNING TEMPLATES</b>
<b>RAV Network 2, 3 and 4</b>
<i>Tandem Drive Turning Template – 27.5m B –double (R=15m)</i>
<i>Tandem Drive Turning Template – 27.5m B-double (R=18m)</i>
<i>Tandem Drive Turning Template – 27.5m B-double (R=20m)</i>
<i>Tandem Drive Turning Template – 27.5m B-double (R=25m)</i>
<i>Tandem Drive Turning Template – 27.5m B-double (R=30m)</i>
<b>RAV Network 5, 6, 7 and 8</b>
<i>Tandem Drive Turning Template - 36.5m B-Triple (R=15m)</i>
<i>Tandem Drive Turning Template - 36.5m B-Triple (R=18m)</i>
<i>Tandem Drive Turning Template - 36.5m B-Triple (R=20m)</i>
<i>Tandem Drive Turning Template - 36.5m B-Triple (R=25m)</i>
<i>Tandem Drive Turning Template - 36.5m B-Triple (R=30m)</i>
<b>RAV Network 9 and 10</b>
<i>Tandem Drive Turning Template - 53.5m Double B-Double (R=15m)</i>
<i>Tandem Drive Turning Template - 53.5m Double B-Double (R=18m)</i>
<i>Tandem Drive Turning Template - 53.5m Double B-Double (R=20m)</i>
<i>Tandem Drive Turning Template - 53.5m Double B-Double (R=25m)</i>
<i>Tandem Drive Turning Template - 53.5m Double B-Double (R=30m)</i>
<b>Tri Drive Network</b>
<i>Tri Drive Category 2 Turning Template - 25m Single steer prime mover and semi-trailer (R=16m)</i>
<i>Tri Drive Turning Category 3 Template - 27.5m Single steer B-Double (R=16m)</i>
<i>Tri Drive Category 4 Turning Template - 36.5m Single steer B-Triple (R=17m)</i>
<i>Tri Drive Category 5 Turning Template - 53.5m Single steer Double B-Double (R=17m)</i>

**1.5.3 Entering Sight Distance**

*The required sight distance for a RAV driver to see a sufficient gap in oncoming traffic that will allow a RAV, with greater length and lower acceleration capacity, to clear the intersection safely.*

Name of Intersecting Road	Direction of Travel	Grade (%)	Speed Limit	Entering Sight Distance		Entering Sight Distance		Guideline (m)
				Direction	(m)	Direction	(m)	
Have all measurements been taken at Truck Driver height of 2.4m to a height that considers all traffic? <input type="checkbox"/> Yes <input type="checkbox"/> No								
Is there anything restricting Sight Distance? <i>(e.g. trees, shrubs, signage)</i>								
All Entering Sight Distances meets guideline requirements: <input type="checkbox"/> Yes <input type="checkbox"/> No								
If no, is there anything that can mitigate the risk? <i>(e.g. warning signage, vegetation clearing)</i>								
<b>Comments</b>								

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<b>ENTERING SIGHT DISTANCES</b>									
<b>Operating Speed km/h</b>	<b>Downhill (approaching traffic)</b>				<b>Level</b>	<b>Uphill (approaching traffic)</b>			
	<b>-8%</b>	<b>-6%</b>	<b>-4%</b>	<b>-2%</b>		<b>2%</b>	<b>4%</b>	<b>6%</b>	<b>8%</b>
<b>RAVs Categories 2-4</b>									
<b>40</b>	97	94	92	90	88	87	86	85	84
<b>50</b>	130	126	123	120	117	115	113	111	110
<b>60</b>	167	162	157	152	149	146	143	140	138
<b>70</b>	209	201	194	188	183	179	175	172	169
<b>80</b>	253	243	234	227	220	215	210	205	201
<b>90</b>	302	289	278	268	260	253	247	241	236
<b>100</b>	364	346	331	318	307	298	290	282	276
<b>110</b>	448	422	400	382	367	353	342	332	323
<b>RAVs Categories 5-8</b>									
<b>40</b>	102	100	97	96	94	93	91	90	89
<b>50</b>	137	133	130	127	124	122	120	118	117
<b>60</b>	176	170	165	161	157	154	151	149	147
<b>70</b>	218	210	204	198	193	189	185	182	179
<b>80</b>	264	254	245	238	231	226	221	216	213
<b>90</b>	314	301	290	281	272	265	259	254	249
<b>100</b>	377	360	345	332	321	312	304	296	290
<b>110</b>	463	437	415	397	382	369	357	347	339
<b>RAVs Categories 9-10</b>									
<b>40</b>	108	105	103	101	99	98	97	96	95
<b>50</b>	144	140	137	134	131	129	127	125	124
<b>60</b>	184	178	173	169	166	162	160	157	155
<b>70</b>	228	220	213	208	203	198	195	191	188
<b>80</b>	276	265	256	249	242	237	232	228	224
<b>90</b>	327	314	303	293	285	278	272	266	261
<b>100</b>	391	373	358	346	335	326	317	310	304
<b>110</b>	479	452	430	412	397	384	373	363	354

**1.5.4 Approach Sight Distance**

The distance required for a driver of a RAV, travelling at a given speed on a minor road, to observe the approaching intersection, and react or stop if necessary.

Name of Approaching Road	Direction of Travel	Recommended Speed of RAV	Is there warning signage	Grade (%)	Approach Distance (m)	Guideline (m)
			<input type="checkbox"/> Yes <input type="checkbox"/> No			
			<input type="checkbox"/> Yes <input type="checkbox"/> No			
			<input type="checkbox"/> Yes <input type="checkbox"/> No			
			<input type="checkbox"/> Yes <input type="checkbox"/> No			
			<input type="checkbox"/> Yes <input type="checkbox"/> No			
Have all measurements been taken at Truck Driver height of 2.4m <input type="checkbox"/> Yes <input type="checkbox"/> No						
Is there anything restricting Sight Distance? (e.g. trees, shrubs, signage)						
All Approach Sight Distances meet guideline requirements: <input type="checkbox"/> Yes <input type="checkbox"/> No						
If no, what action can be taken to mitigate the risk? (e.g. warning signage, vegetation clearing)						
Comments:						

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<b>STOPPING SIGHT DISTANCES</b>							
<b>Operating Speed km/h</b>	<b>Downhill</b>			<b>Level</b>	<b>Uphill</b>		
	<b>-9%</b>	<b>-6%</b>	<b>-3%</b>		<b>3%</b>	<b>6%</b>	<b>9%</b>
<b>RAVs Categories 2-6</b>							
<b>60</b>	*	*	120	109	101	94	89
<b>70</b>	*	*	151	137	126	118	111
<b>80</b>	*	*	184	167	154	143	135
<b>90</b>	*	*	218	198	183	171	161
<b>100</b>	*	*	255	232	214	200	188
<b>RAVs Categories 7-8</b>							
<b>60</b>	*	*	136	120	109	101	94
<b>70</b>	*	*	172	152	138	127	119
<b>80</b>	*	*	211	187	169	156	145
<b>90</b>	*	*	252	224	202	186	173
<b>100</b>	*	*	*	261	237	218	203
<b>RAVs Categories 9-10</b>							
<b>60</b>	*	*	152	131	117	107	99
<b>70</b>	*	*	194	167	149	135	125
<b>80</b>	*	*	*	206	183	166	153
<b>90</b>	*	*	*	247	220	199	184
<b>100</b>	*	*	*	294	261	237	218

\* RAVs would need to descend in low gear to prevent overrun. "TRUCKS USE LOW GEAR" signs in conformity with AS 1742 must be installed on these grades approximately 100 m before the start of the descent.

## 1.6 Other Assets

### 1.6.1 Acceleration and Deceleration (Turn Pockets) Lanes

To assist in ensuring network performance levels are maintained, the assessor needs to identify if acceleration lanes and turn pockets are present at intersections and the length of these treatments. Consultation with the relevant road manager should be undertaken to ensure existing treatments remain adequate and consideration is given to potential significant impacts on network performance that may justify intersection upgrades such as turn pockets or acceleration lanes. For all other values Austroads Guide to Road Design and relevant MRWA supplement should be consulted.

Through Road	Length of Acceleration Lane				Guideline (m)	
<b>Minimum Length (m) of Acceleration Lane - 80 km/h Speed limit through road (i.e. required entry speed for RAV is 56 km/h)</b>						
	<b>Downhill</b>			<b>Level</b>	<b>Uphill</b>	
<b>Average gradient of entry lane (%)</b>	-4	-2	-1		1	2
<b>RAVs Categories 2-6</b>	190	270	350	510	1090	*
<b>RAVs Categories 7-8</b>	200	280	370	570	1500	*
<b>RAVs Categories 9-10</b>	220	330	460	790	*	*
<b>Minimum Length (m) of Acceleration Lane - 110 km/h Speed limit on through road (i.e.: required entry speed for RAV is 77 km/h)</b>						
	<b>Downhill</b>			<b>Level</b>	<b>Uphill</b>	
<b>Average gradient of entry lane (%)</b>	-4	-2	-1		1	2
<b>RAVs Categories 2-6</b>	410	630	910	1620	*	*
<b>RAVs Categories 7-8</b>	420	670	970	1870	*	*
<b>RAVs Categories 9-10</b>	470	760	1180	*	*	*
<i>*It is not possible to accelerate from rest up to the required speed within a distance of 2000 m.</i>						
Are dimensions (width and length) of all acceleration and deceleration lanes adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No						
Comments:						



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**1.6.2 Overtaking Opportunities**

*(Provision of additional overtaking opportunities is usually not justified for AADT of 500 or below)*

Does the AADT exceed 500?       Yes    No

*(If no, please move on to Off Road Parking – Section 1.6.3)*

If yes, please complete the following table

<b>Maximum Distances</b>			
Maximum average distance between overtaking opportunity (km)			
Maximum distance between overtaking opportunities (km)			
<b>Minimum Length for Overtaking Opportunities</b>			
<b>Location (SLK-SLK)</b>	<b>Length of Overtaking Opportunity</b>		<b>Guideline (m)</b>
Is there seasonal traffic* on this road? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, please detail:			
<i>*Seasonal traffic is a predictable fluctuation in traffic volumes that recur every calendar year. These fluctuations can be the increase or decrease in typical traffic volumes depending on location and are mostly caused by school holidays or summer/winter holidays.</i>			
<b>SUITABILITY CRITERIA FOR OVERTAKING OPPORTUNITIES</b>			
<b>AADT (Derived using PCE Factors)</b>	<b>Maximum AVERAGE distance per overtaking opportunity</b>	<b>Maximum distance between any two overtaking opportunities</b>	<b>Notes</b>
<i>500 or below</i>	<i>N/A</i>	<i>N/A</i>	<i>Provision of additional opportunities is usually not justified.</i>
<i>501 to 1000</i>	<i>15 km</i>	<i>30 km</i>	
<i>1001 to 1800</i>	<i>8 km</i>	<i>15 km</i>	
<i>1801 and above</i>	<i>5 km</i>	<i>10 km</i>	<i>At AADT &gt; 2700, additional opportunities that exceed the criteria may be necessary.</i>
<b>PASSENGER CAR EQUIVALENCE FACTORS FOR RAVS</b>			
<b>Vehicle Types</b>		<b>PCE Factors on Flat Terrain</b>	<b>PCE Factors on Rolling Terrain</b>
<i>Austroads Class 2</i>		<i>1</i>	<i>1.3</i>
<i>Austroads Class 3 to 5</i>		<i>2</i>	<i>3.5</i>
<i>Austroads Class 6 to 9</i>		<i>2.5</i>	<i>5</i>
<i>Austroads Class 10</i>	<i>RAVs Categories 2-4</i>	<i>4</i>	<i>10</i>
<i>Austroads Class 11</i>	<i>RAVs Categories 5-8</i>	<i>4</i>	<i>10</i>
<i>Austroads Class 12</i>	<i>RAVs Categories 9-10</i>	<i>9</i>	<i>22</i>
Guideline requirement for Maximum Average Distance (km):			
Guideline requirement for Maximum Distance between Opportunities (km):			
All Overtaking Distances meet guideline requirements: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Comments:			

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**1.6.3 Off Road Parking**

Does any part of the route satisfy at least one of the criteria:

- a) rural road exceeding 80km
- b) remote road exceeding 120 km in length

Yes                       No

If yes, please complete the following table

SLK	Direction of Travel	Speed Limit	Grade %	Clearance from edge of pavement (m)	Approach Sight Distance (m)	Entering Sight Distance		Entering Sight Distance	
						Direction	(m)	Direction	(m)
Have all measurements been taken at Truck Driver height of 2.4m						<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Minimum Guideline requirement for Entering Sight Distance (m):									
All Entering Sight Distances meets guideline requirements:						<input type="checkbox"/> Yes	<input type="checkbox"/> No		
<i>Refer to section 1.5.3 for Entering Sight Distance values.</i>									
Minimum Guideline requirement for Approach Sight Distance (m):									
All Approach Sight Distances meets guideline requirements:						<input type="checkbox"/> Yes	<input type="checkbox"/> No		
<i>Refer to section 1.5.3 for Entering Sight Distance values.</i>									
If no, what action can be taken to mitigate the risk? <i>(e.g. warning signage, vegetation clearing)</i>									
Comments:									

**1.7 Contributions to Road Maintenance**

For more details refer to Cost Contribution Policy.

Daily volume of heavy vehicle traffic from the proposed development to the road?	
<input type="checkbox"/> 0-10	<input type="checkbox"/> 11-100 <input type="checkbox"/> 100+
<b>Details:</b>	
Level of upgrades required for the road to be able to accommodate the proposed added traffic?	
<input type="checkbox"/> Negligible <input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> Significant	
<u>Details:</u>	
What is the added value of required road maintenance?	
What is the percentage expected to be contributed by the proponent?	
Comments:	

## 1.8 Community Considerations

What are the major concerns that need to be addressed? (tick all that apply)
<input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Smell <input type="checkbox"/> Other
<b>Details:</b>
Does the RAV route traverse any residential areas?
<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Details:</b>
What is the distance of nearest dwelling to the proposed route?
Are there any bus lines running along or intersecting proposed RAV route?
<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Details:</b>
Are there any “safe school routes” along the proposed RAV route or intersecting the route?
<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Details:</b>
Are vehicles on this route transporting goods regulated under “Dangerous Goods Safety Act”?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<b>Details:</b>
Does the RAV route traverse any cattle stations or other areas where stray animals may be encountered?
<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Details:</b>
What agencies have been contacted with regards to any community issues or concerns? (tick all that apply)
<input type="checkbox"/> Regional Office <input type="checkbox"/> Local Government Authority <input type="checkbox"/> Local Police <input type="checkbox"/> Other
<b>Details:</b>
<b>Comments:</b>

## 1.9 Other Considerations/Comments

<b>Details:</b>
<b>Comments:</b>

## 1.10 Making the recommendation

### 1.10.1 General

If the proposed route does not meet relevant geometric requirements in any portion of the route, possibilities of upgrade should be considered. Following matters should be considered:

- Is enhancement of road geometry physically possible (are there any natural or man-made obstructions in vicinity preventing enhancement of geometry)?
- Would change of on a specific location geometry trigger any other safety issues?
- Is upgrade of road geometry financially viable?
- Are there appropriate agreements in place for cost contribution or financing the upgrade?

### 1.10.2 Full or partial rejection of application

Proposal for RAV2 route and above without conditions should not be considered further if:

- The proposed route traverses residential area or
- Nearest dwelling is within 50m from the proposed route or
- Proposed RAV route runs along “safe school route” or
- At least three (3) geometric criteria are at 80% of value of required minimum criteria and there is no avenue to make them compliant due to physical, natural or financial constraints.

Routes with criteria a), b) or c) can be considered for a Restricted Local Access with conditions if alternative route cannot be identified.

Conditions may pertain to:

- Allowed times of travel to minimise conflict with sensitive uses and commuters traffic;
- Particular configuration of vehicle allowed on road;
- Length of route
- Duration of permit (if temporary access is approved)

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#### **1.10.3 Application approval**

Proposal for RAV route without conditions can be considered for approval if:

- a) The proposed route does not adversely affect residential or any other sensitive use and
- b) Meets relevant geometric criteria or
- c) There is proof that substandard geometric elements can be upgraded to the required standard and appropriate financial agreements are in place.

#### **1.10.4 Site specific conditions**

No route should be approved in:

- 1) Anywhere within locality of South Hedland;
- 2) North of Wilson Street within locality of Port Hedland

Routes in Wedgefield should not be upgraded, as the Town of Port Hedland will seek to remove roads in Wedgefield from the RAV10 network as Transport Depot businesses relocate.

Hamilton Road and Powell Road should remain outside of RAV network as they are important links for South Hedland Residence.

RAV classification of Wallwork Road should be maintained as a minimum, preferably downgraded in future as this is the key link for residents of South Hedland.

## 2. Technical terms dictionary

<b>AADT -</b>	<i>Annual Average Daily Traffic is determined by the total yearly two-way traffic volume divided by 365, expressed as vehicles per day.</i>
<b>Carriageway Width -</b>	<i>That portion of a road or structure devoted particularly to the use of vehicles that is between guide posts, kerbs or barriers where these are provided, inclusive of shoulders and auxiliary lanes.</i>
<b>Passenger Car Equivalence -</b>	<i>Passenger Car Equivalence (PCE) factors are a relative measure of the traffic flow impedance effects of different vehicle types. The PCE factor for a particular vehicle type is the equivalent number of passenger cars (AUSTRROADS Vehicle Class 1) that would have the same impedance effect as a single vehicle of that type.</i>
<b>Restricted Access Vehicle (RAV) -</b>	<i>Restricted Access Vehicles (RAV) consists of all combinations of vehicles exceeding 19 metres in length or 42.5 tonnes gross mass including B-Doubles, road trains and truck-and-trailer combinations.</i>
<b>Remote Road -</b>	<i>A general term for a main arterial road carrying mostly long distance traffic.</i>
<b>Rural Road -</b>	<i>All roads that provide a secondary network of National, State and local Government roads connecting cities and towns.</i>
<b>Urban and Townsite Road -</b>	<i>All roads within a populated area of established dwellings, a central place of trade and recognised as a distinct place. Generally, the area will act as a central hub of activity for the community.</i>
<b>Seal width -</b>	<i>Width between edges of sealed surface or between edge lines (where installed on undivided carriageways), whichever is less.</i>
<b>Seasonal traffic -</b>	<i>A predictable fluctuation in traffic volumes that recur every calendar year. These fluctuations can be the increase or decrease in typical traffic volumes depending on location and are mostly caused by school holidays or summer/winter holidays.</i>
<b>Structure (Bridge / Culvert) -</b>	<p><b>Bridge</b> is a structure (with the exception of gantries) having a clear opening in any span of greater than 3 metres measured between the faces of piers and/or abutments or structures of a lesser span with a deck supported on timber stringers.</p> <p><b>Culvert</b> is a structure under a road having only clear openings of less than or equal to 3 metres measured between the faces of piers and/or abutments or a pipe shaped structure of any diameter.</p>
<b>Swept path -</b>	<i>Analysis of movement and path of different parts of a vehicle when that vehicle is undertaking a turning manoeuvre. It can be done manually or digitally using approved software solutions.</i>
<b>VPD - vehicles per day -</b>	<i>The number of vehicles observed passing a point on a road in both directions for 24 hours. (It is a measure of daily traffic volume, often more relevant to low volume, Local Government roads, typically rural roads in these guidelines. 'VPD' can differ from AADT in being a better measure of traffic volume during periods of more intensive RAV usage or seasonal tourist traffic.)</i>