

# Farm Gate Access – Practitioners Guide

Access for vehicles including 26m B-doubles, vehicles up to 4.6m high, vehicles up to B-doubles operating at Higher Mass Limits (HML) and vehicles up to B-doubles operating under Livestock Loading and Grain Harvest Management Schemes

Transport for NSW | May 2019



## What the Guide aims to do

The Practitioners Guide has been designed to fulfil the technical requirements described in the Farm Gate Access Procedure and Checklist as part of the Farm Gate Access Project.

This Guide outlines accepted and best practice data collection methods while completing the Farm Gate Access risk assessment checklist. The checklist provides the Road Manager with certainty that a risk assessment of the route has been carried out when the proponent is seeking occasional access to the 'Farm Gate' on low volume roads for restricted access vehicles performing primary production activities.

A review of the Farm Gate Access Risk Assessment Procedure should be carried out before referencing this guide to ensure your route meets the project criteria.

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# Section 1: Preliminaries

## 1.1 General.

The preliminaries section describes the overarching detail of carrying out and submitting a risk-assessment access request in accordance with the criteria outlined for the Farm Gate Access project.

The Practitioners Guide is to work in synergy with the Farm Gate Access Risk Assessment Procedure and Checklist, providing assurance that a sound and methodical process was followed during the assessment. Use of the three documents in conjunction with one another is required in order for the access application to be considered.

## 1.2 Carrying out a route assessment trial.

All restricted access vehicles require a permit from the relevant Road Manager to travel along a route not designated for vehicles other than General Access Vehicles. Contact your Road Manager to discuss who is the delegated Road Manager for the route requiring access, what that the options are for a trial.

## 1.3 Personnel.

The assessor may include, but is not limited to, the land holder, farmer, operator, producer, contractor, external consultant or council staff member. The assessor must have suitable knowledge of the area or necessary skills to complete the assessment.

The assessor is considered to be any party who participates, carries out, and/ or completes the assessment of a low volume road which is sent to the Road Manager as a request for access.

In addition, personnel undertaking the route assessment should be familiar with:

- The Mass, Loading and Access regulation relating to the proposed vehicle <https://www.nhvr.gov.au/road-access/mass-dimension-and-loading>
- Traffic behaviour along the route
- Have experience with freight vehicles similar to that being considered in the risk-assessment.

Assessment of the load capacity of a bridge on the route is outside of scope for this project. Local Council must be consulted in the first instance.

## 1.4 Recording information.

Working papers and data sheets are to be used to record all aspects of the assessment. These should be sent to the Road Manager as part of your submission for consideration and to support approval.

A copy of working papers, data sheets, maps and summary documentation must be retained by the Road Manager and Proponent to provide the basis for the assessment. Documents must be stored for a period of at least seven years.

## 1.5 Submitting the access request.

All Farm Gate Access assessments need to be attached to a permit request and submitted to the National Heavy Vehicle Regulator (the Regulator) through the portal.

A copy of the risk assessment is available as a hard copy or online digital form from the website at [www.rms.nsw.gov.au/farmgate](http://www.rms.nsw.gov.au/farmgate) or by contacting your local council. Once the assessor has completed the form, a copy will be emailed to them as a pdf.

Hard copy assessments still need to be attached to the permit request.

## 1.6 Inspections.

Desktop inspections are an acceptable method to conduct a Farm Gate Access Risk Assessment. Any field inspection should be carried out during the day-time and conducted in a safe and responsible manner in accordance with considerations in this document, and typical Work Health and Safety practices described by SafeWork NSW at <http://www.safetystartswithyou.nsw.gov.au/>.

Transport for NSW, local councils or any other agency involved in developing or using the Farm Gate Access framework hold no responsibility for incidents resulting from the proponent, assessor or any other third party involved in implementing this product.

## 1.7 Work Health and Safety (WHS).

Field work is at the discretion of the assessor. All persons involved in field work must comply with WHS requirements described by SafeWork NSW.

General WHS requirements include but are not limited to:

- Wearing high visibility garments (at least a vest) at all times whenever they are outside a vehicle and within the bounds of a road reserve.
  - Garments must be secured (e.g. zip, velcro, buttons).
  - Garments must be maintained at all times in a clean, serviceable condition and are to be replaced at any time they are defective or become stained or faded to any extent where their high visibility function is reduced.
- Where possible, conducting a desktop assessment for all or part of the risk assessment will mitigate the risks associated with the Assessor needing to occupy the road or road related area.
- Where measurements are required to be taken within a road carriageway, a traffic control plan must be developed and approved, and the requirements complied with.
- Where measurements are to be taken within the rail reserve, access must be approved by the rail infrastructure manager and their requirements must be complied with.

## 1.8 Determining the magnitude of risk and risk mitigation.

Each element of the checklist has a prescribed level of risk, also known as risk rating, and is presented in this document.

This risk rating was determined in accordance with methods outlined in ISO 9001. This approach is consistent with current industry practice and is crucial in adding assurance to the Road Manager when considering an access request.

Components taken from the risk assessment checklist have a list of engineering measures which should be used by the Assessor when exploring options to reduce the initial risk. By reducing the initial risk using a

risk reduction or mitigation measure produces a final residual risk rating. These measures will be considered as conditions for access by the Road Manager.

The information contained in this document is in accordance with, but not limited to, Australian Standards, Austroads guidelines and Transport for NSW guidelines.

The cost to implement or exercise the conditions of access, or carry out remedial work as a result of this access will need to be negotiated and agreed on with the Road Manager at the time access is approved.



## Section 2: Investigation

This section contains a break-down of the technical considerations in the Farm Gate Access Risk Assessment. Each part provides an overview of the measure, outlines best practice on collecting a response, puts the risk rating into context and suggests ways to reduce or mitigate the original risk rating.

These tools will be translated into the conditions of access should the Road Manager provide consent to the Regulator during the permit approval process.

### 1.0 Suitability

#### 1.1 What type of access is required?

One or more of the following heavy vehicle combinations may apply to your desired access:

- 4.6 metre high vehicle
- Up to and including 26m B-double
- Vehicles travelling at Higher Mass Limits (HML)
- Livestock Loading Scheme (LLS) or
- Grain Harvest Management Scheme (GHMS)

You should select each vehicle type you seek access for.

More information on these vehicle types can be found online at <https://www.rms.nsw.gov.au/business-industry/heavy-vehicles/index.html>

#### 1.2 Are you aware of similar vehicles already traveling along the route?

If similar vehicles are traveling along the route, the vehicle type may already have access under another legal instrument such as a Notice. In this instance, you should consider whether a permit is needed in conjunction with New South Wales notices available on the National Heavy Vehicle Regulator's webpage <https://www.nhvr.gov.au/law-policies/notices-and-permit-based-schemes/state-notices/new-south-wales> or in contact with your local council.

Any vehicle travelling under permit as a result of the Farm Gate Access framework will be recorded in the portal and held by the Regulator. Routes which attract three or more permit requests for the same vehicle type using the Farm Gate Access assessment will be shared with council and recommended for area wide access approval.

#### 1.3 Are there any sign posted restrictions for heavy vehicle access including mass, length or time of day travel on any roads or bridges on the route?

Restrictions may be enforced along the route to limit types of vehicles. For example, a bridge may have a maximum load limit and be signposted accordingly.

If you are unsure about restrictions along the route, please contact the relevant local council in the first instance. Outcomes from your conversation should be recorded and attached to the permit application.

## 2.0 Road environment.

### 2.1 What is the maximum posted speed limit?

Roads and Maritime is the only agency authorised to administer permanent speed zones on all roads in NSW. There are two types of default speed limits:

- A 50km/h speed limit applies in urban or 'built-up' areas and
- A 100km/h speed limit applies in rural or 'non-build-up' areas.

For certain road conditions (such as a sharp bend, steep descent or winding road) special speed limit signs may be posted for heavy vehicles otherwise, the driver should reduce their speed to suit the road conditions.

The speed compliance provisions of the Road Transport (General) Regulation places duties on all parties in the supply chain to take all reasonable steps to ensure their business activities, schedules or arrangements do not cause heavy vehicle drivers to exceed an acceptable speed. The speed compliance component applies to heavy vehicles with a Gross Vehicle Mass (GVM) of more than 4.5 tonnes. In NSW the maximum speed limit for a vehicle more than 4.5 tonnes GVM is 100 km/h.

In accordance with the NSW Speed Zoning Guidelines, the default speed limit of 100km/h in a rural area is often inappropriate for unsealed roads. If a speed limit sign is not displayed then drivers should drive to the prevailing conditions of the road.

Community requests to review a speed limit should be directed to Roads and Maritime. More information on speed limits in NSW can be found in the NSW Speed Zoning Guidelines online at [www.rms.nsw.gov.au](http://www.rms.nsw.gov.au).

The assessor should select the speed limit displayed along the route. If there are multiple speed limits, the highest speed limit should be selected as it carries the greatest risk. Alternatively, multiple assessments can be carried out by the assessor and attached to the one permit request.

#### Risk rating

Posted Speed Limit of 40 km/h	Low
Posted Speed Limit of 50 km/h	Low
Posted Speed Limit of 60km/h	Low
Posted Speed Limit of 70 km/h	Moderate
Posted Speed Limit of 80 km/h	Moderate
Posted Speed Limit of 90 km/h	High
Posted Speed Limit of 100 km/h	High
Posted Speed Limit of Greater Than 100 km/h	High
No visible speed limit	High

#### Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your assessment:

- Travel at or below a 60km/h speed limit. This reduces the risk rating to low.
- No travel at school bus times, peak periods, inclement weather, low visibility, etc. This reduces the risk rating by one level.

## 2.2 Describe the land use along the route

This refers to the land use adjacent to the route being assessed and often has a bearing on the road function, posted speed limit and/or conditions of the road.

For the purposes of this document, roadside development can be:

- **Rural** where land use is considered to be farmland with no or isolated adjacent development.
- **Rural residential** which has sparsely placed residential development generally set well back from the road on large blocks.
- **Residential** will have closely spaced residential development usually typified by kerb and gutter and street lighting.
- **Commercial or industrial** has a similar environment to urban residential with the exception of commercial or industry development abutting the route. This type of development would attract heavy vehicles to service the properties.
- **Mixed development** may contain a combination of residential, commercial and/ or industrial development.

### Risk rating

Rural	Low
Rural residential	Moderate
Residential	High
Commercial	High
Industrial	High
Mixed development	High

### Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- No travel at school bus times, peak periods, inclement weather, low visibility, etc. This reduces the risk rating by one level.

## 2.3 Are there any objects that can be damaged or cause damage in accordance with "clear zone" requirements? (For example fence posts, vegetation or guide posts)

An object greater than 200mm wide or installed without a slip-base footing is more likely to cause damage when struck compared to a narrower object. This is because it does not crumble from the force of an impact but instead withstands it. Examples of such objects, also called non-frangible objects, may include trees or fence posts and should generally sit outside of the clear zone or be protected by a safety barrier.

A clear zone is a 'buffer' measured from the edge of the travelled way, outwards away from the road and is free from these non-frangible objects. Each clear zone (in metres) is determined based on the speed limit, volume of traffic using the road on an average day (average daily traffic or data collected over a year and divided by 365 to calculate an average) and the shape of the roadside (also known as verge which may be in cut or fill).

A cutting is when the road sits below the natural surface level and a fill is when the road is built up and sits on top of the natural surface level.

The table below has been taken from the Austroads Guide to Road Design Part 6 and suggests the clear zone distance for a speed limit given the is verge that is next to the shoulder is traversable (traversable being a ‘flatter’ batter greater than or equal to a 4:1).

A traversable area means a driver is more likely to regain control and correct an errant vehicle.

**Table 1 Suggested clear zone widths**

Speed limit (km/h)	Average Daily Traffic (ADT)	Clear zone width (m)	
		Fill	Cut
Less than or equal to 60	Less than 750	3.0	3.0
70-80	Less than 750	4.5	3.0
90	Less than 750	5.5	3.5
100	Less than 750	7.5	4.5
110	Less than 750	8.0	5.0

**Risk rating**

Does meet the clear zone requirements	Low
Does not meet the clear zone requirements	High

**Risk mitigation measures for risk assessment**

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- Travel at or below a 60km/h speed limit. This reduces the risk rating to low.

**2.4 Could the vehicle hit any roadside structures while travelling along the route? (For example pedestrian islands/ refuges, signage, chicanes, safety barriers, fencing or drainage structures)?**

Roadside structures that lie within the movement or swept path of the proposed vehicle will require further risk assessment (e.g. the lane alignment altered, structures relocated).

Usually, a check of the swept path occurs using the information provided in Table 4 on page 15 below, and the methodology described in Austroads Design Vehicles and Turning Path Templates.

Alternatively, the Road Manager can check the swept path by using a swept path tool or the RAVRAT.

**Risk rating**

No, it is likely the swept path will not impact roadside structures	Low
Yes, further investigation should be carried out	High

**Risk mitigation measures for risk assessment**

If you suspect the vehicle may impact a roadside structure while travelling on this route, consider one or more of the following to measures to reduce or mitigate the risk of this occurring:

- Travel at or below a 60km/h speed limit. This reduces the risk rating to low.

## 3.0 Road and traffic characteristics.

### 3.1 Describe the road surface

For the purposes of this framework, the road surface has been simplified to either sealed or unsealed.

Unsealed roads usually need to be closely monitored to ensure ongoing integrity of the road surface and that it satisfies ride quality and safety requirements.

So the Road Manager can continue to monitor its road infrastructure asset, it is important to advise them of the road surface on application of access.

#### Risk rating

Sealed	Low
Unsealed	Moderate
Sealed and Unsealed	Moderate

#### Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- Travel at or below a 60km/h speed limit. This reduces the risk rating to low.
- Limit travel during or following adverse weather events. This reduces the risk rating to low.

### 3.2 Is the road width suitable for your vehicle?

#### a) Approximately, how many vehicles travel on this road per day?

This refers to the number of vehicles which pass a single point in a day.

An assessor can approximate how many vehicles travel along the road by either collecting a sample traffic count or by sourcing existing data.

To collect a sample traffic count, record the number of vehicles which pass a point on the route for 15 minutes. If you are able to, break this into the number of light vehicles (or cars) and heavy vehicles (trucks). Multiply this number by 4 to give you the number of vehicles which could travel this road in an hour. Then, multiply this number by 24. This will give you an indication on how many vehicles travel on this road per day.

Council and Roads and Maritime Services have permanent and/ or temporary roadside traffic counters positioned across the network. Referred to as annual average daily traffic (AADT) or average daily traffic (ADT), these measures show the number of vehicles which pass a point in both directions for 24 hours and over a period of time. AADT is divided by the number of days in the year and ADT is averaged over the amount of days the data has been collected for.

The results of these counters are often available online through the home page. Alternatively, contact your local council.

Please note which approach you followed in the comments field of the assessment form.

#### b) How wide is the road, including the shoulder?

Carriageway or road width (W) refers to the area set aside for the use of vehicles, either moving or stationary, and includes through lanes, shoulders, on-road bike lanes and auxiliary (or turning) lanes width. This is shown in Figure 1 below.

Widths can be measured using online mapping systems (such as Google Earth) or carrying out a field inspection with a measuring device<sup>1</sup>. The road width should be representative of the section being assessed. Where lane width varies, use the narrowest point of the route and make a note of this in the 'other local conditions' comment box on the checklist. The shoulder should include both sealed and unsealed widths.

**Figure 1 Cross section of a typical two-lane sealed rural road**

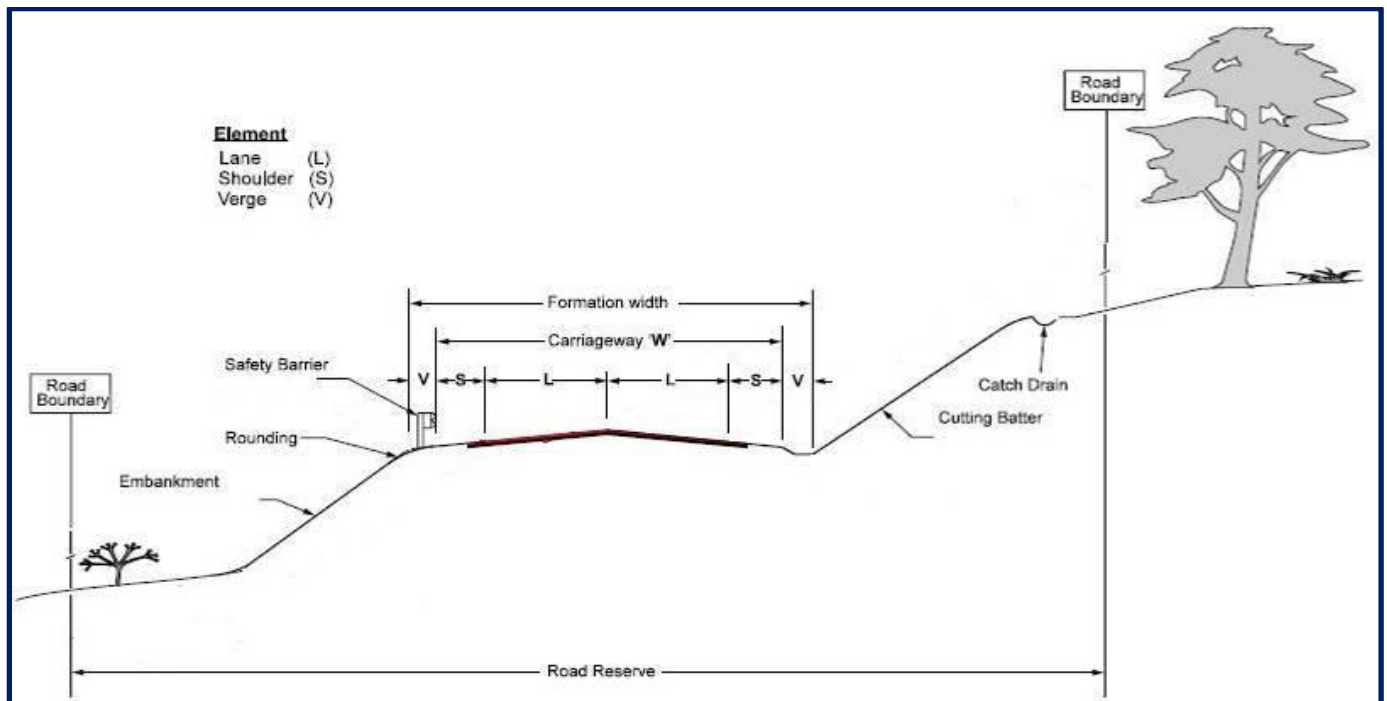


Table 2 shows the minimum road width depending on traffic volumes and whether the road is sealed or unsealed.

**Table 2 Minimum carriageway widths**

Average traffic volumes per day	Roadside Development	Minimum Road Width	
		Sealed	Unsealed
Less than 150	Rural	6.8m	7.2m
Greater than 150 Less than 500	Rural	7.6m	7.7m

The unsealed minimum width requirements are slightly greater than sealed requirements as expected.

**Risk rating**

Equal to or greater than the minimum road width in Table 2	Low
Less than the minimum road width in Table 2	High

<sup>1</sup> Desktop assessments should be considered in the first instance. Any inspection will need to be carried out in accordance with Workplace Health and Safety requirements and at the responsibility of the assessor.

## Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- Travel at or below a 60km/h speed limit

If the road is unsealed, consider adding the following measure to further reduce or mitigate the risk identified in your risk assessment:

- Limit travel during or following adverse weather events

### 3.3 Is the route flat, rolling or mountainous?

Grade, vertical alignment or longitudinal profile is taken along the centreline of the road and refers to its steepness. It is generally expressed as a percentage of the vertical component divided by the horizontal component.

Grade is described by three types of terrain; flat, rolling and mountainous. These are shown in the context of speed in Table 3 below in accordance with Austroads Guide to Road Design Part 3: Geometric Design.

Mapping programs like Google Earth provide information on how steep a road is.

**Table 3 General maximum grades**

Operating speed (km/h)	Terrain (percent, %)		
	Flat	Rolling	Mountainous
60	6-8	7-9	9-10
80	4-6	5-7	7-9
100	3-5	4-6	6-8

For unsealed surfaces the above value should be reduced by 1 percent, for example, 60km/h speed limit in mountainous terrain on an unsealed section would be 8-9 percent instead of 9-10 percent. Values closer to the lower figures should be aimed for however higher values may be warranted to suit local conditions.

The absolute maximum grade for a vehicle with a road class Level 2 is 12 percent.<sup>2</sup>

**Figure 2 Examples of flat, rolling and mountainous terrain<sup>3</sup>**



Flat

Rolling

Mountainous

<sup>2</sup> ARRB Group Ltd PBS Network Classification Guidelines for Local Government

<sup>3</sup> Roadway Design, Theory and Concepts

[http://www.webpages.uidaho.edu/niatt\\_labmanual/Chapters/roadwaydesign/theoryandconcepts/RouteSelectionAndAlignment.htm](http://www.webpages.uidaho.edu/niatt_labmanual/Chapters/roadwaydesign/theoryandconcepts/RouteSelectionAndAlignment.htm)

## Risk rating

The grade is flat in accordance with Table 3	Low
The grade is rolling in accordance with Table 3	Moderate
The grade is mountainous in accordance with Table 3	High

## Mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risks identified in your assessment:

- Pilot vehicle to be used
- Rotating beacons required and used
- Drive with headlights on

### 3.4 Does the road contain any tight intersections or narrow bends where an oncoming vehicle needs to stop or move off the road to pass?

The ability for vehicles to safely negotiate the road, intersections, roundabouts and traffic control devices at the posted speed limit should be considered during the risk-assessment and then checked by the Road Manager during the approval process.

Turning paths of different vehicles form the basis of what is required at intersections and the lane width around curves. When a long vehicle makes a low-speed turn such as at an intersection, the rear of the vehicle covers a wider area than the inside of the path of the front of the vehicle. This is known as low-speed off-tracking. The swept path is the road area covered by the outermost and innermost points of the vehicle making the low-speed turn.<sup>4</sup> These can be checked using a turning path template or computer program. Using the swept path performance of a comparable vehicle already approved to use the route may be considered acceptable.

For the purposes of this risk-assessment, the Assessor is required to visually assess the road and indicate whether there may be concerns of vehicles negotiating the route and whether they are likely to track to the opposite side of the road using the width of the carriageway.

In Accordance with NSW Route Assessment Guide – Freight Route Investigation Levels 30 October 2012, Table 4 compares the swept path of different vehicle configurations and length.

**Table 4 Swept path comparisons**

Configuration	Combination Length (metres)	Low Speed Swept Path (metres)
Articulated bus	19	5.1
Long rigid bus	15	6.0
6-axle semi-trailer	19	6.5
B-double	19	TBA
	26	8.0

Note: (1) The upper limit is listed

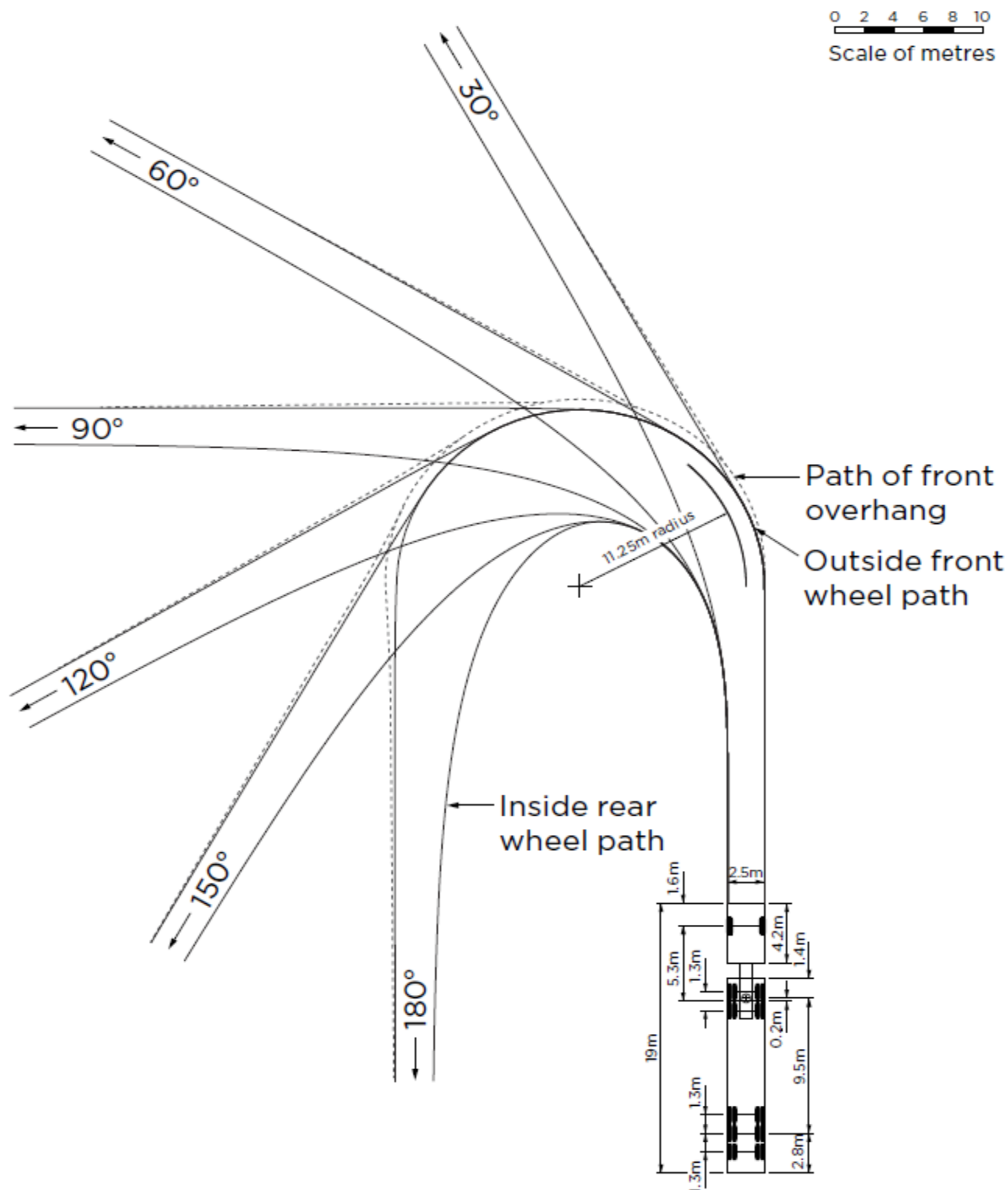
Source: Derived from Austroads Design Vehicles and Turning Path Templates

Low Speed is defined in the NSW ROUTE ASSESSMENT GUIDE – freight route investigation levels 30 October 2012 as **less than 40km/h**

<sup>4</sup> Austroads 2013, Design Vehicles and Turning Path Templates Guide AP-G34-13



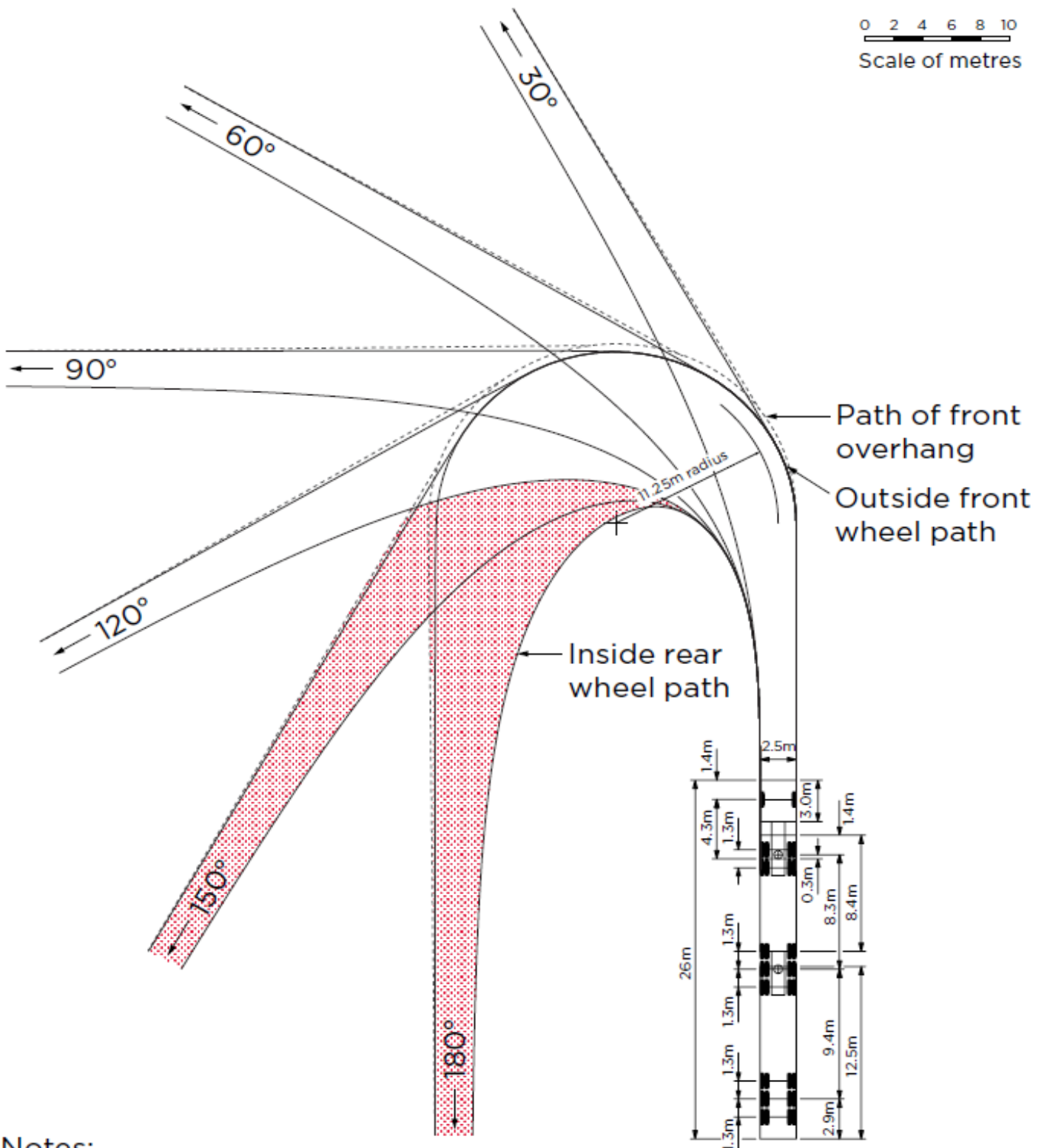
Figure 3 19m B-Double Swept Path



Notes:

1. Locate face of kerbs at least 0.6m clear of wheel paths.
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
3. The outside edge of the swept path remains within the paved area.

Figure 4 26m B-Double Swept path



Notes:

1. Locate face of kerbs at least 0.6m clear of wheel paths.
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
3. Shaded areas indicate turns applicable in off-road situations only.
4. The outside edge of the swept path remains within the paved area.

## Risk rating

No, the swept path of the vehicle appears suitable for this route	Low
Unsure, the swept path may be a concern and requires further investigation	Moderate
Yes, the swept path is a concern.	High

## Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- Pilot vehicle to be used
- Rotating beacons required and used
- Drive with headlights on

## Stopping Sight Distance (SSD)

### 3.5 At your nominated speed, how far down the road can you see?

Truck stopping sight distance (SSD) is generally measured between the driver's eye (2.4 m) and a 0.2m high, stationary object on the road. <sup>5</sup>Consideration should be given to Truck SSD at the following locations:

- On the approaches to railway level crossings
- Intersections with lateral sight distance restrictions. For example, intersections in hilly terrain or near bridge piers
- Intersections on or near crests
- On intersection approaches where truck speeds are close to or equal to car speeds
- At crest and sag points (see figure below)

For the purposes of this assessment, Stopping Sight Distance is approximate only. The Assessor could visually assess a perceived sight distance concern, or measure the sight distance along the road.

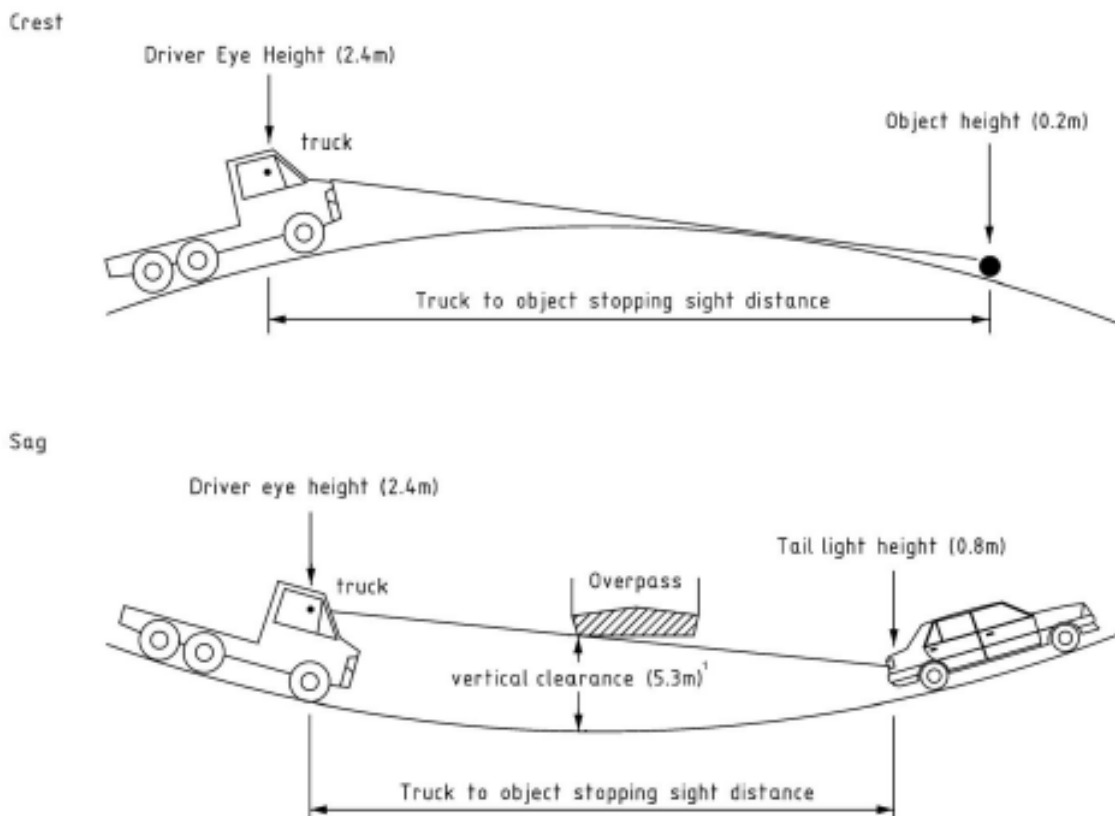
To visually assess, the Assessor should identify whether any of the above locations exist on the route and if they expect sight distance would be impacted as a result.

Alternatively, laser distance measurers or measuring wheels are often used to determine the length of sight.

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<sup>5</sup> Austroads Guide to Road Design Part 3: Geometric Design 5.3.2 Truck Stopping Sight Distance

**Figure 5 Truck stopping sight distance**



*Note: The vertical clearance of 5.3 m is a nominal figure only and should not be used as an acceptable vertical clearance for all structures. Refer to relevant road agency for vertical clearance requirements.*

Source: Austroads Guide to Road Design Part 3: Geometric Design 5.3.2 Truck Stopping Sight Distance

**Table 5 Stopping sight distances**

Road class	Operating speed (km/h)	Stopping sight distance (m)								
		Down grade				Level	Up grade			
		-8%	-6%	-4%	-2%	0%	2%	4%	6%	8%
B-double (not exceeding 26 m)	40	69	66	64	62	61	59	58	57	56
	50	N/A (Descent at low speed & in low gear required)		88	85	83	80	78	77	75
	60			115	111	107	104	101	99	97
	70			145	140	135	130	127	123	120
	80			179	171	165	159	154	150	146
	90			215	206	197	190	184	179	174
	100			261	249	238	228	220	213	207
	110	Not applicable								

Source: Based on NHVR Performance Based Standards Scheme Network Classification Guidelines (2007) Table 15

## Risk rating

At the posted speed limit, the distance is <b>GREATER</b> than that from the table	<b>Low</b>
At the posted speed limit, the distance is <b>LESS</b> than that from the table	<b>High</b>

## Risk mitigation measures for risk assessment

Consider the following measure to reduce or mitigate the risk identified in your risk assessment:

- Travel at or below a 60km/h speed limit

### 3.6 Do cyclists or pedestrians use the route?

Pedestrians and cyclists are among the most vulnerable road users. In collisions with other road users they suffer the most severe consequences because their level of personal protection compared to persons in a vehicle is very low. Not only do pedestrians and cyclists lack the protection of an enclosed vehicle, they also do not benefit from any vehicle safety features like seatbelts or airbags.

With this in mind, it is important to understand whether pedestrians and/ or cyclists use the route. This may be often, occasionally or on specific days and can be collected through observation, discussion with the community or in conversation with your local council.

Cyclist and pedestrian infrastructure is often purpose built so if footpaths, bus shelters or bike lanes exist, it is almost certain these road users will frequent the area.

No	<b>Low</b>
Yes	<b>Moderate</b>

## Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- No travel at school bus times, peak periods, inclement weather, low visibility, etc.

### 3.7 Is this a school bus route?

School buses transport school aged children to and from school during weekdays, usually in the morning and afternoon peak periods. Both formal and informal bus stops encourage pedestrian traffic, sometimes in groups and adjacent to the edge of the road. Purpose built facilities also mean regular stopping, starting and low speeds along a corridor.

You can determine whether you require access along a school bus route through observation, discussion with the community, review of school bus timetables or in conversation with your local council.

No	<b>Low</b>
Yes	<b>Moderate</b>

## Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- No travel at school bus times, peak periods, inclement weather, low visibility, etc.

## 4.0 Intersections or railway level crossings.

### 4.1 Does the route connect to a main road?

Roads are classified into functional categories and indicate the typical traffic volumes, traffic composition, whether they have a higher purpose of connecting communities or roads and speed limit. Where a route sits in the hierarchy also influences who the maintaining authority is and funding allocation for ongoing asset management. State Roads are administered by Roads and Maritime Services and are main roads or highways.

The roads considered under this project are local access roads and have limited, if any, connectivity, very low traffic volumes and are built with the purpose of providing access to individual farms and properties.

A major road in this context is considered to be an arterial or primary collector road and should be considered for reasons such as:

- Sight distance
- Intersection arrangements particularly storage and short stacking
- Exposure to high traffic volumes and composition of vehicles
- Road safety

You will be able to identify whether the route connects to a main road by reviewing road or street maps (including Google Earth), through inspection of the road with consideration to the information contained in this guide or in consultation with your local council.

The Local Government Functional Road Classification Hierarchy table developed by the Institute of Public Works Engineering Australasia NSW (IPWEA) should be used as a guide when identifying whether the route connects to a major road.

**Figure 6 Local Government Functional Road Classification**

Functional Category	Sealed Network	Unsealed Network	Typical Daily Traffic AADT	Heavy Vehicles	Bus Route (Including School)	Linked Communities population	Connectivity
<b>Arterial</b>	Carry traffic to, from and across council areas. They carry traffic between industrial, commercial and residential areas and carry the highest volumes of traffic. Provide for traffic movements between regions. Provide access to major industrial activities and may provide for public transport.	Carry traffic to, from and across council areas. They carry traffic between industrial, commercial and residential areas and carry the highest volumes of traffic. May include heavy vehicle access routes between regional centres.	U: > 15,000 R: > 2,000	> 300	Public Transport Bus Route & School Bus Route	> 10,000	Critical connectivity (there may be no alternative routes)
	<b>Regional Roads</b> Includes roads declared as Regional Roads with funding contribution by RMS	<b>Regional Roads</b> Includes roads declared as Regional Roads with funding contribution by RMS					
<b>Primary Collector</b>	Provide the connections between arterial parts of the network and the Local Collector network. May also service industrial areas and local facilities such as shopping centres and freight terminals.	Provide the connections between the arterial network and the Local Collector network. May also service industrial facilities and grain / freight terminals. May also provide school bus routes in many areas.	U: > 5,000 R: > 1,000	> 150	Public Transport Bus Route & School Bus Route	> 5,000	Provides connection between local population and the State road network
<b>Local Collector</b>	Provides access to the Primary Collector network from local access roads. May provide access to individual industrial facilities and links to local shopping centres.	Provides access to the Primary Collector network from local access roads. May provide access to individual larger facilities such as feedlots and local grain silos. May also provide some school bus links.	U: > 1,000 R: > 200	> 25	Local Bus Route & School Bus Route	> 2,000	Provides connectivity within the local community
<b>Local Access</b>	Major function is to provide access to individual properties. May also provide access to local tourist sites.	Major function is to provide access to individual farms and properties. May also provide access to local tourist sites and recreation facilities.	U: < 1,000 R: < 200	< 25	May include local bus routes	< 250	Provides the link for properties and businesses and the local community

- Notes:**
1. State Roads are not included in this classification as the trafficked lanes are under the care control and management of RMS. Associated facilities (e.g. kerb & gutter, footpath, street furniture etc. which are owned and managed by councils will be included in other asset classes)
  2. Classification of a road is based on its function. Absolute assessment against any one of the above criteria alone is to be avoided.
  3. The assessment parameters in the above table are to provide guidance only. Assessment of a road should take a holistic view of its function and importance to the local community.
  4. Levels of service are not intrinsically linked to the road hierarchy. Levels of service are determined by council following consultation with the local community and may vary across categories.

**Risk rating**

No, the road does not connect to a major road or the road connects to a 'Local Collector' road	<b>Low</b>
Yes, the road connects to a major road, either an arterial or primary collector road	<b>High</b>

**Risk mitigation and mandatory condition for risk assessment**

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted - Route connects to main road.

## Safe Intersection Sight Distance (SISD)

**4.2 If you, as a driver, were waiting to turn onto the road from an intersection, how far down the road can you see a car approaching so you can proceed safely and without forcing the approaching vehicle to stop? Assume the vehicle is travelling at the posted speed limit.**

SISD is the minimum sight distance which should be provided on the major road at any intersection. This allows for all drivers to have the maximum ability to slow down, identify any other road users and drive in a safe manner. SISD ensures that:

- Drivers recognise the presence of an intersection in time to slow down or stop in a controlled and comfortable manner
- All road users have a clear line of sight to see any vehicles approaching in conflicting traffic streams and give way where required by law or avoid a crash in the event of a potential conflict,
- Provides inter-visibility between drivers and vehicles on all approaches which relies upon the intersection safety performance is therefore largely dependent upon adequate sight distance in relation to both horizontal and vertical geometry for all drivers approaching and entering the intersection.

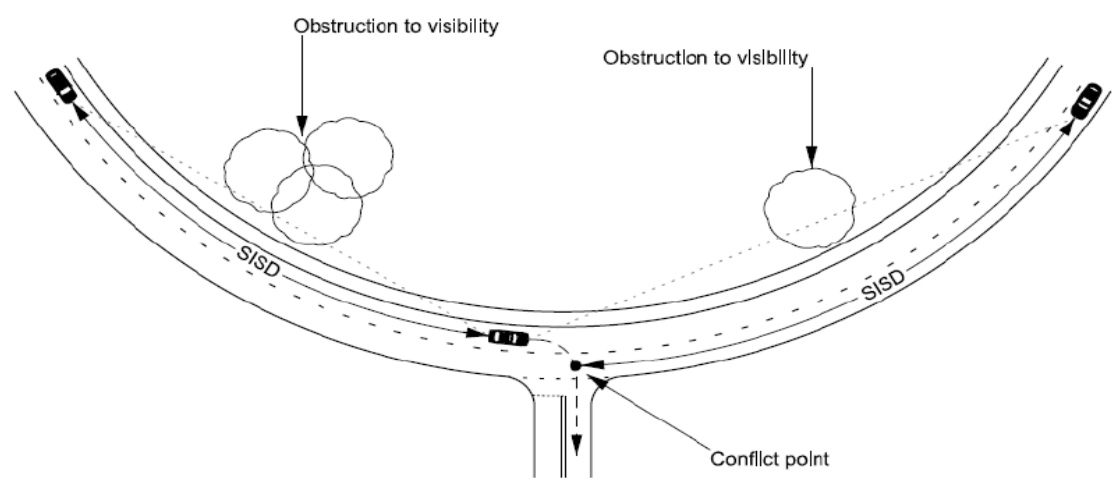
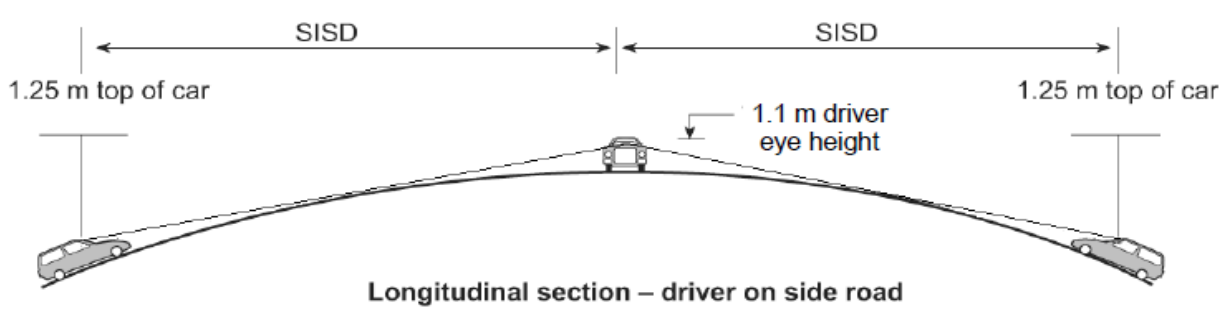
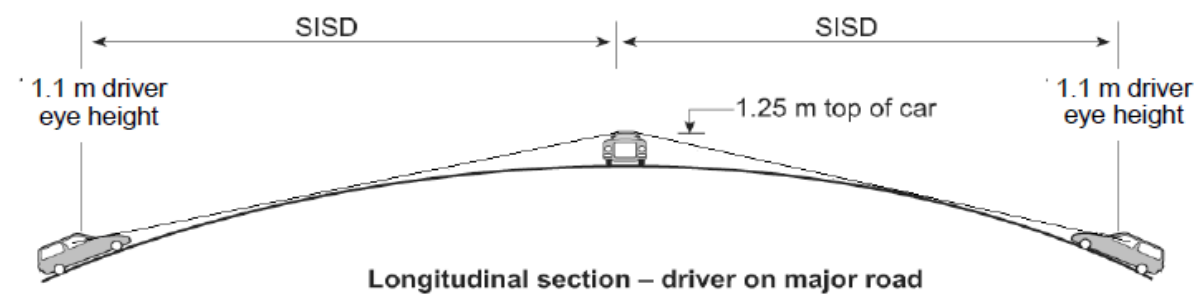
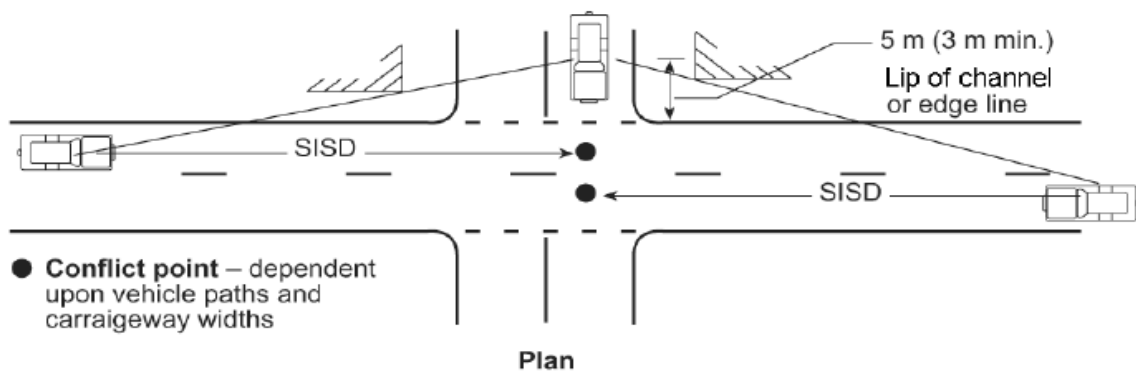
**Table 6 Safe intersection sight distances**

<b>Safe Intersection Sight Distance (SISD) for Trucks*</b>	
Based on reaction time of 2.0 sec, observation time of 3.0 sec and co-efficient of deceleration for trucks of 0.24	
<b>Speed Limit (km/h)</b>	<b>SISD (m)</b>
40	82
60	142
80	216
100	303

*\*Using Safe Intersection Site Distance formula from Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2017 Edition)*



**Figure 7 Safe Intersection Sight Distance**



Source: Department of Main Roads (2006)7.

## Risk rating

Yes, the sight distance is satisfactory	Low
No, the sight distance is not met for the route	High

## Risk mitigation measures for risk assessment

Consider one or more of the following measures to reduce or mitigate the risk identified in your risk assessment:

- Travel at or below a 60km/h speed limit. This reduces the risk rating to moderate.

### 4.3 Is there a railway level crossing on the route?

The Rail Industry Safety and Standards Board define a railway level crossing to be the location where a road and railway line intersect at grade (at the same level) allowing road users (including pedestrians and cyclists) to travel over the railway tracks.

Railway level crossings have passive or active controls to guide road users.<sup>6</sup>

- Passive: have static warning signs (stop or give way) that are visible on approach. This signage is unchanging with no mechanical aspects or light devices.
- Active: In addition to passive railway level crossing signage, these are controlled by automatic warning systems. Including flashing lights, automatic gates (booms, boom gates), audible devices (bells, gongs), advanced warning signs or other warning devices are activated by approaching trains.

Concerns with safety at the site should be highlighted during the assessment and may include visual obstructions (such as vegetation) to oncoming trains.

## Risk rating

No, there are no railway level crossings	No risk
Yes, the crossing has active control as described above	Low
Yes, the crossing has passive control as described above	Low
Yes, the crossing exists and has no control and/ or I have safety concerns for the site	High

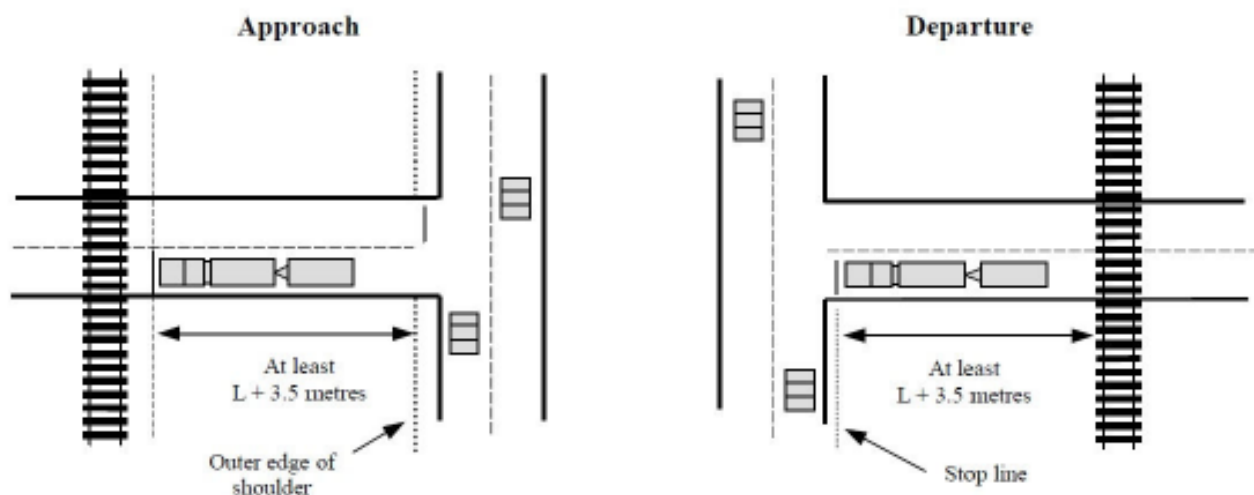
### 4.4 Is there a minimum distance of 29.5m to prevent the blocking of an adjacent intersection or railway level crossing?

In some areas the distance between intersections (including railway level crossings) are shorter than the length of some vehicles. This is referred to as 'storage' or 'stacking distance'. When a vehicle overhangs the adjacent intersection or railway level crossing we call this 'short stacking'.

The distance between intersections or an intersection and railway level crossing must be at least 3.5 metres plus the vehicle length. Sufficient stacking distance should be provided as shown in the figure below.

<sup>6</sup> <https://www.rissb.com.au/safety/railway-level-crossings/what-is-a-railway-level-crossing/>

**Figure 8 Example of stacking distance**



Source: Based on NHVR Performance Based Standards Scheme Network Classification Guidelines (2007) Figure 2.2

**Risk rating**

Yes the storage length is sufficient	Low
No there are short stacking issues	High

**Risk mitigation and mandatory condition for risk assessment**

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted - Short Stacking concern

## 5.0 Structures.

### 5.1 Are there any culverts or causeways on the route?

Culvert and causeway asset attributes will be maintained, ensuring associated signage and roadside furniture and equipment is maintained at the original design standards. Bridges and culverts are robustly designed with considerable structural factors for safety. To monitor and identify issues, inspections are undertaken to check on their overall performance.

Culvert and causeway structures are key elements within the road network. A structural failure of one of these assets may lead to loss of life and/or significant disruption to freight and traffic flows, which results in financial and social impacts to the community.

To ensure that councils understand what will be asked of the infrastructure that may be present, it is important to identify and nominate any such structures so that any potential risks can be identified and/or further inspections can be carried out to check on their overall performance.

No	Low
Yes	High

#### Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted - culvert or causeway on route.

### 5.2 Are there any bridges on the route?

Bridge structures are key elements within the road network. A structural failure of one of these assets may lead to loss of life and/or significant disruption to freight and traffic flows, which results in financial and social impacts to the community. To monitor and identify issues, inspections are undertaken to check on their overall performance.

As such, any structures which exist along the route should be identified so the asset owner (such as local council) can make an informed decision on the access request.

No	Low
Yes	High

#### Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted - bridge on route.

### 5.3 If yes, are any of these timber structures?

Excess load on a timber bridge could result in a catastrophic failure. Timber structures can usually be identified by inspection or in consultation with the asset owner (such as local council).

No	Low
Yes	High

#### Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted – Timber Bridge on route.

## 6.0 Structures.

### 6.1 Is there an object less than 4.6m in height over the road that can be struck on the route? (For example vegetation, signage, utilities)?

The use of vehicle vehicles and vehicle combinations that exceed the general access height limit of 4.3 metres are predominately used for the movement of such commodities as cattle, sheep, pigs, wool and hay bales.

It is important to understand that these vehicles are higher than that of the general access vehicles and due to this the route is required to be assessed for any vegetation, signage, utilities or alike that could be impacted when the vehicle is travelling along the route.

Any height data should be collected by visual inspection so the road manager can investigate further.

No	Low
Yes	High

#### Risk mitigation and mandatory condition for risk assessment

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- Local council road manager to investigate and advise prior to access granted - Possible height restrictions.
- Local council road manager to investigate and advise prior to access granted – Possible overhead utilities.

## 7.0 Adjacent communities and amenity.

### 7.1 Are there any schools, churches or hospitals on the route?

Information on the adjacent communities can be found using desktop research or by inspection. This criterion is simply to highlight any sensitivity with the surrounding environment to council.

#### **When selecting 'yes', Risk mitigation and mandatory condition for risk assessment**

The below access condition is mandatory to reduce or mitigate the risk identified in your risk assessment:

- No travel at school bus times, peak periods, inclement weather, low visibility, etc.