

**Item 10 A-Double Modern Road Train Assessment**

**FILE REFERENCE**

**DELIVERY PROGRAM**

**GOAL:** 4. Proactive Regional and Local Leadership

**OUTCOME:** 5.1 CORPORATE MANAGEMENT

**STRATEGY:** 2.1.1 Plan for and develop the right assets and infrastructure - TS -external

**AUTHOR** Design and Assets Manager

**DATE** 15/02/2016

**STAFF DISCLOSURE OF INTEREST** Nil

**IN BRIEF/ SUMMARY RECOMMENDATION**

The purpose of this report is to allow Council to make a determination for restricted vehicle access (A-double Modern Road Train access) on a 12.180km section of County Boundary Road (SR41), south from the intersection of Gil Gil Creek Road (SR63) to the Moree Plains Shire Boundary.

**BACKGROUND:**

Modern A-double road trains, B-triples and AB-triples up to 36.5 metres in length, may operate on approved roads on and east of the Newell Highway, under an access permit issued by the National Heavy Vehicle Regulator (NHVR). An application for such permit access for A-double Modern Road Trains has been received by Council from Johnstone Quarries Pty Ltd.

As part of the extensions to the existing approved restricted access vehicle routes, it is suggested that Council consider allowing A-double Modern Road Train truck access on the 12.180km section of County Boundary Road (SR41), south from the intersection of Gil Gil Creek Road (SR63) to the Moree Plains Shire Boundary.

As County Boundary Road either side of this section is currently approved for Type 1 A-double Modern Road Trains, this would allow County Boundary Road (SR41) to be a through road for this type of vehicle. This, in turn, would allow a through road to Croppa Creek and other roads with Road Train approvals in Gwydir Shire. An inspection by the Road Safety Officer was undertaken to assess any improvements that may be required prior to making recommendations for A-double Modern Road Train approval, and several swept path diagrams were also prepared to assess the intersection suitability (Attachment 1).

**ISSUES AND COMMENT:**

This is page number 160 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....

The 12.180km section on County Boundary Road (SR41) is a missing link between Croppa Creek and Pallamallawa in Moree Plains Shire. Gwydir Shire Council has received numerous permit requests to travel on the full section of County Boundary Road (SR41). This has been inhibited due to this missing section.

**CONCLUSION:**

A-double Modern Road Train access on SR41 will be a link between Pallamallawa in Moree Plains Shire and Croppa Creek in Gwydir Shire. This will provide increased transport efficiencies and lower freight costs in the northern part of Gwydir Shire.

Operators wishing to use approved routes within Gwydir Shire for road train and A-double Modern Road Train access still require a permit from the National Heavy Vehicle Regulator (approved by GSC), allowing Council to restrict access should road or safety conditions deteriorate.

**CONSULTATION:**

Consultation has been conducted with the GIS Officer of Gwydir Shire Council, National Heavy Vehicle Register, and Road Safety Officer of Gwydir Shire Council and Moree Plains Shire Council.

**OFFICER RECOMMENDATION**

**THAT the 12.180km Section of County Boundary Road (SR41) South of Gil Gil Creek Road (SR63) be approved for A-Double Modern Road Train access.**

**THAT this report be accepted.**

**ATTACHMENTS**

AT- Route Assessment Summary

**COUNCIL RESOLUTION:**

**MINUTE 17/16**

**THAT the 12.180km Section of County Boundary Road (SR41) South of Gil Gil Creek Road (SR63) be approved for A-Double Modern Road Train access.**

**THAT this report be accepted.**

**(Moved Cr Smith, seconded Cr Dick)**

# Gwydir Shire Council Route Assessment Report



## *SR 41 County Boundary Road from Moree Plains and Gwydir Shire Boundary to intersection of Croppa Moree Road (Moree Plains Shire)* Wednesday, 3 July 2013

### Contents

Section 1 : Route assessment summary report .....	1-2
1.1 Cover Sheet.....	1-2
1.2 Route Assessment summary check list.....	1-3
1.3 Engineering determination report .....	1-12
Section 2 : Road Information .....	2-15
2.1 Map of Route .....	2-15
2.2 Road widths .....	2-17
2.3 Turning Path Drawings.....	2-27
Section 3 : Bridges, Culverts & Other Structures .....	3-35
3.1 Bridges .....	3-35
3.2 Culverts.....	3-35
3.3 Other structures .....	3-45
Section 4 : Risk Management .....	4-49
4.1 Crash History .....	4-49
4.2 Road Safety Considerations.....	4-49
4.3 Risk Assessment .....	4-52
Section 5 : Completed Application Form.....	5-57
Section 6 : General Comments.....	6-57


Section 1: Route assessment summary report

1.1 Cover Sheet

<b>Vehicle configuration:</b>	Type 1 Modern Road Train, 4.6m
<b>Route:</b>	County Boundary Road (SR 41)
<b>Origin Address:</b>	Moree Plains and Gwydir Shire Boundary
<b>Destination Address:</b>	Intersection of County Boundary Road (SR 41) and Croppa Moree Road (Moree Plains Shire Council SR 131)

This is to certify that the investigation levels have been duly considered, checklist has been completed and comments provided as appropriate.

**My assessment of the inspected route against the guide is that the route is: Suitable once additional works are completed.**

Person/s responsible for the route assessment:		
<b>Signature:</b>		
<b>Name:</b>	Renee McMillan	Carl Tooley
<b>Position:</b>	Road Safety Officer	Manager Engineering Services
<b>Organisation</b>	Moree Plains & Gwydir Shire Councils	Gwydir Shire Council
<b>Date:</b>	19 March 2014	19 March 2014

## 1.2 Route Assessment summary check list

Separate working papers are to contain the detailed assessment that supports this summary check list.

Road Name and Section:		County Boundary Road (SR 41)		
Ref	Assessment characteristic	Data	Comment / information	
2.1.1	<b>General</b>			
	Length of route (km)	12.180km		
	Road Class Hierarchy (State Roads)	Local Road		
	Traffic Volumes (AADT)	59	AADT was placed south of the intersection with MPSCSR 131 – Croppa Moree Road.	
	% Volume of commercial vehicles	27%	This is productive farming and grazing land with very few residential properties.	
	Volume by types of freight vehicles:			
	• Semi-trailers	Unknown		
	• B-doubles	Unknown		
	• Road Trains	n/a		
	• AB and B-triple combinations	n/a		
	• Other		Agricultural machinery such as tractors and wheat harvesters either walked or under float.	
Ref	Assessment characteristic	Pass	Inves tigate	Comment / information
2.2	<b>Legal/regulatory</b>			
2.2.1	<b>Vehicle</b>			
	Check the proposed vehicle against the regulations:	✓		A Double Road Trains are legally allowed to operate on NSW roads.
	Actual legal class and configuration	✓		A Double Road Trains are legally allowed to operate on NSW roads.

Ref	Assessment characteristic	Pass	Investigate	Comment / information
	Comparable vehicle			This route is currently approved for b-doubles. There are no comparable vehicles approved for travel on this section of the road, however A-double road trains are currently approved to travel this road either side of the assessed section which remains the missing link. Swept paths have been checked to ensure intersections are suitable.
<b>2.2.2</b>	<b>Zoning of land</b>			
	Evidence provided that access complies with planning approvals	✓		No evidence provided. The route is currently a B-double route and the majority of land is zoned rural.
<b>2.3</b>	<b>Road safety issues</b>			
<b>2.3.1</b>	<b>At terminals</b>			
2.3.1(a)	Road access within terminals	n/a		No terminal to consider with this route as it is only once section of a longer route and is not the terminating location.
	Evidence provided to confirm suitability within terminals.	n/a		No terminal to consider with this route as it is only once section of a longer route.
2.3.1(b)	Road access into or from terminals	n/a		No terminal to consider with this route as it is only once section of a longer route.
	Entry and exit complies	n/a		No terminal to consider with this route as it is only once section of a longer route.
<b>2.3.2</b>	<b>Road safety assessment</b>			
	Road Crash Investigation Report Review of desk-top analysis of the road crash history over the previous 5 years.	✓		No crash data recorded for five year period between 1 July 2007 and 30 June 2012.
	Where required, road safety audit report	n/a		
	• Speed zones	✓		100kph
	• School speed zones	n/a		No school zones on route.
	• Truck and bus zone	n/a		No truck and bus zones on route.

Ref	Assessment characteristic	Pass	Investigate	Comment / information
2.3.3	<b>Road alignment</b>			
	Is there a comparable vehicle using this route?		✓	This route is currently approved for b-doubles. There are no comparable vehicles approved for travel on this section of the road, however A-double road trains are currently approved to travel this road either side of the assessed section which remains the missing link. The region in which this route is located, has a large number of approved A-double road train routes.
	Low speed turns at intersections, roundabouts, traffic management devices	✓		There are three (3) intersections along this route, with only two (2) requiring investigation. The third is not a road train approved route. The two (2) intersections investigated showed that some vehicles may need to operate with reduced clearances or encroach into adjacent lanes. While this may inconvenience some road users, the low frequency of the occurrence of these vehicles make this acceptable.
	Curve geometry at road speed	✓		Other than intersections the majority of the route is straight road with only minor bends.
2.3.4	<b>Road width (cross-section)</b>			
2.3.4(a)	Rural roads	✓		
	For unsealed sections: <ul style="list-style-type: none"> <li>• Carriageway width (W)</li> </ul>	✓		Average road width: 6.0m – 8.5m Some sections of were less than 7m wide but generally there is sufficient room for a vehicle to move onto the shoulder safely of necessary to pass an oncoming vehicle.
	For sealed sections: <ul style="list-style-type: none"> <li>• Sealed surface width (SSW)</li> <li>• Sealed lane width (SLW)</li> <li>• Carriageway width (W)</li> </ul>	✓		Average seal width: 5.2m Average carriageway width: 6.7m Although the carriageway width is lower than 7.0m, there is sufficient room for a vehicle to move onto the unsealed shoulders safely if necessary to pass an oncoming vehicle.

Ref	Assessment characteristic	Pass	Investigate	Comment / information
2.3.4(b)	Urban roads	n/a		
	For sealed sections: <ul style="list-style-type: none"> <li>Sealed lane width (SLW)</li> <li>Adjacent lane (SLW)</li> </ul>	n/a		
<b>2.3.5</b>	<b>Structure width (including bridge width)</b>			
	Structure width	✓		There are twenty-two (22) structures on this route. Eighteen (18) culverts, three (3) causeways and one (1) floodway.  All of the culverts were measured; widths and distance between end walls. Minimum structure width recorded was 6.1m.  Further investigation is required to identify the structural soundness of the culverts. Drainage maintenance is required prior to further investigations as access was prevented when assessment was completed.
	Width ratio ≤ 1.25	✓		
<b>2.3.6</b>	<b>Intersections</b>			
2.3.6(a)	Low speed turns			
	Roadside structures	✓		
2.3.6(b)	Intersections and turn bays			
	Safe intersections sight distance (SISD)	✓		
	Adequate road length for storage	✓		
2.3.6(c)	Approach visibility (stopping sight distance)			
	Stopping Sight Distance (SSD)	✓		
<b>2.3.7</b>	<b>Overtaking opportunities</b>			
	Overtaking opportunities meet the requirements for the route.	✓		
<b>2.3.8</b>	<b>Traffic facilities</b>			
2.3.8(a)	Signs, lines and markings	✓		No line marking on this route.



Ref	Assessment characteristic	Pass	Investigate	Comment / information
	Signposting	✓		No additional signage required.
2.3.8(b)	Crash barriers and clear zones	✓		There are good clear zones along the most of the road length.
2.3.8(c)	Traffic signals			
	Minimum green time (Note locations where adjustment is required)	n/a		
<b>2.3.9</b>	<b>Traffic interaction with other users</b>			
	School bus route has bus stop areas off the road where the bus can safely stop.	✓		Ample room on shoulder and road reserve to pull safely off the road if required.
	Tourist route	✓		This route is not known to be a tourist route.
	Pedestrians and cyclists	✓		This route is not known to be used by pedestrians and cyclists.
	Other drivers familiar with RAV	✓		Although this route is has no comparable vehicles, this section is the missing link on the entire road length that is not already open to A-double road trains. The region in which this route is located, has a large number of approved A-double road train routes. Therefore other drivers are already familiar with this type of restricted access vehicle.
<b>2.3.10</b>	<b>Local conditions</b>			
	Other local conditions (describe)	✓		This route has in places a large number of rocks in the unsealed road surface. It is suggested that as part of the routine maintenance, a rock crusher is used to reduce this risk.
<b>2.4</b>	<b>Rail-road safety</b>			
2.4.1	Grade Separated Crossings	n/a		
2.4.2	Railway crossings			
2.4.2(a)	Sight distance	n/a		
2.4.2(b)	Alignment and width	n/a		
2.4.2(c)	Queuing on railway crossings at or near intersections	n/a		

Ref	Assessment characteristic	Pass	Investigate	Comment / information
2.4.2(d)	Short stacking	n/a		
	Concurrence from rail infrastructure manager	n/a		
<b>2.5</b>	<b>Work, health and safety</b>			
2.5.1	Decoupling operation	✓		The approval of this route potentially decreases the need to decouple a combination.  This route is the only missing link for A-double road trains travelling from the Croppa Creek area direct to the Pallamallawa area and vice versa.  From the north; A-doubles would have to decouple at the Moree Plains/Gwydir Shire Boundary (where this assessed section ends). If travelling from the south then decoupling is required approximately 16km away from the datum of the assessed area.
2.5.2	Driver breaks	✓		The approval of this route potentially decreases the travel time and enables less rest period for an overall journey. This is because it would allow for operators to use this missing link for A-double road trains travelling from/through the Croppa Creek area direct to the Pallamallawa area and vice versa.
<b>2.6</b>	<b>Amenity and environment issues</b>			
2.6.1	Existing approved land-use			
2.6.1(a)	Community amenity	✓		This is productive farming and grazing land with very few residential properties. The approval of this route could reduce the number of trucks using the route. This Route is currently approved for B-double and there has been no history of freight related concerns over the past five (5) years.
2.6.1(b)	Noise and vibration			

Ref	Assessment characteristic	Pass	Investigate	Comment / information
	Road noise: Road surface irregularity	✓		This route is currently approved for B-doubles. For the purpose of road noise a B-double is considered a comparable vehicle. This is productive farming and grazing land with very few residential properties.
	Engine and brake noise: Grade > 5% (potential for engine brake noise)	✓		This route is currently approved for B-doubles. For the purpose of engine and brake noise a B-double is considered a comparable vehicle. This is productive farming and grazing land with very few residential properties.
2.6.1(c)	Air quality	✓		This route is currently approved for B-doubles. For the purpose of air quality a B-double is considered a comparable vehicle. The approval of this route could reduce the number of trucks using the route for the same freight task, which directly reduces fuel use and emissions.
2.6.1(d)	Vulnerable or endangered flora or fauna	✓		This route is currently approved for B-doubles. For the purpose of vulnerable or endangered flora or fauna a B-double is considered a comparable vehicle. The approval of this route could reduce the number of trucks using the route for the same freight task and consequently reduce exposure of fauna.
2.6.2	<b>Traffic-generating development</b>			
	Associated with DA	n/a		

Ref	Assessment characteristic	Pass	Investigate	Comment / information
2.7	<b>Infrastructure loading</b>			
2.7.2	<b>Bridge structure</b>			
	All bridges & culverts structurally capable		✓	There are no bridges on the route; however there are eighteen (18) culverts. All of the culverts were measured; widths and distance between end walls. Further investigation is required to identify the structural soundness of the culverts. Drainage maintenance is required prior to further investigations as access was prevented when assessment was completed. No structural testing has been completed on the culverts.
2.7.3	<b>Pavement structure</b>			
2.7.3(a)	General and concessional mass			
	Wear relative to 6 axle semi-trailer Pavement condition	✓		Wear relative to 6 axle semi-trailer: 0.75 There are no comparable vehicles approved for travel on this section of the road, however A-double road trains are currently approved to travel this road either side of this section which remains the missing link. There are a few locations on the route that have visible flood damage or general road failure; however the overall pavement appears to be in a suitable condition with no major potholes.
2.7.3(b)	Higher mass limits (HML) on axles groups			
	Pavement condition	n/a		HML assessment not requested.
2.7.4	<b>Floodways and causeways</b>	✓		There are three (3) causeways and one (1) floodway on this route. All of the causeways and the floodway were measured; widths and length. No structural testing has been completed on the causeways or floodway.

Ref	Assessment characteristic	Pass	Investigate	Comment / information
<b>2.8</b>	<b>Property damage (public infrastructure or property)</b>			
2.8.1	Low clearance structures and plant			
2.8.1(a)	Structure clearance	n/a		
2.8.1(b)	Overhead cable clearance	✓		
2.8.2	Tree clearance		✓	Some trees were identified as requiring maintenance and limb removal prior approving this section of road for RAV's. These have been identified in the Data Collection spreadsheet which is attached to this report.
<b>2.9</b>	<b>Other significant issues</b>			
	Other issues not covered in the assessment (describe)	n/a		

**Risk Management Approach:**

	Yes	No
Risk management analysis required to resolve issues Attach the risk management analysis at the end of this summary	✓	

**Access Conditions:**

None
------

**Other issues:**

	Yes	No
Is a review of the route scheduled?		✓

### 1.3 Engineering determination report

<b>Vehicle type</b>	B-triple operating at GML	<b>HML Vehicle</b>	No
<b>Asset Manager</b>	Gwydir Shire Council		
<b>Route</b>	From: Moree Plains and Gwydir Shire Boundary (southern end)		
	To: Intersection of Croppa Moree Road (Moree Plains Shire)		
		<b>Yes</b>	<b>No</b>
List of all structures, their assessments and sign-off by structural engineer is attached			✓
• Culvert – 0.12km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Floodway (concrete) – 1.128km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 1.377km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 1.676km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 2.215km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Causeway (concrete) – 2.887km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 3.040km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 4.714km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 5.120km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 5.237km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓

Vehicle type	B-triple operating at GML	HML Vehicle	No
• Culvert – 5.490km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 5.881km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 6.563km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Causeway (concrete) – 7.038km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 8.206km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 8.552km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Causeway (concrete) – 8.856km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 9.299km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 9.633km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 9.864km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 11.404km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
• Culvert – 12.107km from the Moree Plains and Gwydir Shire southern boundary – No structural engineer’s report available and therefore structural capacity is unknown.			✓
All structures can support the proposed vehicle			

Person responsible for the engineering determination:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Organisation: \_\_\_\_\_

Date: \_\_\_\_\_

*The above pages (1-2 to 1-8) is from the NSW Route Assessment Guide – freight route investigation levels, 30 October 2012 produced by the NSW Government Transport Roads & Maritime Services.*

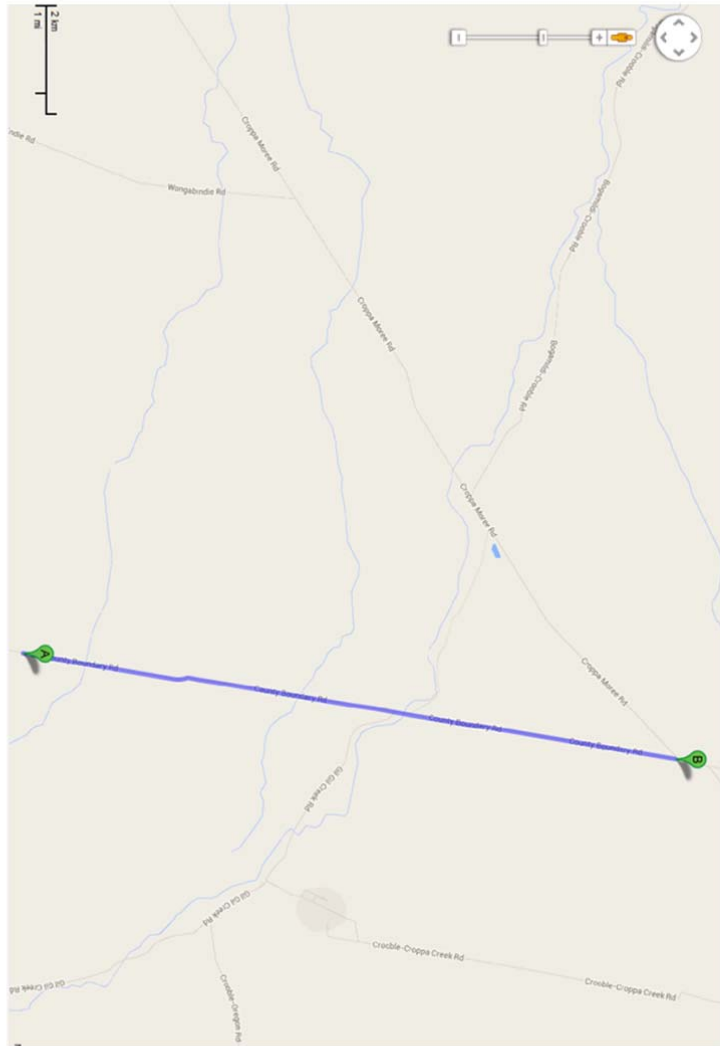
This is page number 175 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....



Section 2: Road Information

2.1 Map of Route



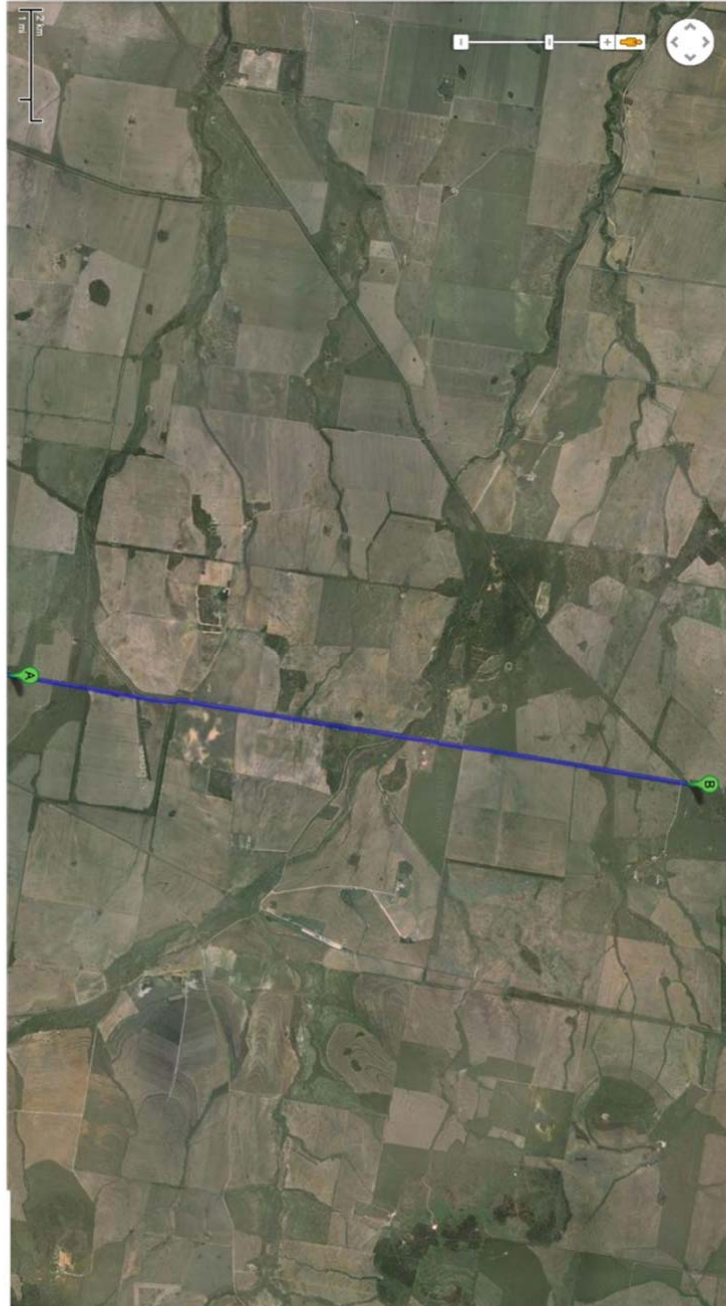
<http://maps.google.com.au>

Gwydir Shire Council Route Assessment SR 41

2-15

This is page number 176 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....



<http://maps.google.com.au>

Gwydir Shire Council Route Assessment SR 41

2-16


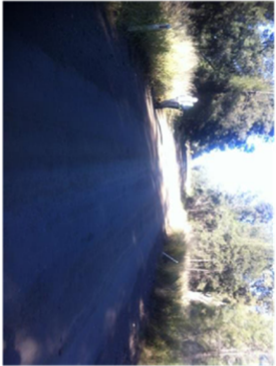
This is page number 177 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016



Chairman .....


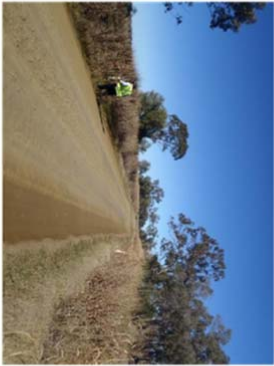
2.2 Road widths

Road Name: County Boundary Road      Road Length: 43.6km      Assessed Road Length: 12.18km  
 Recommended Road Width: 7m      Average Road Width: 6.7      Annual Average Daily Traffic (AADT): 59  
 Inspection Date: Wednesday, 3 July 2013

Approximate Measurement Location	Width	Comments	Photos
0.0	Unsealed: 6.7m Formation: 12.4	Start point of assessed route (Moree Plains and Gwydir Shire southern boundary)	
1.127	Unsealed: 6.1m	Visible road width change	



Approximate Measurement Location	Width	Comments	Photos
1.128	Unsealed: 6.1m	Floodway	
1.377	Unsealed: 7.2m Culvert: 7.5m Formation: 9.0m	Culvert	
1.676	Unsealed: 7.2m Culvert: 7.5m	Culvert	

Approximate Measurement Location	Width	Comments	Photos
2.215	Unsealed: 7.2m Culvert: 7.5m Formation: >8m	Culvert	
2.887	Unsealed: 6.2 m Edge to edge: 6.6m Formation: 6.6m	Causeway	

Approximate Measurement Location	Width	Comments	Photos
3.040	Unsealed: 8.0m Culvert: 9.4m Formation: 9.4m	Culvert. Large rocks visible in road surface.	
4.714	Unsealed: 6.2m Culvert: 7.2m	Culvert	
5.120	Unsealed: 6.0m Culvert: 7.2m	Culvert	
5.237	Unsealed: 6.0m	Culvert	



Gwydir Shire Council Route Assessment SR 41

2-20



Approximate Measurement Location	Width	Comments	Photos
5,490	Unsealed: 6.5m Culvert: 9.5m Formation: >9.5m	Culvert	
5,881	Unsealed: 6.0m Culvert: 7.2m Formation: 11.0m	Culvert	
6,563	Unsealed: 7.2m Culvert: 8.2m	Culvert	



Gwydir Shire Council Route Assessment SR 41



2-21


Approximate Measurement Location	Width	Comments	Photos
7.038	Unsealed: 6.2 m Edge to edge: 6.2m Formation: >8.0m	Causeway	
8.206	Unsealed: 9.5m Culvert: 10.0m Formation: 10.0m	Culvert	



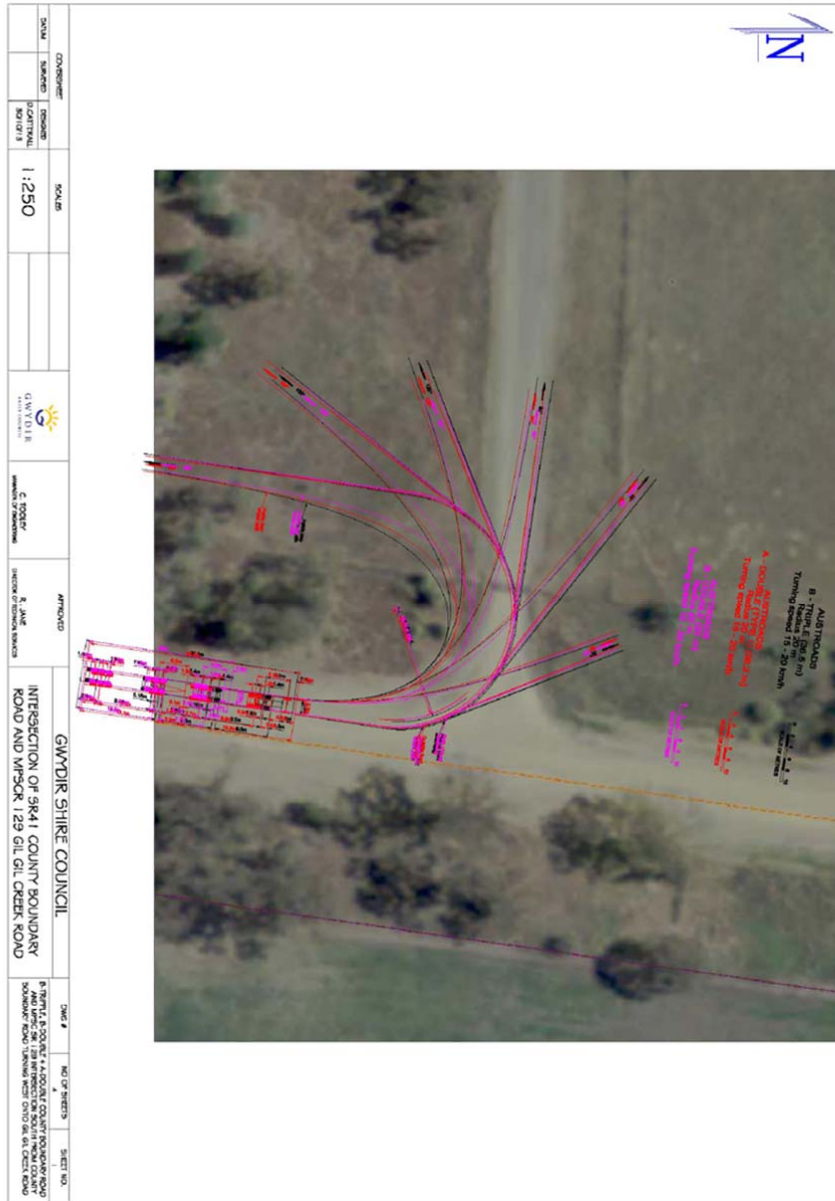
Approximate Measurement Location	Width	Comments	Photos
8,552	Unsealed: 7.2m Culvert: 10.0m Formation: 11.0m	Culvert	
8,856	Unsealed: 6.2 m Edge to edge: 7.2m Formation: >8.5m	Causeway	

Approximate Measurement Location	Width	Comments	Photos
9,299	Unsealed: 6.2m Culvert: 7.0m	Culvert	
9,633	Unsealed: 7.0m Culvert: 9.8m Formation: 10.8m	Culvert	

Approximate Measurement Location	Width	Comments	Photos
9,864	Unsealed: 7.2m Culvert: 10.0m	Culvert	
11,404	Unsealed: 7.2m Culvert: 10.0m	Culvert	

Approximate Measurement Location	Width	Comments	Photos
12.107	Unsealed: 6.6m Culvert: 10.6m	Culvert	
12.111	Seal: 5.2 Edge to edge: 9.1	Start bitumen seal	
12.180	Seal: 5.2 Edge to edge: 9.0	End assessment	

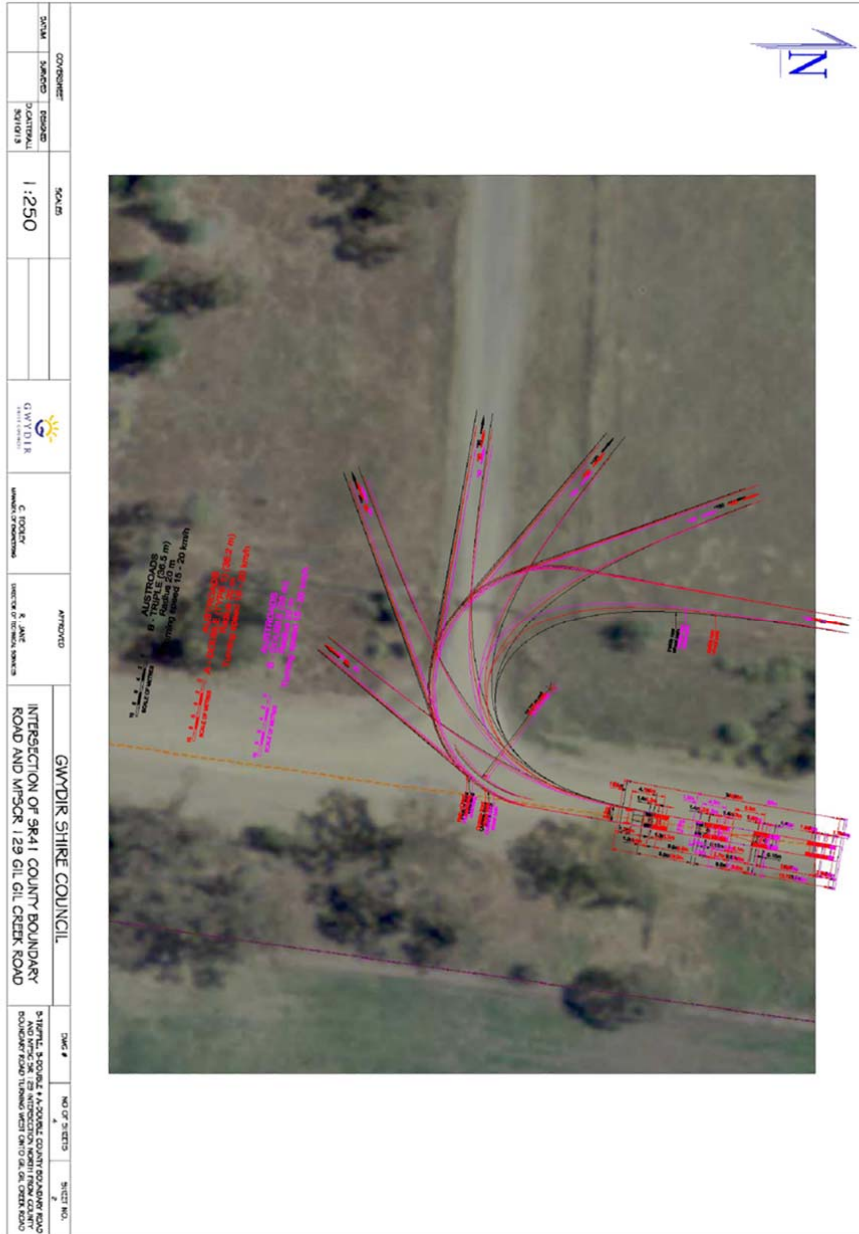
2.3 Turning Path Drawings



CONTRACT NO.	SR41	SCALE	1:250	DATE	12/11/15
CLIENT	GWYDIR SHIRE COUNCIL	PROJECT	SR41 COUNTY BOUNDARY ROAD AND WPSCK 129 GIL GIL CREEK ROAD	NO. OF SHEETS	1
DESIGNER	SR41	APPROVED	GWYDIR SHIRE COUNCIL	SHEET NO.	1
DATE	12/11/15	PROJECT	SR41 COUNTY BOUNDARY ROAD AND WPSCK 129 GIL GIL CREEK ROAD	B - TRAILER 8.50M x 2.50M + 1.50M CLEARANCE C - TRAILER 8.50M x 2.50M + 1.50M CLEARANCE D - TRAILER 8.50M x 2.50M + 1.50M CLEARANCE	

Gwydir Shire Council Route Assessment SR 41

2-27



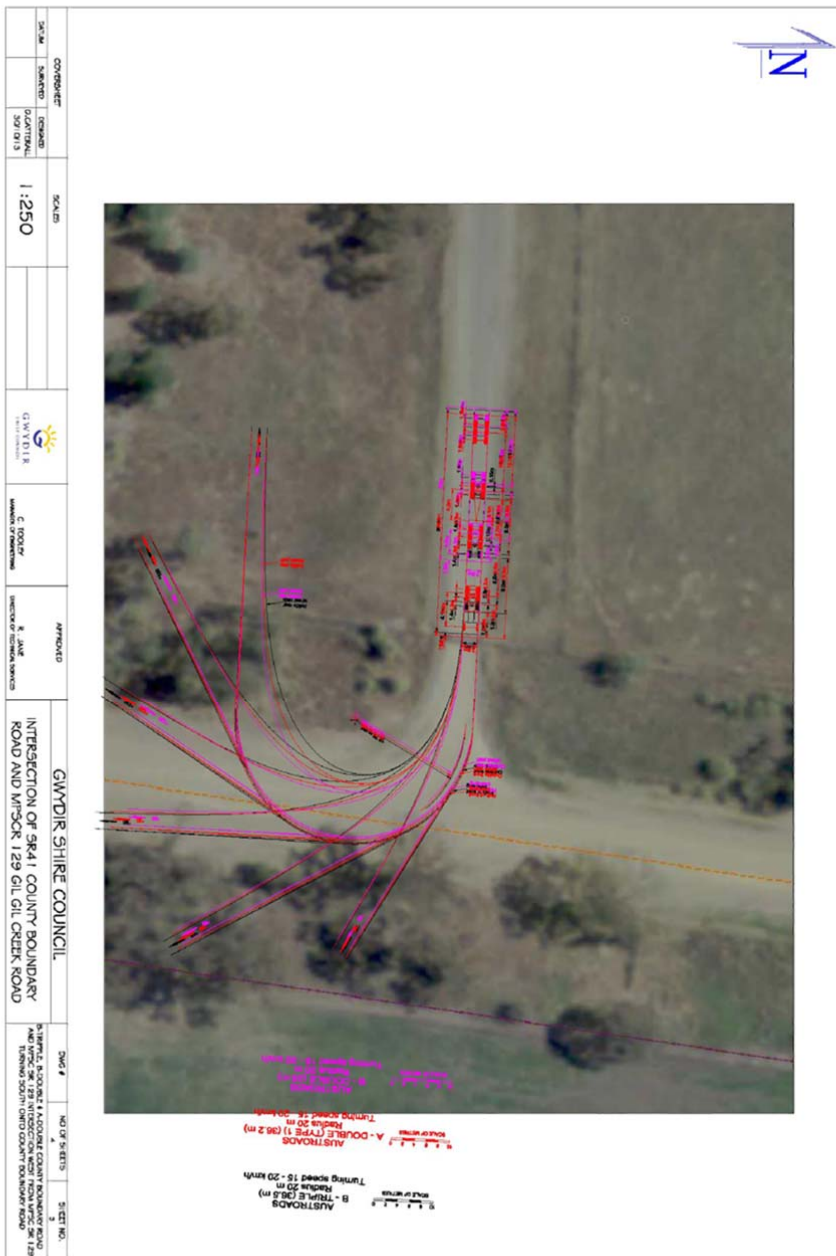
CONTRACT	SCALE		C BODY MEMBERS OF COUNCIL	APPROVED 2 JAN MEMBERS OF COUNCIL	GWYDIR SHIRE COUNCIL INTERSECTION OF SR41 COUNTY BOUNDARY ROAD AND MPOCR 129 GIL GIL CREEK ROAD	SHEET # NO. OF SHEETS SHEET NO.
SCALE	1:250					

Gwydir Shire Council Route Assessment SR 41

2-28

This is page number 189 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....

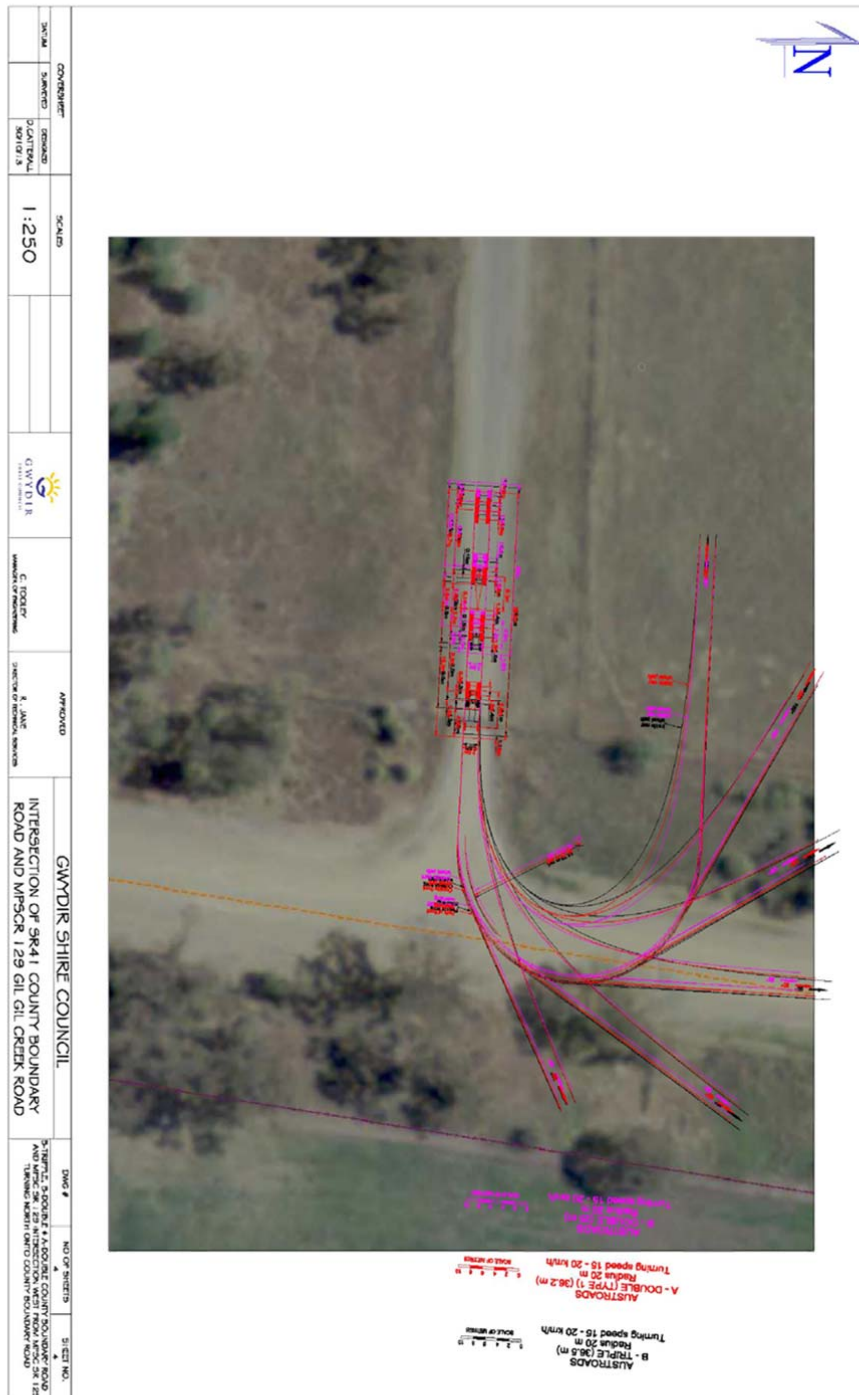


Gwydir Shire Council Route Assessment SR 41

2-29

This is page number 190 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....



CONTRACTOR	SCALE	 GWYDIR SHIRE COUNCIL 12001/13	C. DODD MANAGER (TECHNICAL)	APPROVED J. JAMES CHIEF OF TECHNICAL SERVICES	GWYDIR SHIRE COUNCIL INTERSECTION OF SR41 COUNTY BOUNDARY ROAD AND MP5CR 129 GIL GIL CREEK ROAD	DWG # NO OF SHEETS S. EET NO.
DATE	1:250					

Gwydir Shire Council Route Assessment SR 41

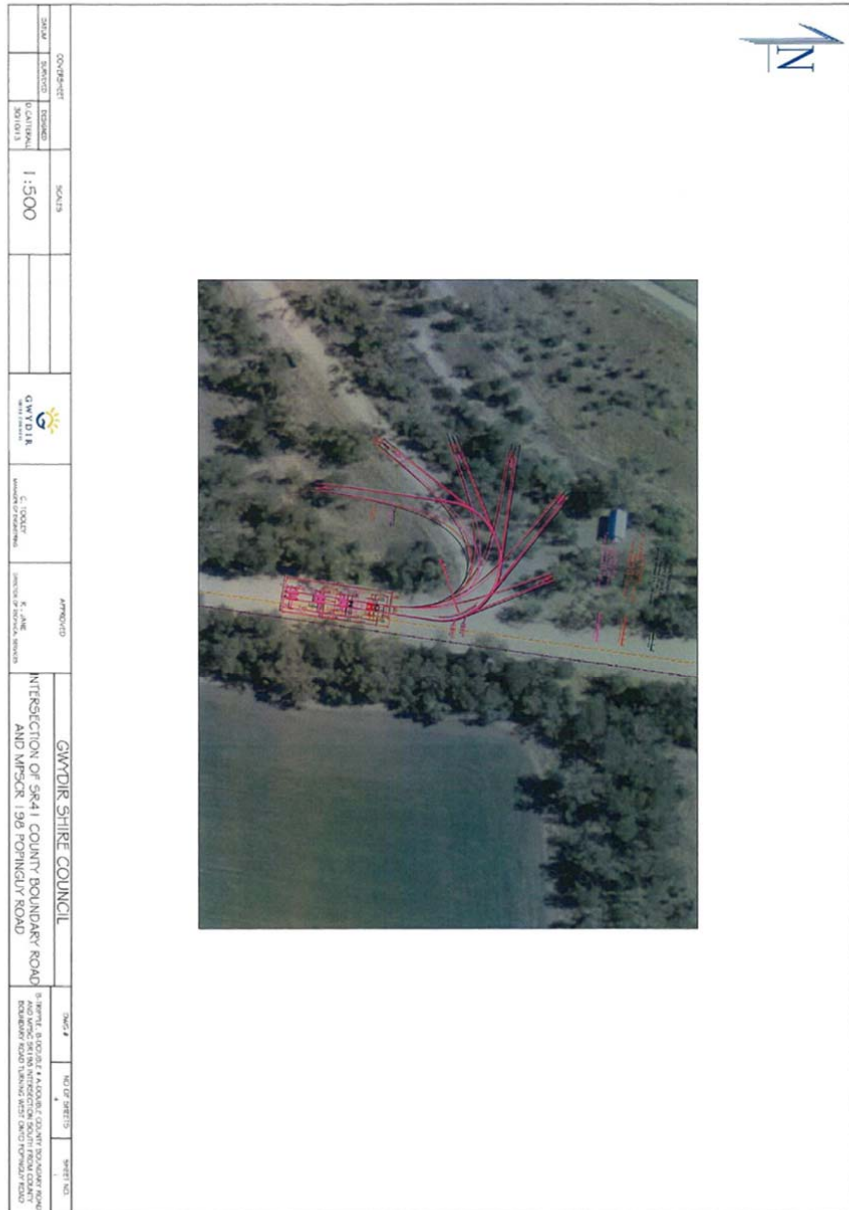
2-30

This is page number 191 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....



Gwydir Shire Council Route Assessment SR 41

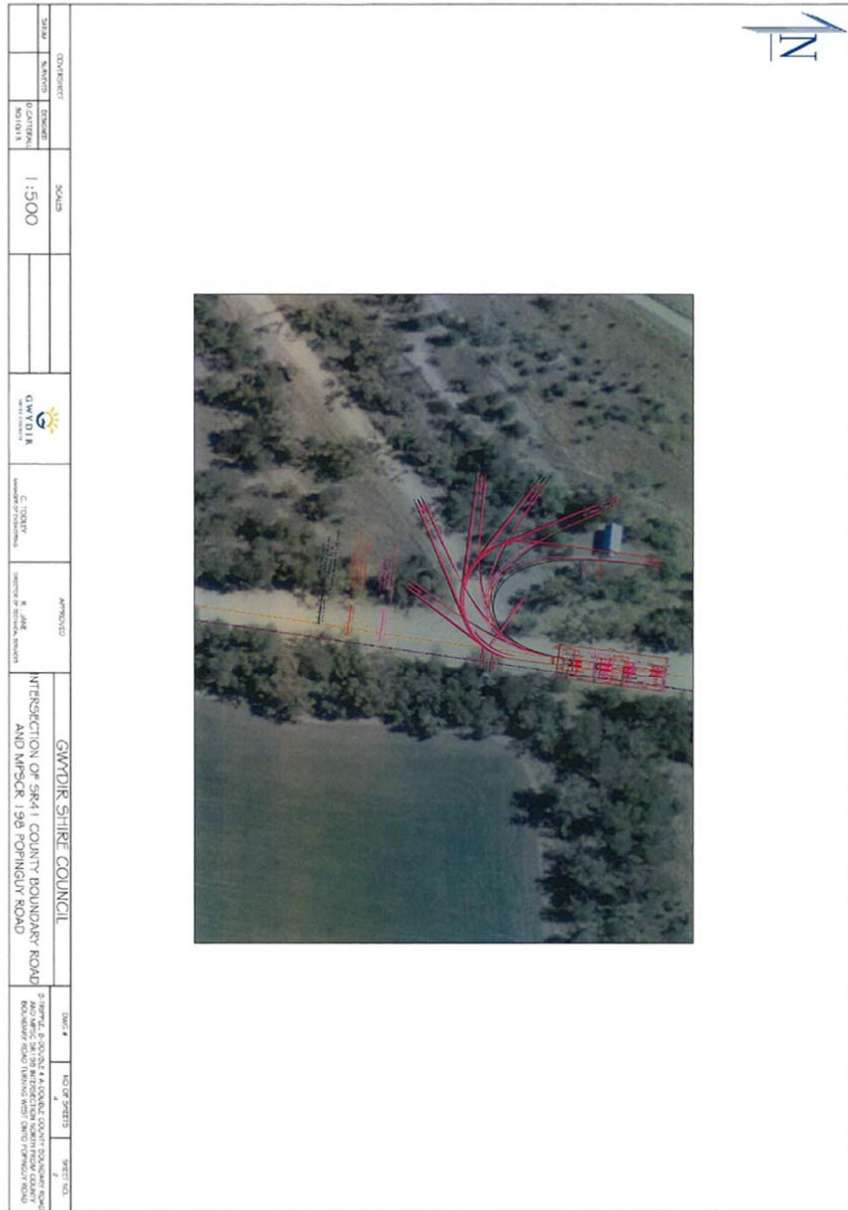


2-31

This is page number 192 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....

Gwydir Shire Council Route Assessment SR 41

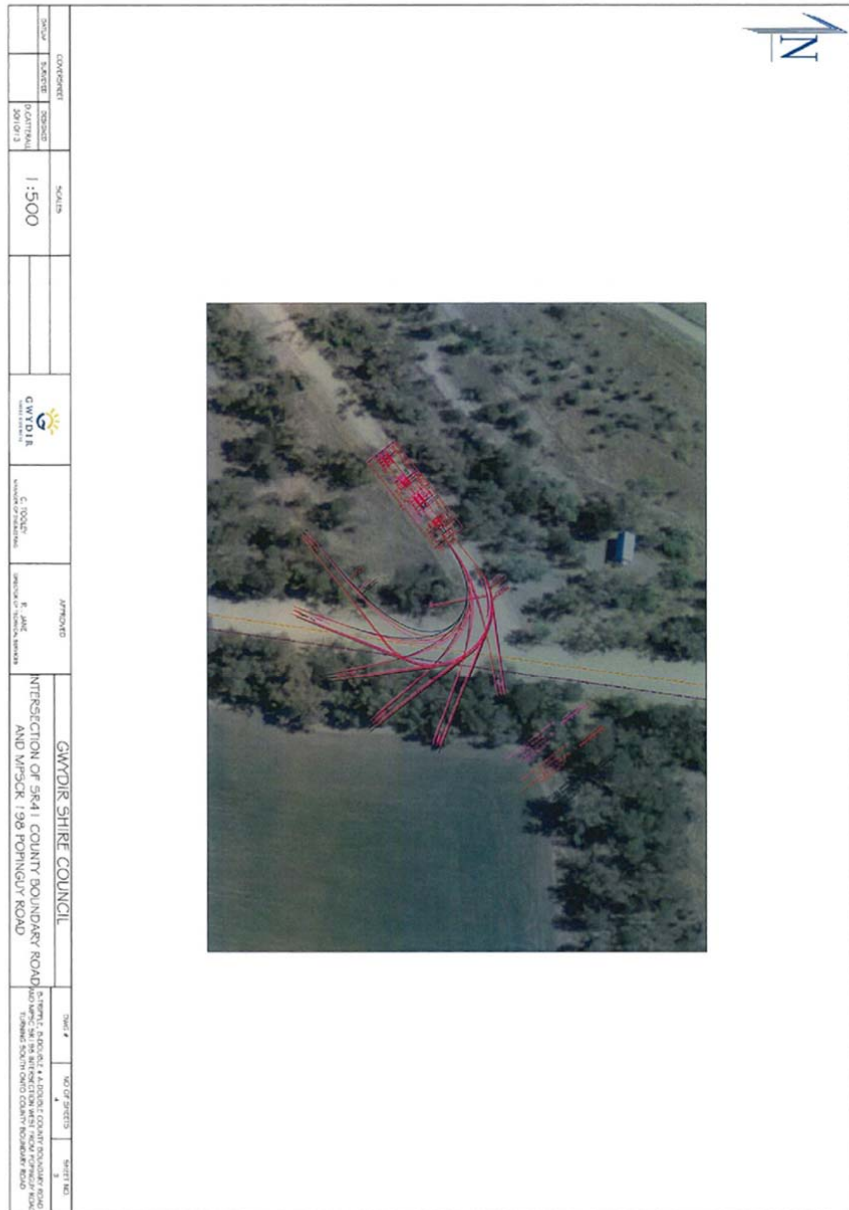


2-32

This is page number 193 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

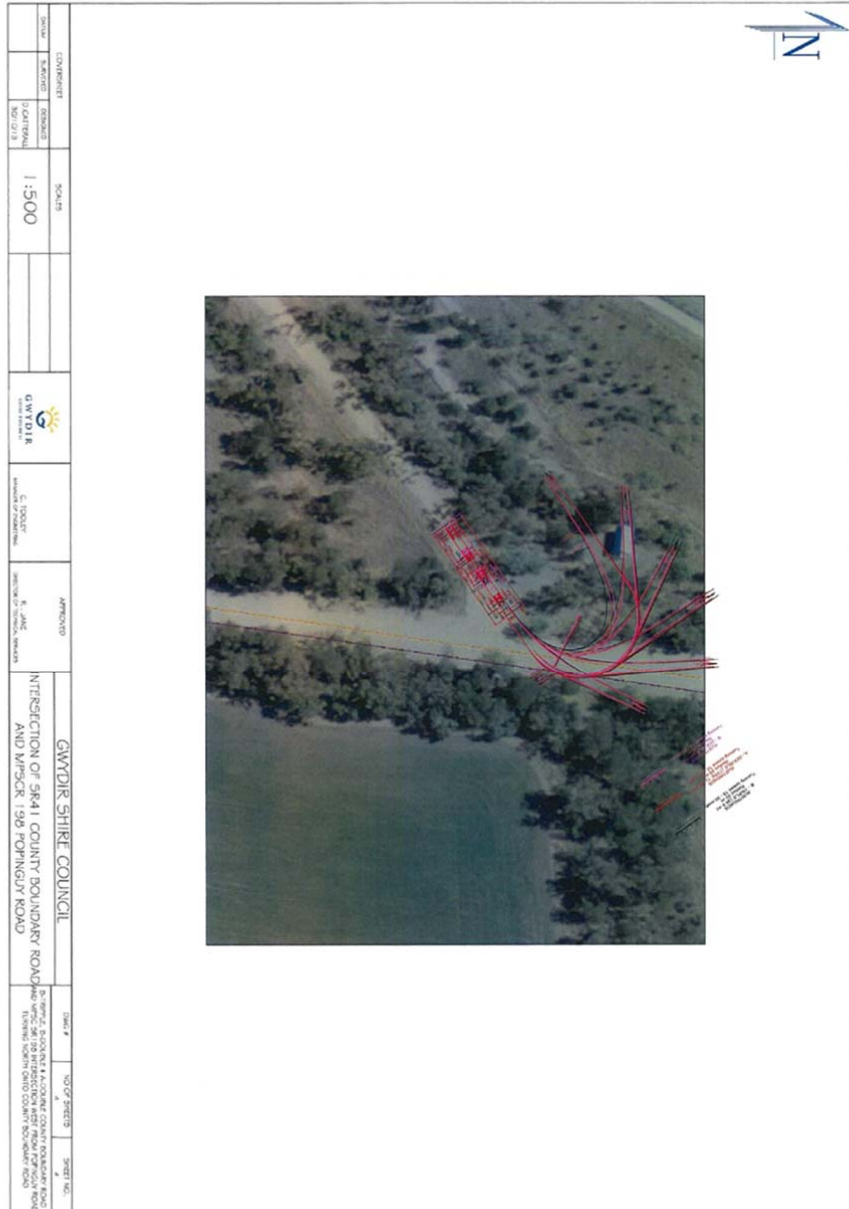
Chairman .....

Gwydir Shire Council Route Assessment SR 41



DATE 20/01/16	COMPILED BY SARAH BENTLEY	SCALE 1:500	 GWYDIR SHIRE COUNCIL <small>SHIRE OF GUYDIR</small>		<small>PROJECT NO: SR 41</small> <small>PROJECT NAME: GUYDIR SHIRE COUNCIL ROUTE ASSESSMENT SR 41</small>	<small>DATE: 20/01/16</small> <small>BY: SARAH BENTLEY</small>	<small>PROJECT NO: SR 41</small> <small>PROJECT NAME: GUYDIR SHIRE COUNCIL ROUTE ASSESSMENT SR 41</small>	<small>DATE: 20/01/16</small> <small>BY: SARAH BENTLEY</small>
------------------	------------------------------	----------------	--	--	--	---	--	---

Gwydir Shire Council Route Assessment SR 41



2-34

This is page number 195 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....



**Section 3: Bridges, Culverts & Other Structures**



**3.1 Bridges**

No Bridges on this route.

**3.2 Culverts**


Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 0120	0.12	Unsealed: 6.7m Culvert: 8.9m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	

Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 1337	1.337	Unsealed: 7.2m Culvert: 7.5m	Culvert - concrete, single pipe	
CGSR41_00 1676	1.676	Unsealed: 7.2m Culvert: 7.5m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to silt build-up blocking the entrance to the culvert. No visible posts or headwalls	


Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 2215	2.215	Unsealed: 7.2m Culvert: 7.5m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation and silt build-up blocking the entrance to the culvert.	
CGSR41_00 3040	3.040	Unsealed: 8m Culvert: 9.4m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert. No visible	

Gwydir Shire Council Route Assessment SR 41

3-37


Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 4714	4.714	Unsealed: 6.2m Culvert: 7.2m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	



Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 5120	5.120	Unsealed: 6.0m Culvert: 7.2m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	
CGSR41_00 5237	5.237	Unsealed: 6m Culvert: 7.2m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation and silt build-up blocking the entrance to the culvert.	
CGSR41_00 5490	5.490	Unsealed: 6.5m	Concrete, single pipe. Unable to complete	


Gwydir Shire Council Route Assessment SR 41



3-39

Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 5881	5.881	Unsealed: 6.0m Culvert: 7.2m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation and silt build-up blocking the entrance to the culvert.	
CGSR41_00 6563	6.563	Unsealed: 7.2m Culvert: 8.2m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation and silt build-up	

Gwydir Shire Council Route Assessment SR 41

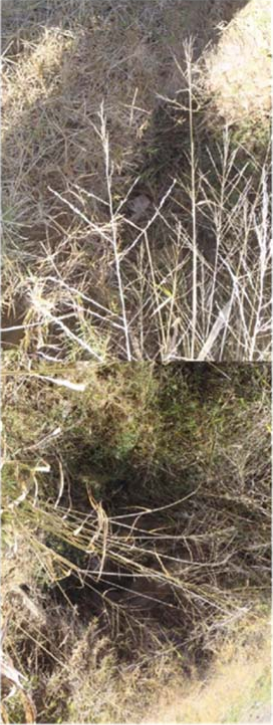
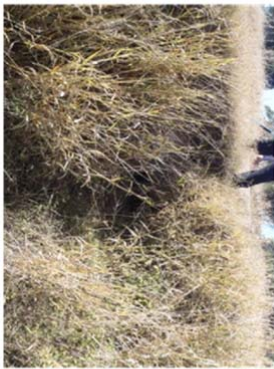
3-40


Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CCSR41_00 8206	8.206	Unsealed: 9.5m Culvert: 10.0m	Concrete, four (4) pipes. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	
CCSR41_00 8552	8.552	Unsealed: 7.2m Culvert: 10.0m	Concrete, double pipes. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	

Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 9299	9.299	Unsealed: 6.2m Culvert: 7.0m	Concrete, single pipe.  Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.  Visible washout on right side.	
CGSR41_00 9633	9.633	Unsealed: 7.0m Culvert: 9.8m	Concrete, single pipe.  Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	


Gwynedd Shire Council Route Assessment SR 41


3-42

Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_00 9864	9.864	Unsealed: 7.2m Culvert: 10.0m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	
CGSR41_01 1404	11.404	Unsealed: 7.2m Culvert: 10.0m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	

Culvert Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
CGSR41_01 2107	12.107	Unsealed: 6.6m Culvert: 10.6m	Concrete, single pipe. Unable to complete a visual inspection of the culvert due to vegetation build-up blocking the entrance to the culvert.	

3.3 Other structures

Structure Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
SGSR41_00 1128	1.128	Floodway: 6.1m Length: 31m	Floodway – concrete Flood damage visible. Repairs required.	

Structure Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
SGSR41_00 2887	2.887	Seal: 6.2 Edge to Edge: 7.0 Length: 54	Causeway – concrete with poor line of sight due to vegetation height. Suggest vegetation control.	



Structure Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
SGSR41_00 7038	7.038	Seal: 6.2 Edge to Edge: 6.2 Length: 31	Concrete slab with triple pipe culvert. Unable to complete a visual inspection of the culvert due to silt and rocks blocking the entrance to the culvert. Flood Damage visible on left side, large section of concrete missing on right side. Requires maintenance.	

Structure Id	Approximate Measurement Location (kilometres)	Width (metres)	Comments	Photos
SGSR41_00 8856	8.856	Seal: 6.2 Edge to Edge: 7.2 Length: 30	Causeway – concrete Large drop off at northern end. Suggest maintenance works.	

## Section 4: Risk Management

### 4.1 Crash History

There have been no recorded crashes on County Boundary Road (SR 41) within the area of Gwydir Shire from 1 January 2007 to 30 June 2012.

Crash figures used in this report are based on crash statistics supplied by the Roads and Maritime Services.

### 4.2 Road Safety Considerations

The minimum carriageway width in the NSW Route Assessment Guide – freight route investigation levels (30 October 2012) for vehicles from 20m to 36.5m for straight unsealed roads with and AADT between 1 and 100 is 7.0m for two-way travel.

The average carriageway width for the assessed section of road is 6.7m; however the NSW Route Assessment Guide – freight route investigation levels (30 October 2012) also states that a minimum pavement width of 5.5m is applicable where an opposing smaller vehicles can safely pull over to allow passing (e.g. firm clear zone with slope 1:6 or flatter). This section of road has good clear zones for vehicles to safely pull over to allow passing and it is therefore determined that this section of road meets the necessary requirements for the lower carriageway width of 5.5m.

There are a significant number of large rocks visible in the road pavement right along this assessed section of road. It is suggested that as part of routine maintenance, a rock crusher be passed over the road to help reduce the number and size of the rocks.





A number of large trees that have branches overhanging the road were also recorded. It is assumed that the trucks would need to navigate into the centre or even the other side of the road to be able to pass under the low lying branches without touching them. It is recommended that the low lying branches are removed as regular maintenance works.

The abovementioned trees were recorded at the following approximate locations.

Approx. Location	Description	Comments
1.377	Tree - right side	Diameter: ≤ 300mm Tree close to travel path Branch overhanging roadway Suggest tree maintenance prior to approval.
1.564	Tree - right side	Diameter: ≤ 300mm Tree close to travel path Branch overhanging roadway Suggest tree maintenance prior to approval.
2.415	Tree - right side	Diameter: ≤ 500mm Tree very close to travel path. Suggest tree maintenance prior to approval.
2.567	Tree - left side	Diameter: ≤ 300mm Tree close to travel path Branch overhanging roadway Suggest tree maintenance prior to approval.
3.364	Tree - left side	Diameter: ≤ 300mm Tree close to travel path Branch overhanging roadway Suggest tree maintenance prior to approval.

		approval.
3.372	Tree - right side	Diameter: ≤ 400mm Tree close to travel path Branch overhanging roadway Suggest tree maintenance prior to approval.
4.901	Tree - left side	Diameter: ≤ 300mm Tree close to travel path Branch overhanging roadway
7.432	Tree - left side	Diameter: ≤ 200mm Branch overhanging roadway

This is page number 212 of the minutes of the Ordinary Meeting held on Thursday 25 February 2016

Chairman .....

4.3 Risk Assessment

Risk No.	RISK IDENTIFICATION						RISK ANALYSIS					RISK TREATMENT		
	Asset at Risk	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Consequences	Risk rating	Action required	Is risk acceptable?	Treatment option(s)	Residual risk	Risk treatment plan
1	County Boundary Road (SR 41)	Vehicle travel along the centre of the road or onto wrong side of the road and has a crash.	Beyond 20 years	Low hanging branches on trees.	None	Yes	Rare	Major	Medium	Planned action required	Yes	Regular inspection of roadside vegetation. Remove over hanging branches	n/a	n/a
2	County Boundary Road (SR 41) - Floodway and Causeways	Motor vehicle crash.	Within 10 year.	Driver loses control of vehicle and has no clear zone to recover in.	One guidepost in the centre of the causeway. Regular visual inspections of causeway. Signs on the approach to the causeway to inform drivers.	Yes	Rare	Major	Medium	Planned action required	No	Install guideposts along the length of the floodway and causeways on both sides to improve the visibility of the causeway particularly at night.	Medium	Install and maintain guideposts along the length of the floodway and causeways on both sides to improve the visibility of the causeway particularly at night.

Gwynedd Shire Council Route Assessment SR 41

4-52

RISK IDENTIFICATION						RISK ANALYSIS				RISK TREATMENT				
Risk No.	Asset at Risk	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Consequences	Risk rating	Action required	Is risk acceptable?	Treatment option(s)	Residual risk	Risk treatment plan
3	County Boundary Road (SR 63) - Culverts	Motor vehicle crash.	Within 20 years	Culvert could fail while vehicle is driving over it.	Regular visual inspections of culverts	Yes	Rare	Moderate	Medium	Planned action required	Yes	Repair or replace damage as per the work schedule and/or funding becomes available.	Low	Repair or replace damage as per the work schedule and/or funding becomes available.
2	County Boundary Road (SR 63) - Culverts	Motor vehicle crash	Within 10 years	Vehicle could lose control while driving over the culvert and have no clear zone to recover.	Double guideposts to inform drivers that there is a culvert.	Yes	Unlikely	Moderate	Medium	Planned action required	No	Install double guideposts at each culvert on both sides to improve the visibility of the culverts particularly at night. Install guardrail where the culvert has a drop off of more than 2 metres.	Medium	Install double guideposts at each culvert on both sides to improve the visibility of the culverts particularly at night. Install guardrail where the culvert has a drop off of more than 2 metres.

RISK IDENTIFICATION							RISK ANALYSIS				RISK TREATMENT			
Risk No.	Asset at Risk	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Consequences	Risk rating	Action required	Is risk acceptable?	Treatment option(s)	Residual risk	Risk treatment plan
4	County Boundary Road (SR 41) - unsealed section of road	Motor vehicle crash	Within 10 years	Vehicle could lose control while driving after hitting a large rock in/on the road pavement.	None	Yes	Possible	Minor	Medium	Planned action required	No	Large rocks to be reduced to within acceptable limits for gravel roads. This could be achieved by removing/crushing the rocks as part of the routine pavement maintenance.	Low	Large rocks to be reduced to within acceptable limits for gravel roads. This could be achieved by removing/crushing the rocks as part of the routine pavement maintenance.



RISK IDENTIFICATION							RISK ANALYSIS				RISK TREATMENT			
Risk No.	Asset at Risk	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Consequences	Risk rating	Action required	Is risk acceptable?	Treatment option(s)	Residual risk	Risk treatment plan
5	County Boundary Road (SR 41) - unsealed section of road	Motor vehicle damage	Within 5 years	Vehicle could be damaged by large rocks while driving over the unsealed pavement.	None	Yes	Possible	Insignificant	Low	Planned action required	Yes	Large rocks to be reduced to within acceptable limits for gravel roads. This could be achieved by removing/crushing the rocks as part of the routine pavement maintenance.	Low	Large rocks to be reduced to within acceptable limits for gravel roads. This could be achieved by removing/crushing the rocks as part of the routine pavement maintenance.

Risk Rating Matrix

		CONSEQUENCES			
LIKELIHOOD	Insignificant No medical	Minor Minor medical	Moderate Medical treatment	Major Death or injury	Catastrophic Multiple deaths
Health & Safety	Minor injury no medical treatment required	Minor Medical treatment, First Aid	Medical treatment (< 30%) to one or more persons	Single fatality and/or severe irreversible disability (>30%) to one persons	Multiple fatalities or significant irreversible effects
Financial Loss	> \$10,000	\$10,000 to \$50,000	\$50,000 to \$500,000	\$500,00 to \$1 million	> \$1 million
Natural Environment	Minimal environmental impact - isolated area only	Minor environmental impact - onsite controlled immediately	Significant Environmental impact, onsite contained with assistance	Major- impact spreading off-site with external assistance	Fatalities occur, extensive release off-site, requires long term remediation
Social/Cultural/Heritage	Minor medium term social impact on local population		Ongoing social issues, damage to sections of cultural significance		Ongoing serious social issues. Significant damage to structures or sections of cultural significance
Community/Government/Reputation/Media	Isolated internal or minimal adverse attention or complaint	Heightened local community concern or criticism	Significant public criticism with or without media attention	Serious public or media outcry, broad media attention	Extensive public outcry, potential national media attention
Legal	Isolated non-compliance or breach, negligible financial impact	Contained non-compliance or breach with short term significance and minor financial impact	Serious breach involving statutory authority or investigation, prosecution possible with significant financial impact	Major breach with fines and litigation, long term significance and major financial impact	Extensive fines and litigation with possible class action, threat to viability of service or Council
Risk Assessment	CONSEQUENCES - What could occur				
LIKELIHOOD	Insignificant No medical	Minor Minor medical	Moderate Medical treatment	Major Death or injury	Catastrophic Multiple deaths
Almost certain	MEDIUM	HIGH	HIGH	EXTREME	EXTREME
Likely	MEDIUM	MEDIUM	HIGH	HIGH	EXTREME
Possible	LOW	MEDIUM	HIGH	HIGH	HIGH
Unlikely	LOW	LOW	MEDIUM	MEDIUM	HIGH
Rare	LOW	LOW	MEDIUM	MEDIUM	HIGH

*Extreme - STOP Report immediately to RMAG, High - STOP Urgent attention required - report to RMAG within 1 week, Medium - STOP - Isolate then develop & implement controls - report to RMAG within 1 month, Low - Proceed monitor.*

## Section 5: Completed Application Form

No application received for this route. This route assessment was requested by the road authority.

## Section 6: General Comments

*When assessing the route please keep the **Safe System Approach** in mind. The **Safe System Approach** moves beyond the traditional role of constructing and maintaining roads towards systematically planning and designing a sustainable safe road network for all road users. It recognises the need to make the road network more forgiving of human error and to minimise the level of unsafe road user behaviour.*

- **Safe Roads** - Designing, constructing & maintaining roads & roadsides to reduce the risk of crashes & minimise the severity of injury if a crash occurs.
- **Safe Road Users** - Information & education, licensing and enforcement.
- **Safe Speeds** - Setting speed limits that take into consideration the level of risk on the road & the benefits of lower speeds in minimising the incidence & severity of injury if a crash occurs.
- **Safe Vehicles** - Designing & maintaining vehicles to minimise crash risk & the severity of injury if a crash occurs.

### Work required to overcome obstacles to route approval:

- That appropriate vegetation control works be undertaken with a minimum width of 1m past the gravel formation on County Boundary road (SR 41) to ensure appropriate clearance is maintained for passing oncoming traffic.
- That all trees with a diameter of 300mm or greater located within 1 m of the road edge be removed.
- That the large rocks in the road pavement be removed/crushed as part out the routine pavement maintenance.
- That maintenance/flood damage works be carried out on all floodways and causeways.
- That drainage/culvert maintenance (removal of silt and vegetation) be carried out to allow for further structural assessment of the culverts.
- Structural assessments of all culverts be undertaken.