

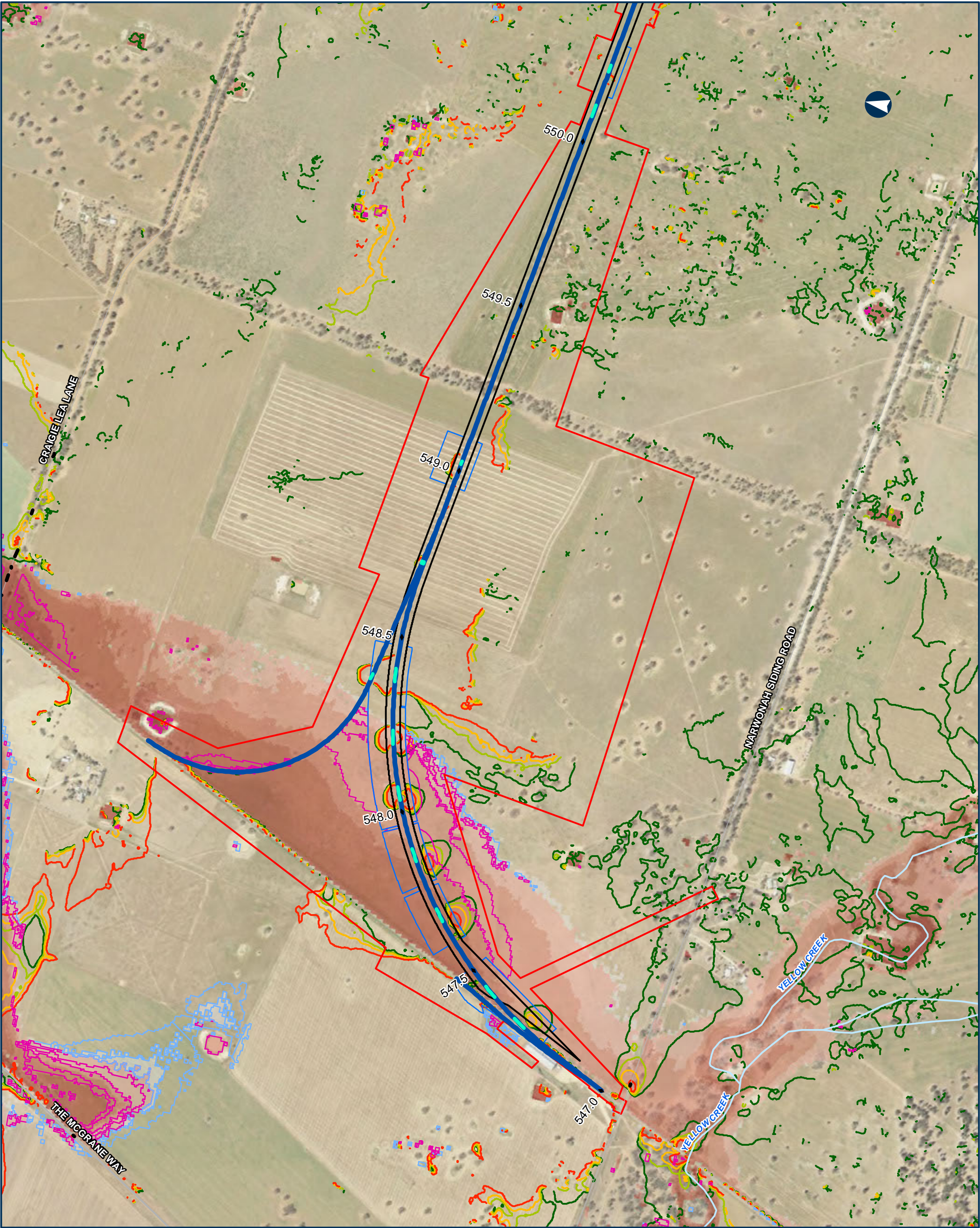
TECHNICAL REPORT 03

Updated flooding and hydrology assessment

Appendix I14 QDL compliance (duration 5% AEP)

NARROMINE TO NARRABRI PROJECT





NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.1

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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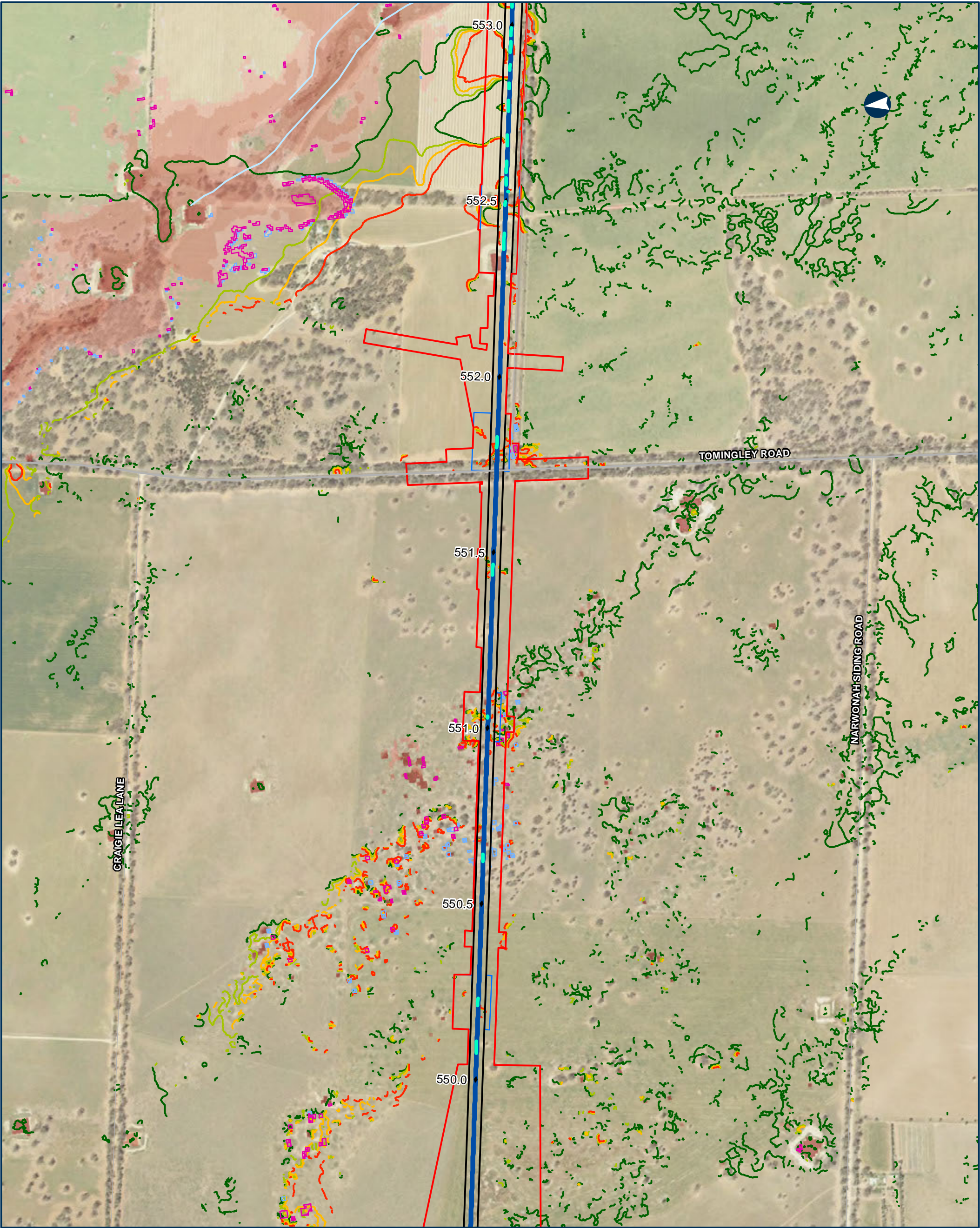
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentArterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.2

0 200 400 Metres

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.3

0 200 400 Metres

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| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.4

0200400

Metres

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Road QDL departure

Alignment

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

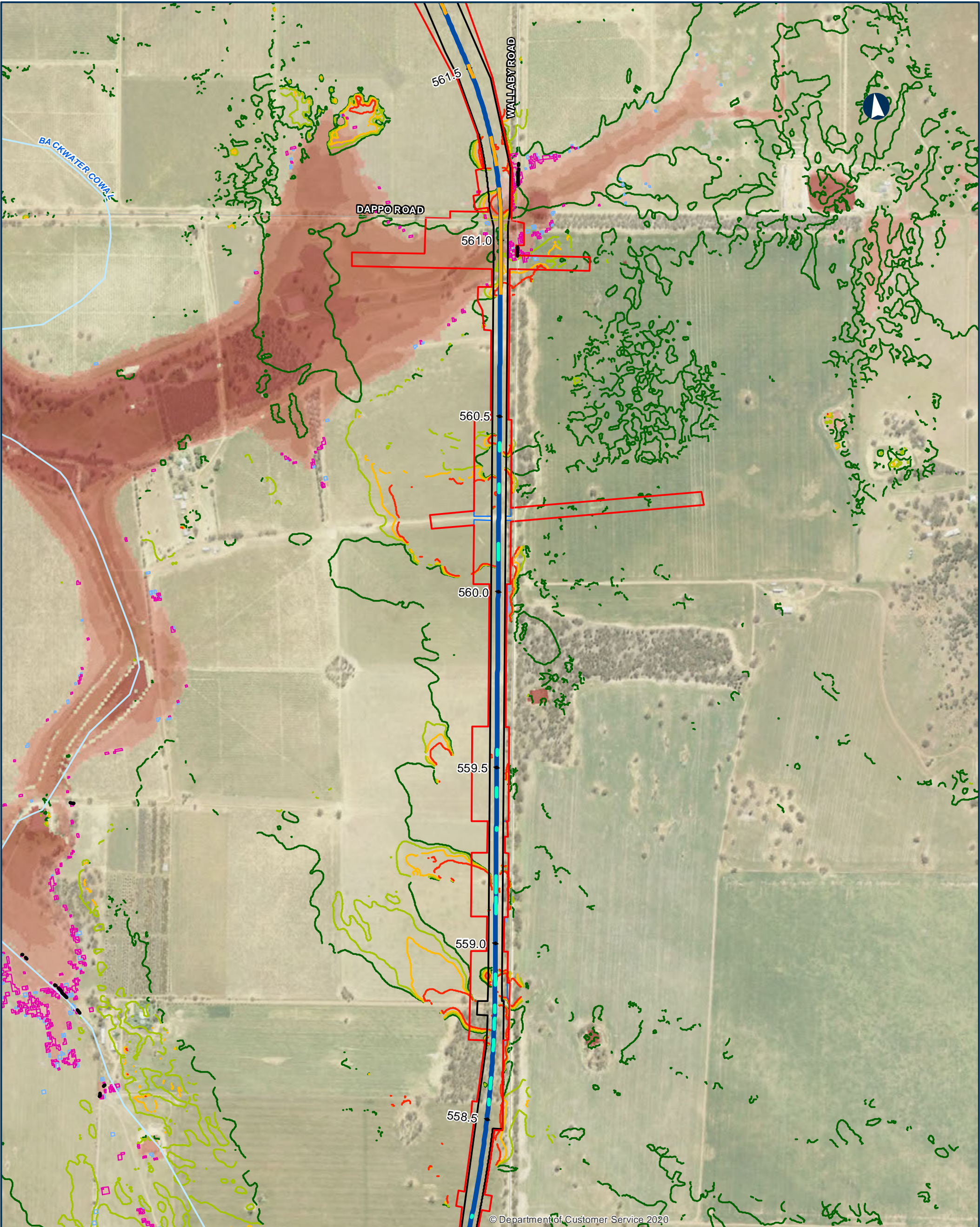
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.5

0 200 400 Metres

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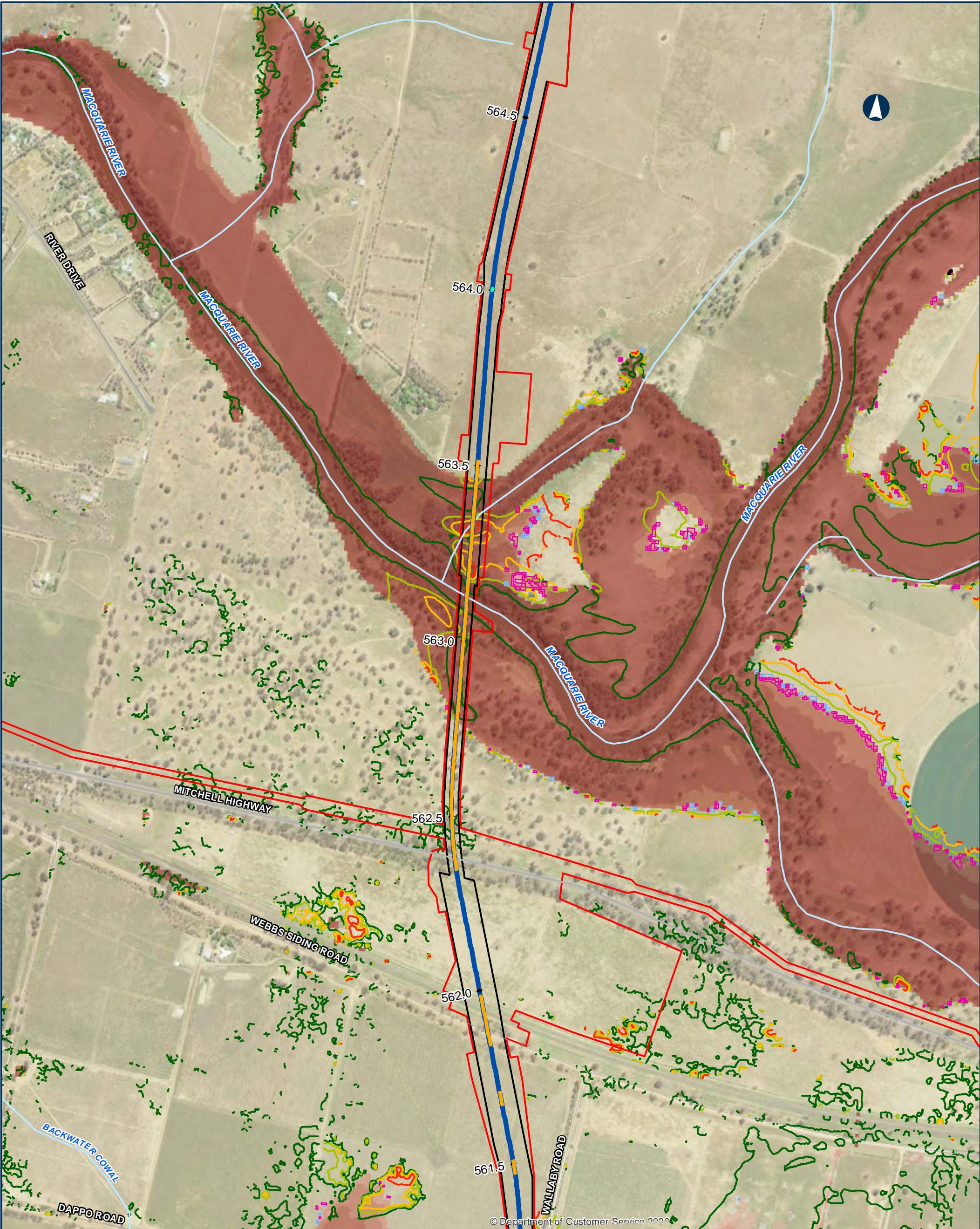
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



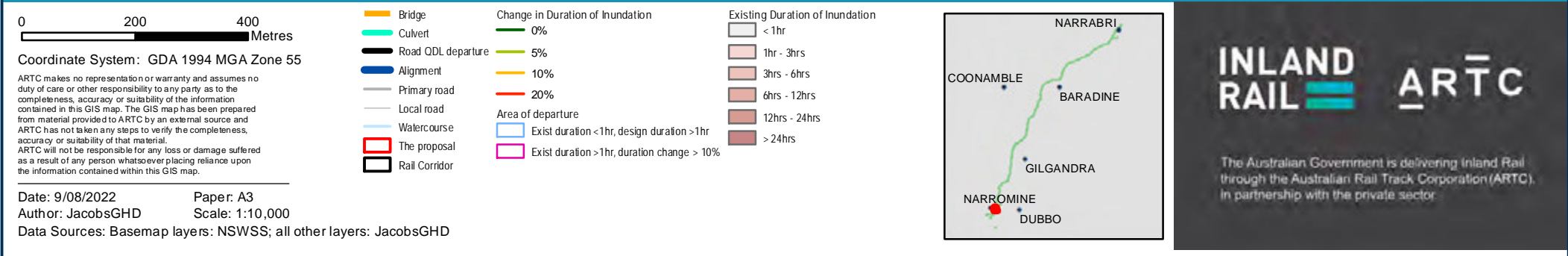
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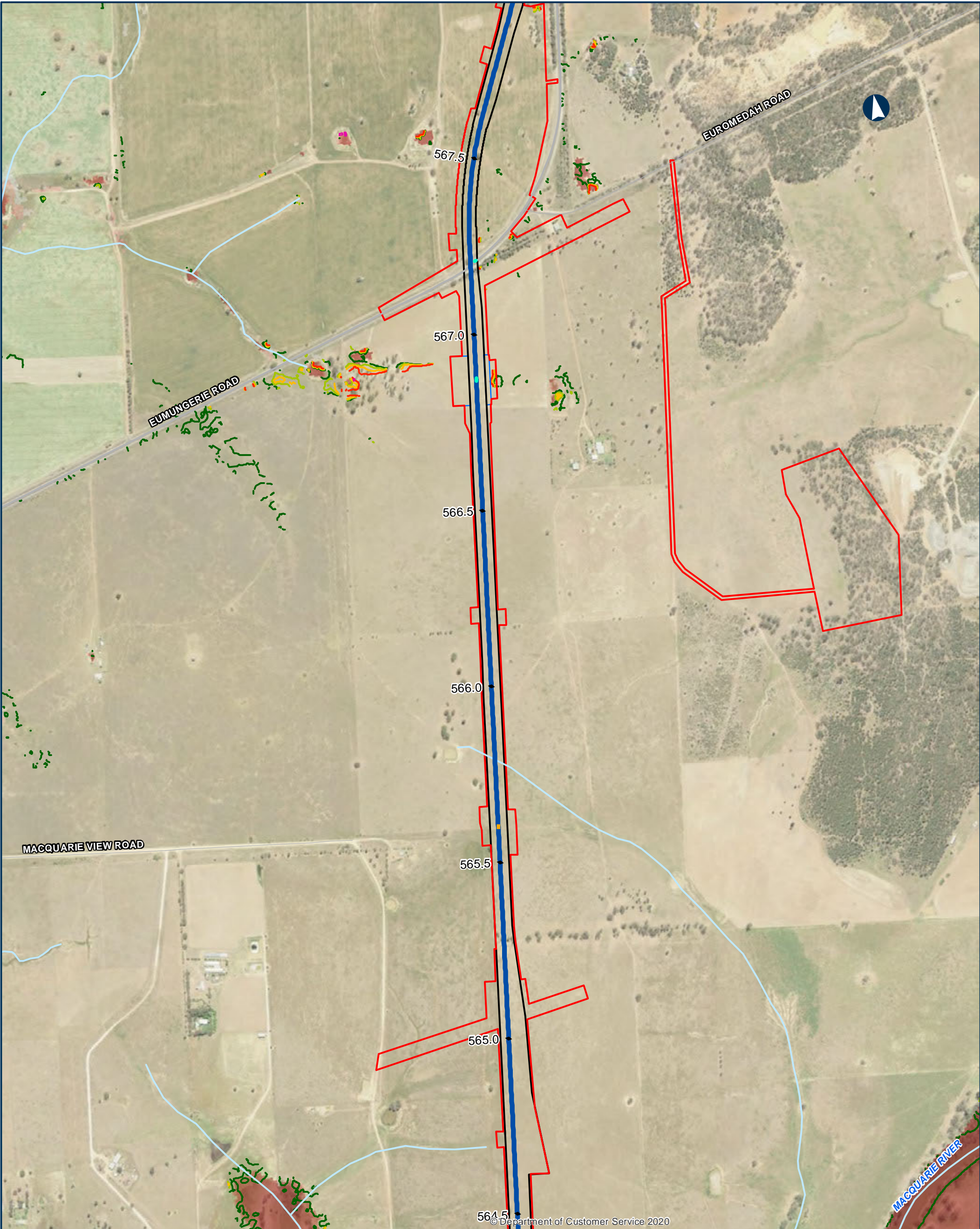
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.6





NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.7

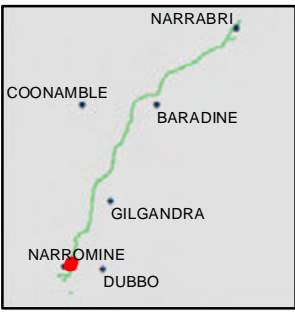
0 200 400 Metres

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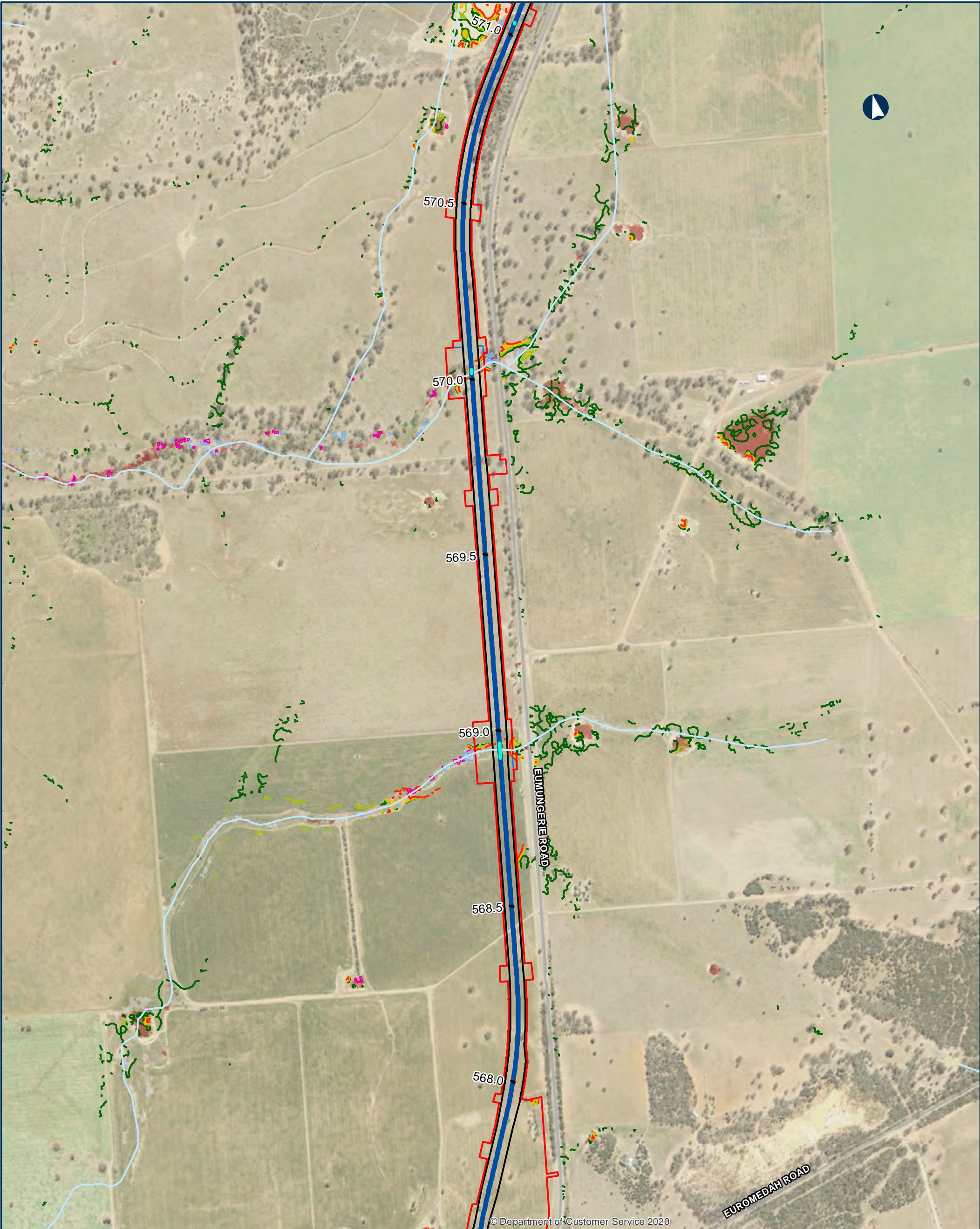
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Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Arterial road | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration <1hr, design duration >1hr | > 24hrs |
| Drainage Control Area | Exist duration >1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

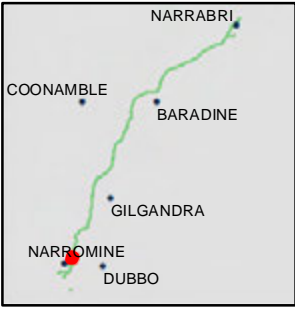
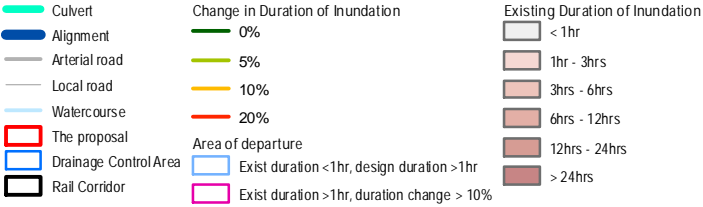
Appendix I - Figure 4.2.8

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

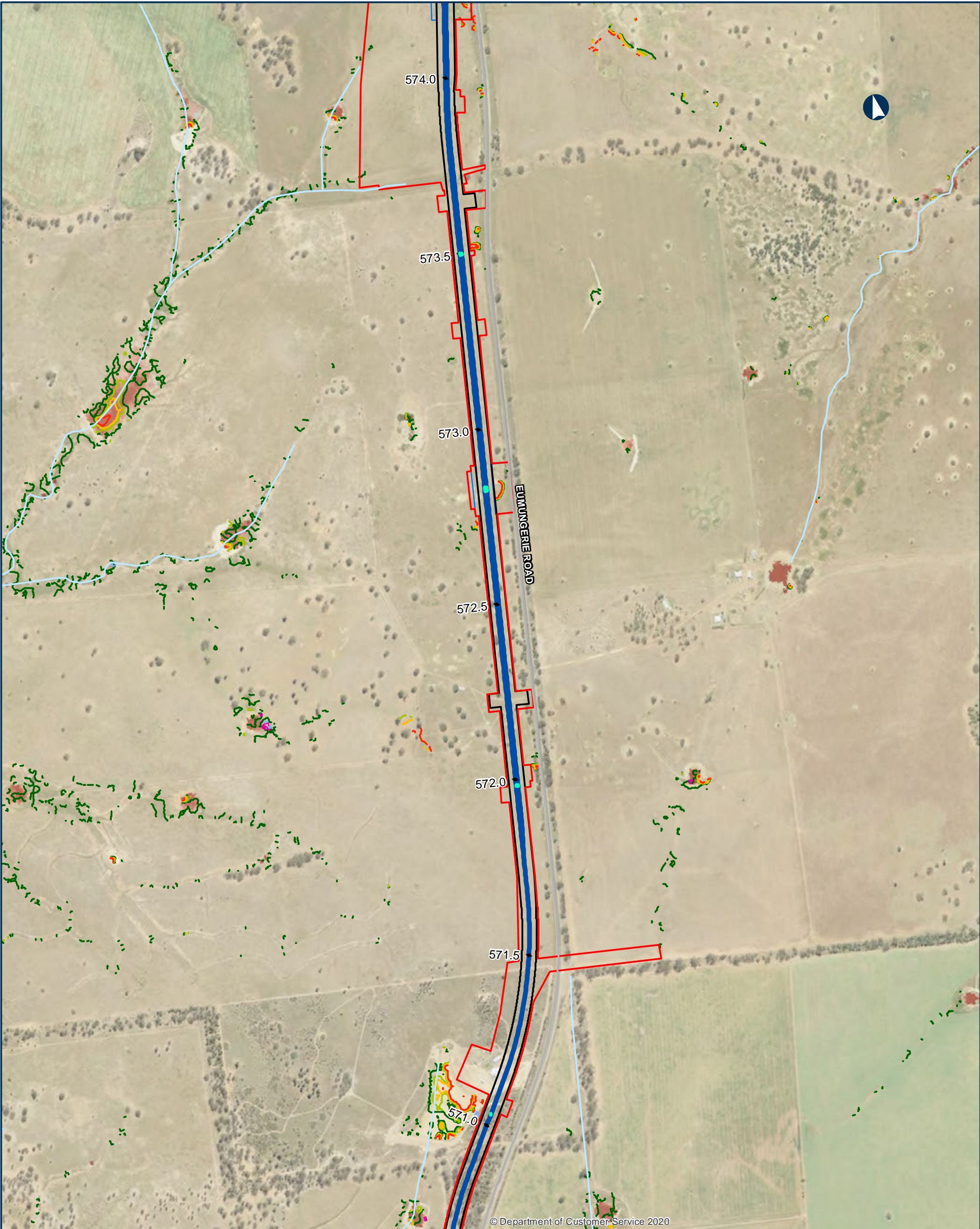
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.9

0 200 400 Metres

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.10

0 200 400 Metres

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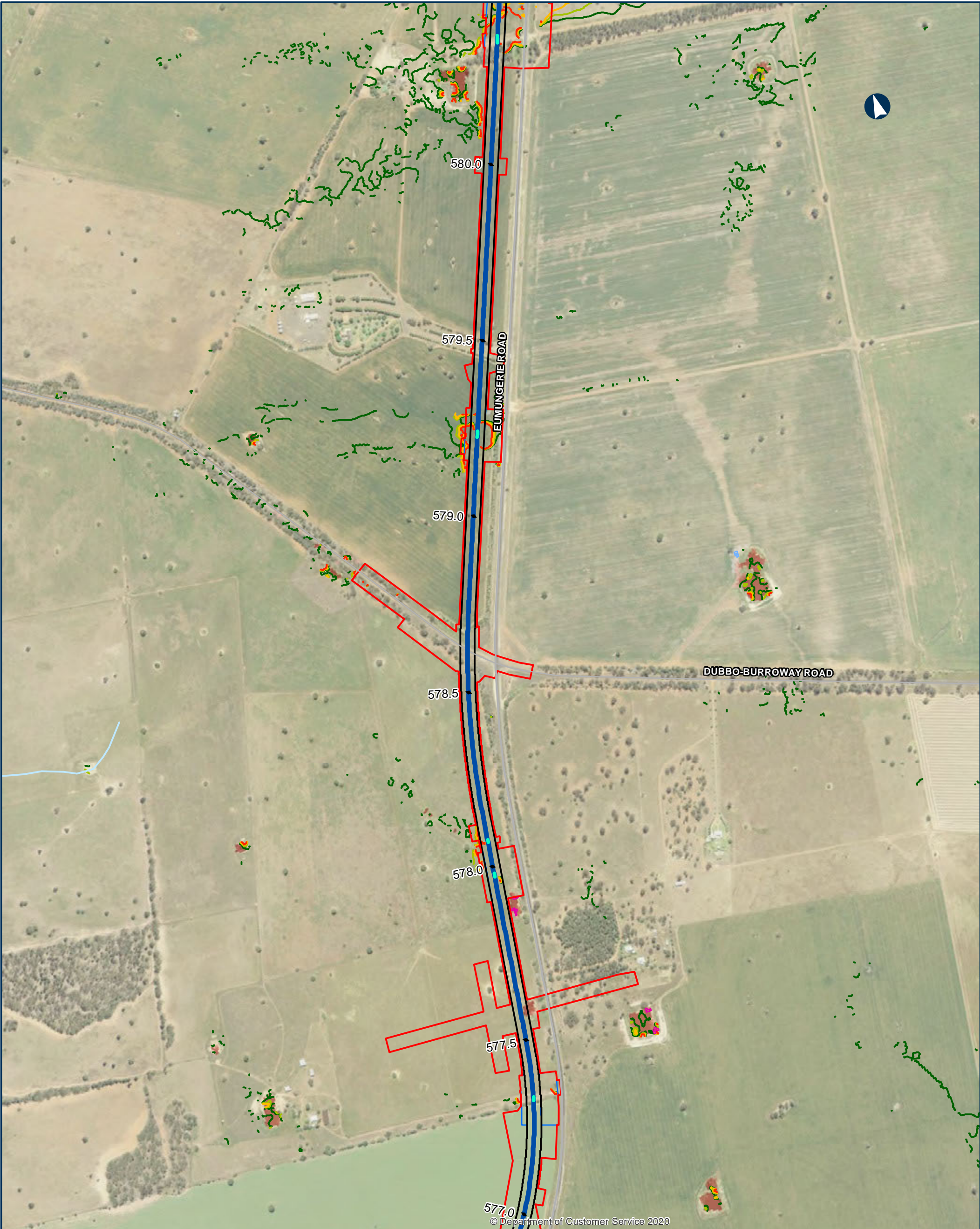
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentArterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.11

0 200 400 Metres

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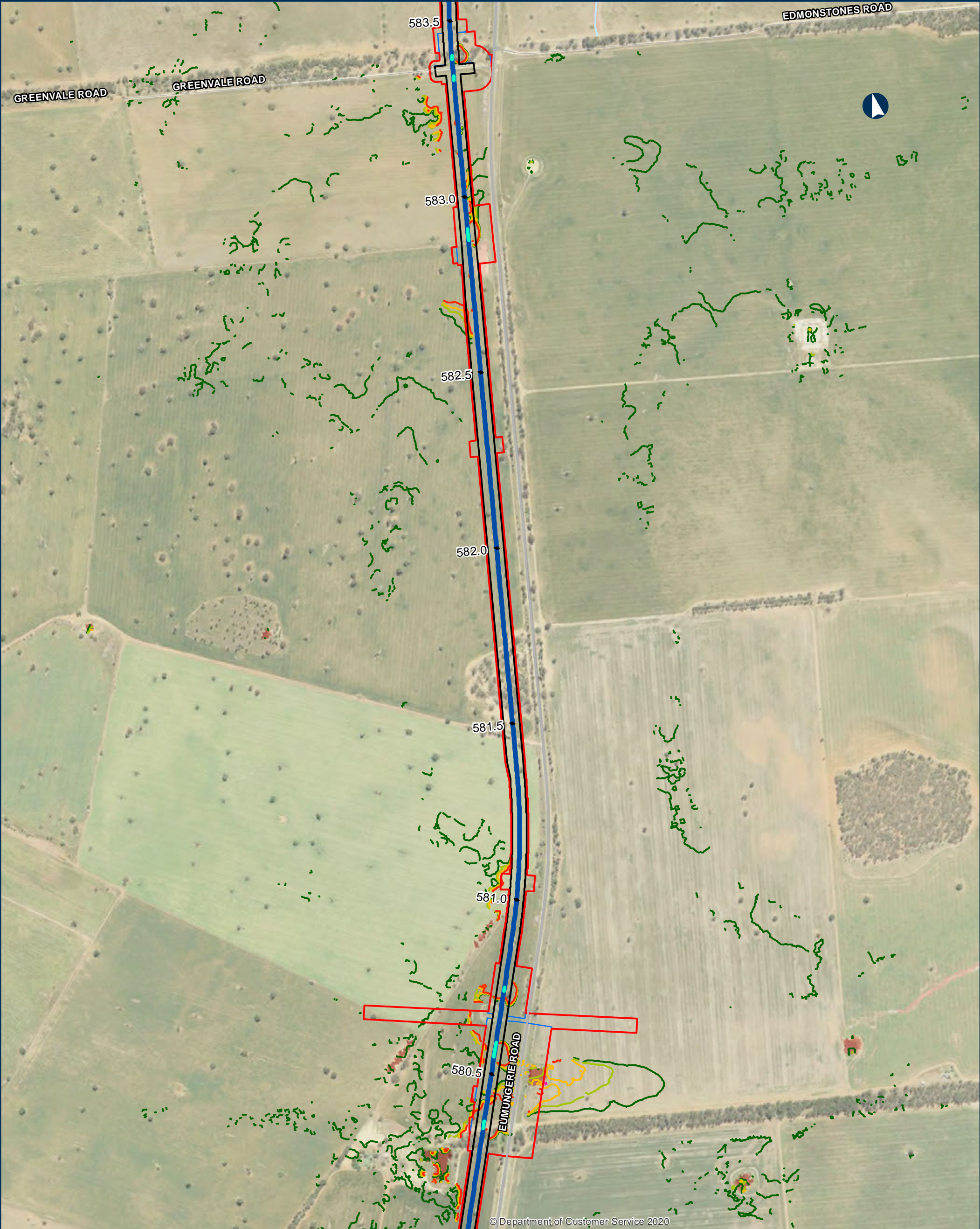
Date: 9/08/2022 Paper: A3
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

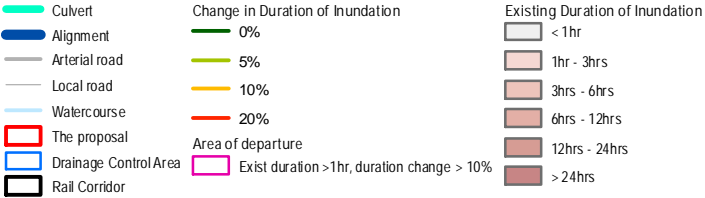
Appendix I - Figure 4.2.12

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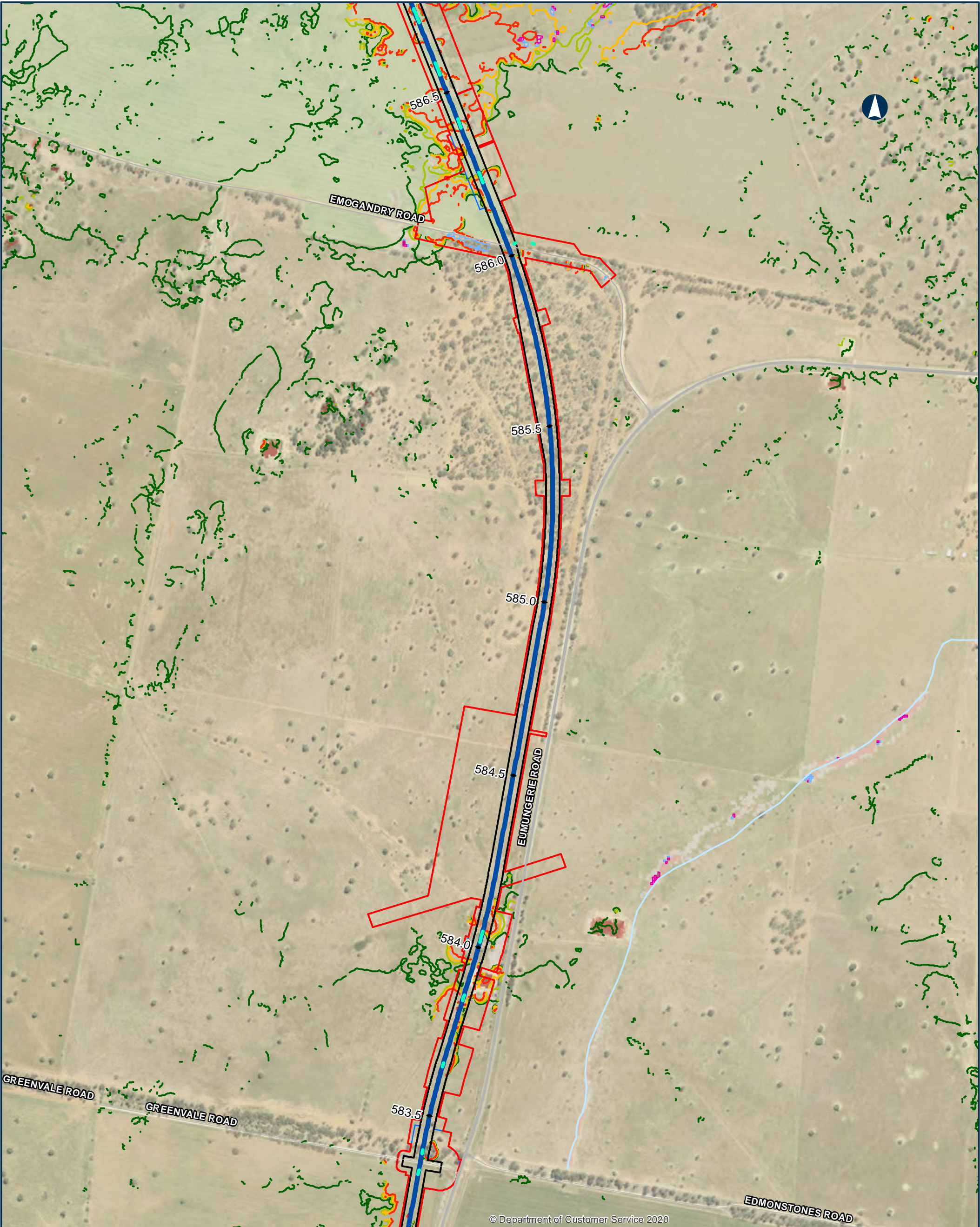
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.13

0 200 400 Metres

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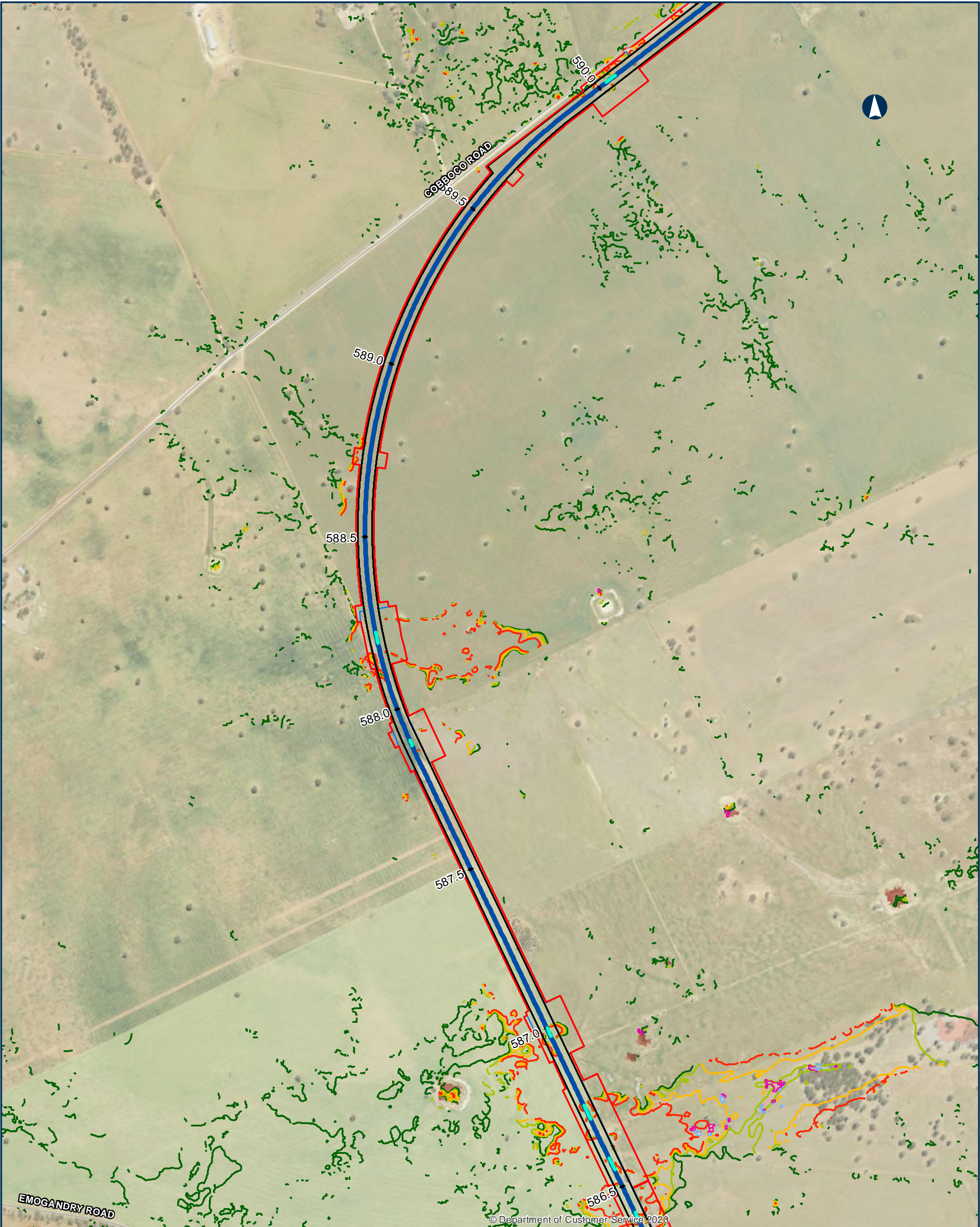
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.14

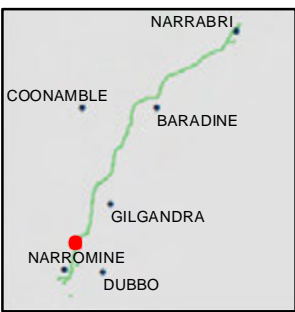
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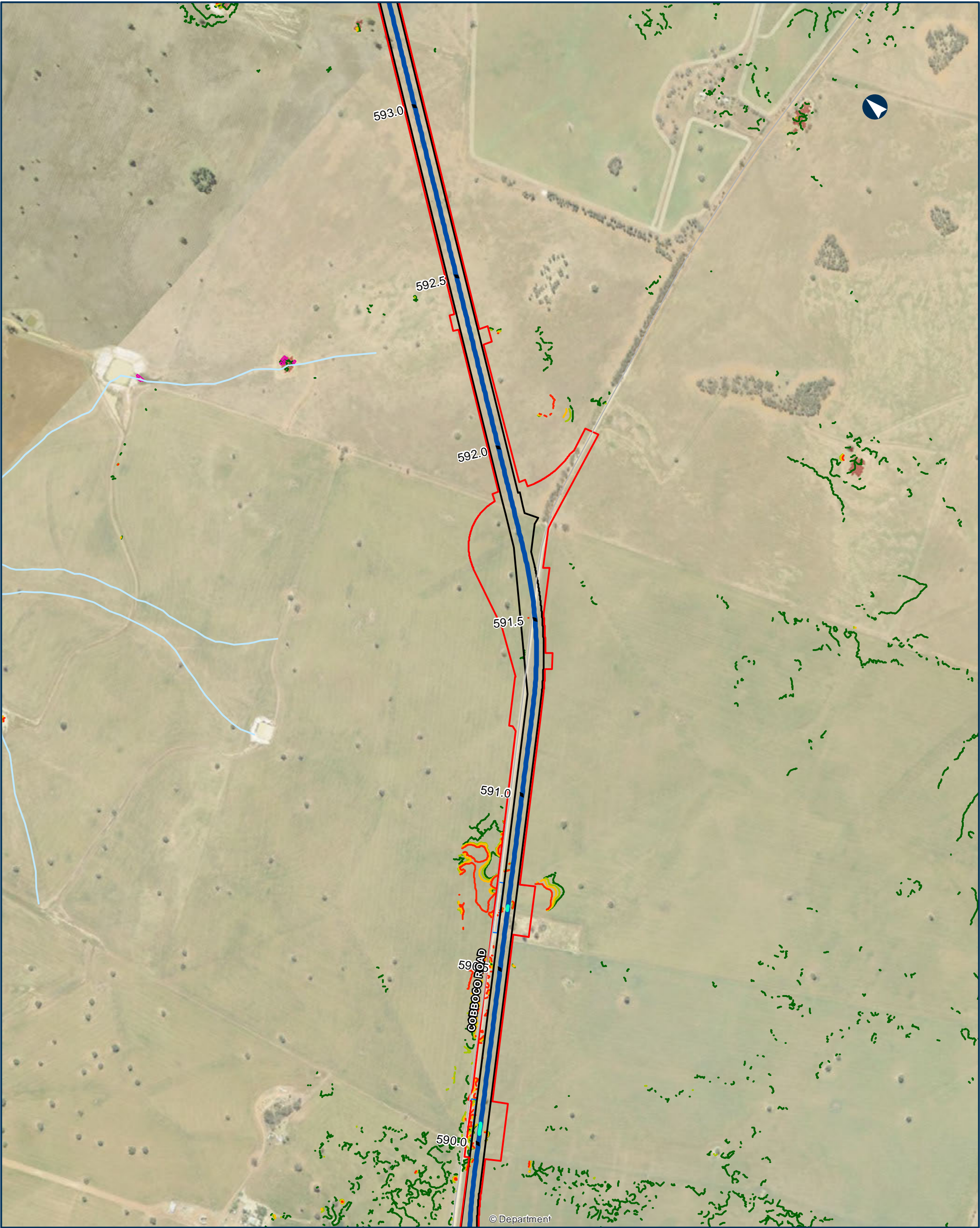
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.15

0 200 400 Metres

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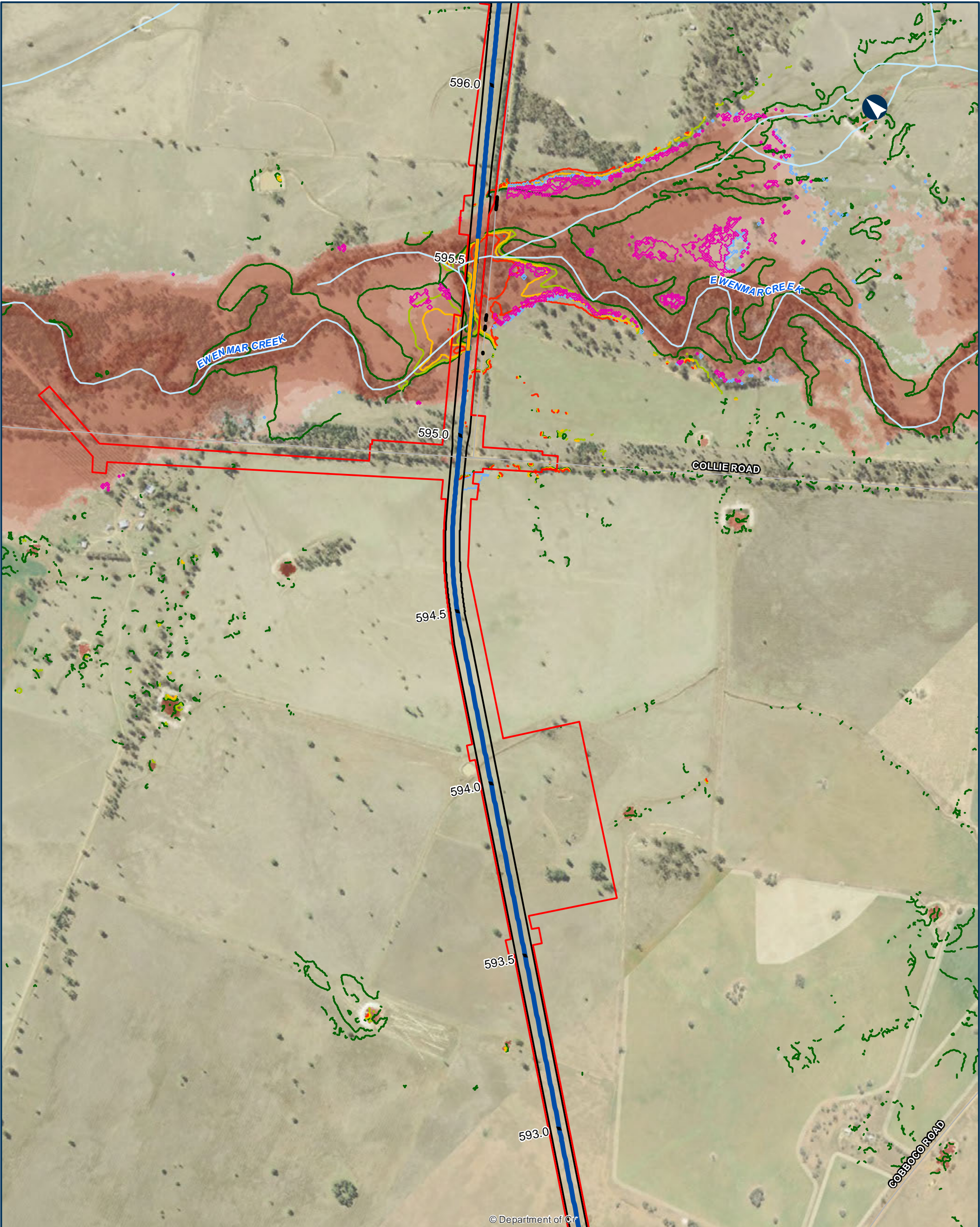
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.16

0 200 400 Metres

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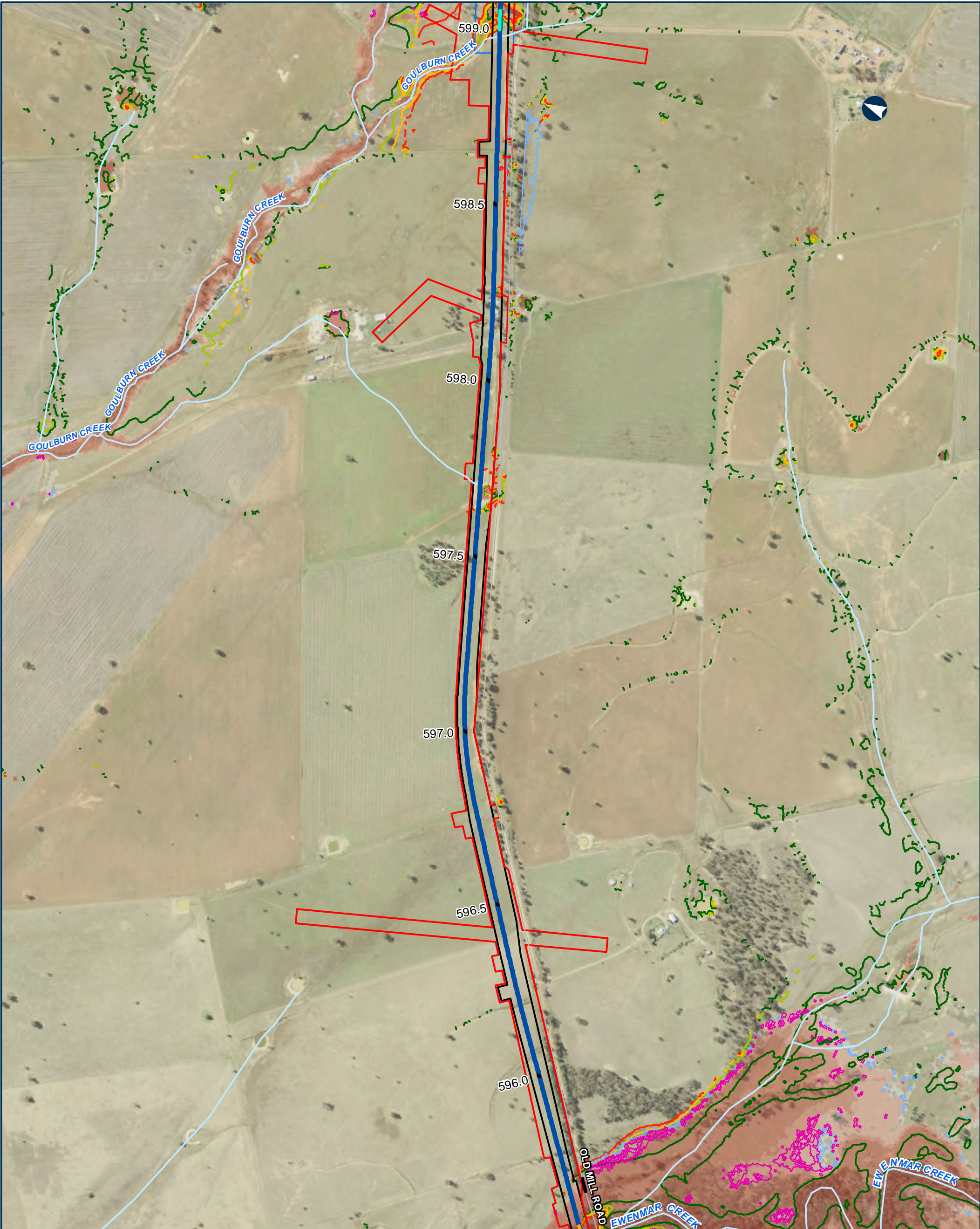
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Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Road QDL departure | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | | 12hrs - 24hrs |
| Rail Corridor | | > 24hrs |
| | Area of departure | |
| | Exist duration <1hr, design duration >1hr | |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.17

0 200 400 Metres

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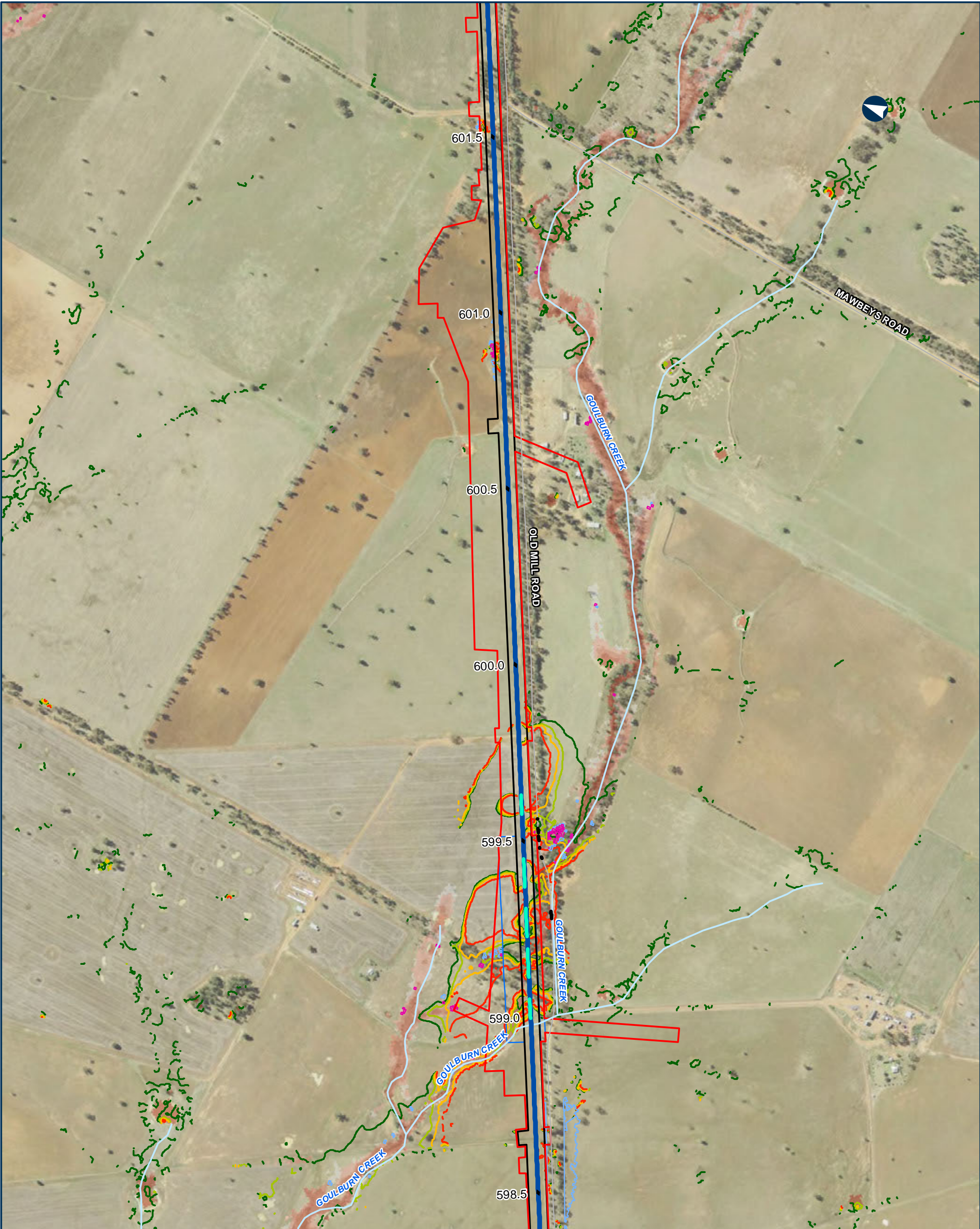
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- | | | |
|-----------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration <1hr, design duration >1hr | > 24hrs |
| Drainage Control Area | Exist duration >1hr, duration change > 10% | |
| Rail Corridor | | |



INLAND RAIL = ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.18

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

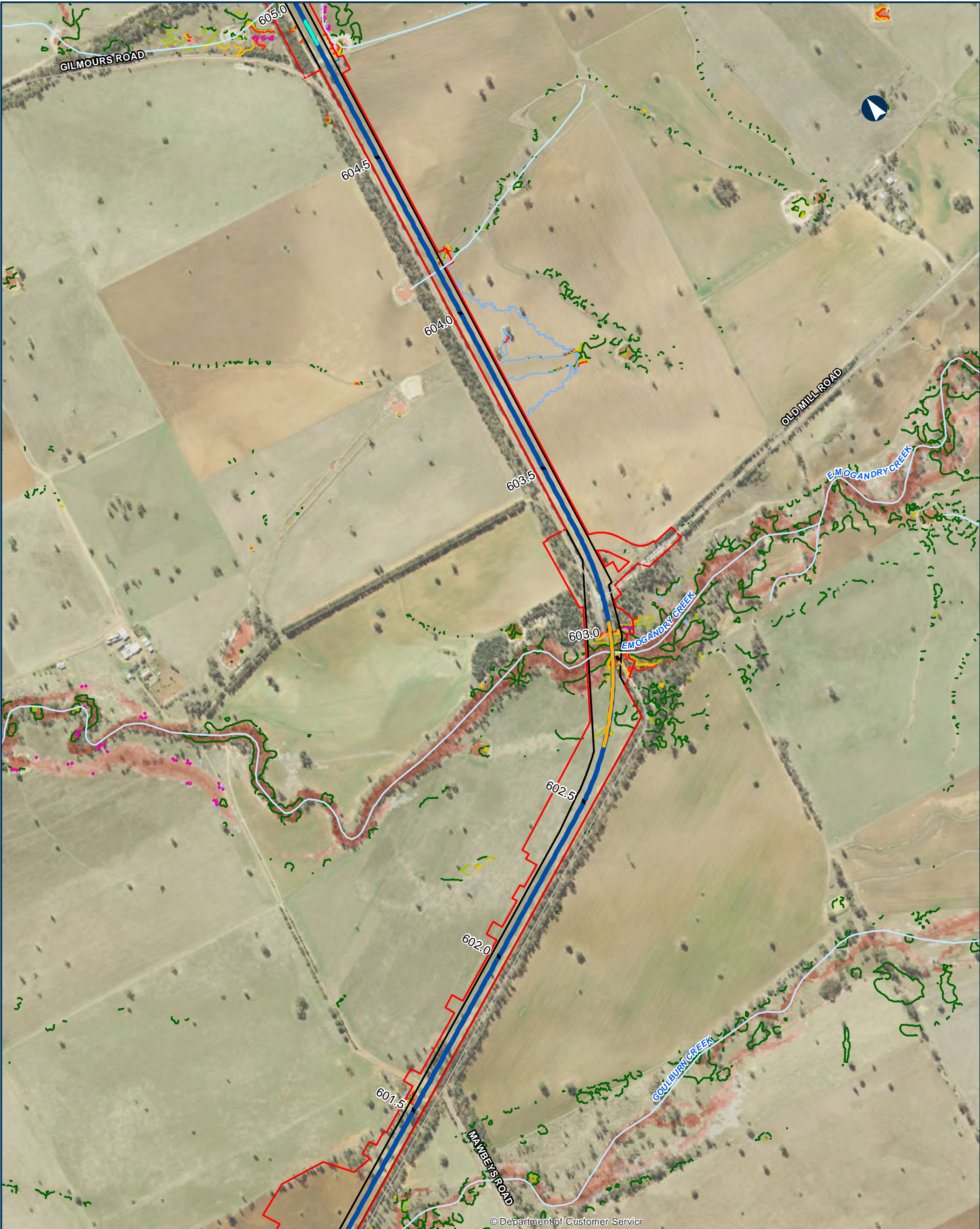
- | | |
|---|---|
| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentSub arterial roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% |
|---|---|

- | |
|--|
| <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs |
|--|



INLAND RAIL = ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.19

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Paper: A3
Scale: 1:10,000

Bridge

Culvert

Road QDL departure

Alignment

Sub arterial road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

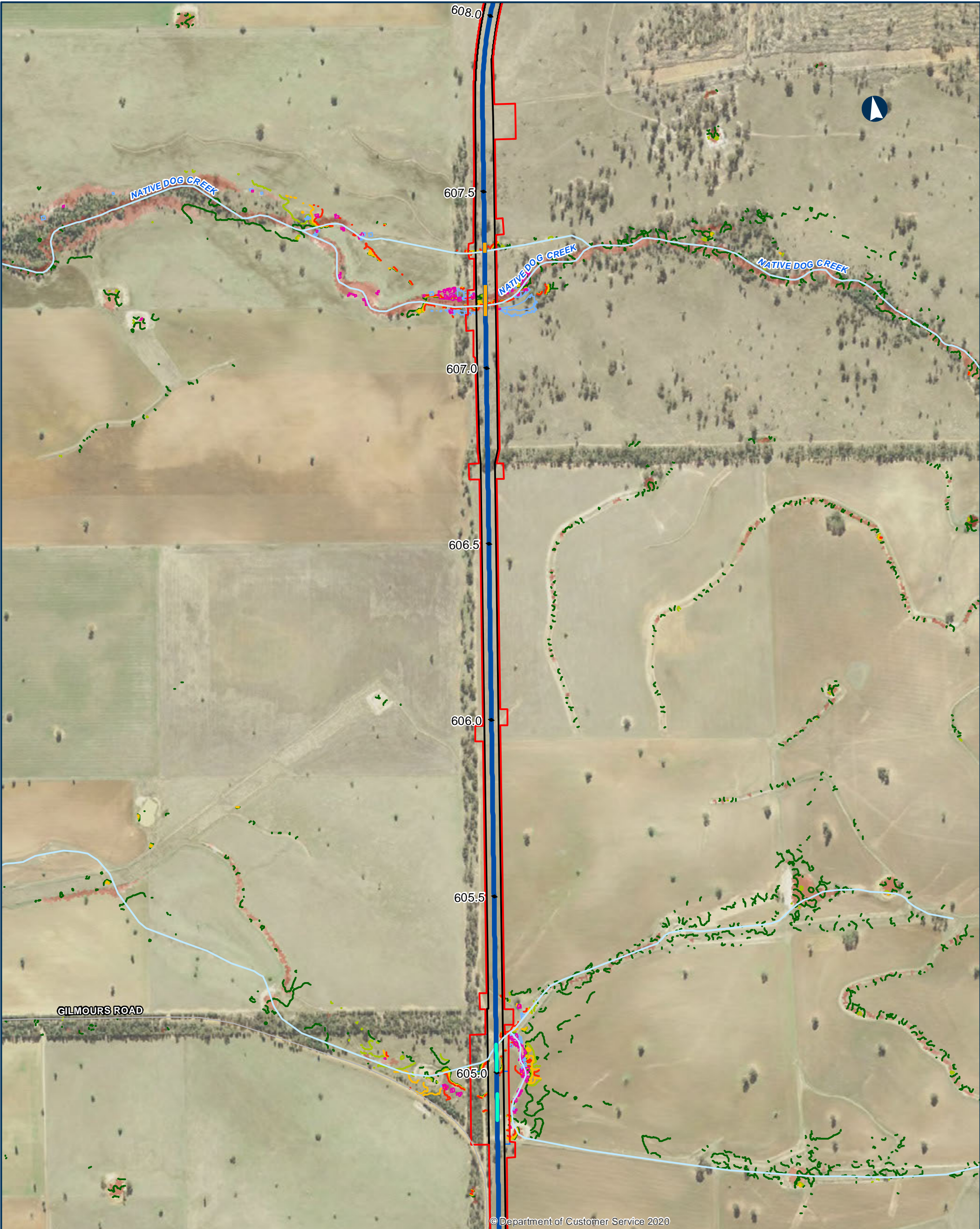
DUBBO

INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.20

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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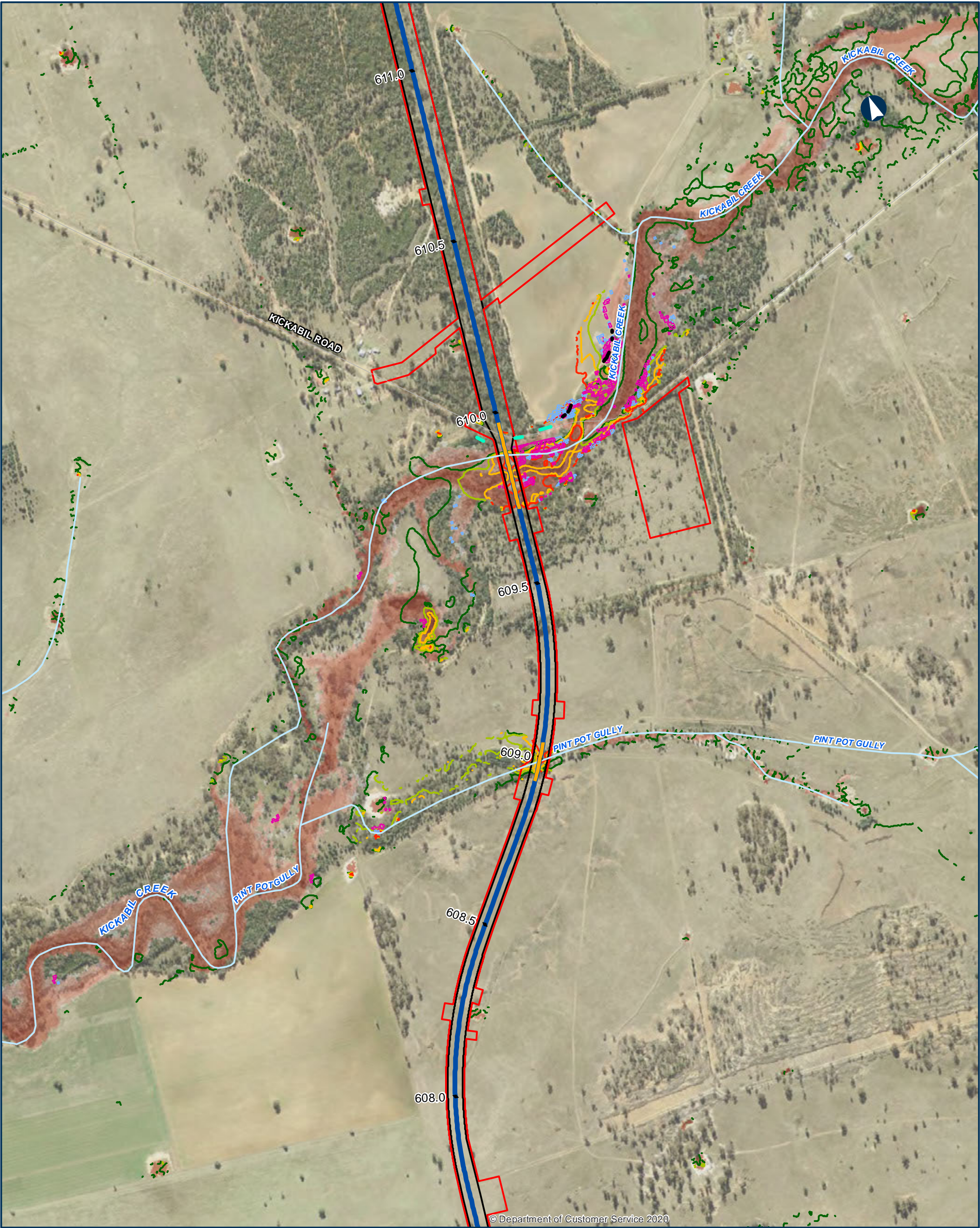
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.21

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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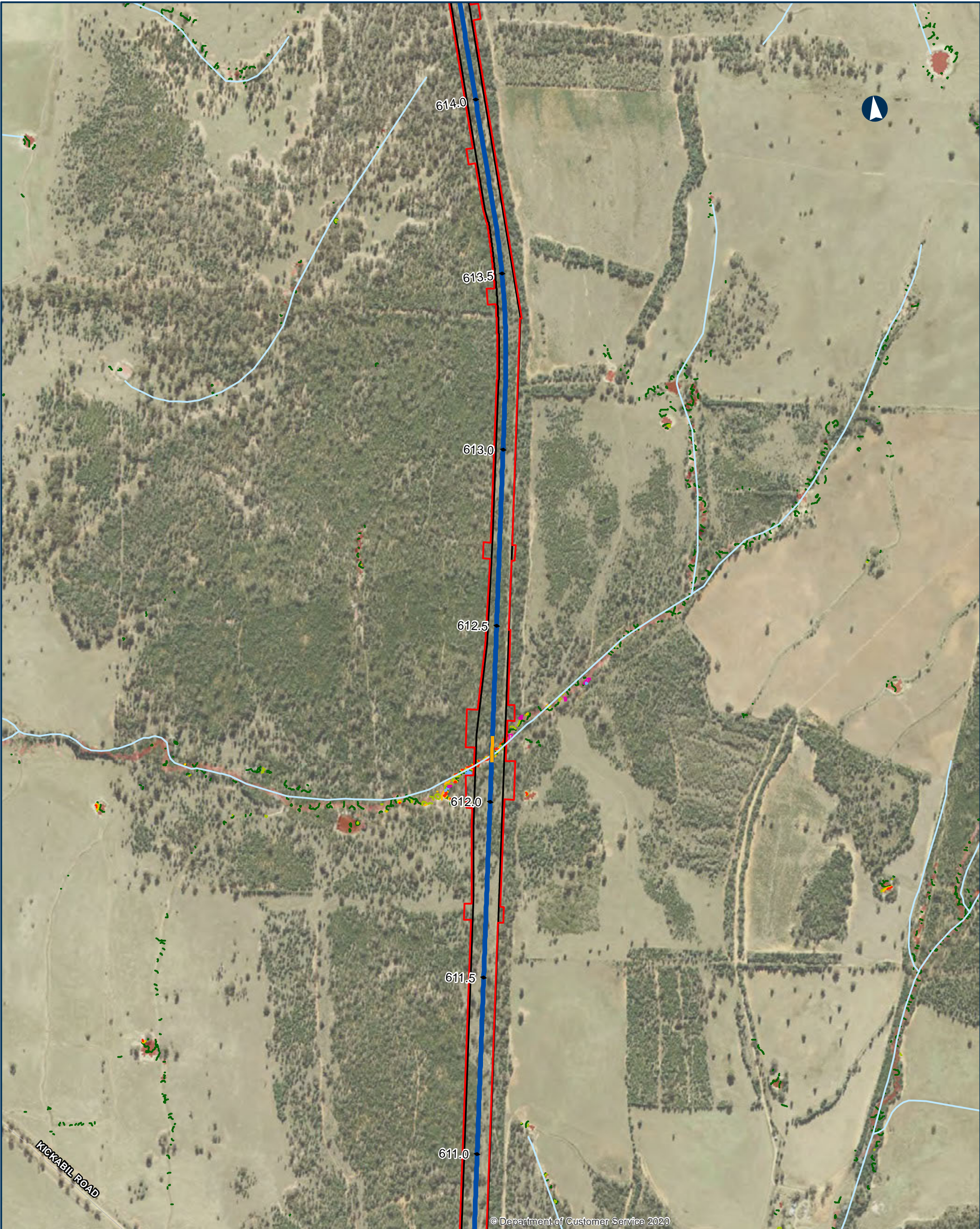
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | | 12hrs - 24hrs |
| The proposal | Area of departure | > 24hrs |
| Rail Corridor | Exist duration <1hr, design duration >1hr | |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.22

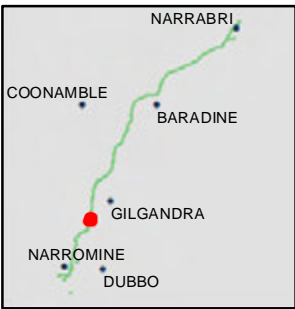
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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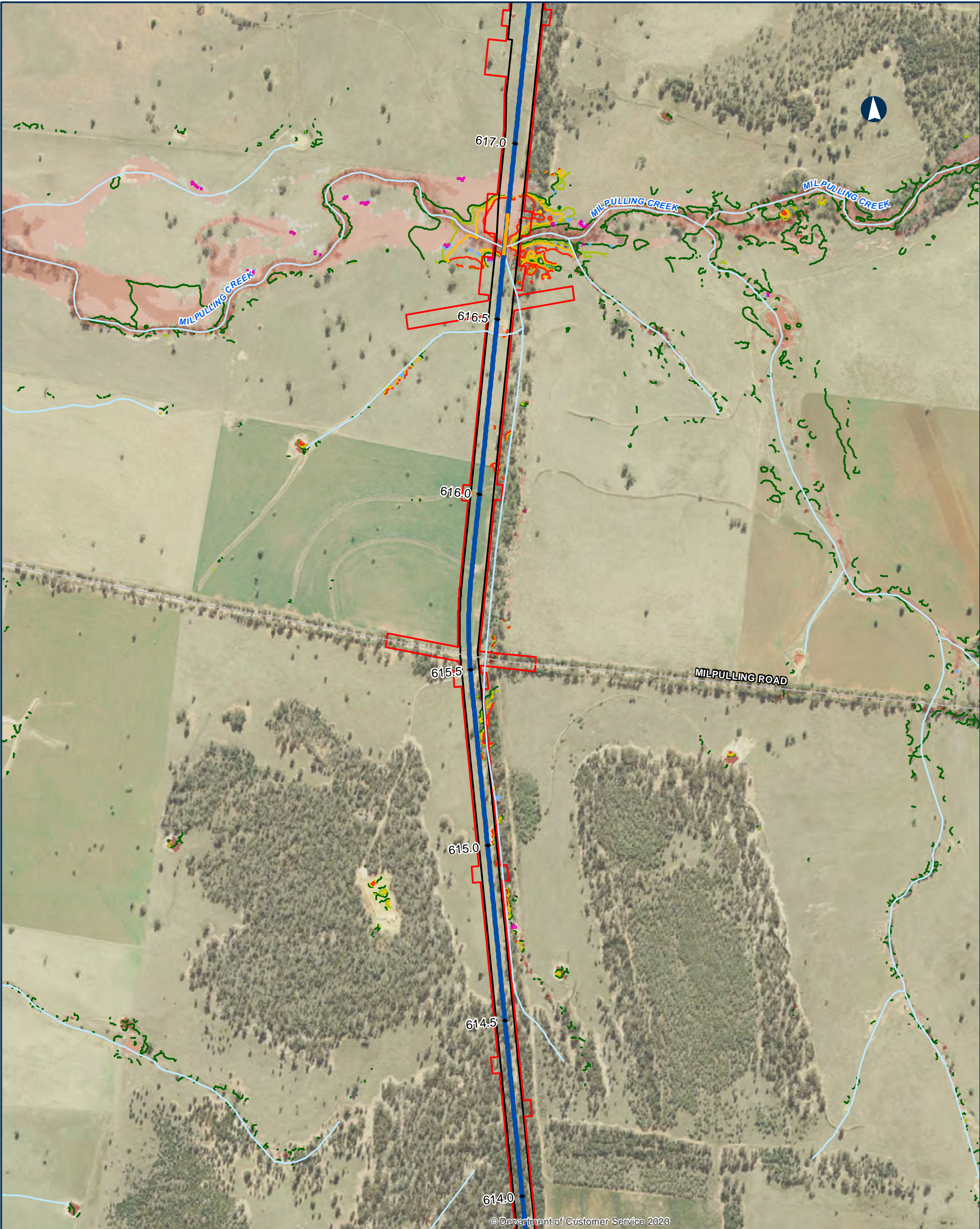
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Local road | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Rail Corridor | Area of departure | 12hrs - 24hrs |
| | Exist duration <1hr, design duration >1hr | > 24hrs |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.23

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge

Alignment

Sub arterial road

Watercourse

The proposal

Rail Corridor

Change in Duration of Inundation

Area of departure

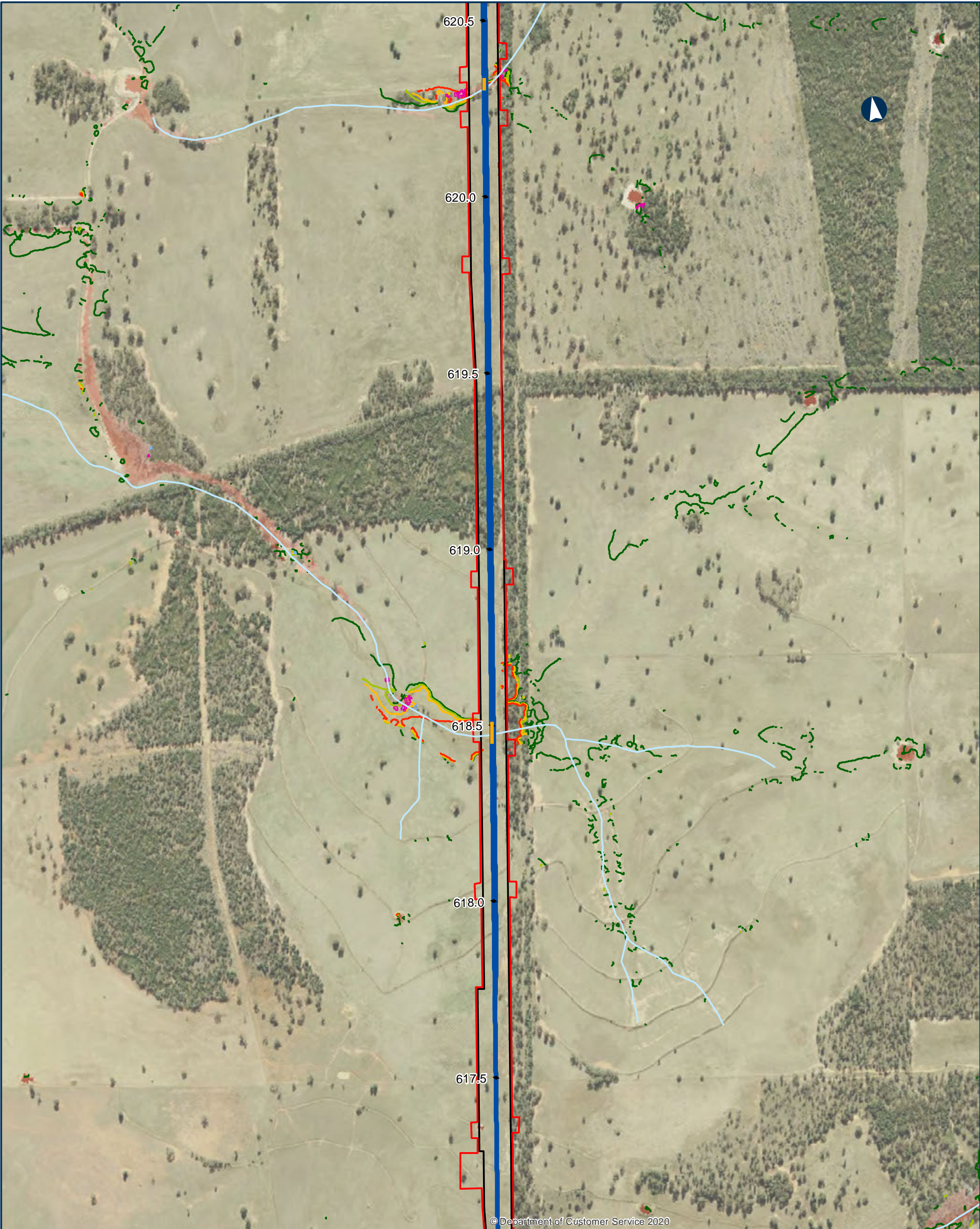
Existing Duration of Inundation

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N:\AD\Newcastle\Projects\2219593\GIS\GIS_2500_NZN_V2\Maps\Deliverables_SPIN\EIS\Flooding_Hydrology\Appendices\2500_EIS\WPAPP099_QDL_Duration_spc_rev0.mxd



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.24

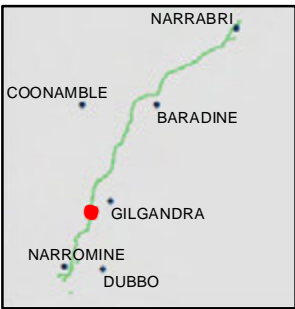
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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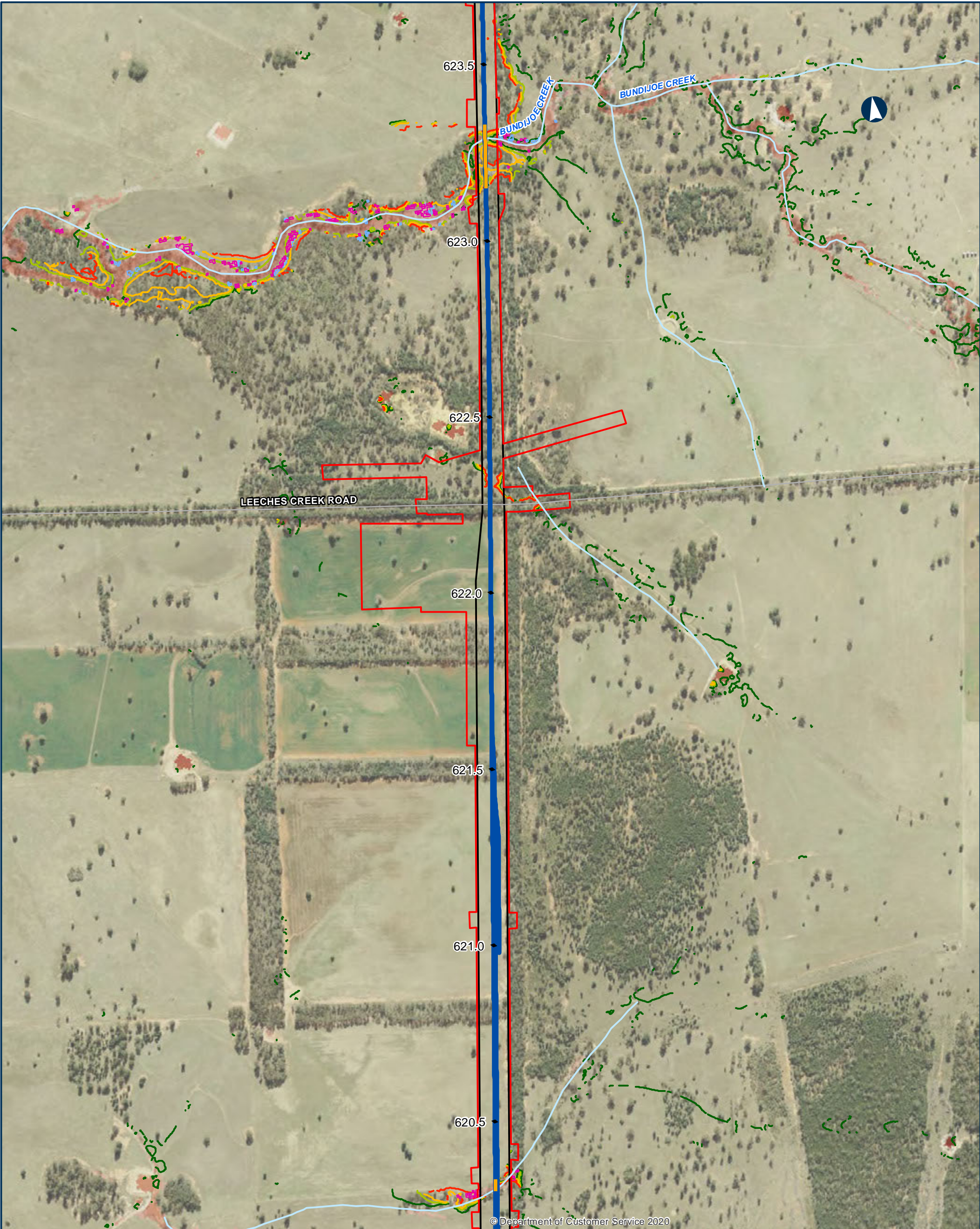
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Watercourse | 5% | 1hr - 3hrs |
| The proposal | 10% | 3hrs - 6hrs |
| Rail Corridor | 20% | 6hrs - 12hrs |
| | | 12hrs - 24hrs |
| | | > 24hrs |
| | Area of departure | |
| | Exist duration <1hr, design duration >1hr | |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.25

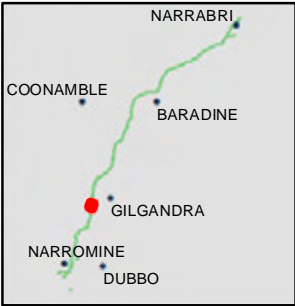
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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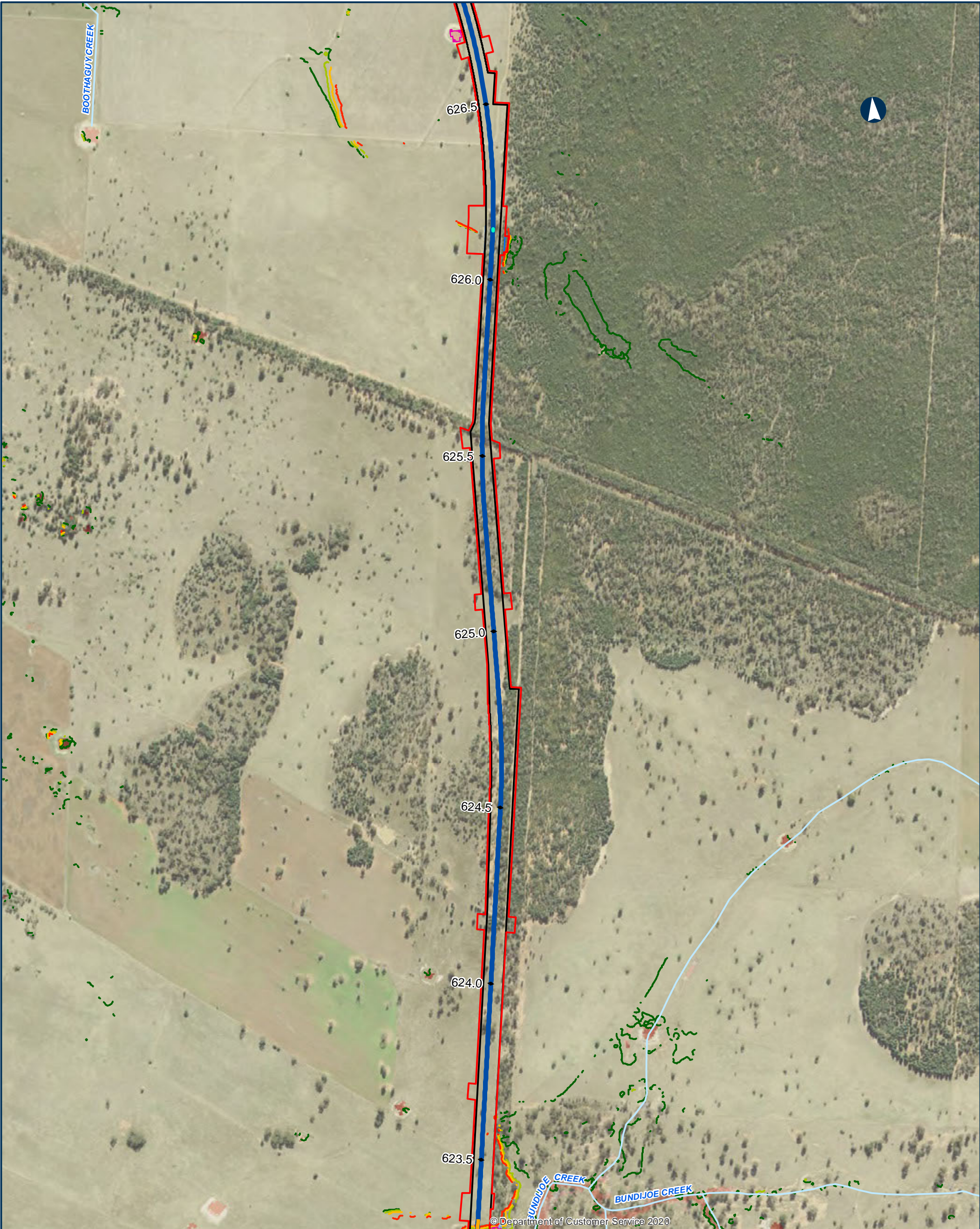
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Sub arterial road | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Rail Corridor | Area of departure | 12hrs - 24hrs |
| | Exist duration <1hr, design duration >1hr | > 24hrs |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.26

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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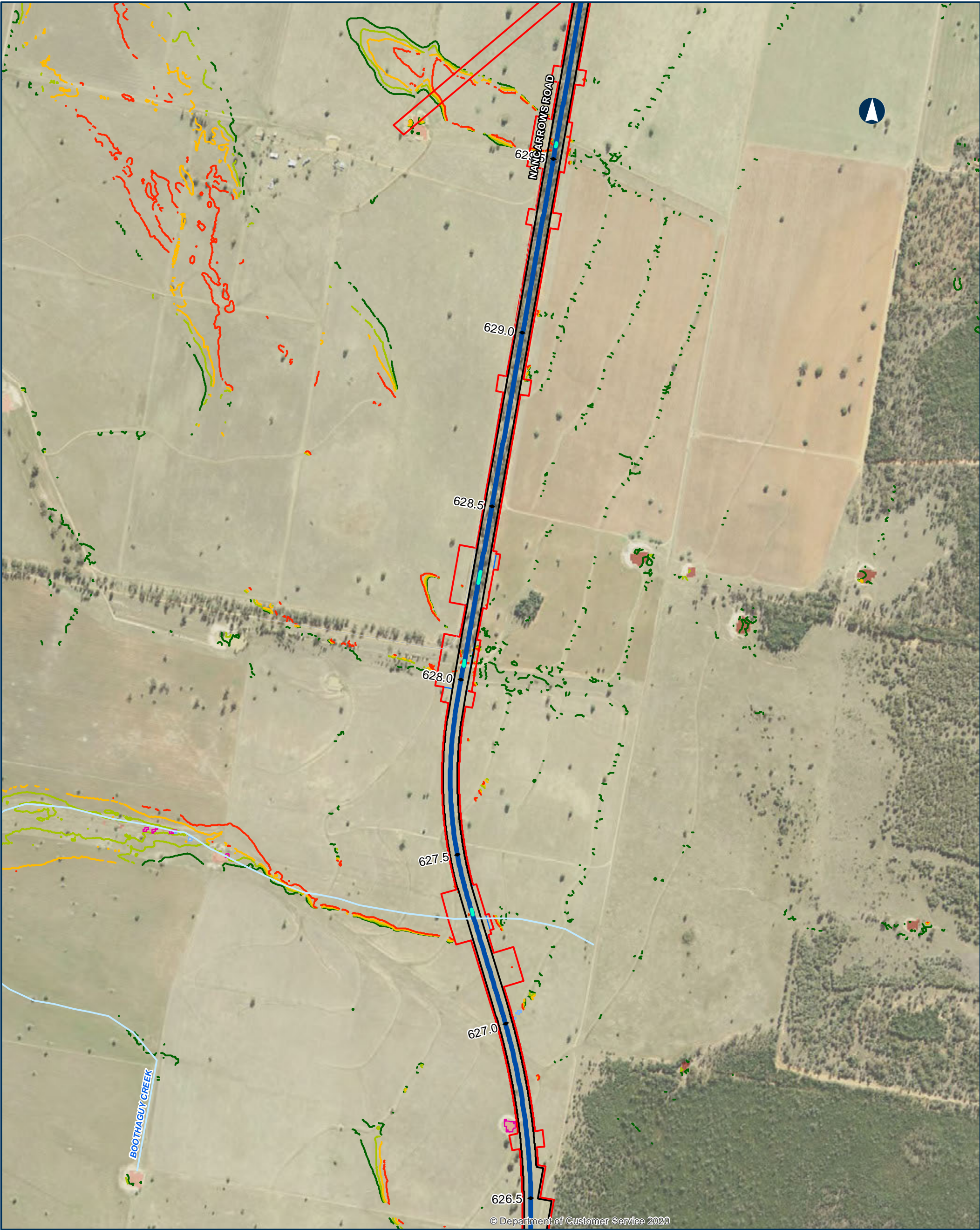
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Drainage Control Area | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.27

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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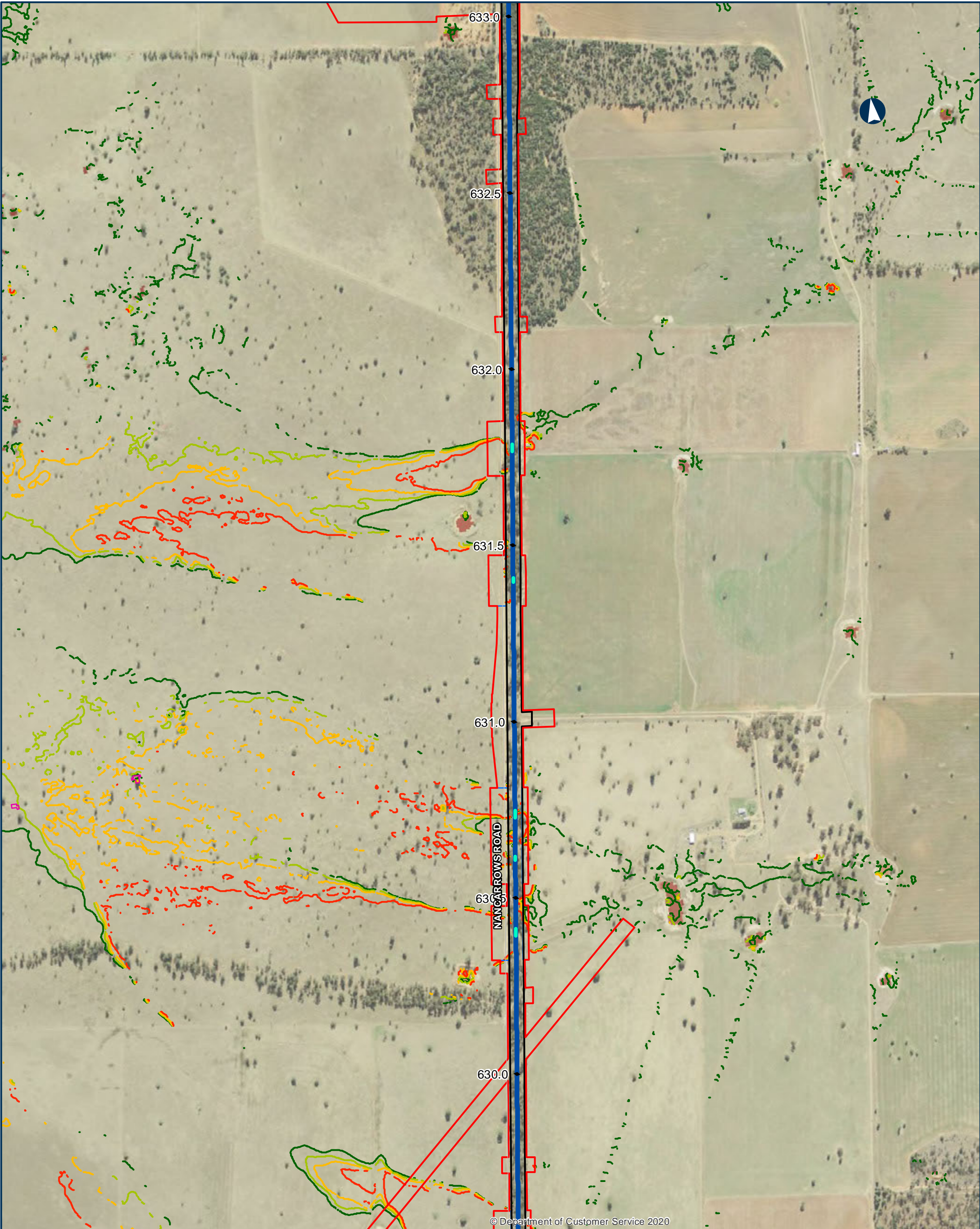
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|---|
| <ul style="list-style-type: none">CulvertAlignmentLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.28

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Alignment

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

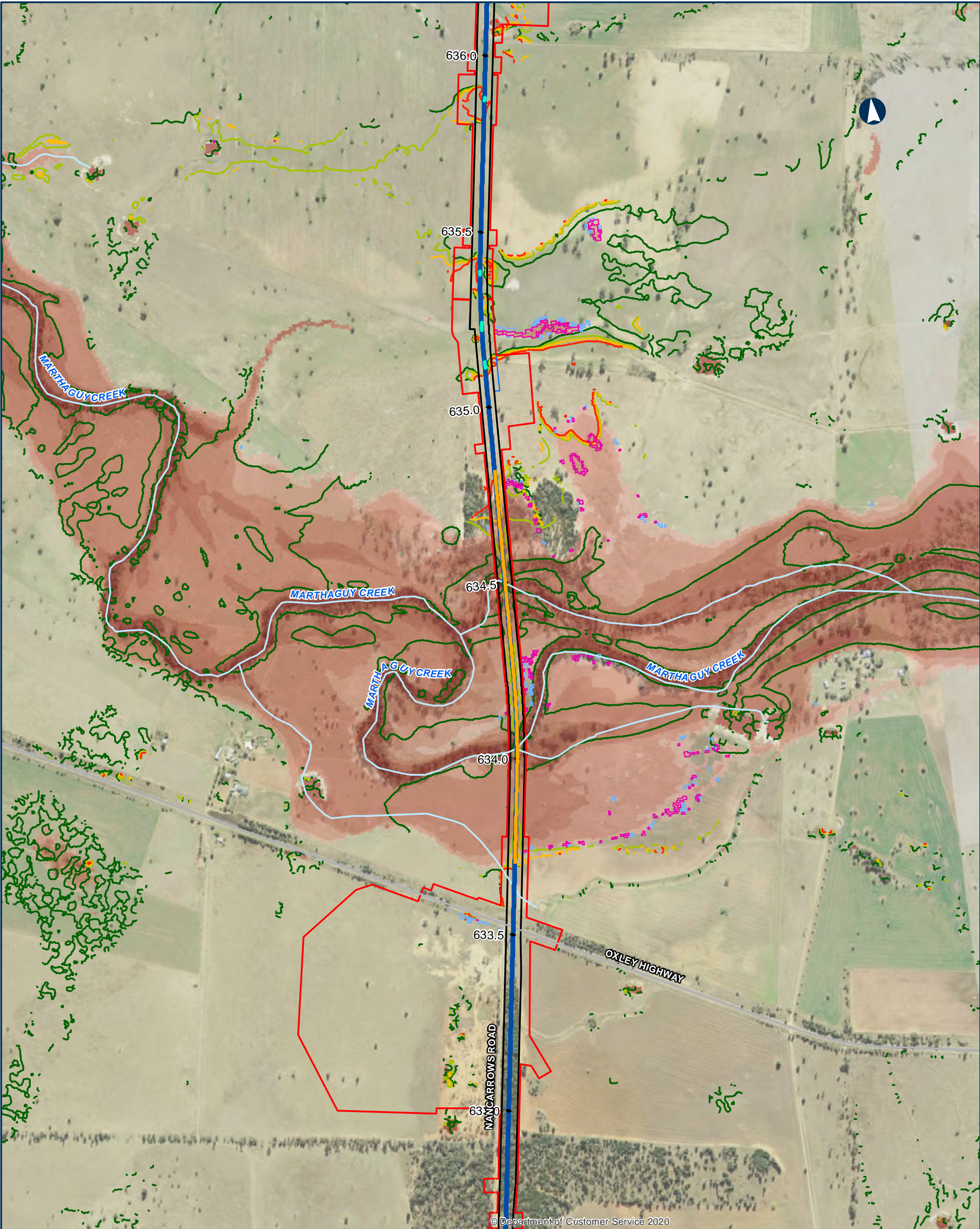
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.29

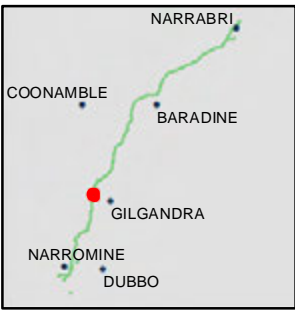
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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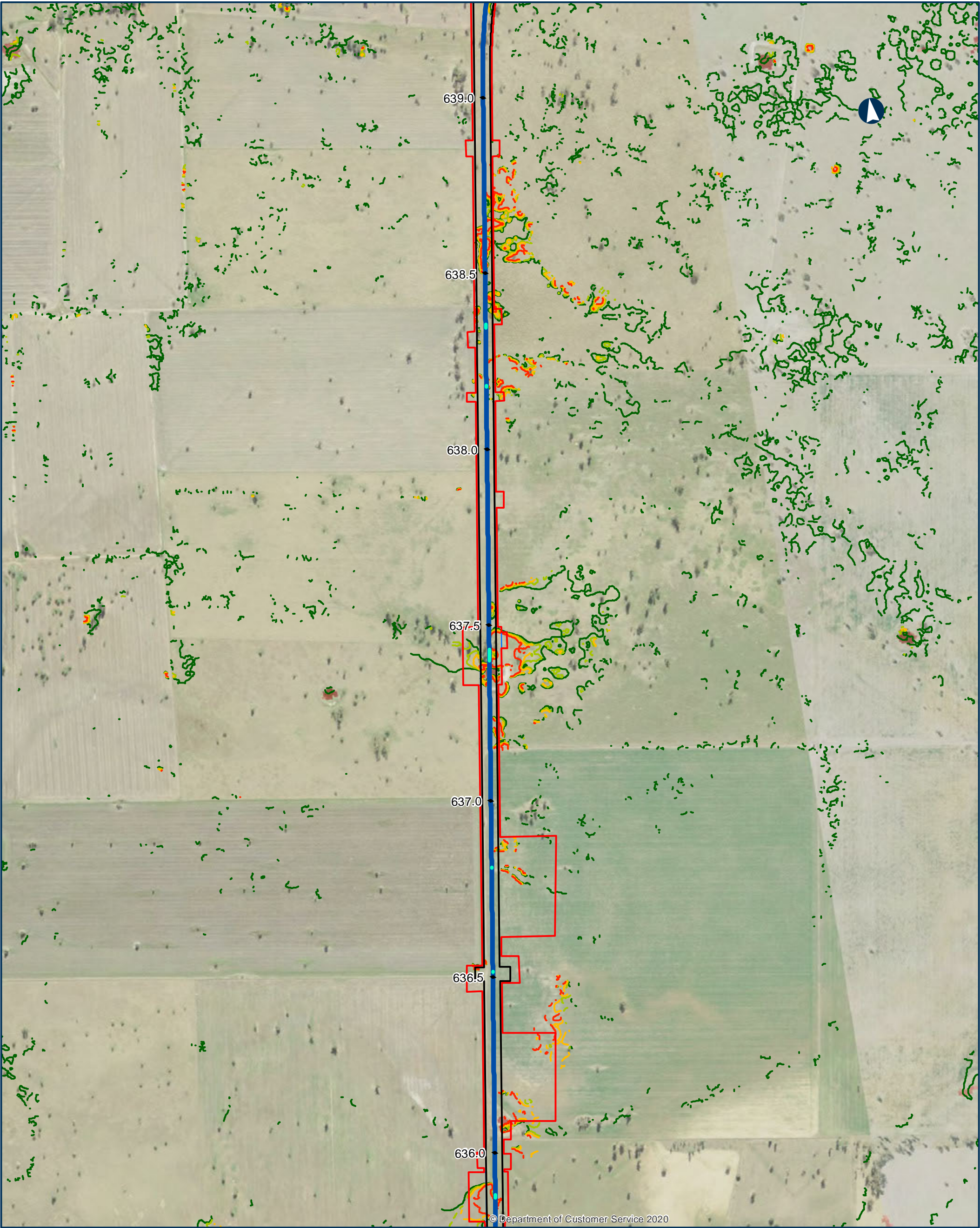
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Primary road | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.30

0200400

Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Alignment

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

DUBBO

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.31

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.32

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Paper: A3
Scale: 1:10,000

Bridge

Culvert

Alignment

Sub arterial road

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

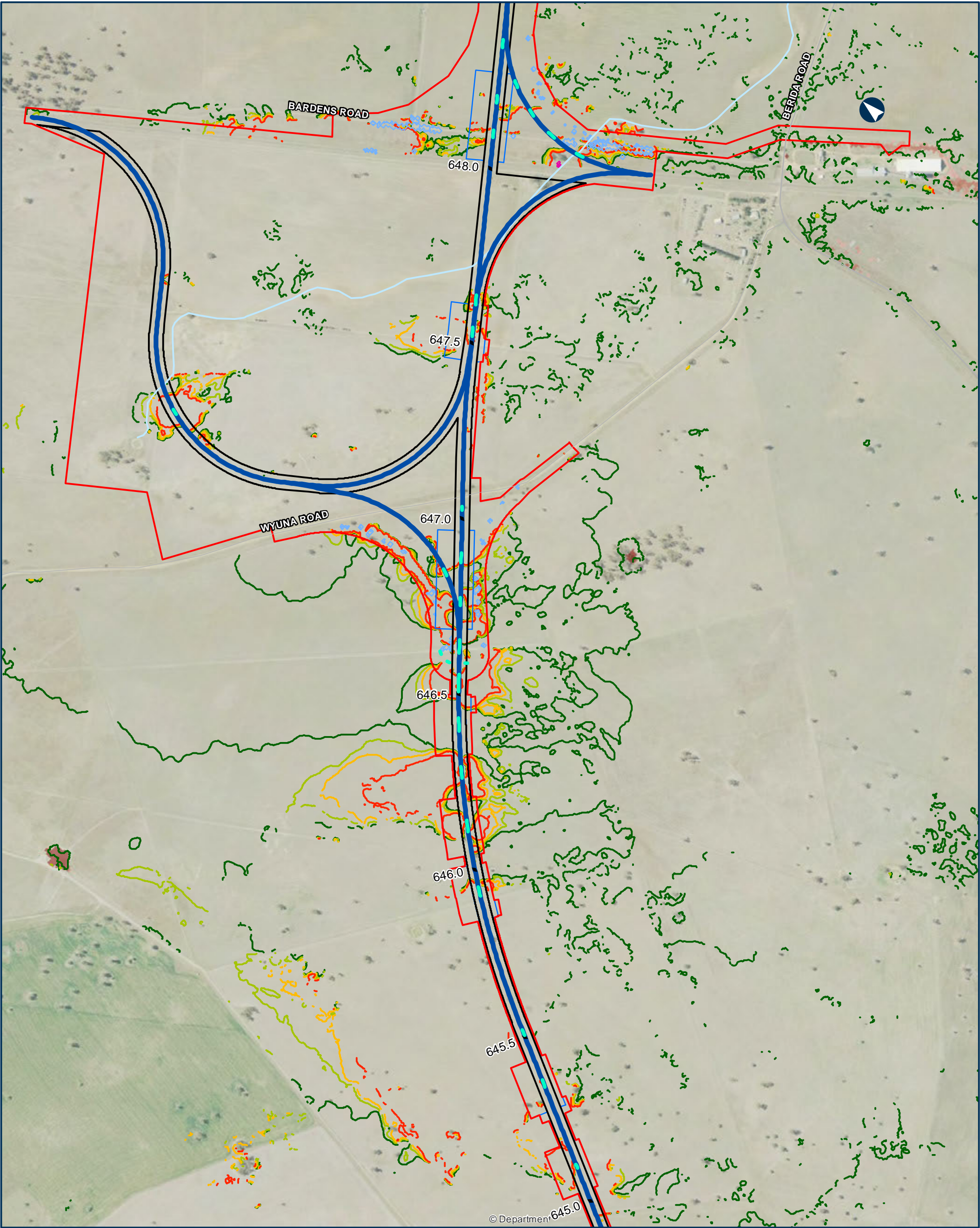
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INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.33

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <p>Change in Duration of Inundation</p> <ul style="list-style-type: none">0%5%10%20% <p>Area of departure</p> <ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



INLAND RAIL = ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.34

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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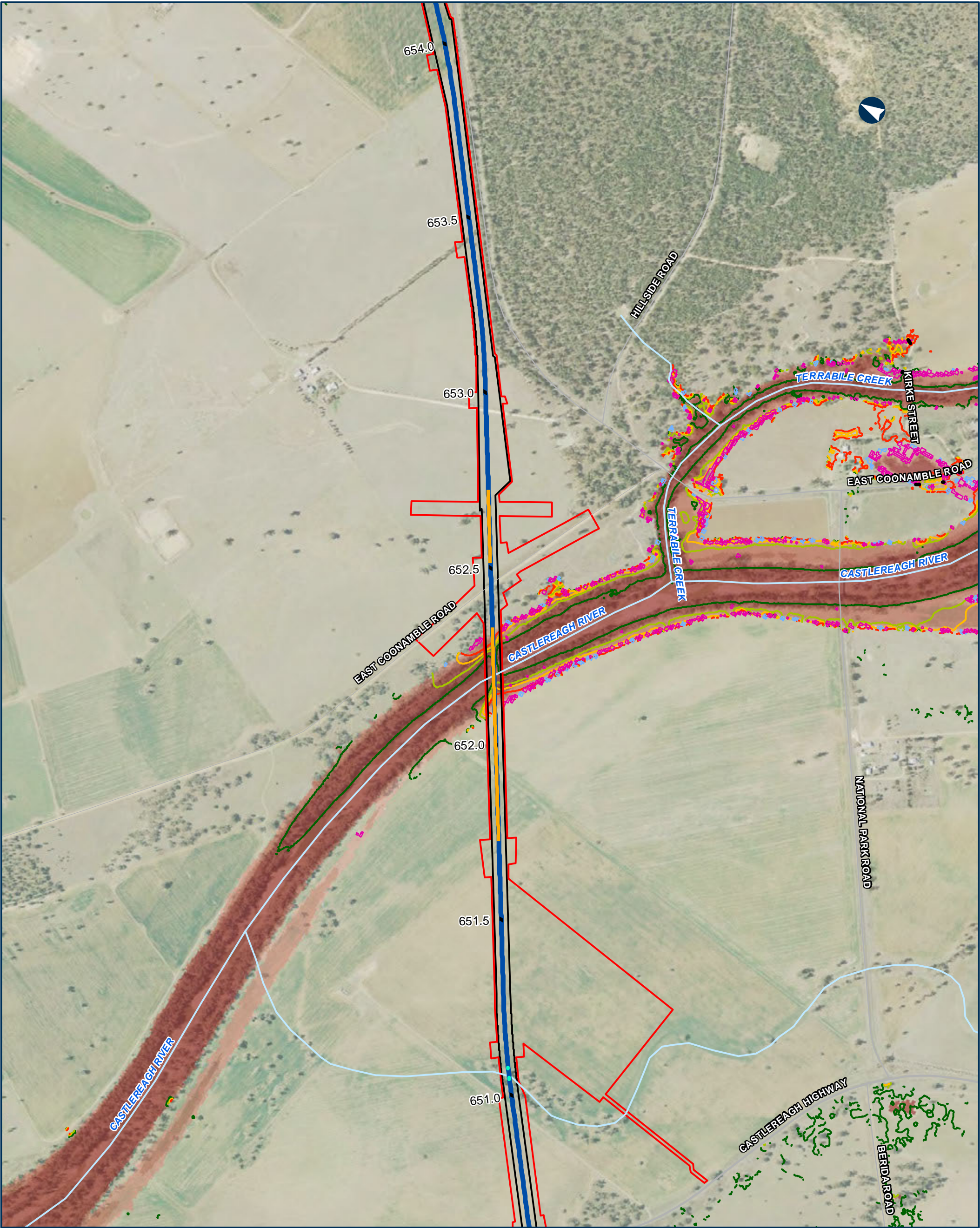
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--|---|--|
| <ul style="list-style-type: none">CulvertAlignmentPrimary roadSub arterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.35

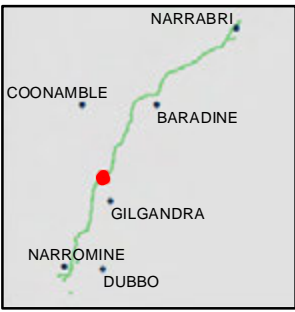
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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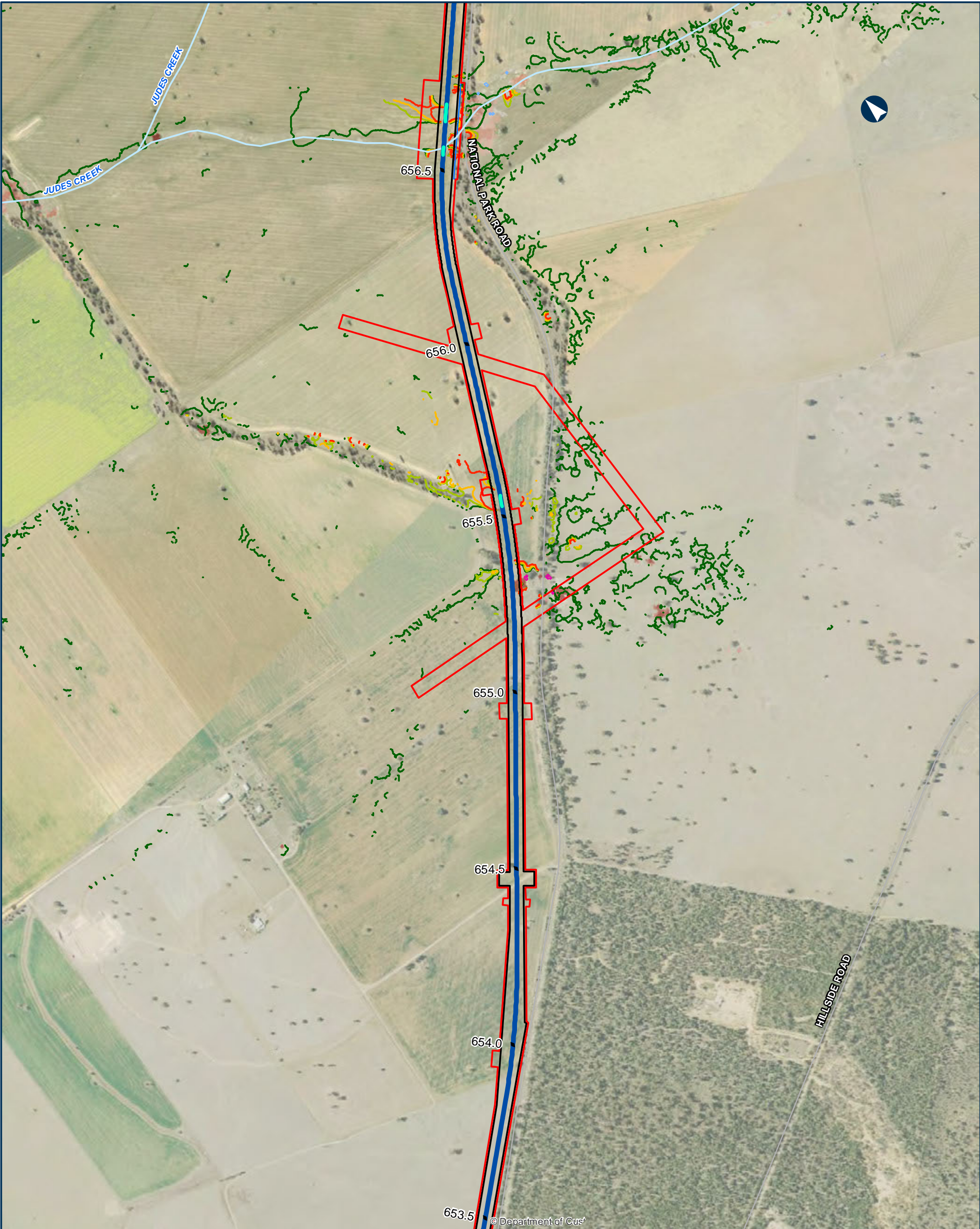
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Primary road | 20% | 6hrs - 12hrs |
| Sub arterial road | | 12hrs - 24hrs |
| Local road | | > 24hrs |
| Watercourse | Area of departure | |
| The proposal | Exist duration <1hr, design duration >1hr | |
| Rail Corridor | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.36

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Alignment

Sub arterial road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

DUBBO

INLAND RAIL

ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.37

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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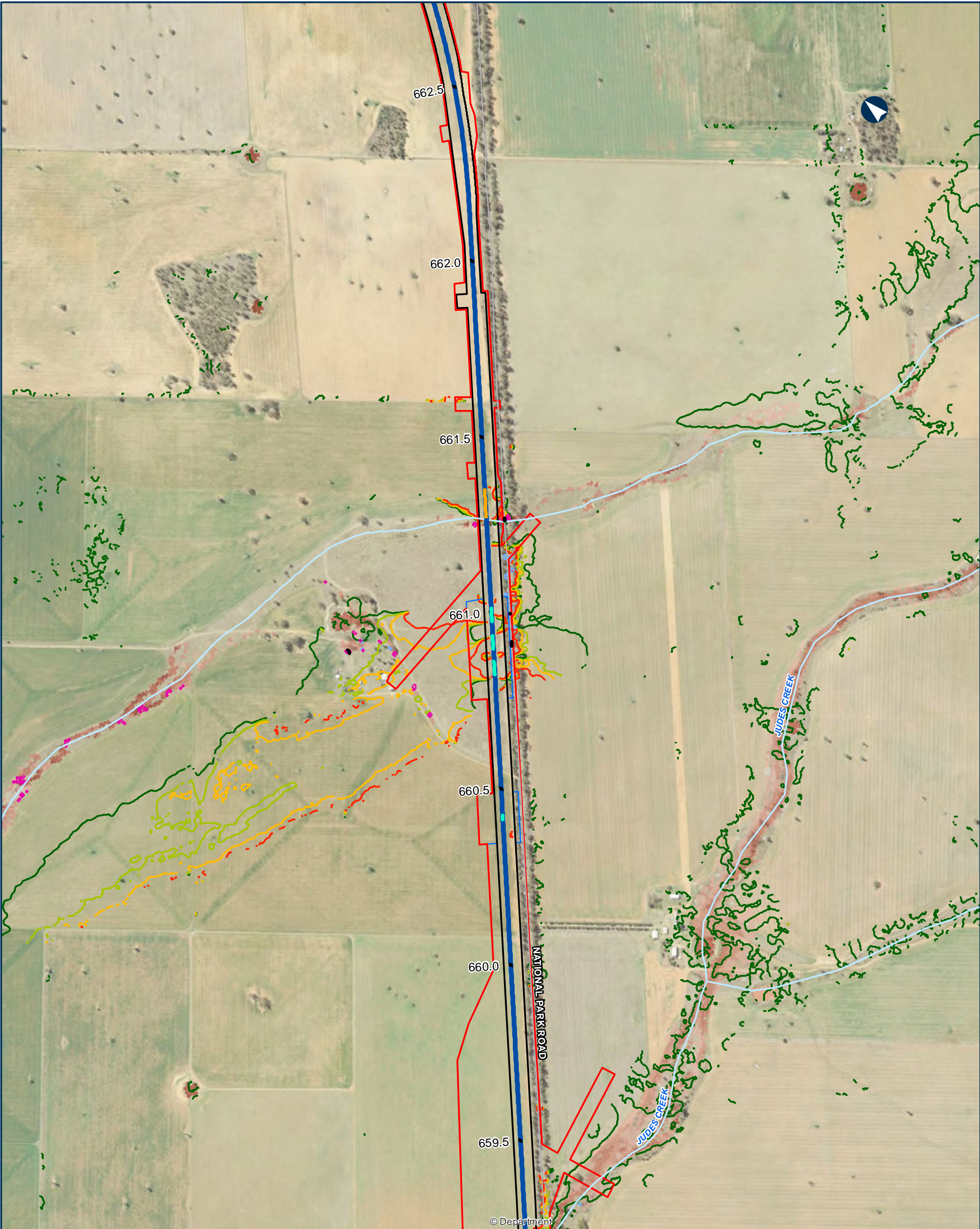
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|---|
| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentSub arterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.38

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge

Culvert

Road QDL departure

Alignment

Sub arterial road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

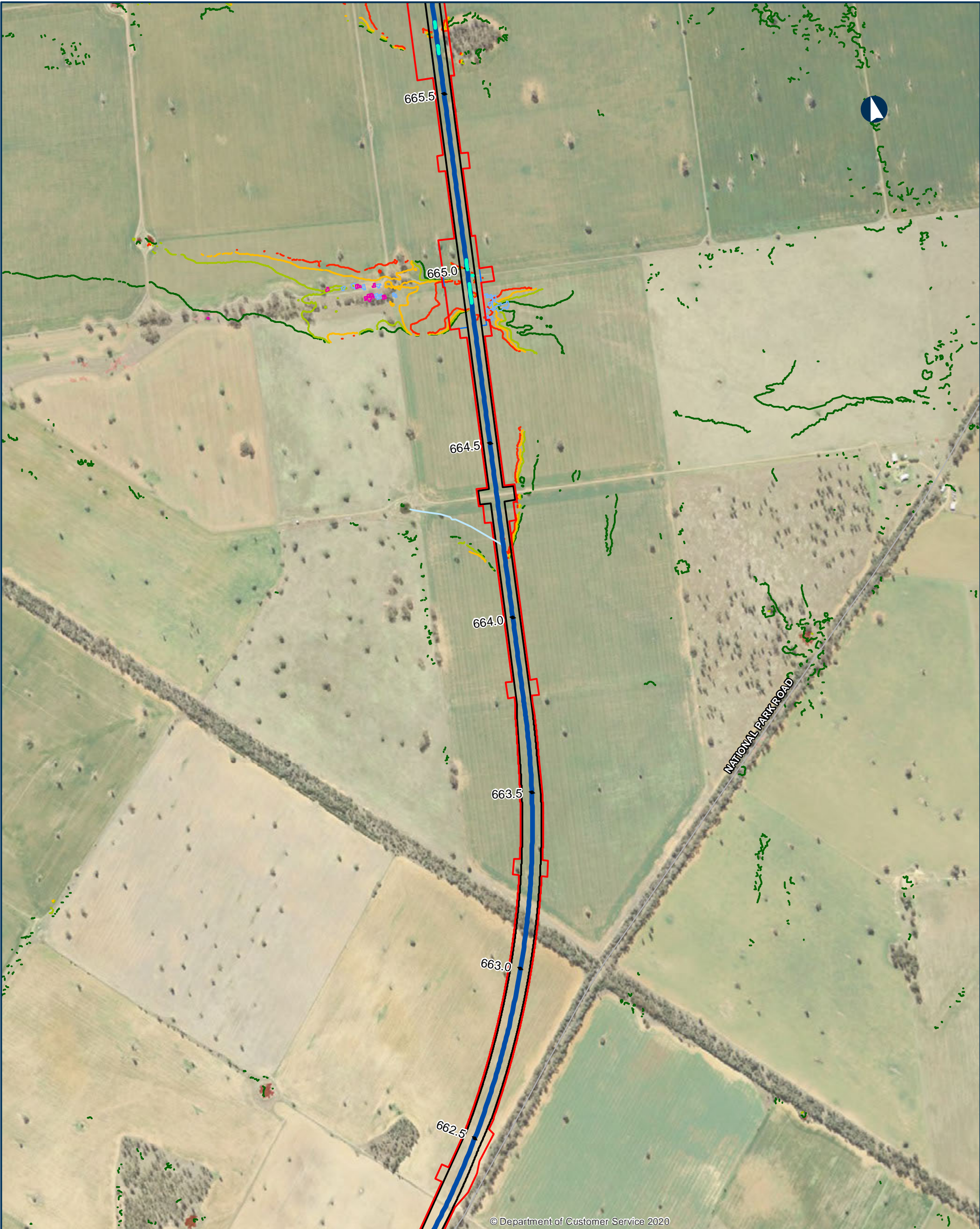
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INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.39

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.40

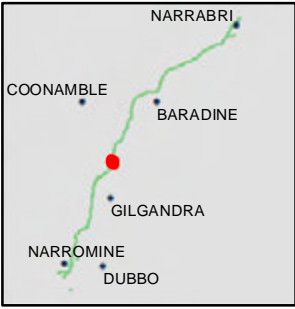
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|---|
| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentSub arterial roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.41

0200400

Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Alignment

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

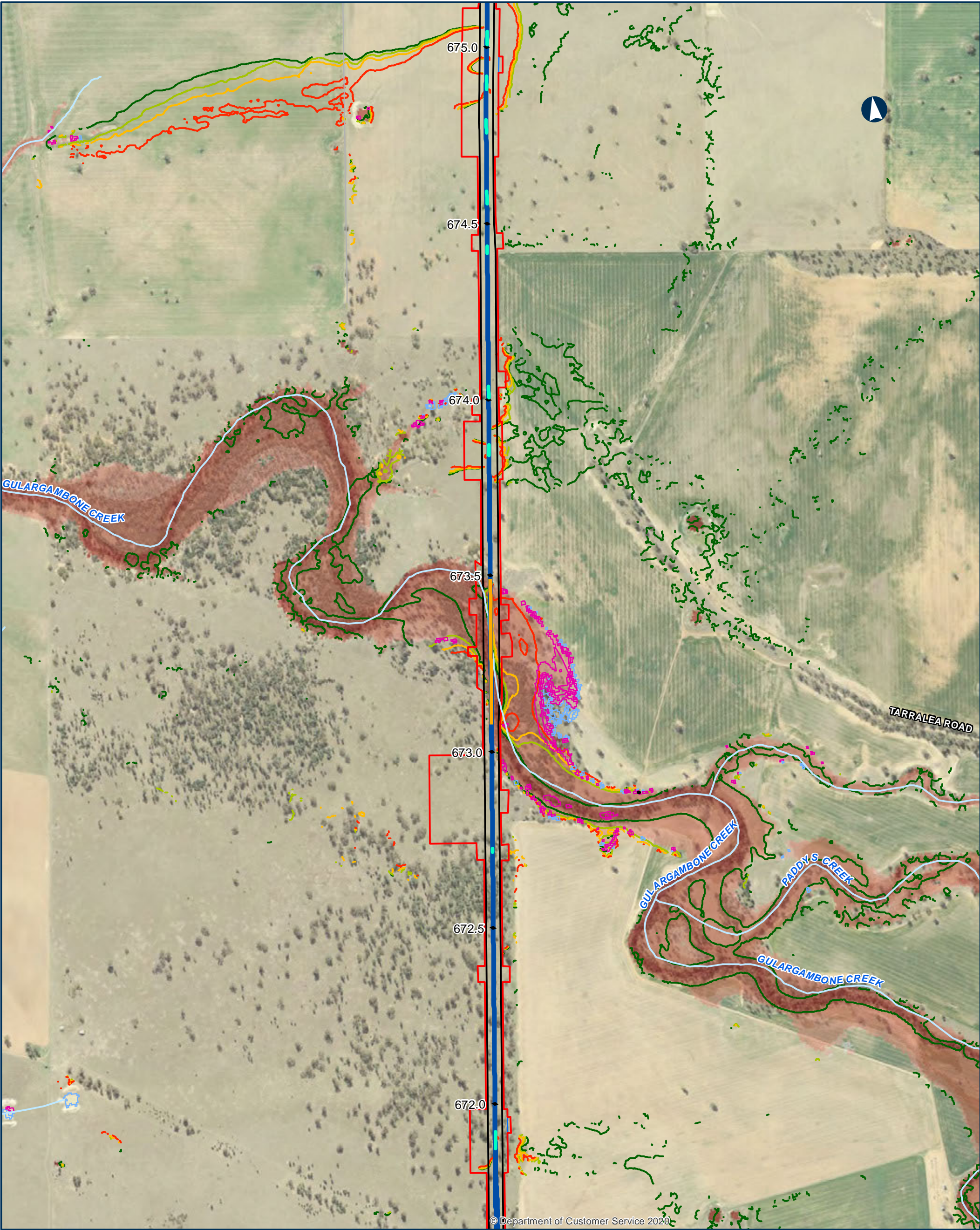
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INLAND RAIL

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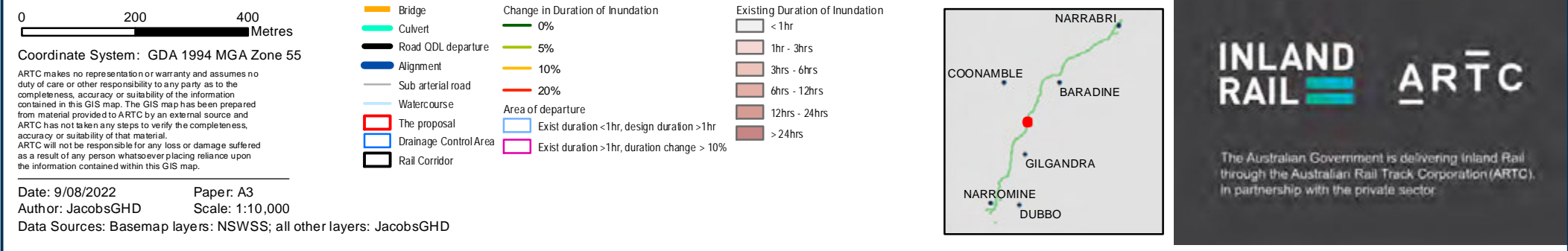
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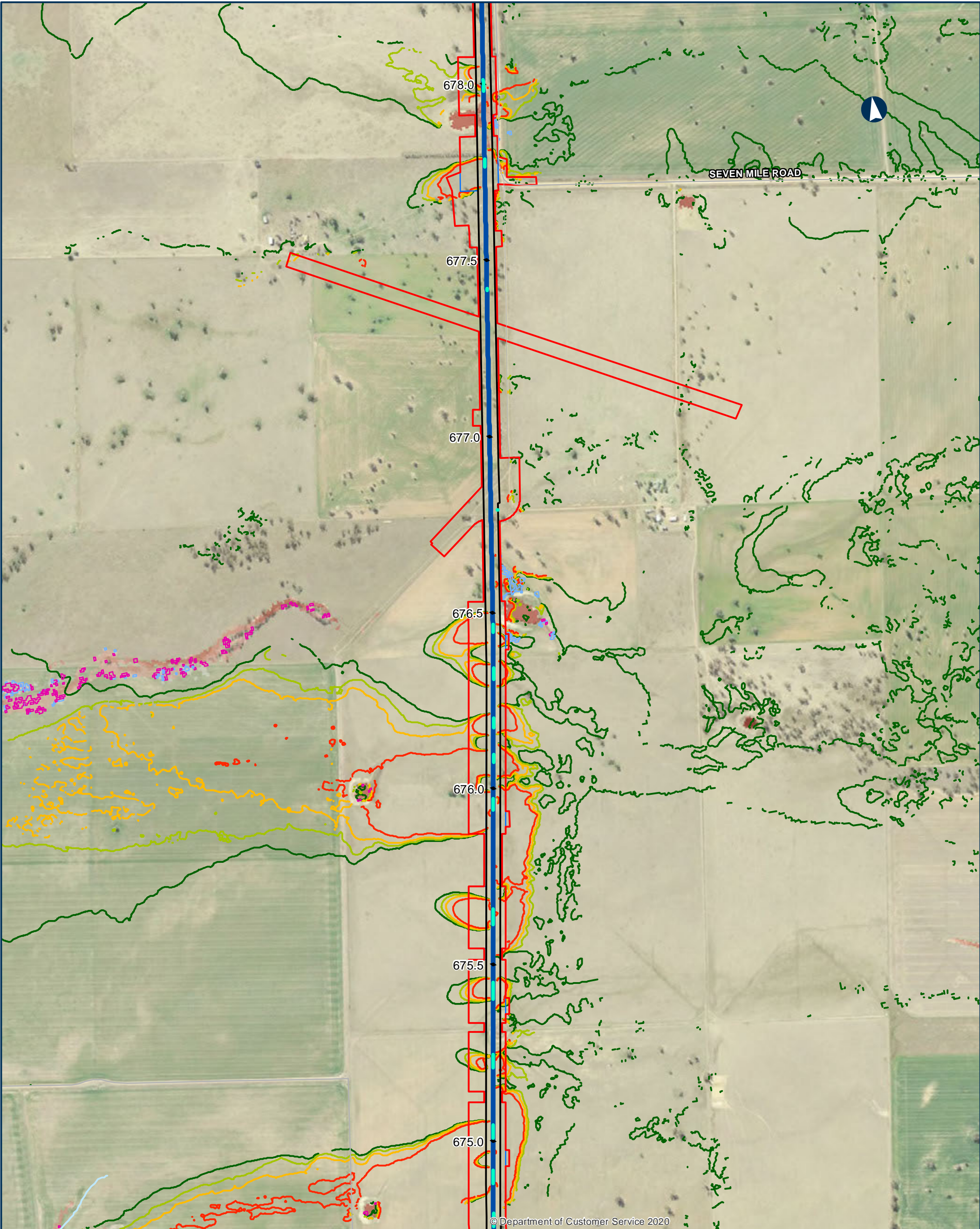
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.42





NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.43

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Paper: A3
Scale: 1:10,000

Culvert

Alignment

Sub arterial road

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

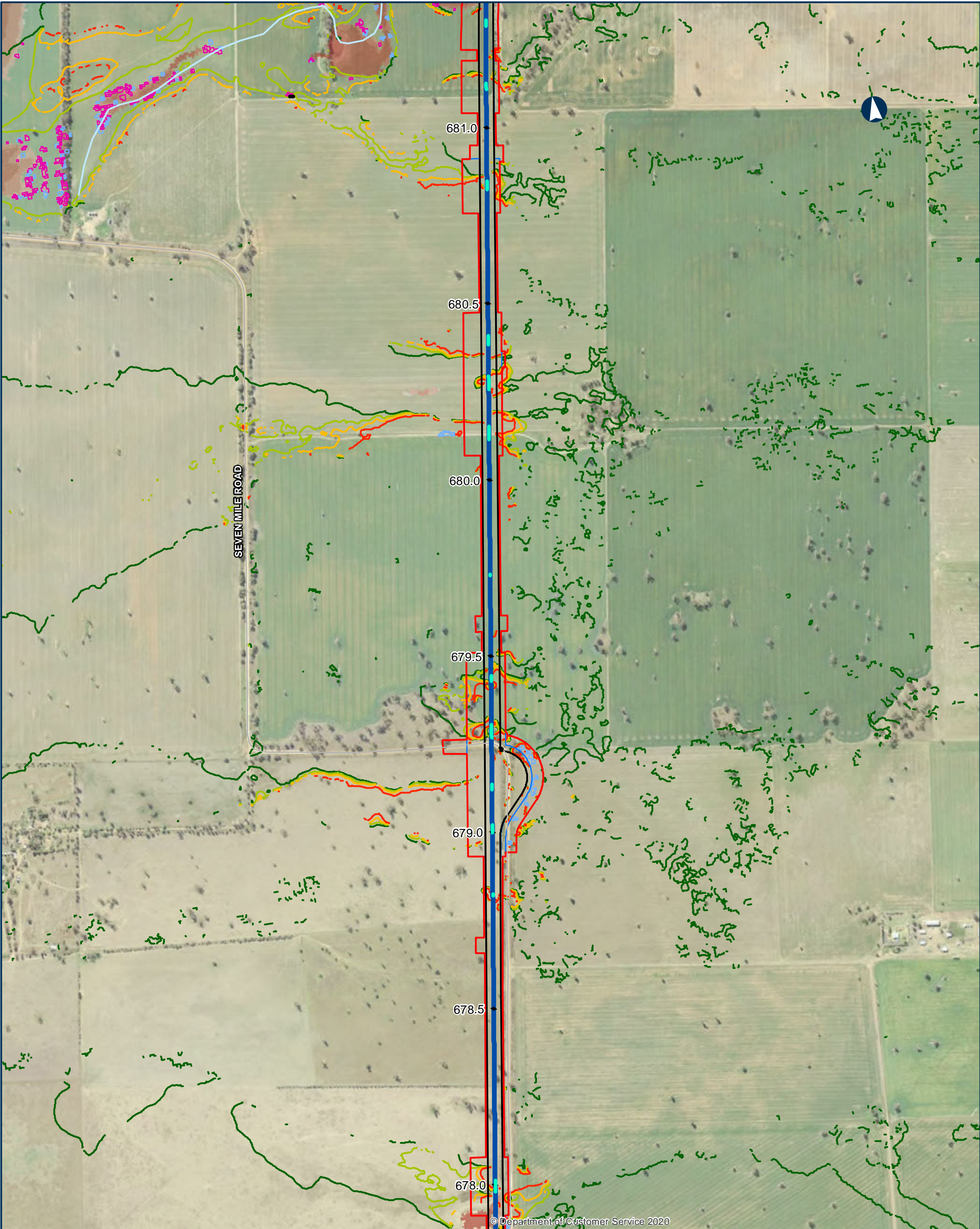
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.44

0200400

Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Road QDL departure

Alignment

Sub arterial road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

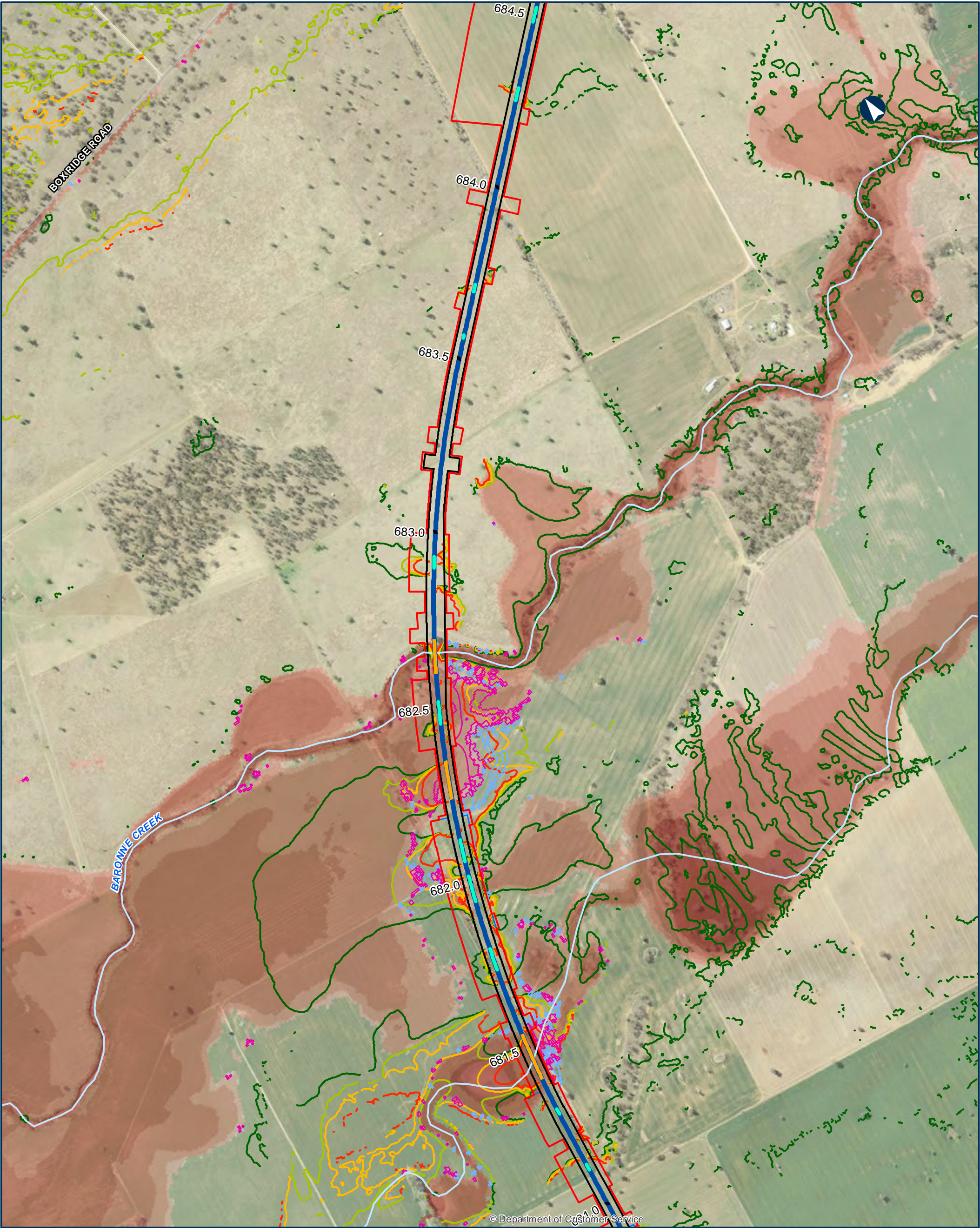
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.45

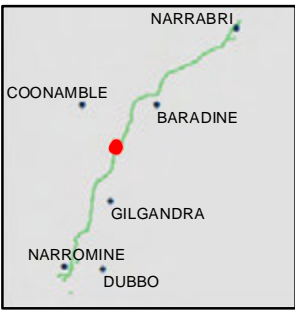
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Coordinate System: GDA 1994 MGA Zone 55

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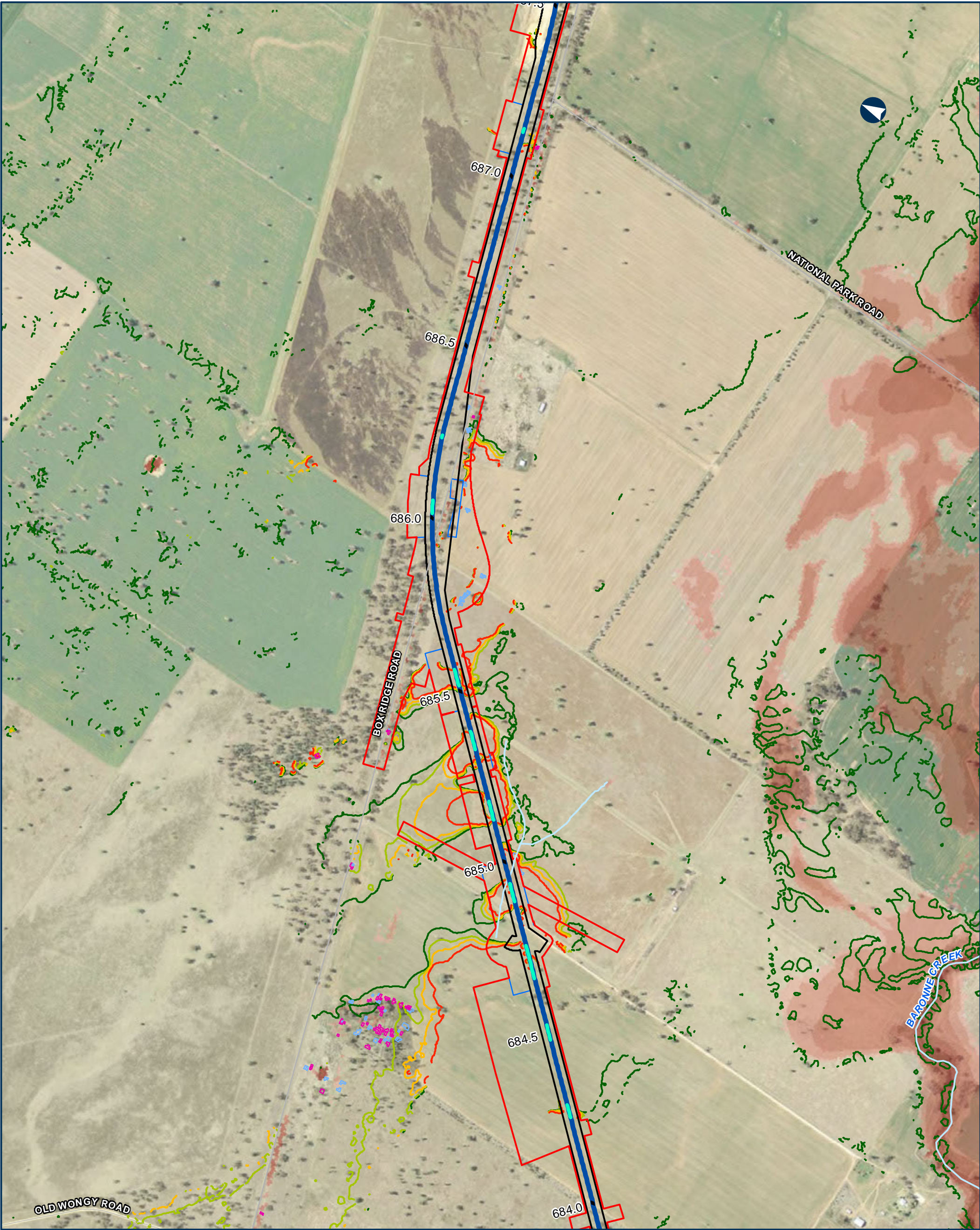
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.46

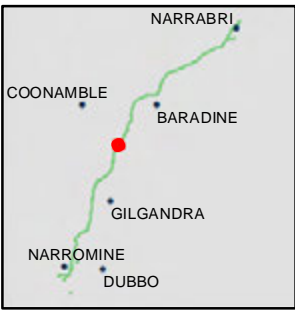
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.47

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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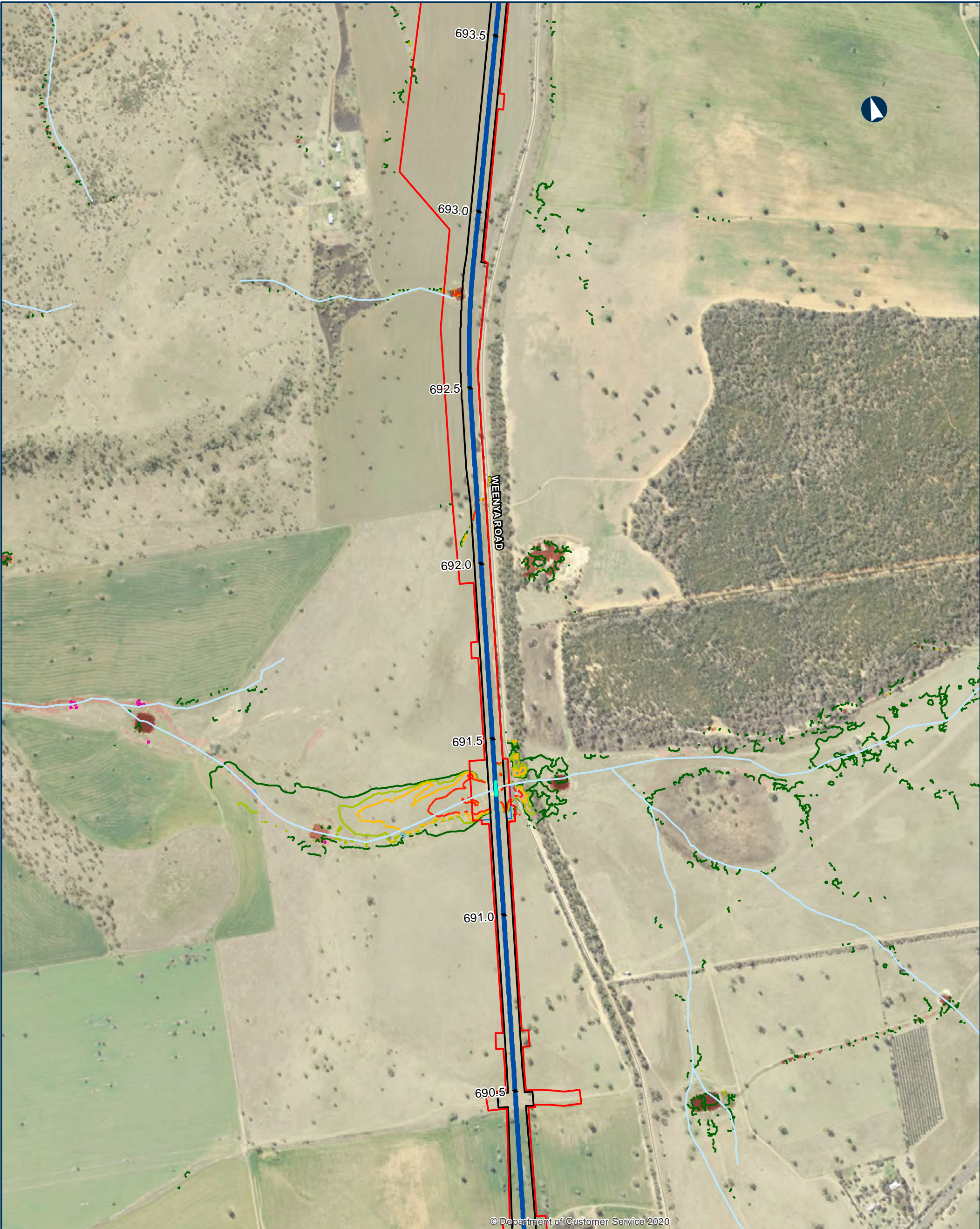
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Culvert | Change in Duration of Inundation | Existing Duration of Inundation |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.48

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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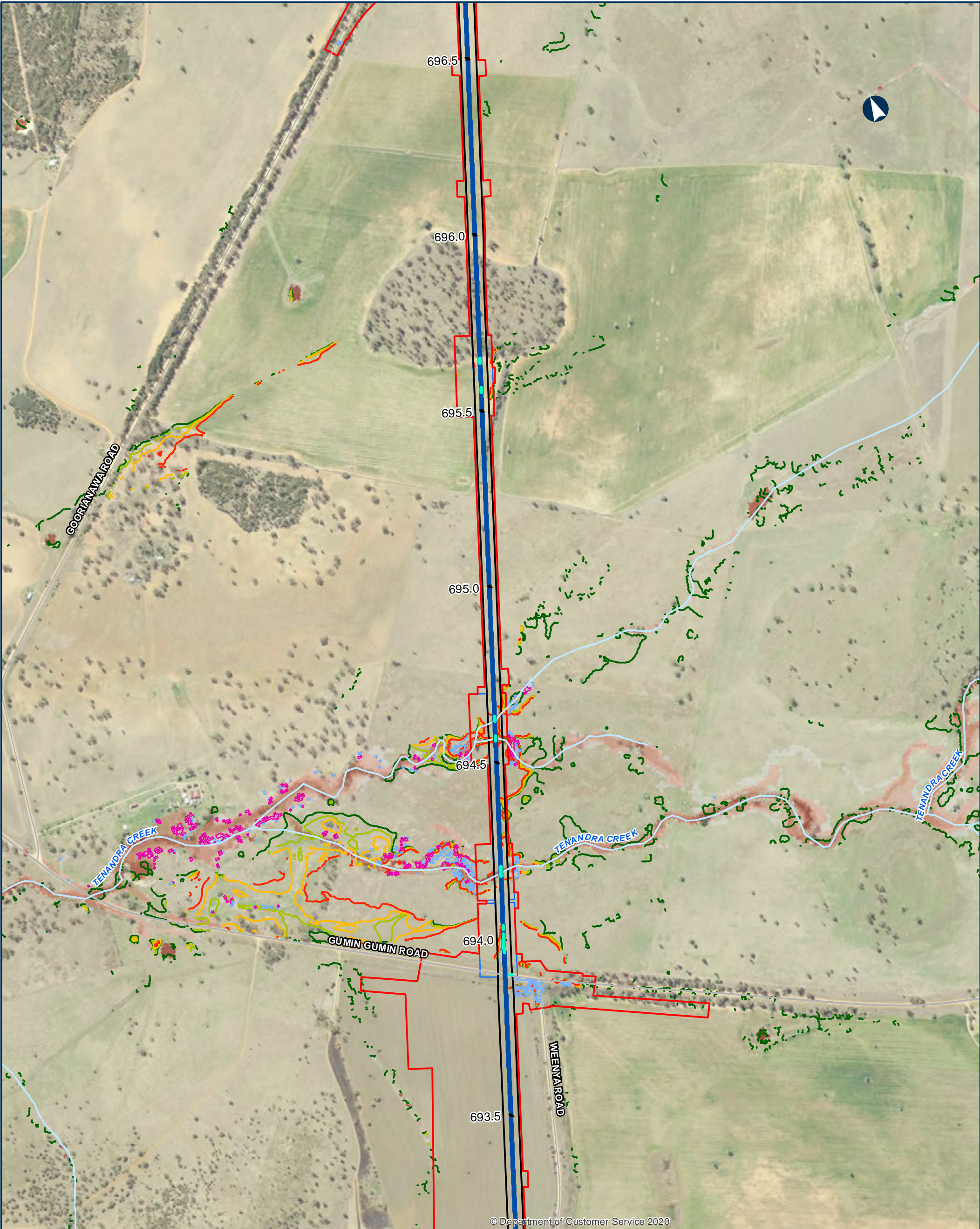
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Culvert
Alignment
Sub arterial road
Watercourse
The proposal
Drainage Control Area
Rail Corridor
- Change in Duration of Inundation
0%
5%
10%
20%
- Area of departure
Exist duration < 1hr, design duration > 1hr
Exist duration > 1hr, duration change > 10%
- Existing Duration of Inundation
< 1hr
1hr - 3hrs
3hrs - 6hrs
6hrs - 12hrs
12hrs - 24hrs
> 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.49

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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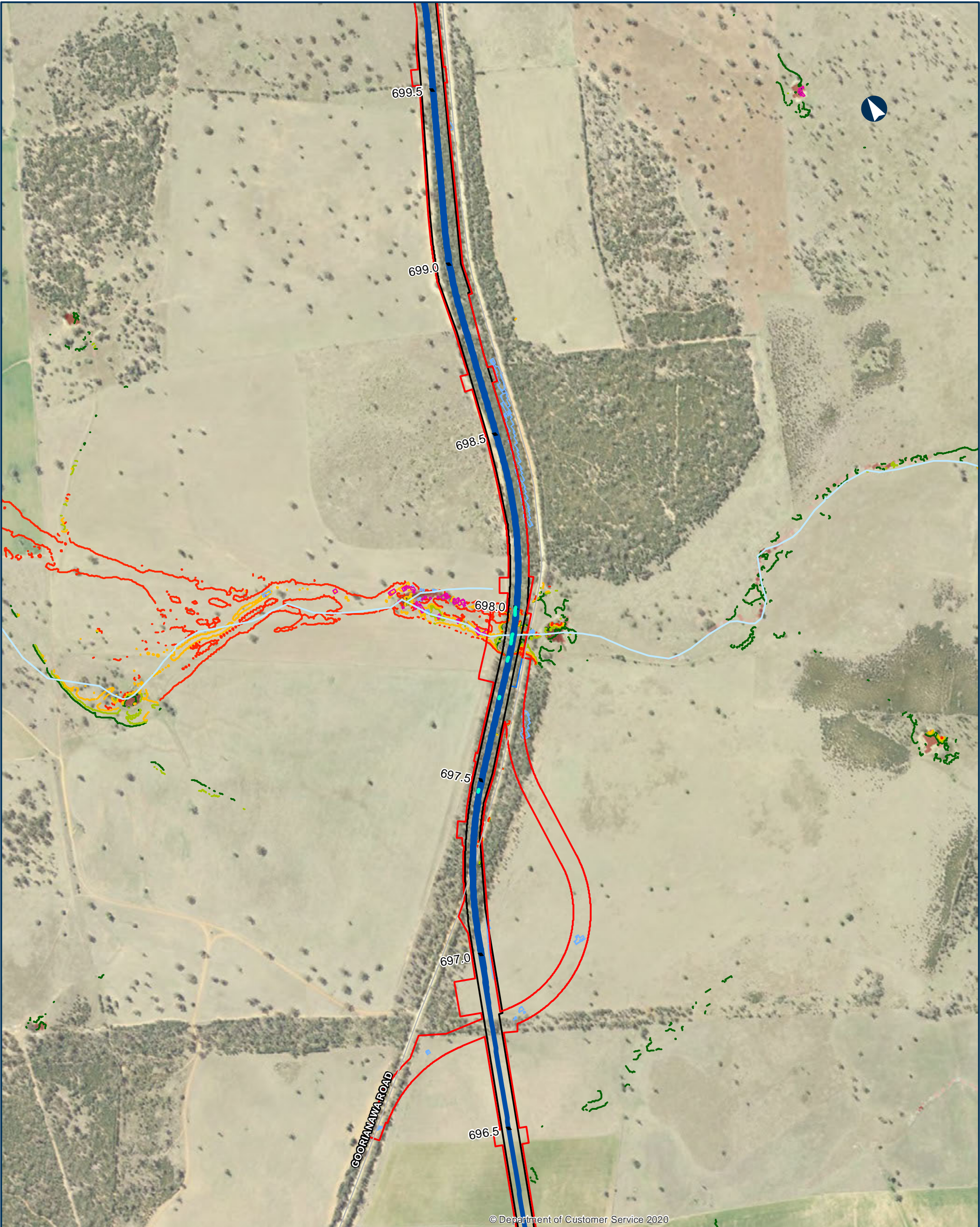
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------------|
| Culvert | Change in Duration of Inundation 0% | Existing Duration of Inundation < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Arterial road | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | | 12hrs - 24hrs |
| The proposal | Area of departure | > 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.50

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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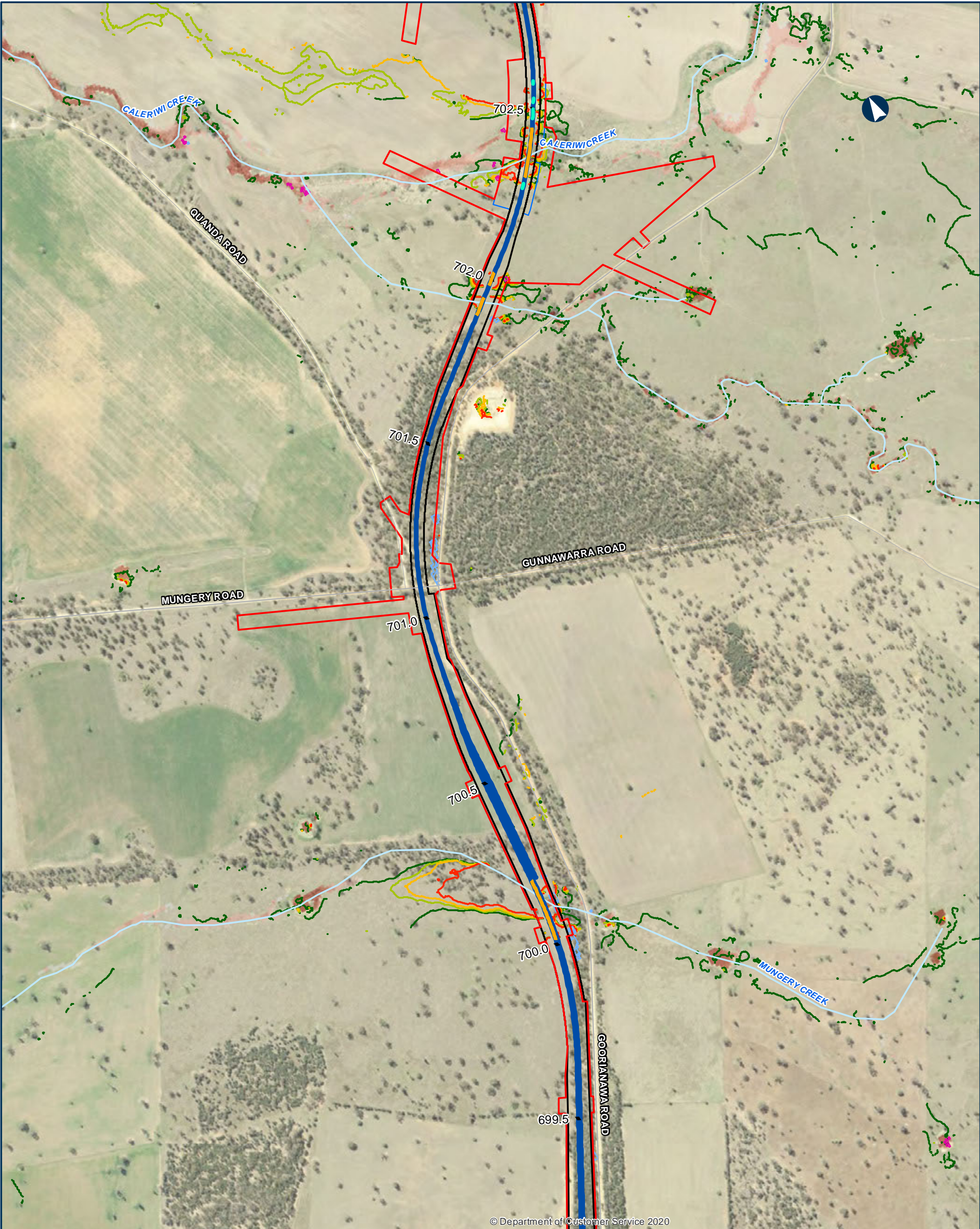
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.51

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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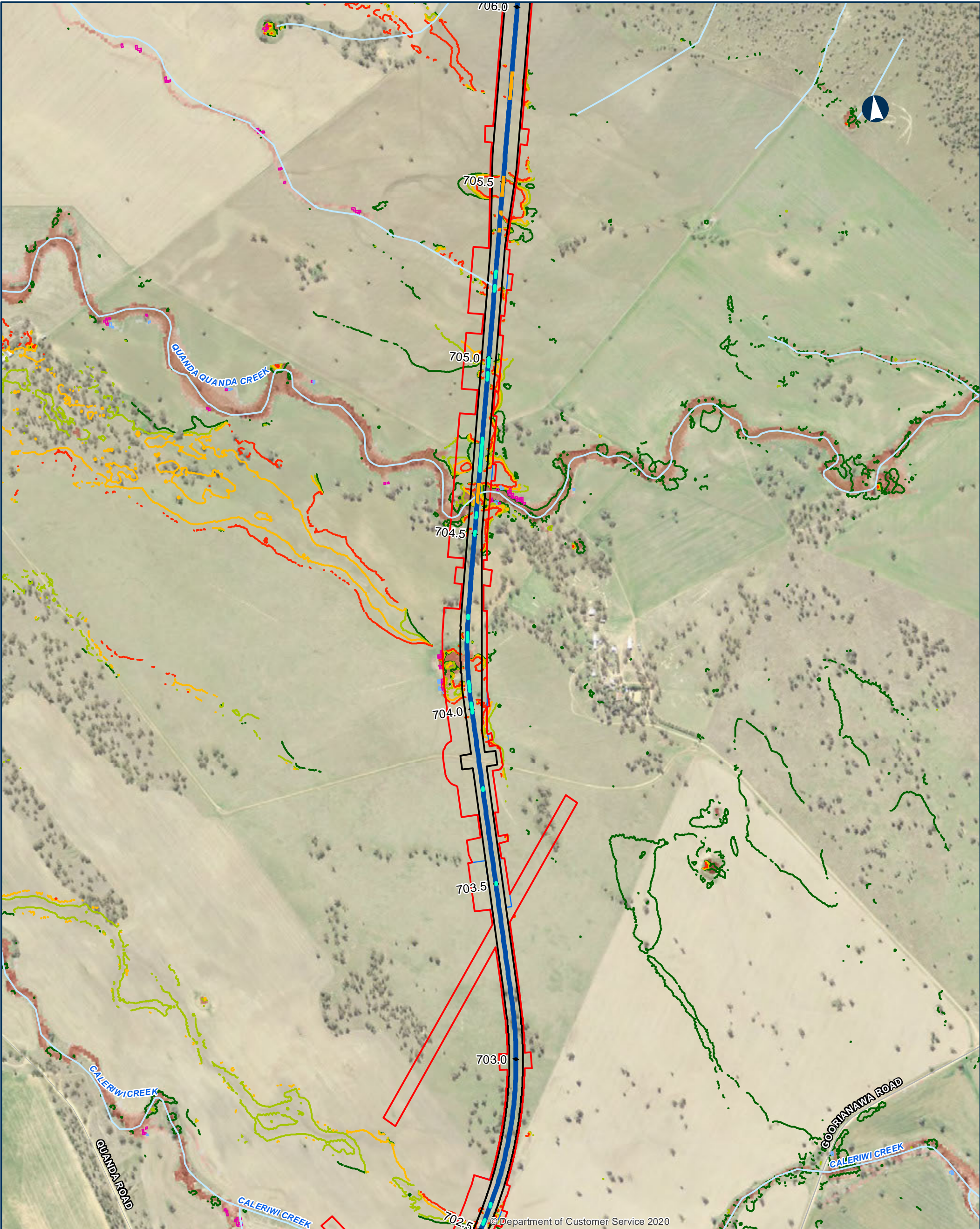
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.52

0200400

Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge

Culvert

Alignment

Sub arterial road

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

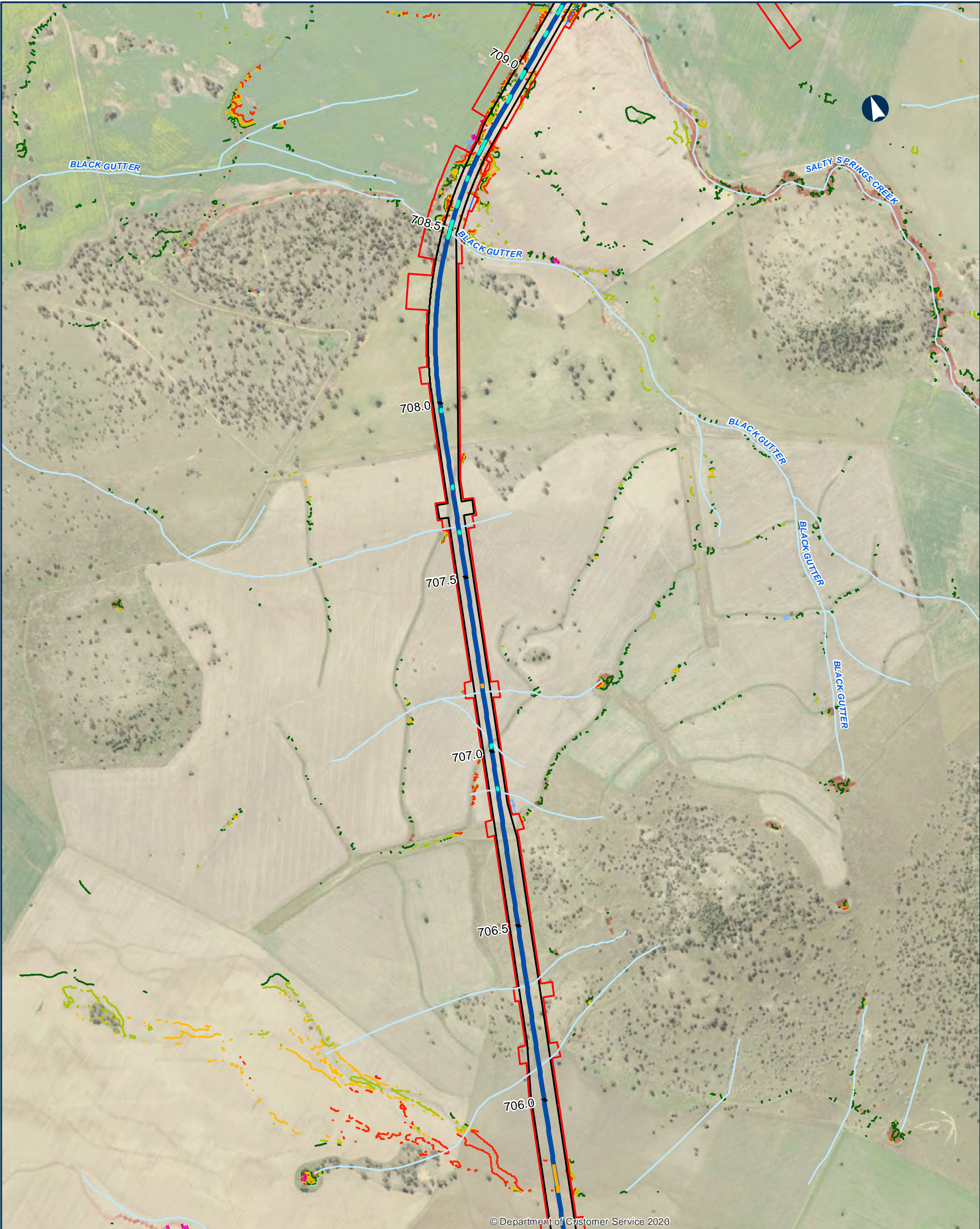
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INLAND RAIL

ARTC

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N:\AU Newcastlre\Projects\2219593\GIS\GIS_2500_NZN_V2\Maps\Deliverables_SPIR\EIS\Flooding_Hydrology\Appendices\2500_EIS\WPAPP099_QDL_Duration_spc_rev0.mxd



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.53

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

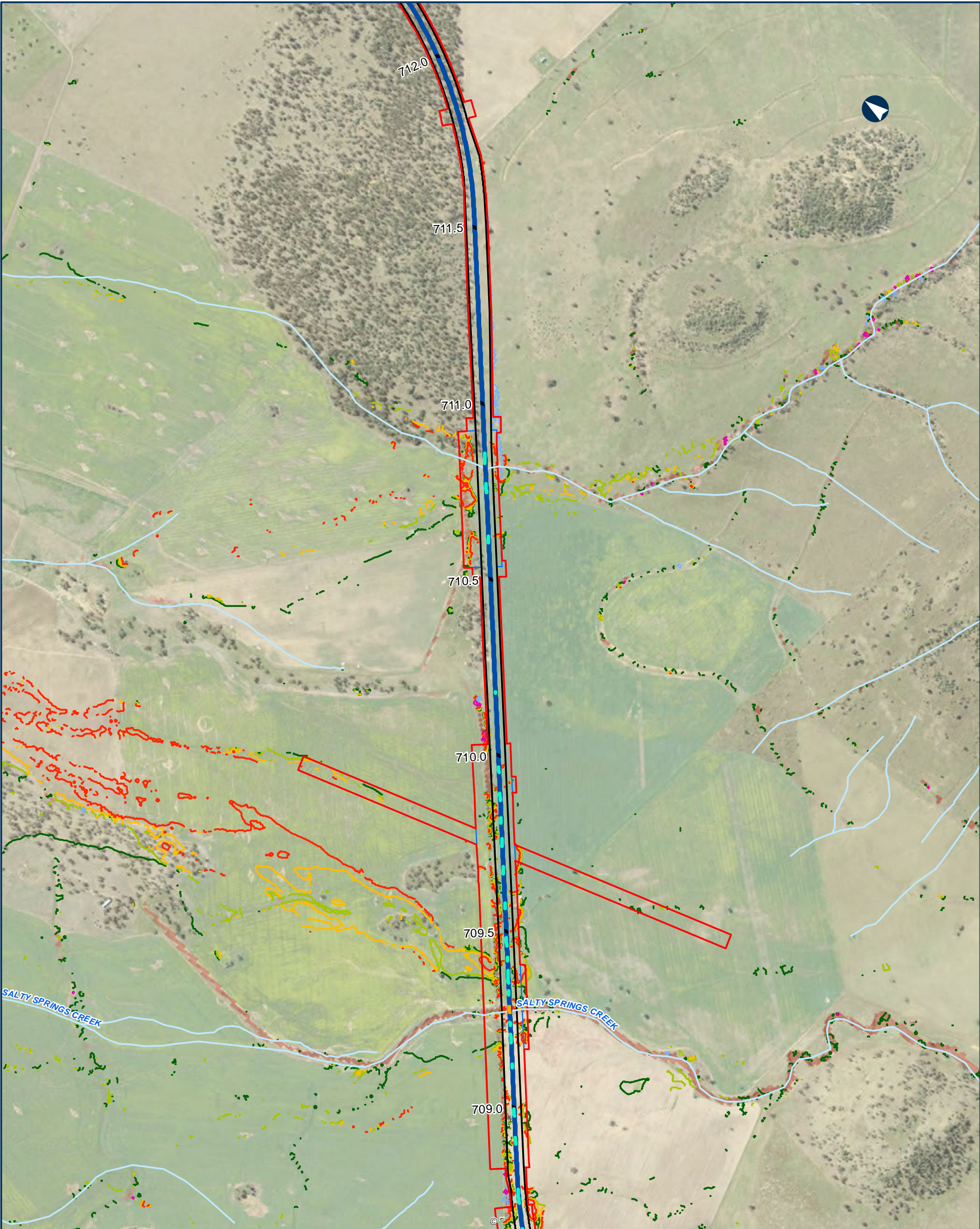
- Bridge
Culvert
Alignment
Watercourse
The proposal
Drainage Control Area
Rail Corridor
- Change in Duration of Inundation
0%
5%
10%
20%
- Area of departure
Exist duration <1hr, design duration >1hr
Exist duration >1hr, duration change > 10%

- Existing Duration of Inundation
< 1hr
1hr - 3hrs
3hrs - 6hrs
6hrs - 12hrs
12hrs - 24hrs
> 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.54

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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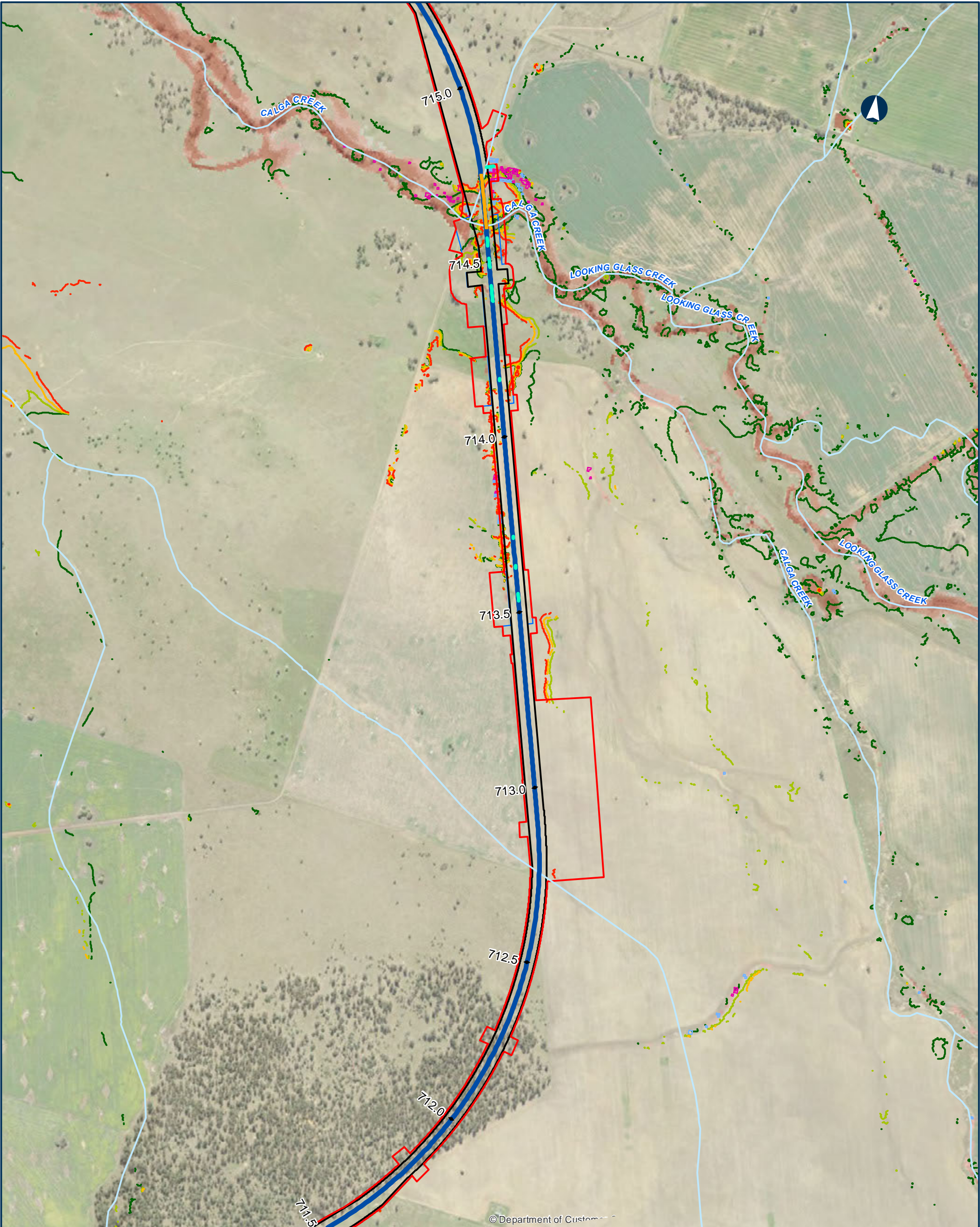
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Drainage Control Area | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.55

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge
Culvert
Alignment
Watercourse
The proposal
Drainage Control Area
Rail Corridor

Change in Duration of Inundation
0%
5%
10%
20%
Area of departure
Exist duration <1hr, design duration >1hr
Exist duration >1hr, duration change > 10%

Existing Duration of Inundation
< 1hr
1hr - 3hrs
3hrs - 6hrs
6hrs - 12hrs
12hrs - 24hrs
> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

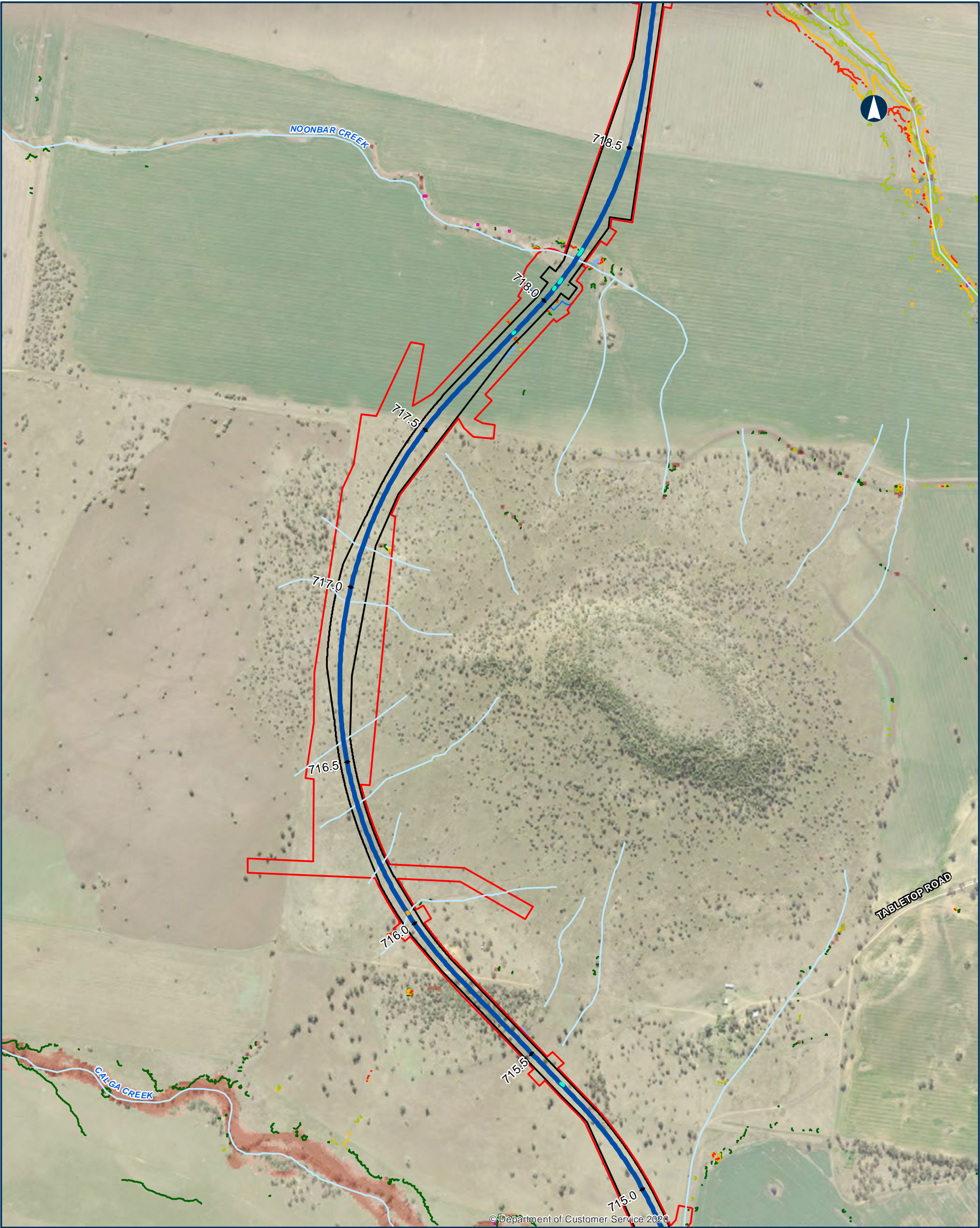
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.56

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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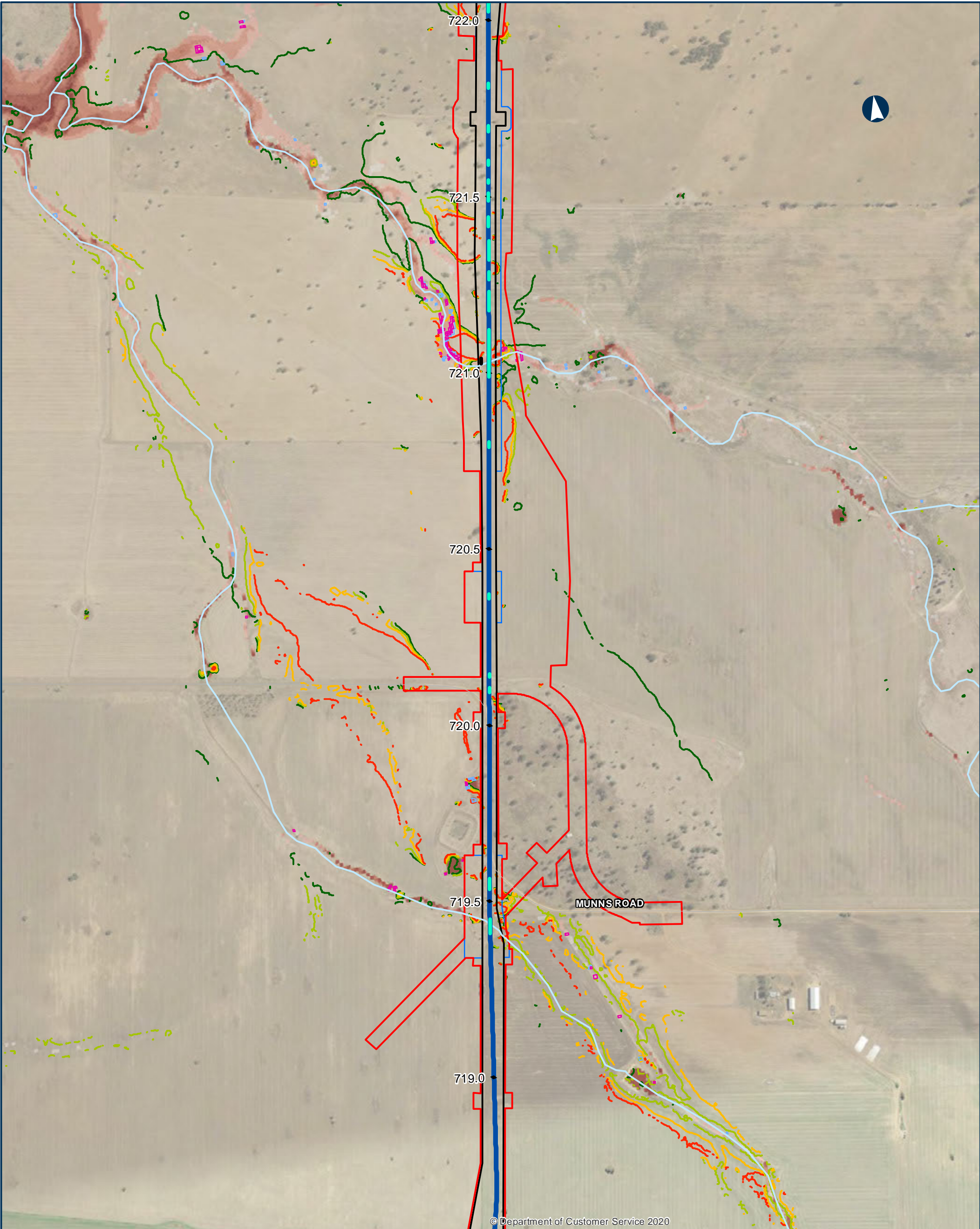
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Local road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.57

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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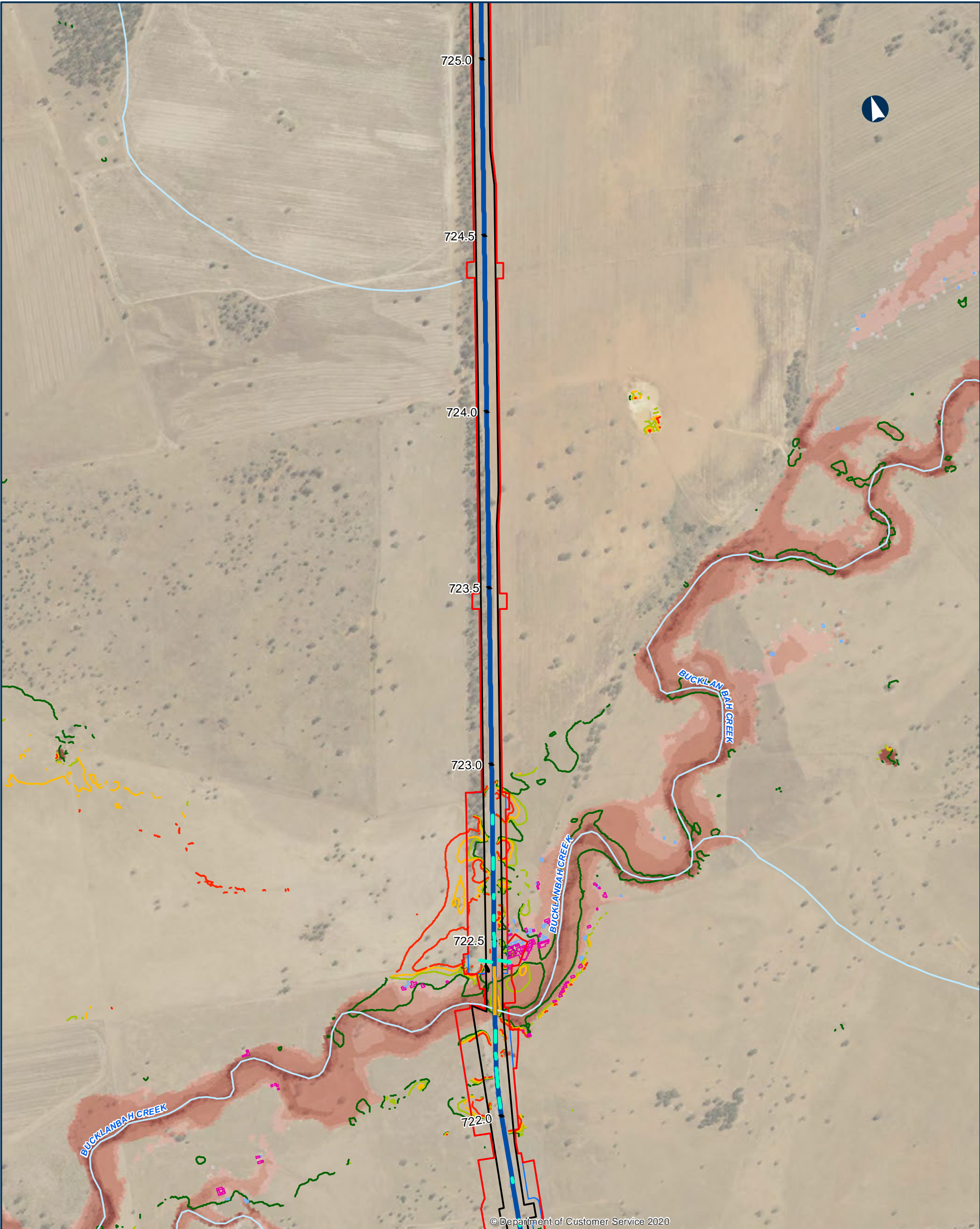
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Culvert | Change in Duration of Inundation | Existing Duration of Inundation |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration > 1hr, duration change > 10% | > 24hrs |
| Drainage Control Area | | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.58

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge

Culvert

Road QDL departure

Alignment

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

Area of departure

Existing Duration of Inundation

Existing duration <1hr, design duration >1hr

Existing duration >1hr, duration change > 10%

0%

5%

10%

20%

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

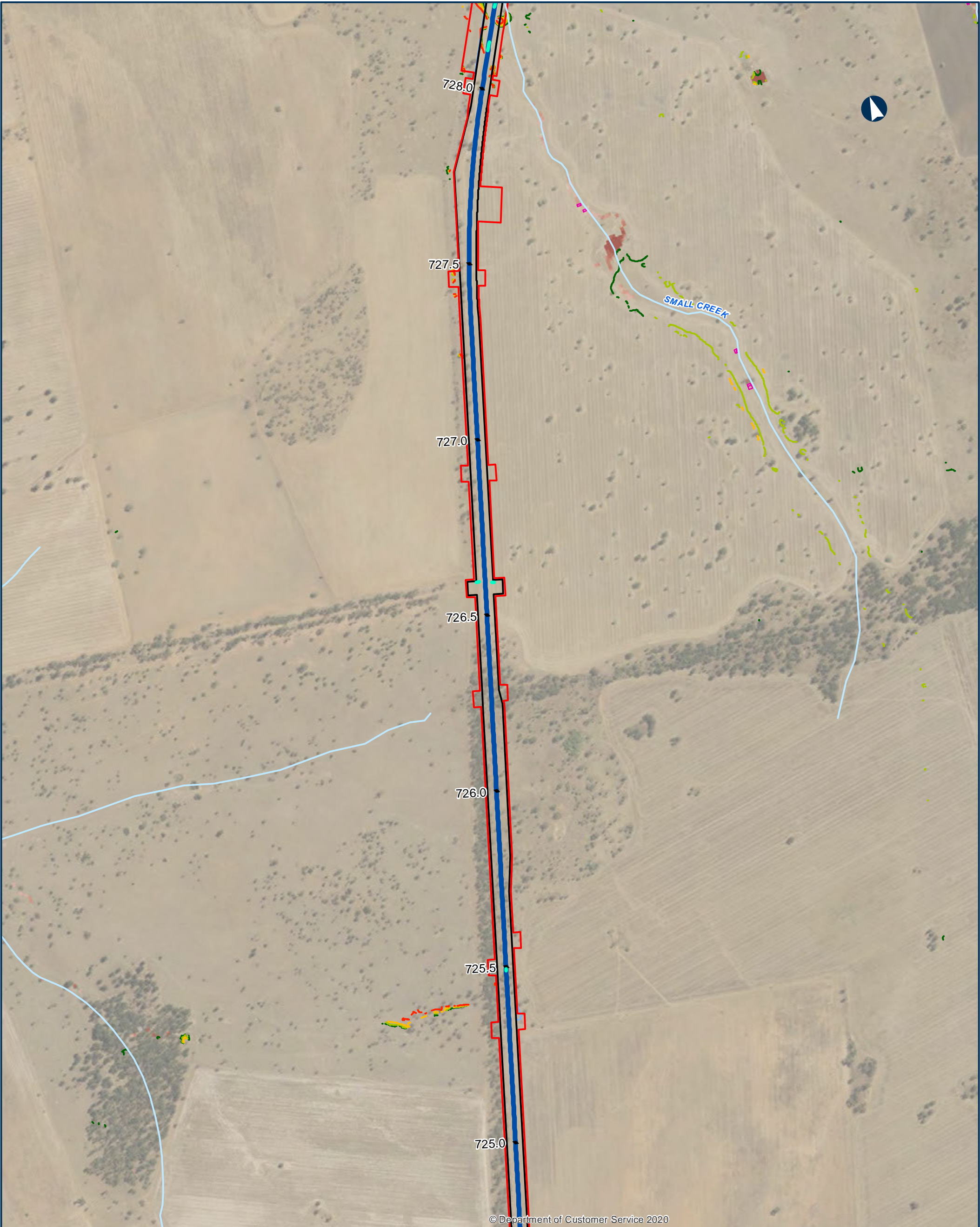
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INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.59

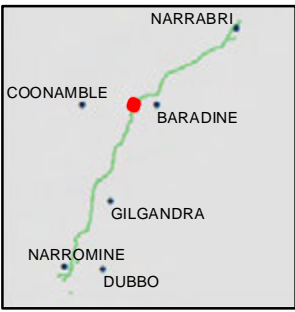
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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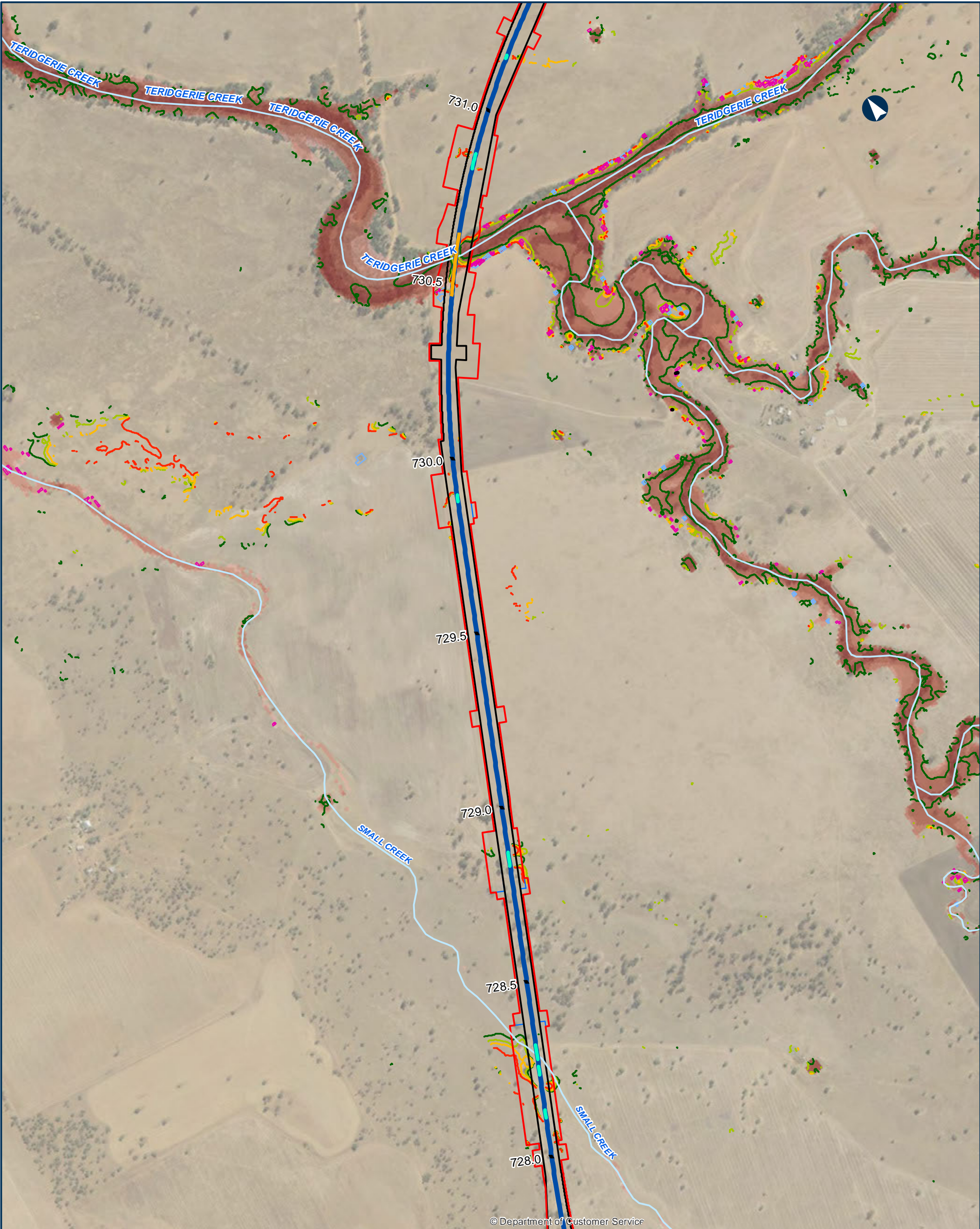
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------------|
| Culvert | Change in Duration of Inundation 0% | Existing Duration of Inundation < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Drainage Control Area | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.60

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.61

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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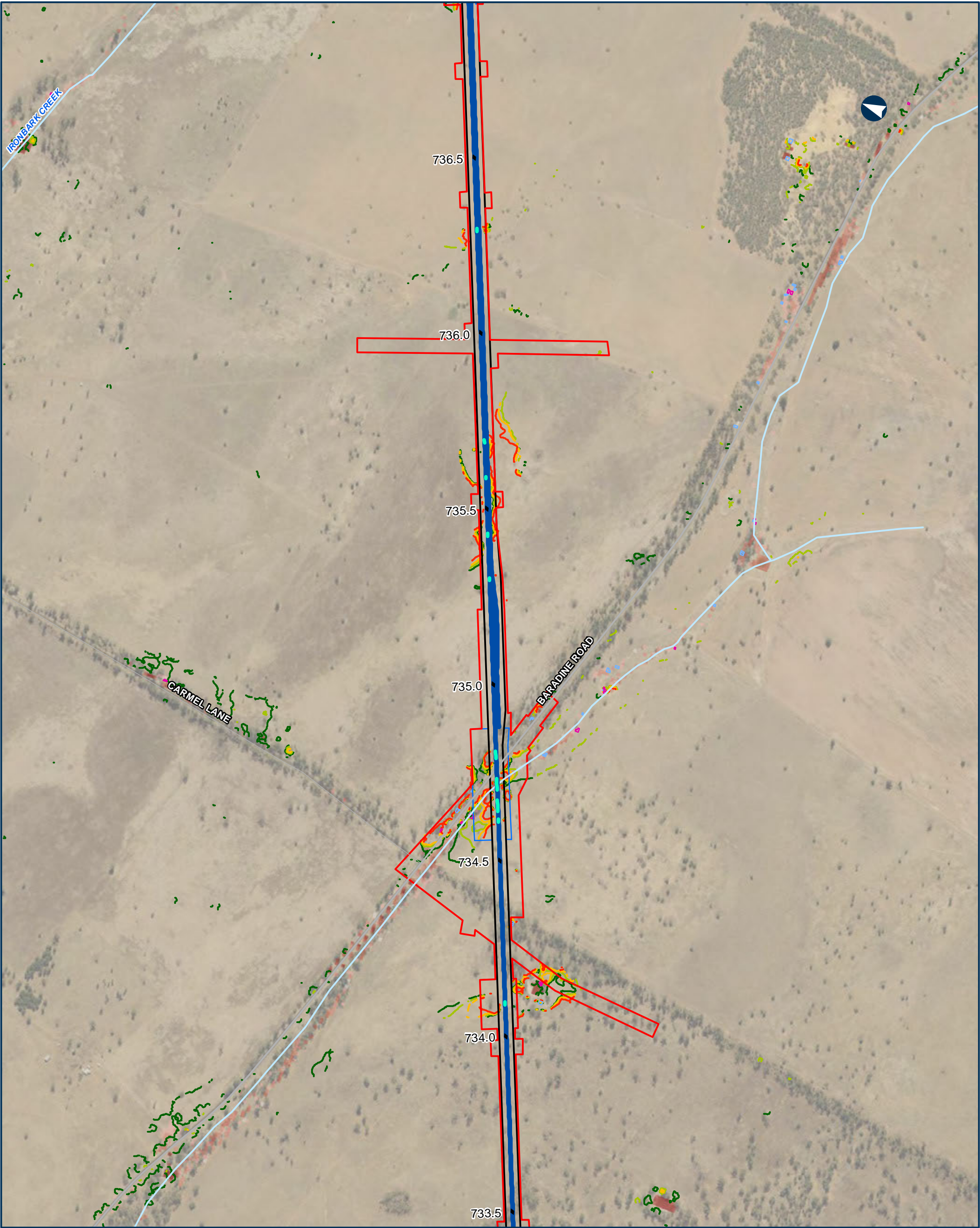
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertAlignmentArterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <p>Change in Duration of Inundation</p> <ul style="list-style-type: none">0%5%10%20% <p>Area of departure</p> <ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.62

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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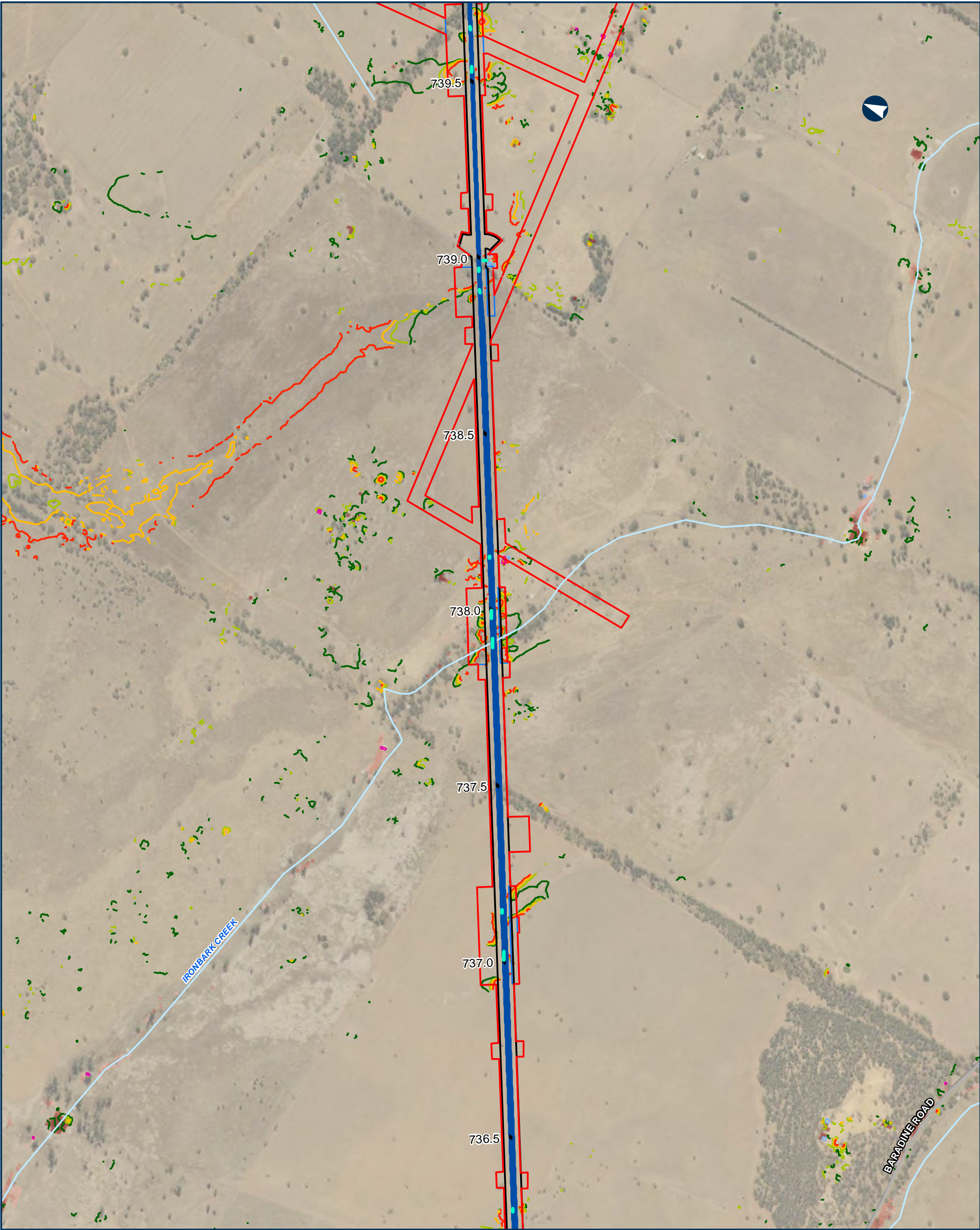
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertAlignmentArterial roadLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.63

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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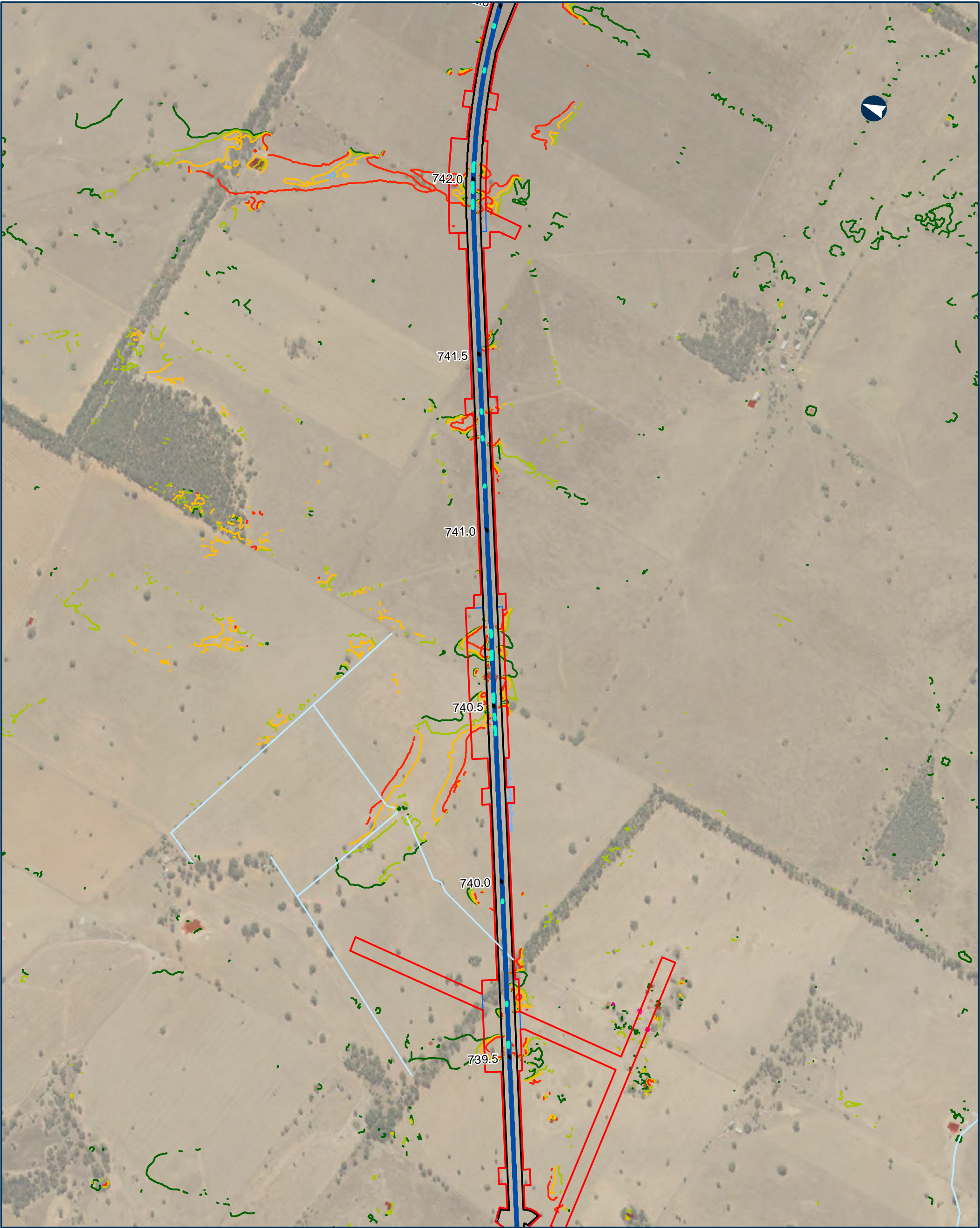
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Culvert | Change in Duration of Inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Arterial road | 5% | 1hr - 3hrs |
| Local road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.64

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertAlignmentLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.65

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

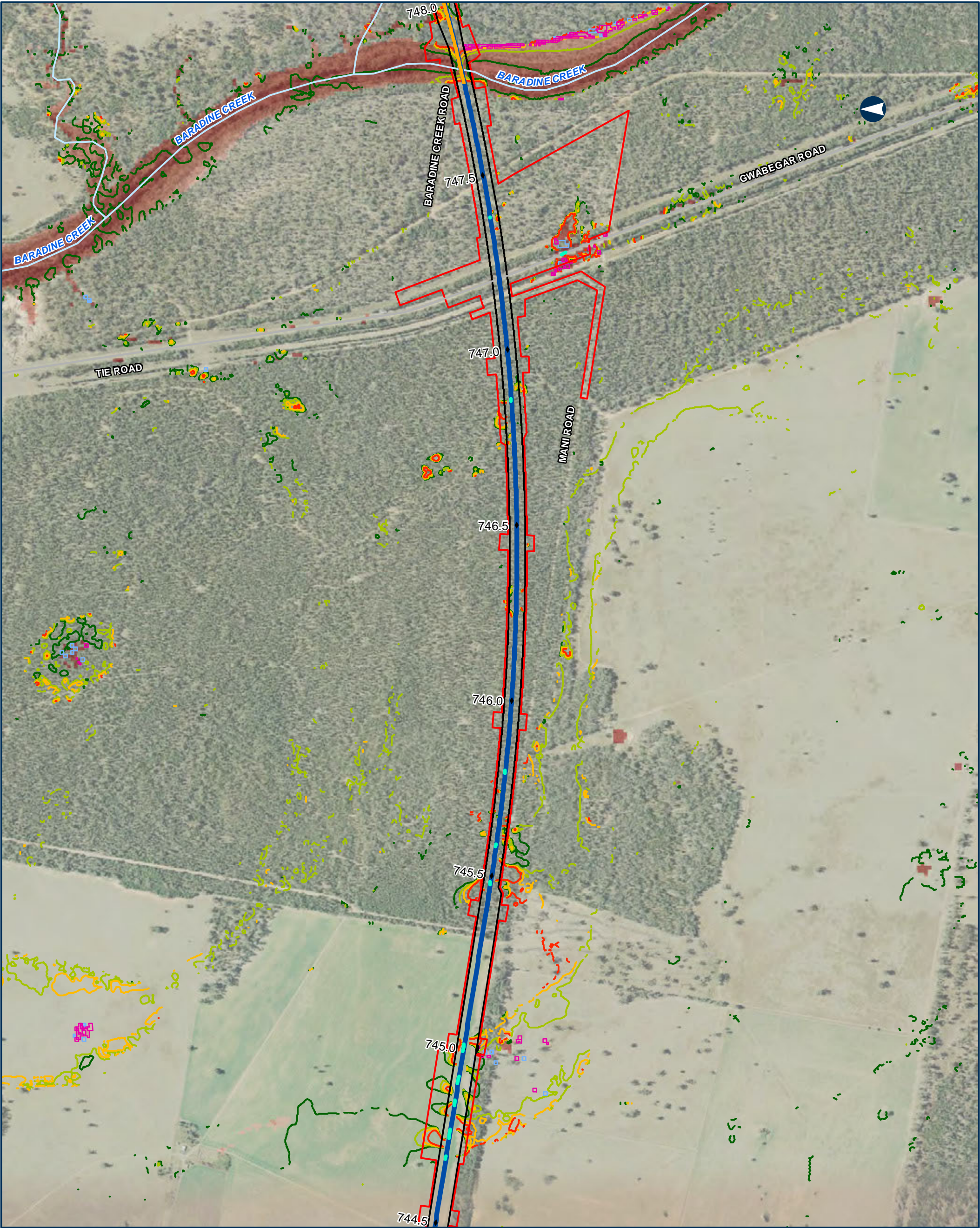
- | | | |
|--|---|---|
| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentLocal roadWatercourseThe proposalDrainage Control AreaRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|---|



INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.66

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Arterial road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.67

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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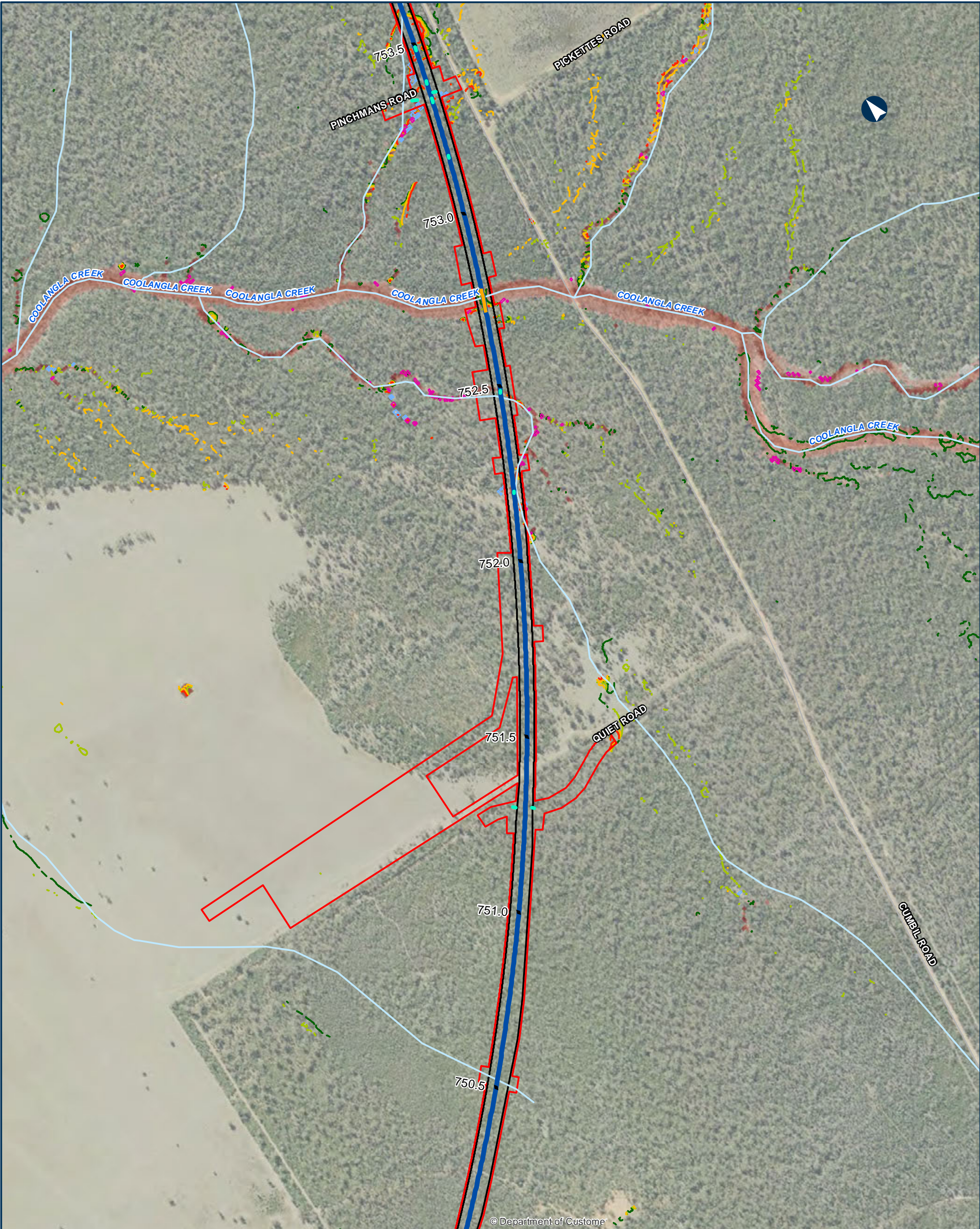
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration <1hr, design duration >1hr | > 24hrs |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.68

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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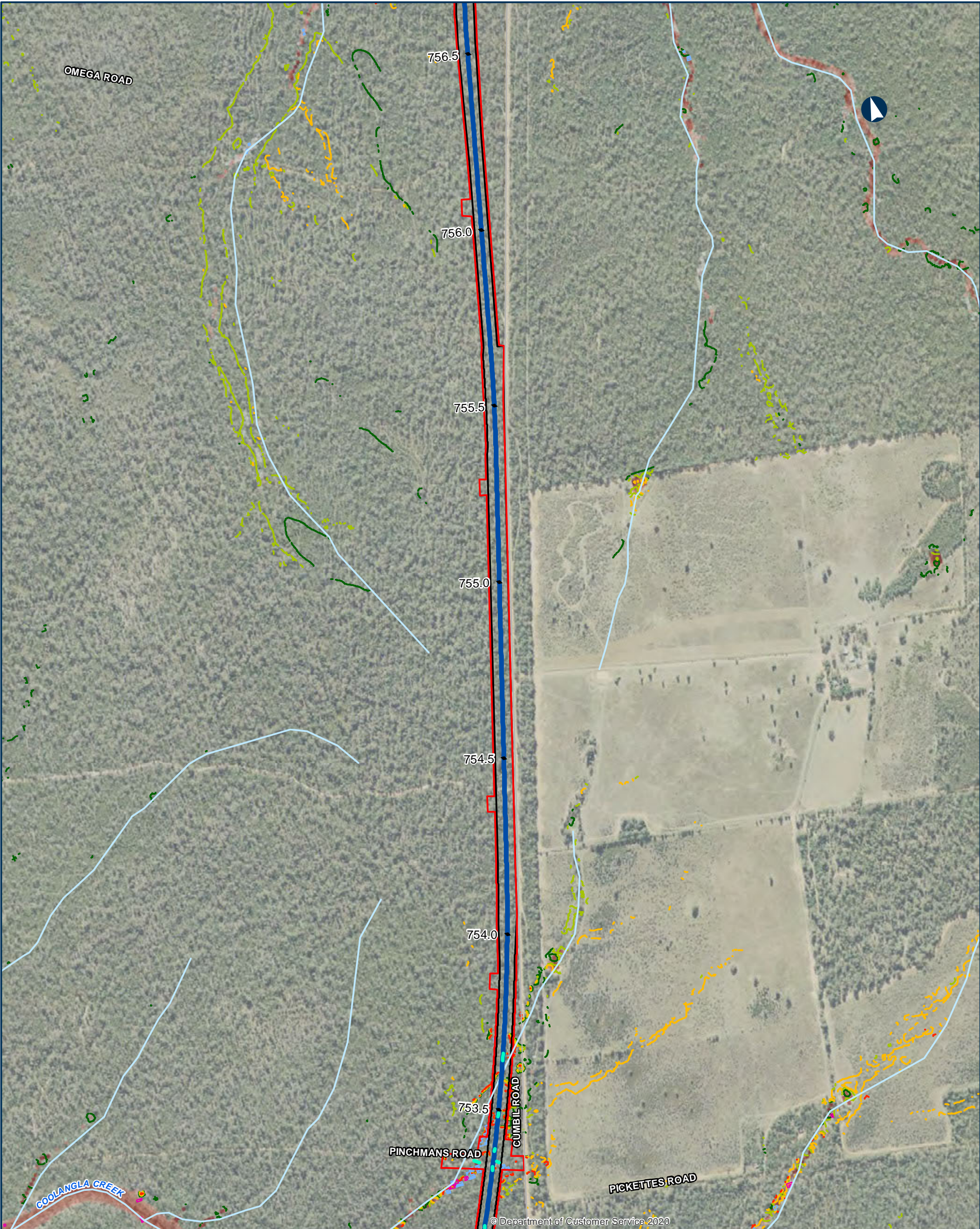
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



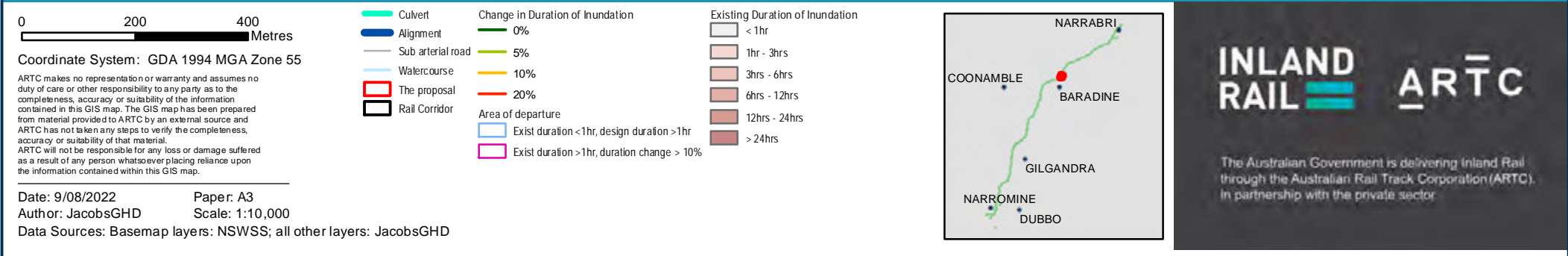
INLAND RAIL ARTC

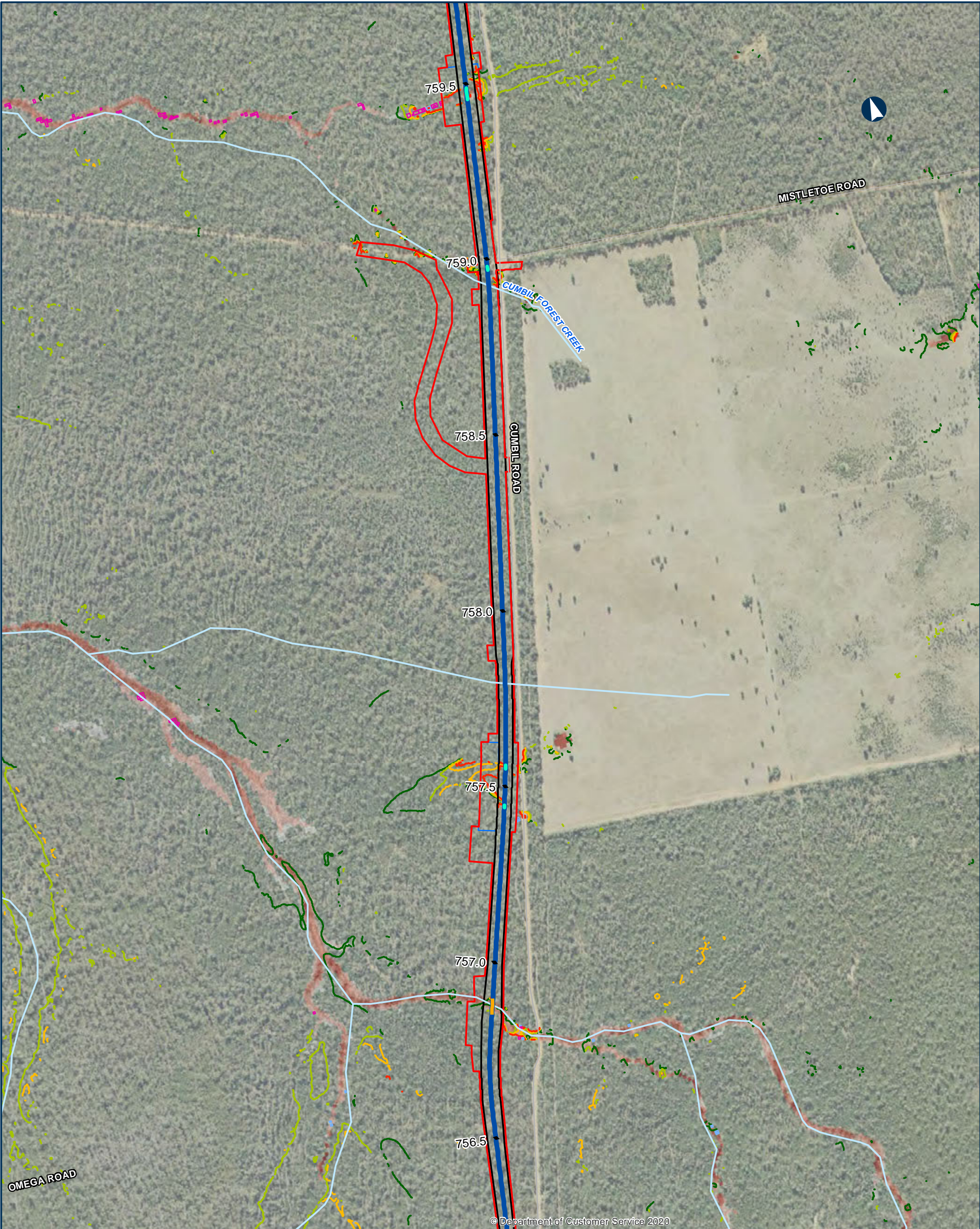
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.69





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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.70

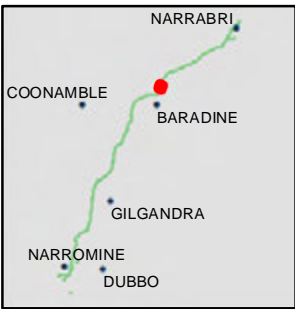
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Local road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.71

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Alignment

Sub arterial road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

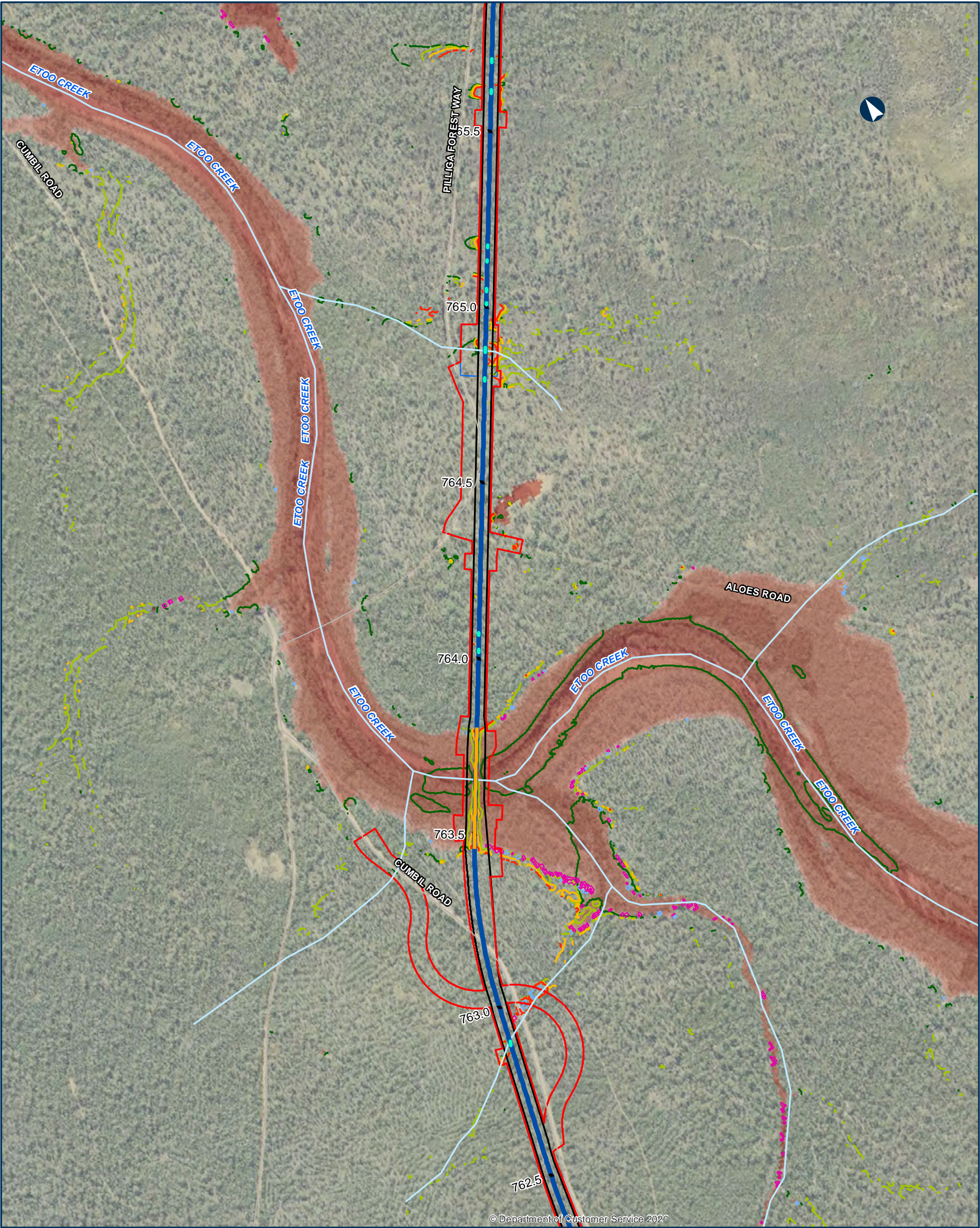
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.72

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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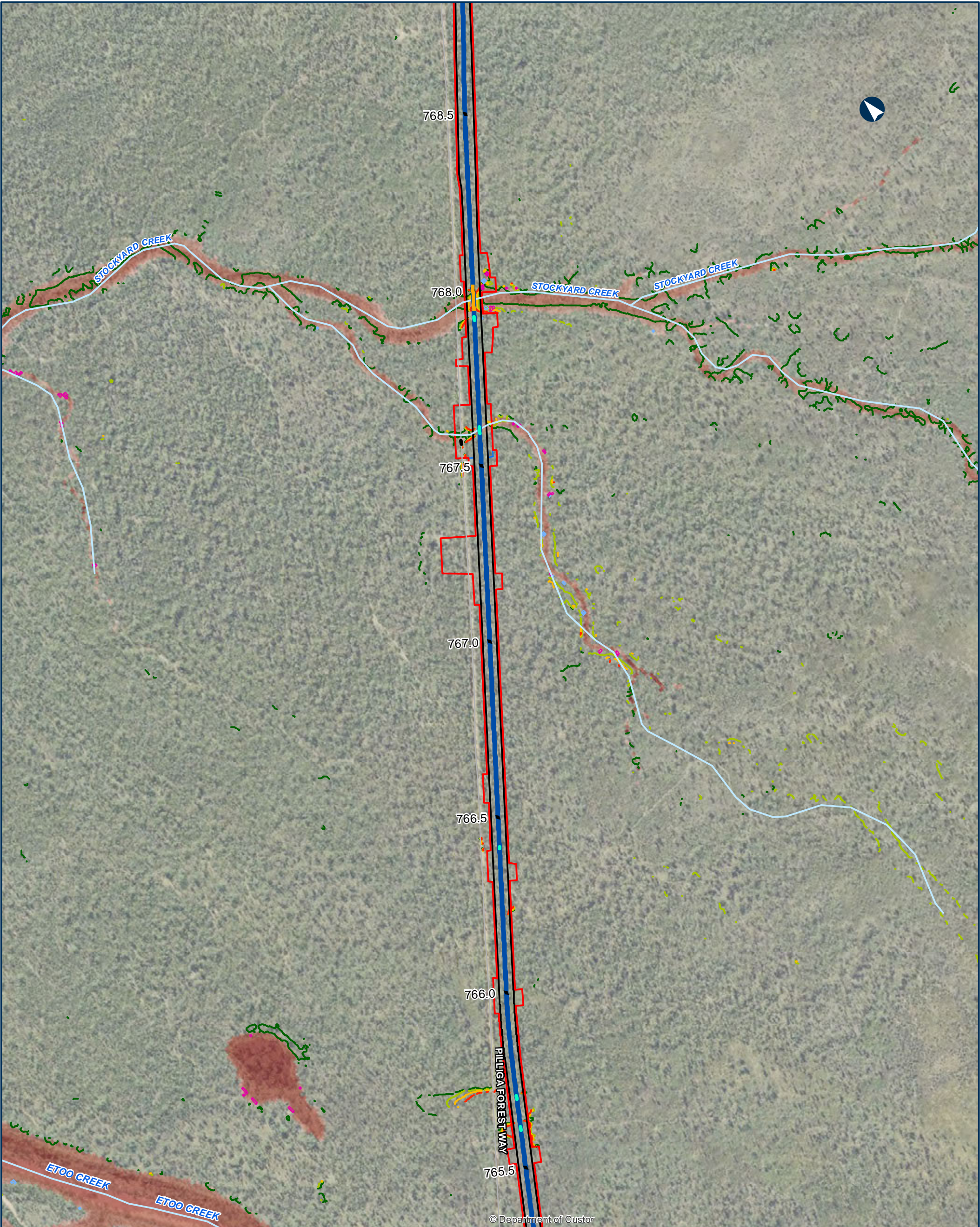
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.73

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge
Culvert
Road QDL departure
Alignment
Sub arterial road
Watercourse
The proposal
Drainage Control Area
Rail Corridor

Change in Duration of Inundation
0%
5%
10%
20%

Area of departure
Exist duration <1hr, design duration >1hr
Exist duration >1hr, duration change > 10%

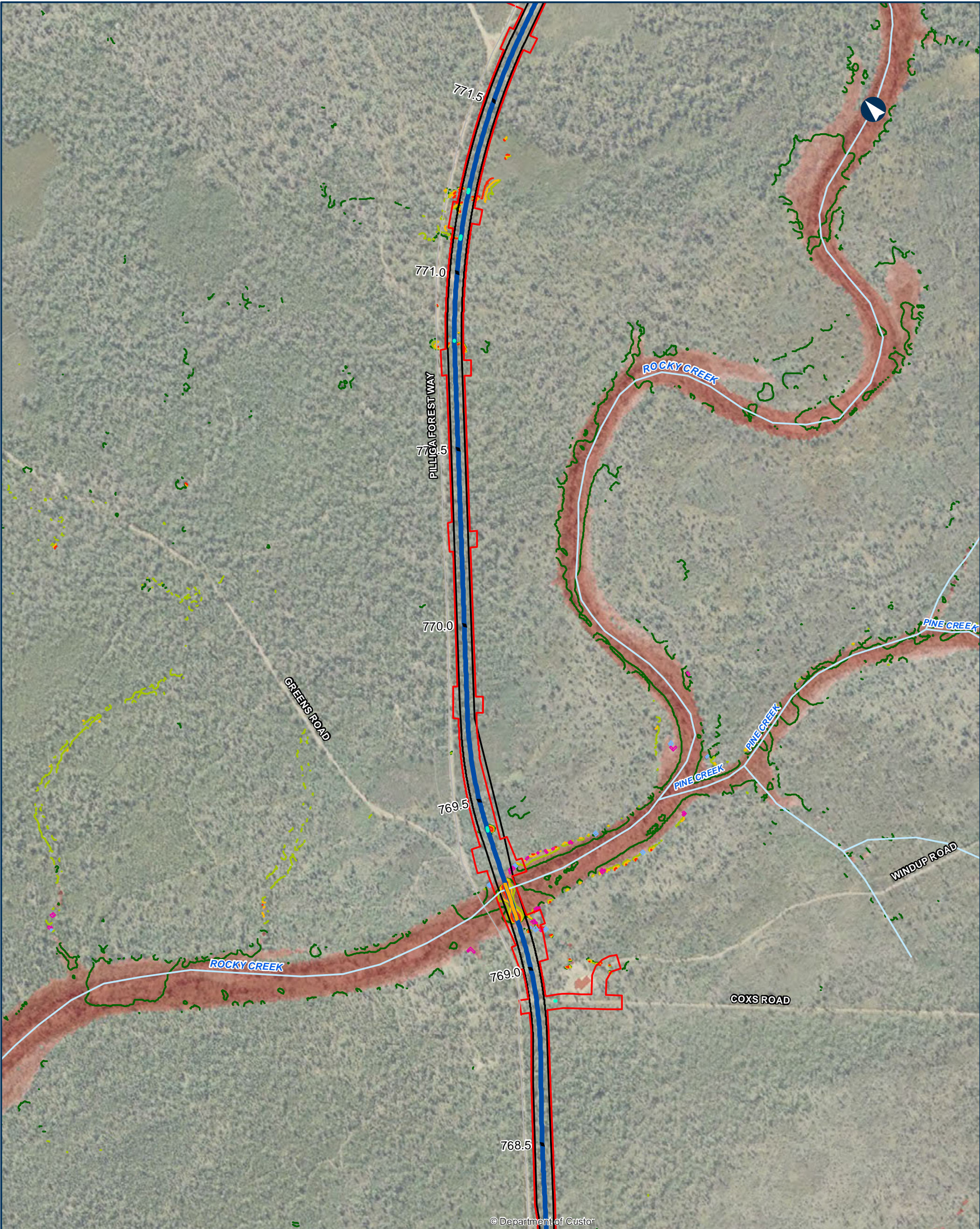
Existing Duration of Inundation
< 1hr
1hr - 3hrs
3hrs - 6hrs
6hrs - 12hrs
12hrs - 24hrs
> 24hrs

INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.74

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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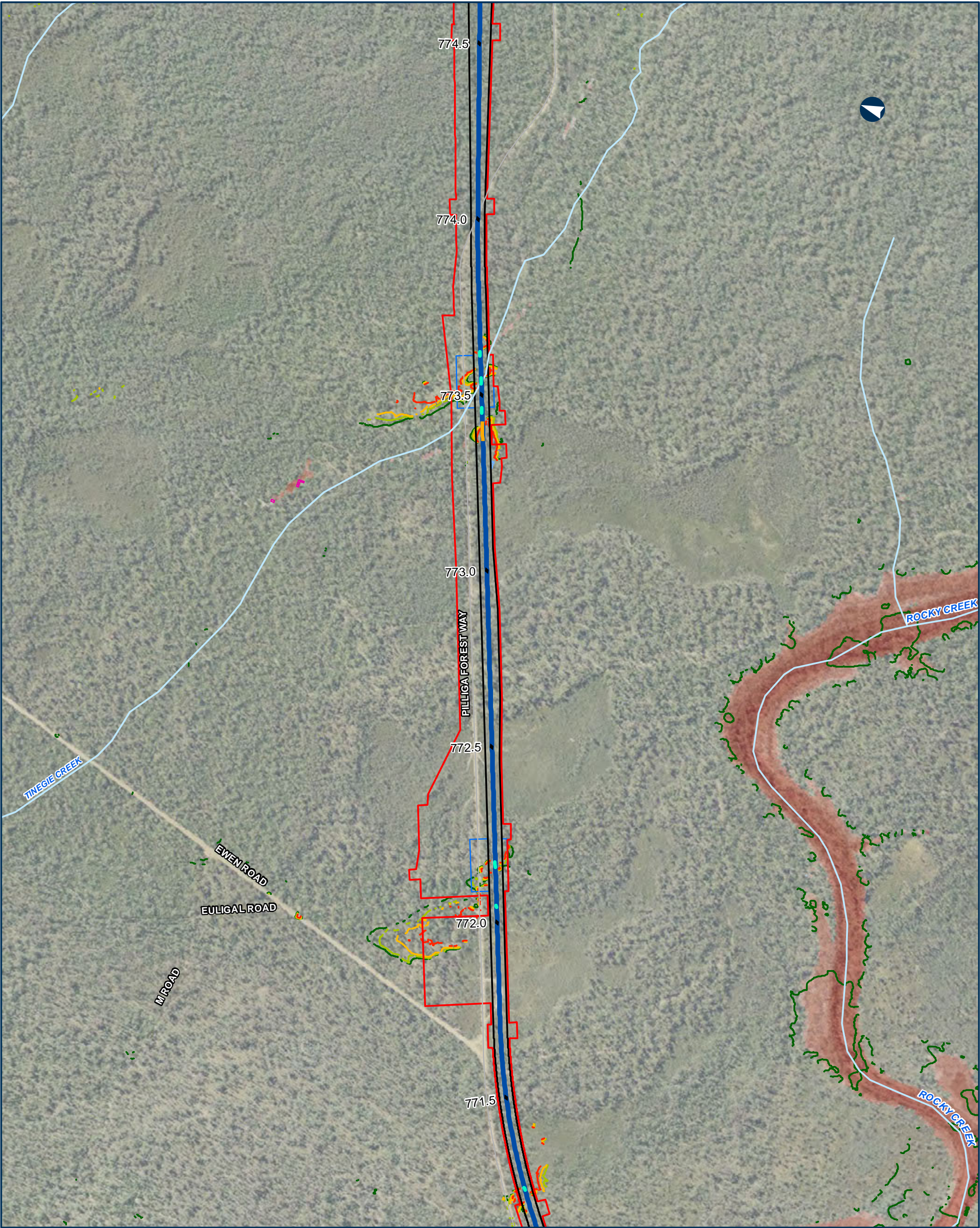
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration <1hr, design duration >1hr | > 24hrs |
| | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.75

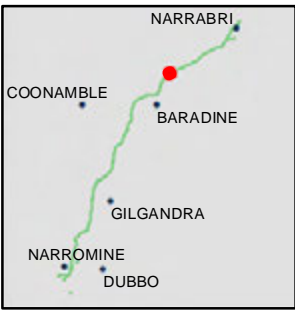
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Coordinate System: GDA 1994 MGA Zone 55

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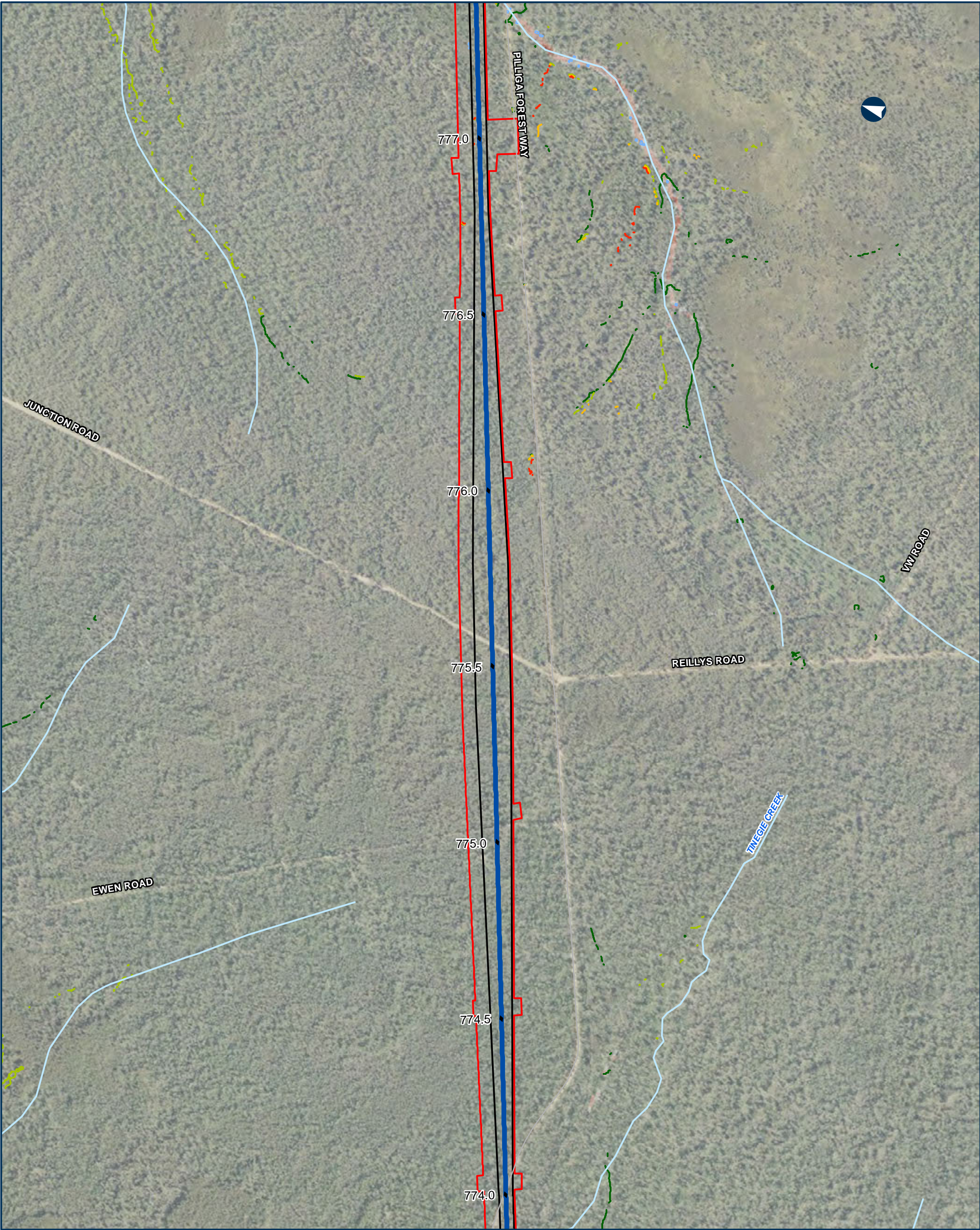
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | | 12hrs - 24hrs |
| Drainage Control Area | Area of departure | > 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.76

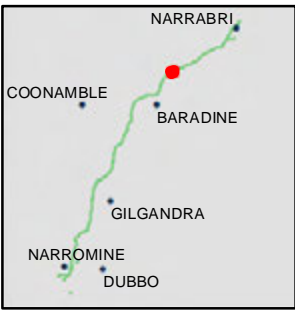
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Coordinate System: GDA 1994 MGA Zone 55

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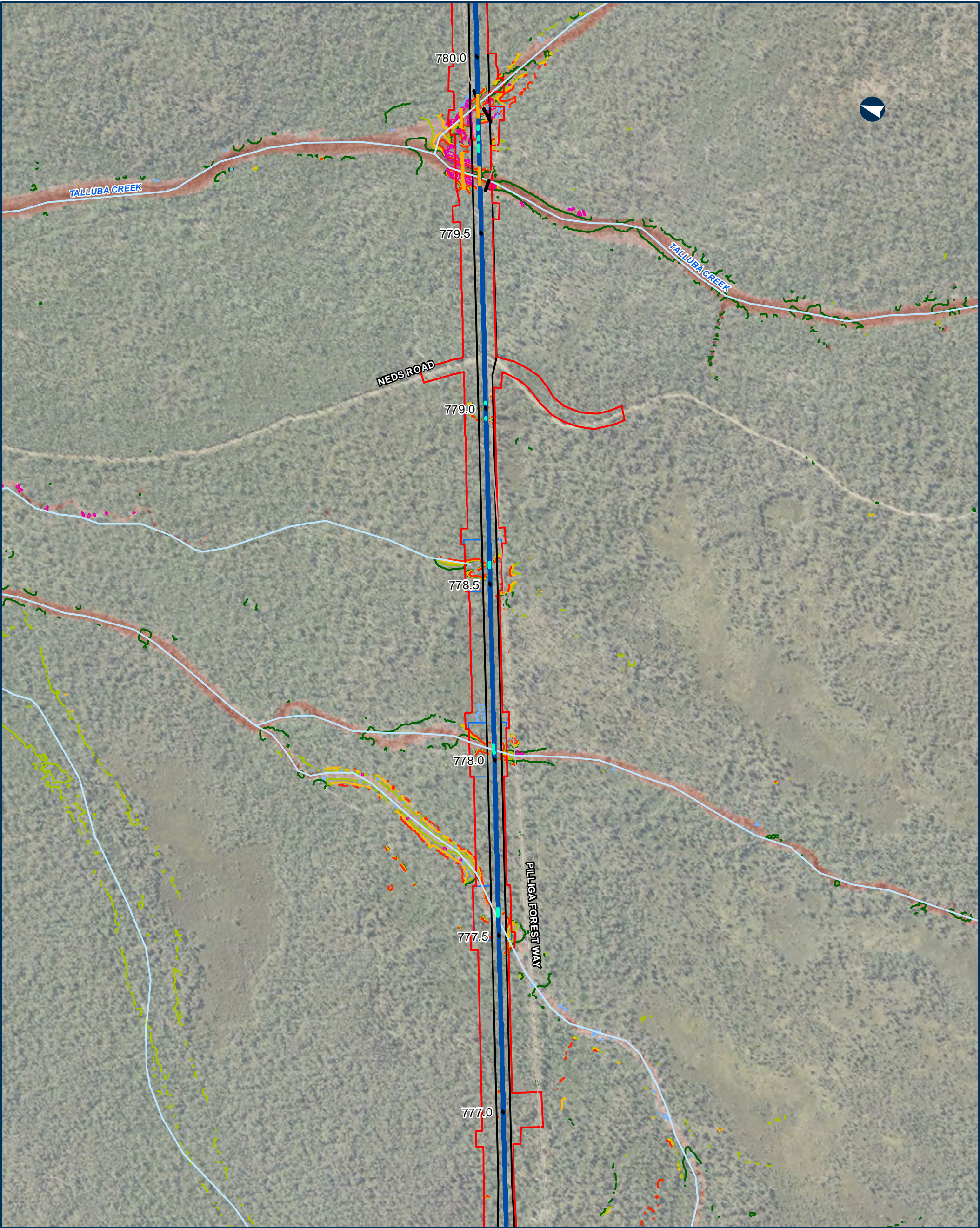
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-------------------|---|---------------------------------|
| Alignment | Change in Duration of Inundation | Existing Duration of Inundation |
| Sub arterial road | 0% | < 1hr |
| Watercourse | 5% | 1hr - 3hrs |
| The proposal | 10% | 3hrs - 6hrs |
| Rail Corridor | 20% | 6hrs - 12hrs |
| | Area of departure | 12hrs - 24hrs |
| | Exist duration <1hr, design duration >1hr | > 24hrs |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.77

0 200 400 Metres

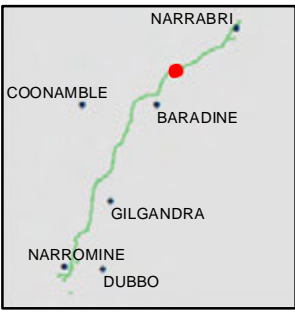
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Date: 9/08/2022 Paper: A3
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Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

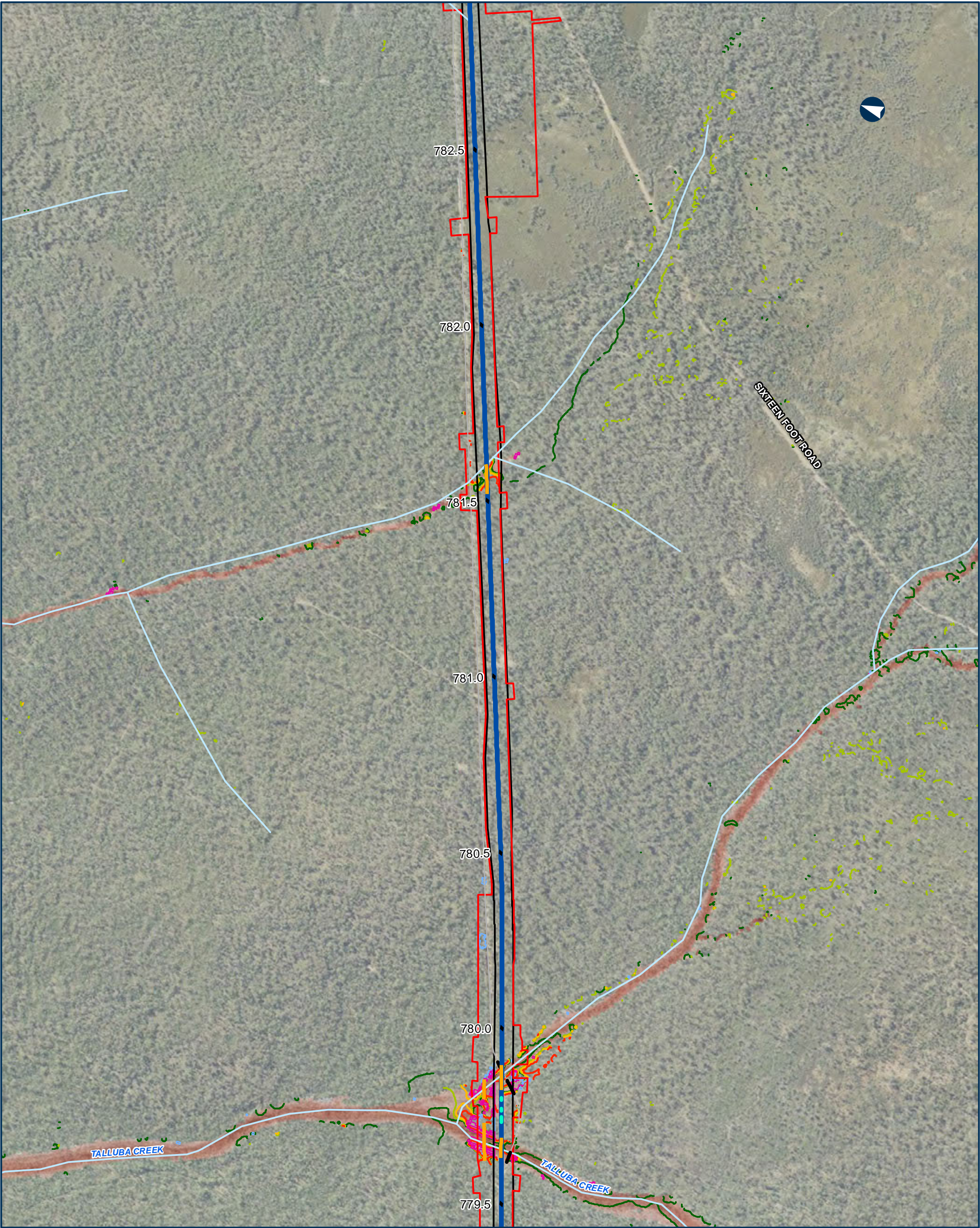
- | | |
|-----------------------|--|
| Bridge | Change in Duration of Inundation |
| Culvert | 0% |
| Road QDL departure | 5% |
| Alignment | 10% |
| Sub arterial road | 20% |
| Watercourse | Area of departure |
| The proposal | Exist duration <1hr, design duration >1hr |
| Drainage Control Area | Exist duration >1hr, duration change > 10% |
| Rail Corridor | |

- | |
|---------------------------------|
| Existing Duration of Inundation |
| < 1hr |
| 1hr - 3hrs |
| 3hrs - 6hrs |
| 6hrs - 12hrs |
| 12hrs - 24hrs |
| > 24hrs |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.78

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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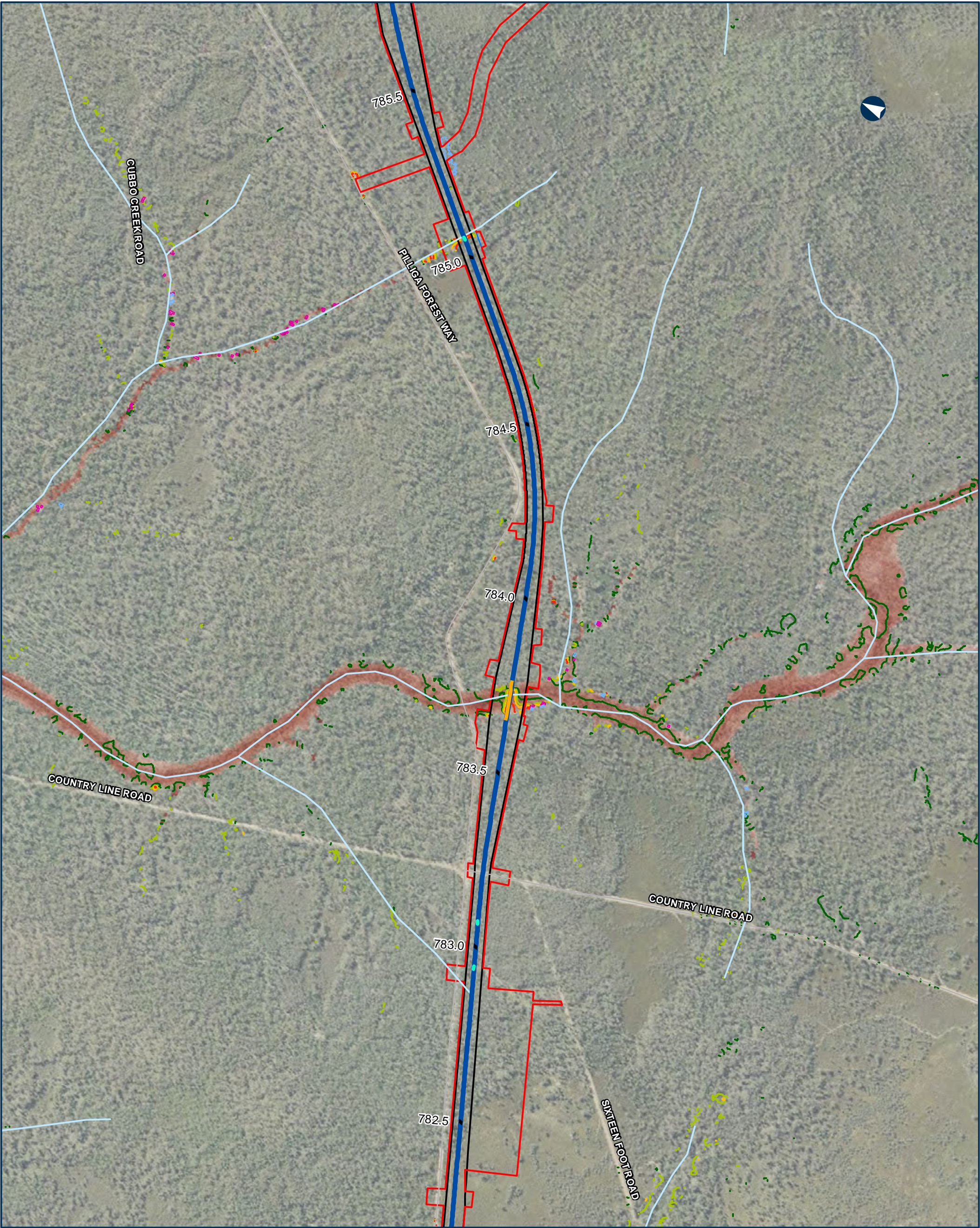
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration <1hr, design duration >1hr | > 24hrs |
| Rail Corridor | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.79

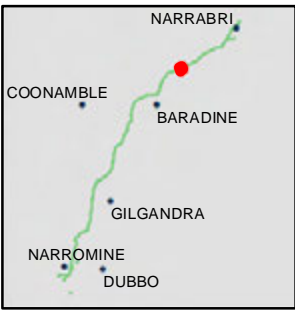
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Coordinate System: GDA 1994 MGA Zone 55

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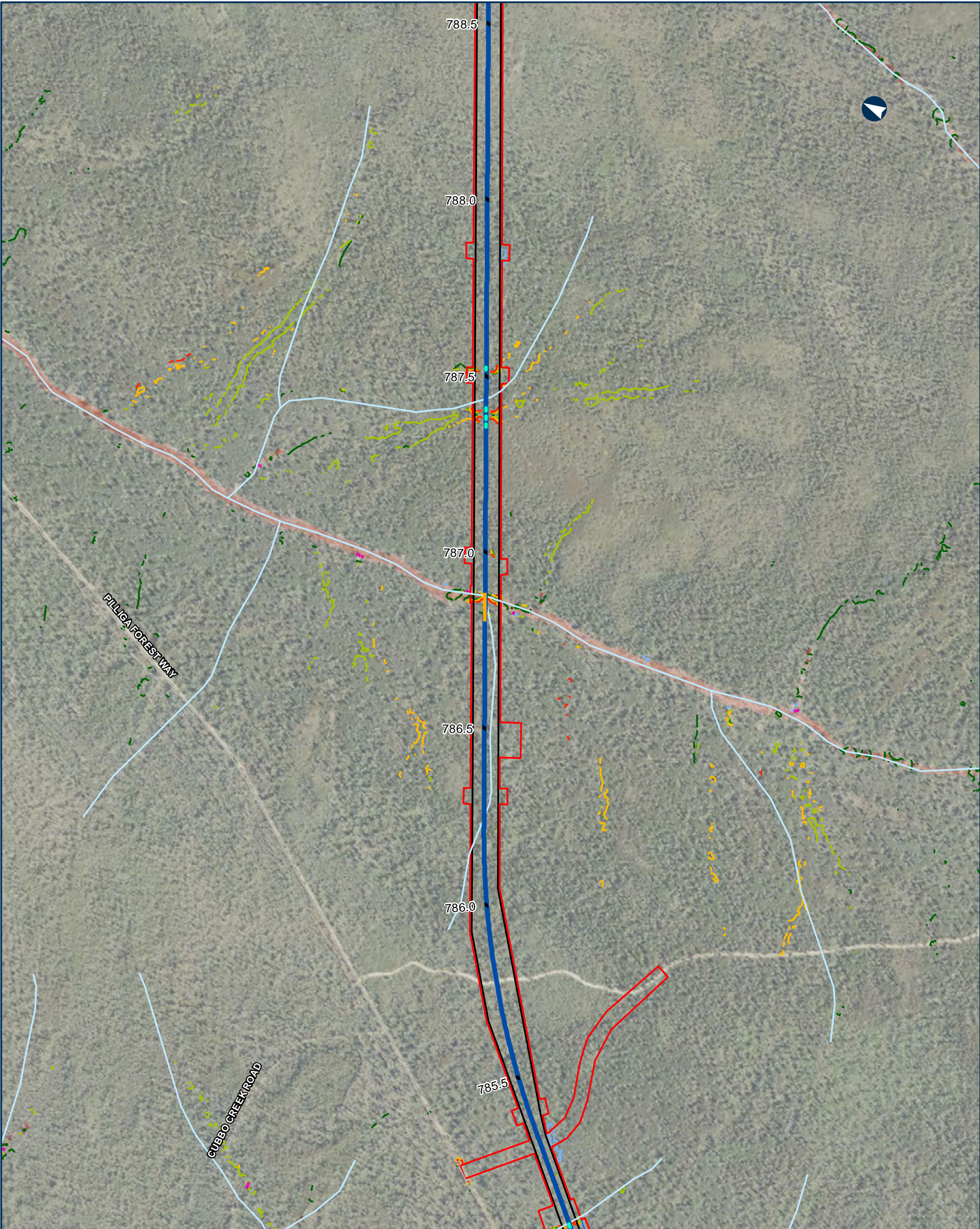
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | | 12hrs - 24hrs |
| Drainage Control Area | Area of departure | > 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.80

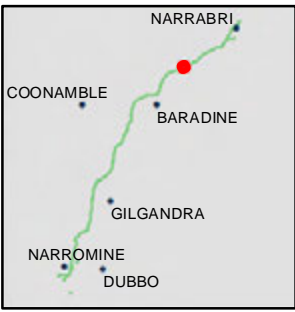
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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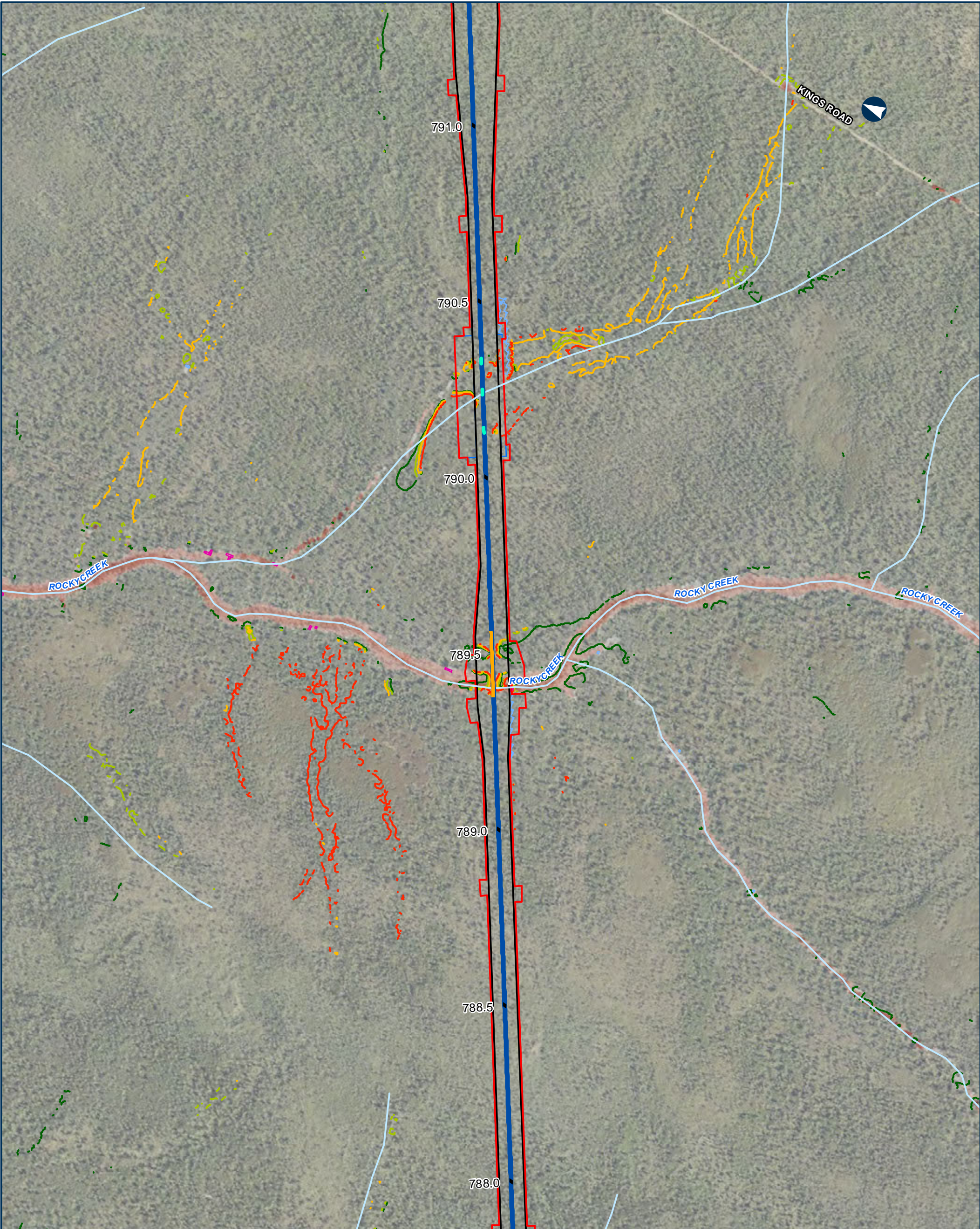
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Sub arterial road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | | 12hrs - 24hrs |
| Drainage Control Area | Area of departure | > 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | |
| | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.81

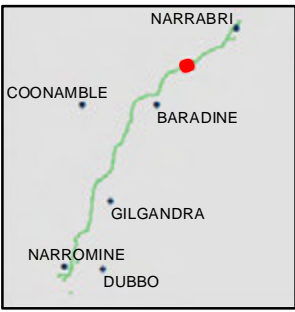
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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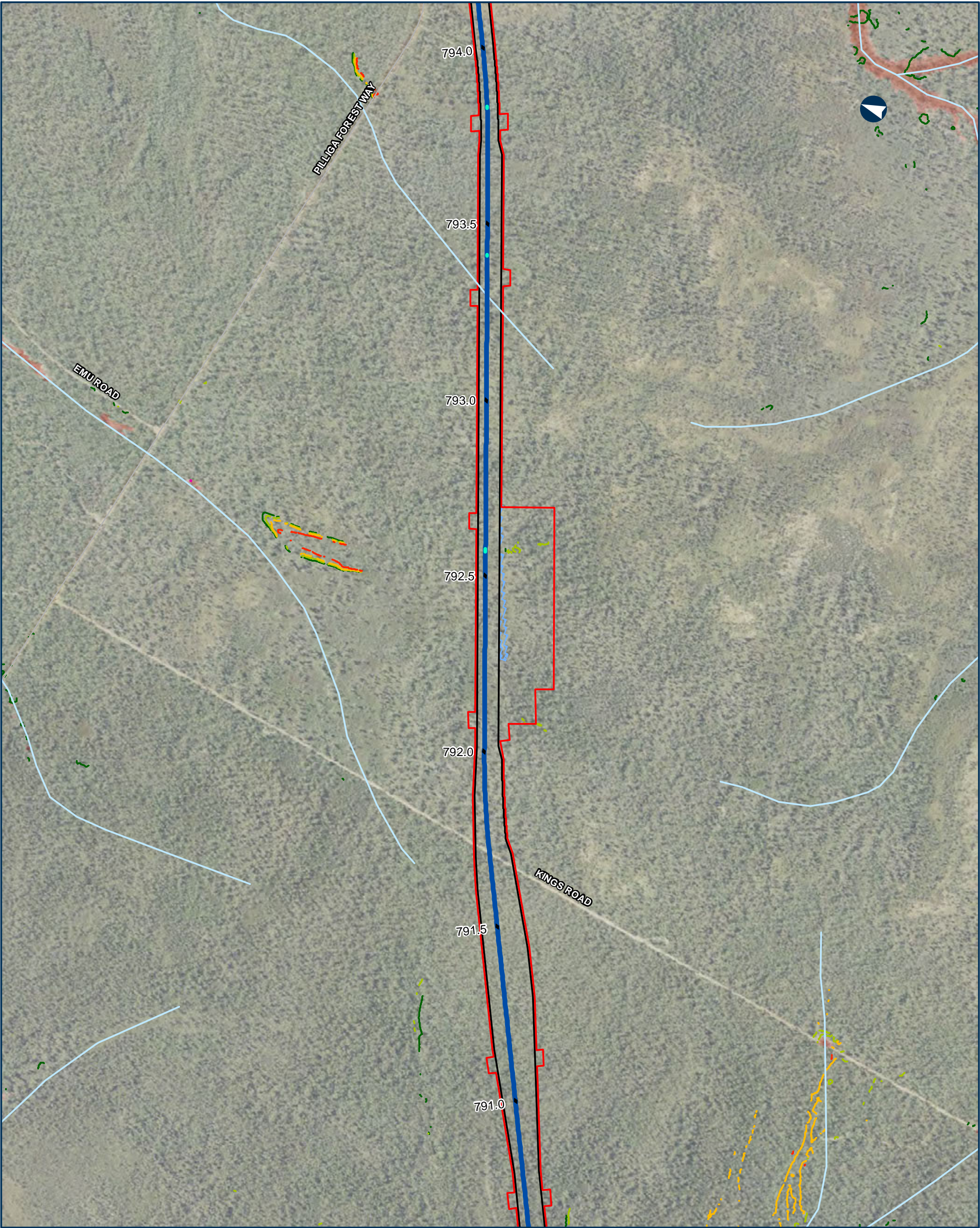
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Watercourse | 10% | 3hrs - 6hrs |
| The proposal | 20% | 6hrs - 12hrs |
| Drainage Control Area | Area of departure | 12hrs - 24hrs |
| Rail Corridor | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| | Exist duration > 1hr, duration change > 10% | |



INLAND RAIL = ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.82

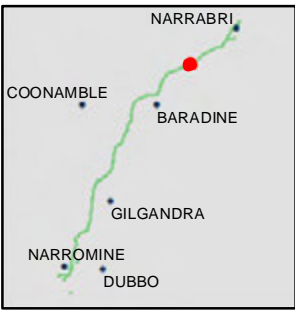
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Coordinate System: GDA 1994 MGA Zone 55

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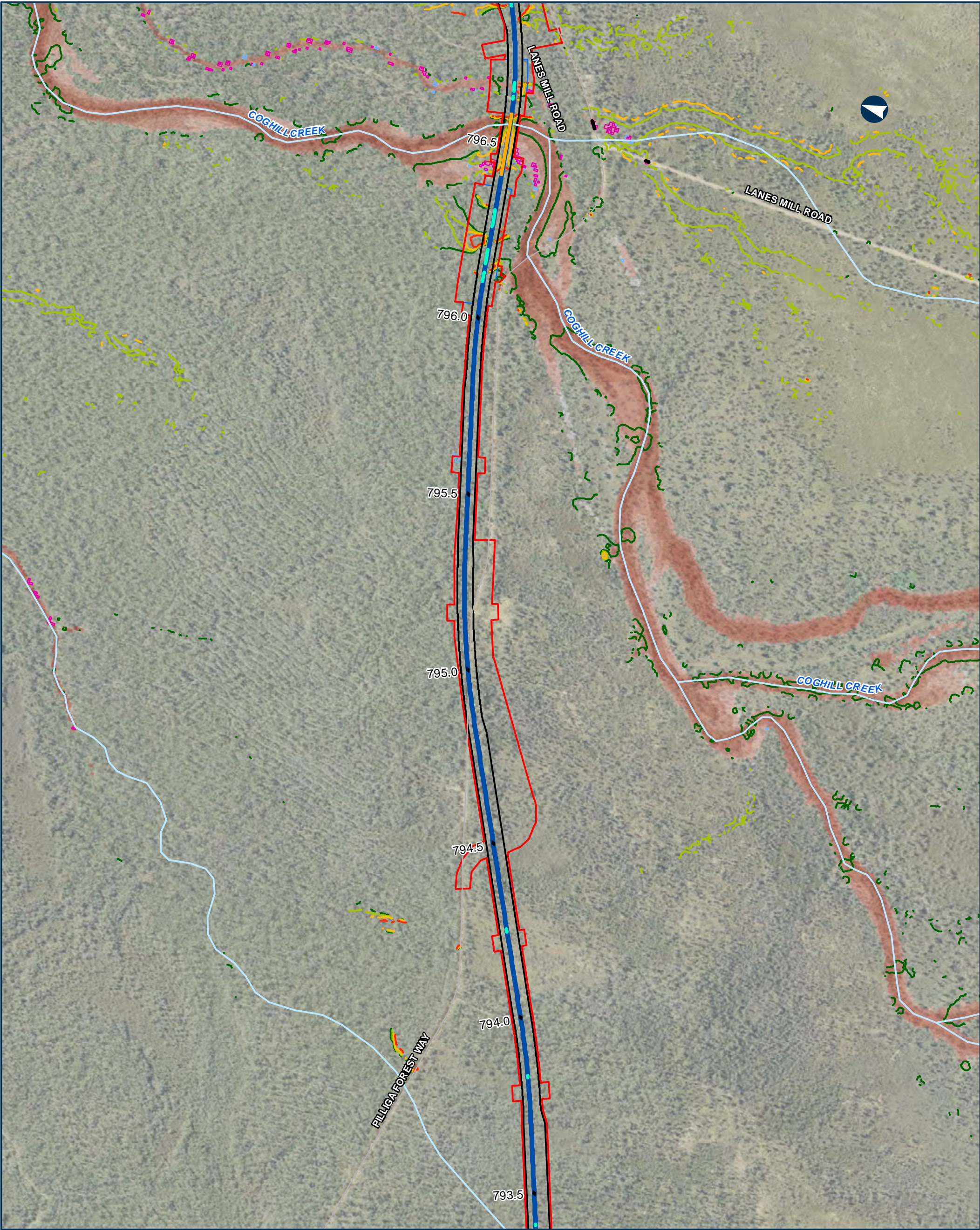
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--|---|--|
| <ul style="list-style-type: none">CulvertAlignmentSub arterial roadWatercourseThe proposalRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.83

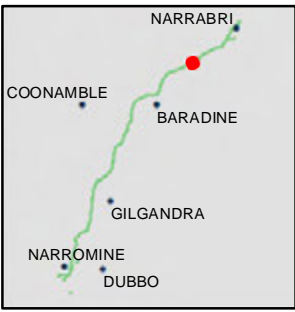
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Coordinate System: GDA 1994 MGA Zone 55

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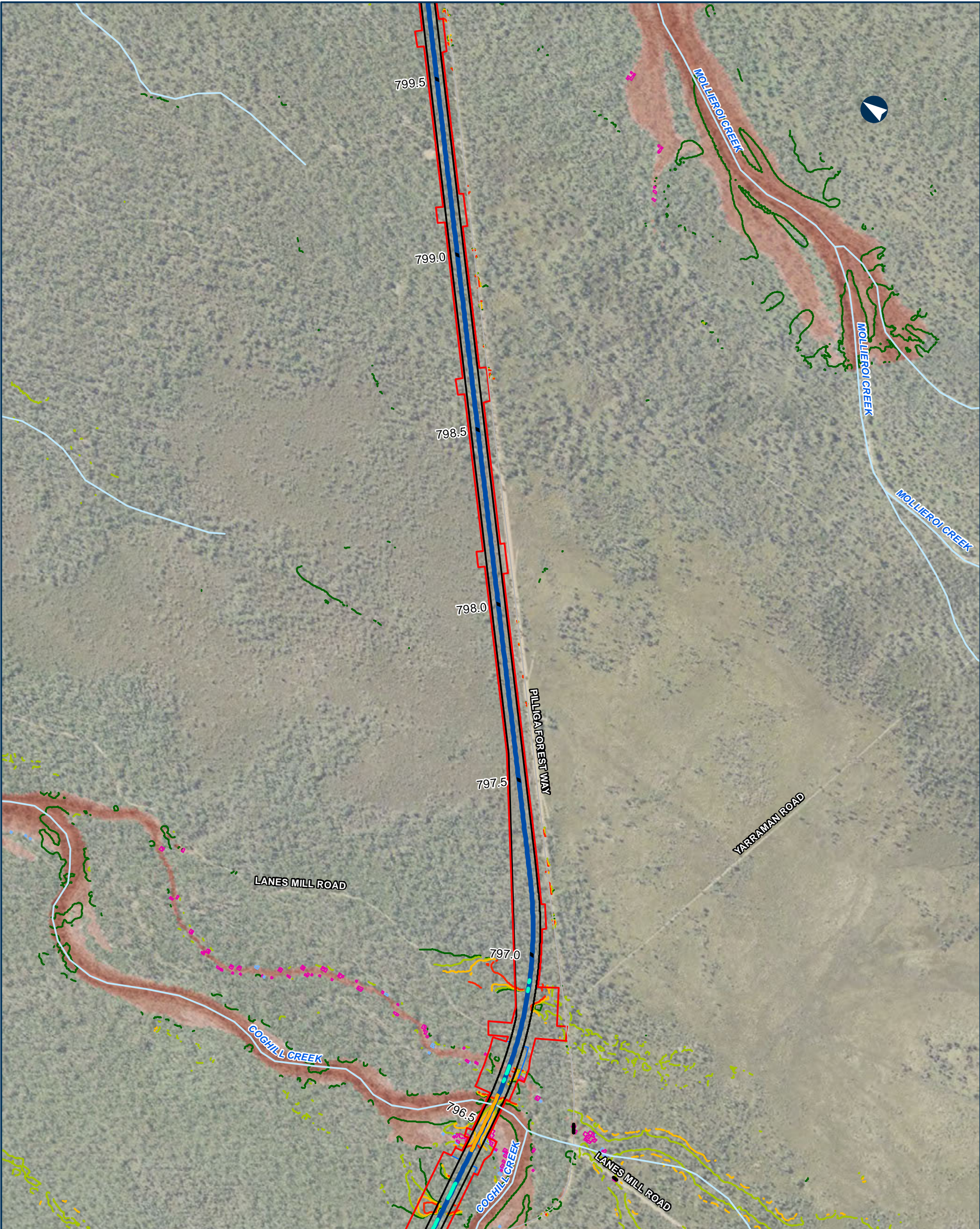
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | Area of departure | 12hrs - 24hrs |
| The proposal | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Drainage Control Area | Exist duration > 1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.84

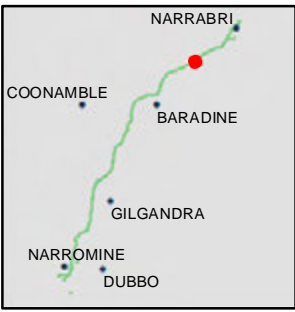
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Coordinate System: GDA 1994 MGA Zone 55

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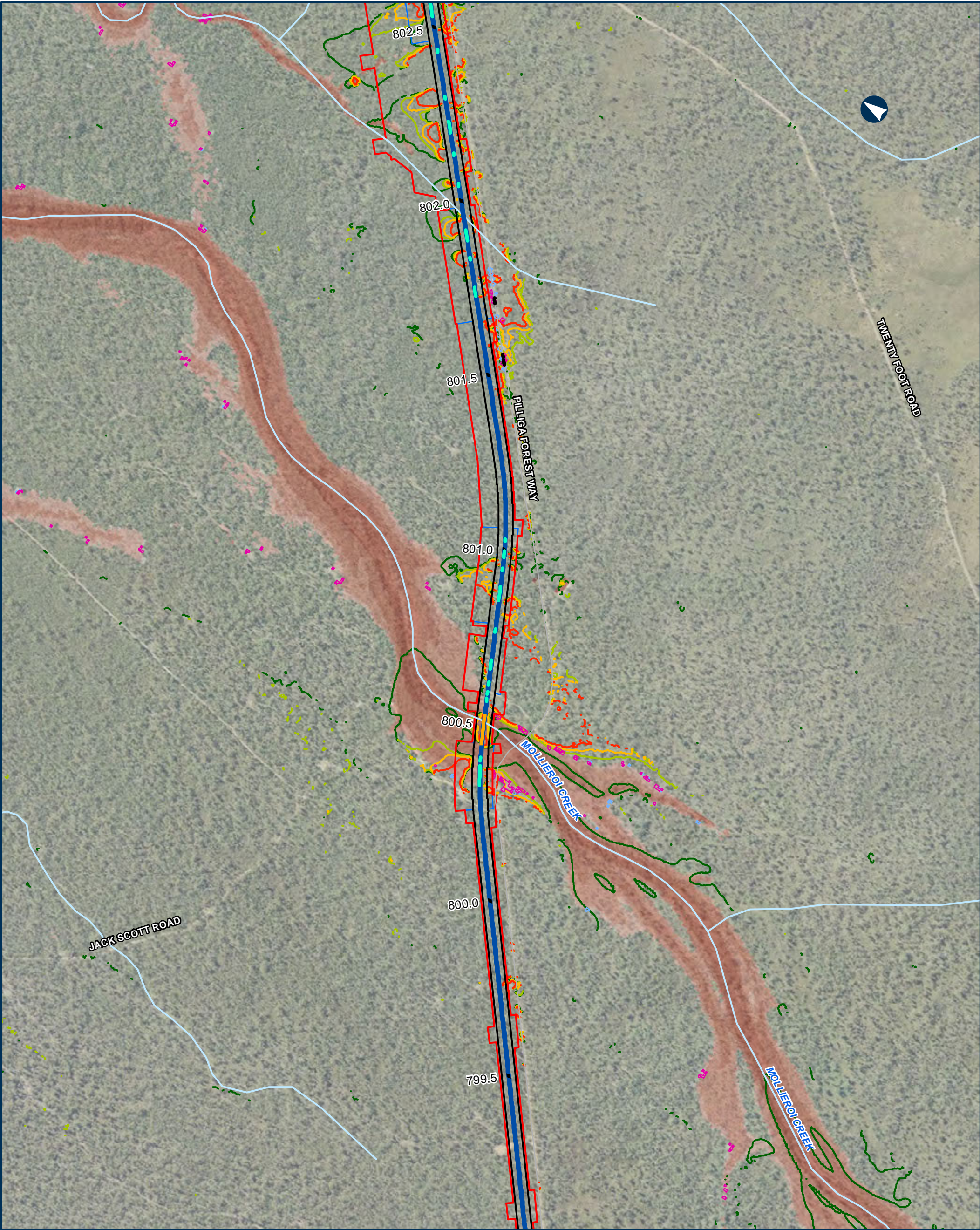
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | | 12hrs - 24hrs |
| The proposal | Area of departure | > 24hrs |
| Drainage Control Area | Exist duration <1hr, design duration >1hr | |
| Rail Corridor | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.85

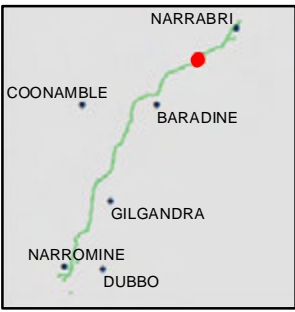
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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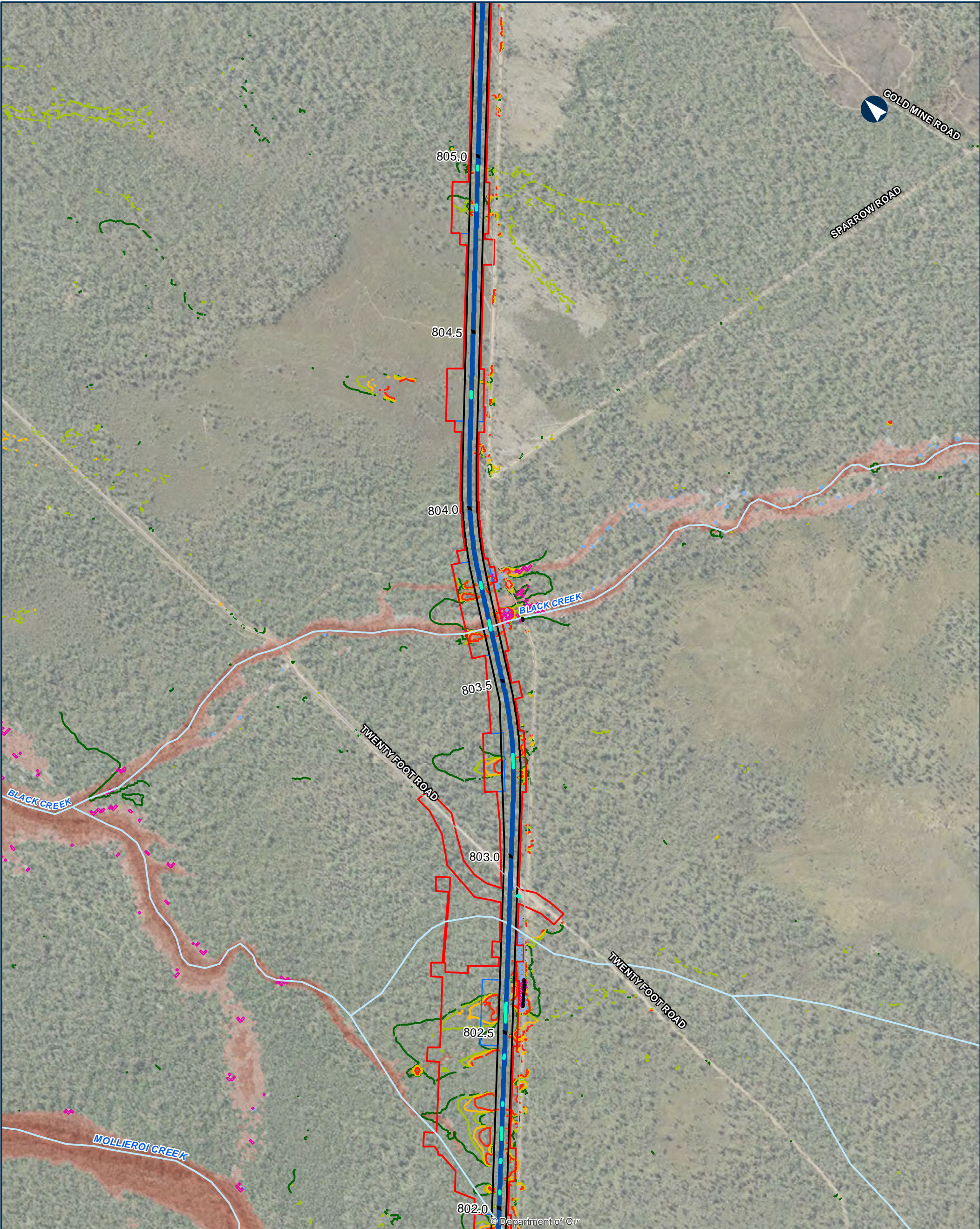
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Watercourse | | 12hrs - 24hrs |
| The proposal | Area of departure | > 24hrs |
| Drainage Control Area | Exist duration <1hr, design duration >1hr | |
| Rail Corridor | Exist duration >1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.86

0 200 400 Metres

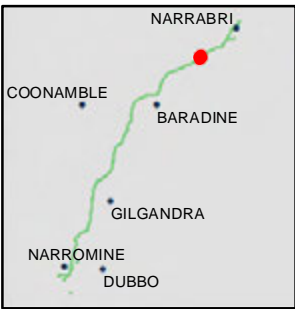
Coordinate System: GDA 1994 MGA Zone 55

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Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

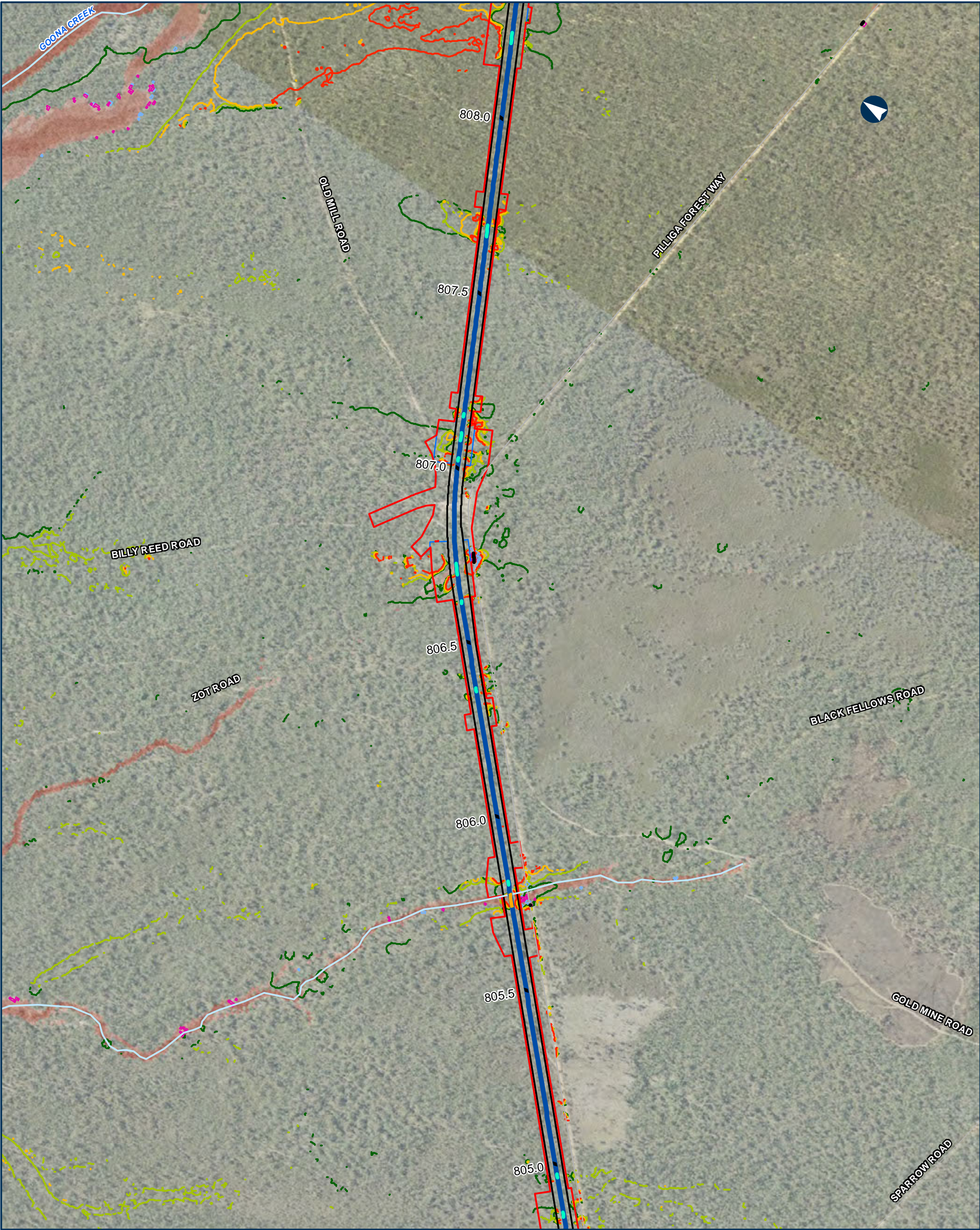
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|--|---|

- | |
|--|
| <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs |
|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.87

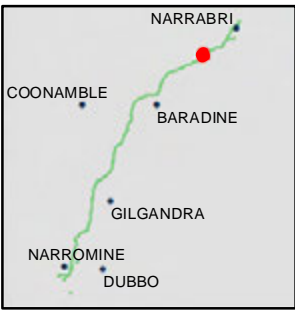
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Coordinate System: GDA 1994 MGA Zone 55

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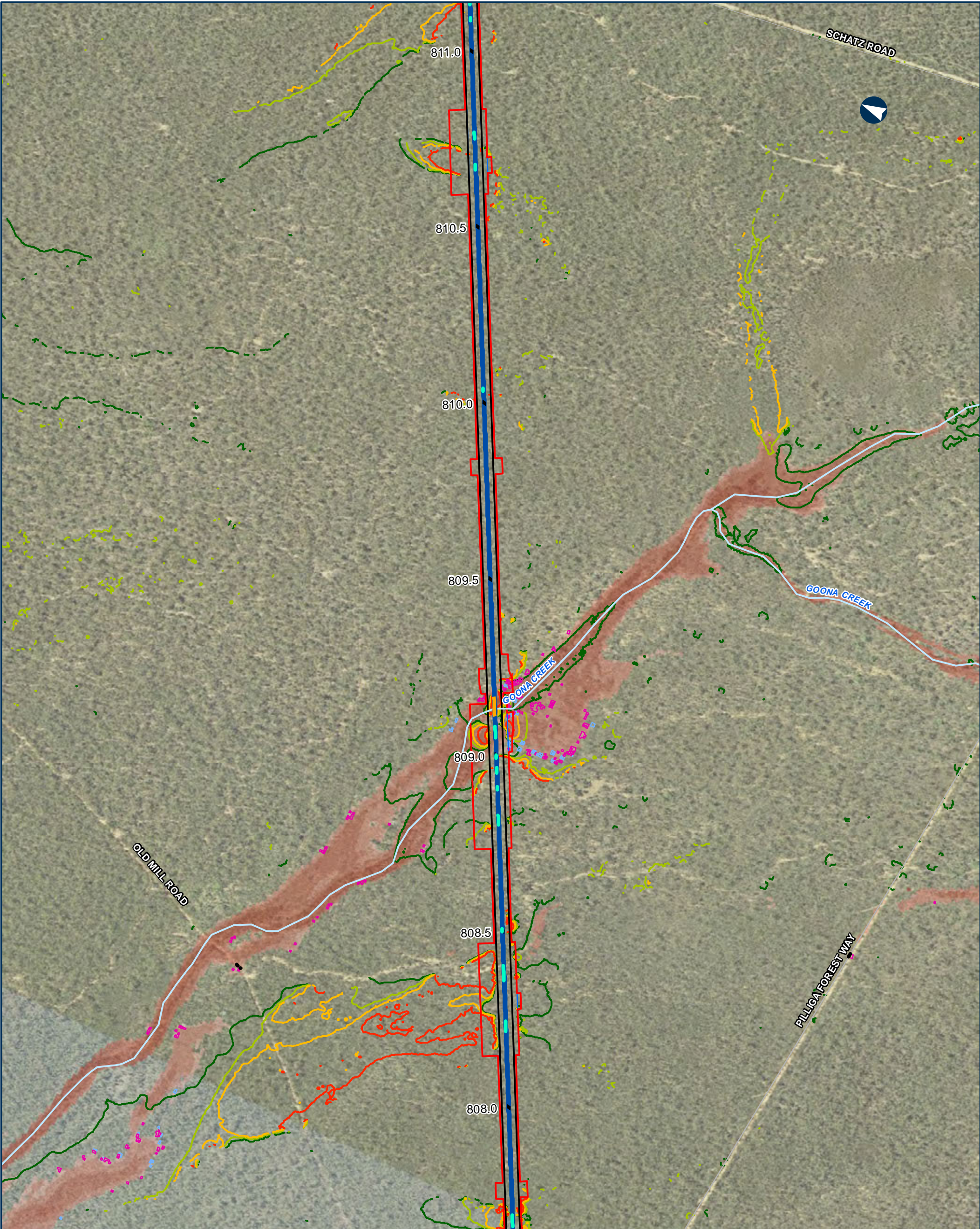
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Local road | | 12hrs - 24hrs |
| Watercourse | Area of departure | > 24hrs |
| The proposal | Exist duration <1hr, design duration >1hr | |
| Drainage Control Area | Exist duration >1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.88

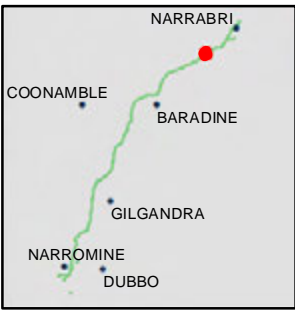
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Coordinate System: GDA 1994 MGA Zone 55

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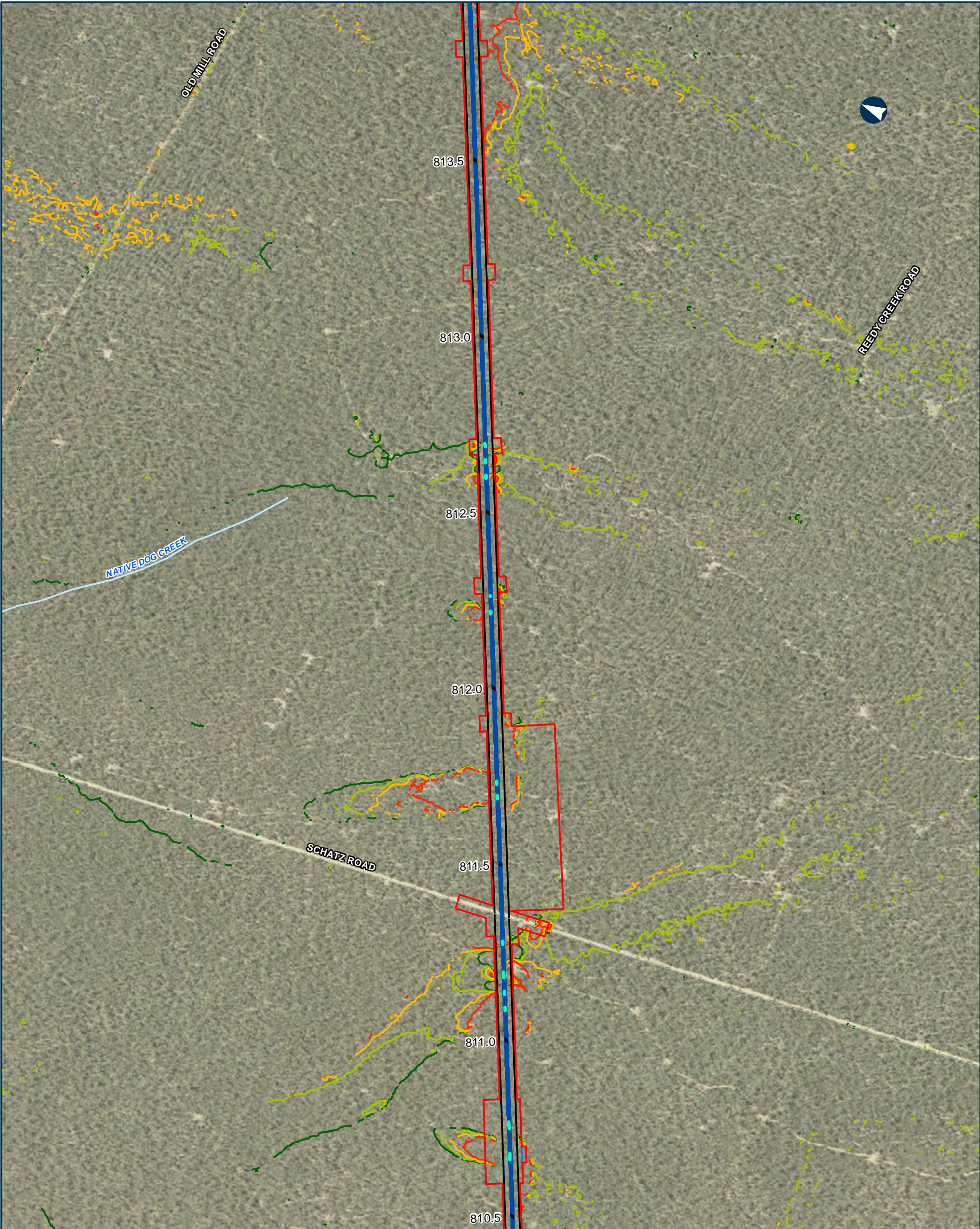
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Sub arterial road | 20% | 6hrs - 12hrs |
| Local road | Area of departure | 12hrs - 24hrs |
| Watercourse | Exist duration < 1hr, design duration > 1hr | |
| The proposal | Exist duration > 1hr, duration change > 10% | |
| Drainage Control Area | | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.89

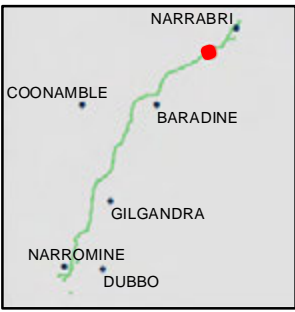
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Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | |
|-----------------------|---|
| Culvert | Change in Duration of Inundation |
| Alignment | |
| Local road | |
| Watercourse | |
| The proposal | 0% |
| Drainage Control Area | 5% |
| Rail Corridor | 10% |
| | 20% |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.90

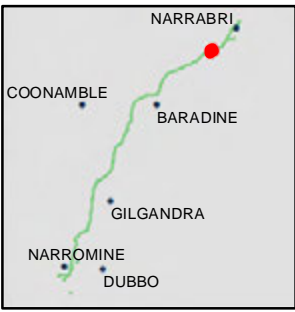
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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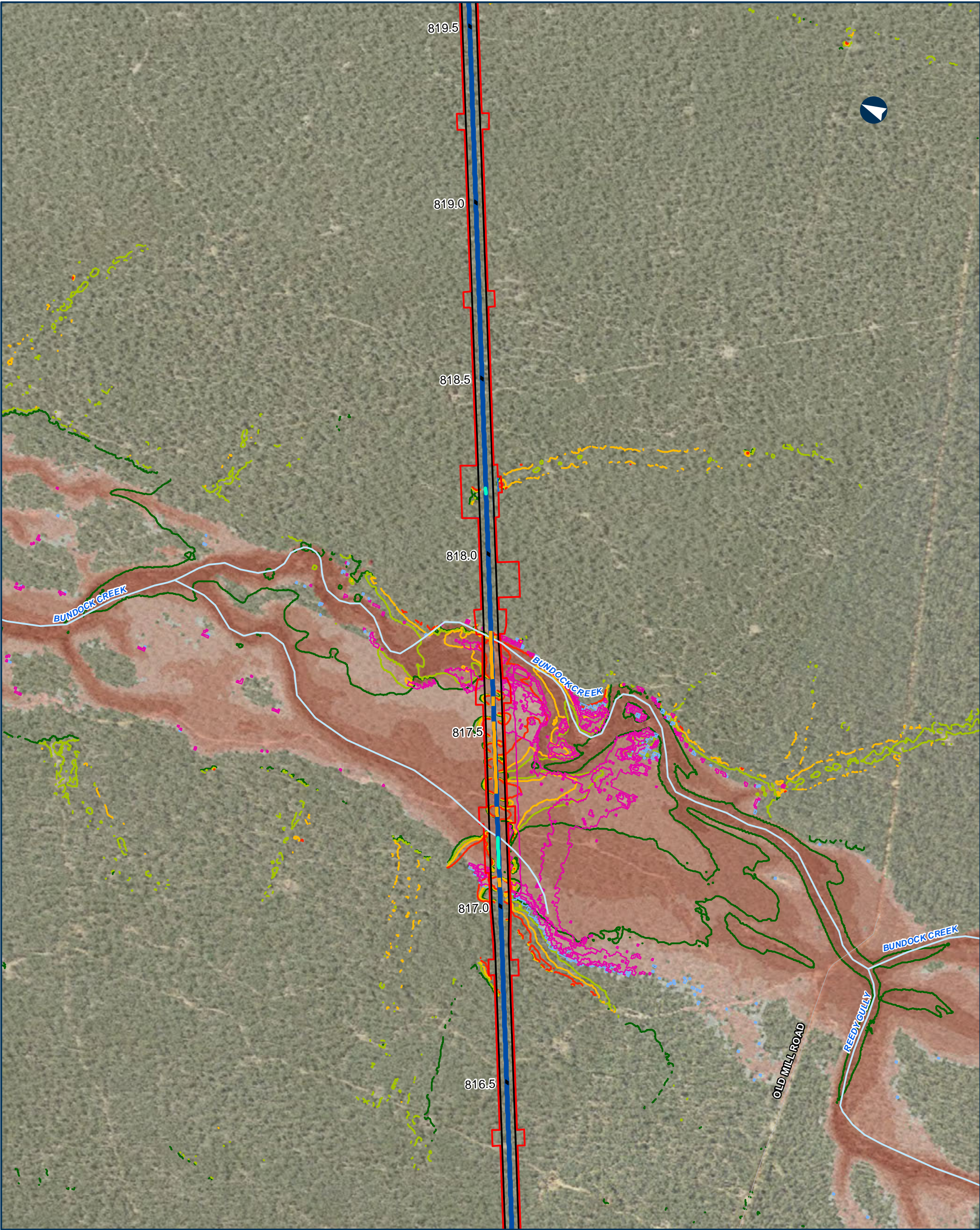
Date: 9/08/2022 Paper: A3
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Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|---|--|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.91

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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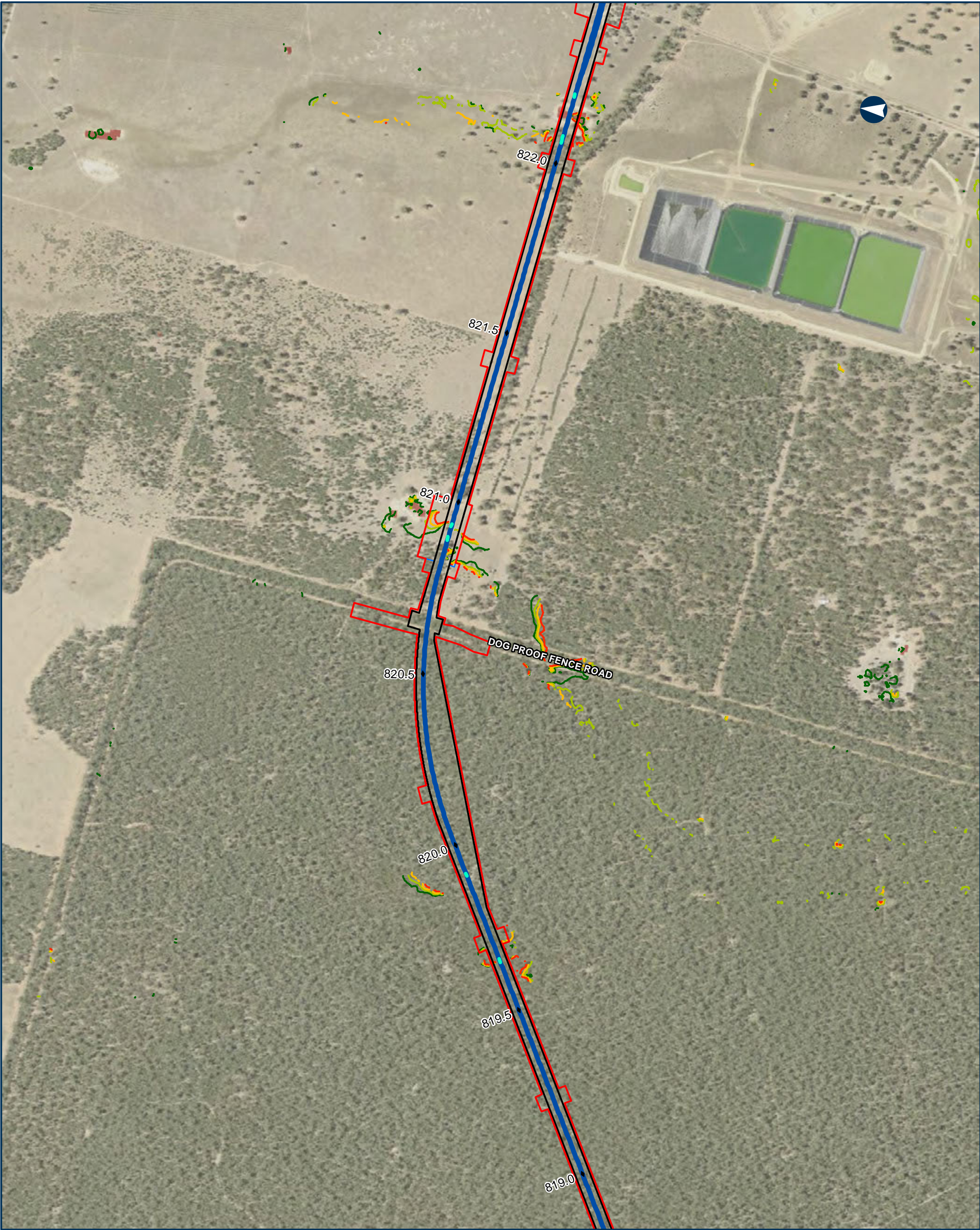
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Alignment | 5% | 1hr - 3hrs |
| Local road | 10% | 3hrs - 6hrs |
| Watercourse | 20% | 6hrs - 12hrs |
| The proposal | Area of departure | 12hrs - 24hrs |
| Drainage Control Area | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Rail Corridor | Exist duration > 1hr, duration change > 10% | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

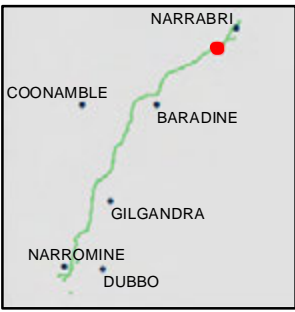
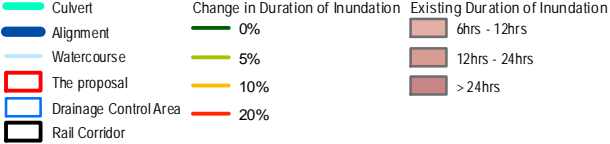
Appendix I - Figure 4.2.92

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.93

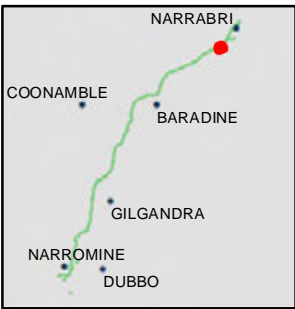
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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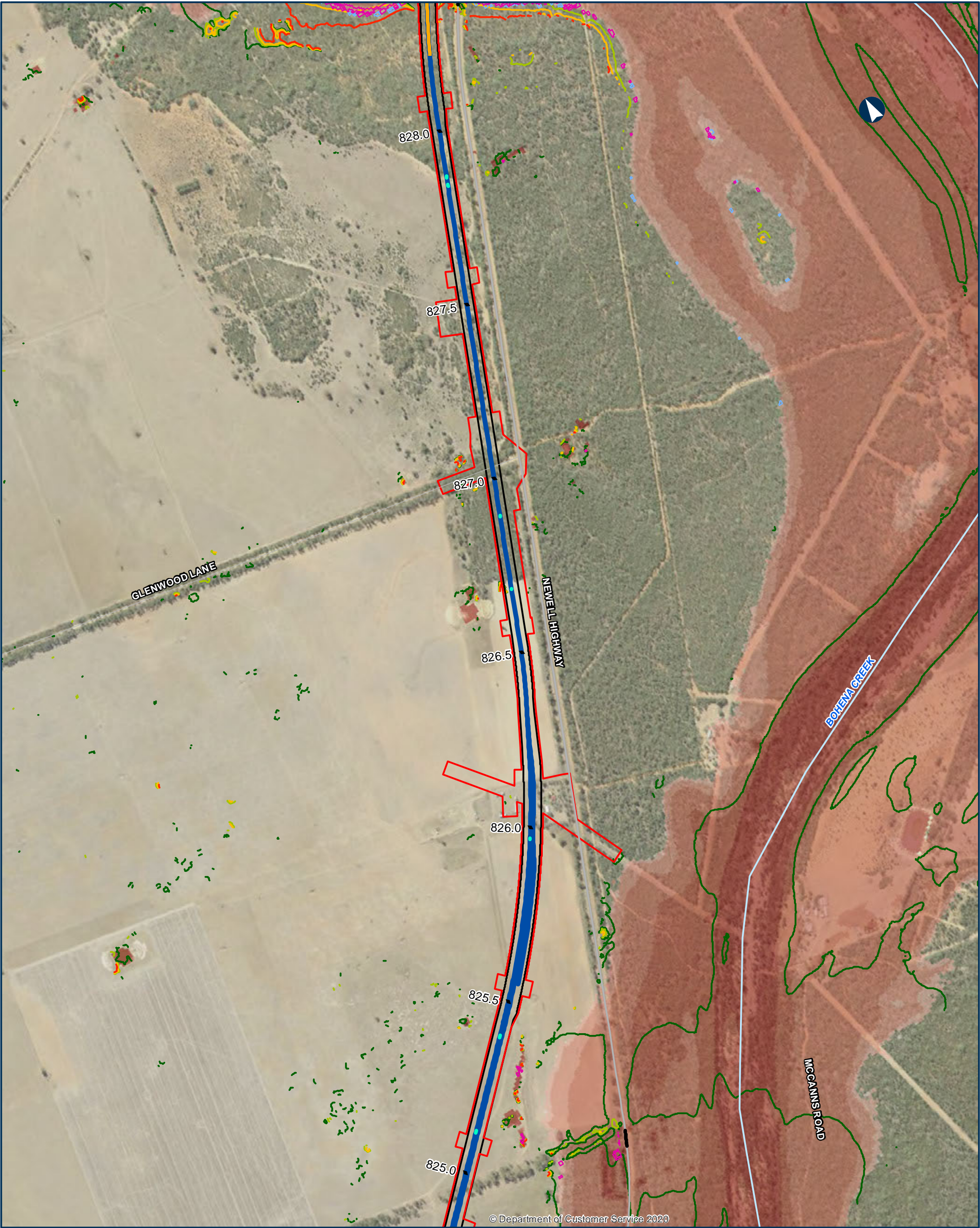
- | | | |
|---|---|--|
| <ul style="list-style-type: none">CulvertRoad QDL departureAlignmentPrimary roadLocal roadWatercourseThe proposalRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation<ul style="list-style-type: none">0%5%10%20%Area of departure<ul style="list-style-type: none">Exist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation<ul style="list-style-type: none">< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|---|---|--|



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ARTC



NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.94

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Bridge

Culvert

Road QDL departure

Alignment

Primary road

Local road

Watercourse

The proposal

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

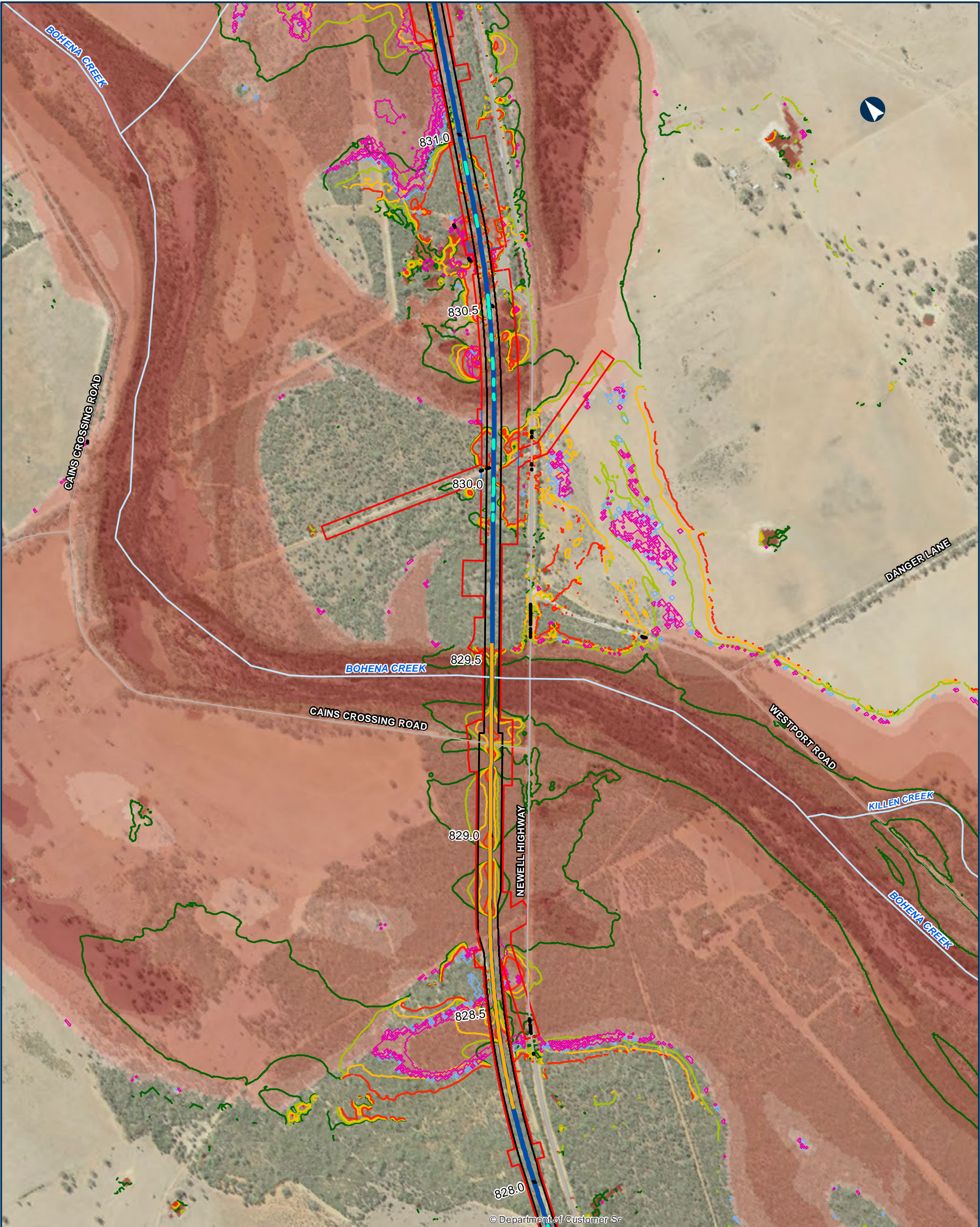
NARROMINE

DUBBO

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.95

0 200 400 Metres

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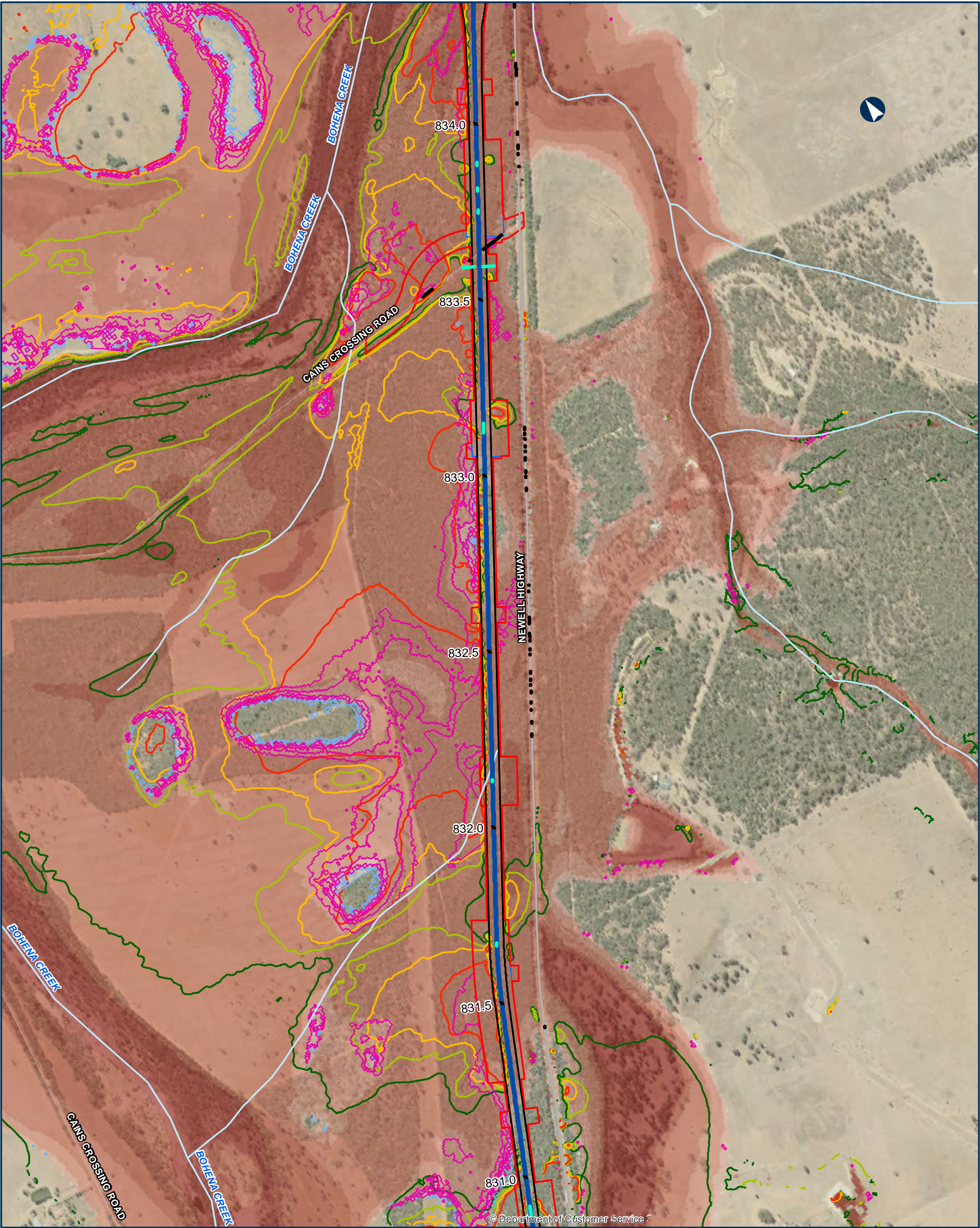
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|---|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Primary road | 20% | 6hrs - 12hrs |
| Sub arterial road | Area of departure | 12hrs - 24hrs |
| Local road | Exist duration < 1hr, design duration > 1hr | > 24hrs |
| Watercourse | Exist duration > 1hr, duration change > 10% | |
| The proposal | | |
| Drainage Control Area | | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.96

0200400

Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022

Paper: A3

Author: JacobsGHD

Scale: 1:10,000

Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Culvert

Road QDL departure

Alignment

Primary road

Local road

Watercourse

The proposal

Drainage Control Area

Rail Corridor

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

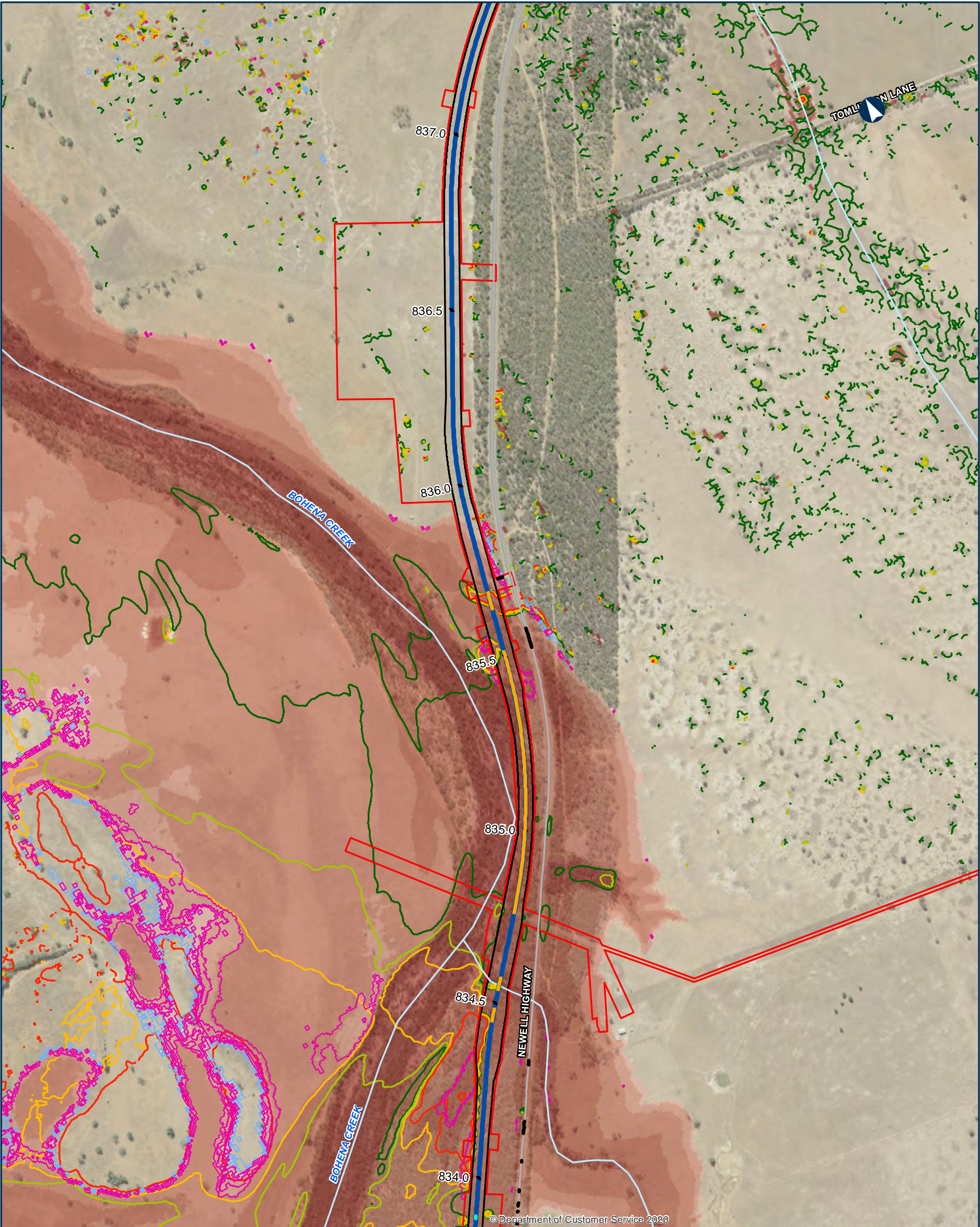
DUBBO

INLAND RAIL

ARTC

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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.97

0 200 400 Metres

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Author: JacobsGHD Scale: 1:10,000
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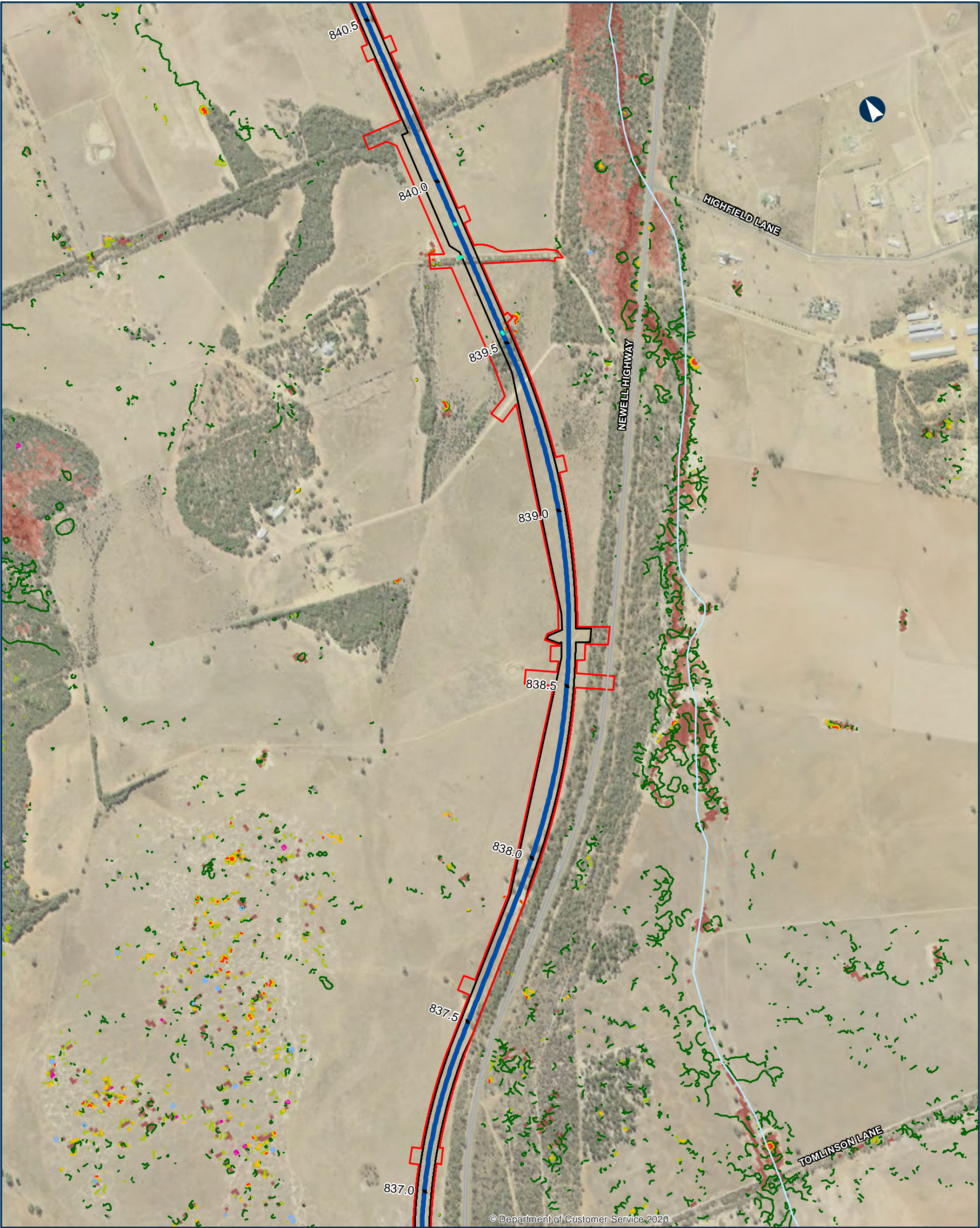
- | | |
|-----------------------|--|
| Bridge | Change in Duration of Inundation |
| Culvert | 0% |
| Road QDL departure | 5% |
| Alignment | 10% |
| Primary road | 20% |
| Watercourse | Area of departure |
| The proposal | Exist duration <1hr, design duration >1hr |
| Drainage Control Area | Exist duration >1hr, duration change > 10% |
| Rail Corridor | |

- | |
|---------------------------------|
| Existing Duration of Inundation |
| < 1hr |
| 1hr - 3hrs |
| 3hrs - 6hrs |
| 6hrs - 12hrs |
| 12hrs - 24hrs |
| > 24hrs |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

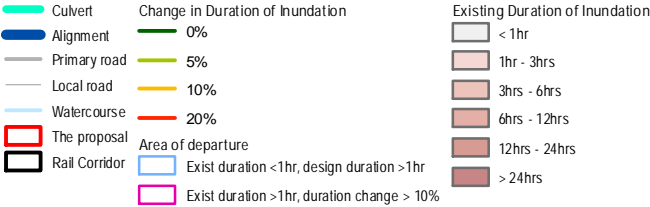
Appendix I - Figure 4.2.98

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

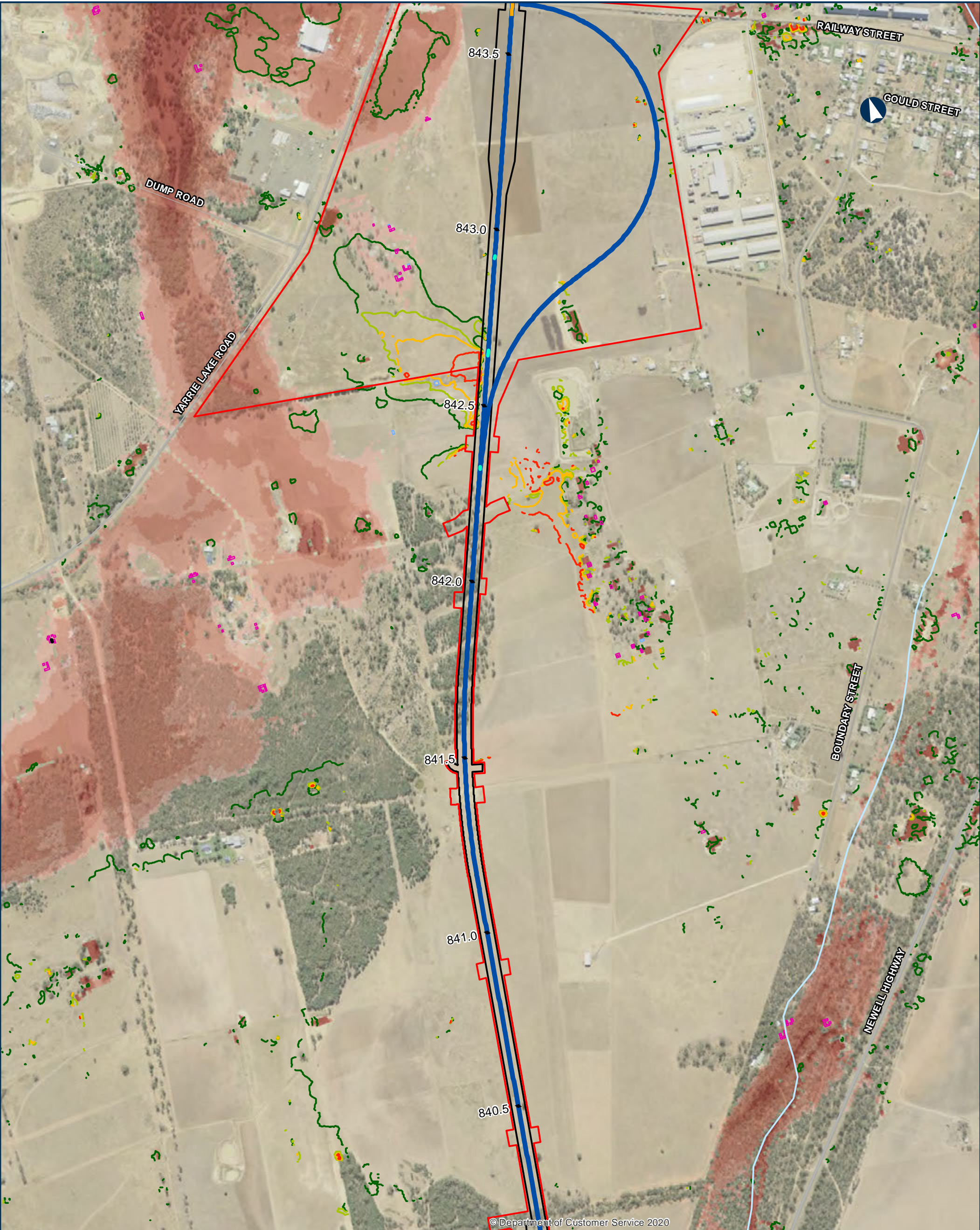
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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.99

0 200 400 Metres

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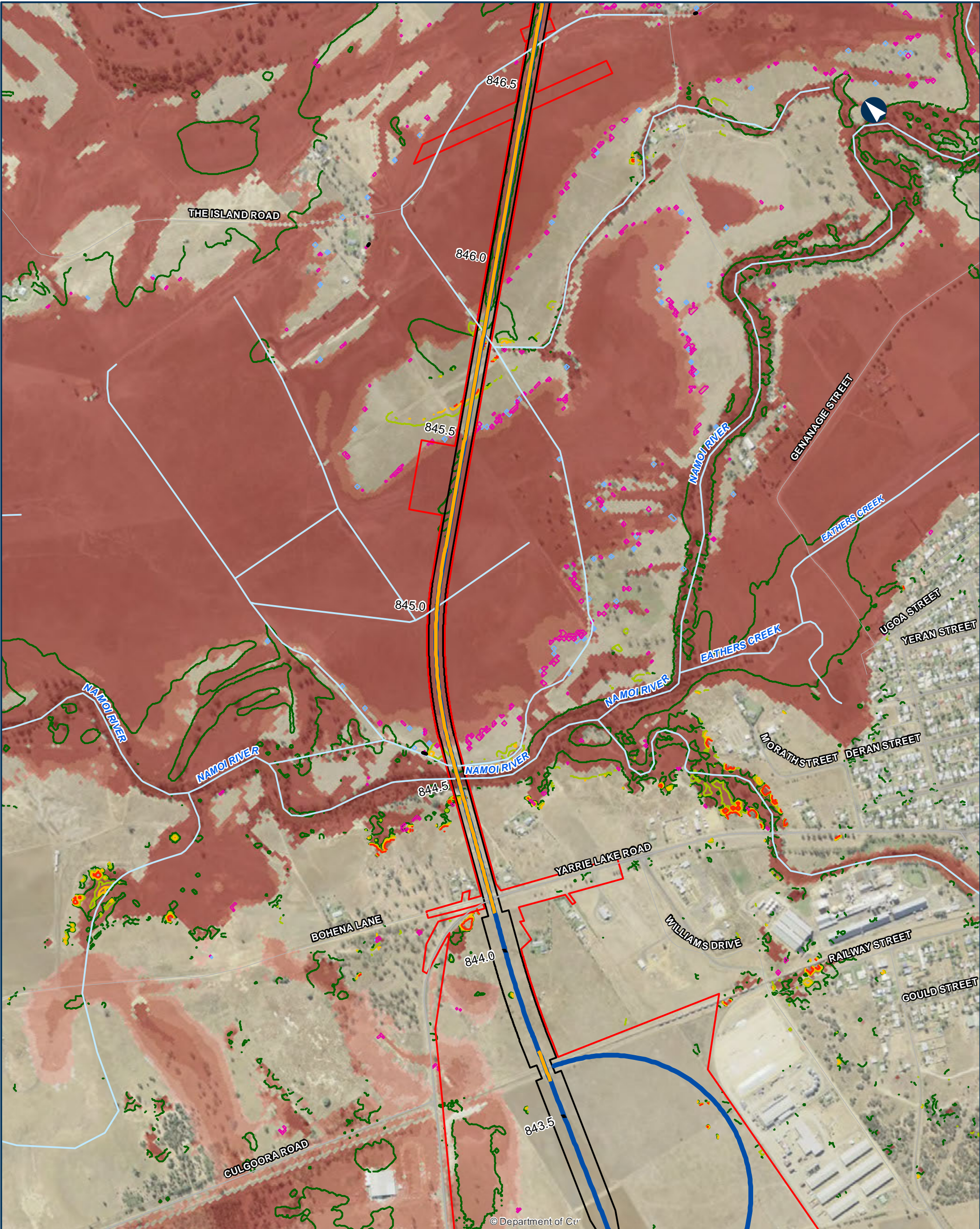
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--------------------|--|---------------------------------|
| Bridge | Change in Duration of Inundation | Existing Duration of Inundation |
| Culvert | 0% | < 1hr |
| Road QDL departure | 5% | 1hr - 3hrs |
| Alignment | 10% | 3hrs - 6hrs |
| Primary road | 20% | 6hrs - 12hrs |
| Sub arterial road | | 12hrs - 24hrs |
| Local road | Area of departure | > 24hrs |
| Watercourse | Exist duration <1hr, design duration >1hr | |
| The proposal | Exist duration >1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.100

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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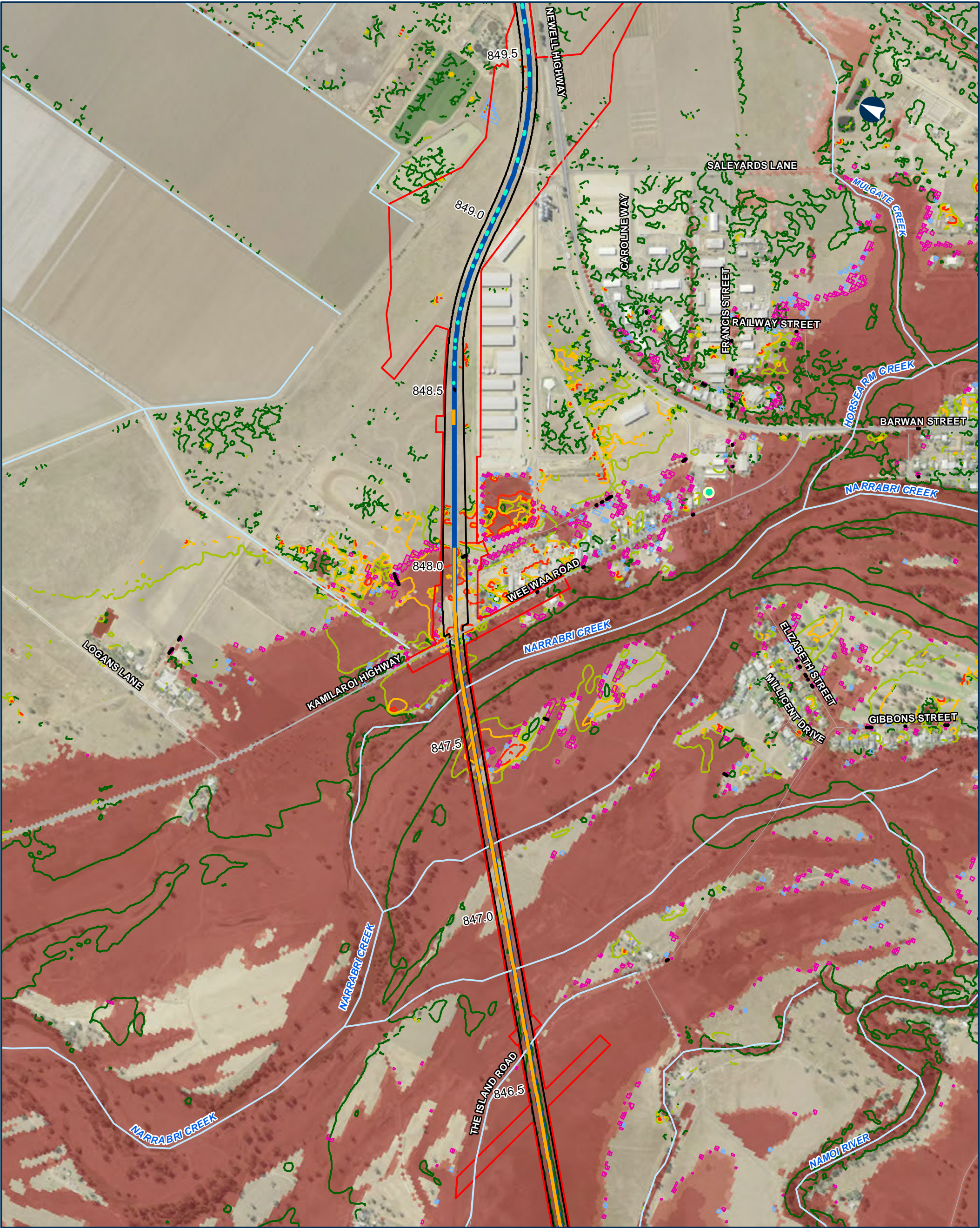
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Bridge
 - Road QDL departure
 - Alignment
 - Sub arterial road
 - Local road
 - Watercourse
 - The proposal
 - Rail Corridor
- Change in Duration of Inundation
- 0%
 - 5%
 - 10%
 - 20%
- Area of departure
- Exist duration < 1hr, design duration > 1hr
 - Exist duration > 1hr, duration change > 10%
- Existing Duration of Inundation
- < 1hr
 - 1hr - 3hrs
 - 3hrs - 6hrs
 - 6hrs - 12hrs
 - 12hrs - 24hrs
 - > 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.101

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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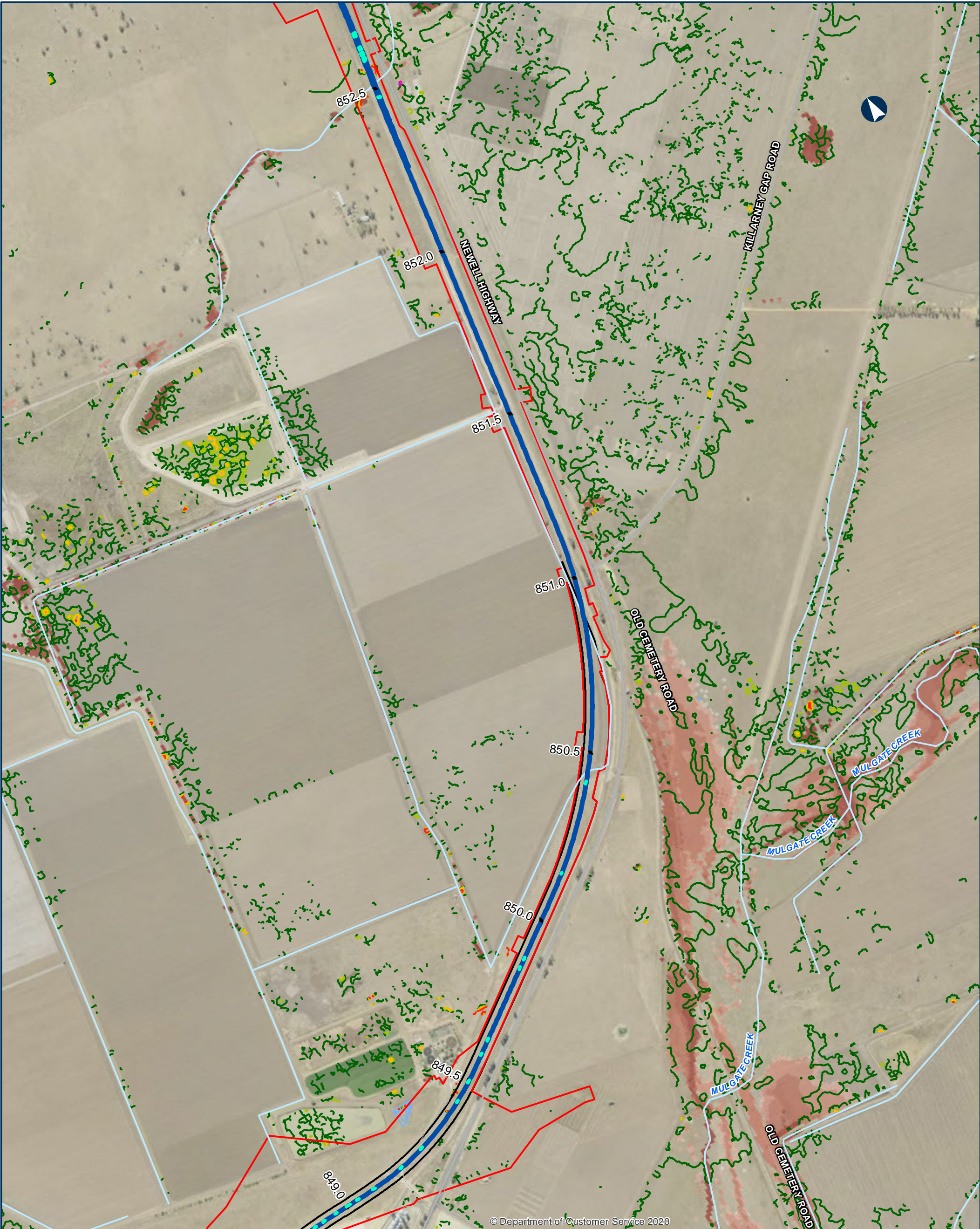
- QDL departure habitable building
 - Bridge
 - Culvert
 - Road QDL departure
 - Alignment
 - Primary road
 - Local road
 - Watercourse
 - The proposal
 - Rail Corridor
- Change in Duration of Inundation
- 0%
 - 5%
 - 10%
 - 20%
- Area of departure
- Exist duration <1hr, design duration >1hr
 - Exist duration >1hr, duration change >10%
- Existing Duration of Inundation
- < 1hr
 - 1hr - 3hrs
 - 3hrs - 6hrs
 - 6hrs - 12hrs
 - 12hrs - 24hrs
 - > 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.102

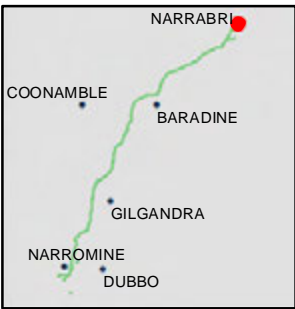
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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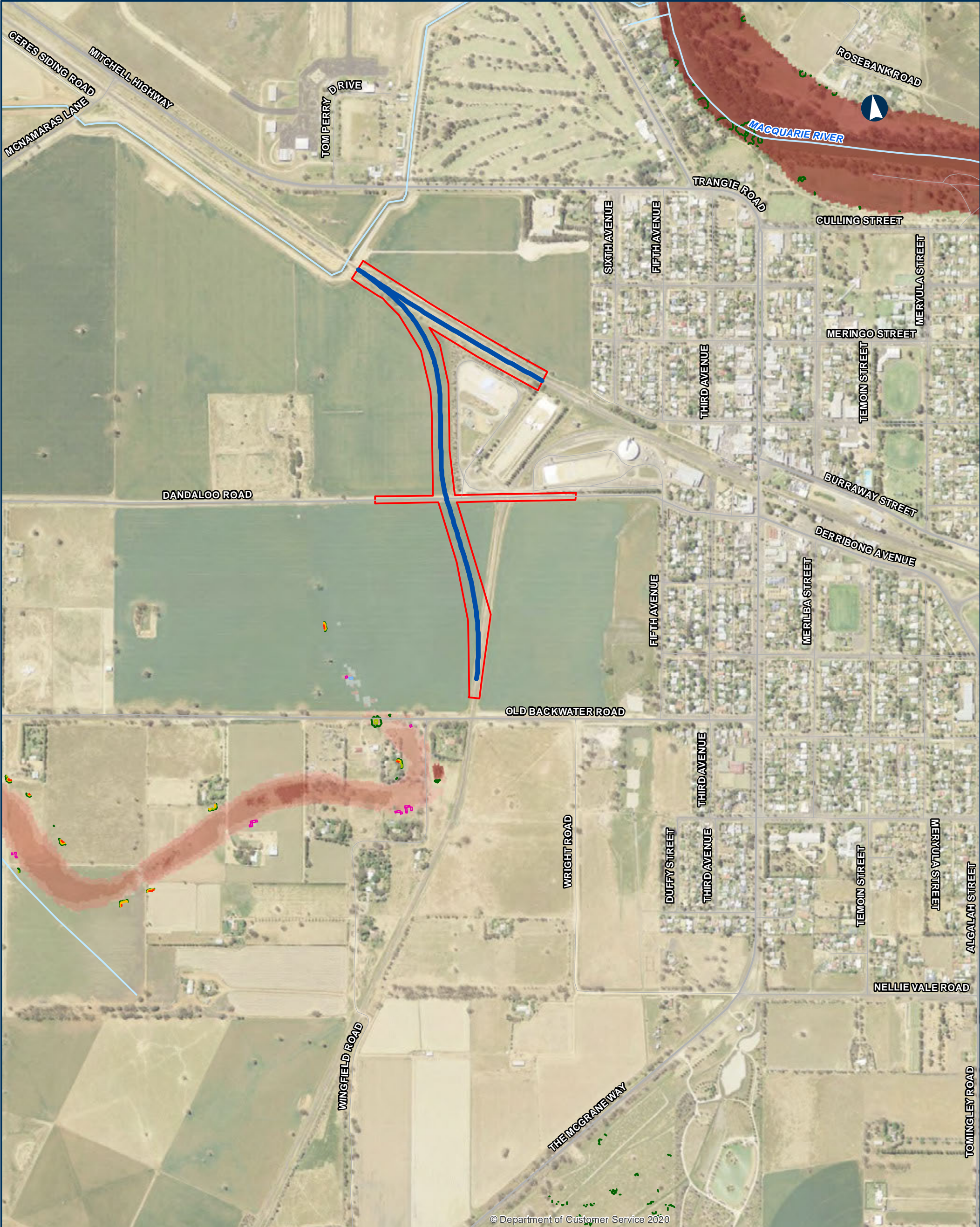
Date: 9/08/2022 Paper: A3
Author: JacobsGHD Scale: 1:10,000
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|---|
| <ul style="list-style-type: none">CulvertAlignmentPrimary roadArterial roadLocal roadWatercourseThe proposalRail Corridor | <ul style="list-style-type: none">Change in Duration of Inundation0%5%10%20%Area of departureExist duration <1hr, design duration >1hrExist duration >1hr, duration change > 10% | <ul style="list-style-type: none">Existing Duration of Inundation< 1hr1hr - 3hrs3hrs - 6hrs6hrs - 12hrs12hrs - 24hrs> 24hrs |
|--|---|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 5% AEP

Appendix I - Figure 4.2.104

0200400Metres

Coordinate System: GDA 1994 MGA Zone 55

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Date: 9/08/2022
Author: JacobsGHD
Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

Alignment

Primary road

Arterial road

Sub arterial road

Local road

Watercourse

The proposal

Change in Duration of Inundation

0%

5%

10%

20%

Area of departure

Exist duration <1hr, design duration >1hr

Exist duration >1hr, duration change > 10%

Existing Duration of Inundation

< 1hr

1hr - 3hrs

3hrs - 6hrs

6hrs - 12hrs

12hrs - 24hrs

> 24hrs

NARRABRI

COONAMBLE

BARADINE

GILGANDRA

NARROMINE

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