

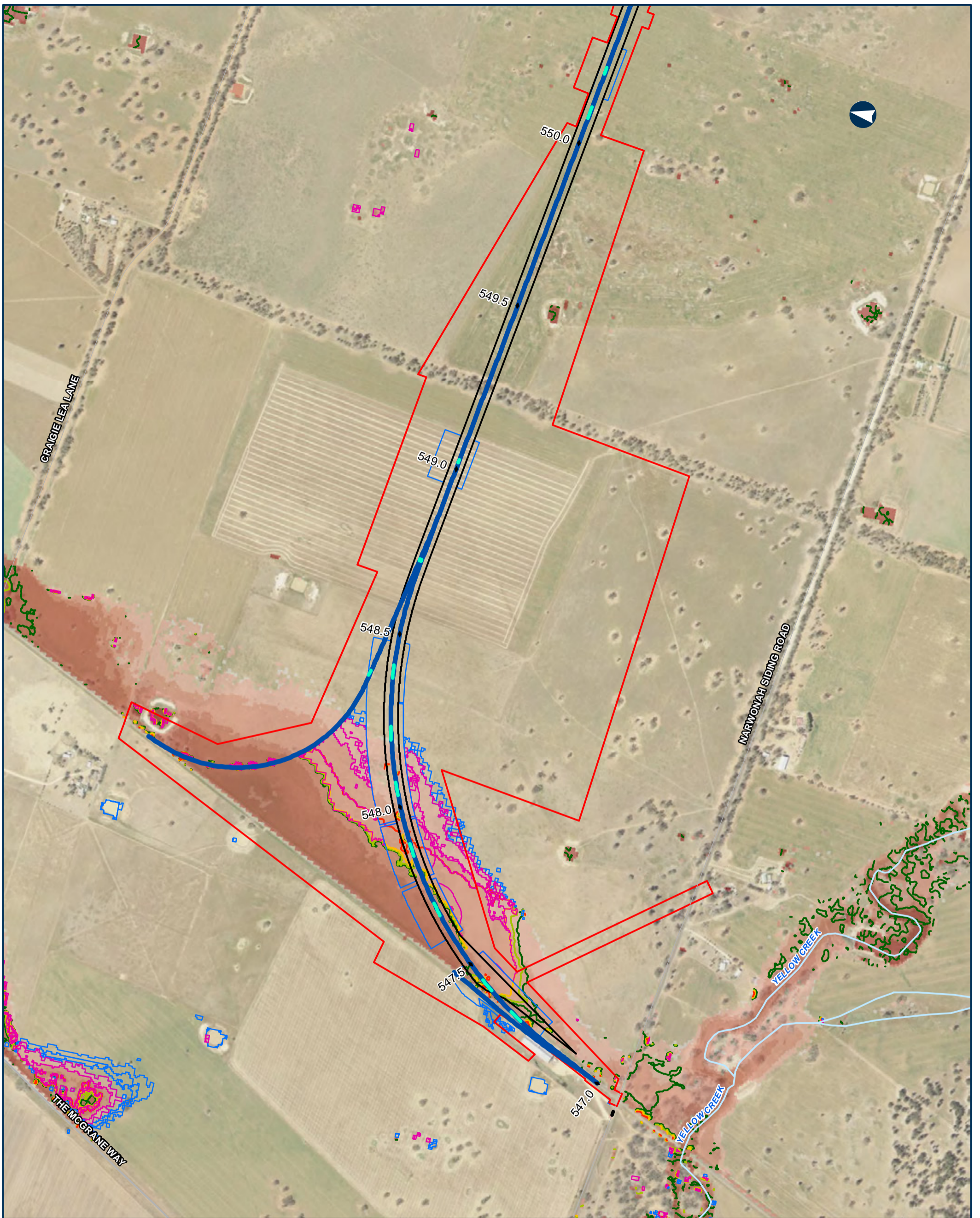
TECHNICAL REPORT 03

Updated flooding and hydrology assessment

Appendix I13 QDL compliance (duration 20% AEP)

NARROMINE TO NARRABRI PROJECT





NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.1

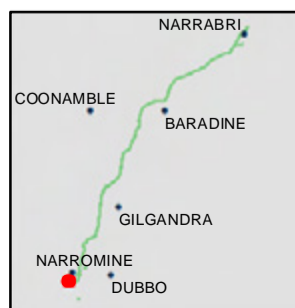
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Coordinate System: GDA 1994 MGA Zone 55

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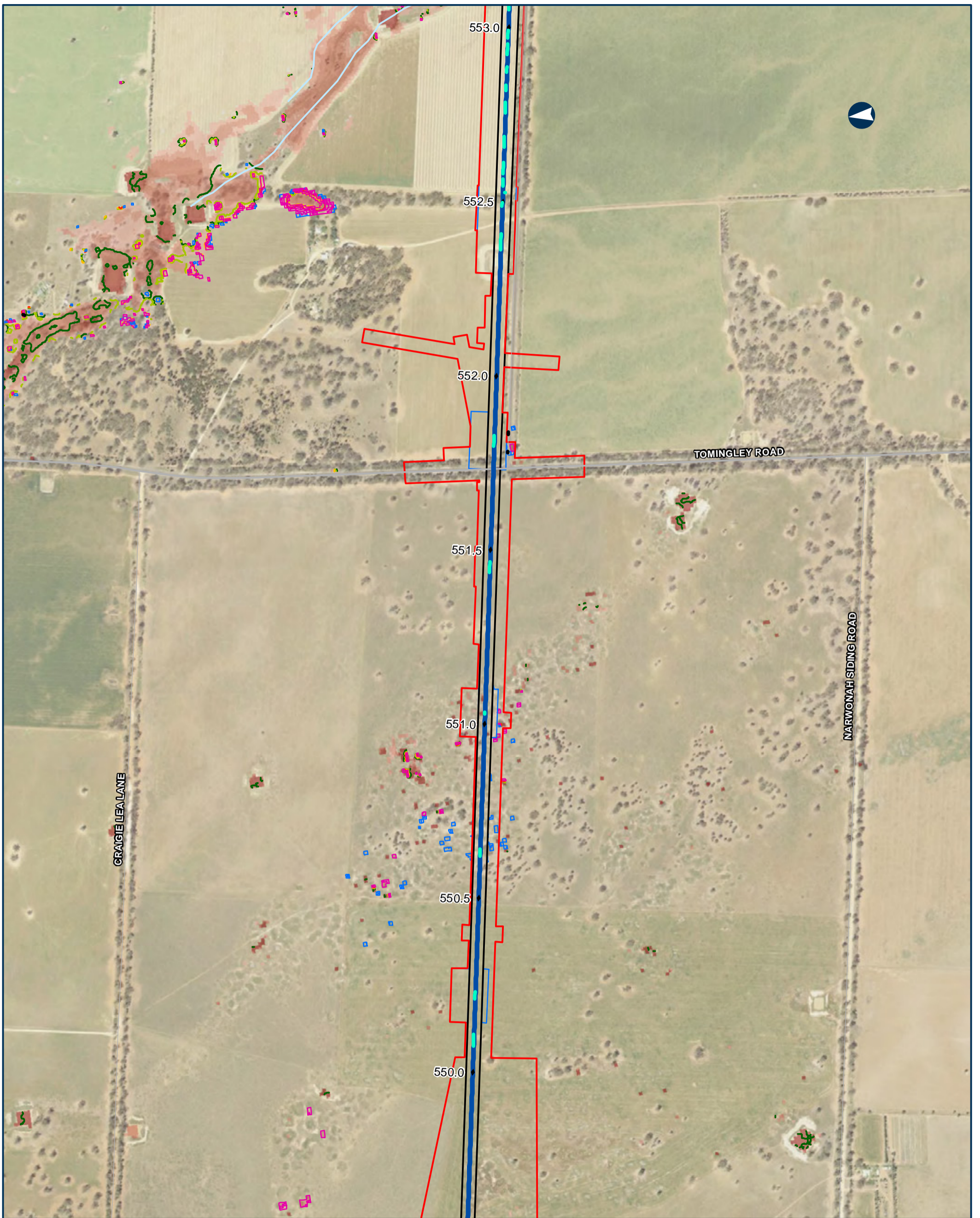
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Road ODL departure — Arterial road — Local road — Watercourse — The proposal — Drainage Control Area — Rail 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 >1hr — Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> — < 1hr — 1hr - 3hrs — 3hrs - 6hrs — 6hrs - 12hrs — 12hrs - 24hrs — > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.2

0 200 400 Metres

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|-----------------------|---|---------------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Road ODL departure | 5% | 3hrs - 6hrs |
| Arterial road | 10% | 6hrs - 12hrs |
| Local road | 20% | 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 - 20% AEP

Appendix I - Figure 4.1.3

0 200 400 Metres

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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"> — Culvert — Alignment — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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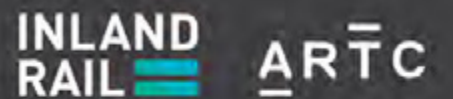
NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.4

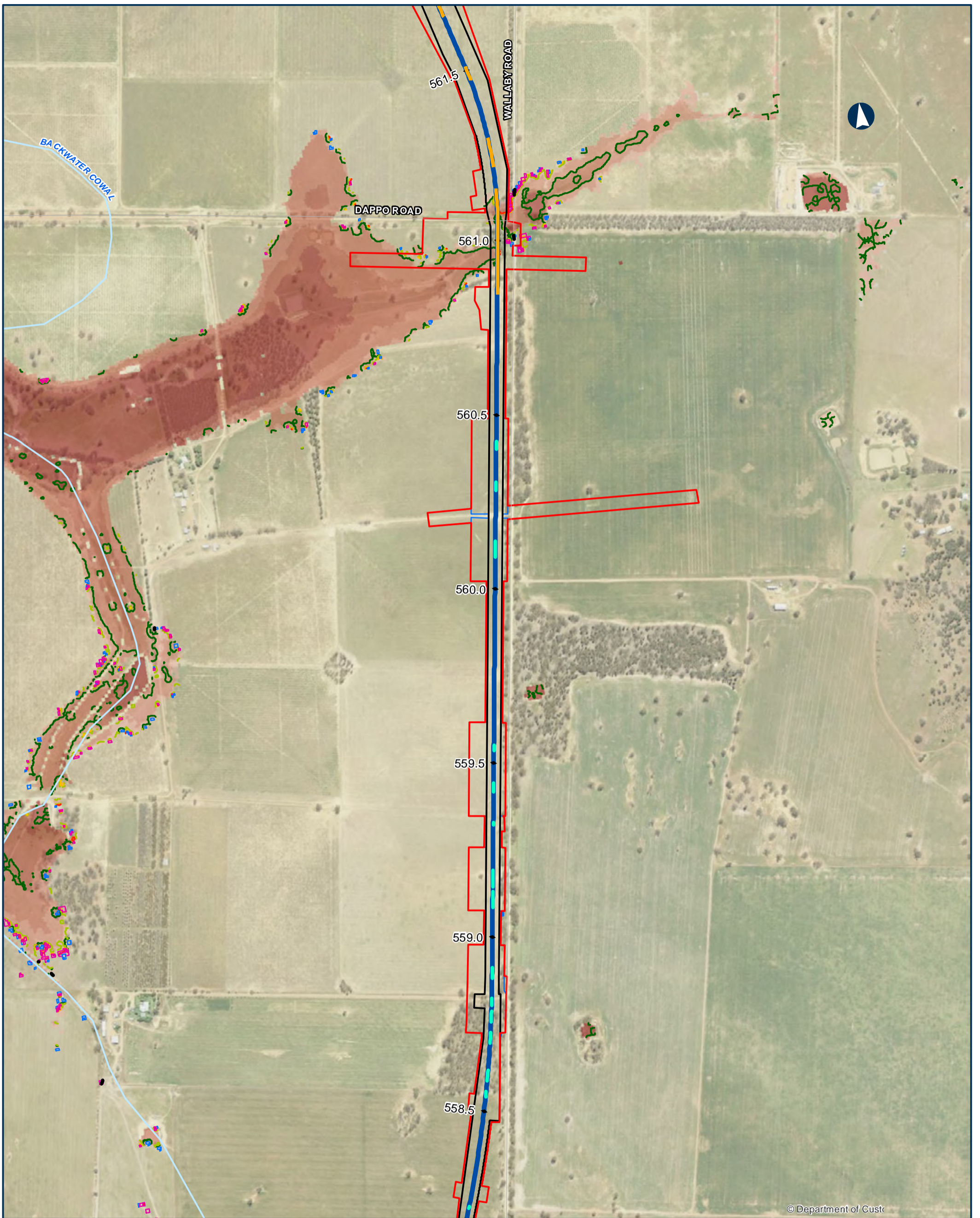
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Road QDL departure — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.5

0 200 400 Metres

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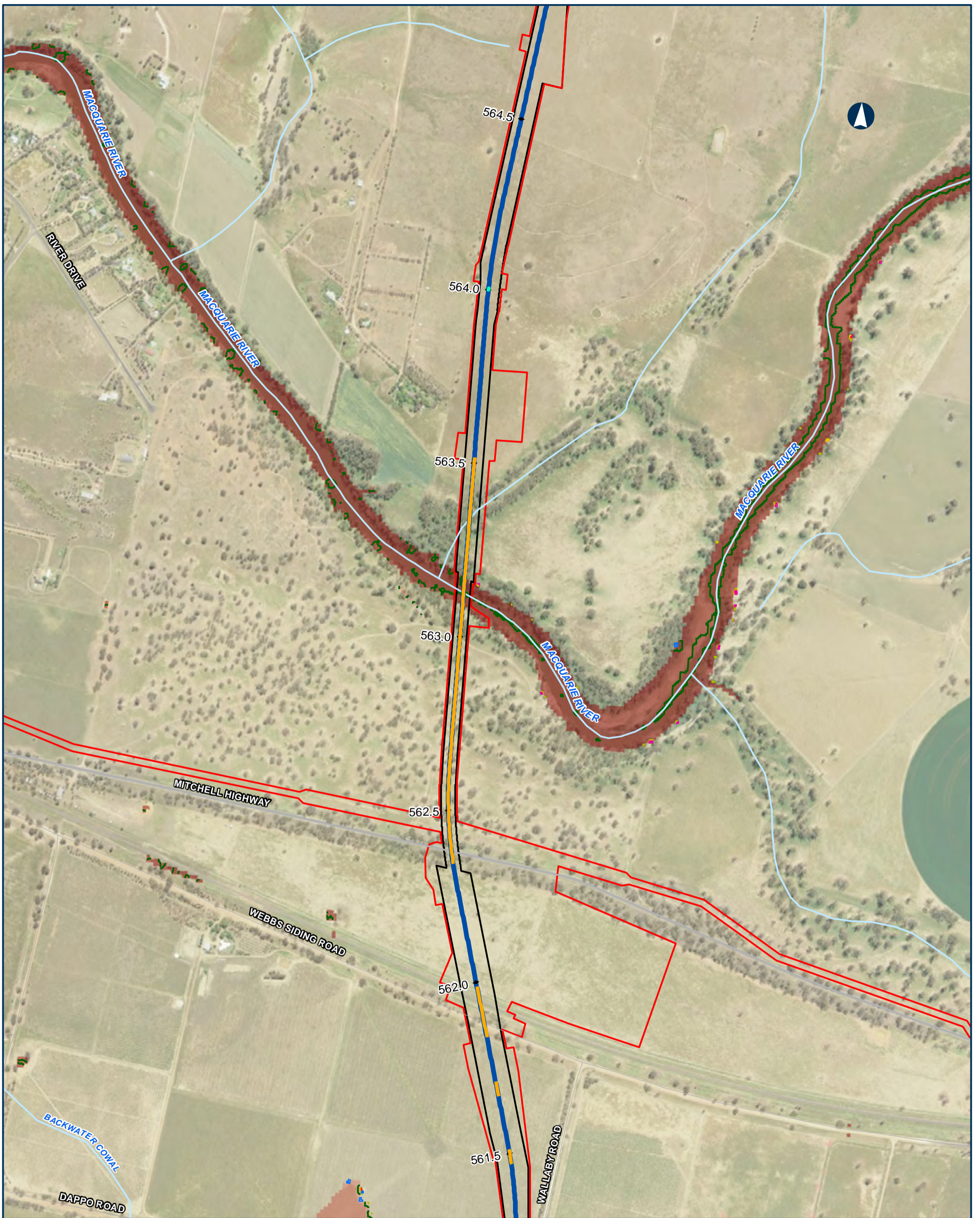
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Local road — Watercourse — The proposal — Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.6

0 200 400 Metres

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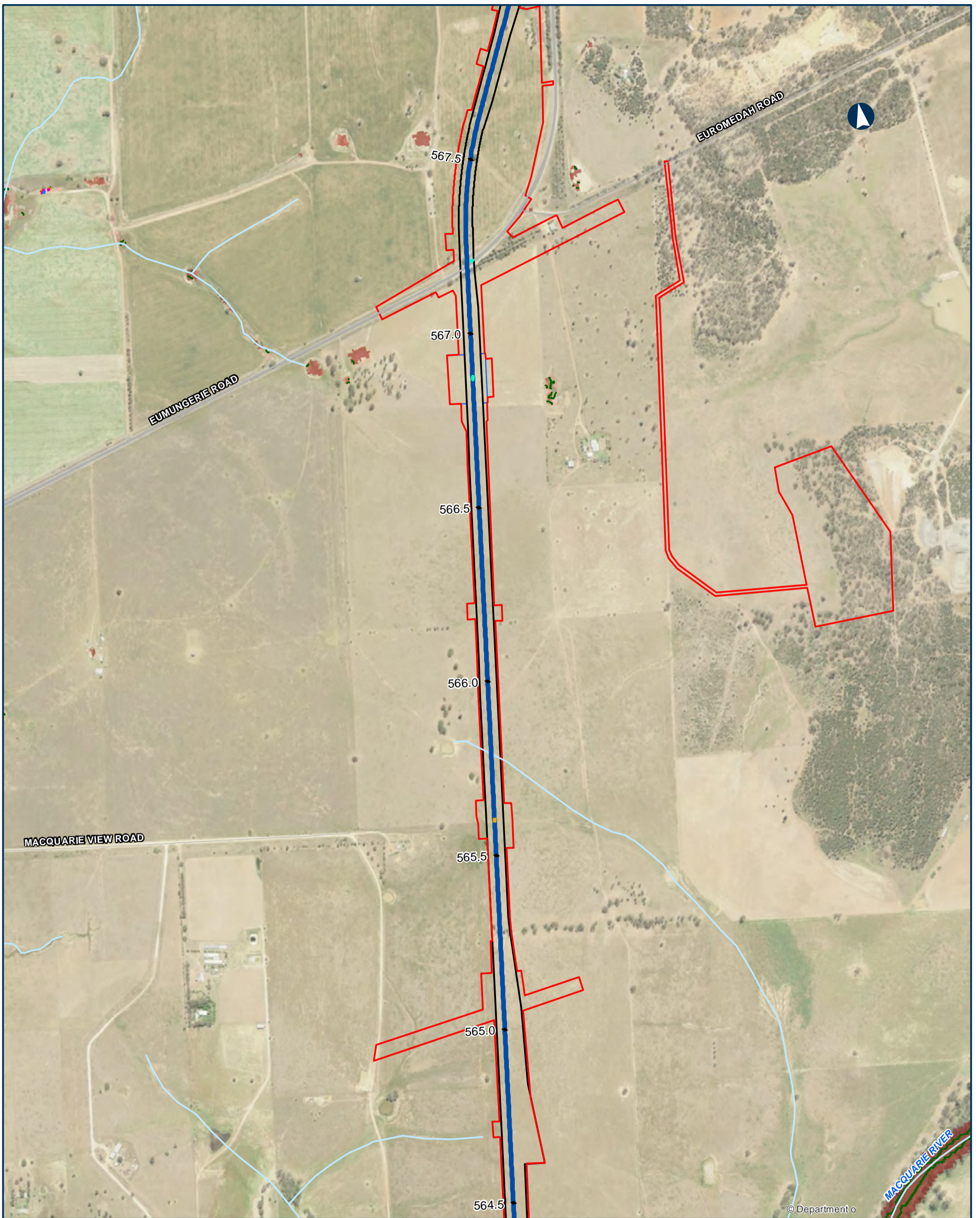
Date: 9/08/2022 Paper: A3
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Primary road — Local road — Watercourse — The proposal Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.7

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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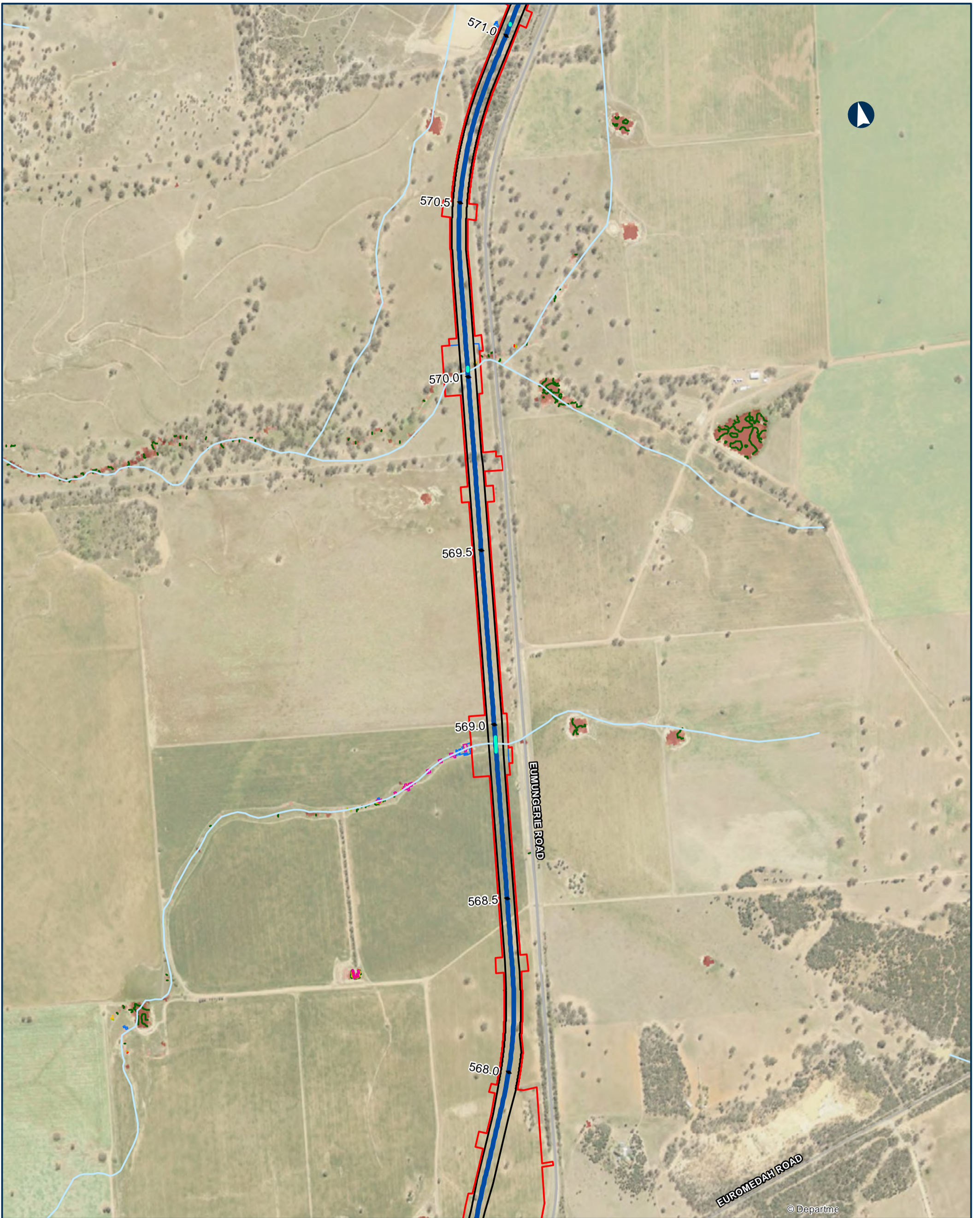
Date: 9/08/2022 Paper: A3
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.8

0 200 400 Metres

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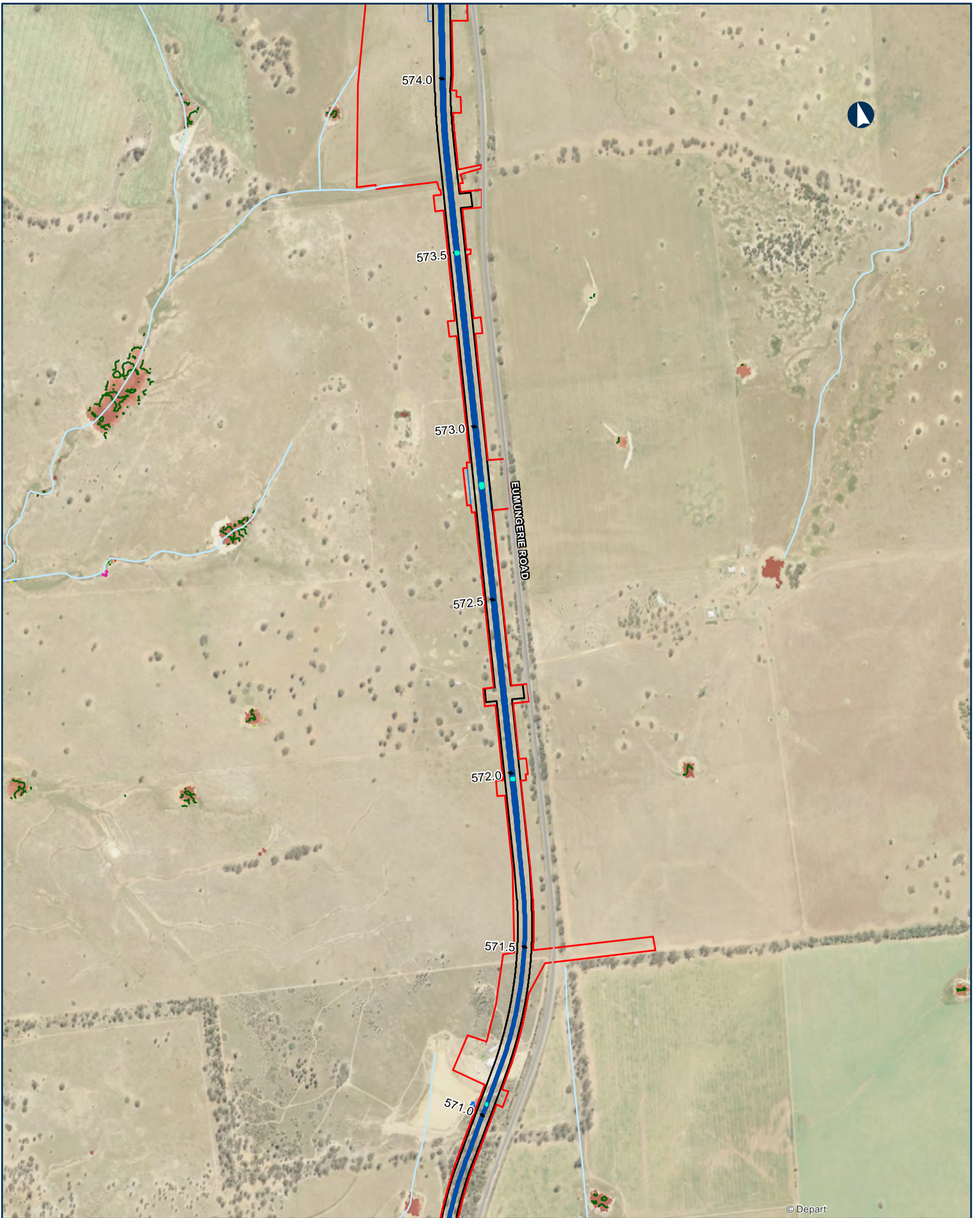
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.9

0 200 400 Metres

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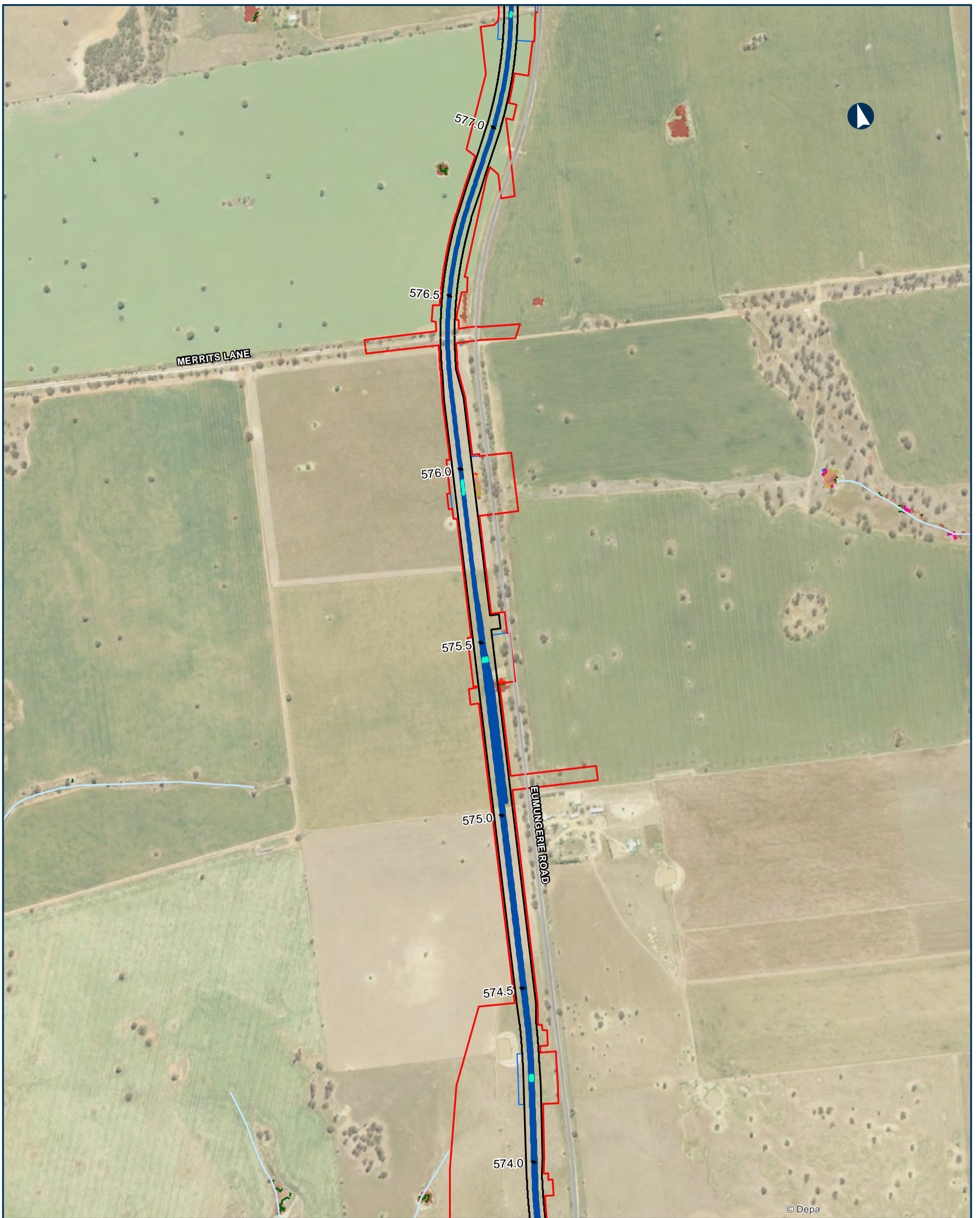
Date: 9/08/2022 Paper: A3
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| <ul style="list-style-type: none"> — Culvert — Alignment — Arterial road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.10

0 200 400 Metres

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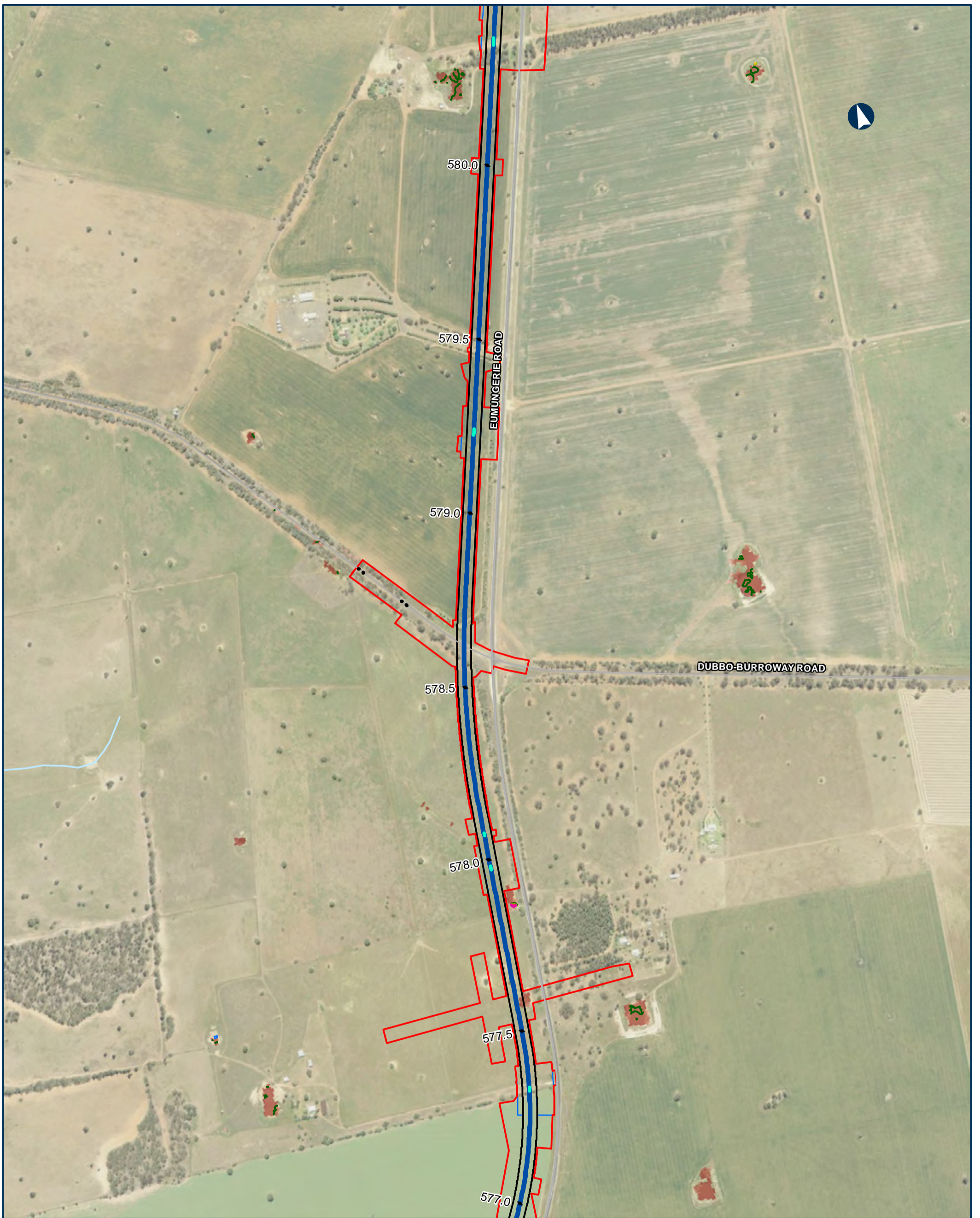
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.11

0 200 400 Metres

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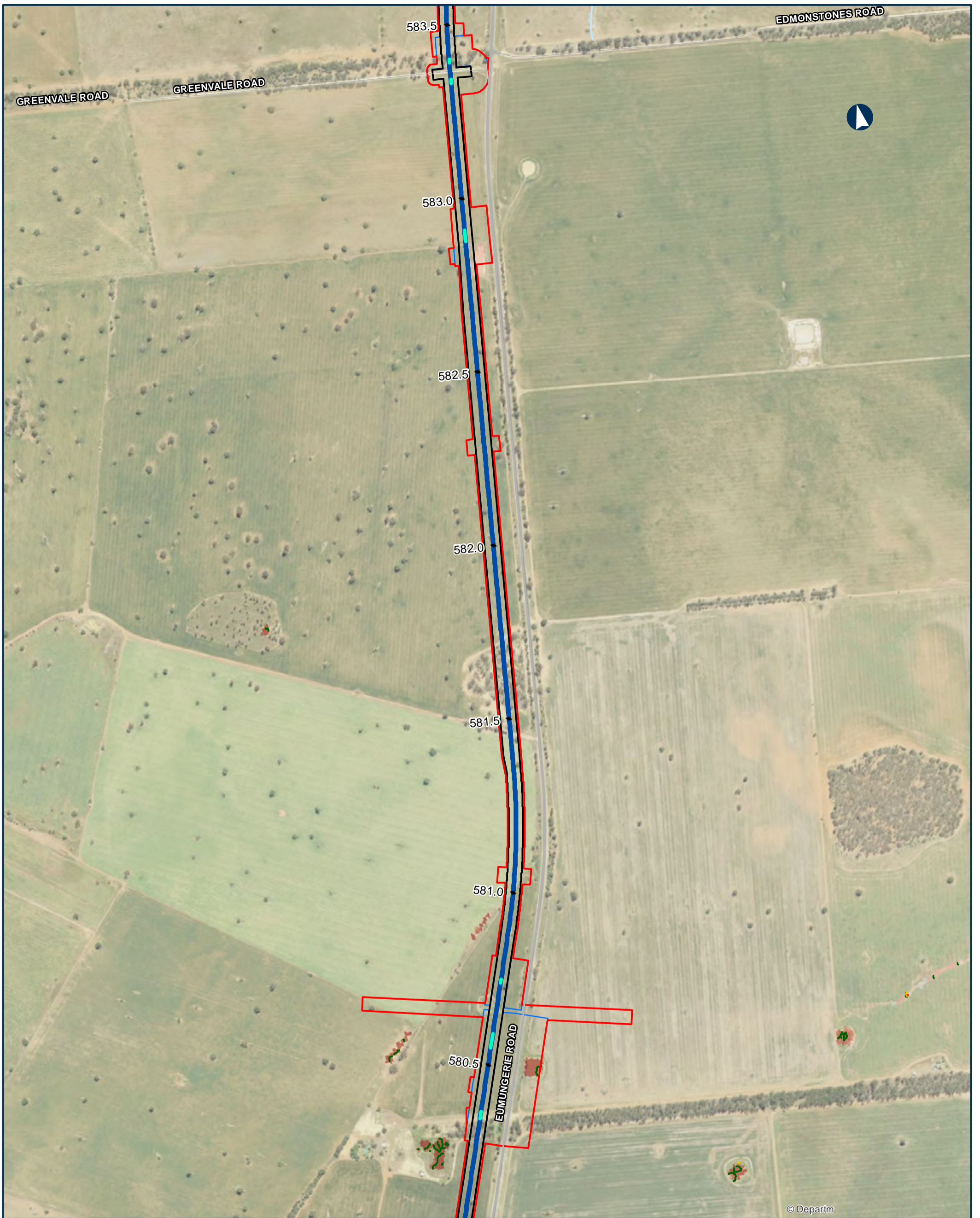
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Road ODL departure | 5% | 3hrs - 6hrs |
| Arterial road | 10% | 6hrs - 12hrs |
| Sub arterial road | 20% | 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 - 20% AEP

Appendix I - Figure 4.1.12

0 200 400 Metres

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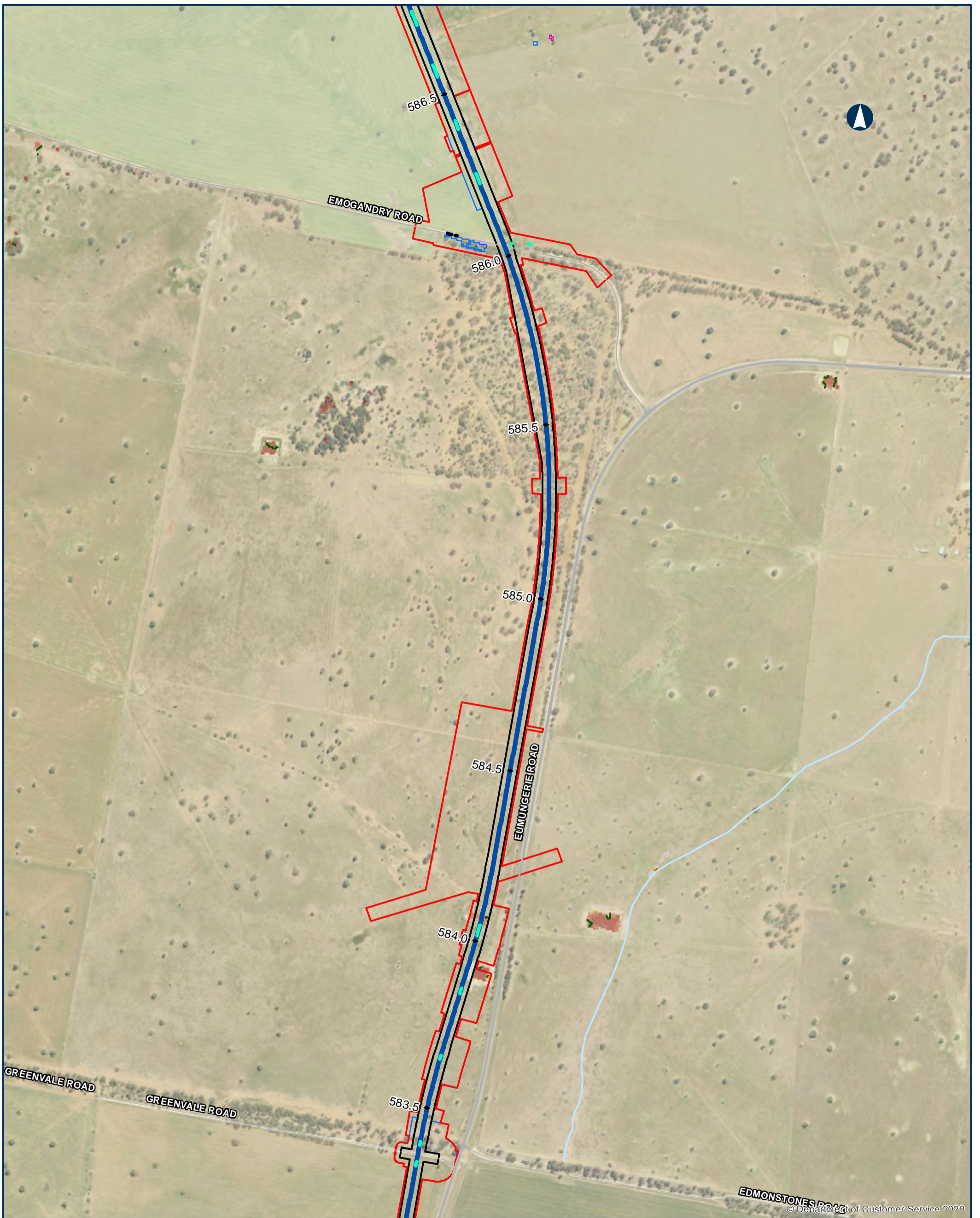
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.13

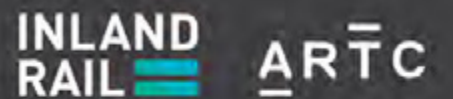
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Road ODL departure — Arterial road — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|--|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.14

0 200 400 Metres

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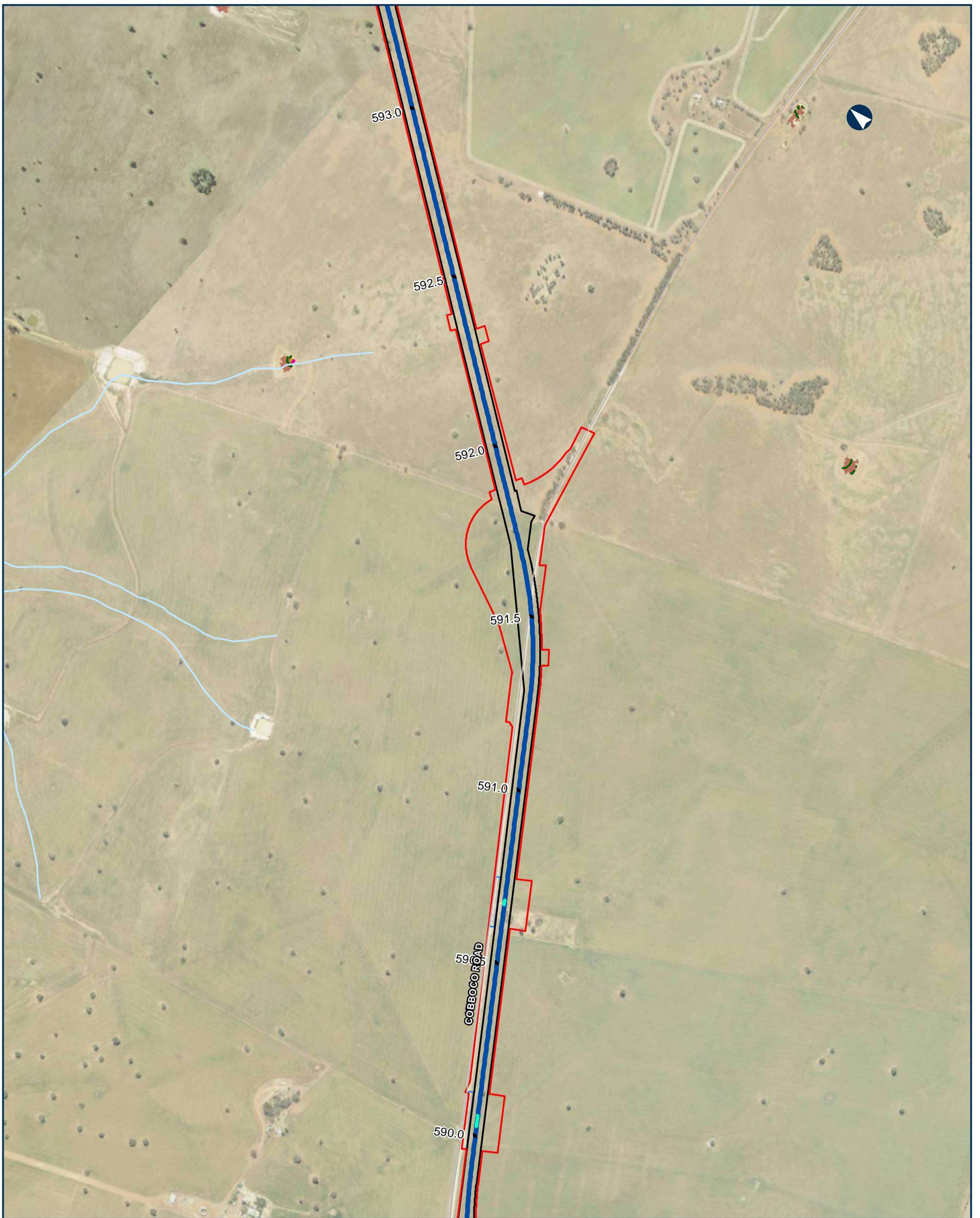
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| Culvert | Change in duration of inundation | Existing Duration of Inundation 1hr - 3hrs |
| Alignment | 0% | 3hrs - 6hrs |
| Sub arterial road | Area of departure | 6hrs - 12hrs |
| Watercourse | Exist duration <1hr, design duration >1hr | 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 - 20% AEP

Appendix I - Figure 4.1.15

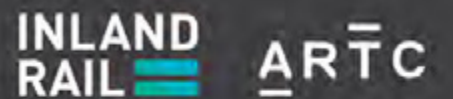
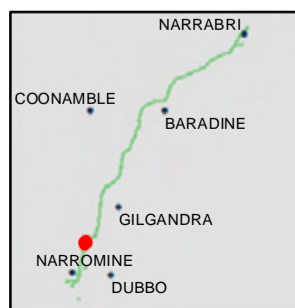
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Coordinate System: GDA 1994 MGA Zone 55

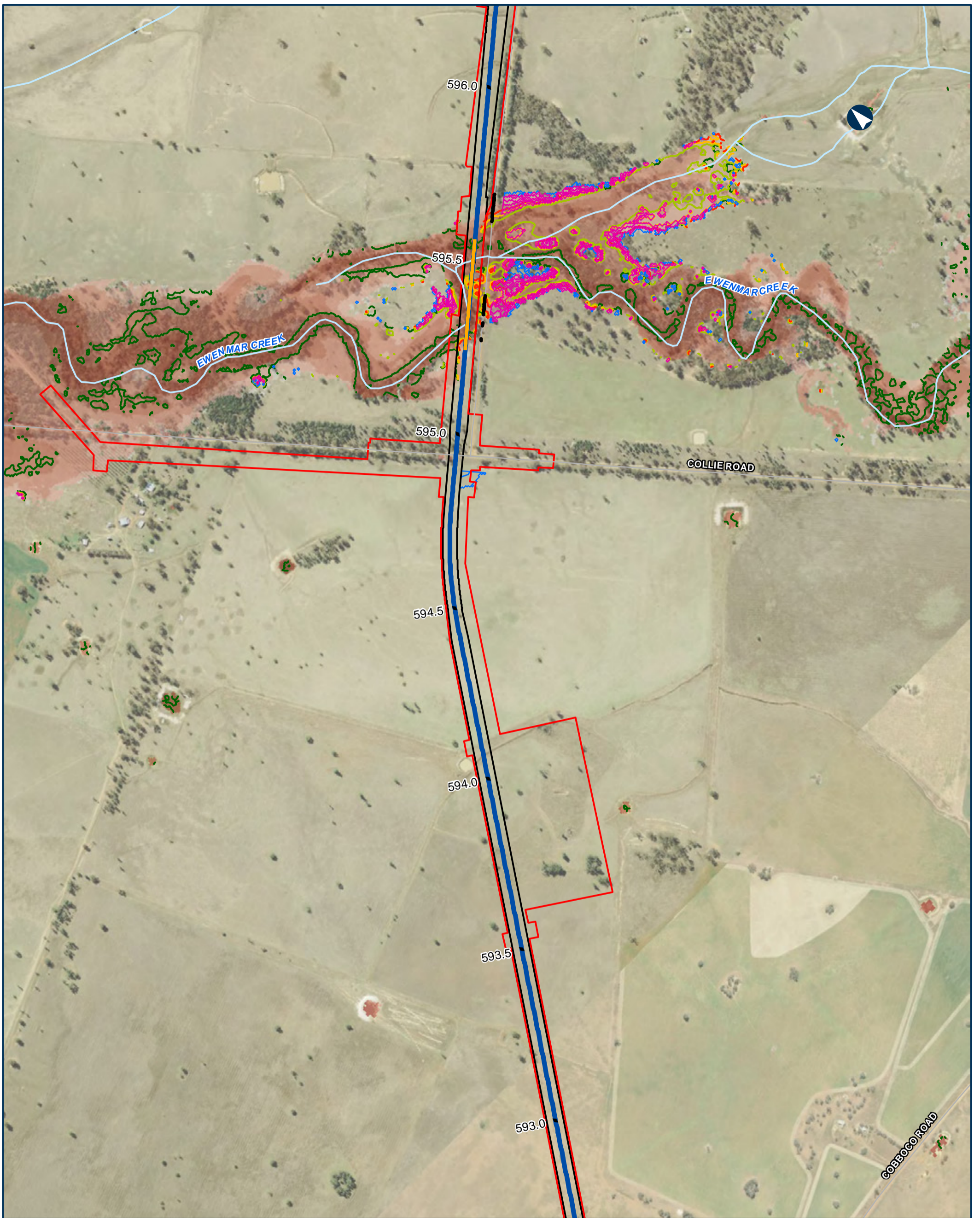
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.16

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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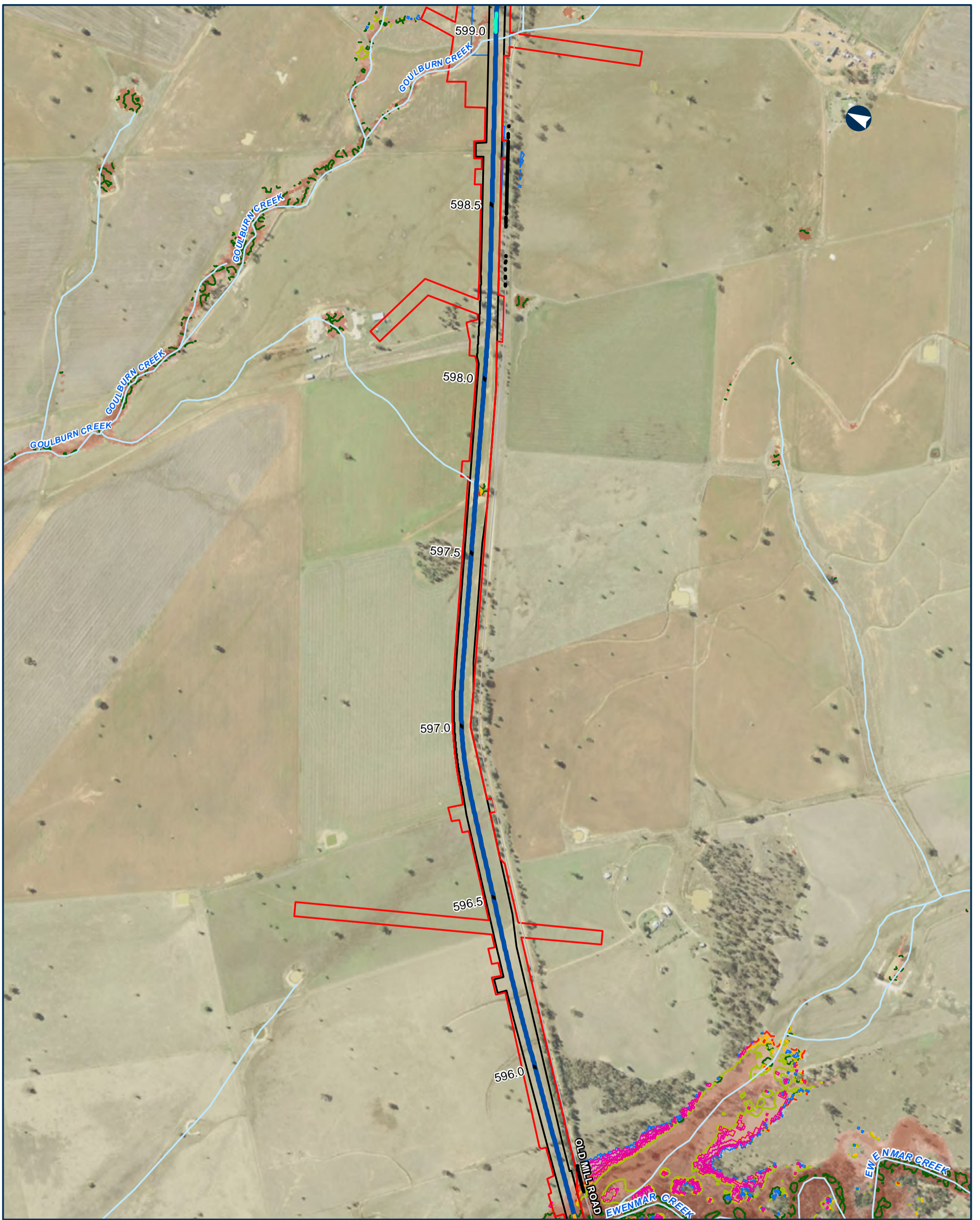
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Bridge
 - Alignment
 - Road QDL departure
 - Sub arterial 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 - 20% AEP

Appendix I - Figure 4.1.17

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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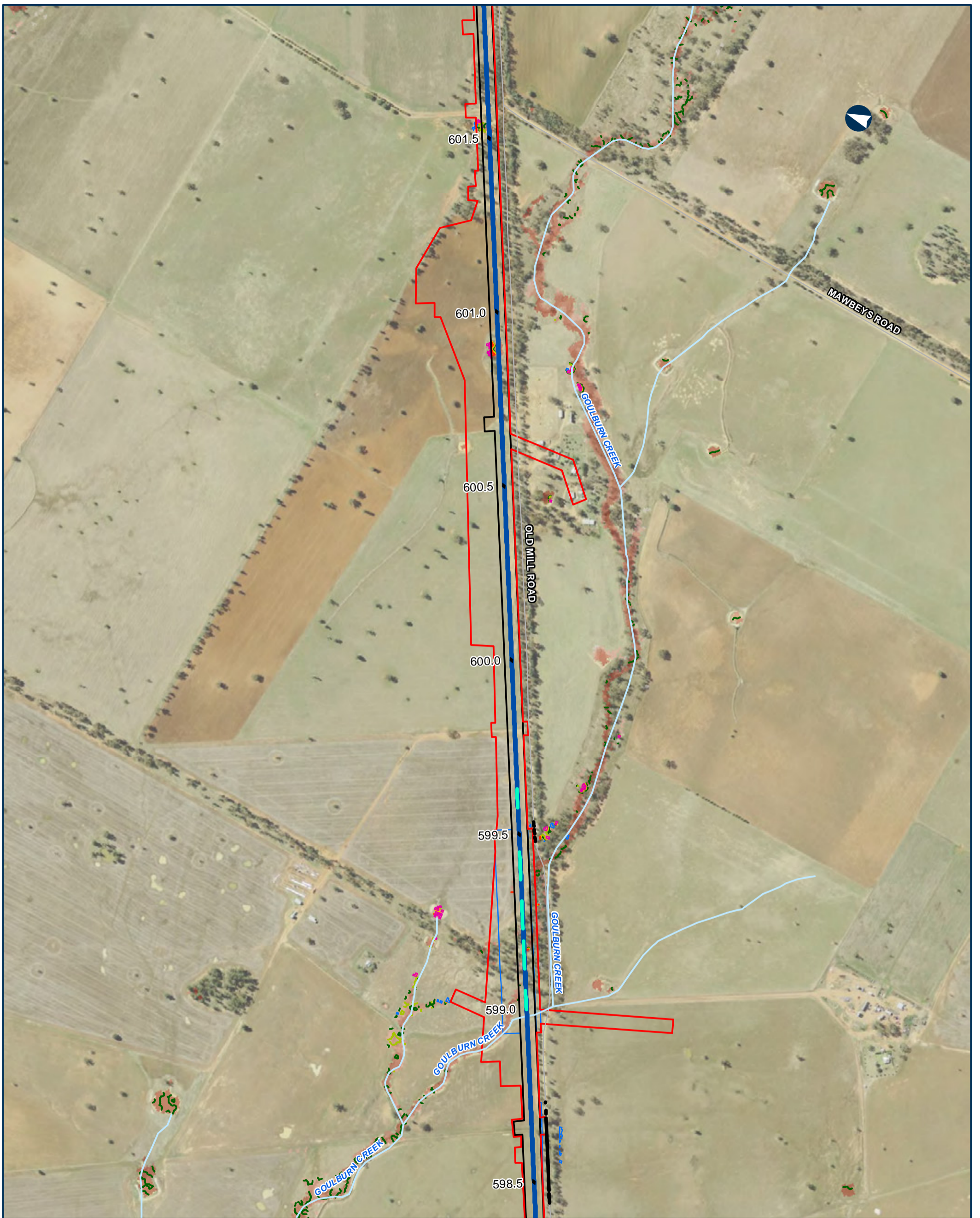
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|--|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.18

0 200 400 Metres

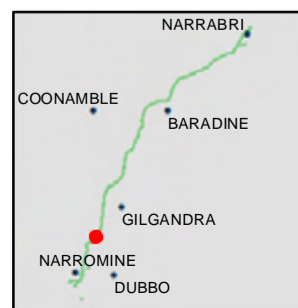
Coordinate System: GDA 1994 MGA Zone 55

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

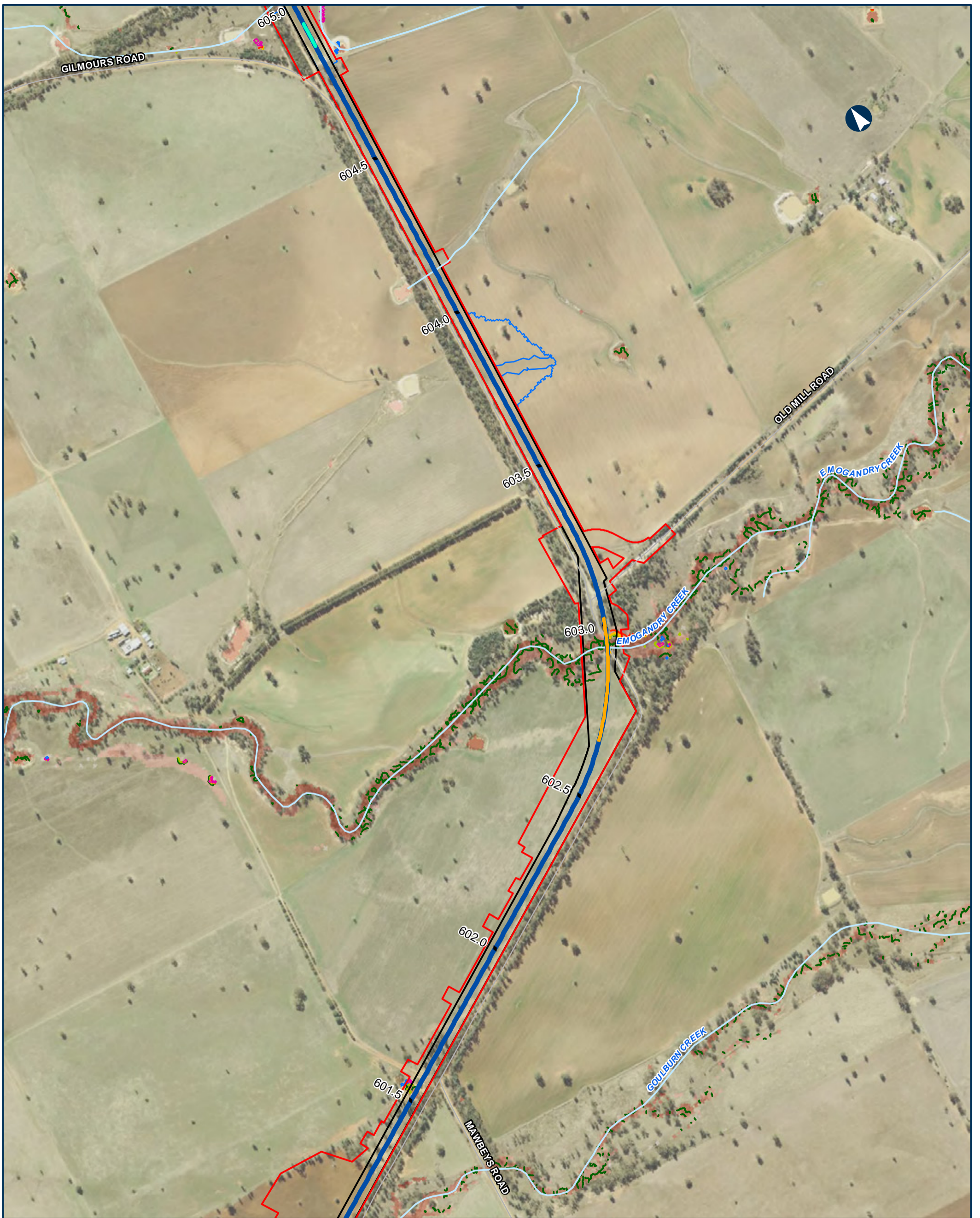
- Culvert
 - Alignment
 - Road QDL departure
 - Sub arterial road
 - Watercourse
 - The proposal
 - Drainage Control Area
 - Rail Corridor
- Change in duration of inundation**
- 0%
 - 5%
 - 10%
 - 20%
- Area of departure**
- Exist duration <1hr, design duration >1hr
 - Exist duration >1hr, duration change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

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.19

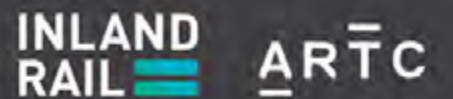
0 200 400 Metres

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

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.20

0 200 400 Metres

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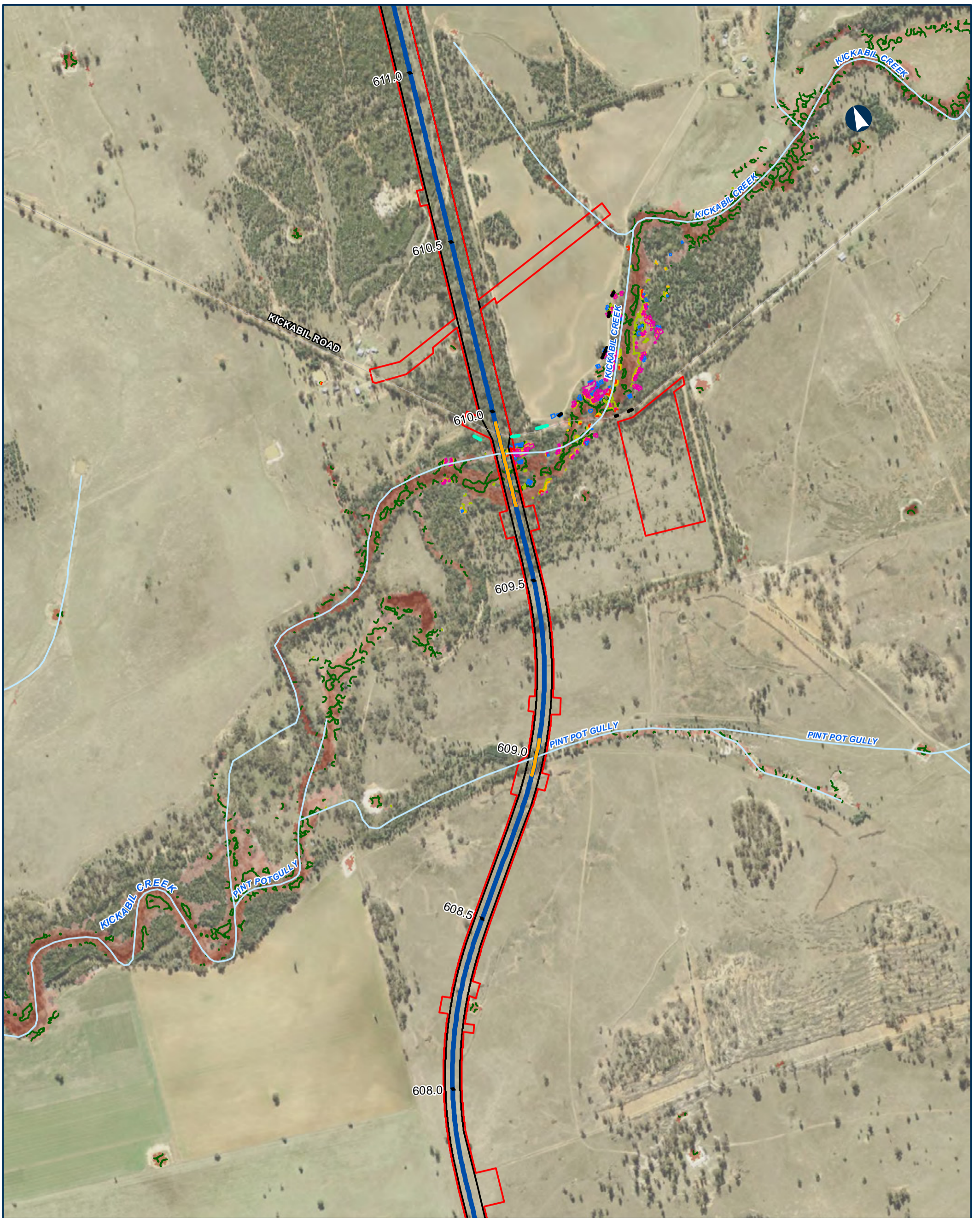
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|--|---------------------------------------|
| Bridge | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Culvert | 0% | 1hr - 3hrs |
| Alignment | 5% | 3hrs - 6hrs |
| Sub arterial road | 10% | 6hrs - 12hrs |
| Watercourse | 20% | 12hrs - 24hrs |
| The proposal | Area of departure | |
| 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 - 20% AEP

Appendix I - Figure 4.1.21

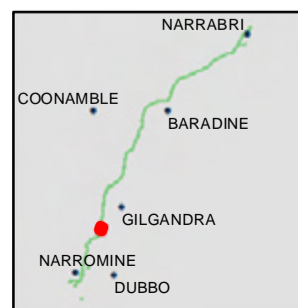
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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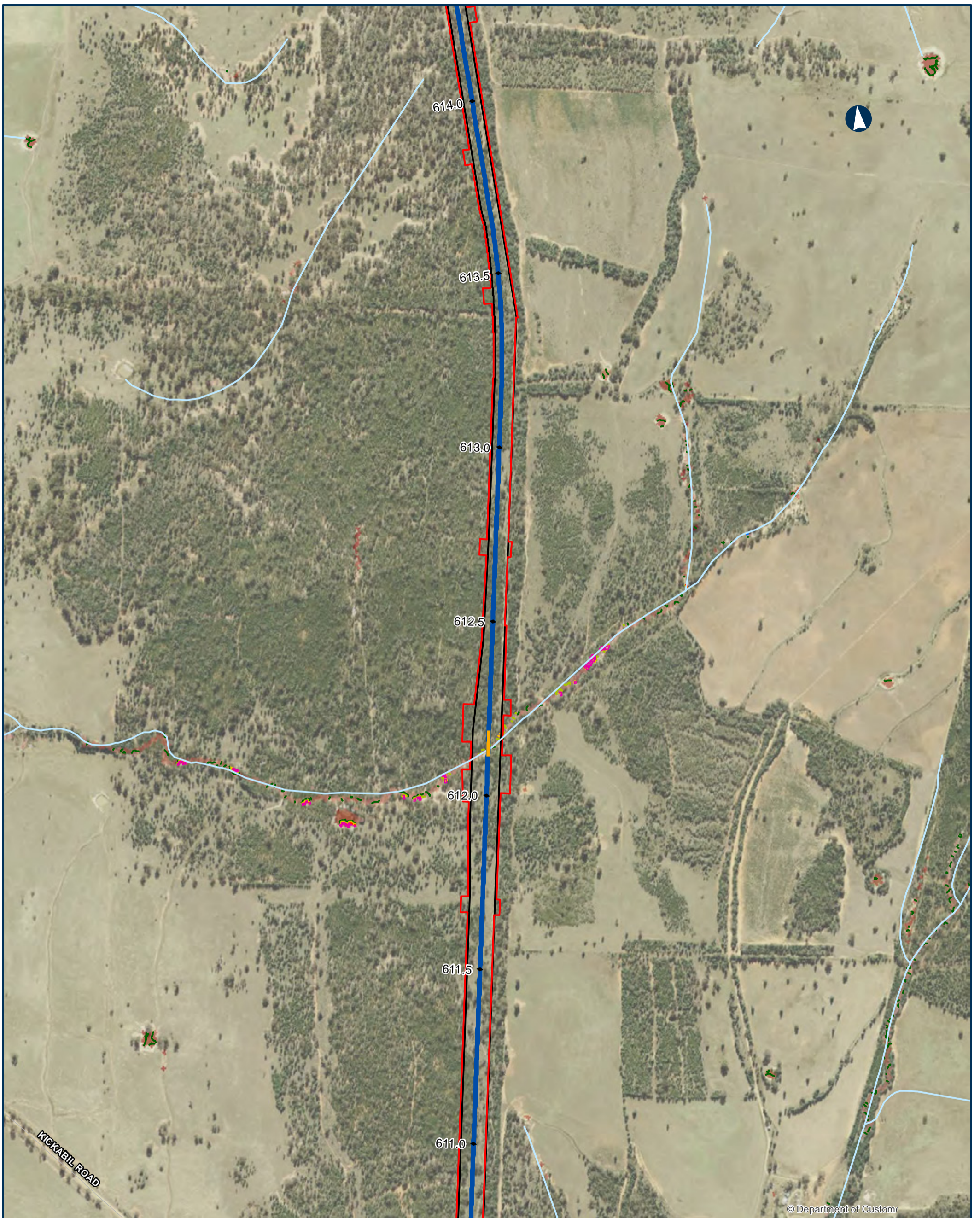
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Local road — Watercourse — The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.22

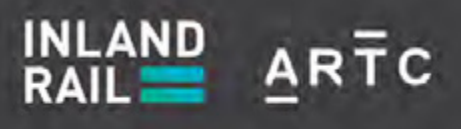
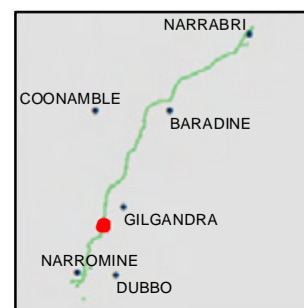
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

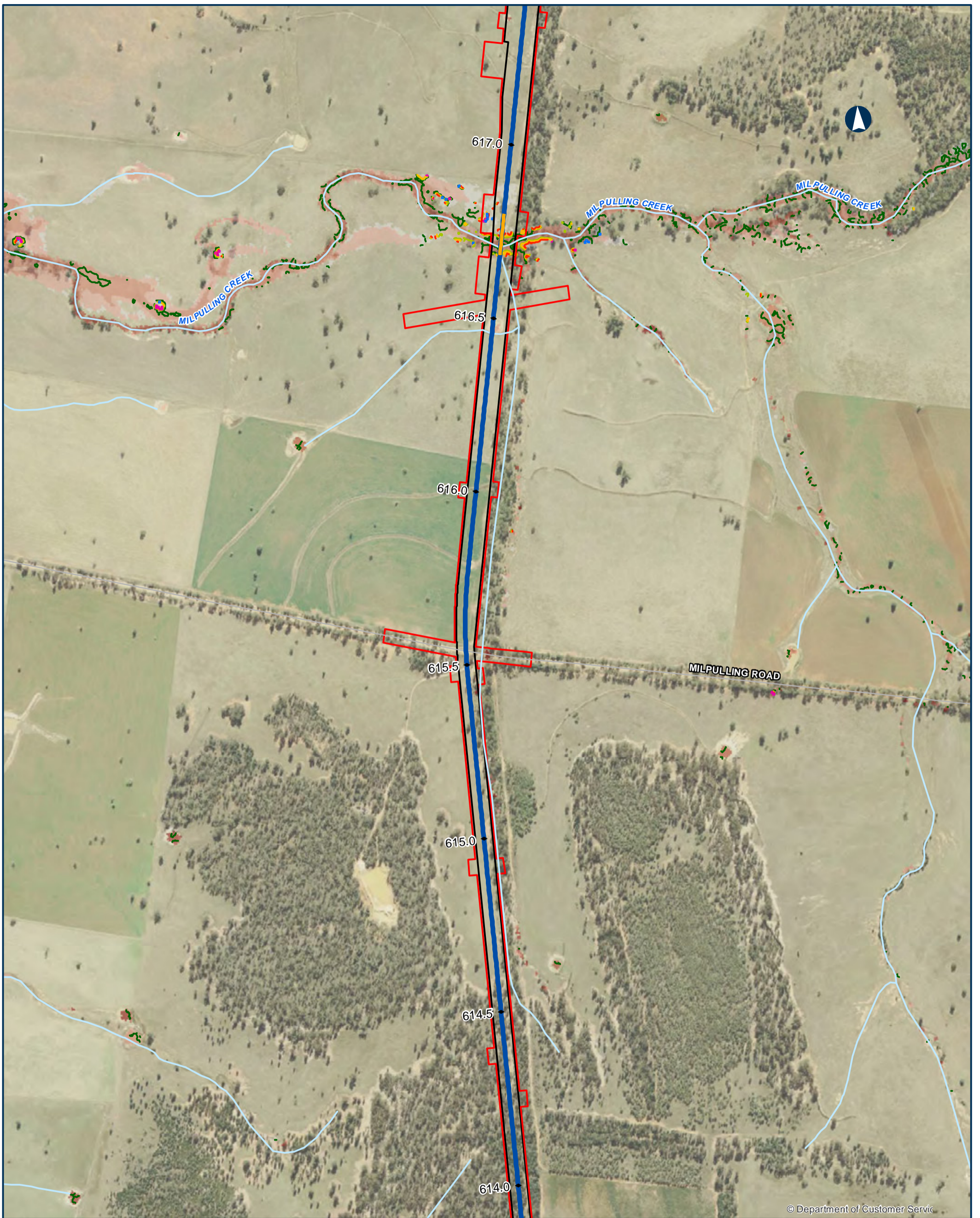
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ■ Bridge ■ Alignment ■ Local road ■ Watercourse The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.23

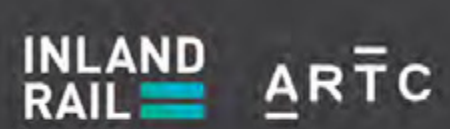
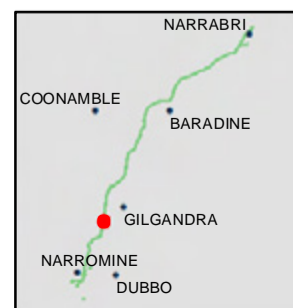
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

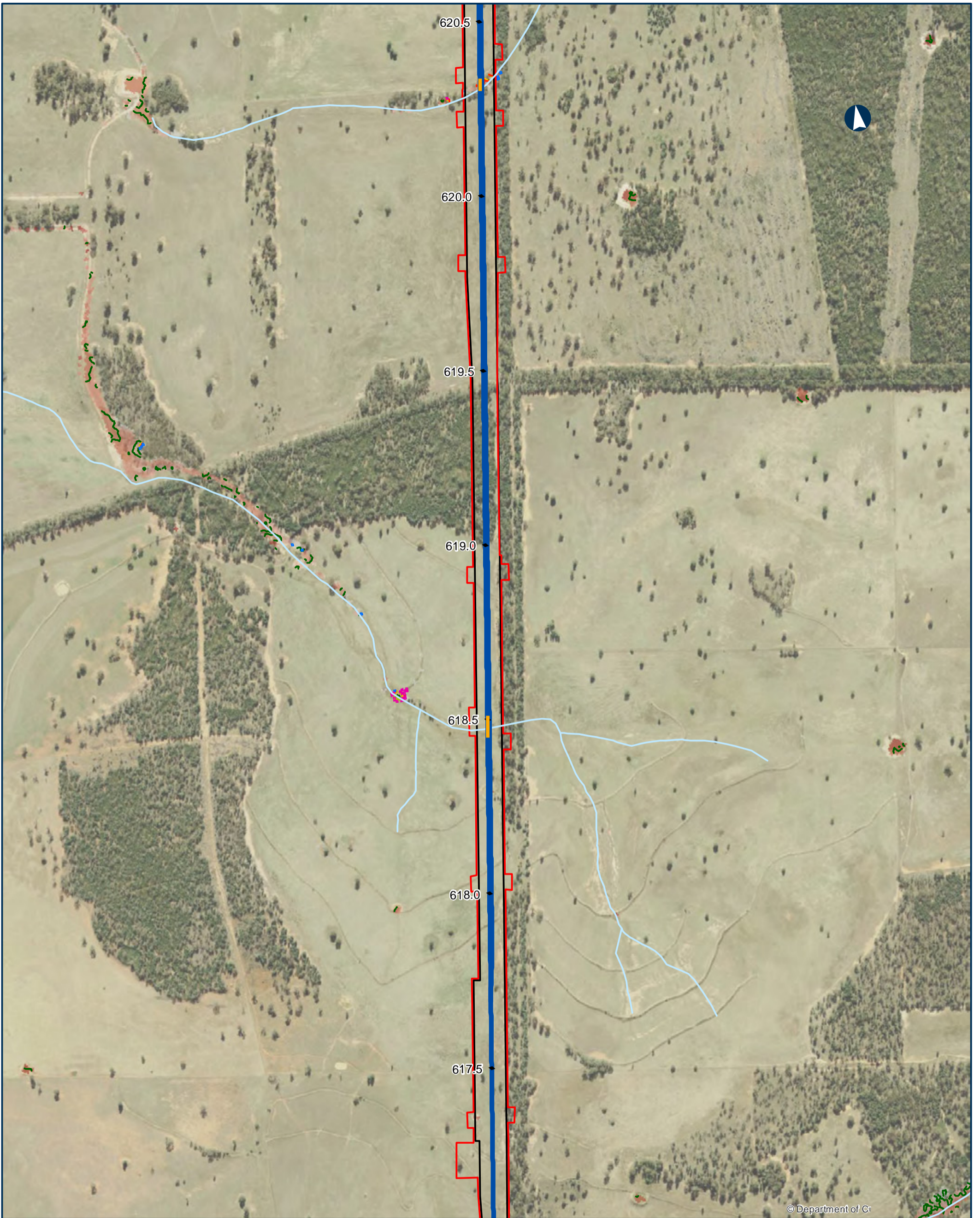
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Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Alignment — Sub arterial road — Watercourse The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.24

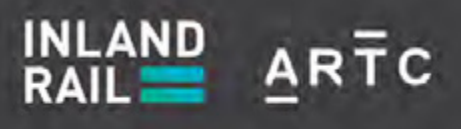
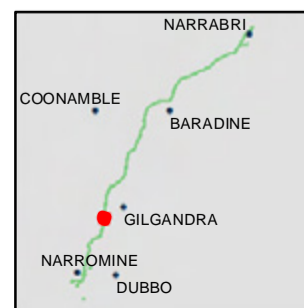
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

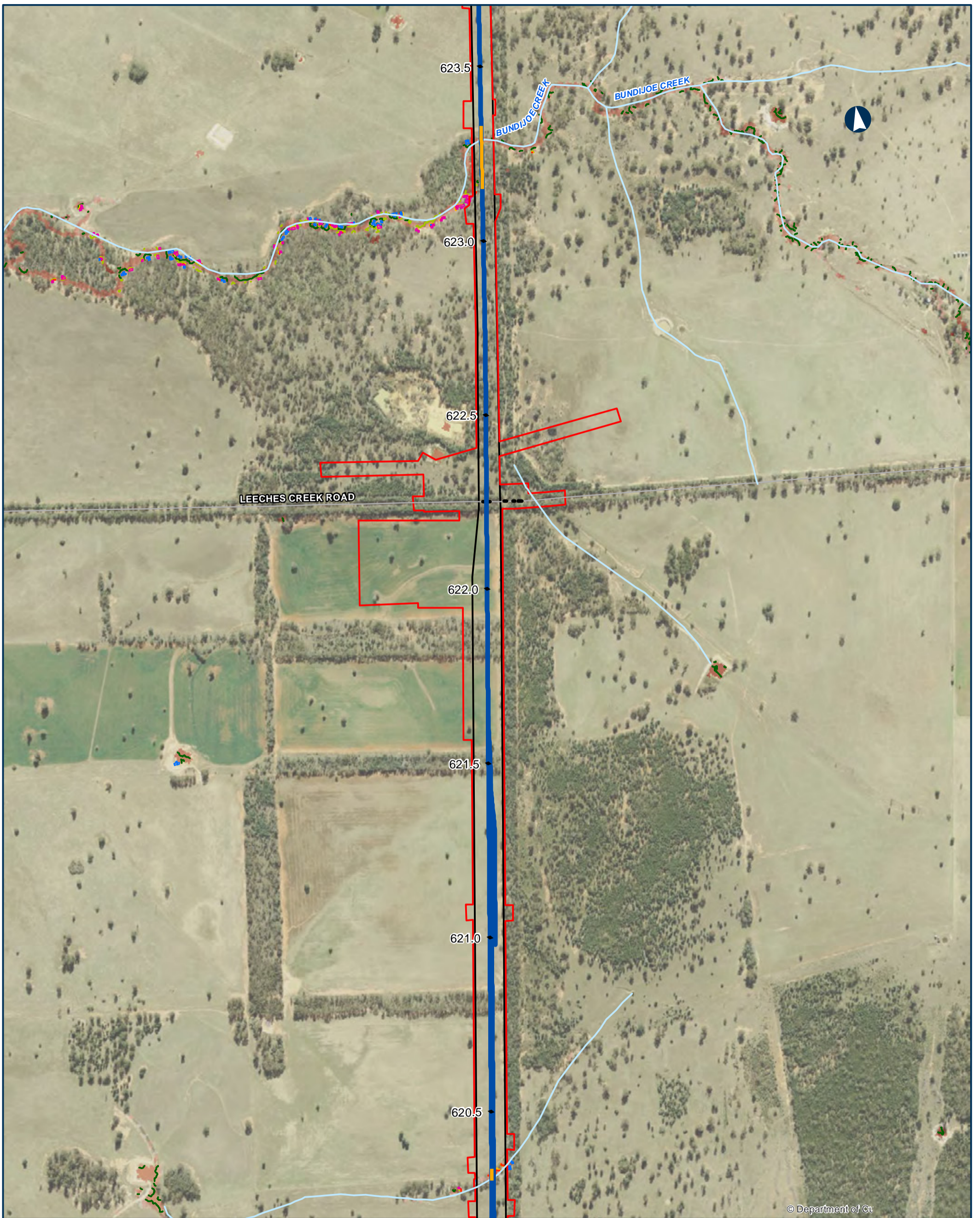
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> — Bridge — Alignment — Watercourse The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.25

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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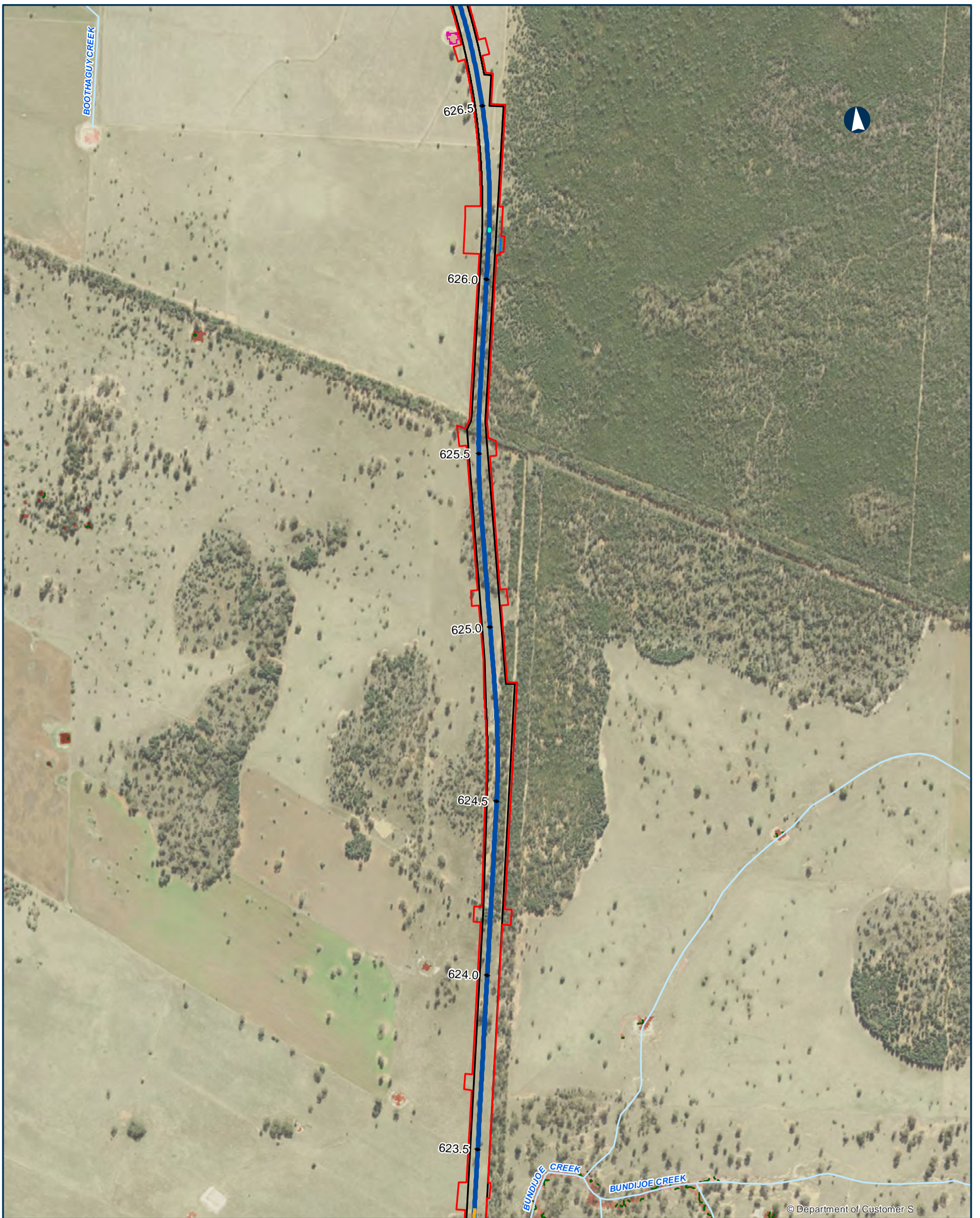
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> — Bridge — Alignment — Road ODL departure — Sub arterial road — Watercourse The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs >24hrs |
|--|---|---|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.26

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.27

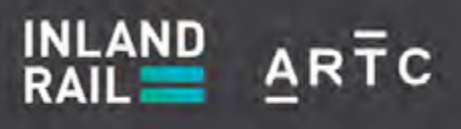
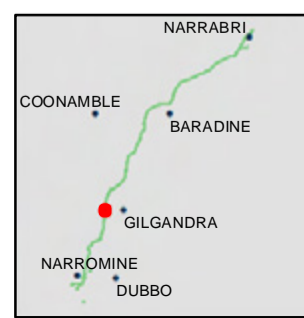
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

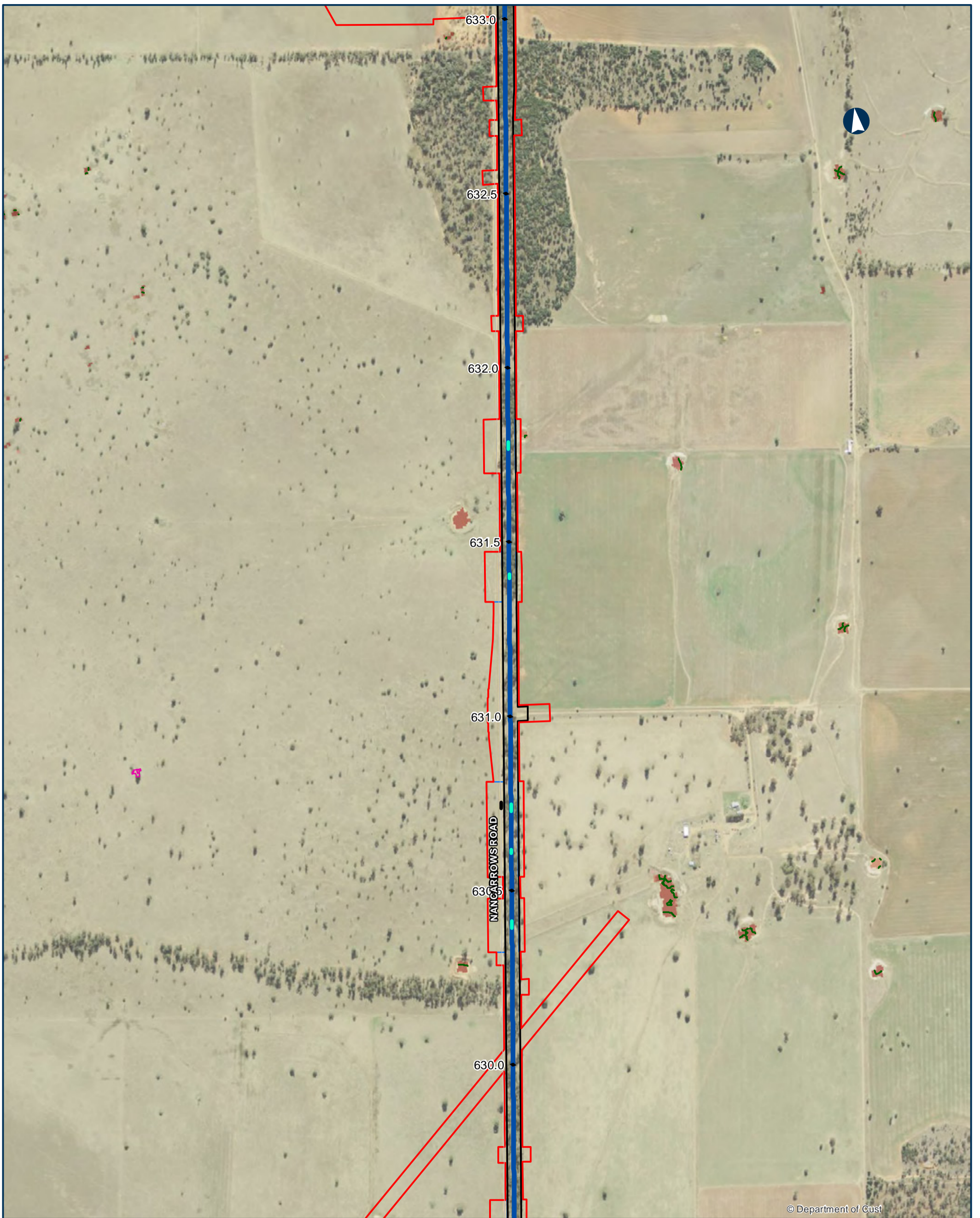
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Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Culvert
 - Alignment
 - Local road
 - Watercourse
 - The proposal
 - Drainage Control Area
 - Rail Corridor
- Change in duration of inundation**
- 0%
 - 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 - 20% AEP

Appendix I - Figure 4.1.28

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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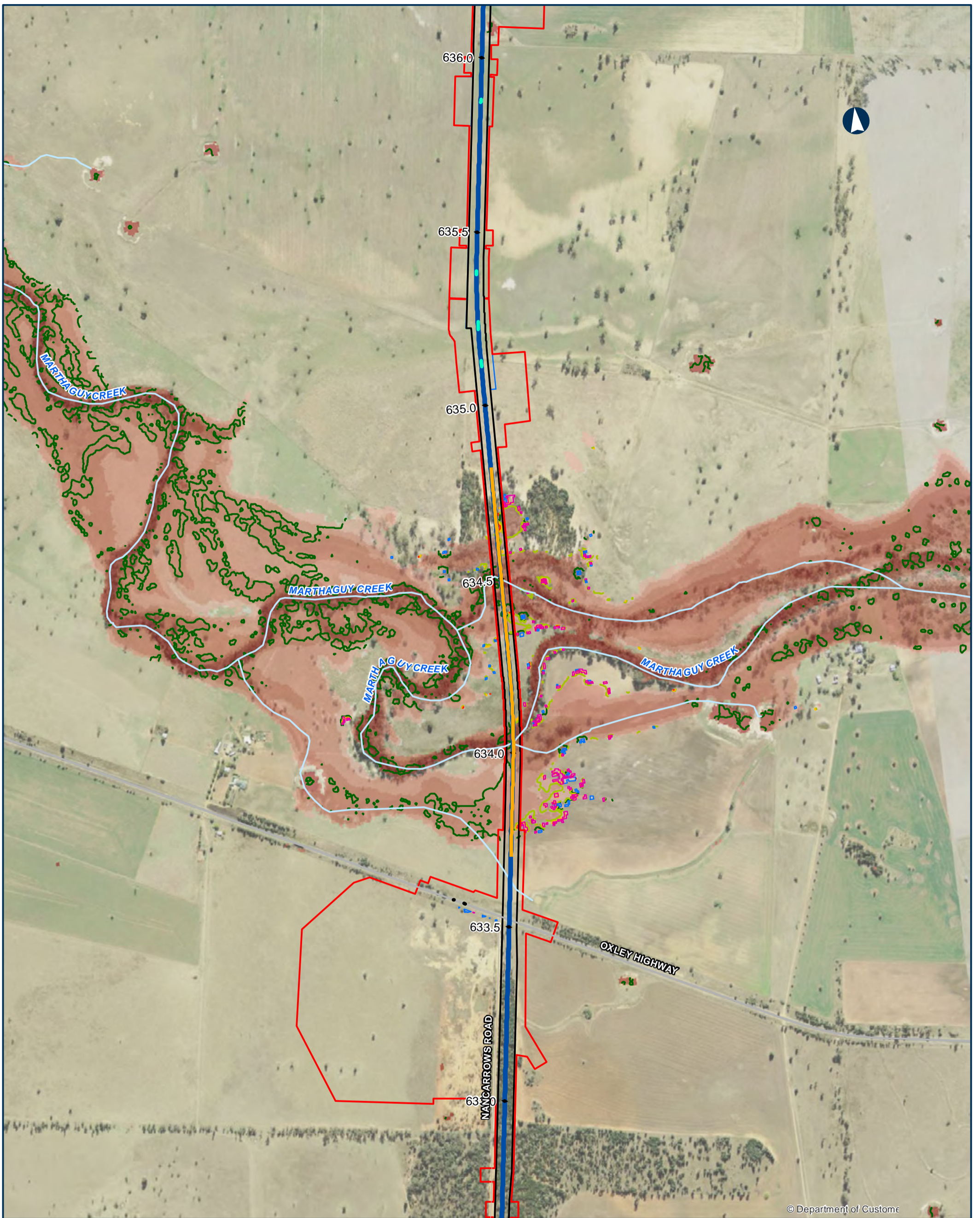
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Culvert
 - Alignment
 - Road QDL departure
 - Local road
 - Watercourse
 - The proposal
 - Drainage Control Area
 - Rail Corridor
- Change in duration of inundation**
- 0%
 - Area of departure
 - Exisit 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 - 20% AEP

Appendix I - Figure 4.1.29

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

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Primary road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.30

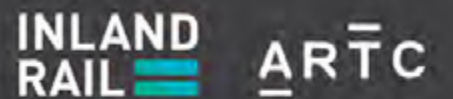
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Coordinate System: GDA 1994 MGA Zone 55

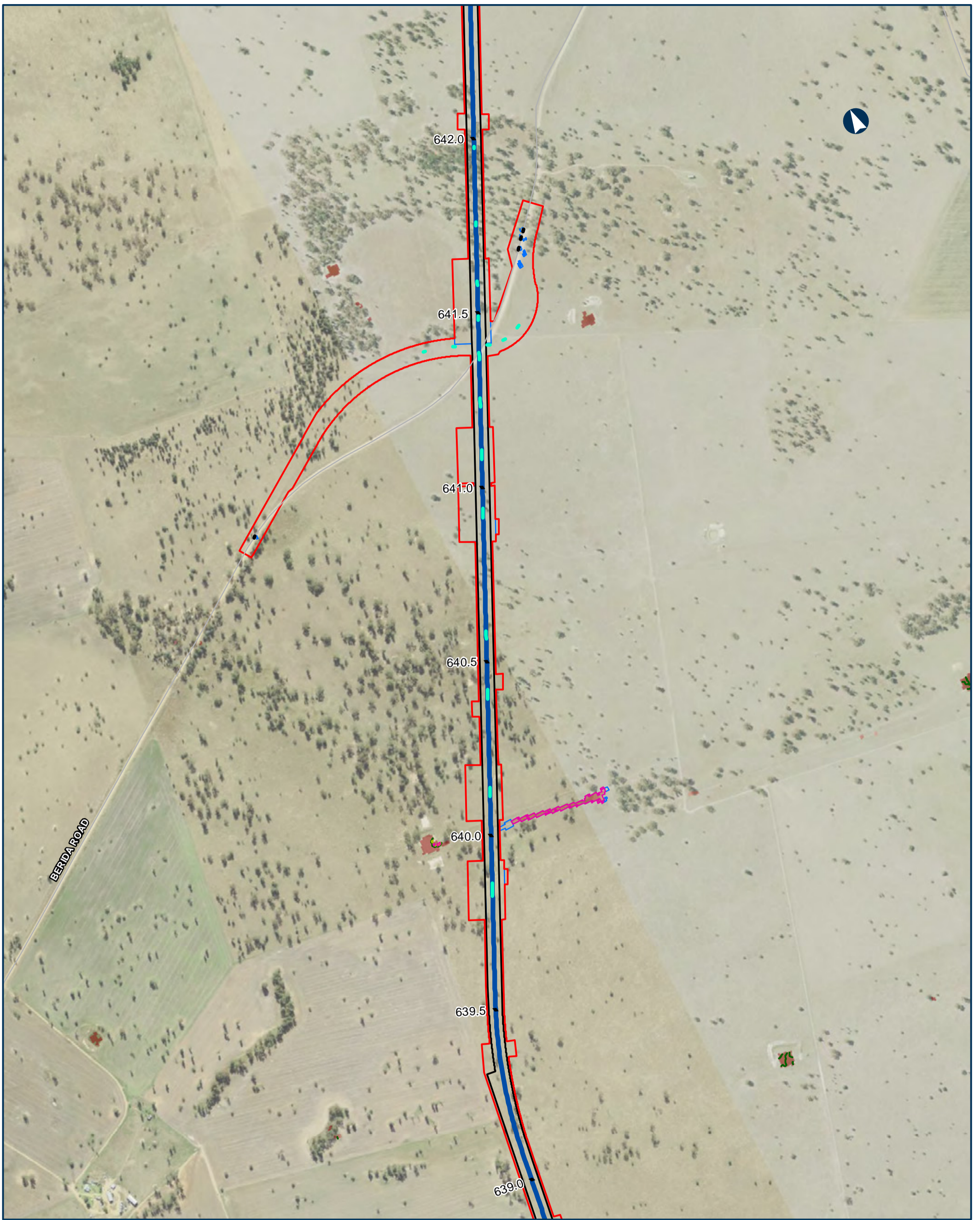
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Culvert	Change in duration of inundation	Existing Duration of Inundation
Alignment		
Watercourse	0%	1hr - 3hrs
The proposal		3hrs - 6hrs
Drainage Control Area		6hrs - 12hrs
Rail Corridor		12hrs - 24hrs
		> 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.31

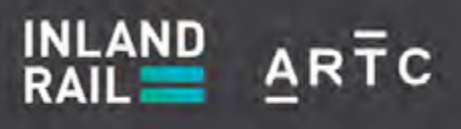
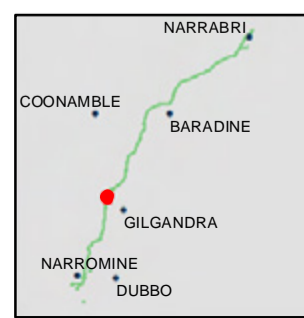
0 200 400 Metres

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

- | | | |
|-----------------------|--|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | 3hrs - 6hrs |
| Road ODL departure | 5% | 6hrs - 12hrs |
| Sub arterial road | 10% | 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 - 20% AEP

Appendix I - Figure 4.1.32

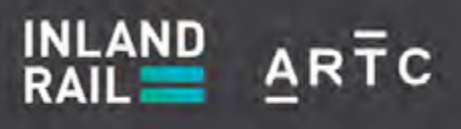
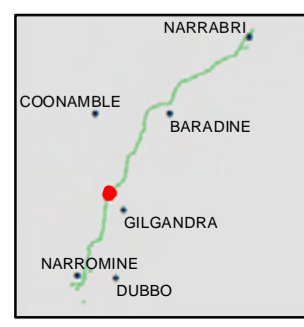
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

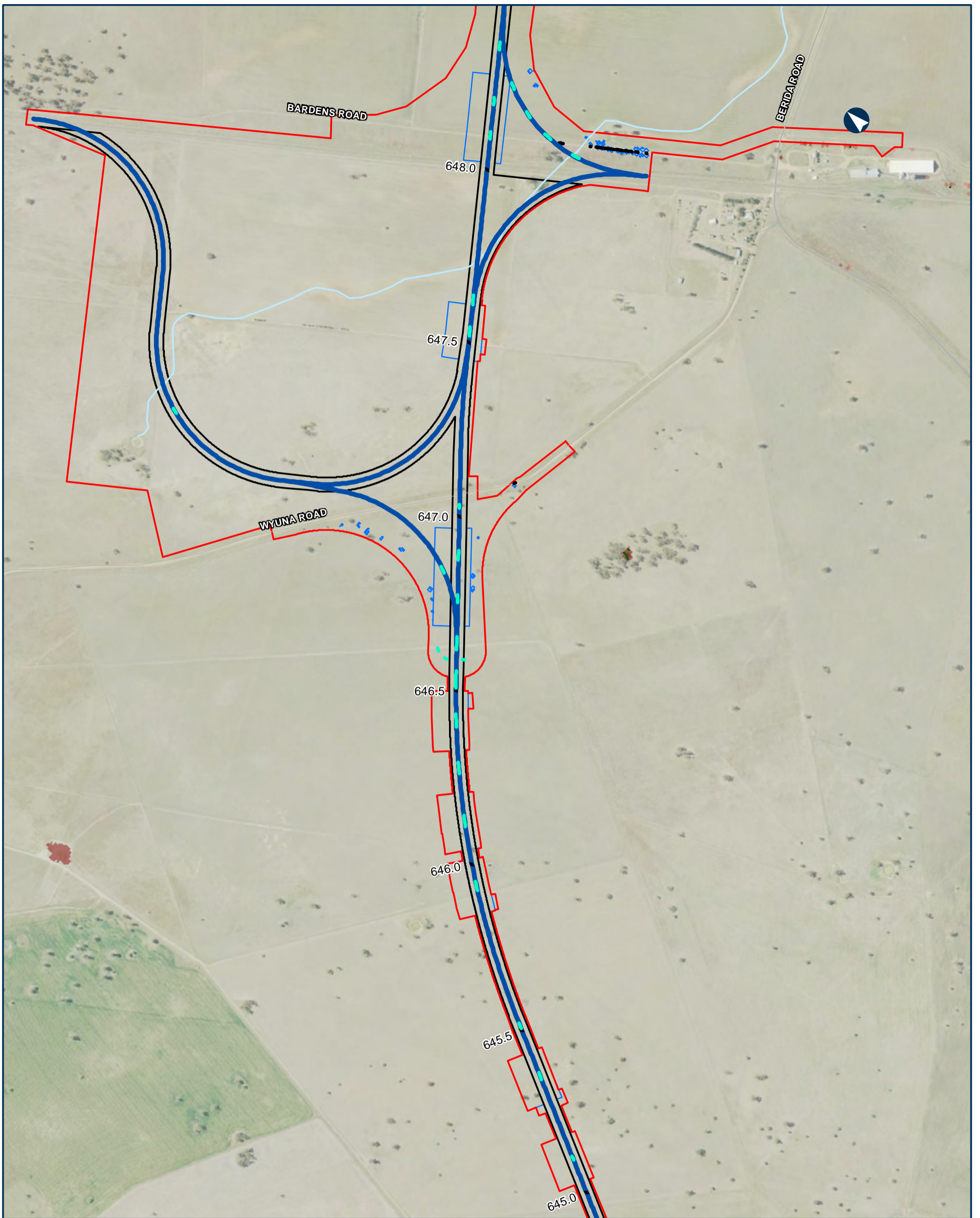
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- | | | |
|---|--|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|--|--|

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.33

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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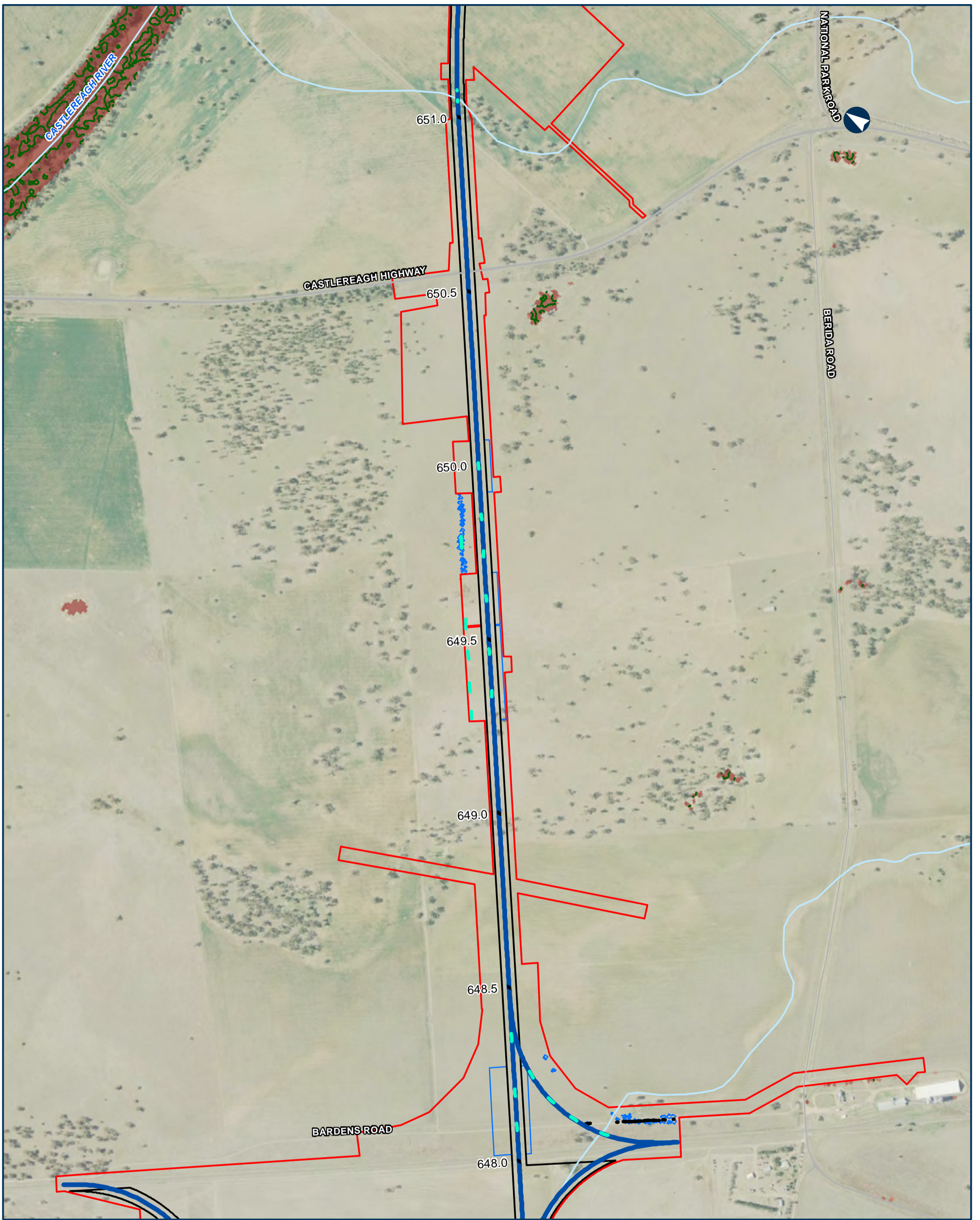
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.34

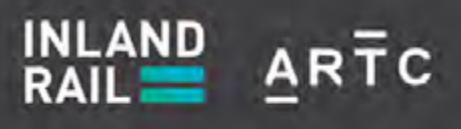
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

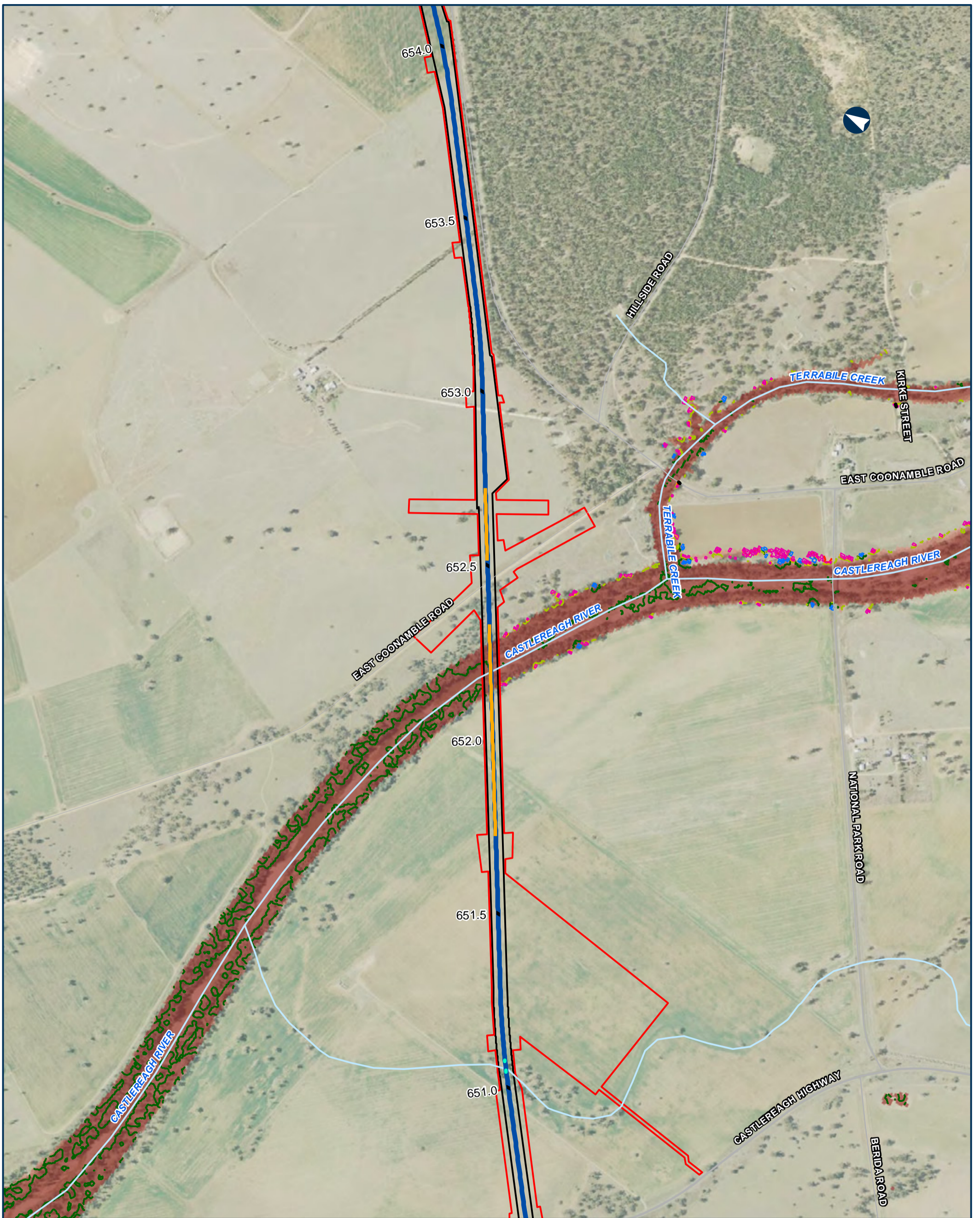
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.35

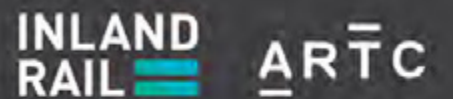
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

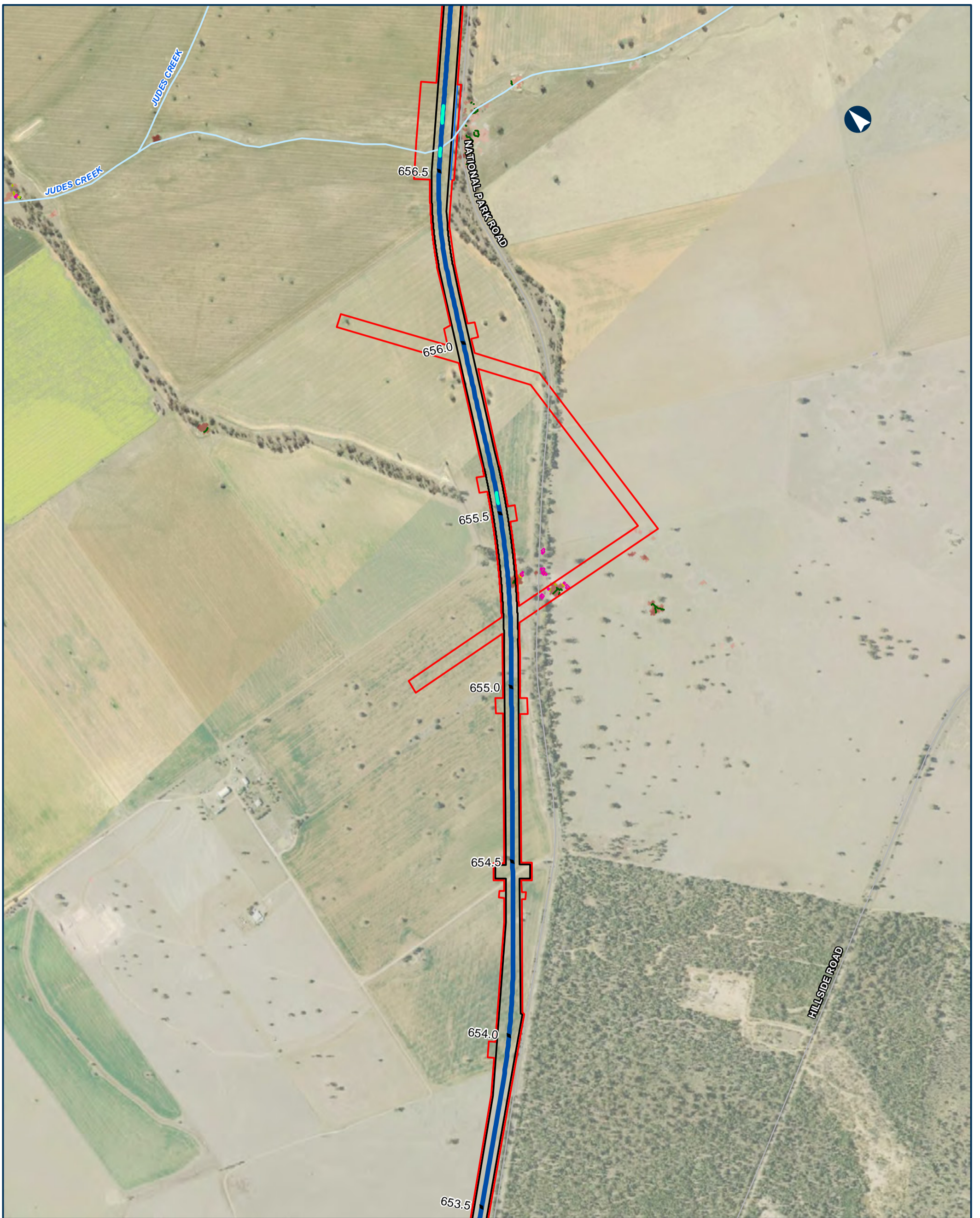
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Primary road — Sub arterial road — Local road — Watercourse — The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.36

0 200 400 Metres

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.37

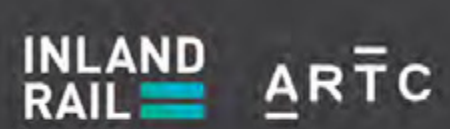
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

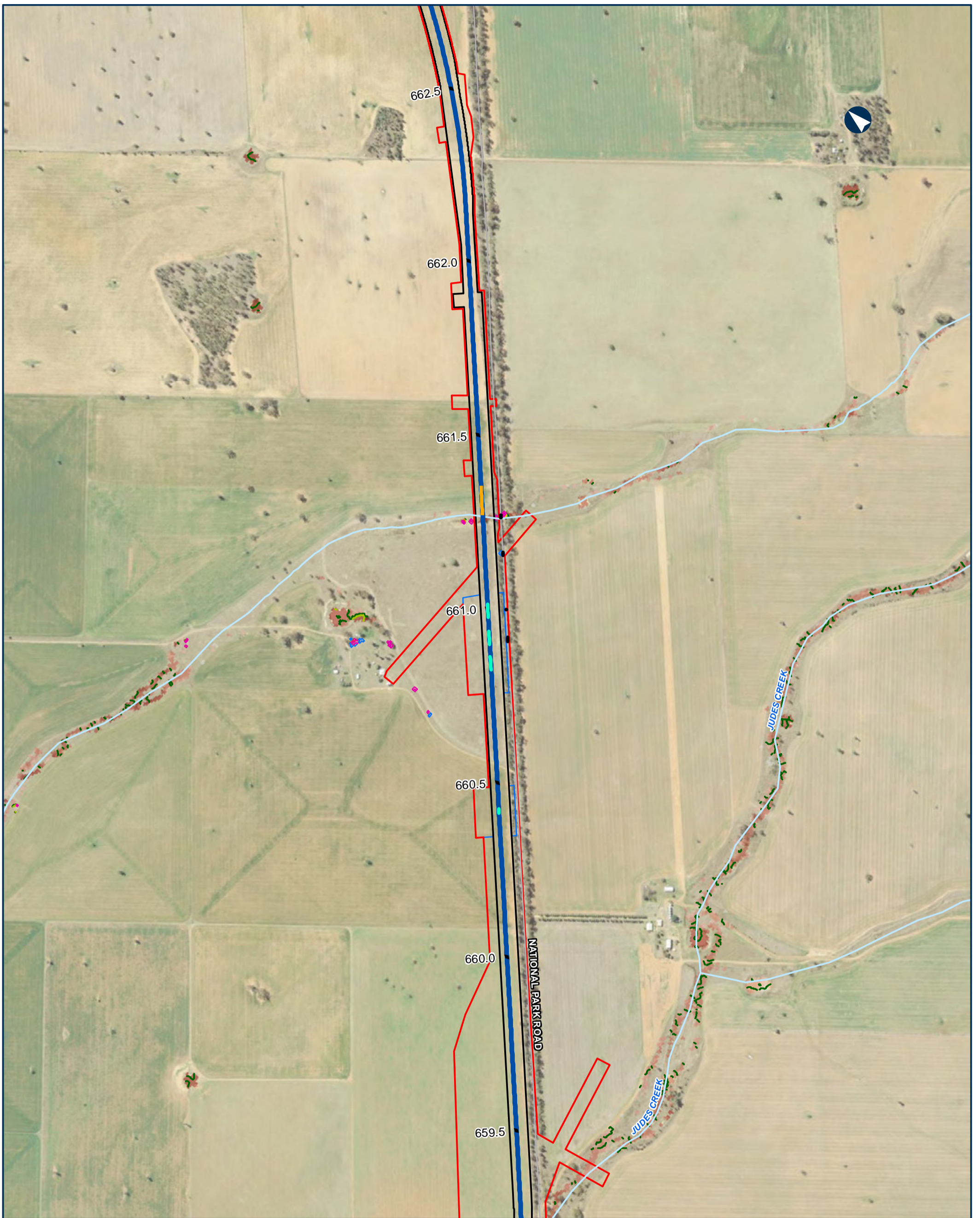
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Culvert — Alignment — Road QDL departure — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.38

0 200 400 Metres

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- | | | |
|--|---|---|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|---|

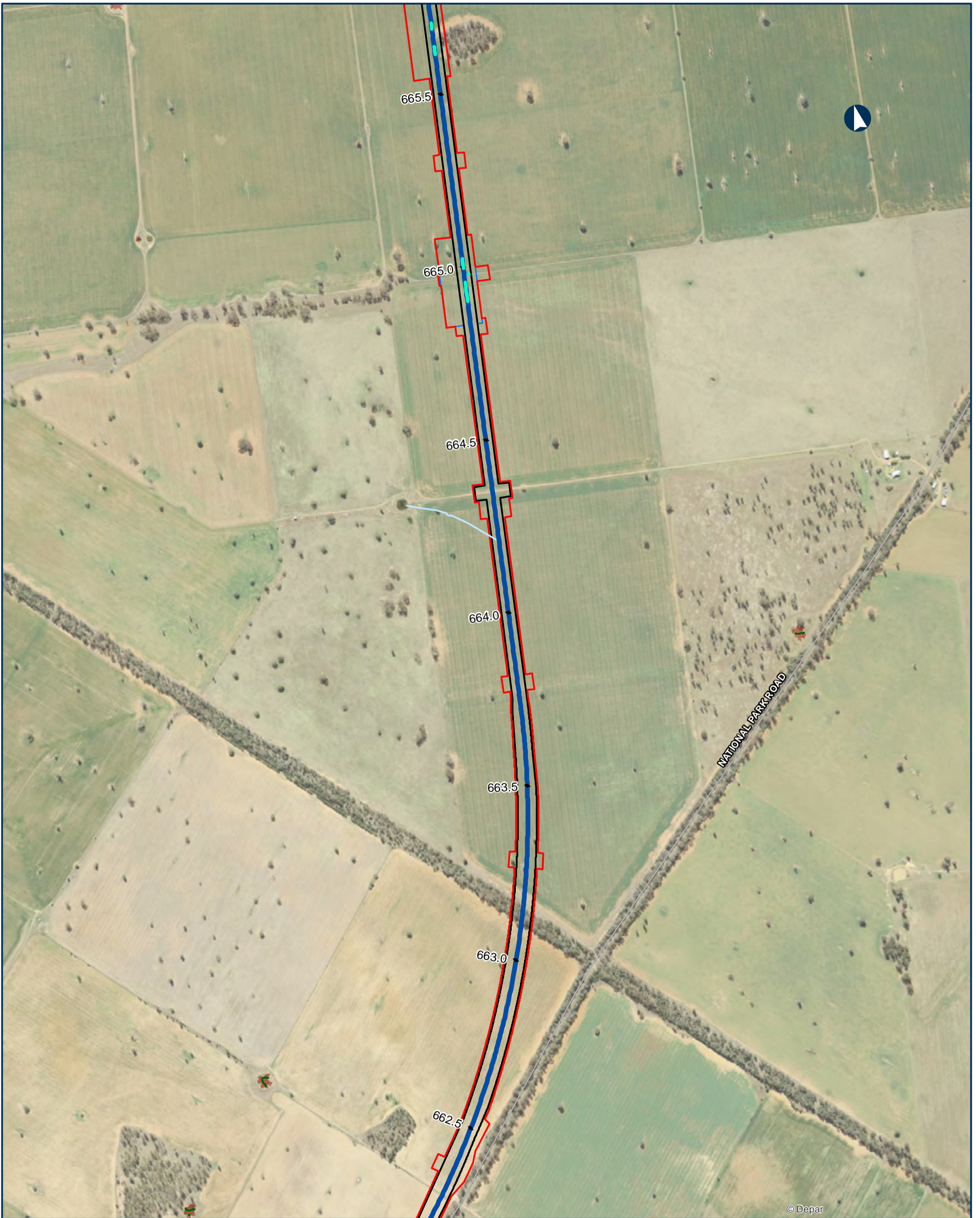
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.39

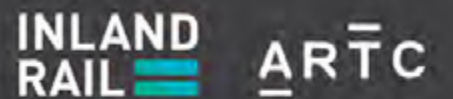
0 200 400 Metres

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

<ul style="list-style-type: none"> — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail Corridor 	<p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% 	<p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs
--	--	--



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.40

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

- | | | |
|-----------------------|--|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Road QDL departure | 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 - 20% AEP

Appendix I - Figure 4.1.41

0 200 400 Metres

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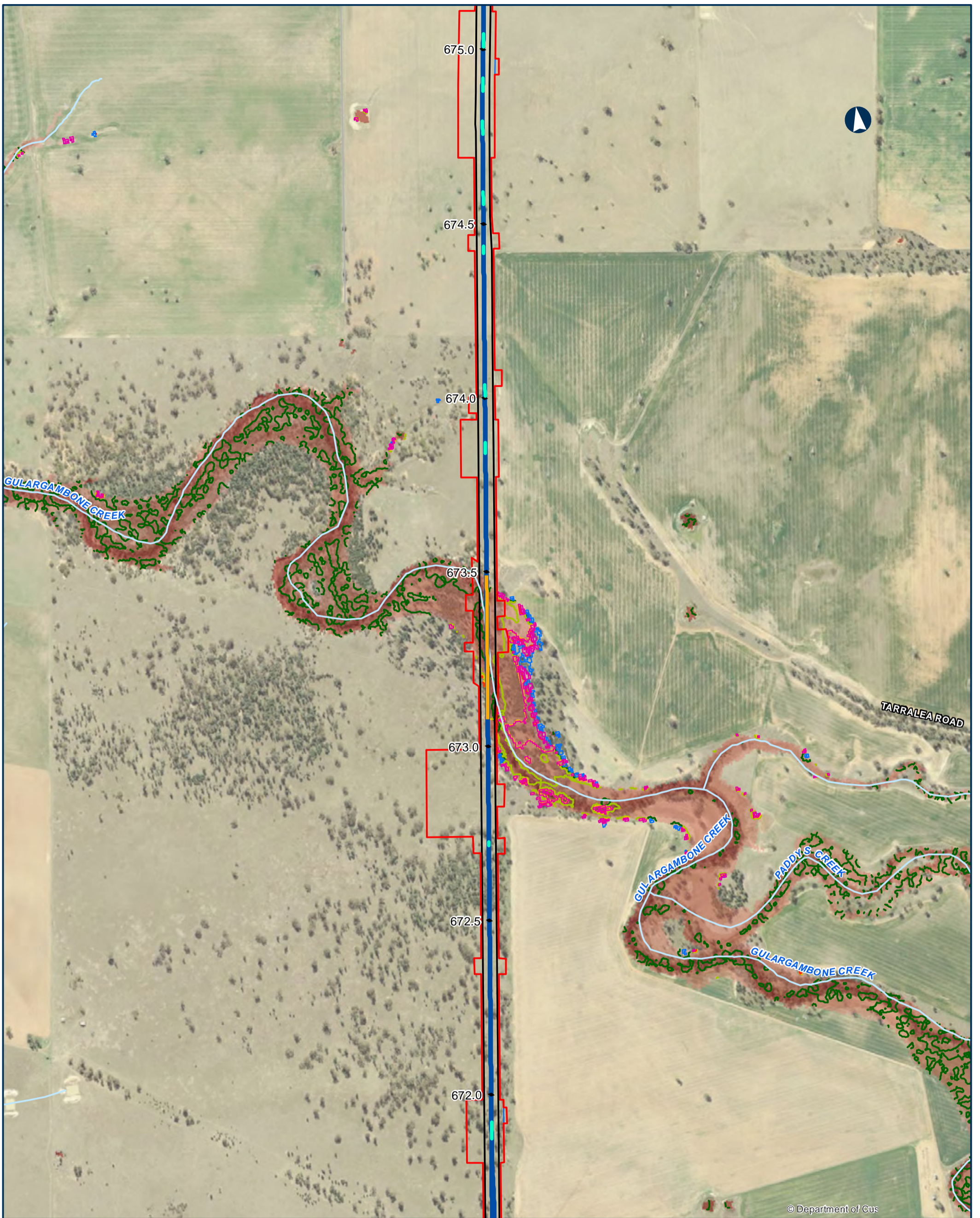
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Watercourse | 5% | 1hr - 3hrs |
| The proposal | 10% | 3hrs - 6hrs |
| Drainage Control Area | 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 - 20% AEP

Appendix I - Figure 4.1.42

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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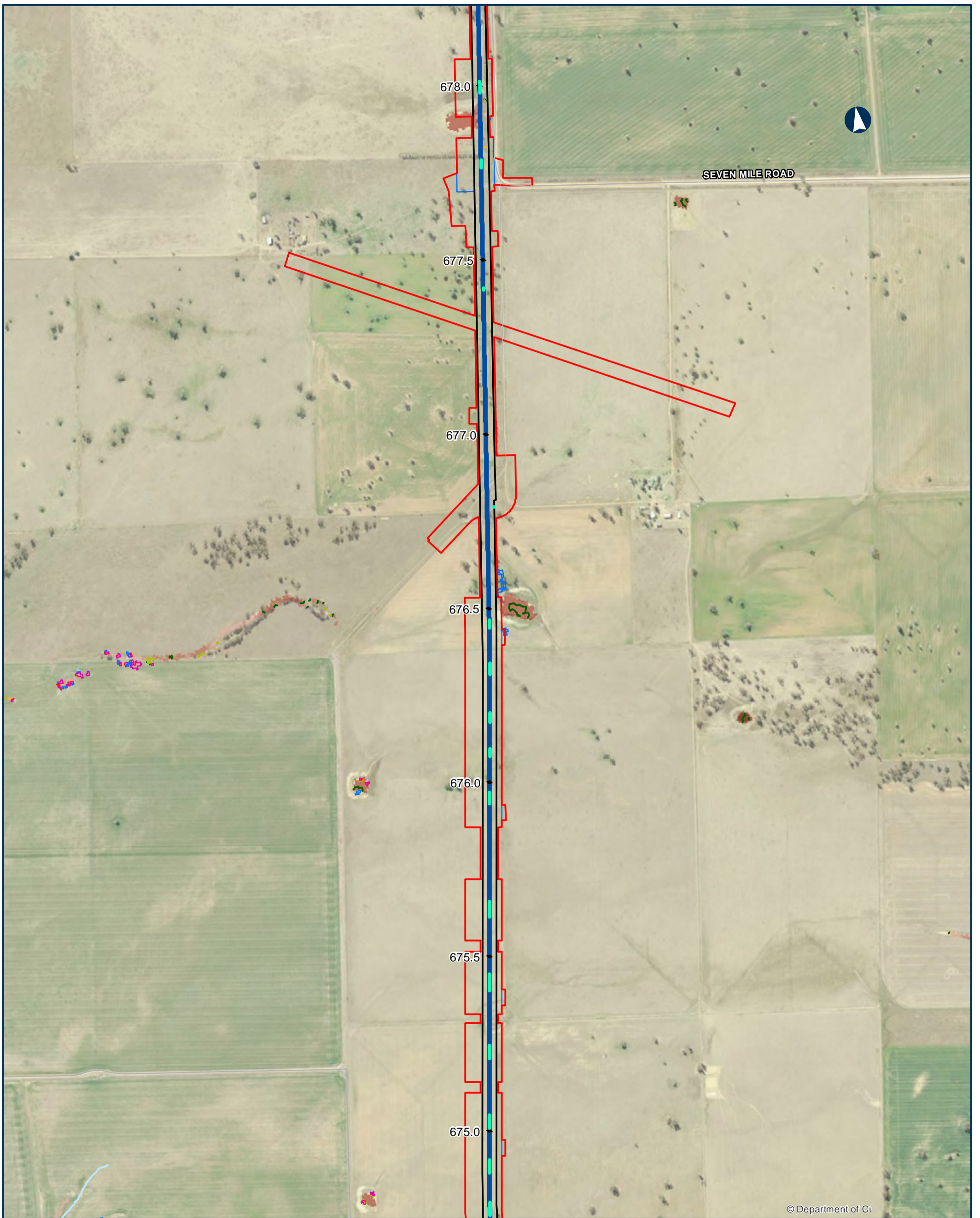
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.43

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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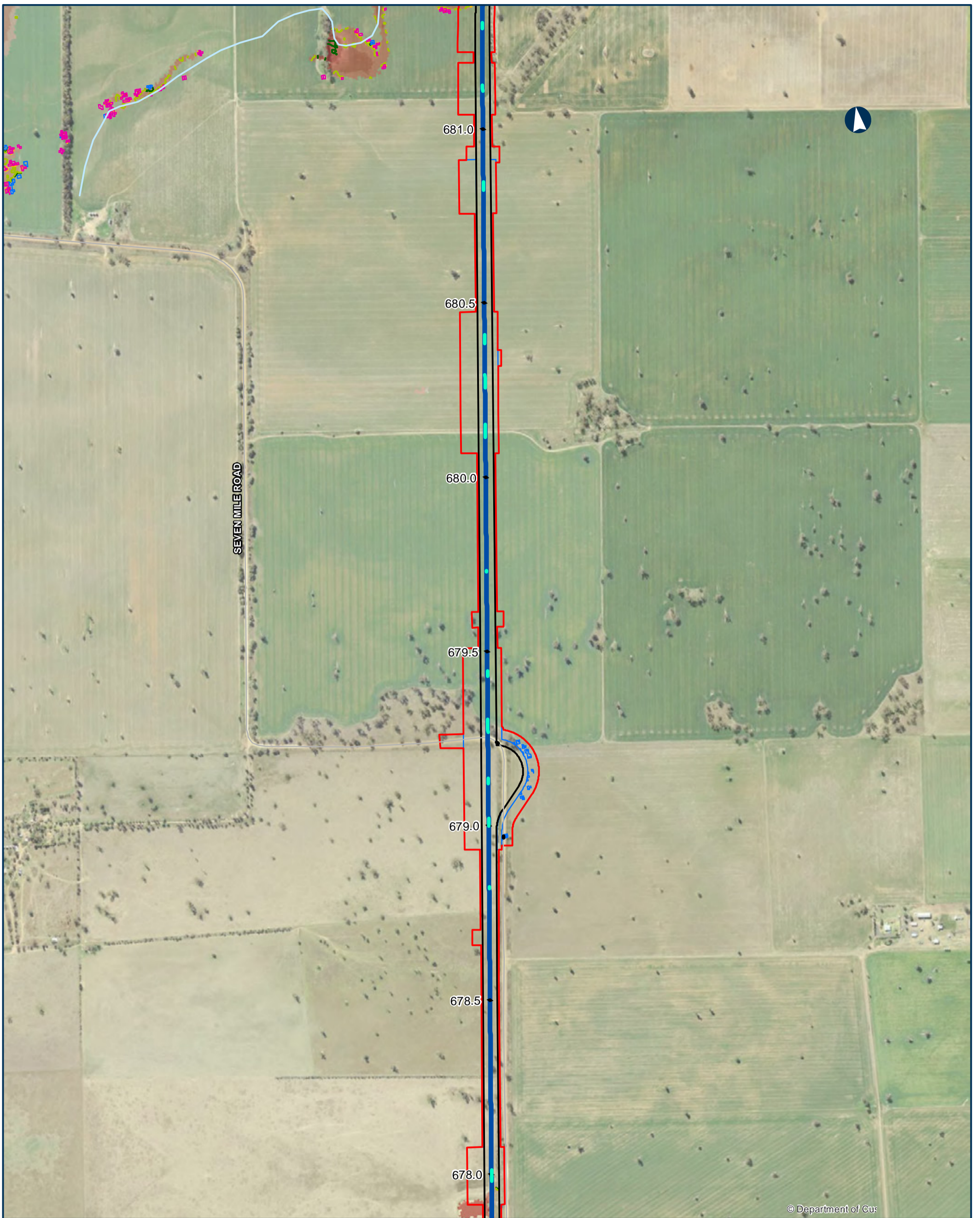
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> — Culvert — Alignment — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.44

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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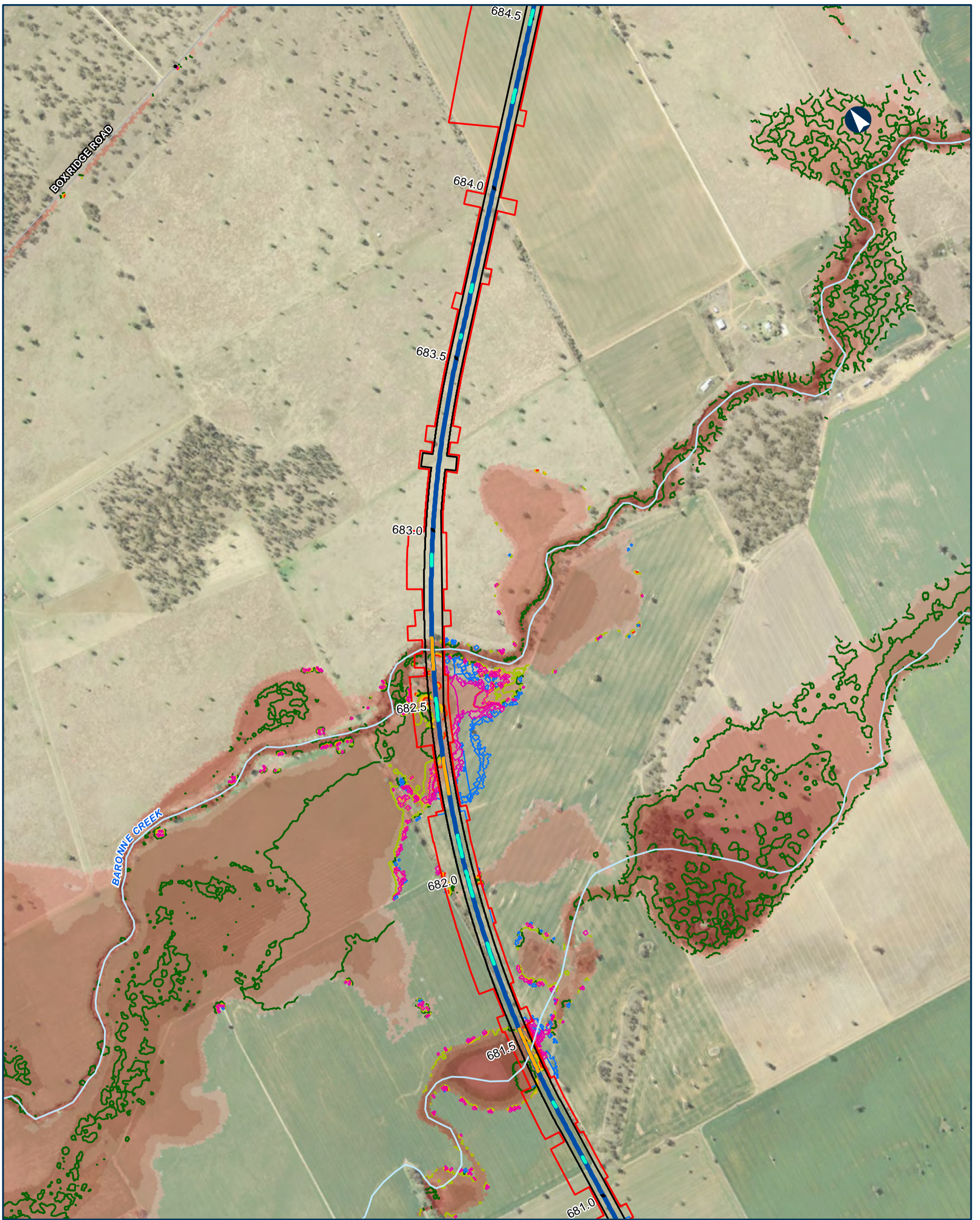
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Road QDL departure | 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 - 20% AEP

Appendix I - Figure 4.1.45

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
- Road QDL departure
- 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



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.46

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

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| <ul style="list-style-type: none"> — Culvert — Alignment — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> 0% Area of departure Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|--|--|



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.47

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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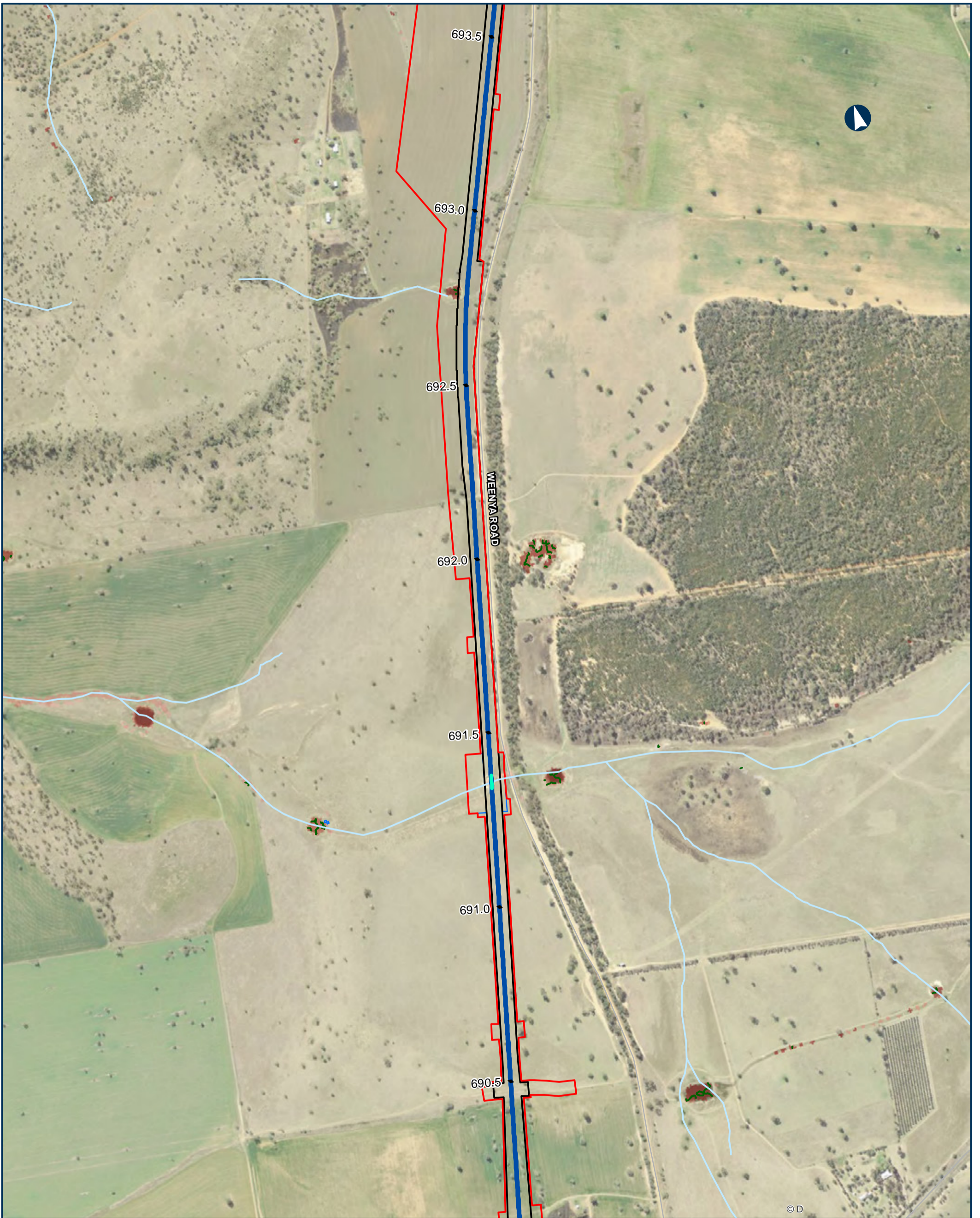
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.48

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

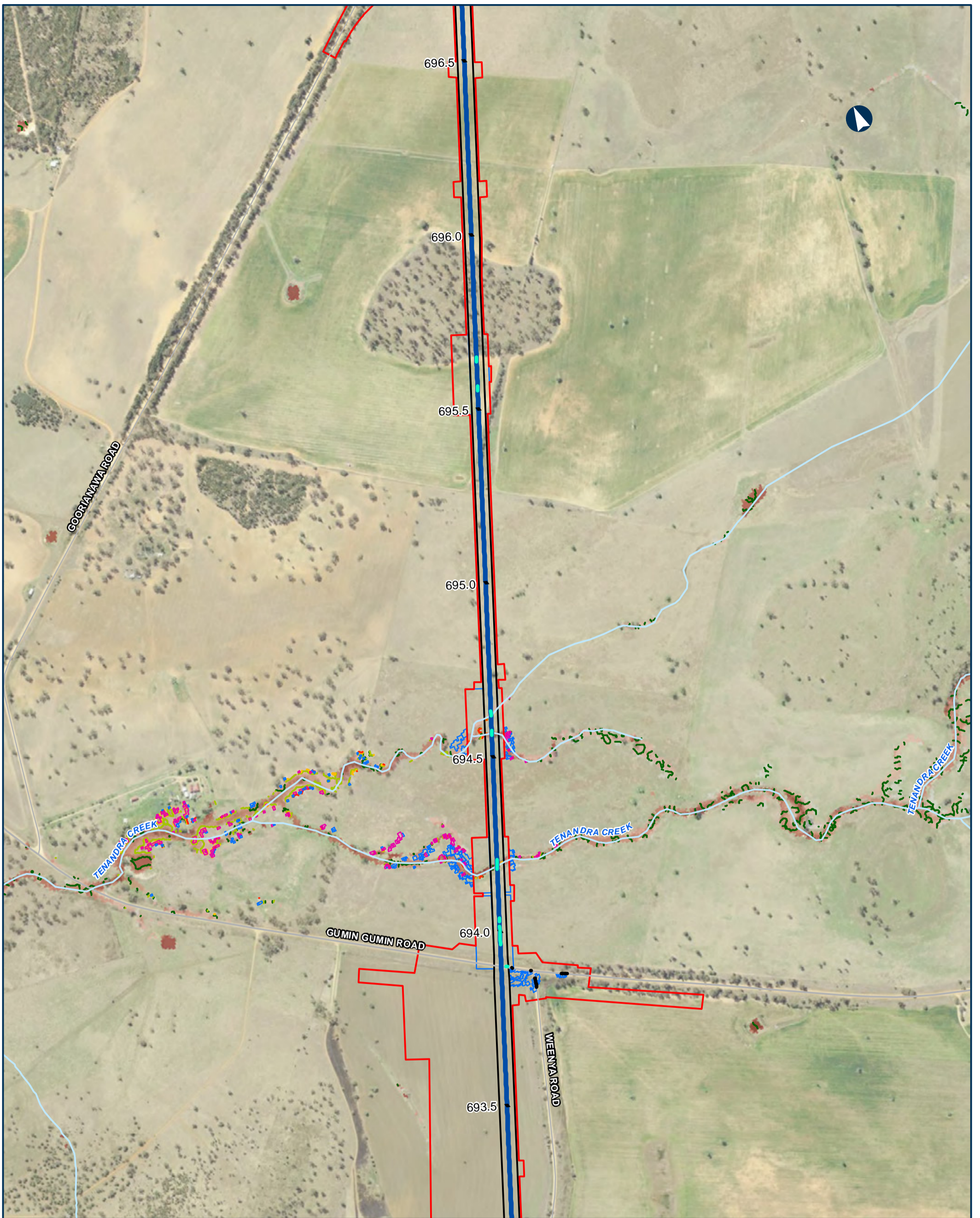
- Change in duration of inundation**
- 0%
 - Area of departure
 - Exist duration <1hr, design duration >1hr

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



INLAND RAIL **ARTC**

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NARRABRI TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.49

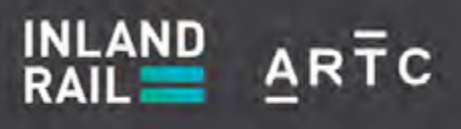
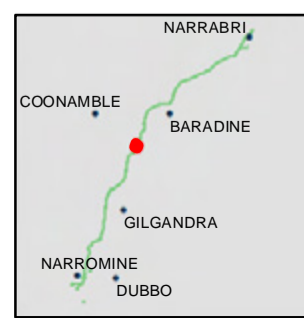
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

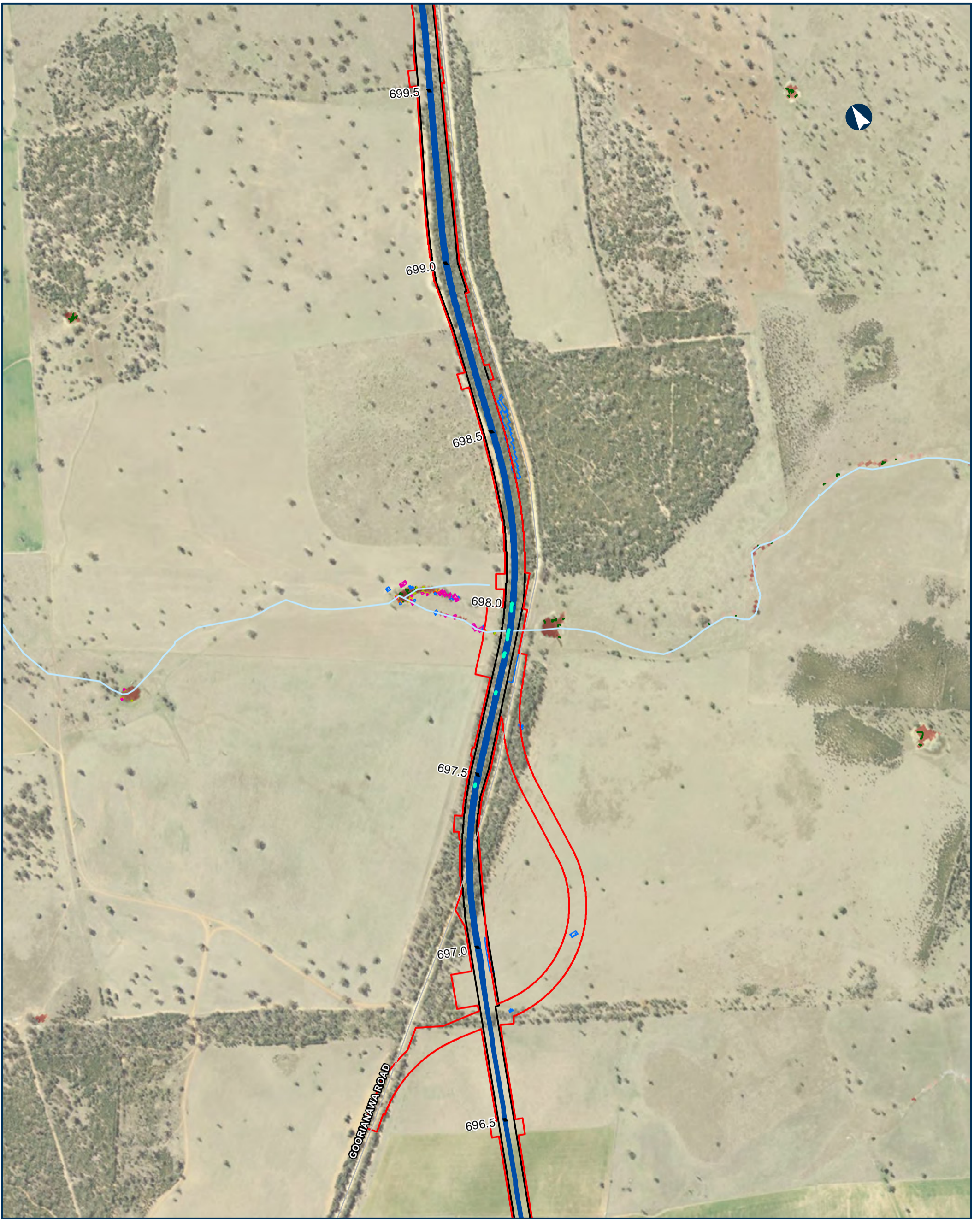
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Culvert — Alignment — Road ODL departure — Arterial road — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.50

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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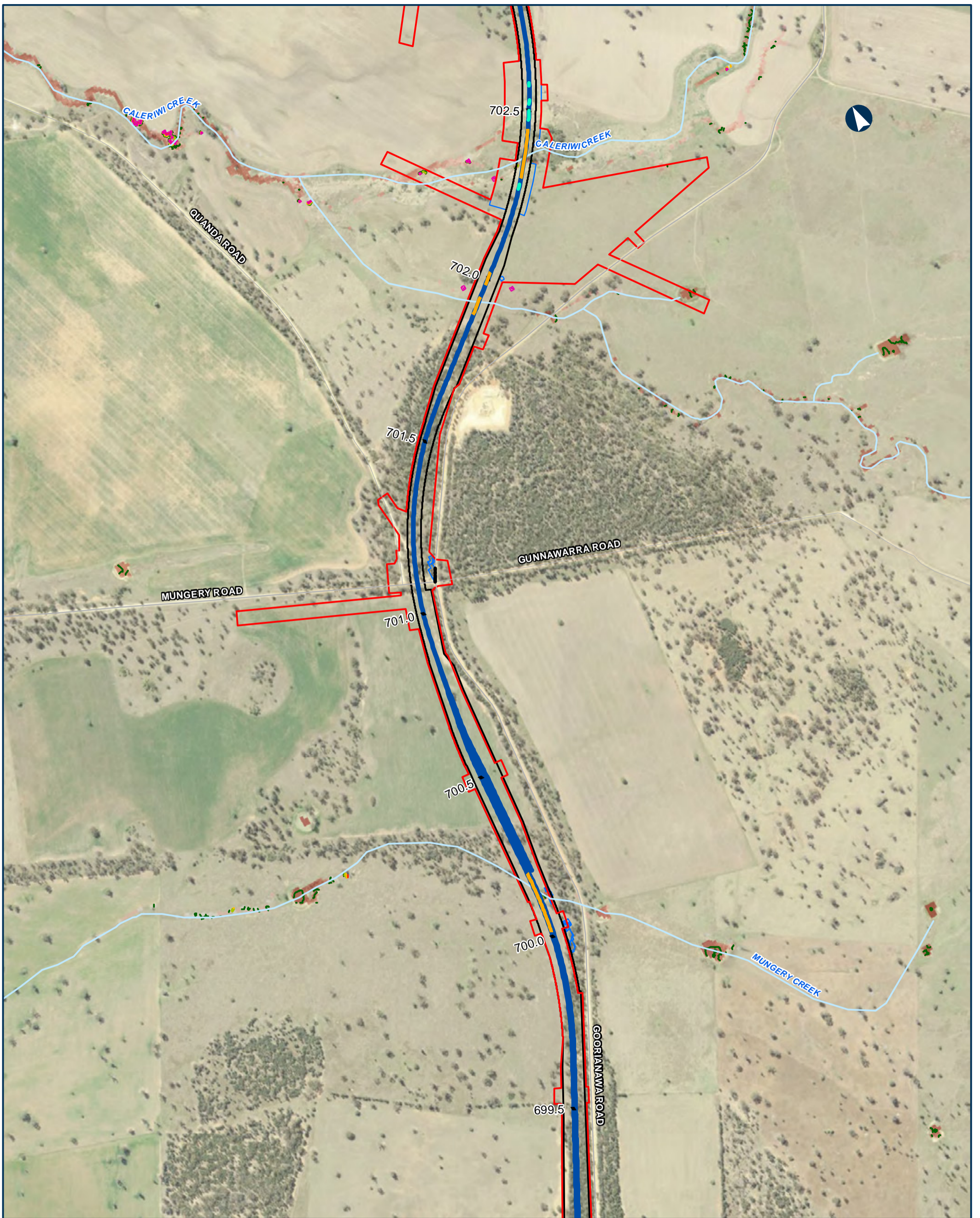
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|---|---------------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Sub arterial road | 5% | 3hrs - 6hrs |
| Watercourse | 10% | 6hrs - 12hrs |
| The proposal | 20% | 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 - 20% AEP

Appendix I - Figure 4.1.51

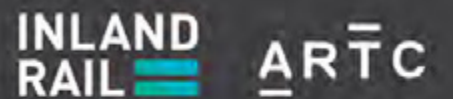
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

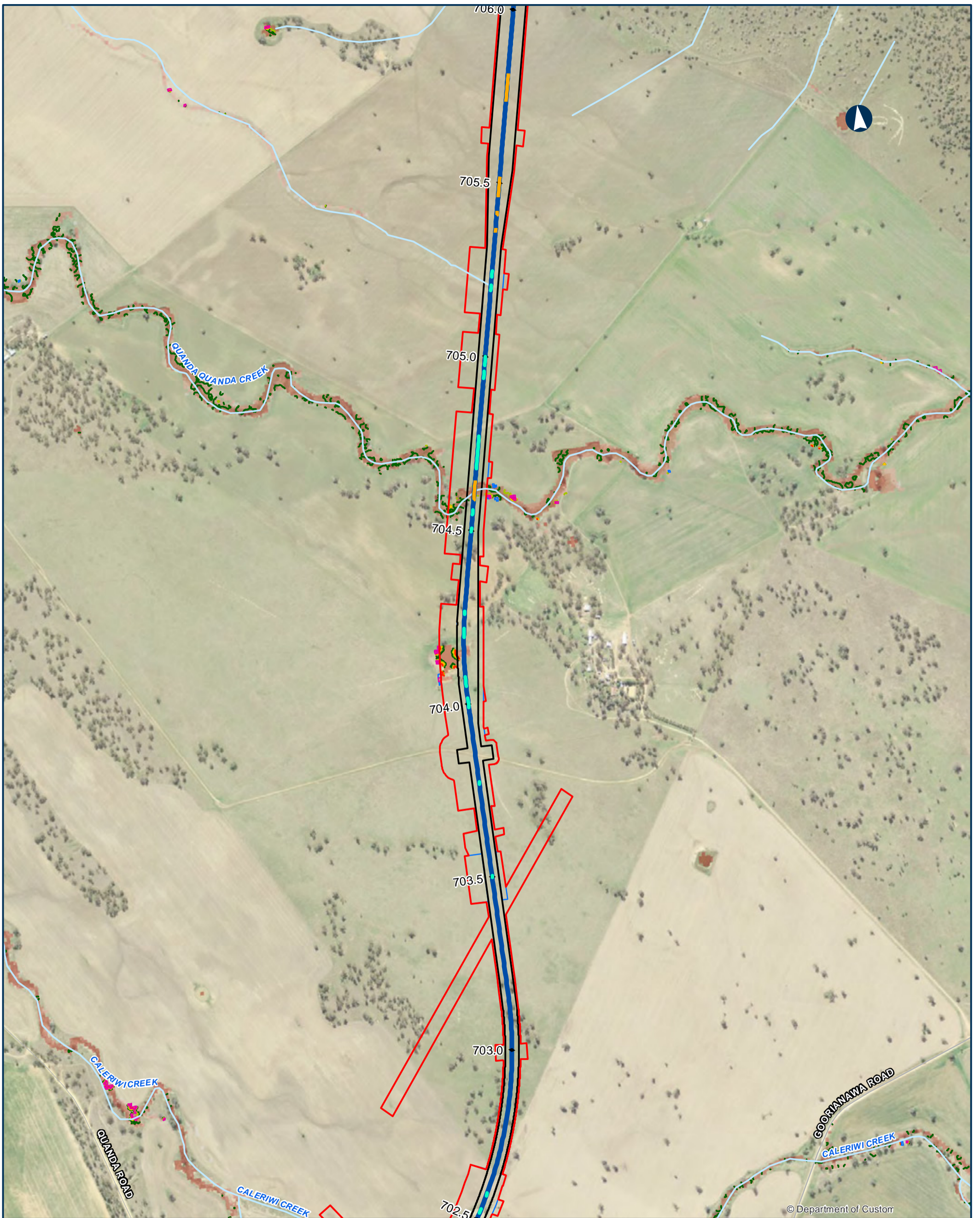
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.52

0 200 400 Metres

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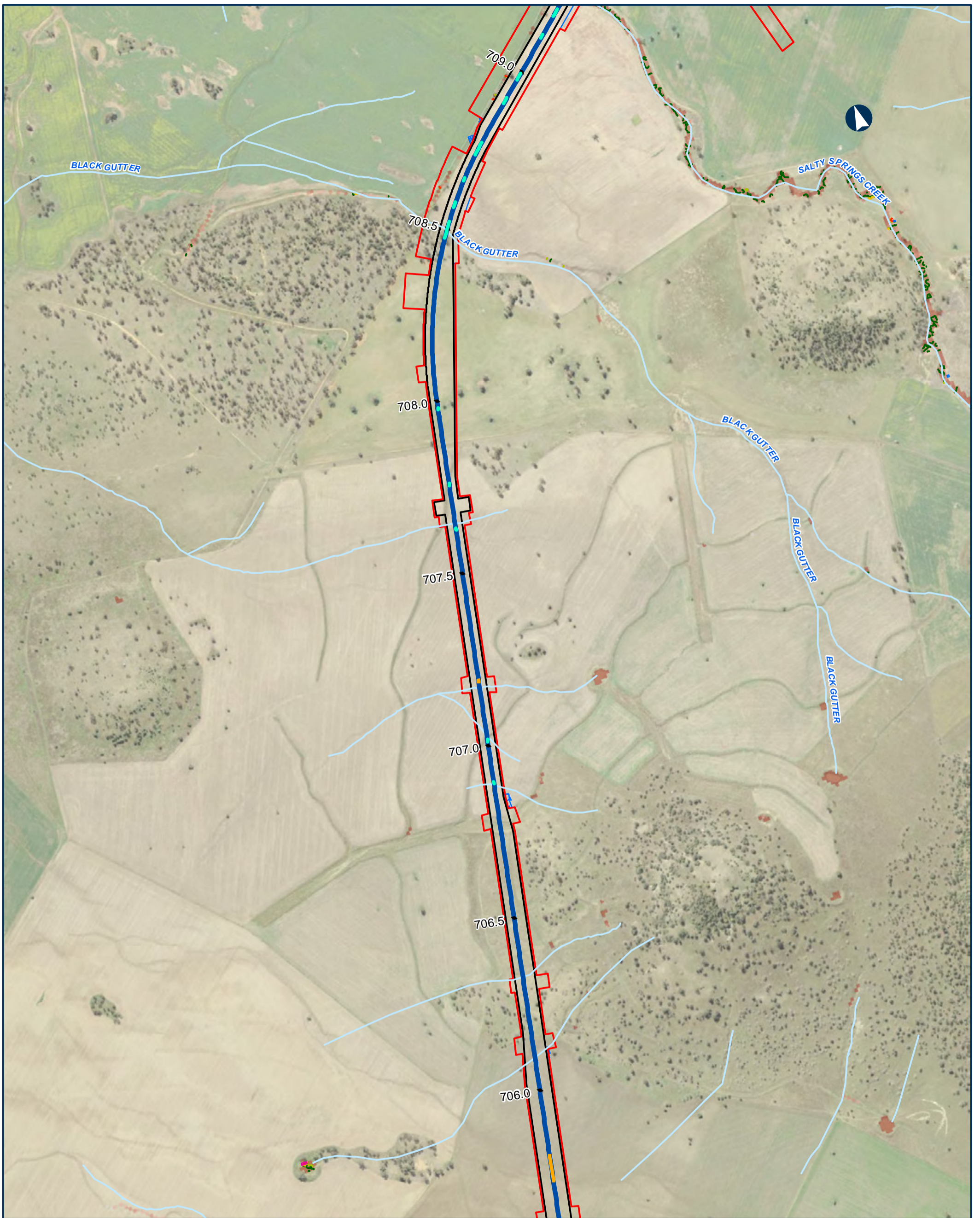
Date: 9/08/2022 Paper: A3
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.53

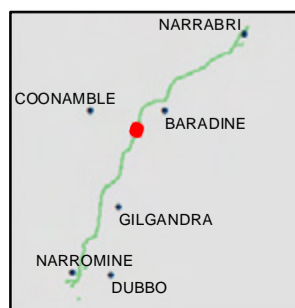
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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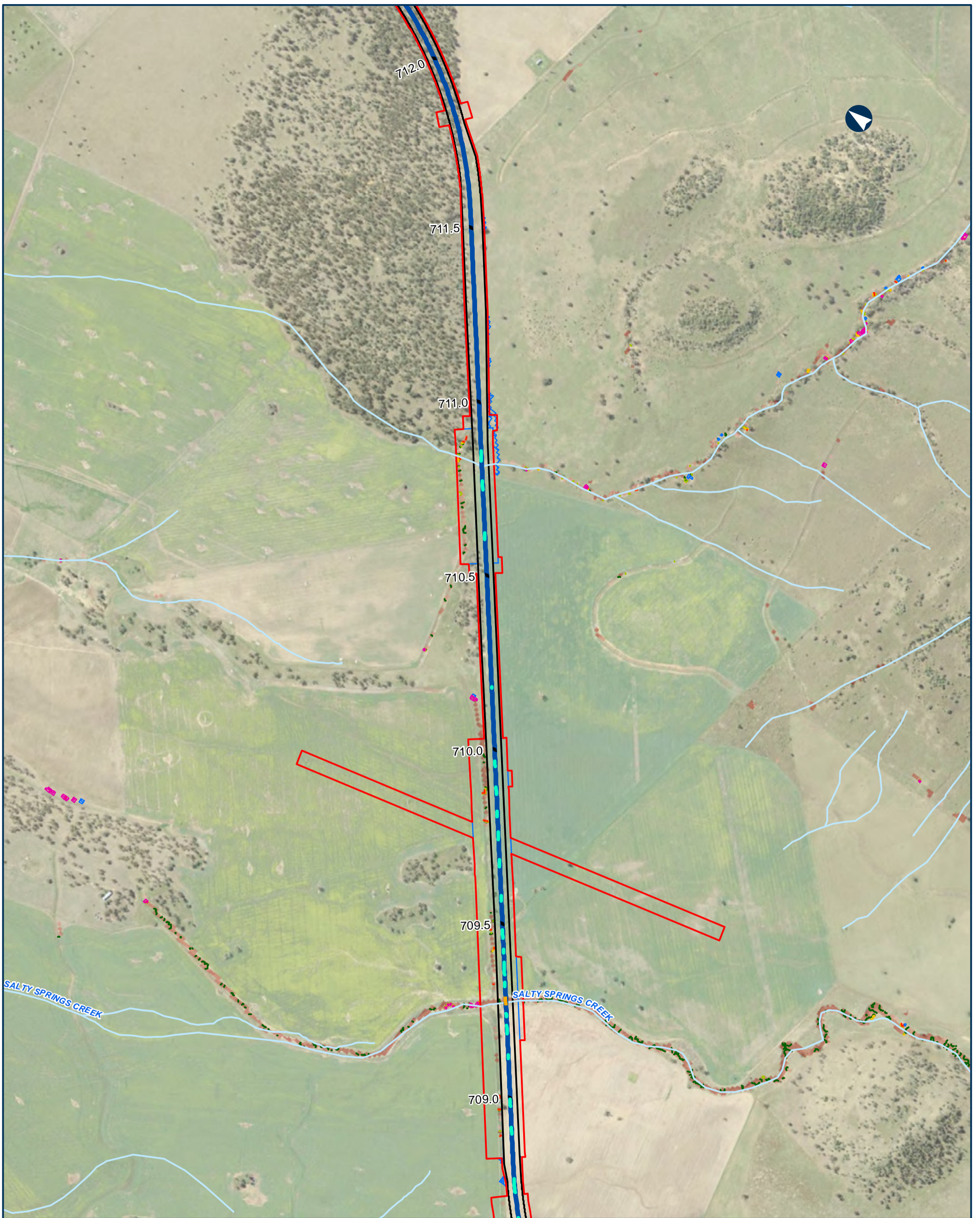
Date: 9/08/2022 Paper: A3
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.54

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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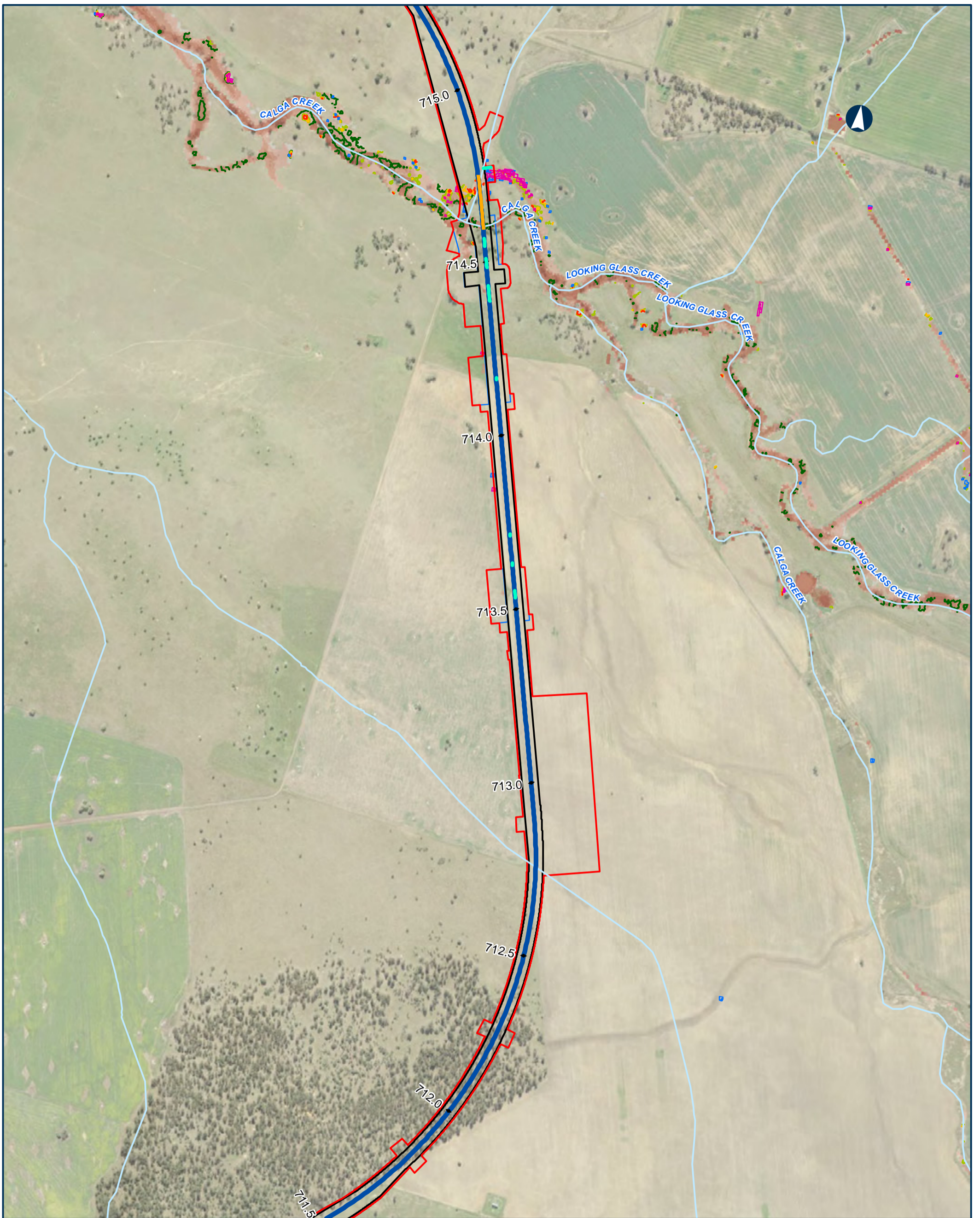
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.55

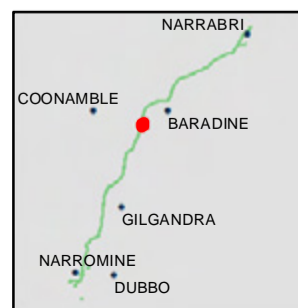
0 200 400 Metres

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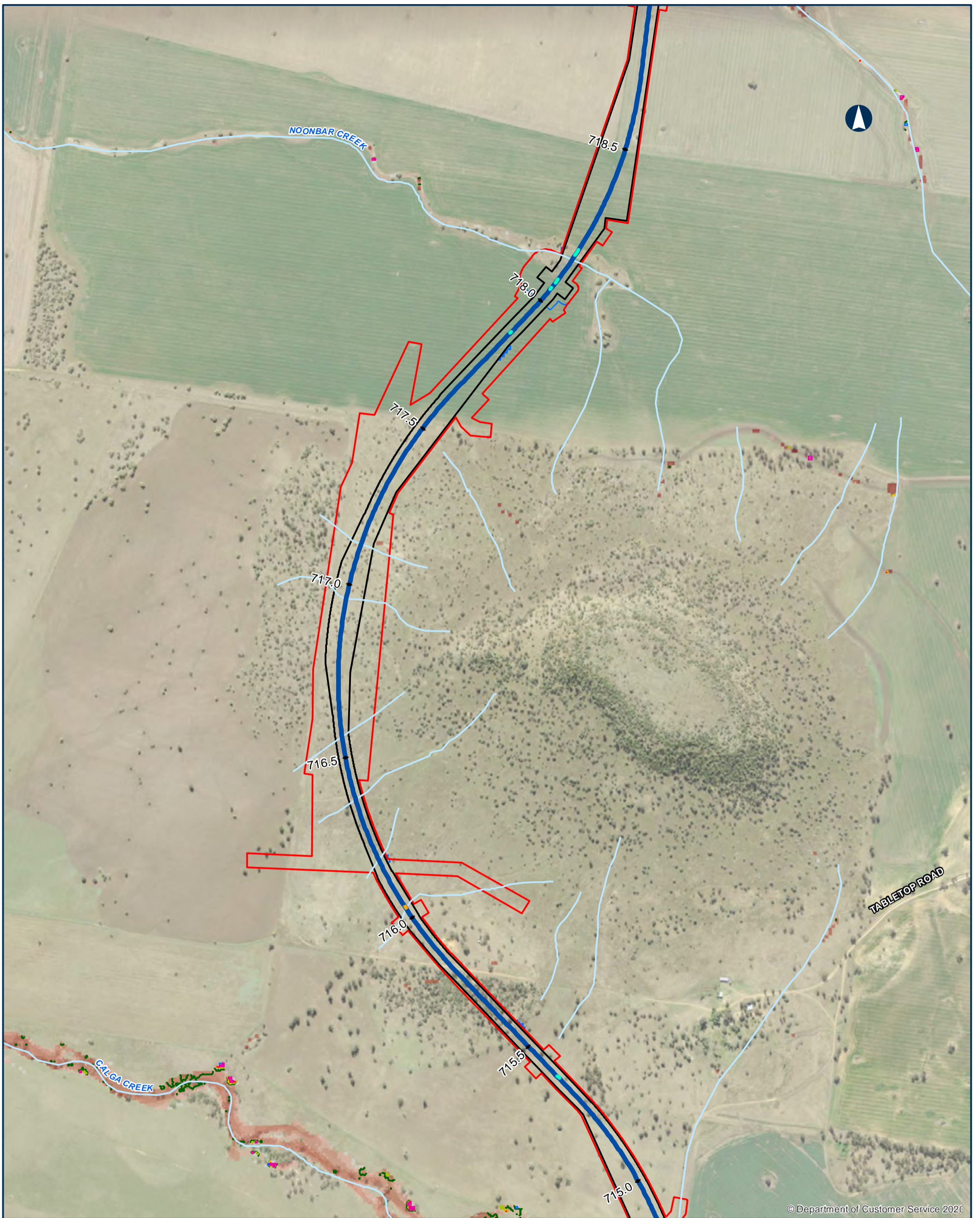
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.56

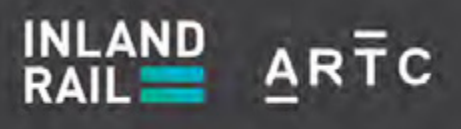
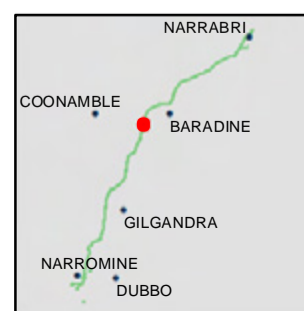
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Coordinate System: GDA 1994 MGA Zone 55

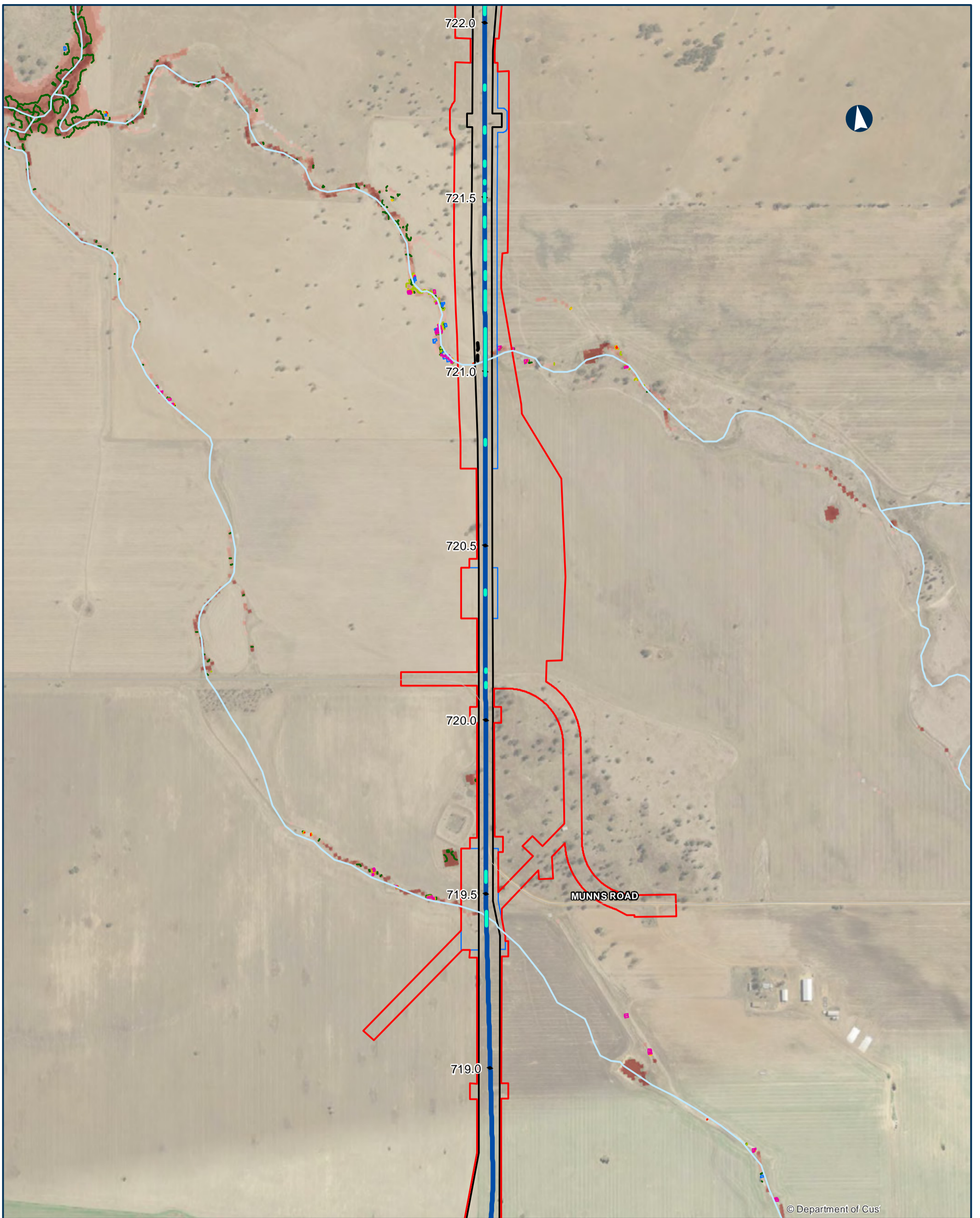
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.57

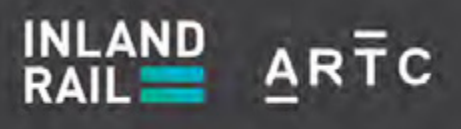
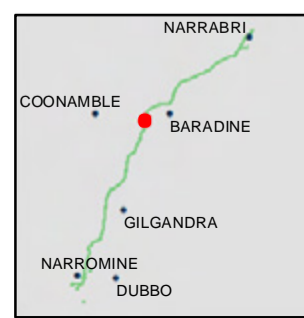
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Coordinate System: GDA 1994 MGA Zone 55

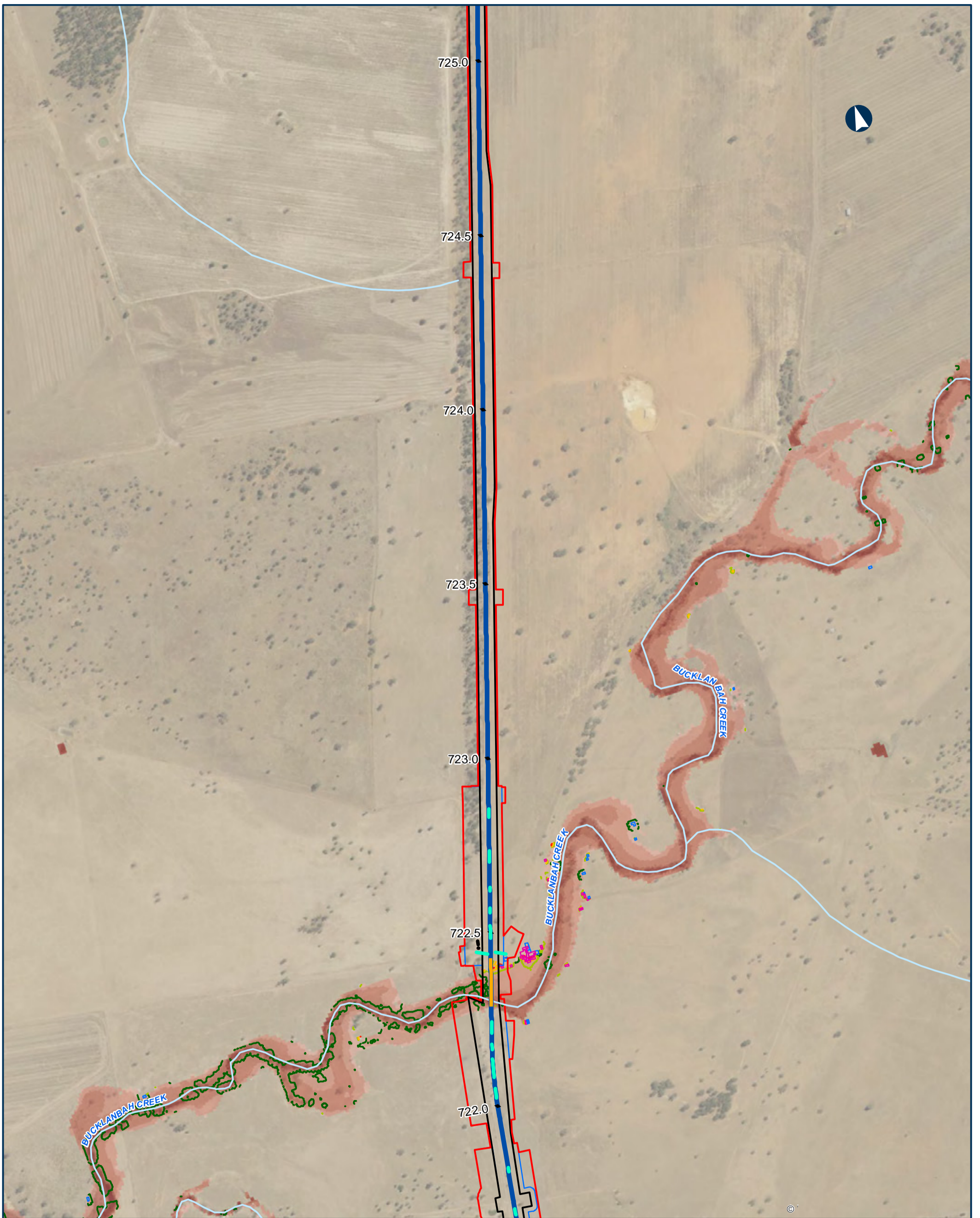
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|--|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Road QDL departure | 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 - 20% AEP

Appendix I - Figure 4.1.58

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.59

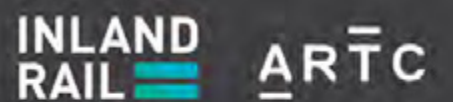
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Coordinate System: GDA 1994 MGA Zone 55

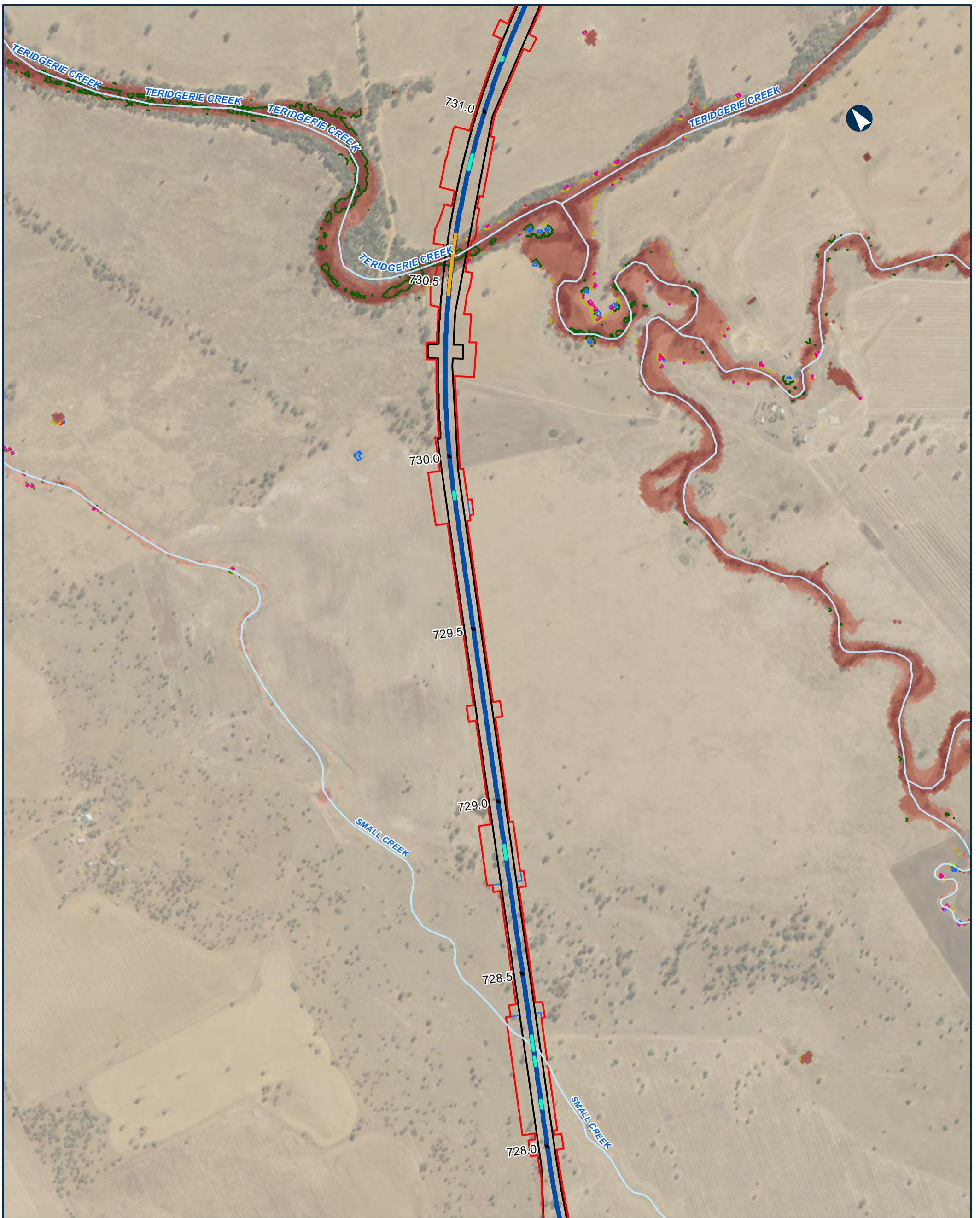
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.60

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

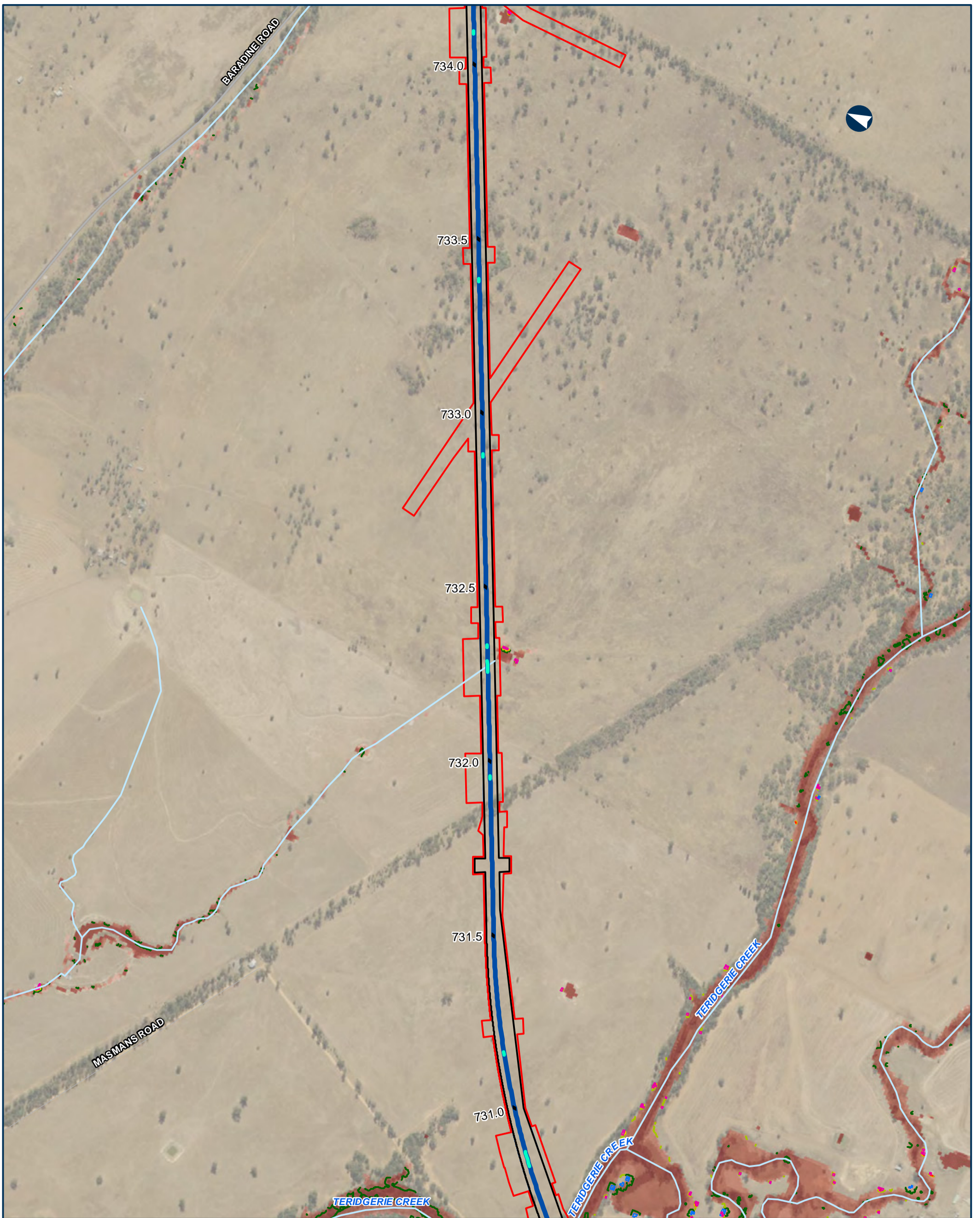
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<ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Watercourse The proposal Drainage Control Area Rail Corridor 	<p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% 	<p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.61

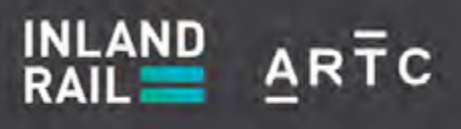
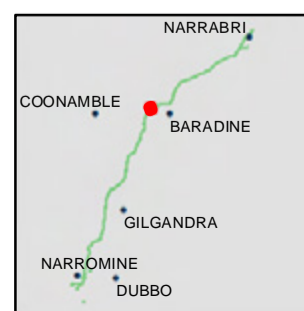
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

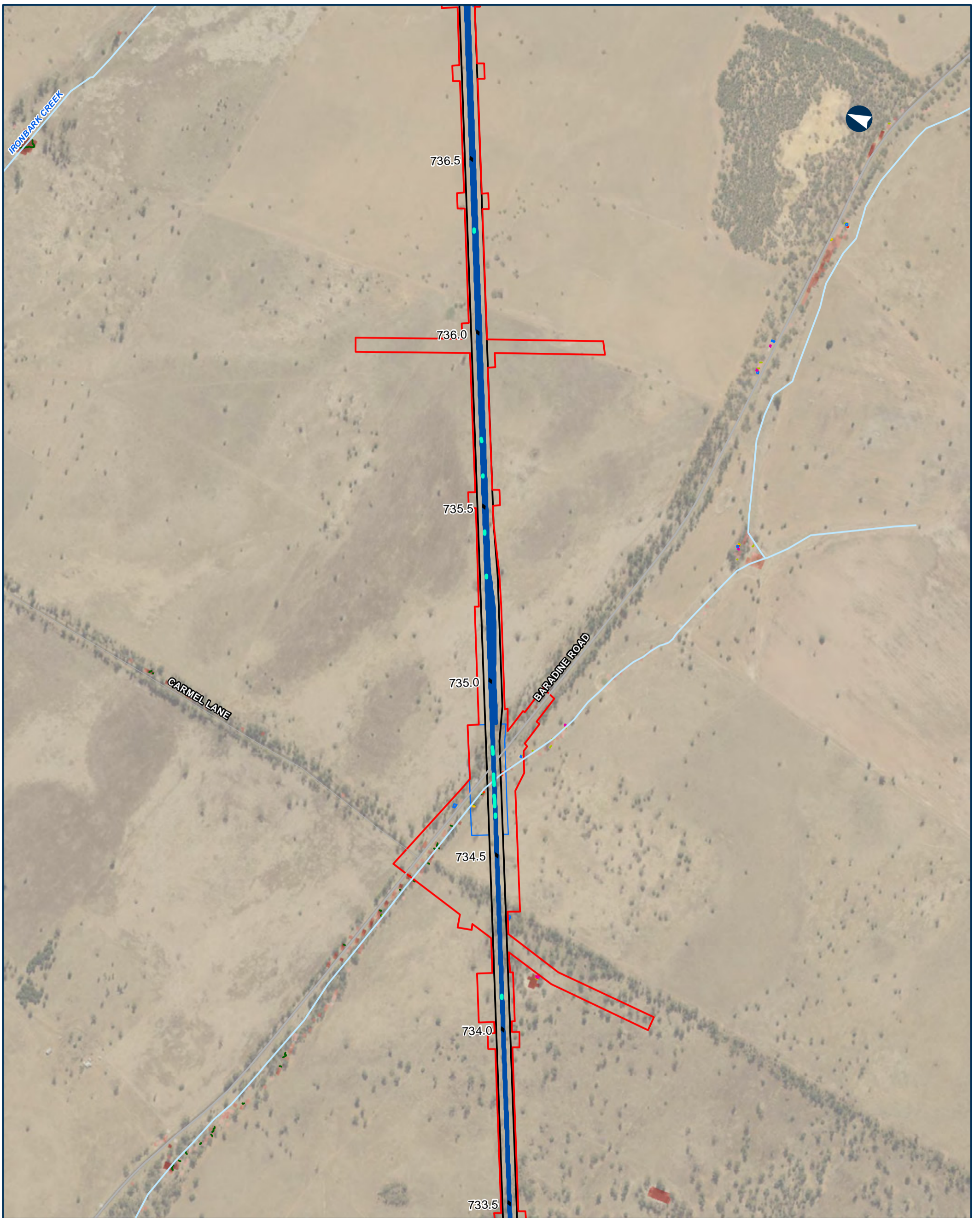
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Culvert — Alignment — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.62

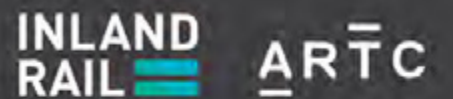
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Coordinate System: GDA 1994 MGA Zone 55

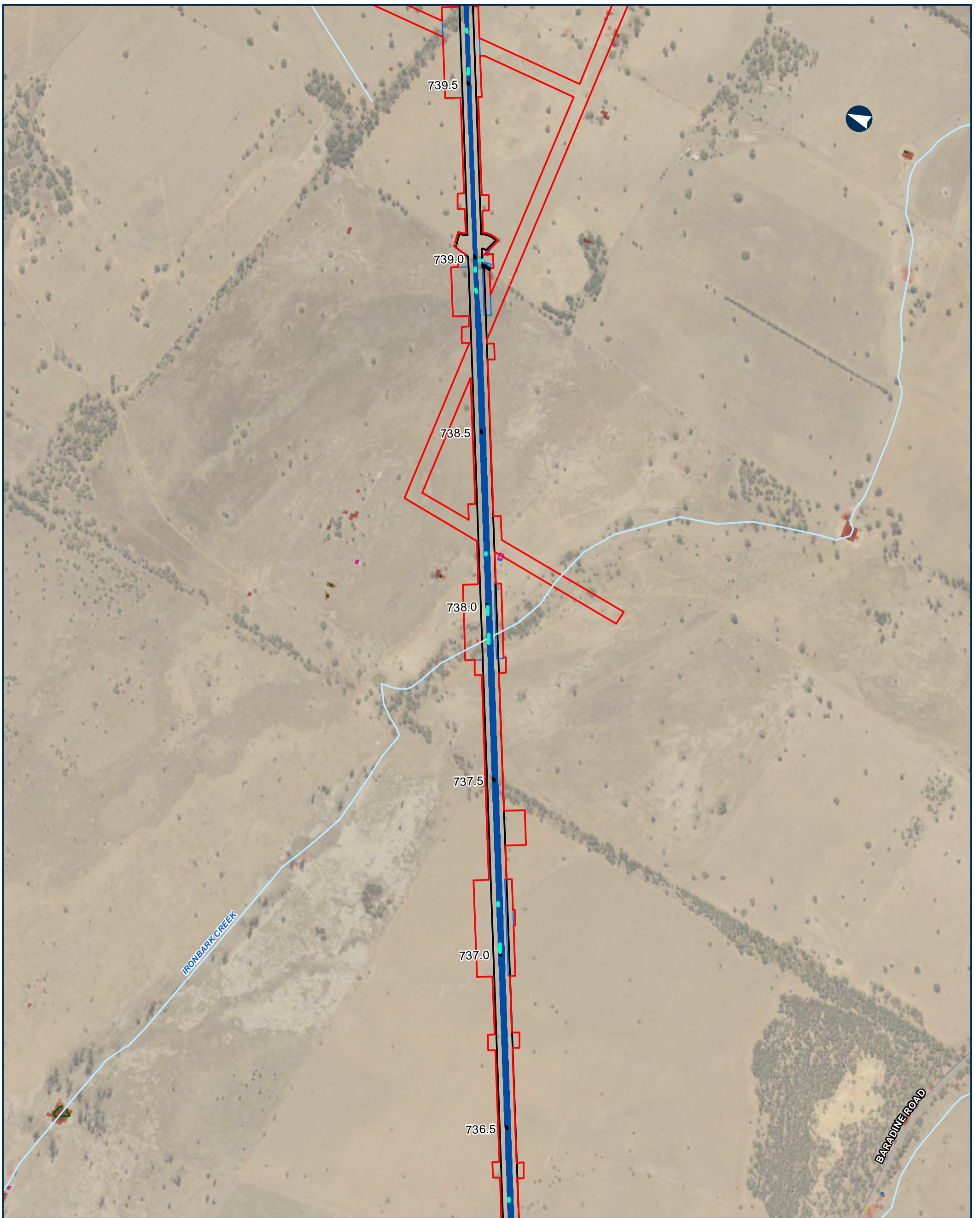
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> ■ Culvert ■ Alignment ■ Arterial road ■ Local road ■ Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.63

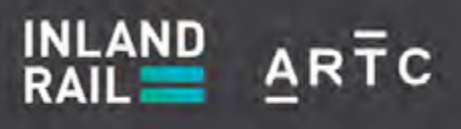
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Coordinate System: GDA 1994 MGA Zone 55

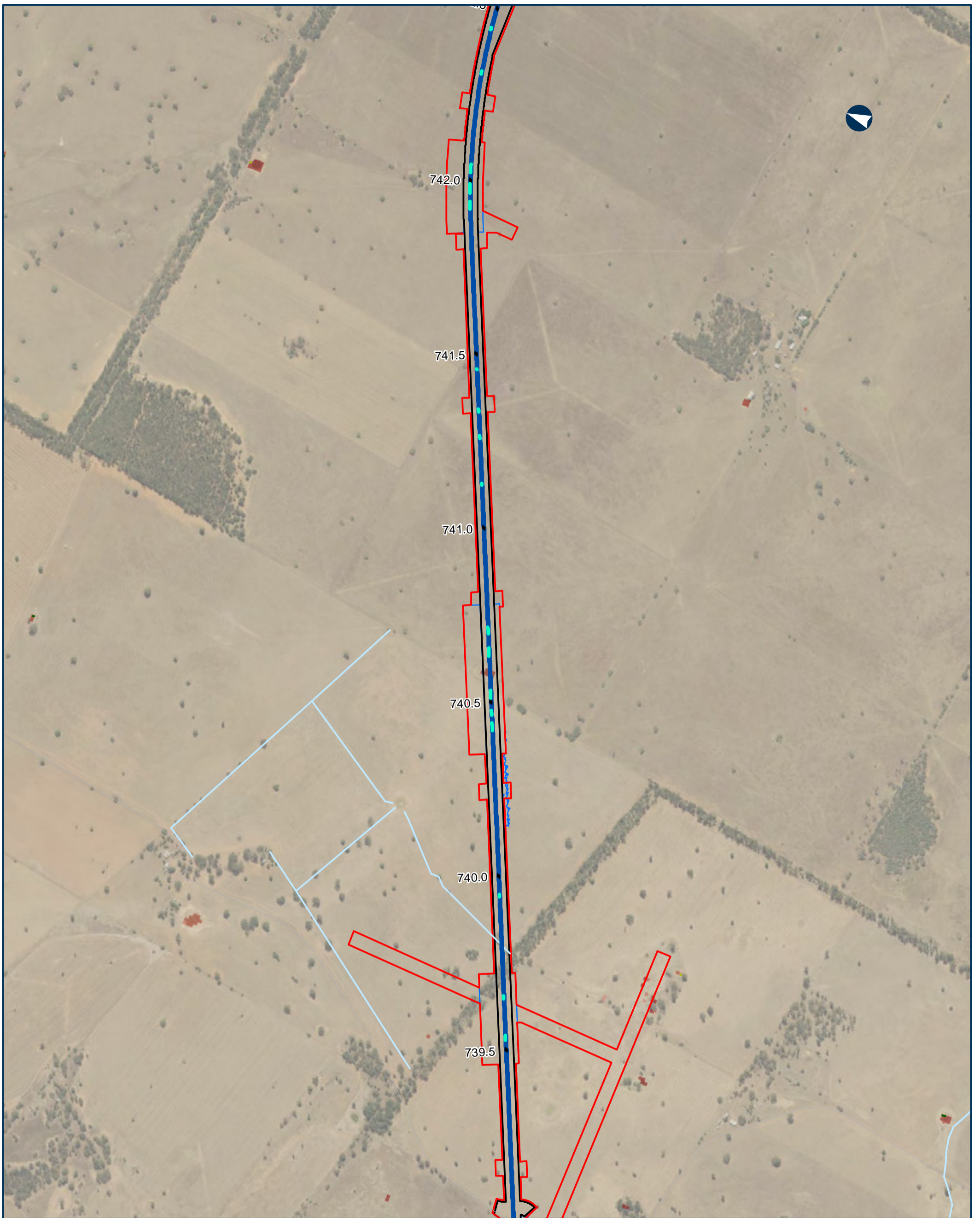
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| <ul style="list-style-type: none"> — Culvert — Alignment — Road ODL departure — Arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.64

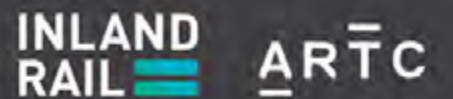
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.65

0 200 400 Metres

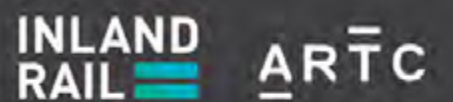
Coordinate System: GDA 1994 MGA Zone 55

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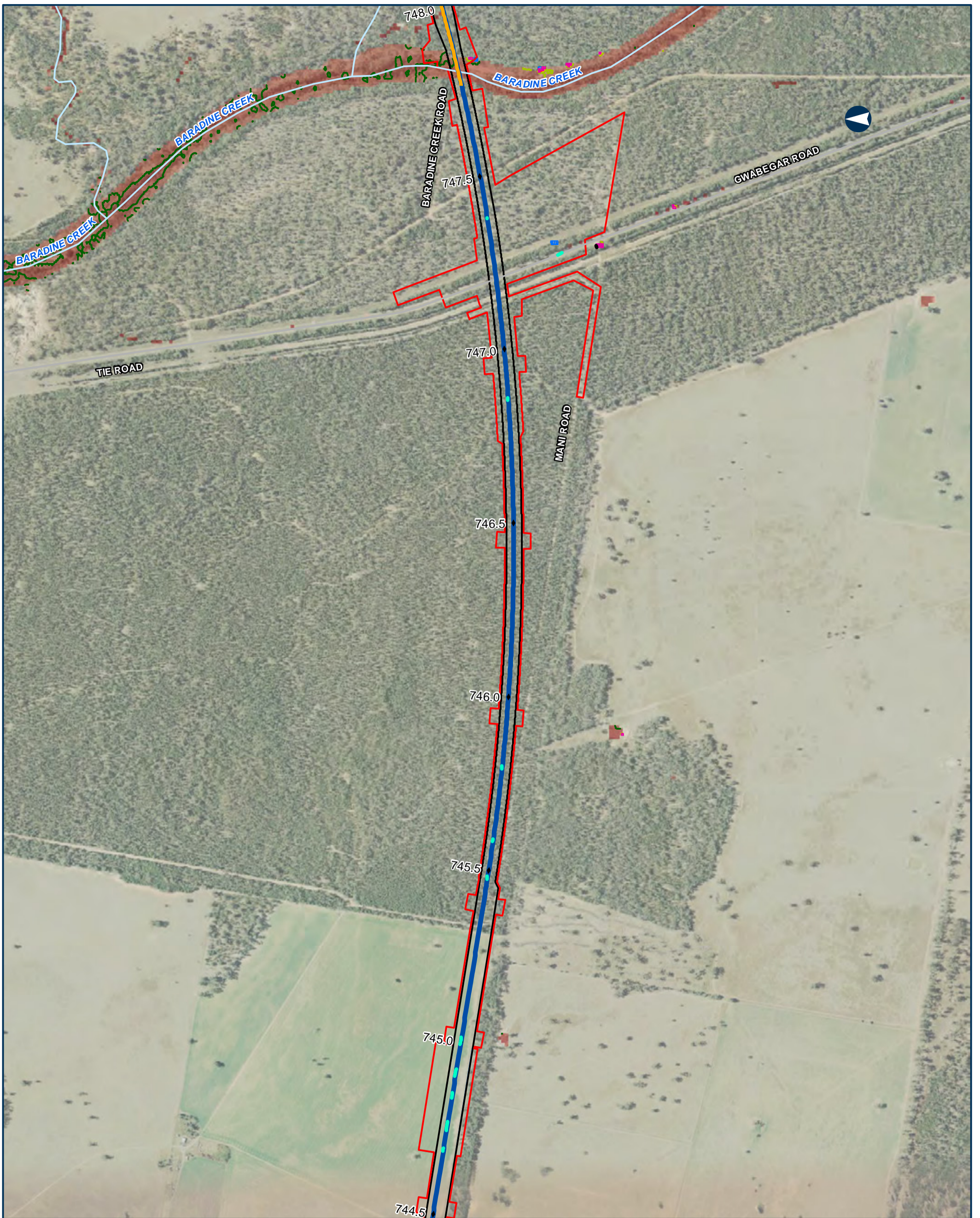
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Culvert
- Alignment
- Local road
- Watercourse
- The proposal
- Drainage Control Area
- Rail Corridor

- Change in duration of inundation**
- 0%
 - 5%
- Existing Duration of Inundation**
- 1hr - 3hrs
 - 6hrs - 12hrs
 - 12hrs - 24hrs
 - > 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.66

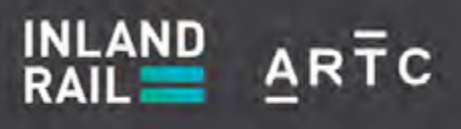
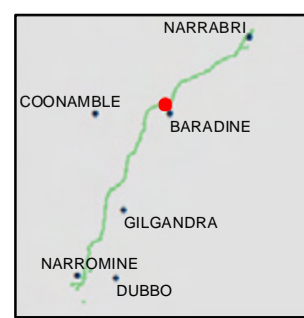
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Coordinate System: GDA 1994 MGA Zone 55

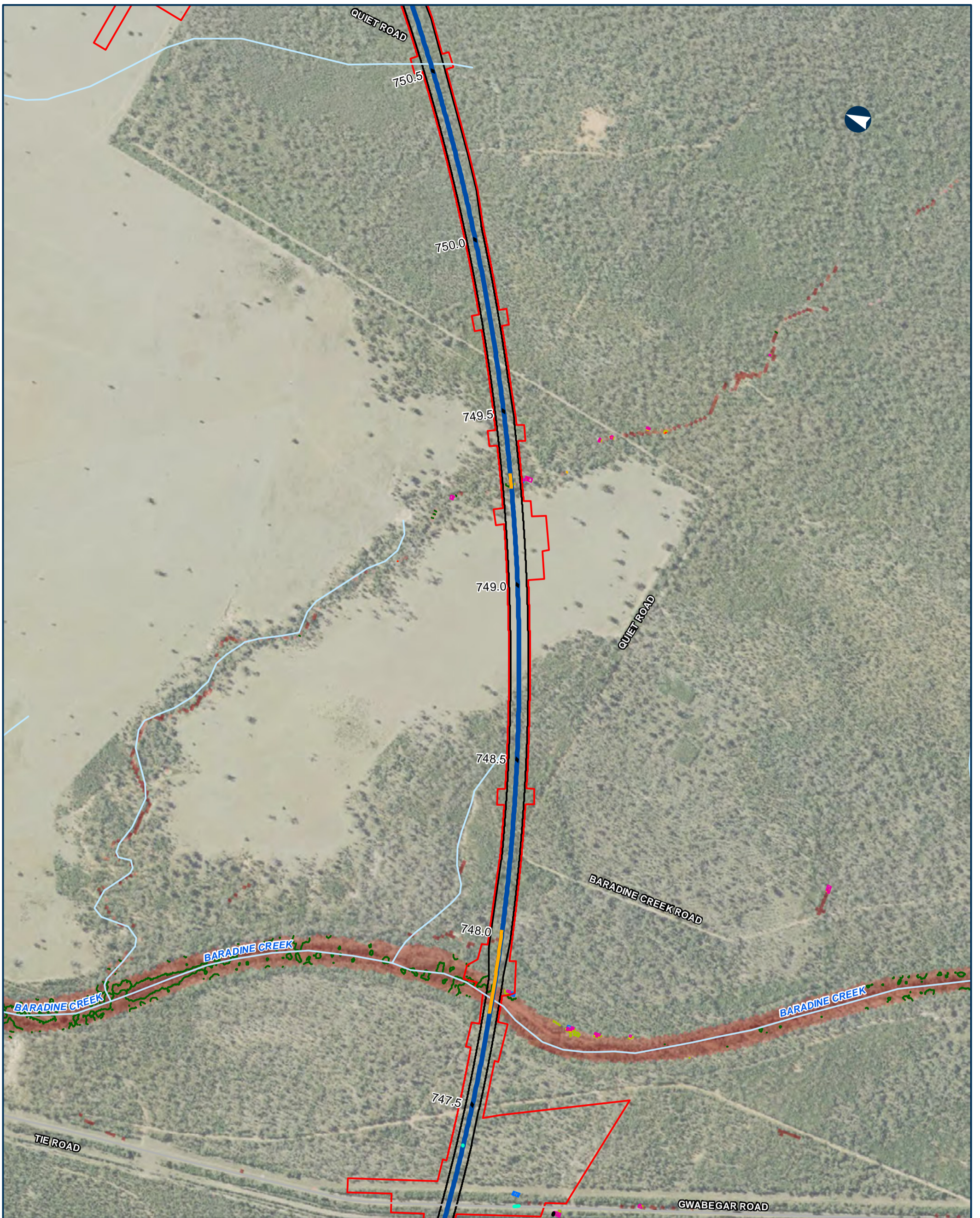
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Arterial road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.67

0 200 400 Metres

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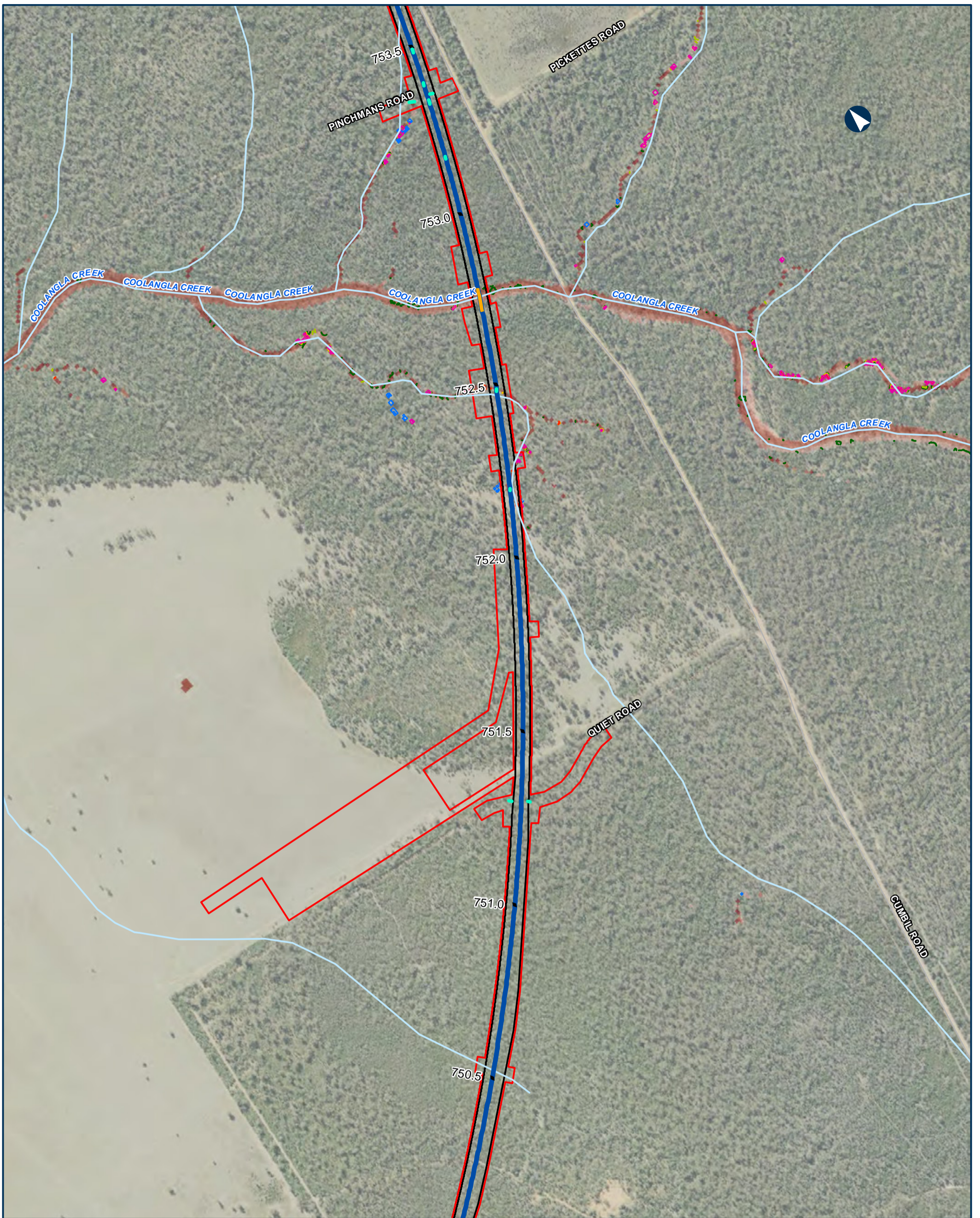
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Arterial road — Watercourse — The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.68

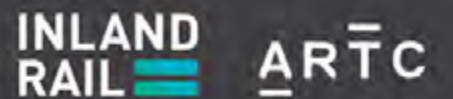
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

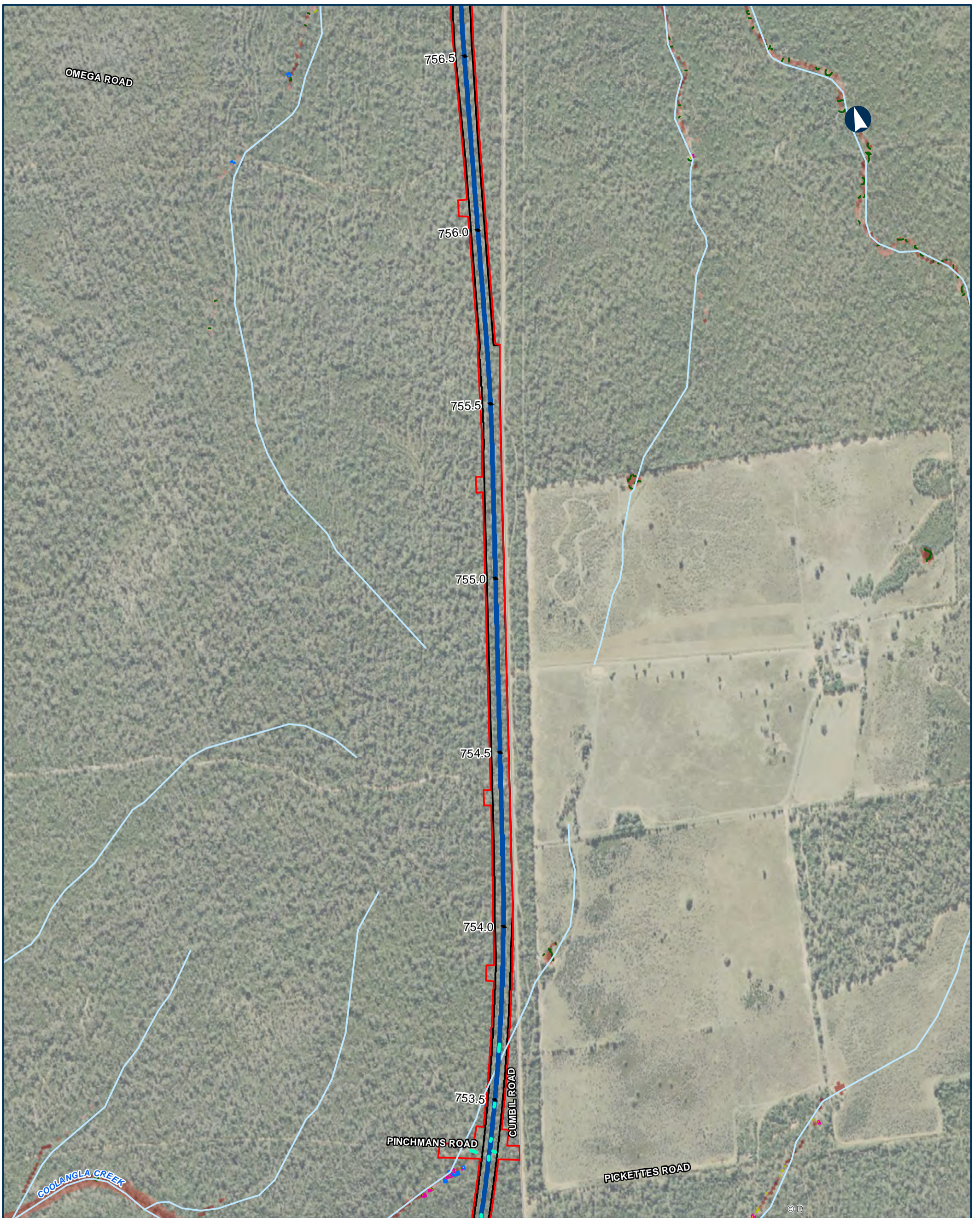
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.69

0 200 400 Metres

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

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.70

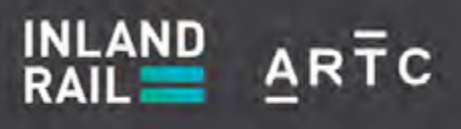
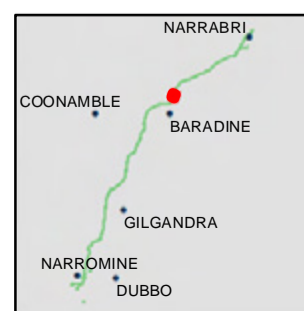
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|--|---|

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.71

0 200 400 Metres

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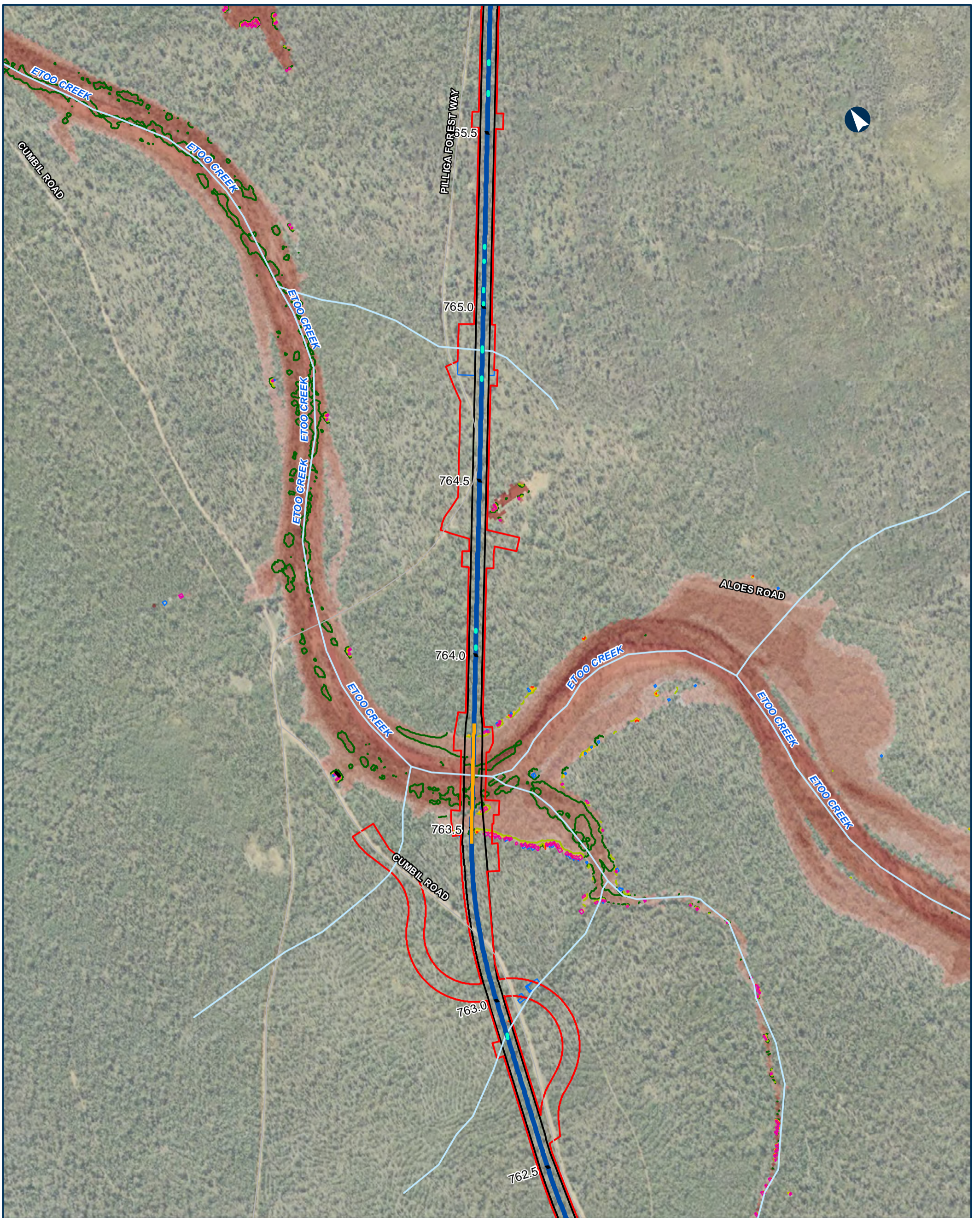
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|-----------------------|---|---------------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Road QDL departure | 5% | 3hrs - 6hrs |
| Sub arterial road | 10% | 6hrs - 12hrs |
| Watercourse | 20% | 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 - 20% AEP

Appendix I - Figure 4.1.72

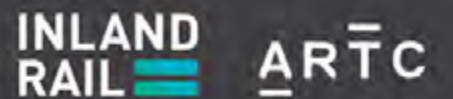
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Coordinate System: GDA 1994 MGA Zone 55

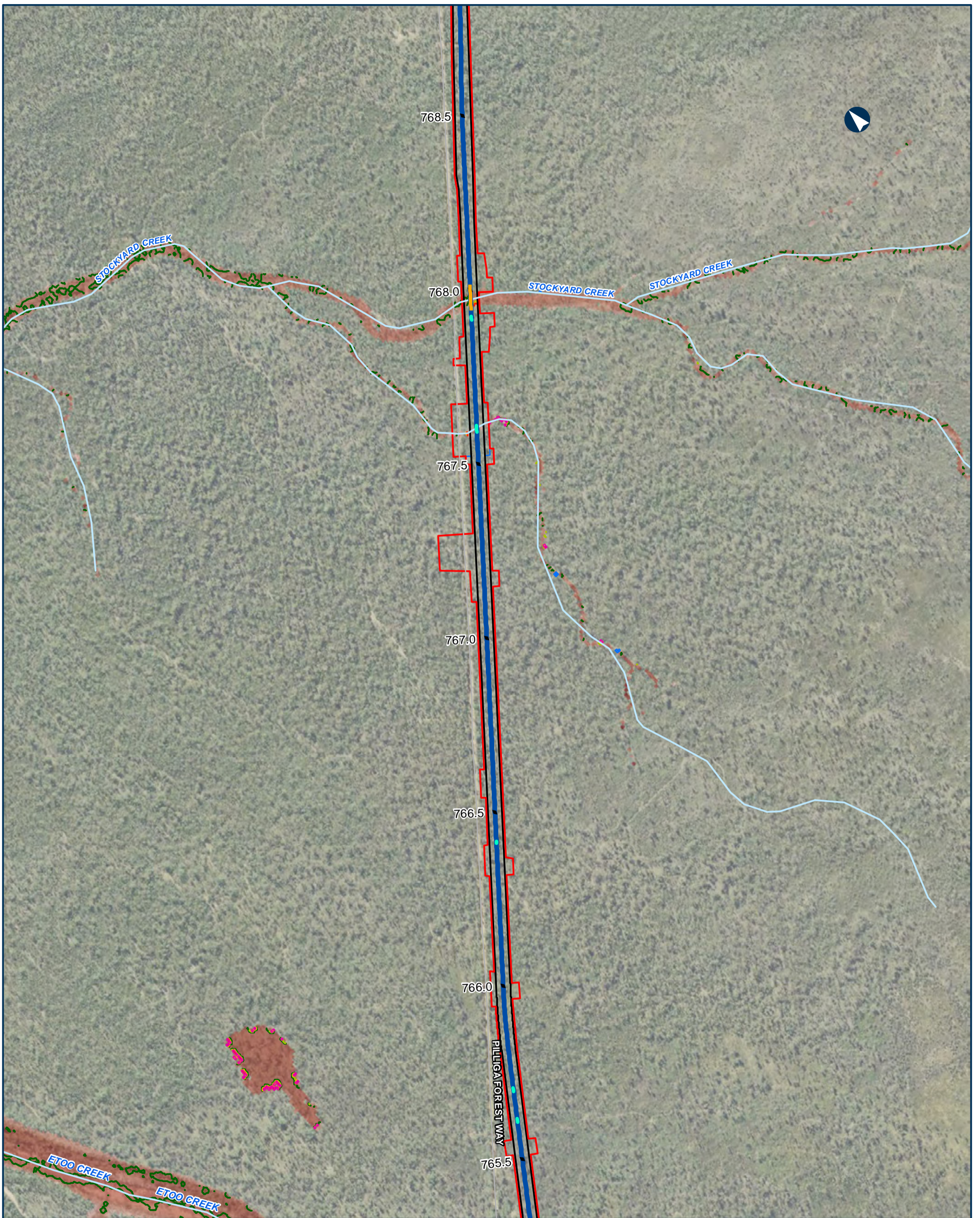
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse — The proposal — Drainage Control Area — Rail 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 >1hr — Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> — < 1hr — 1hr - 3hrs — 3hrs - 6hrs — 6hrs - 12hrs — 12hrs - 24hrs — > 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.73

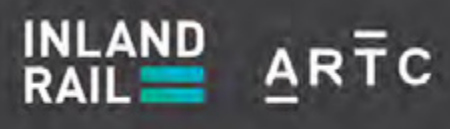
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Coordinate System: GDA 1994 MGA Zone 55

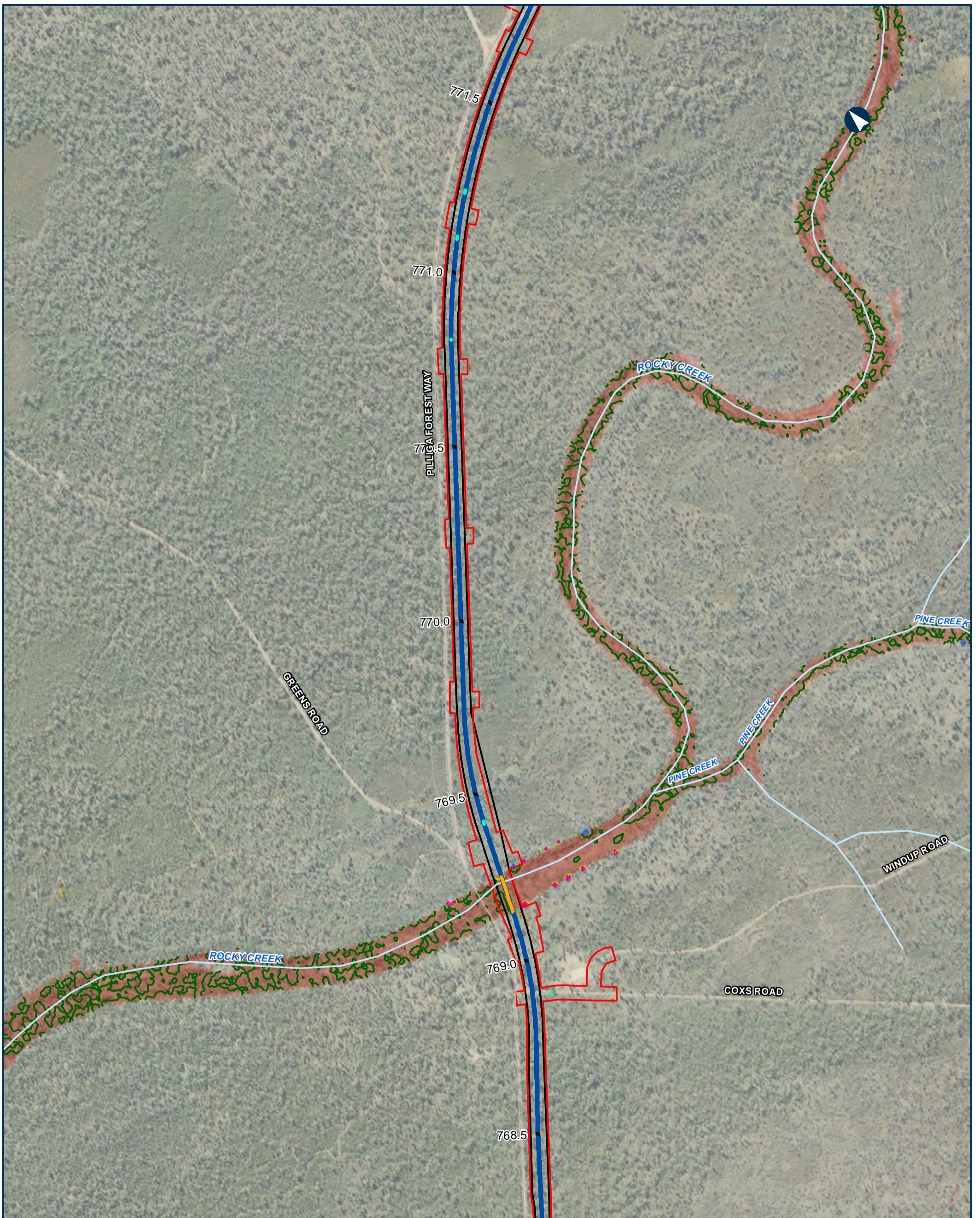
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|---|---|--|
| <ul style="list-style-type: none"> ■ Bridge ■ Culvert ■ Alignment ■ Sub arterial road ■ Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.74

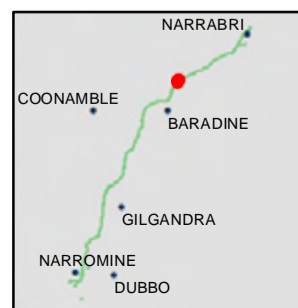
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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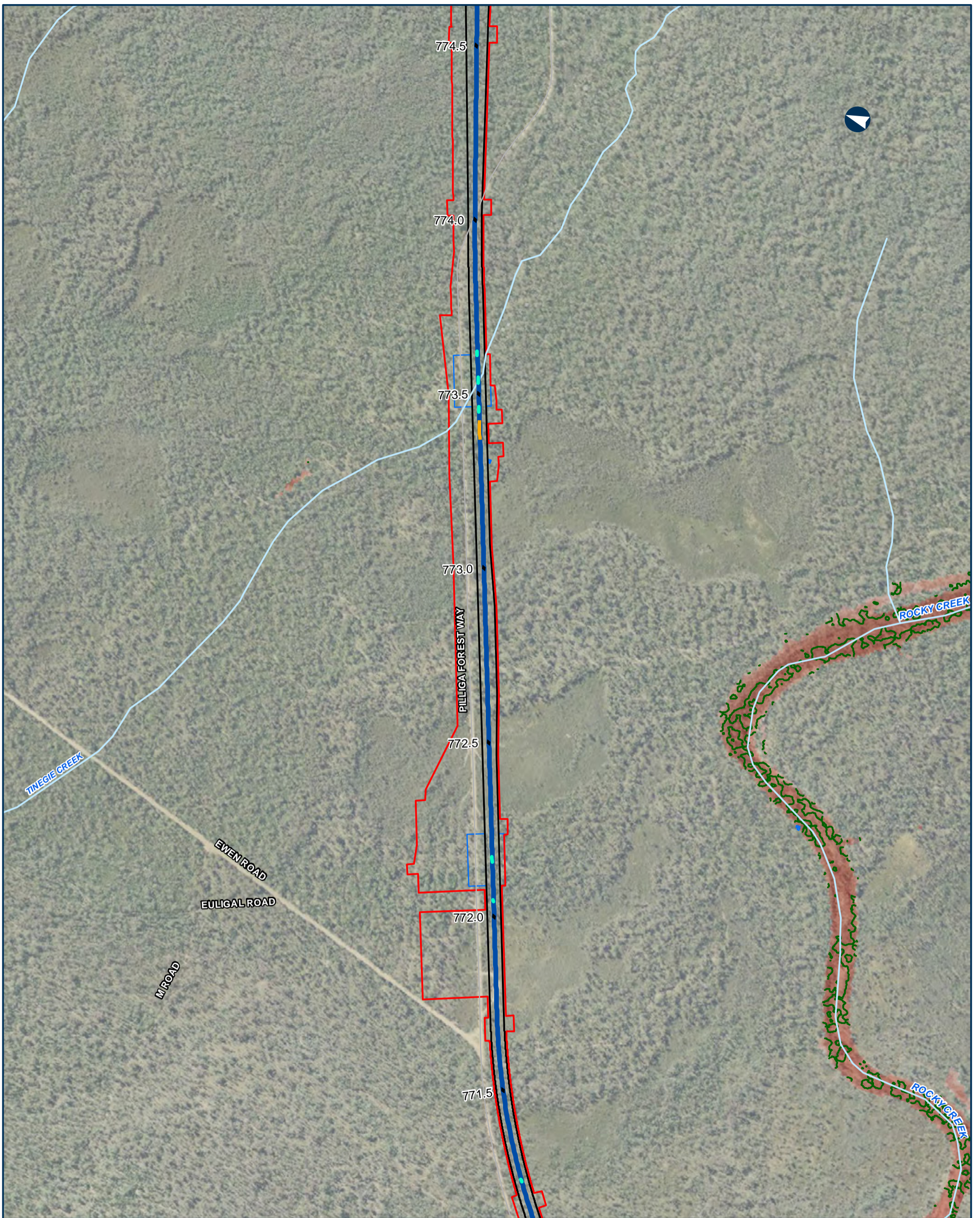
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.75

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

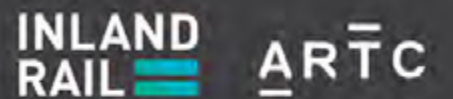
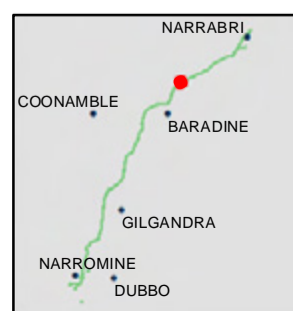
- Bridge
- Culvert
- Alignment
- Sub arterial road
- Watercourse
- The proposal
- Drainage Control Area
- Rail Corridor

Change in duration of inundation

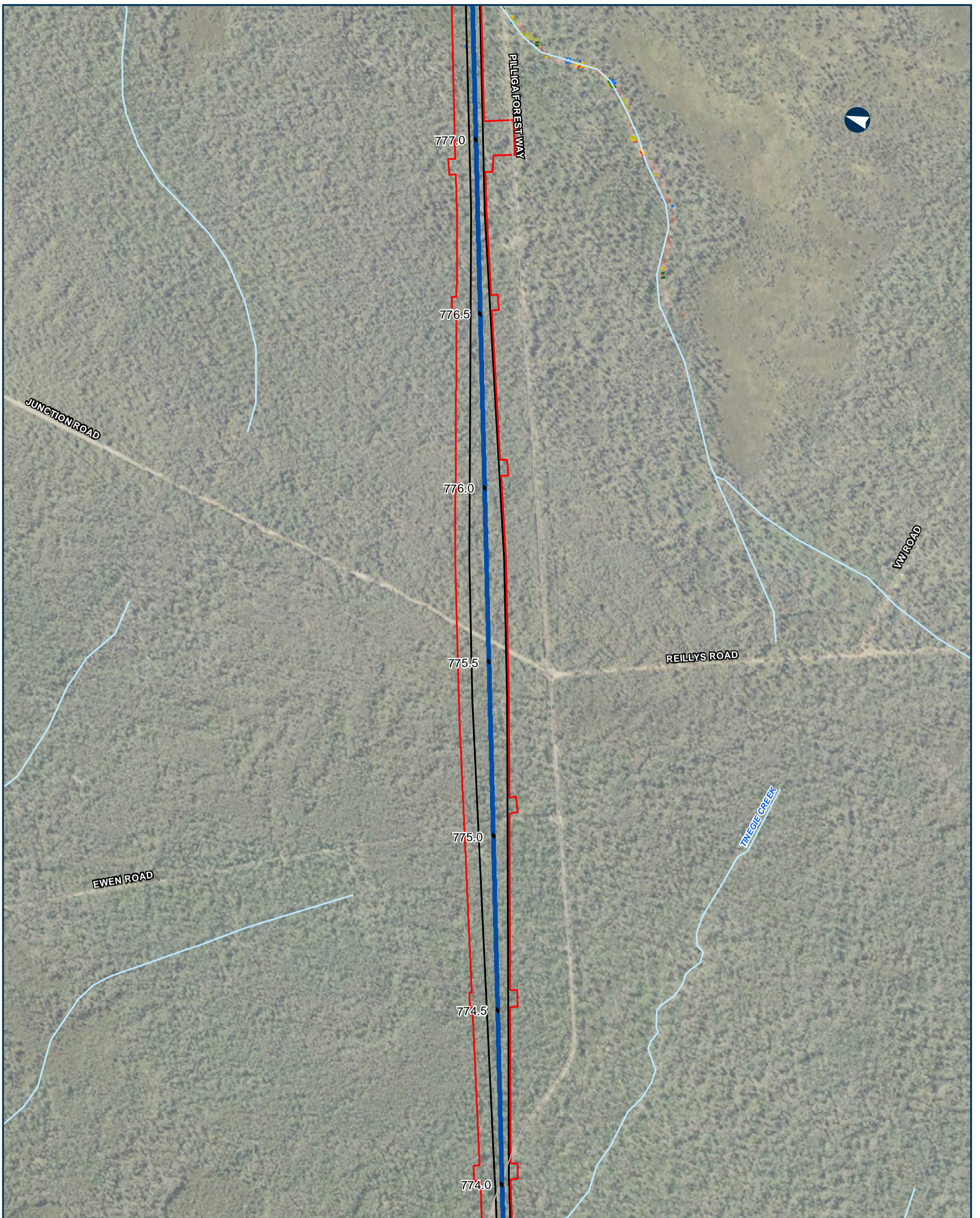
- 0%
- Area of departure
- Exist duration <1hr, design duration >1hr

Existing Duration of Inundation

- < 1hr
- 1hr - 3hrs
- 3hrs - 6hrs
- 6hrs - 12hrs
- 12hrs - 24hrs
- > 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.76

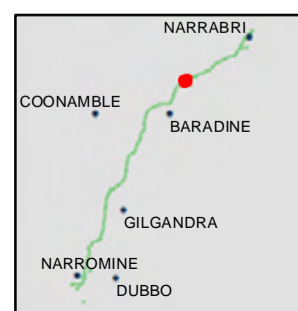
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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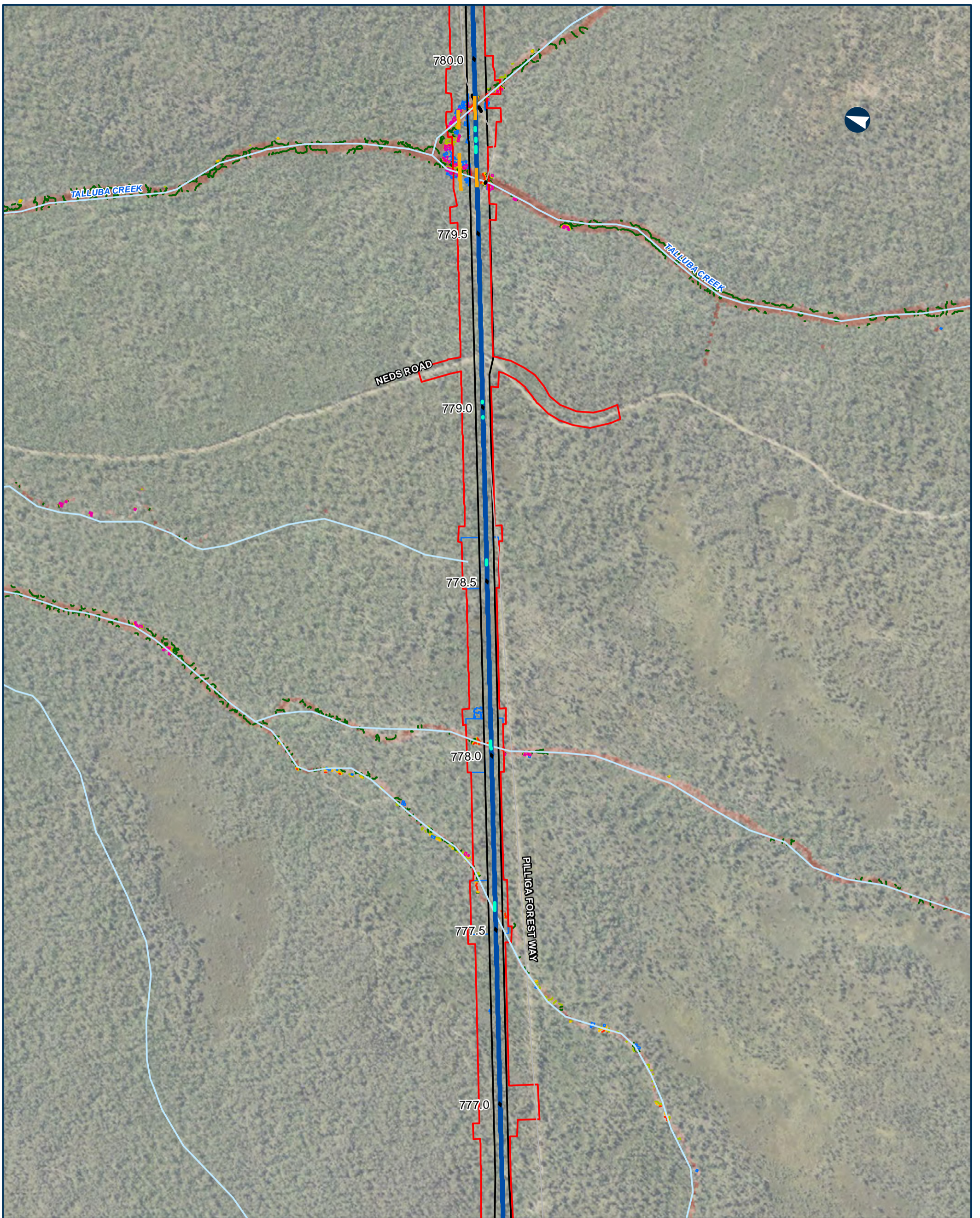
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.77

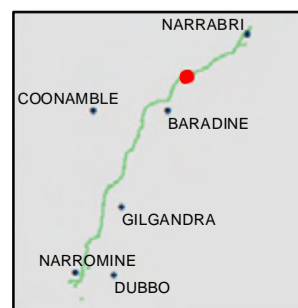
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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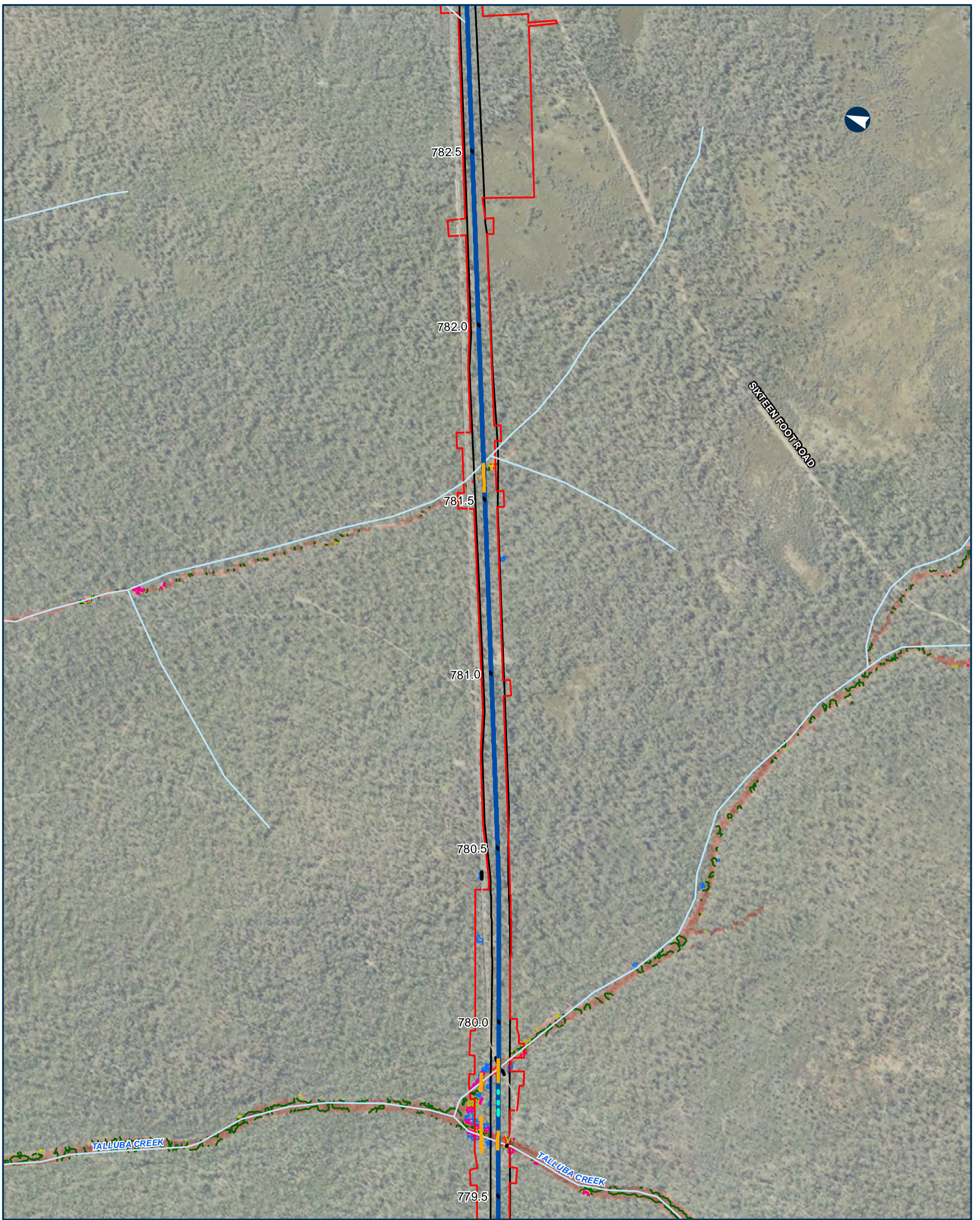
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|--|---|--|



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.78

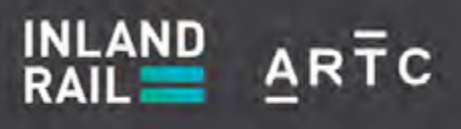
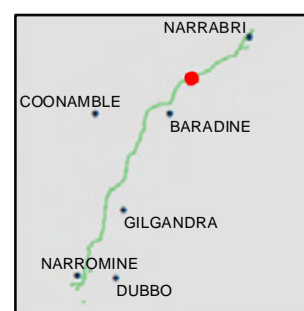
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

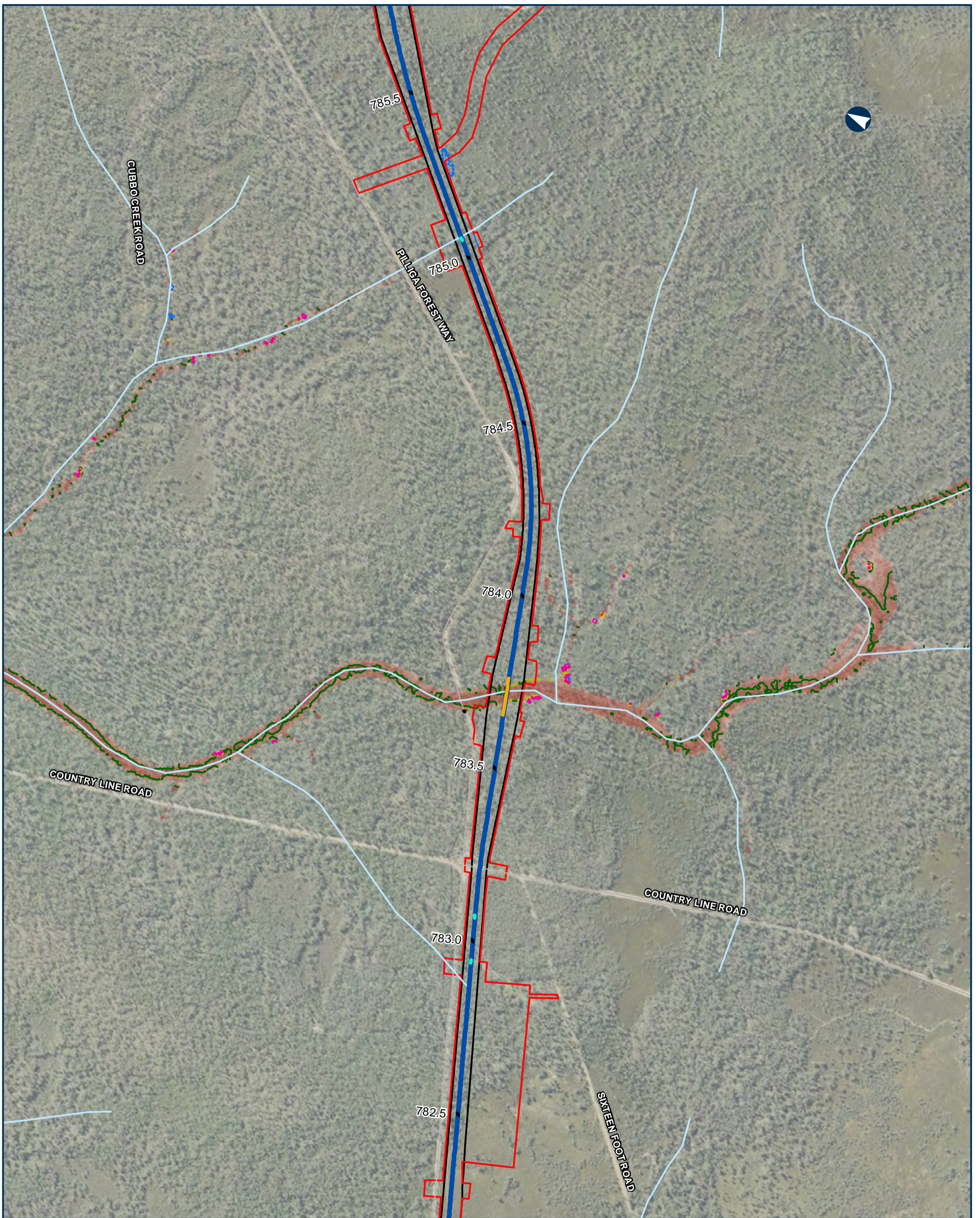
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Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|--------------------|---|---------------------------------------|
| Bridge | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Culvert | 0% | 1hr - 3hrs |
| Alignment | 5% | 3hrs - 6hrs |
| Road QDL departure | 10% | 6hrs - 12hrs |
| Sub arterial road | 20% | 12hrs - 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 - 20% AEP

Appendix I - Figure 4.1.79

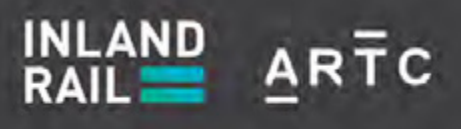
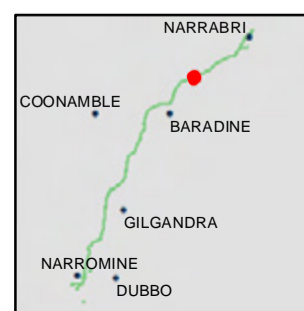
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

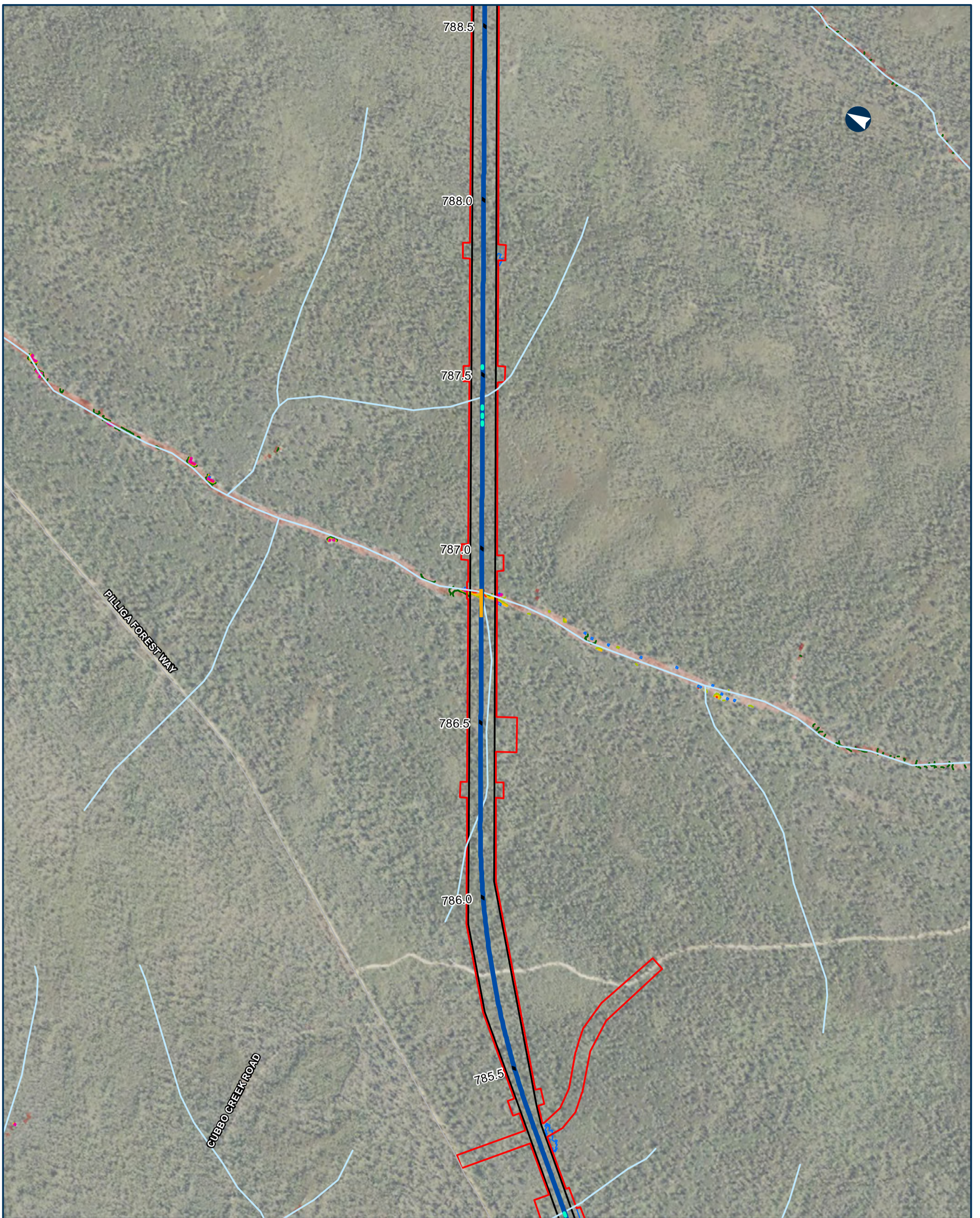
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse — The proposal — Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.80

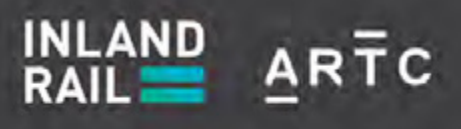
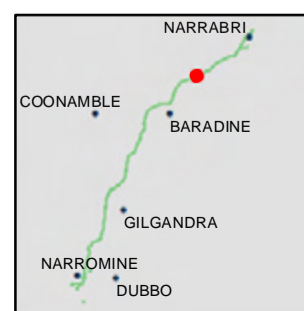
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Coordinate System: GDA 1994 MGA Zone 55

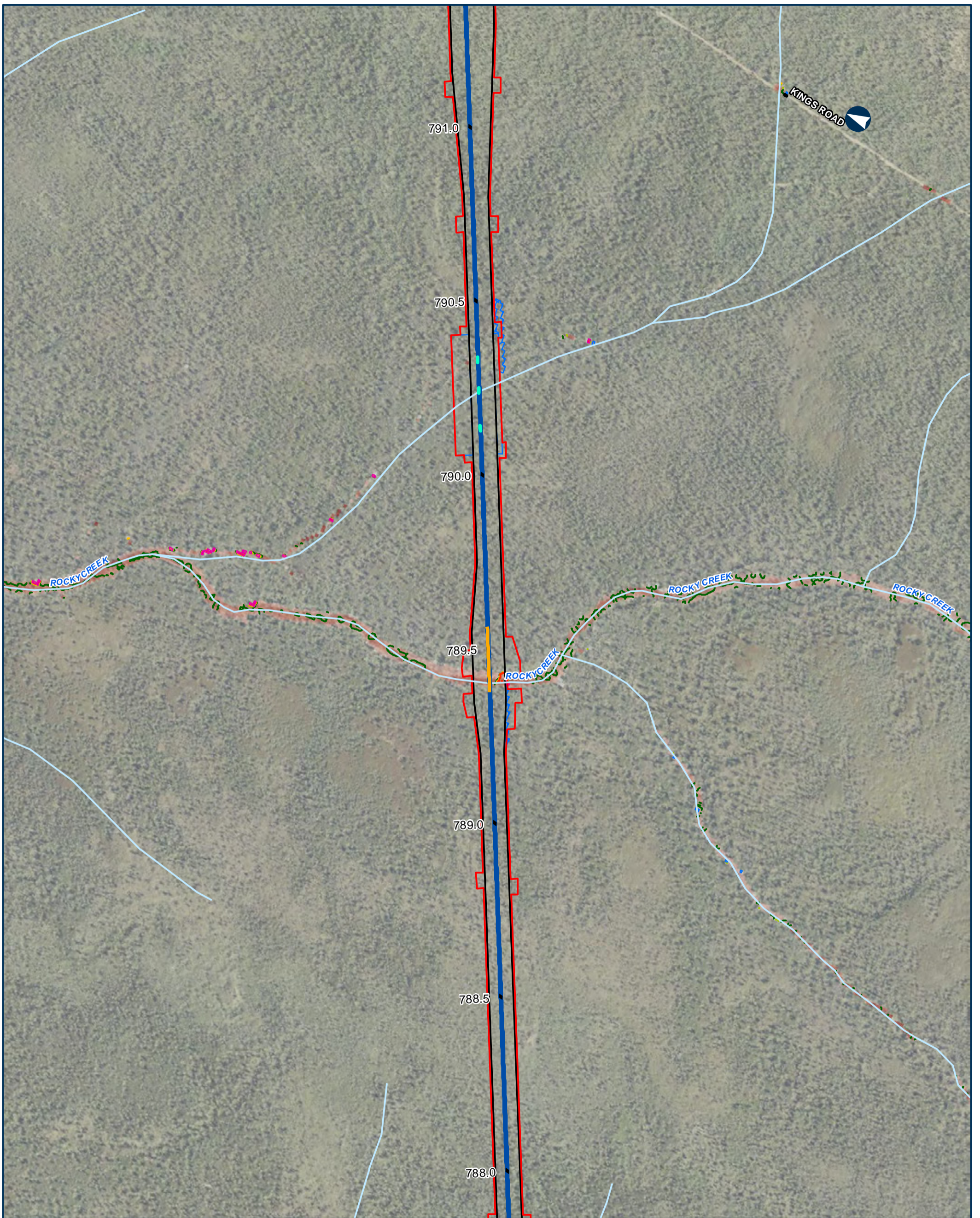
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|---|---|--|
| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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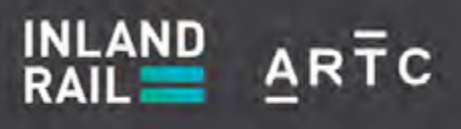
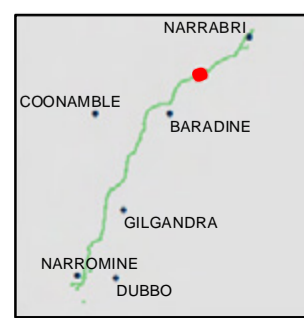
NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.81

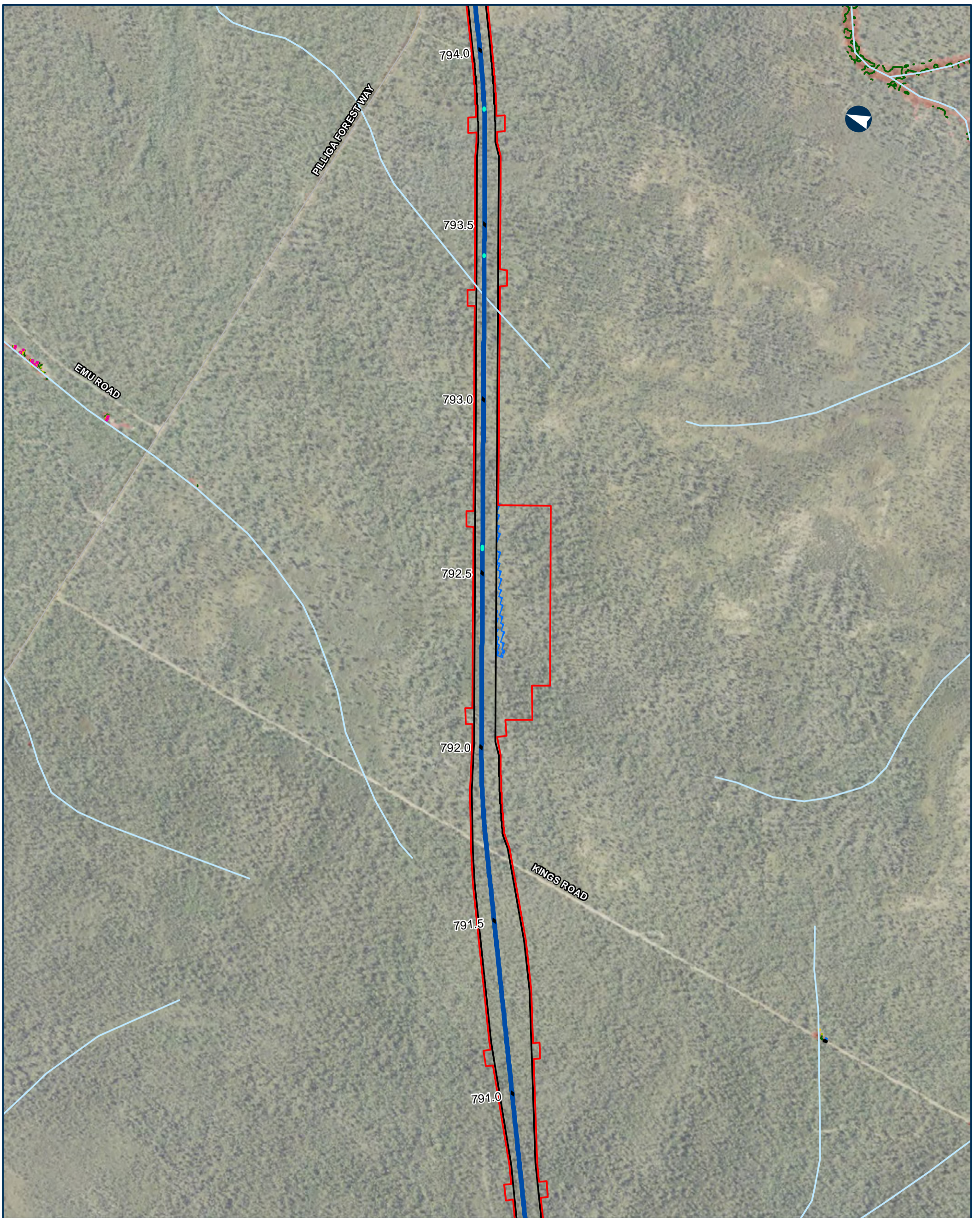
0 200 400 Metres
 Coordinate System: GDA 1994 MGA Zone 55
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.82

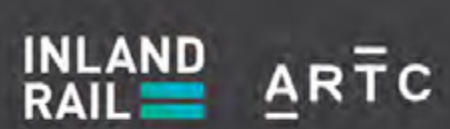
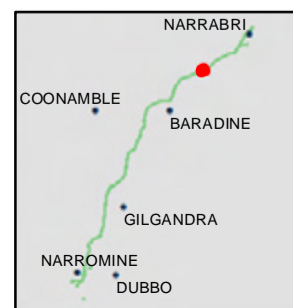
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Coordinate System: GDA 1994 MGA Zone 55

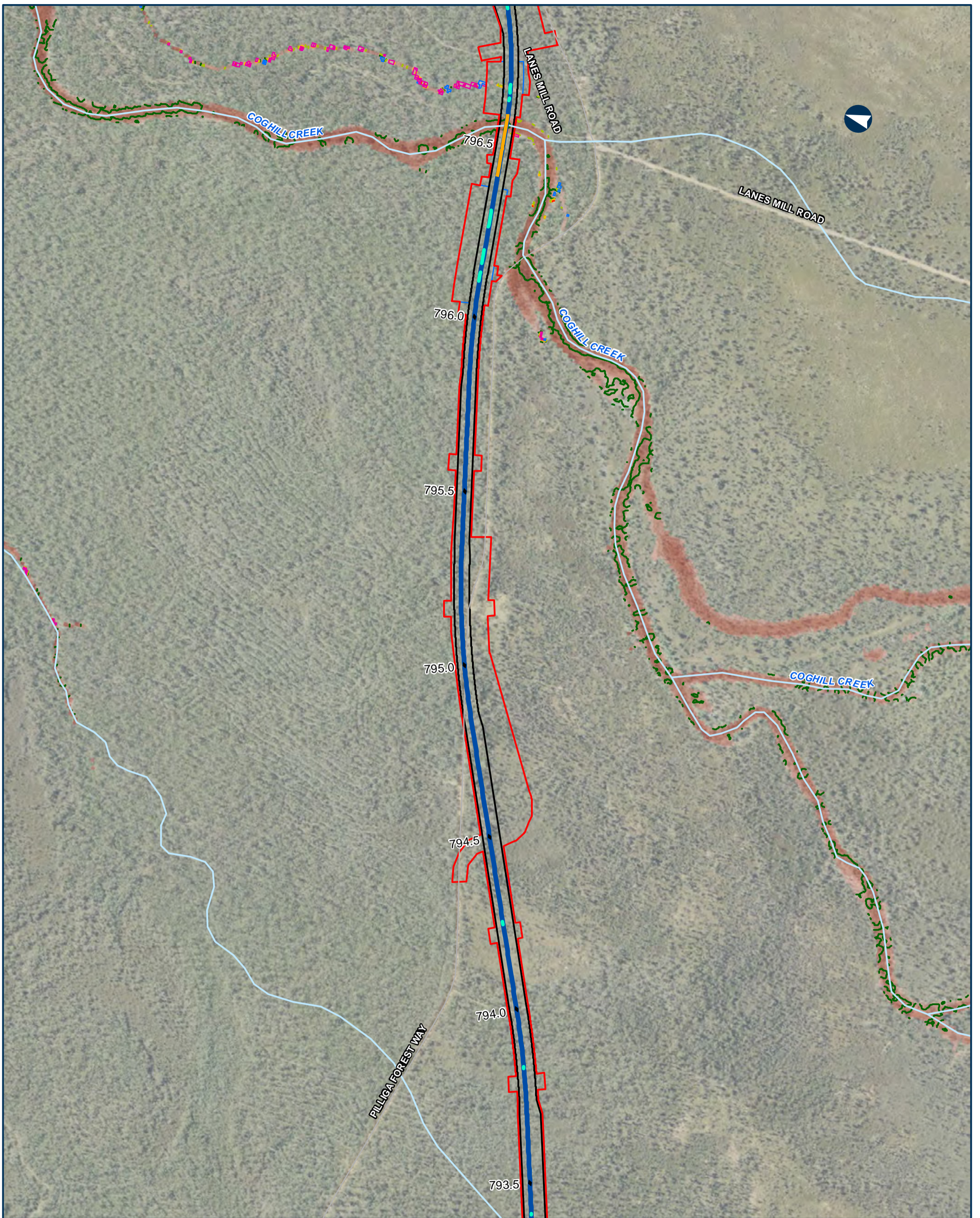
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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|--------------------|---|---------------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Road ODL departure | 5% | 3hrs - 6hrs |
| Sub arterial road | 10% | 6hrs - 12hrs |
| Watercourse | 20% | 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 - 20% AEP

Appendix I - Figure 4.1.83

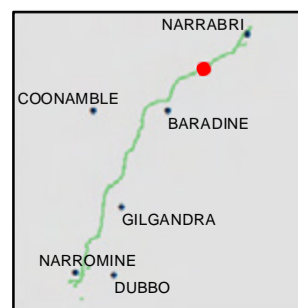
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Coordinate System: GDA 1994 MGA Zone 55

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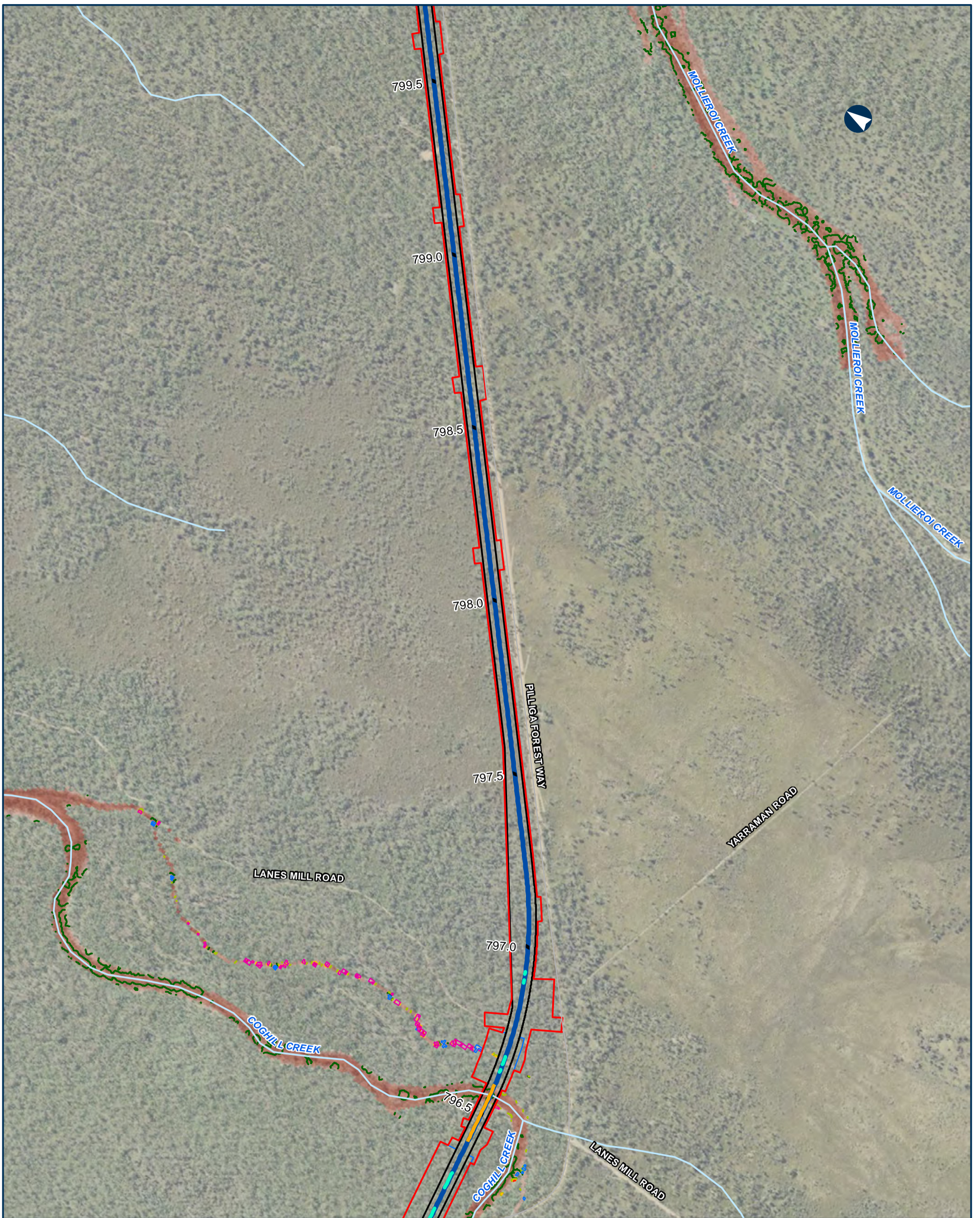
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|---|---|--|



INLAND RAIL **ARTC**

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.84

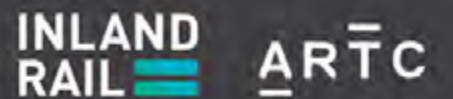
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Coordinate System: GDA 1994 MGA Zone 55

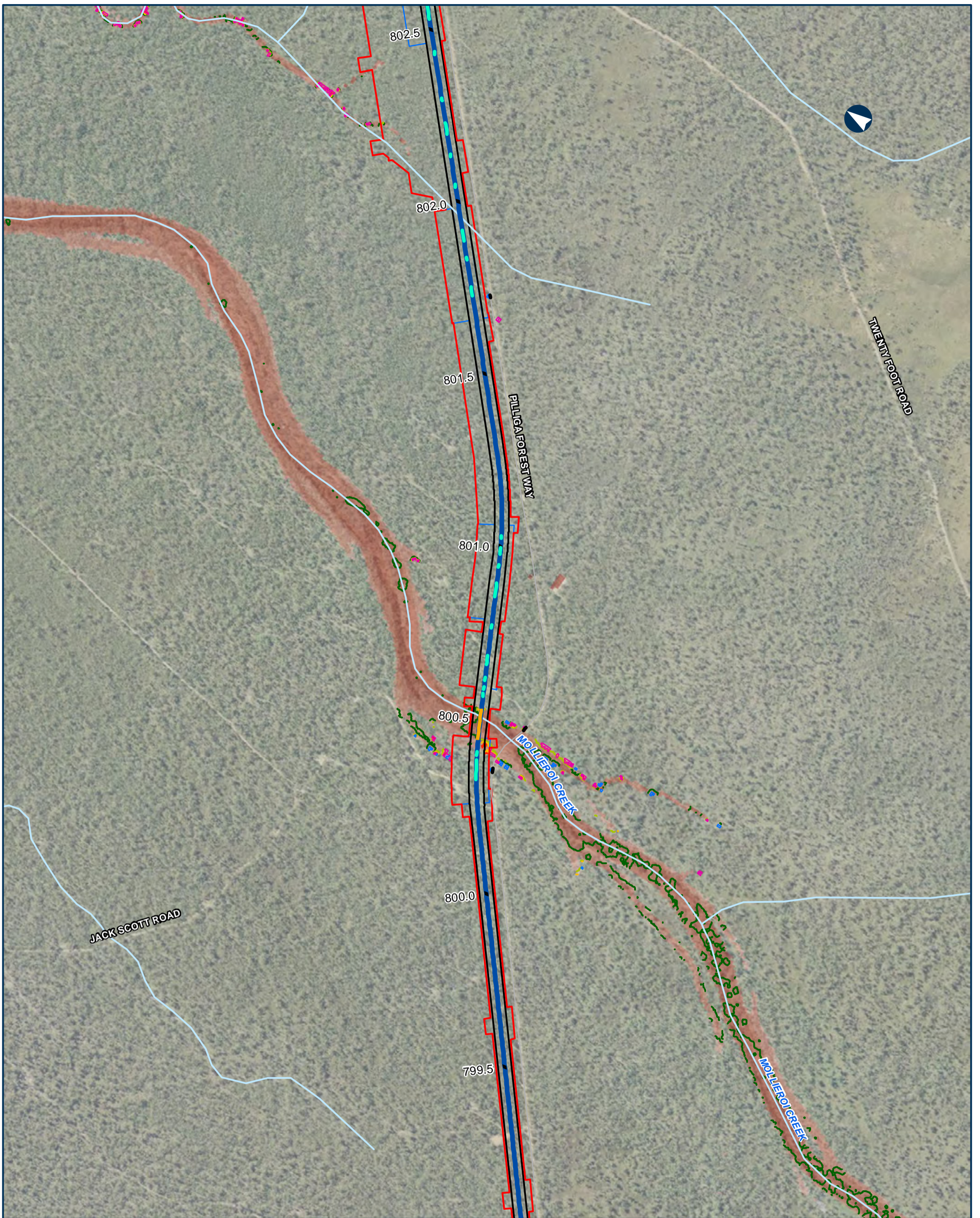
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.85

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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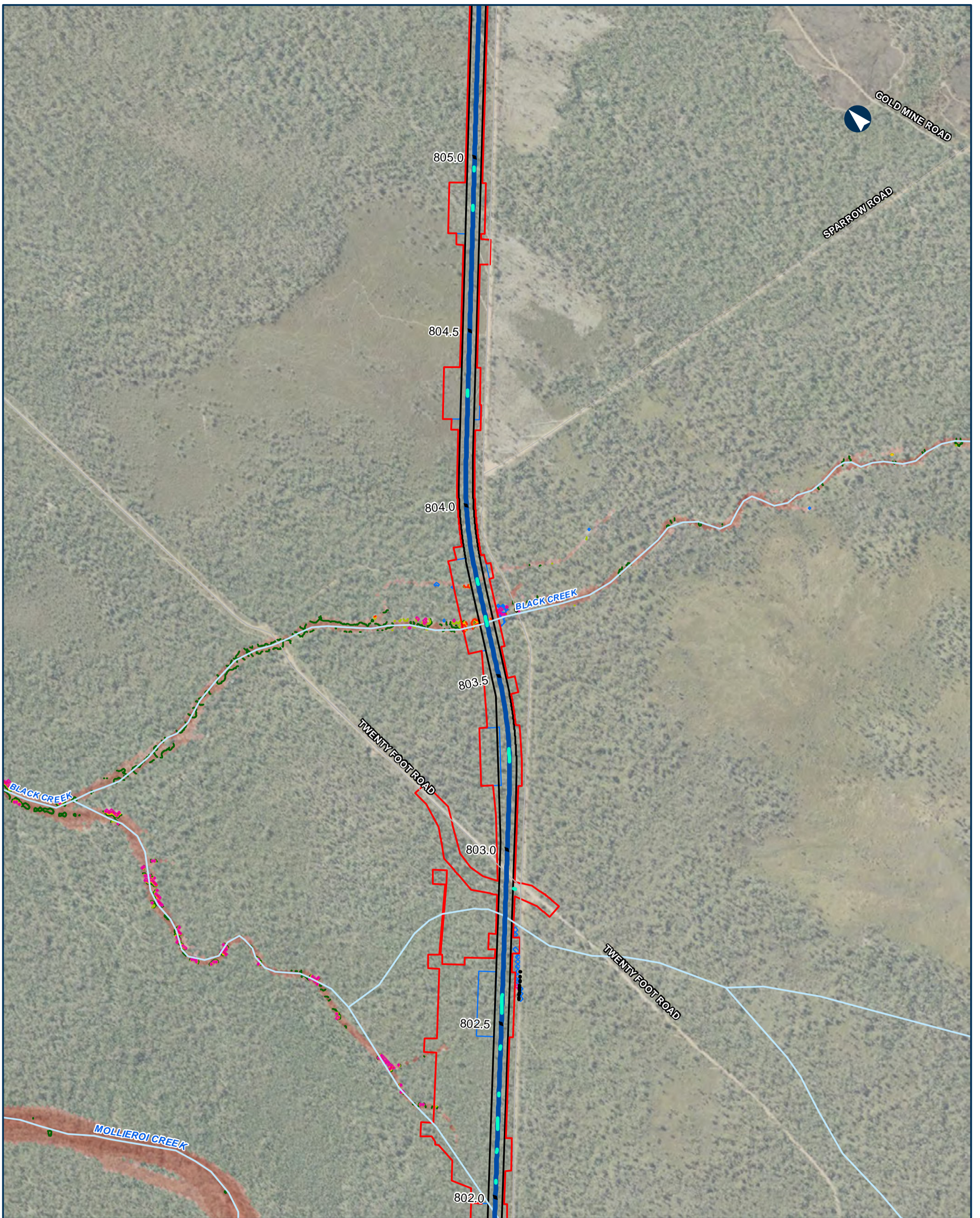
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
|--|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.86

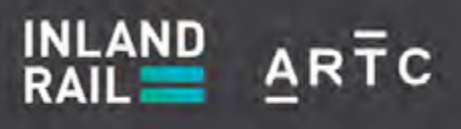
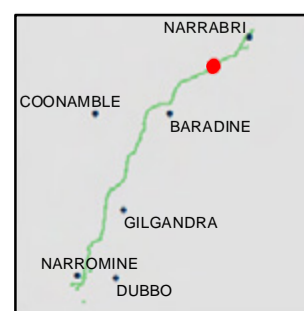
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

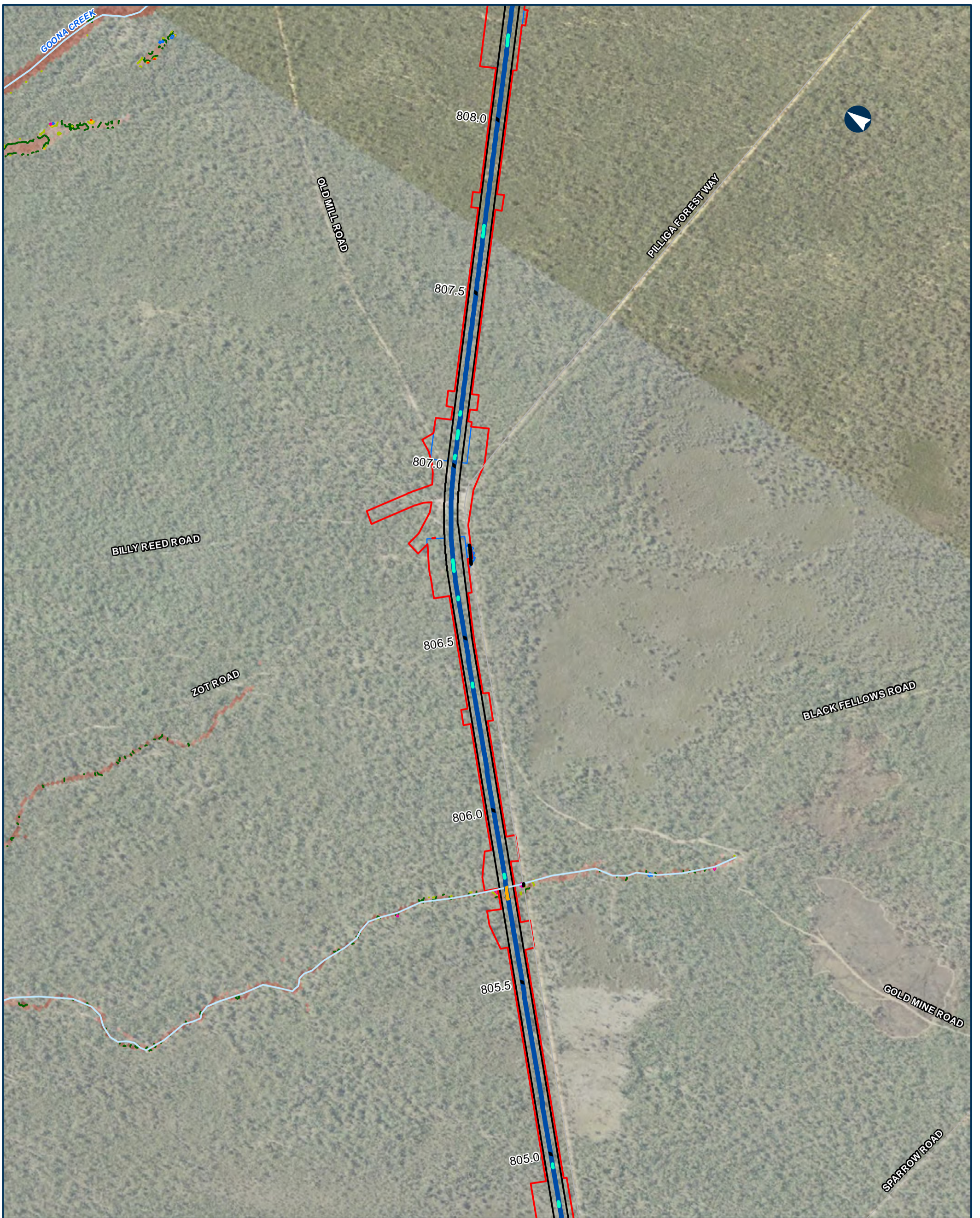
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Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- | | | |
|-----------------------|--|---------------------------------|
| Culvert | Change in duration of inundation | Existing Duration of Inundation |
| Alignment | 0% | < 1hr |
| Road ODL departure | 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 | |
| Drainage Control Area | Exist duration >1hr, duration change > 10% | |
| Rail Corridor | | |



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.87

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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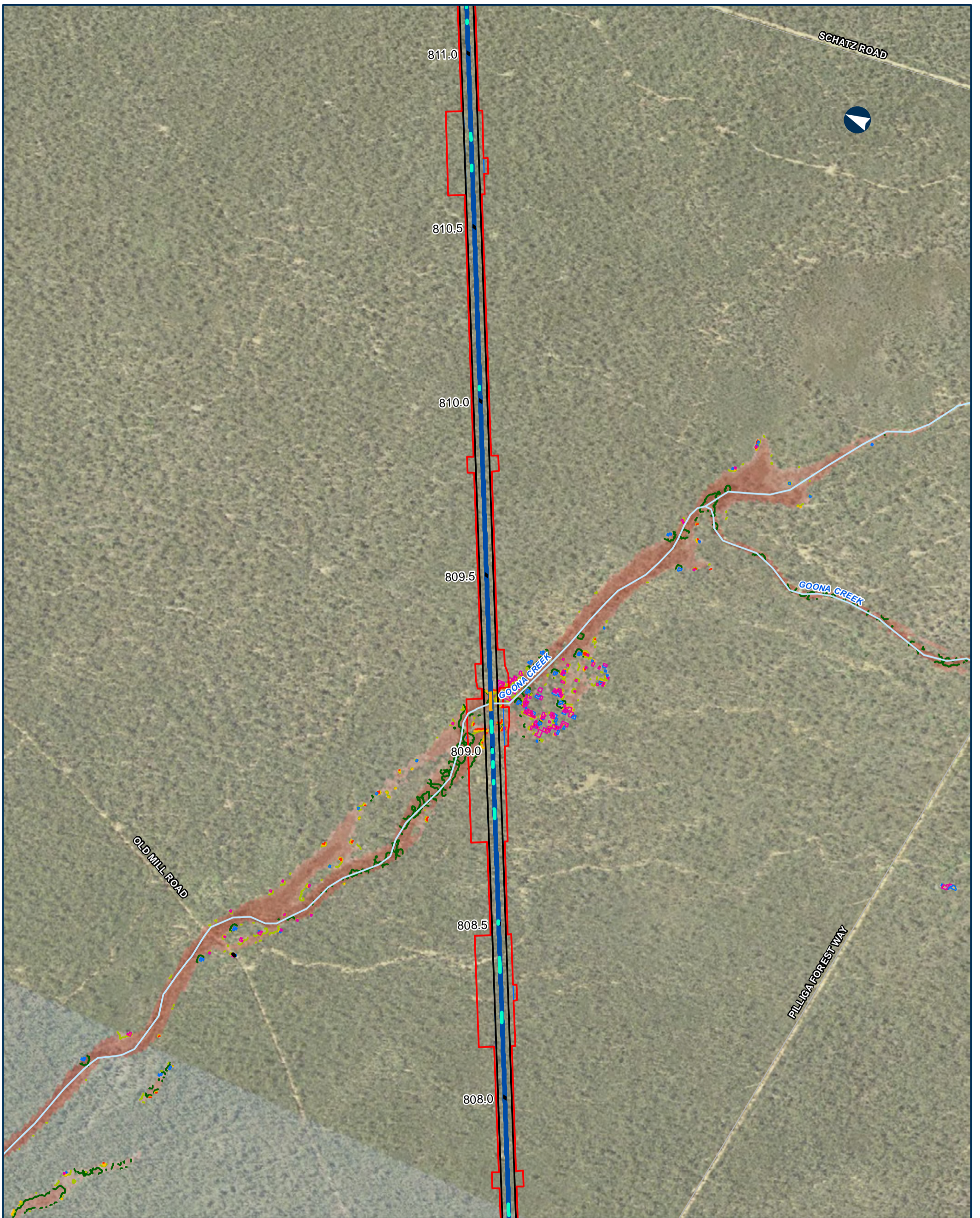
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.88

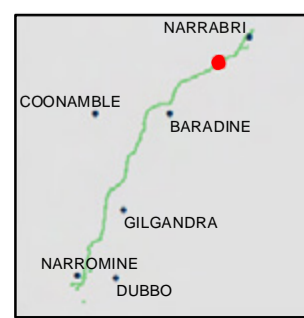
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
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INLAND RAIL

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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.89

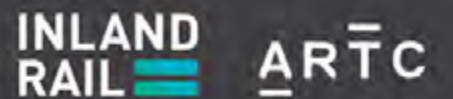
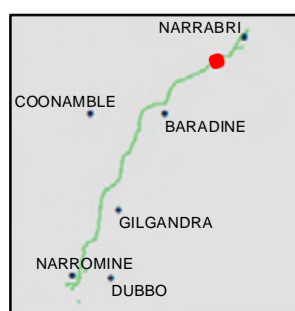
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Coordinate System: GDA 1994 MGA Zone 55

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- Culvert
- Alignment
- Local road
- Watercourse
- The proposal
- Drainage Control Area
- Rail Corridor



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

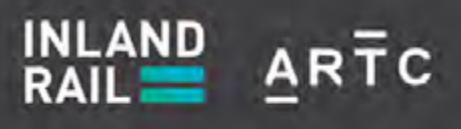
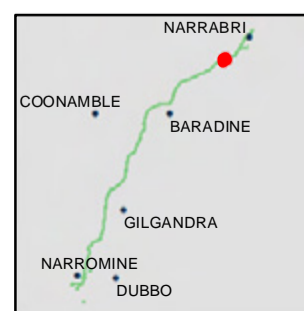
Appendix I - Figure 4.1.90

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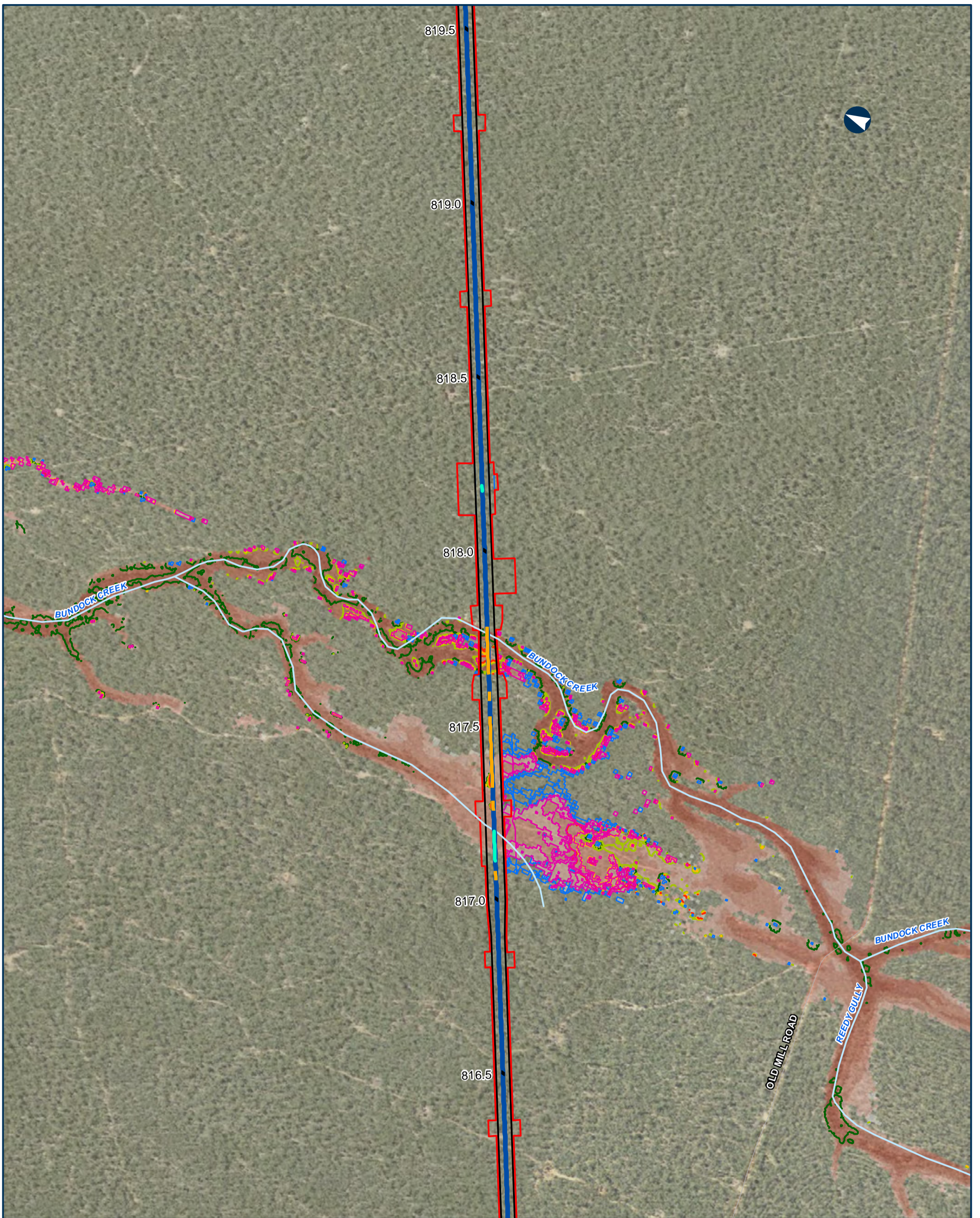
Coordinate System: GDA 1994 MGA Zone 55

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.91

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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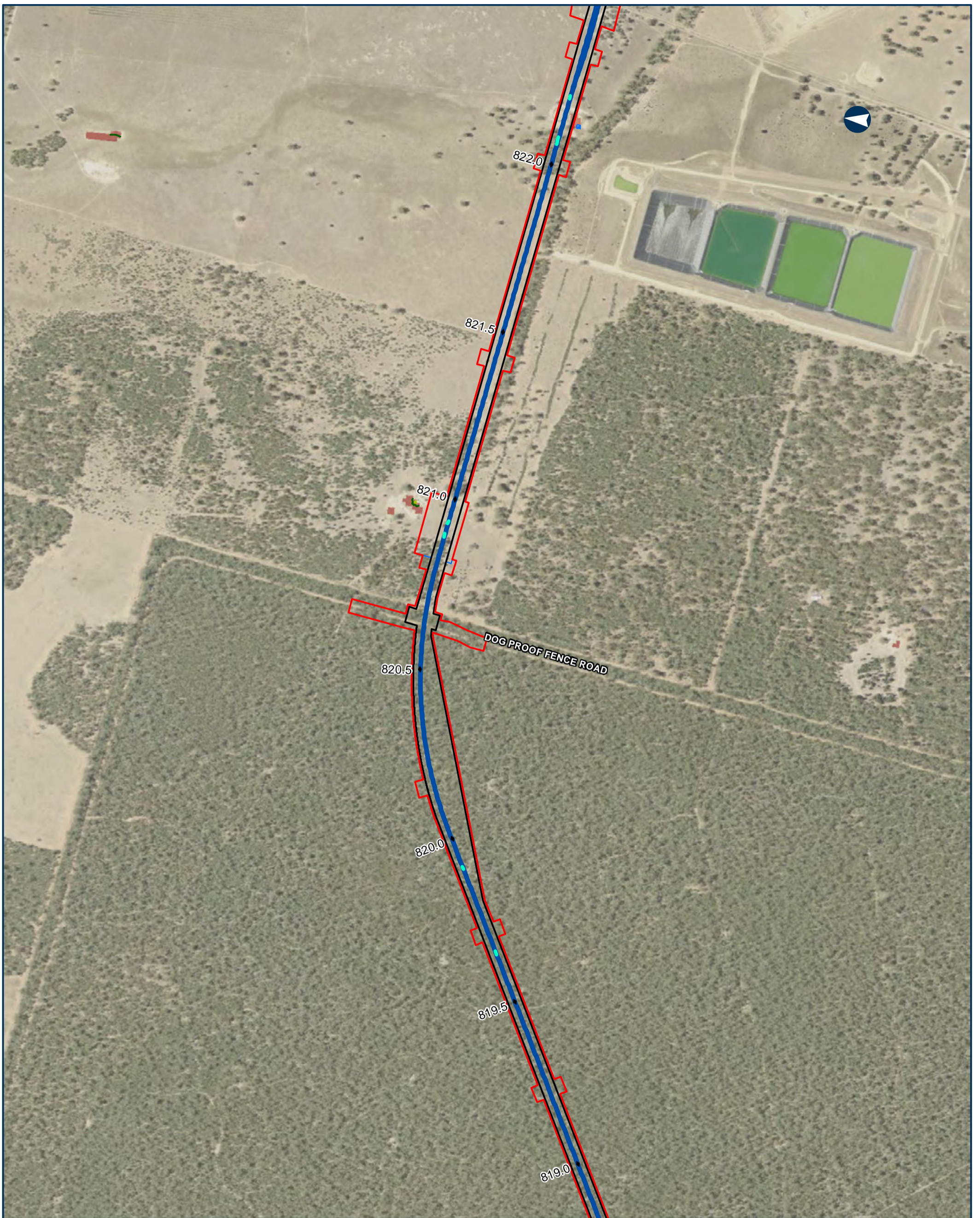
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Local road — Watercourse The proposal Drainage Control Area Rail 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 >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.92

0 200 400 Metres

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

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.93

0 200 400 Metres

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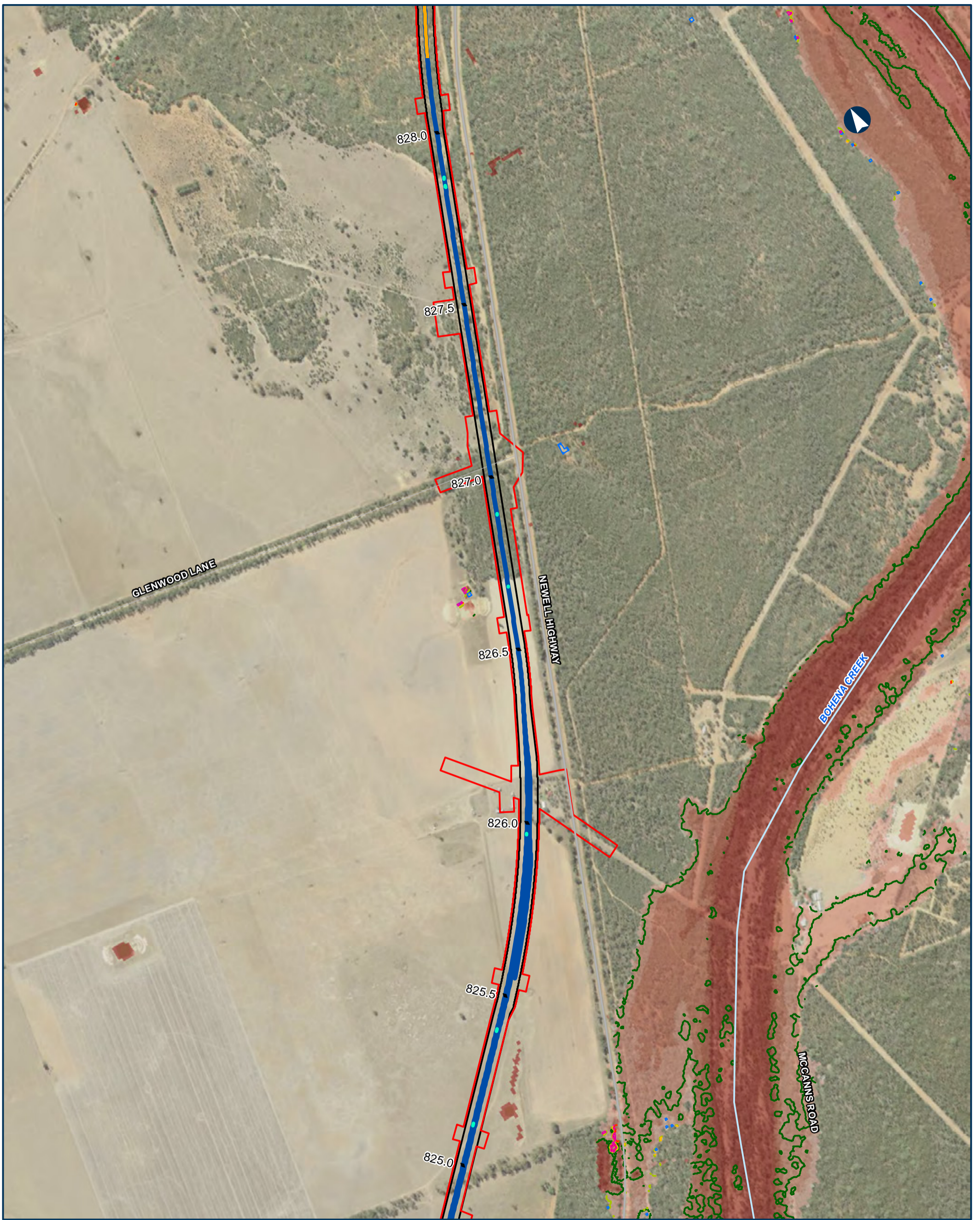
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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| Culvert | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Alignment | 0% | 1hr - 3hrs |
| Primary road | 5% | 3hrs - 6hrs |
| Local road | 10% | 6hrs - 12hrs |
| Watercourse | 20% | 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 - 20% AEP

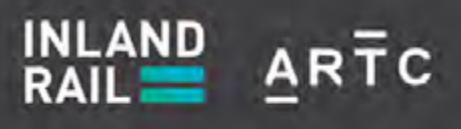
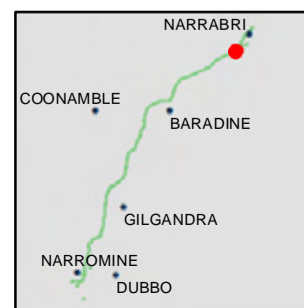
Appendix I - Figure 4.1.94

0 200 400 Metres

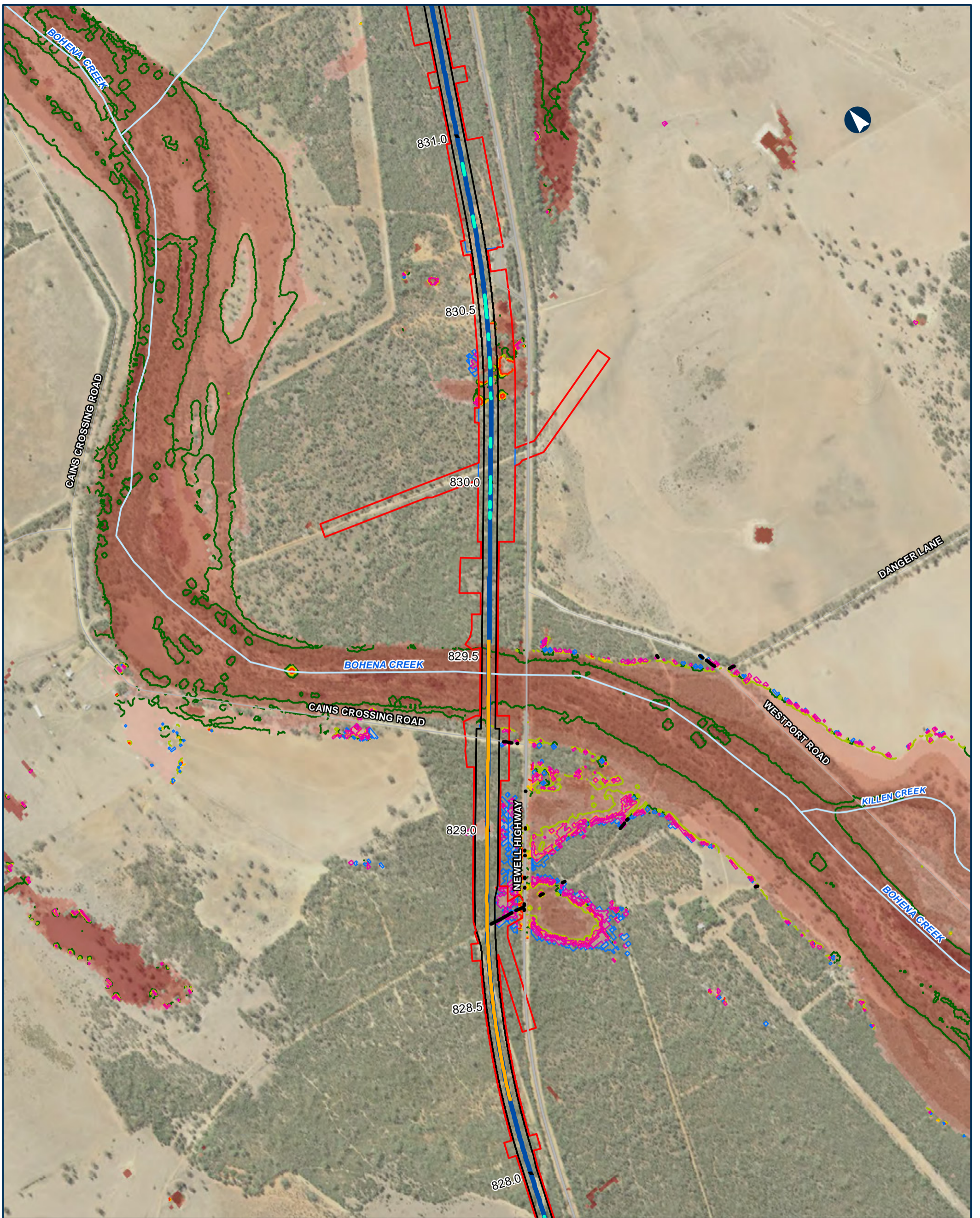
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Primary road — Local road — Watercourse The proposal Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.95

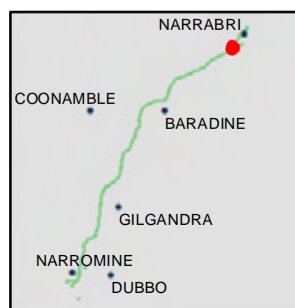
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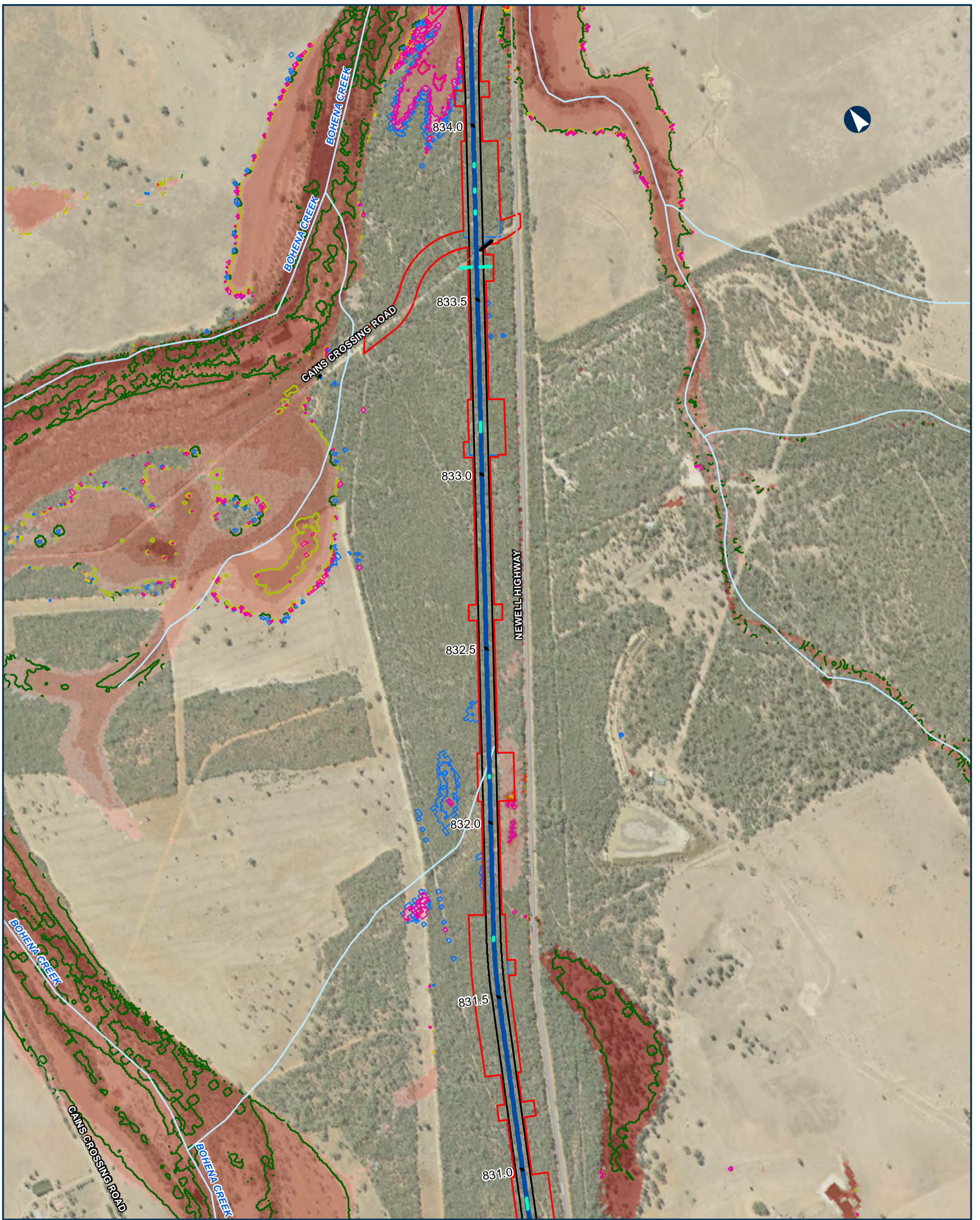
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Primary road — Sub arterial road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.96

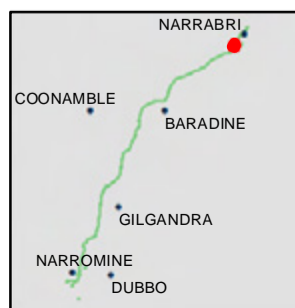
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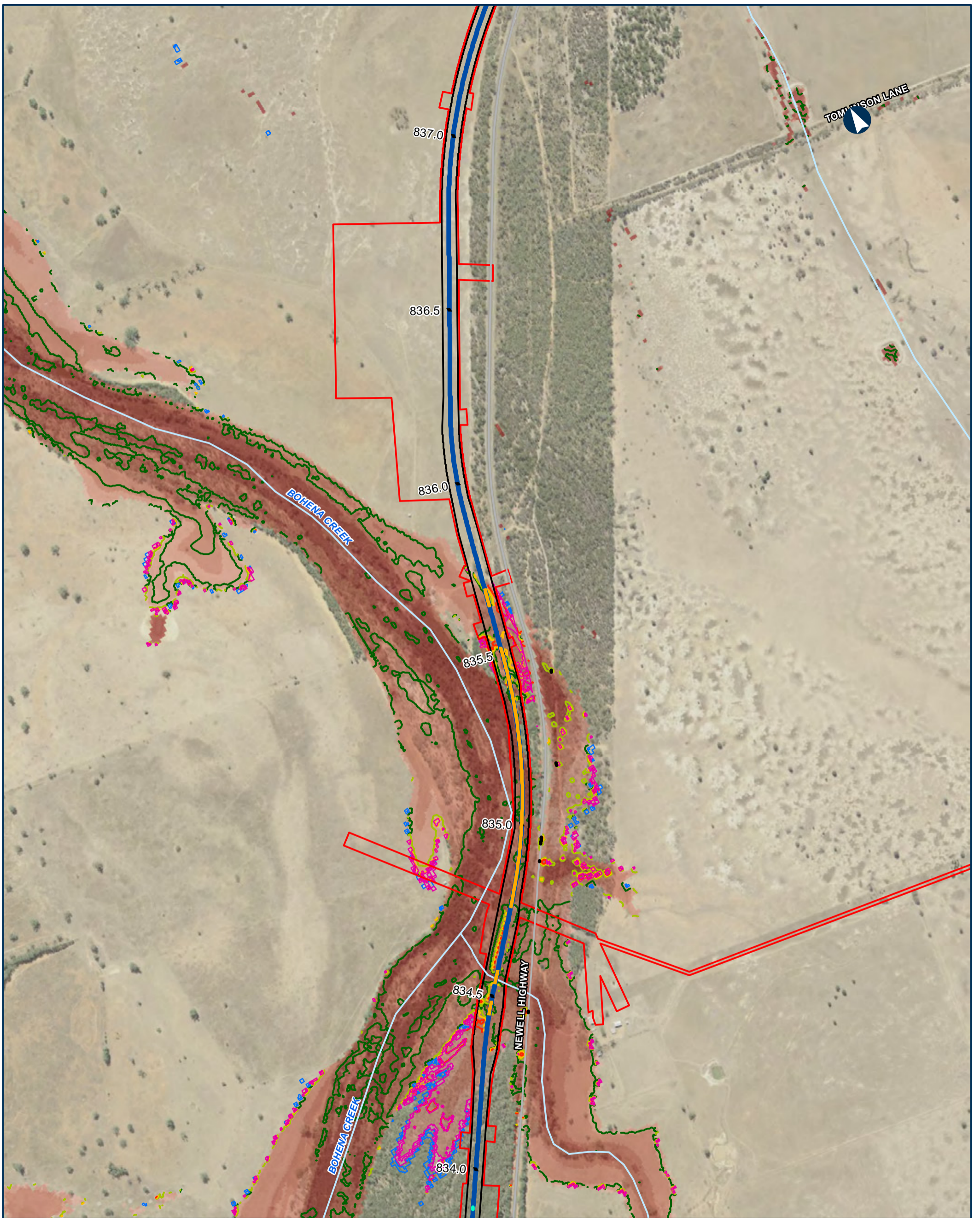
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| <ul style="list-style-type: none"> — Culvert — Alignment — Road ODL departure — Primary road — Local road — Watercourse The proposal Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.97

0 200 400 Metres

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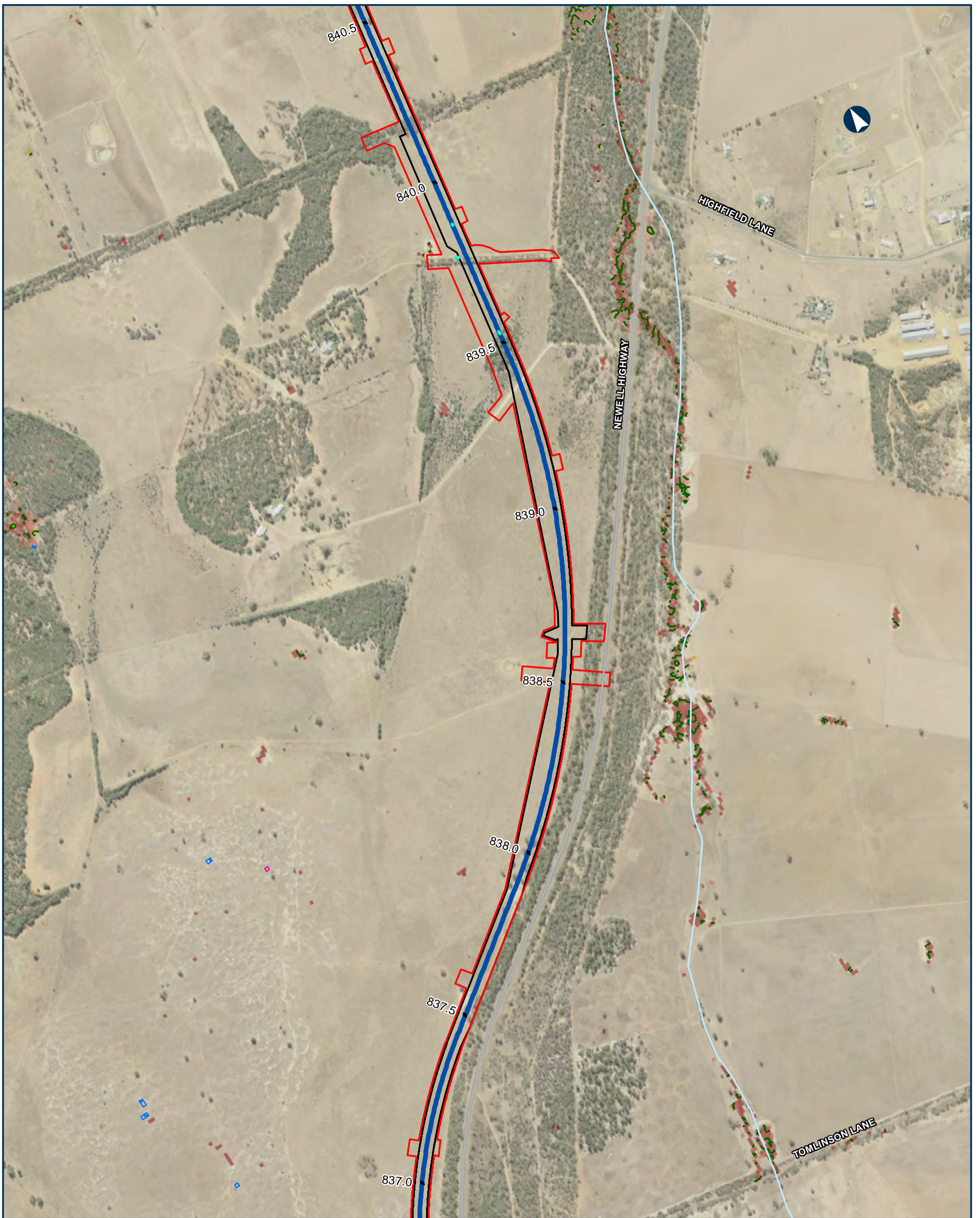
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Primary road — Watercourse — The proposal — Drainage Control Area Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.98

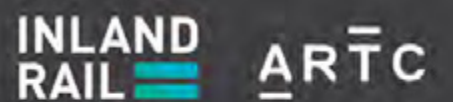
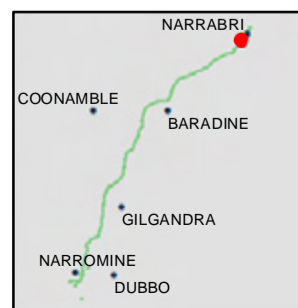
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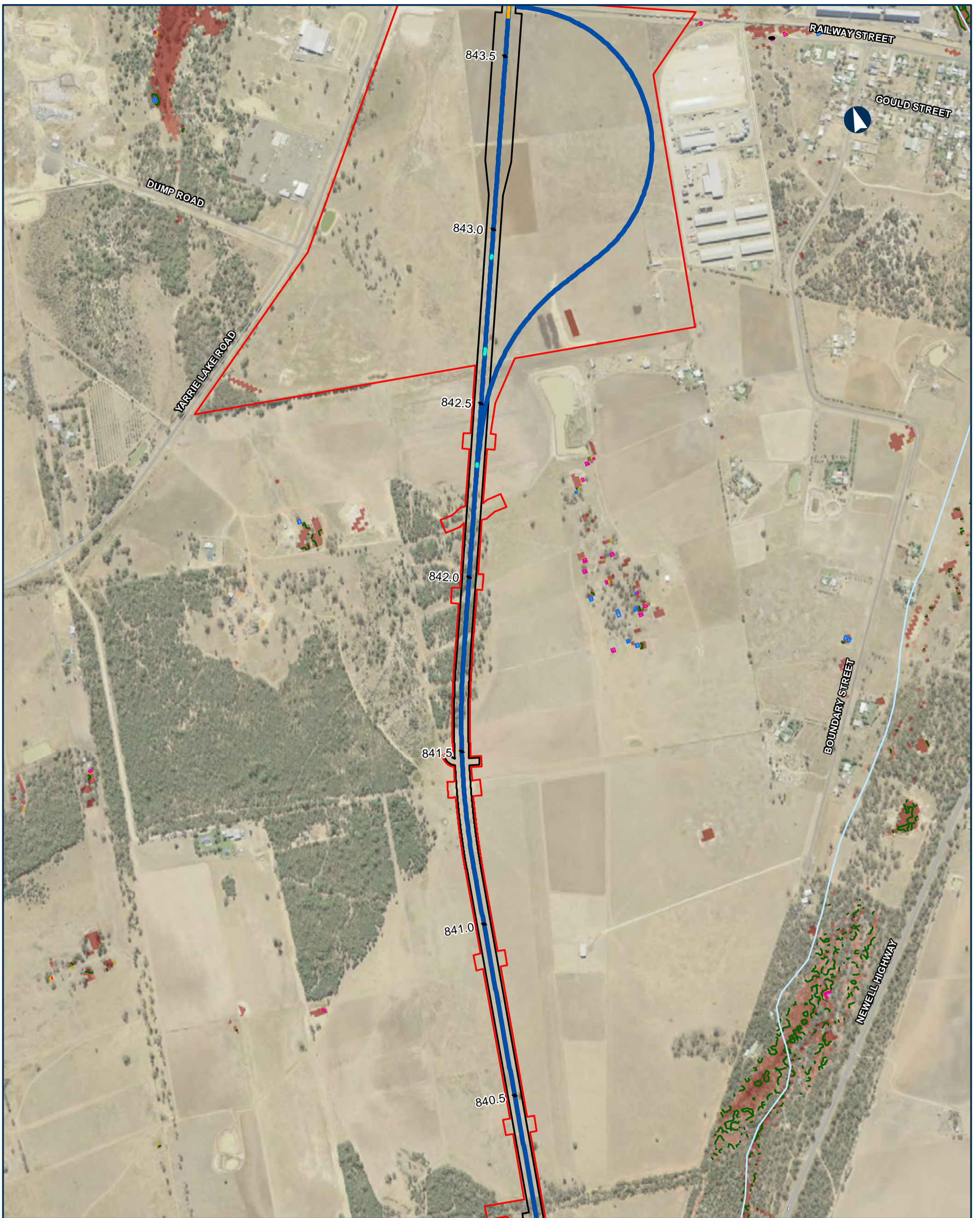
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 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.99

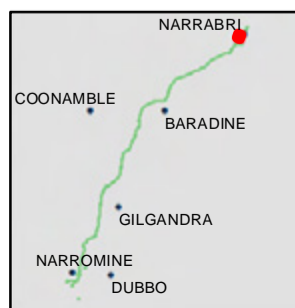
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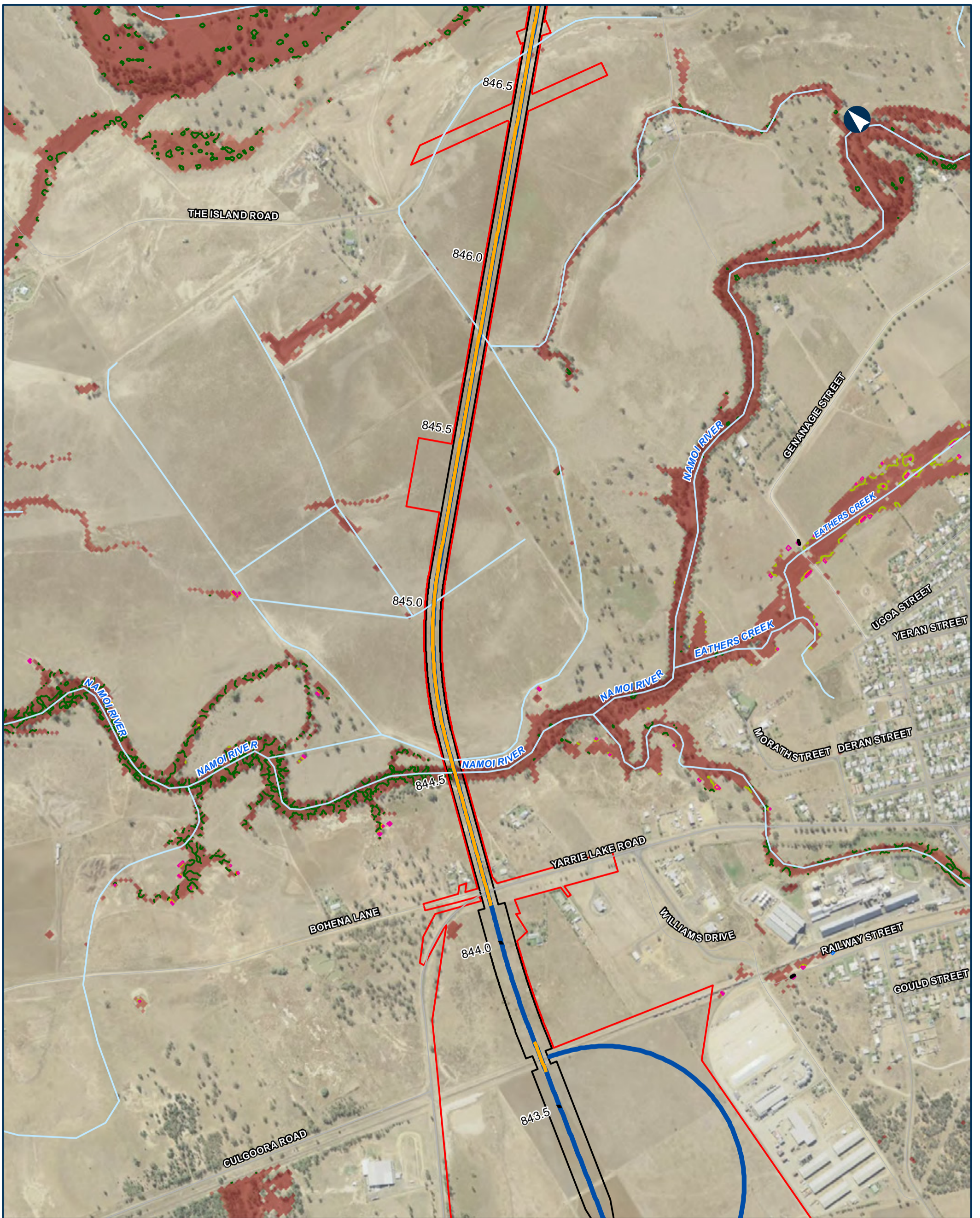
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| <ul style="list-style-type: none"> — Bridge — Culvert — Alignment — Road QDL departure — Primary road — Sub arterial road — Local road — Watercourse The proposal Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> — 0% — 5% — 10% — 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
|---|---|--|



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.100

0 200 400 Metres

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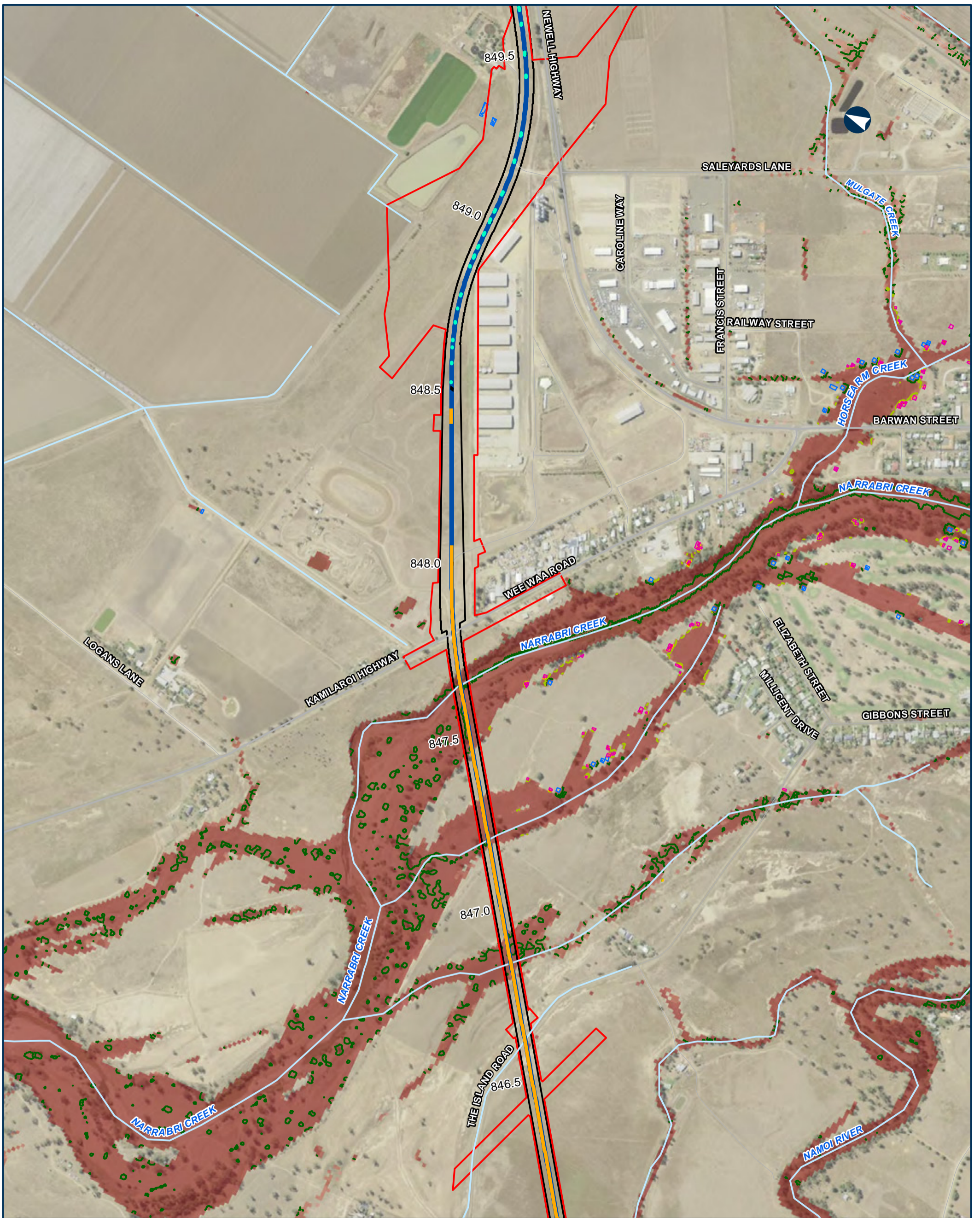
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|--|---|--|
| <ul style="list-style-type: none"> Bridge Alignment Road ODL departure Sub arterial road Local road Watercourse The proposal Rail Corridor | <p>Change in duration of inundation</p> <ul style="list-style-type: none"> 0% 5% 10% 20% <p>Area of departure</p> <ul style="list-style-type: none"> Exist duration <1hr, design duration >1hr Exist duration >1hr, duration change > 10% | <p>Existing Duration of Inundation</p> <ul style="list-style-type: none"> < 1hr 1hr - 3hrs 3hrs - 6hrs 6hrs - 12hrs 12hrs - 24hrs > 24hrs |
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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.101

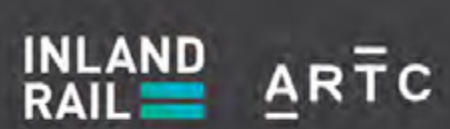
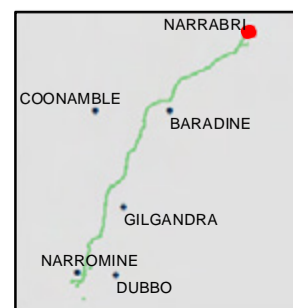
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Coordinate System: GDA 1994 MGA Zone 55

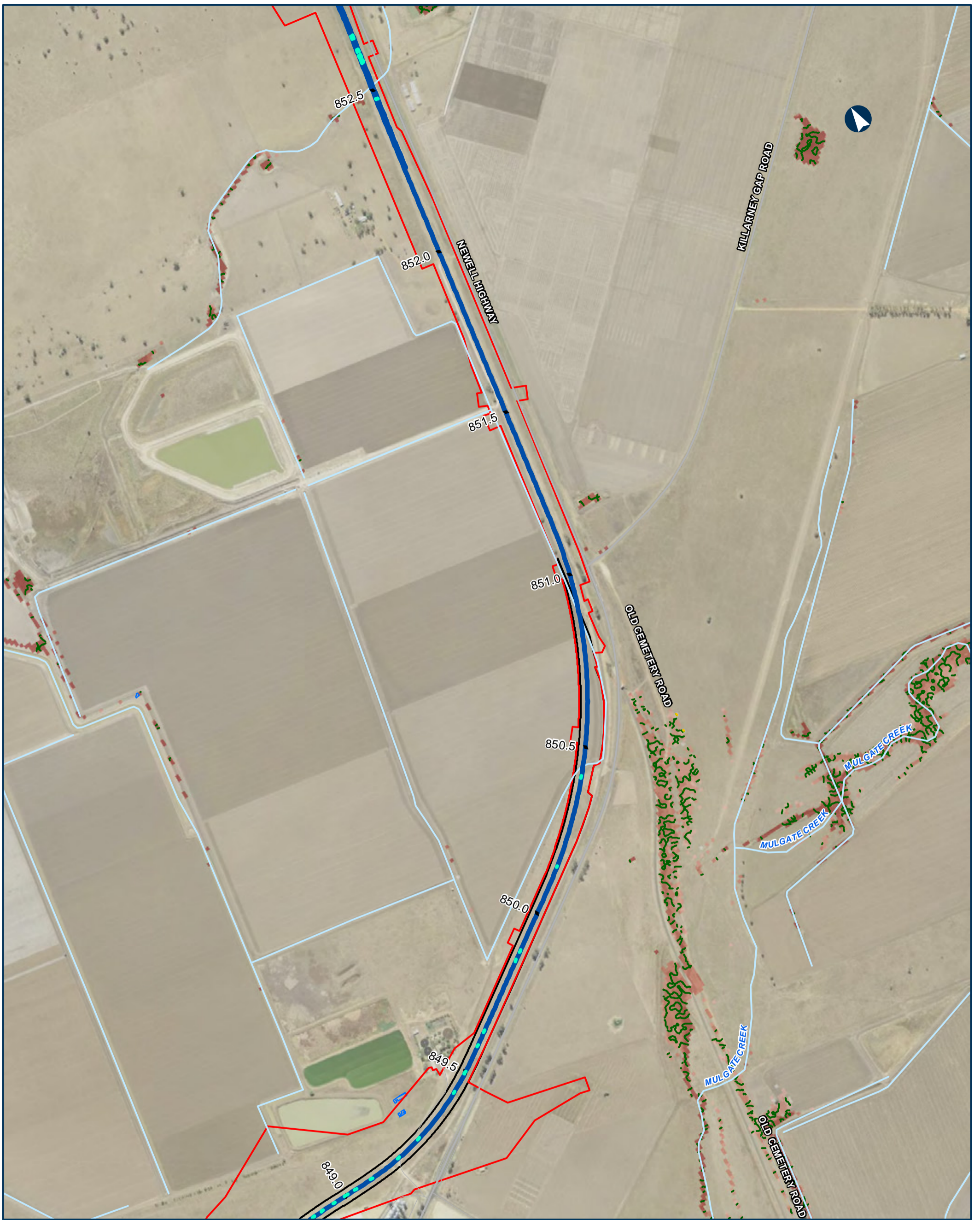
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- | | | |
|---------------|---|---------------------------------------|
| Bridge | Change in duration of inundation | Existing Duration of Inundation < 1hr |
| Culvert | 0% | 1hr - 3hrs |
| Alignment | 5% | 3hrs - 6hrs |
| Primary road | 10% | 6hrs - 12hrs |
| Local road | 20% | 12hrs - 24hrs |
| Watercourse | Area of departure | > 24hrs |
| 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 - 20% AEP

Appendix I - Figure 4.1.102

0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

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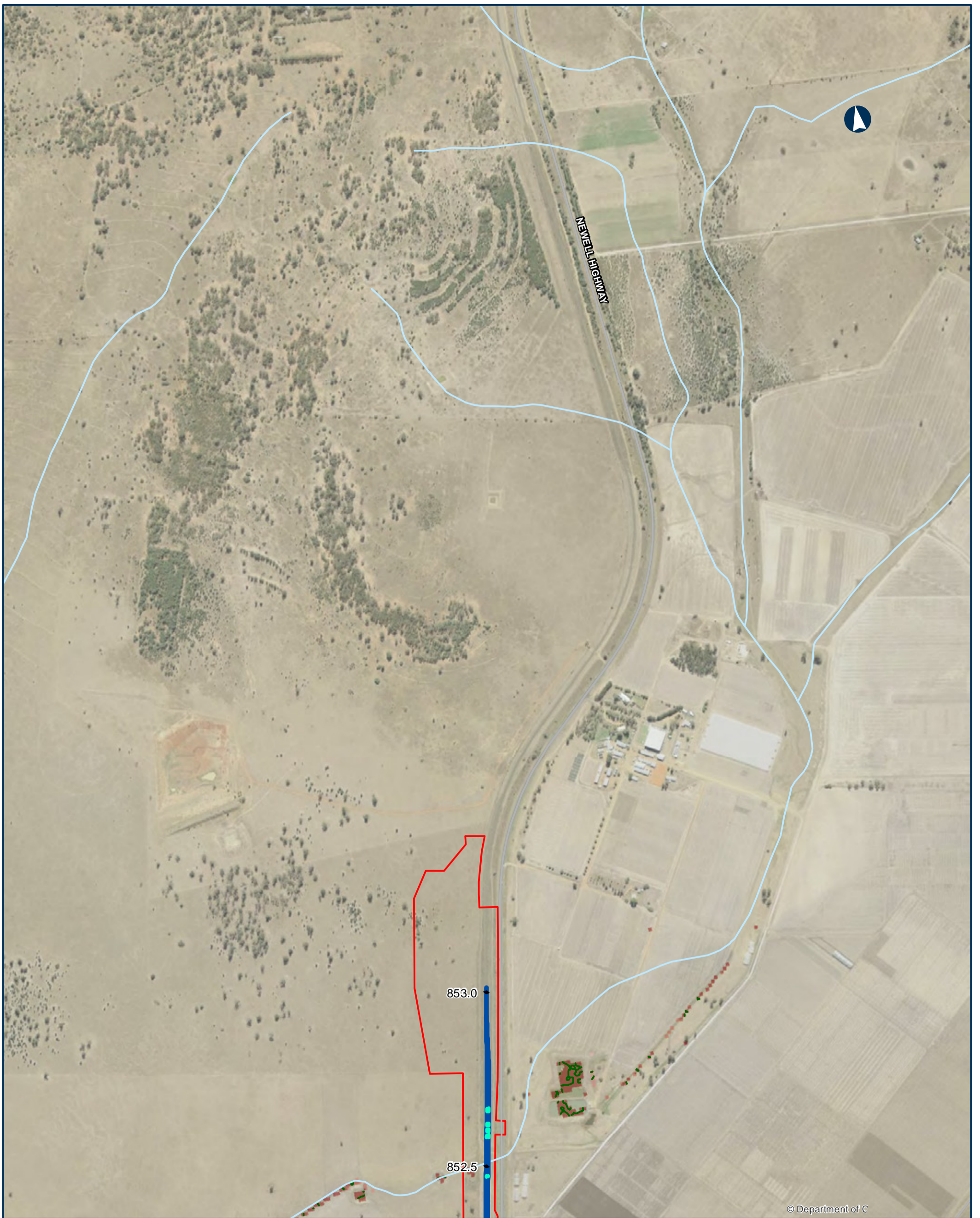
Date: 9/08/2022 Paper: A3
 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

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



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.103

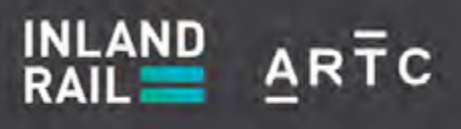
0 200 400 Metres

Coordinate System: GDA 1994 MGA Zone 55

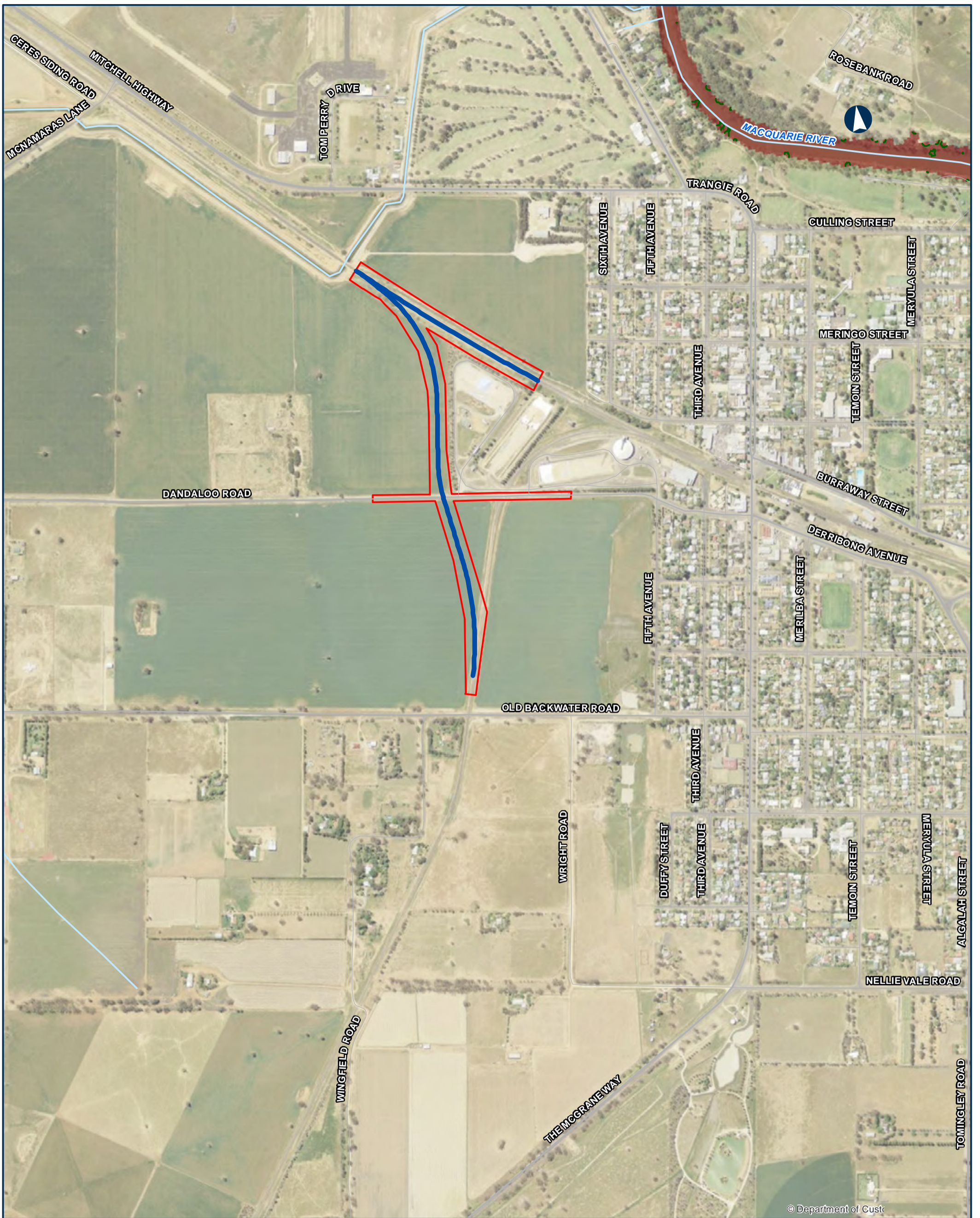
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 Author: JacobsGHD Scale: 1:10,000
 Data Sources: Basemap layers: NSWSS; all other layers: JacobsGHD

- Culvert
 - Alignment
 - Primary road
 - Arterial road
 - Watercourse
 - The proposal
- Change in duration of inundation**
- 0%
- Existing Duration of Inundation**
- < 1hr
 - 1hr - 3hrs
 - 3hrs - 6hrs
 - 6hrs - 12hrs
 - 12hrs - 24hrs
 - > 24hrs



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NARROMINE TO NARRABRI QDL departures - Duration - 20% AEP

Appendix I - Figure 4.1.104

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

- Alignment
- Primary road
- Arterial road
- Sub arterial road
- Local road
- Watercourse
- The proposal

Change in duration of inundation

— 0%

Existing Duration of Inundation

- < 1hr
- 1hr - 3hrs
- 3hrs - 6hrs
- 6hrs - 12hrs
- 12hrs - 24hrs
- > 24hrs



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