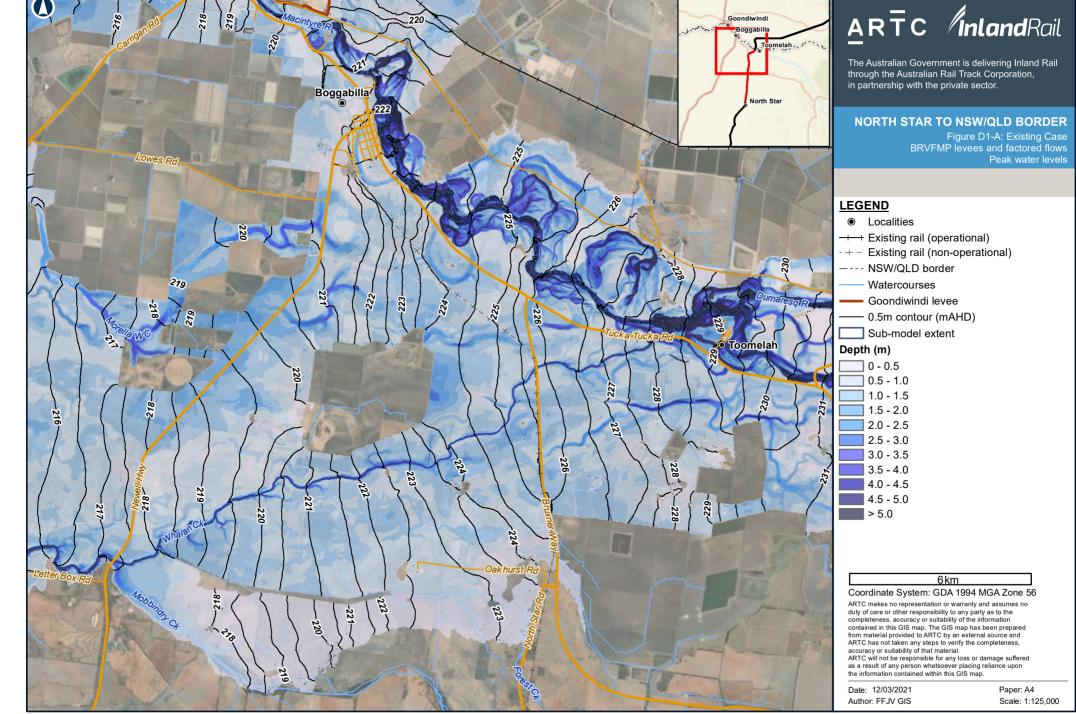
Appendix D Figures – BRVFMP levees and factored flows



-19 Goondiwindi ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER Figure D1: Existing Case BRVFMP levees and factored flows Peak water levels I FGEND 216 214 -215 Toomelah Localities , o +++ Existing rail (operational) 20 -+- Existing rail (non-operational) 218----- NSW/QLD border 213 Watercourses Goondiwindi levee 222 228 229 22 1m contour (mAHD) 220 22 Sub-model extent Wha Depth (m) 27. 3 ,219 222 Ň 51 0 - 0.5 -220 -221 223 05-10 Mobbindry Ck 10 - 151.5 - 2.0ayleaves Ck 2.0 - 2.52.5 - 3.03.0 - 3.5 3.5 - 4.0 4.0 - 4.5 4.5 - 5.0 > 5.0 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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NORTH STAR TO NSW/QLD BORDER

Figure D1-B: Existing Case BRVFMP levees and factored flows Peak water levels

- +++ Existing rail (operational)
- -+- Existing rail (non-operational)
- ---- NSW/QLD border
 - Watercourses
- 0.5m contour (mAHD)
- Sub-model extent

6km

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Paper: A4 Author: FFJV GIS Scale: 1:125,000

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Goondiwindi ARTC /InlandRail Goondiwind Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER Figure D2: Existing Case BRVFMP levees and factored flows LEGEND Toomelah Localities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Goondiwindi levee Sub-model extent Peak velocity (m/s) 0 to 0.5 0.5 to 1.0 > 1.0 bbindry Ck ayleaves Ck 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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Goondiwindi Boggabilla Toomelah Boggabilla North Sta Toomelah Date: 12/03/2021

NORTH STAR TO NSW/QLD BORDER Figure D2-A: Existing Case BRVFMP levees and factored flows Localities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Goondiwindi levee Sub-model extent Peak velocity (m/s) 0 to 0.5 0.5 to 1.0 > 1.0

6km

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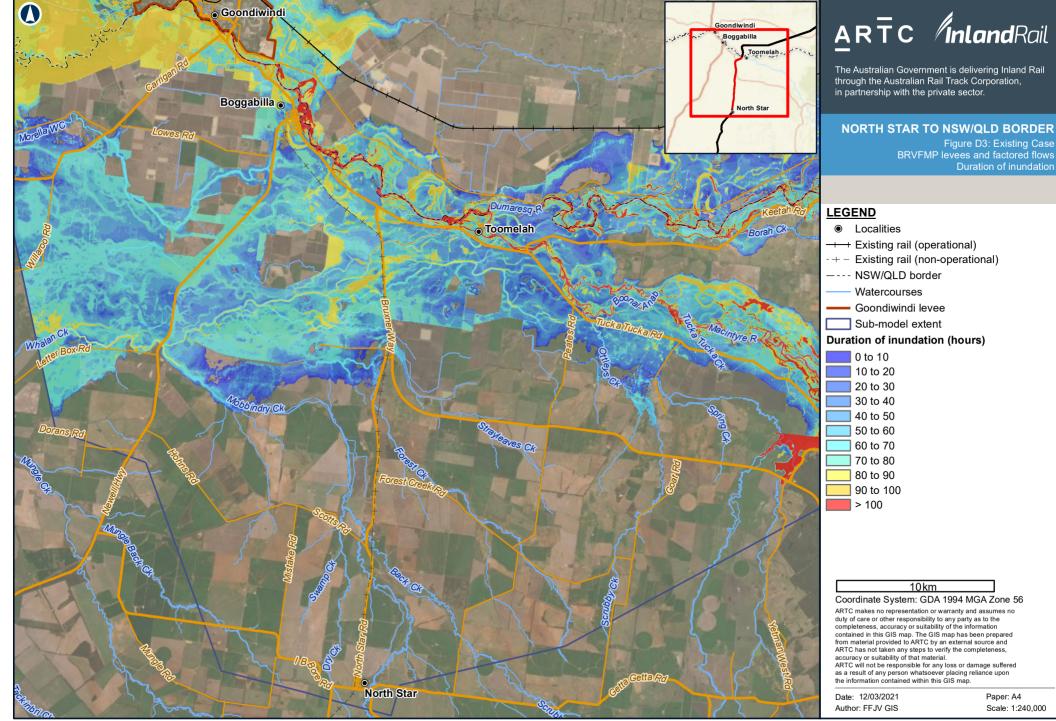
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ARTC InlandRail The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. LEGEND

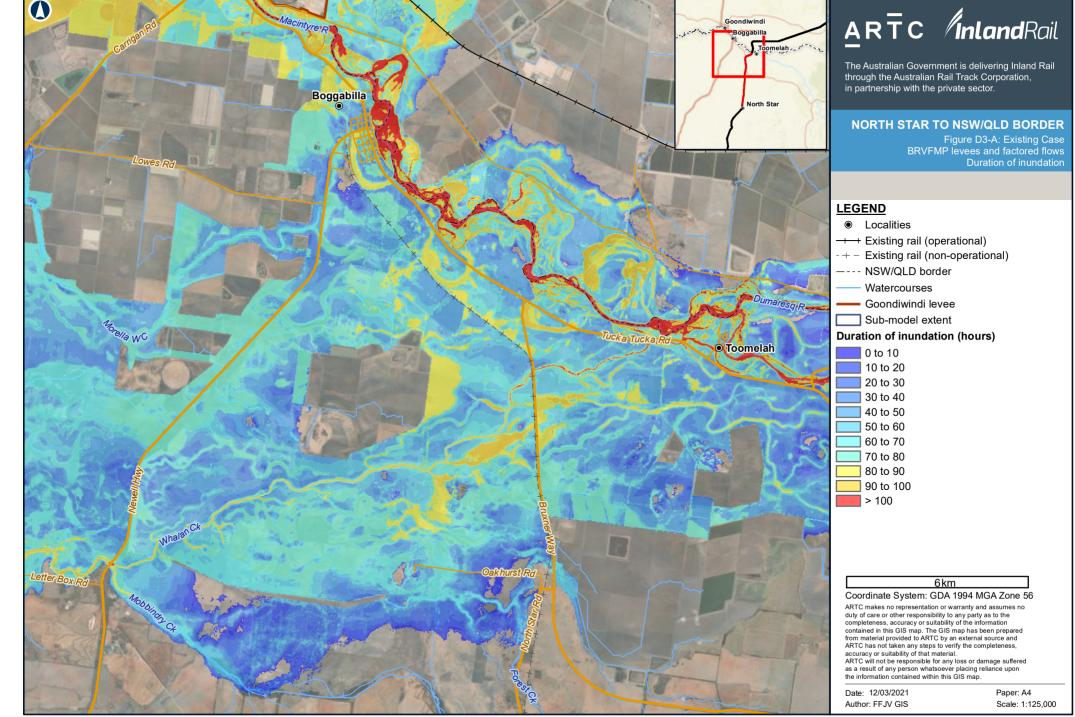
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ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Mar NORTH STAR TO NSW/QLD BORDER Figure D2-B: Existing Case BRVFMP levees and factored flows Mobbindny Ck Bruxner Way I FGFND Strayleaves Ck Localities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border est Cl Watercourses Sub-model extent Peak velocity (m/s) 0 to 0.5 0.5 to 1.0 > 1 0 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CK completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

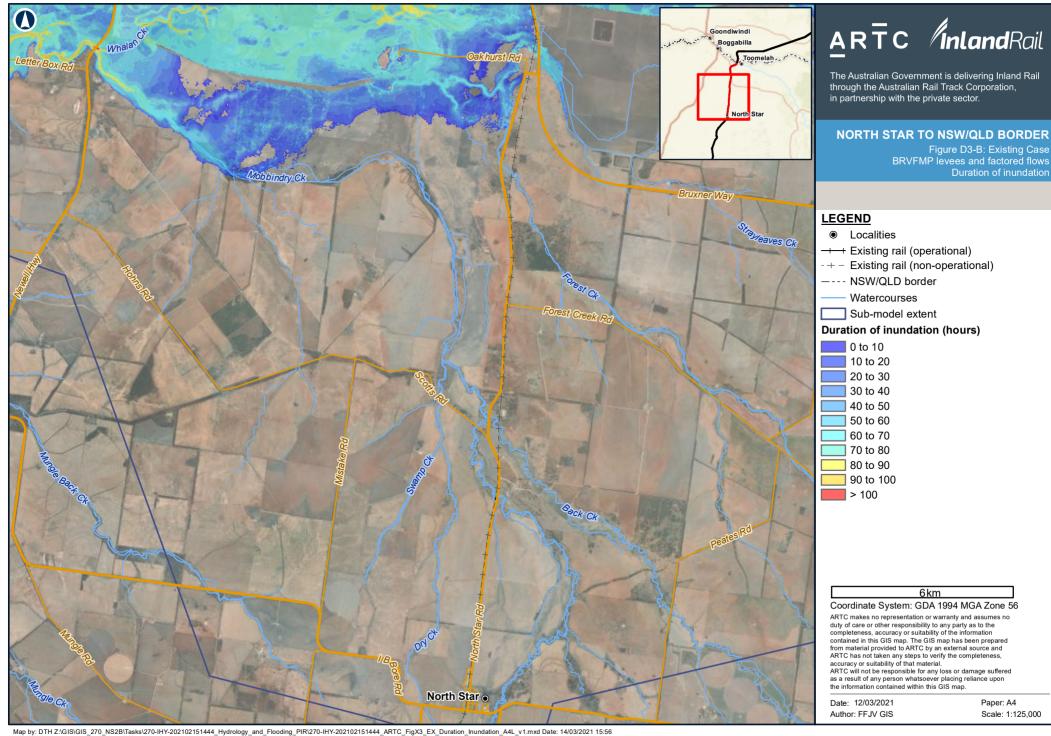
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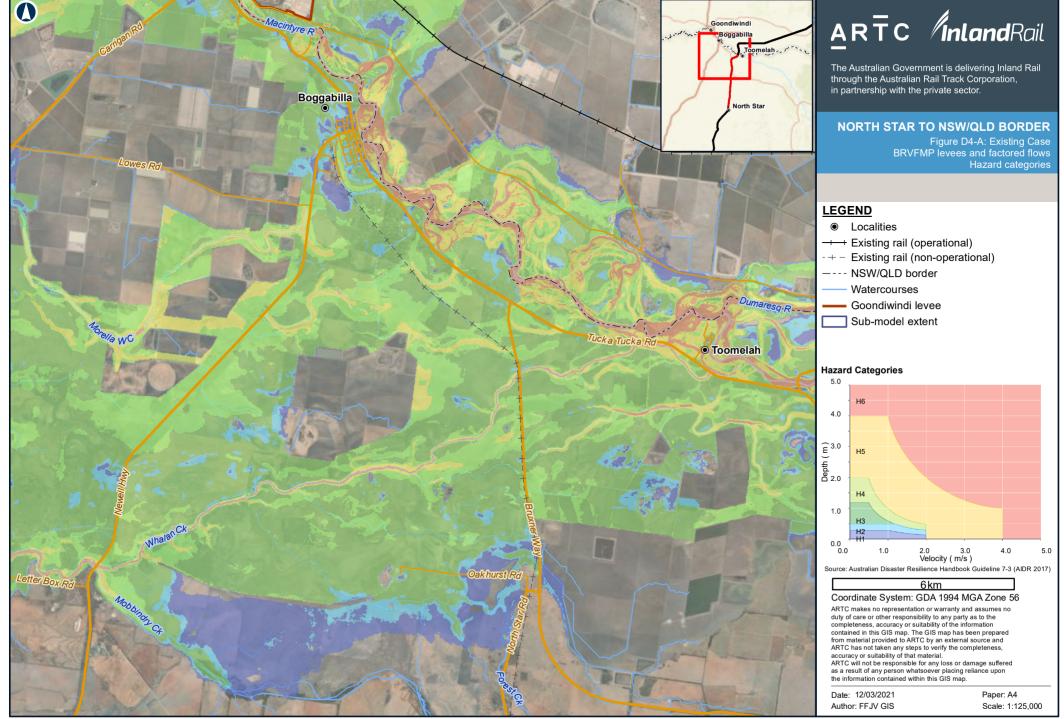
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Goondiwindi ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER Mor Figure D4: Existing Case BRVFMP levees and factored flows Hazard categories Dumareso R LEGEND Keeta **Toomelah** Borah Ck Localities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Goondiwindi levee Macintyre R Sub-model extent Wha Hazard Categories 5.0 H6 bb indry Ck. 4.0 revieaves Ck (m) 3.0 Depth (m) 2.0 H5 1.0 0.0 4.0 3.0 5.0 0.0 1.0 2.0 Velocity (m/s) Source: Australian Disaster Resilience Handbook Guideline 7-3 (AIDR 2017) 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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ARTC /InlandRail WhalanCH Goondiwindi Boggabilla Toomelah - P Letter Box F The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Mar NORTH STAR TO NSW/QLD BORDER Figure D4-B: Existing Case BRVFMP levees and factored flows Hazard categories Mobbindry Ck Bruxner Way I FGFND Stravleaves Ck Localities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border est cu Watercourses Sub-model extent Hazard Categories 5.0 H6 4.0 (m) 3.0 Depth (m) 2.0 H5 1.0 H3 0.0 4.0 0.0 3.0 1.0 2.0 Velocity (m/s) Source: Australian Disaster Resilience Handbook Guideline 7-3 (AIDR 2017) 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CH completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

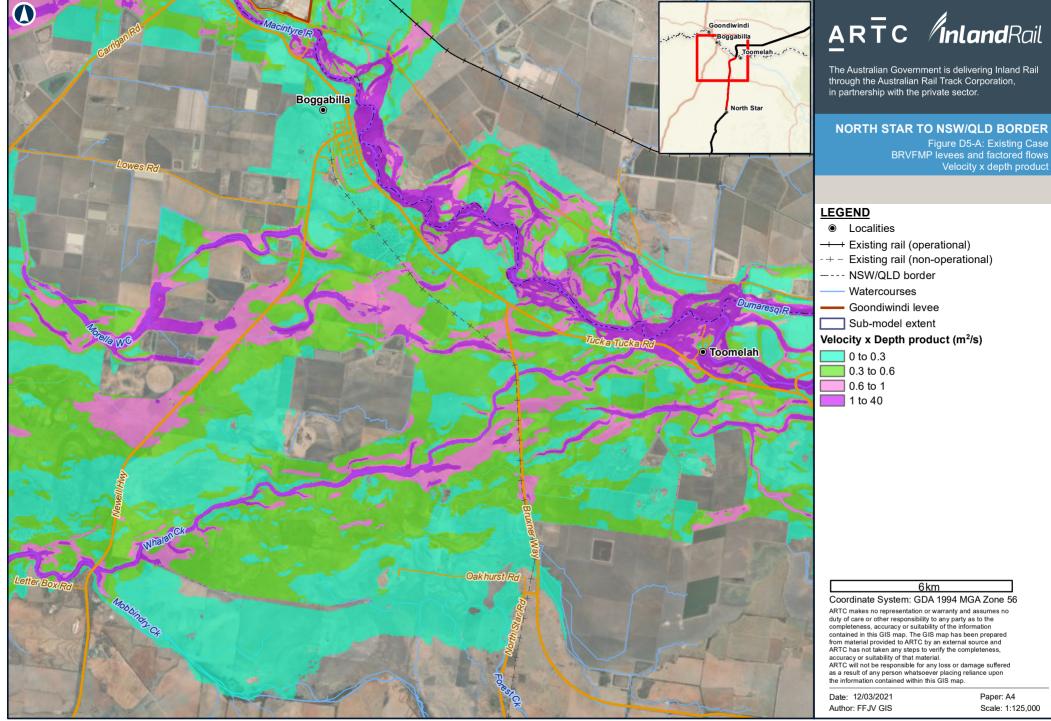
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Goondiwind ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER More Figure D5: Existing Case BRVFMP levees and factored flows Velocity x depth product Dumaresa I EGEND Keeta Toomelah Borah Ck I ocalities +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Goondiwindi levee Sub-model extent Velocity x Depth product (m²/s) W 0 to 0.3 0.3 to 0.6 0.6 to 1 1 to 40 Mobbindry Ck ayleaves Ck 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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NORTH STAR TO NSW/QLD BORDER

Figure D5-B: Existing Case BRVFMP levees and factored flows Velocity x depth product

- +++ Existing rail (operational)
- -+- Existing rail (non-operational)
- ---- NSW/QLD border
 - Watercourses
- Sub-model extent

Velocity x Depth product (m²/s)

6km

Coordinate System: GDA 1994 MGA Zone 56

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C Goondiwindi 62 ARTC /InlandRail Goondiwindi 0 Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star 0 NORTH STAR TO NSW/QLD BORDER 0 Figure D6: Developed Case 0 08 Change in peak water levels 0 0 Dumaresa R I FGEND Keeta 90 ⁱO Flood sensitive receptor **Toomelah** Borah Ck 0 ۲ Localities 5 Chainage (km) 0 North Star to NSW/QLD border alignment Adjoining alignments +++ Existing rail (operational) 0 0 - + - Existing rail (non-operational) Macintyre R P ---- NSW/QLD border Whalan Ck Her Box Rd Watercourses Goondiwindi levee Sub-model extent Change in peak water levels (m) < -0.5 obbindry Ck -0.5 to -0.2 0 -0.2 to -0.1 ayleaves Ck -0 1 to -0.05 -0.05 to -0.01 -0.01 to 0.01 0.01 to 0.05 0.05 to 0.1 0.1 to 0.2 0.2 to 0.5 > 0.5 Was Wet Now Dry Was Dry Now Wet 10 km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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ARTC InlandRail Goondiwindi Boggabilla 0 Toomelah 0 The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla O North Sta NORTH STAR TO NSW/QLD BORDER 0 Figure D6-A: Developed Case BRVFMP levees and factored flows Change in peak water levels Owes Ro 6 000 0 I FGFND 0 Flood sensitive receptor Q ۲ Localities 5 Chainage (km) C North Star to NSW/QLD border alignment Adjoining alignments +++ Existing rail (operational) Dumaresg-R----- + --Existing rail (non-operational) ---- NSW/QLD border 0 Watercourses 0 Toomelah Goondiwindi levee Sub-model extent Change in peak water levels (m) < -0.5 -0.5 to -0.2 80 -0.2 to -0.1 -0 1 to -0.05 -0.05 to -0.01 -0.01 to 0.01 0.01 to 0.05 0.05 to 0.1 0 0 0.1 to 0.2 0.2 to 0.5 Whalan Ck > 0.5 00 Was Wet Now Dry Was Dry Now Wet 0 0 Letter Box R 6km Mobbindy Ct Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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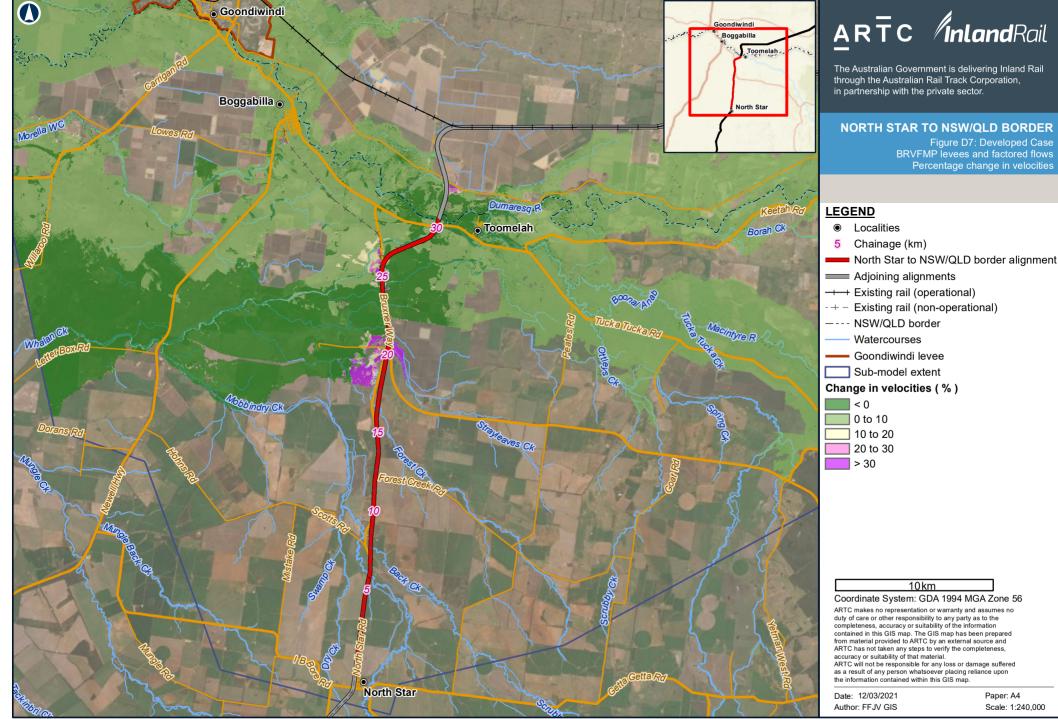
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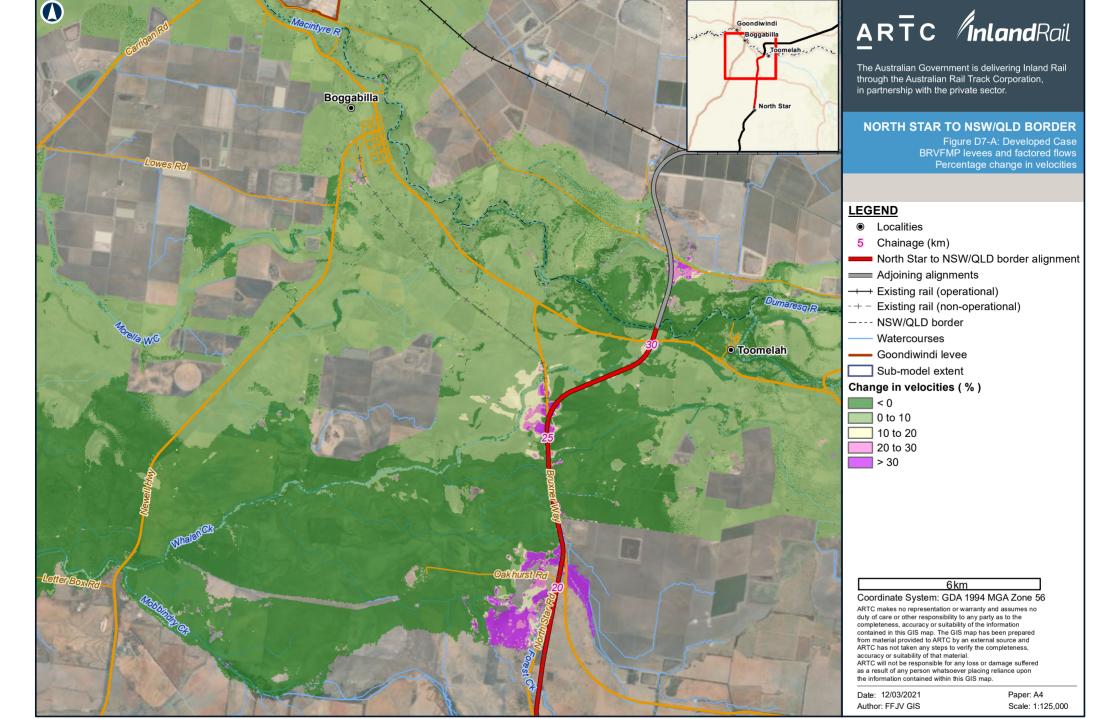
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ARTC /InlandRail WhalanCH Goondiwindi Boggabilla 00 Toomelah Letter Box Ri The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Nor NORTH STAR TO NSW/QLD BORDER Figure D6-B. Developed Case BRVFMP levees and factored flows Change in peak water levels Mobbindry Ck Bruxner Way 0 I FGFND Strayleaves Ck Flood sensitive receptor 0 ۲ Localities 5 Chainage (km) North Star to NSW/QLD border alignment Diest Ch Adjoining alignments +++ Existing rail (operational) rest Creek Rc -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Sub-model extent 0 Change in peak water levels (m) 0 < -0.5 -0.5 to -0.2 -0.2 to -0.1 -0.1 to -0.05 -0.05 to -0.01 -0.01 to 0.01 d Ό 0.01 to 0.05 0.05 to 0.1 8 0.1 to 0.2 0.2 to 0.5 > 0.5 Was Wet Now Drv Was Drv Now Wet 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CF completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered North as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Star 0 Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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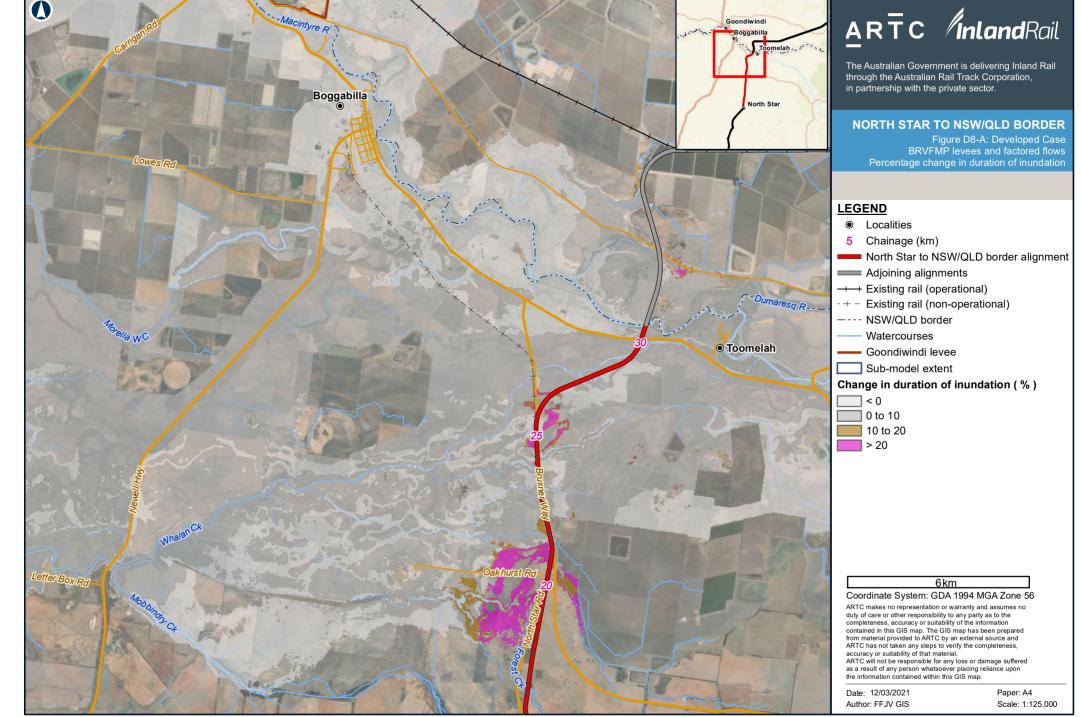
ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Mar NORTH STAR TO NSW/QLD BORDER Figure D7-B: Developed Case BRVFMP levees and factored flows Percentage change in velocities Mobbindry Ck Bruxner Way I FGFND Strayleaves Ck Localities 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments rest Cl +++ Existing rail (operational) Existing rail (non-operational) - + ----- NSW/QI D border Watercourses Sub-model extent Change in velocities (%) < 0 0 to 10 10 to 20 20 to 30 > 30 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CF completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered North as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Star 0 Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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Goondiwindi ARTC /InlandRail Goondiwindi Boggabilla Toomelah. The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER Mor Figure D8: Developed Case BRVFMP levees and factored flows Percentage change in duration of inundation Dumaresq.P I FGFND Keeta Toomelah Borah Ck ۲ Localities 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Macintyre R Whalai Watercourses Goondiwindi levee Sub-model extent Change in duration of inundation (%) obbindry Ck. < 0 0 to 10 Vleaves Ck 10 to 20 > 20 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

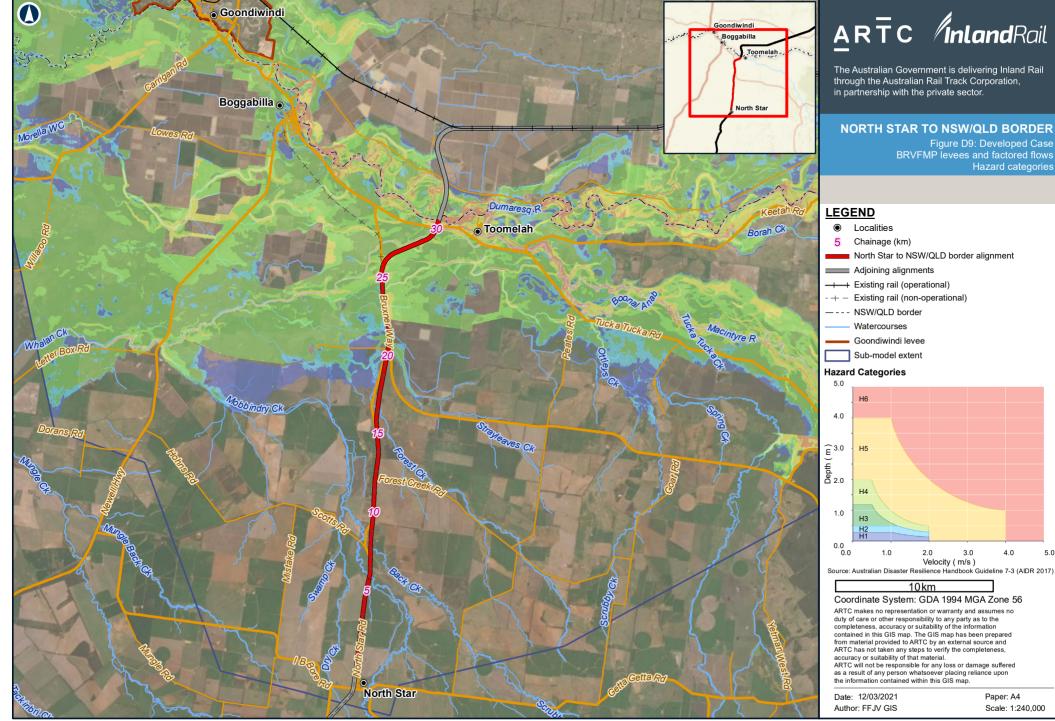
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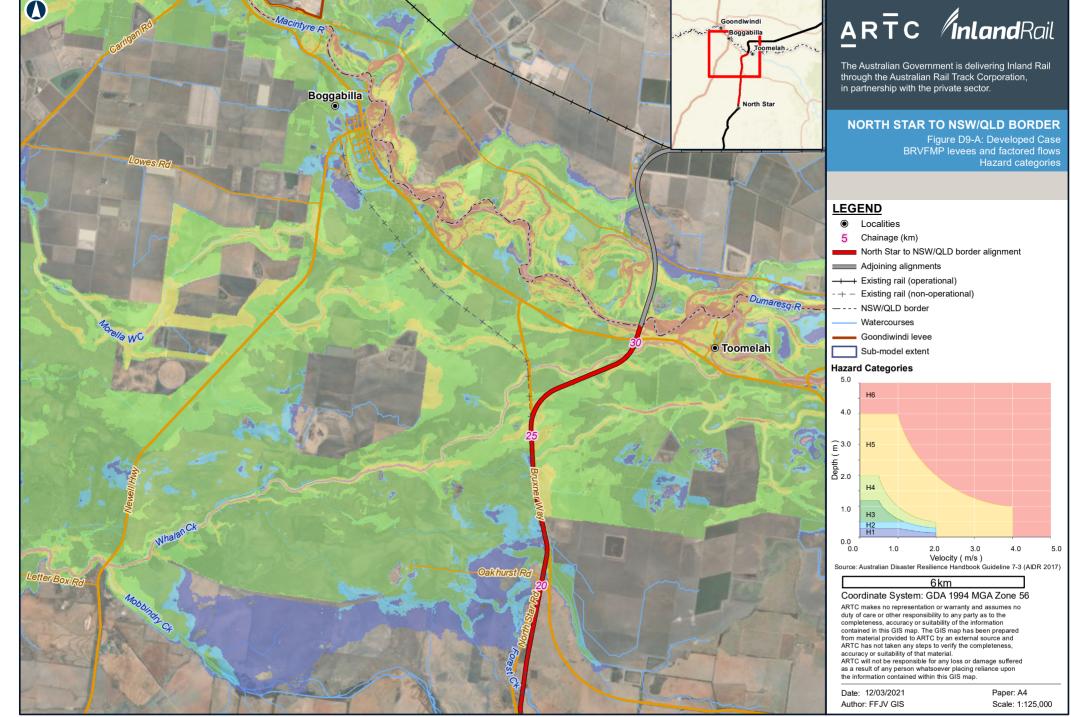
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ARTC /InlandRail Goondiwindi C^{*} Boggabilla Whala Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Mar NORTH STAR TO NSW/QLD BORDER Figure D8-B: Developed Case BRVFMP levees and factored flows Percentage change in duration of inundation Mobbindry Ck Bruxner Way I FGFND Strayleaves Ck Localities 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments rest Cl +++ Existing rail (operational) Existing rail (non-operational) - + ----- NSW/QLD border Watercourses Sub-model extent Change in duration of inundation (%) < 0 0 to 10 10 to 20 > 20 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CF completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered North as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Star 0 Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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ARTC /InlandRail WhalanCH Goondiwindi Boggabilla Toomelah Letter Box F The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Nor NORTH STAR TO NSW/QLD BORDER Figure D9-B: Developed Case BRVFMP levees and factored flows Hazard categories MobbindryCk Bruxner Way I FGFND Strayleaves Ck I ocalities Chainage (km) 5 North Star to NSW/QLD border alignment Adjoining alignments Test Ch +++ Existing rail (operational) - + - Existing rail (non-operational) ---- NSW/QLD border Watercourses Sub-model extent Hazard Categories 5.0 H6 4.0 Ê 3.0 H5) Depth 5.0 H4 1.0 Н3 0.0 3.0 4.0 1.0 2.0 5.0 0.0 Velocity (m/s) Source: Australian Disaster Resilience Handbook Guideline 7-3 (AIDR 2017) 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CF completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered North as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Star 0 Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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Goondiwindi ARTC /InlandRail Goondiwind Boggabilla Toomelah. The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Star NORTH STAR TO NSW/QLD BORDER Mo Figure D10: Developed Case BRVFMP levees and factored flows Percentage change in velocity x depth product Dumaresa I FGFND Toomelah I ocalities Borah Ck 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments +++ Existing rail (operational) -+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Goondiwindi levee Sub-model extent Change in velocity x depth product (%) < 0 bbindry Ck 0 to 10 10 to 20 ayleaves Ck 20 to 30 | > 30 10km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. North Star Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:240,000

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ARTC /InlandRail Goondiwindi Boggabilla Toomelah The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Boggabilla North Sta NORTH STAR TO NSW/QLD BORDER Figure D10-A: Developed Case BRVFMP levees and factored flows Percentage change in velocity x depth product I EGEND I ocalities 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments +++ Existing rail (operational) Dumareso R-----+- Existing rail (non-operational) ---- NSW/QLD border Watercourses Toomelah Goondiwindi levee Sub-model extent Change in velocity x depth product (%) < 0 0 to 10 10 to 20 20 to 30 > 30 Whatenok Dakhurst 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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ARTC InlandRail unalaget Goondiwindi Boggabilla Toomelah Dak hurs The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation, in partnership with the private sector. Mar NORTH STAR TO NSW/QLD BORDER Figure D10-B: Developed Case BRVFMP levees and factored flows Percentage change in velocity x depth product Mobbindry Ck Bruxner Way I FGFND Strayleaves Ck I ocalities 5 Chainage (km) North Star to NSW/QLD border alignment Adjoining alignments rest Ch +++ Existing rail (operational) - + -Existing rail (non-operational) ---- NSW/QLD border Watercourses Sub-model extent Change in velocity x depth product (%) < 0 0 to 10 10 to 20 20 to 30 > 30 6km Coordinate System: GDA 1994 MGA Zone 56 ARTC makes no representation or warranty and assumes no duty of care or other responsibility to any party as to the DN CF completeness, accuracy or suitability of the information contained in this GIS map. The GIS map has been prepared from material provided to ARTC by an external source and ARTC has not taken any steps to verify the completeness, accuracy or suitability of that material. ARTC will not be responsible for any loss or damage suffered North as a result of any person whatsoever placing reliance upon the information contained within this GIS map. Star 0 Date: 12/03/2021 Paper: A4 Author: FFJV GIS Scale: 1:125,000

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