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Flood Maps

BYLONG COAL PROJECT
Environmental Impact Statement

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Flood Maps

A1 Overview

The hydrologic and hydraulic models of the Bylong River presented in the Surface Water Impact Assessment (SWIA) (Appendix L of the EIS) were used to assess the flood risks and impacts of the Bylong Coal Project (the Project) for the 2, 50, 100 and 1,000 year Average Recurrence Interval (ARI) design events. The revised haul roads and proposed North Link Road were included in the hydraulic model for the Developed Conditions.

A2 Design Flood Discharges

The design discharges estimated by the RAFTS model described in Section 7 of the SWIA were adopted for the TUFLOW model. Table A.1 shows the adopted 2, 50, 100 and 1,000 year ARI design flood discharges.

Table 0.1 – Adopted Design Discharges

Location	Design Peak Discharges (m^3/s)			
	2 year ARI	50 year ARI	100 year ARI	1000 year ARI
U2 (Local Inflow)	3.6	19.8	24.5	31.0
UB3 (Bylong River)	38.5	224.4	286.5	504.6
U1 (Local inflow)	5.6	29.5	36.2	46.0
C1 (Cousins Creek)	8.4	48.3	61.5	94.7
L4 (Lee Creek)	41.8	202.1	250	360.9
G11 (Growee River)	127.1	668.6	837.5	1406.8
S1 (Dry Creek)	4.7	26	32.2	42.5
Critical Storm Duration	**48 Hrs**	**12 Hrs**	**12 Hrs**	**24 Hrs**

A3 Model Configurations

The Existing Conditions TUFLOW model configuration was unchanged from that used in the SWIA.

The mine plan for Project Year 5 (PY5) was selected as the Developed Conditions as it has the largest encroachment upon the existing waterway corridors of the developed open cut mine plans. The Developed Conditions model configuration was modified to include the updated haul road designs and the proposed North Link Road. Figure A.1 shows the configuration of the Developed Conditions TUFLOW model.

A4 Flood Maps

Figure A.2 to Figure A.13 show the Developed Conditions maximum flood extents, depths and velocities, as well as change in water level and velocity for the 2, 50 and 100 year ARI design events. Figure A.14 to Figure A.17 show the Existing and Developed conditions maximum flood depths and velocities for the 1000 year ARI design event. Figure A.18 and A.19 show the change in water level and velocity for the 1000 year ARI design event.

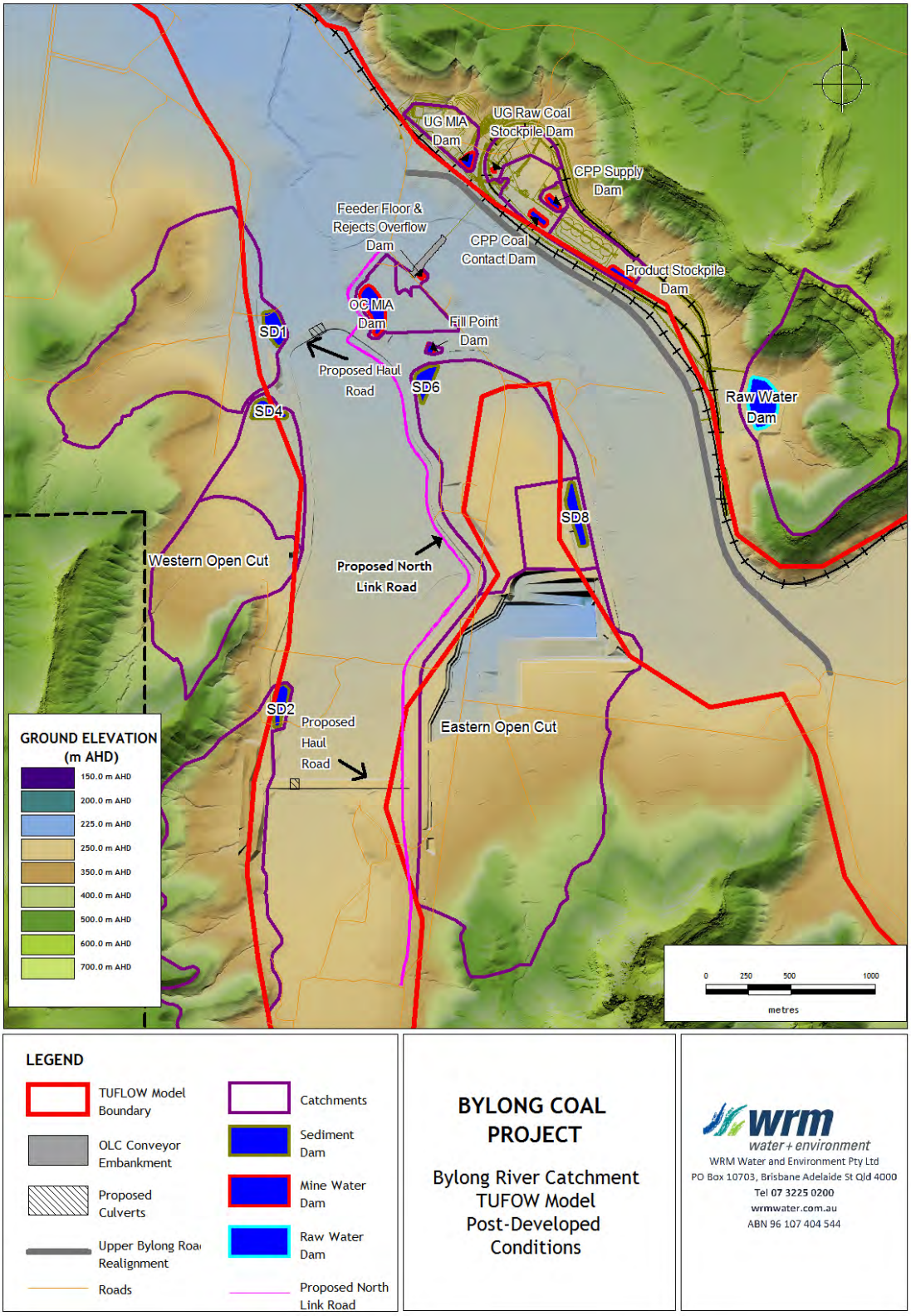

Figure 0.1 – Project Year 5 (PY5) TUFLOW Model Extent, Bylong River Catchment

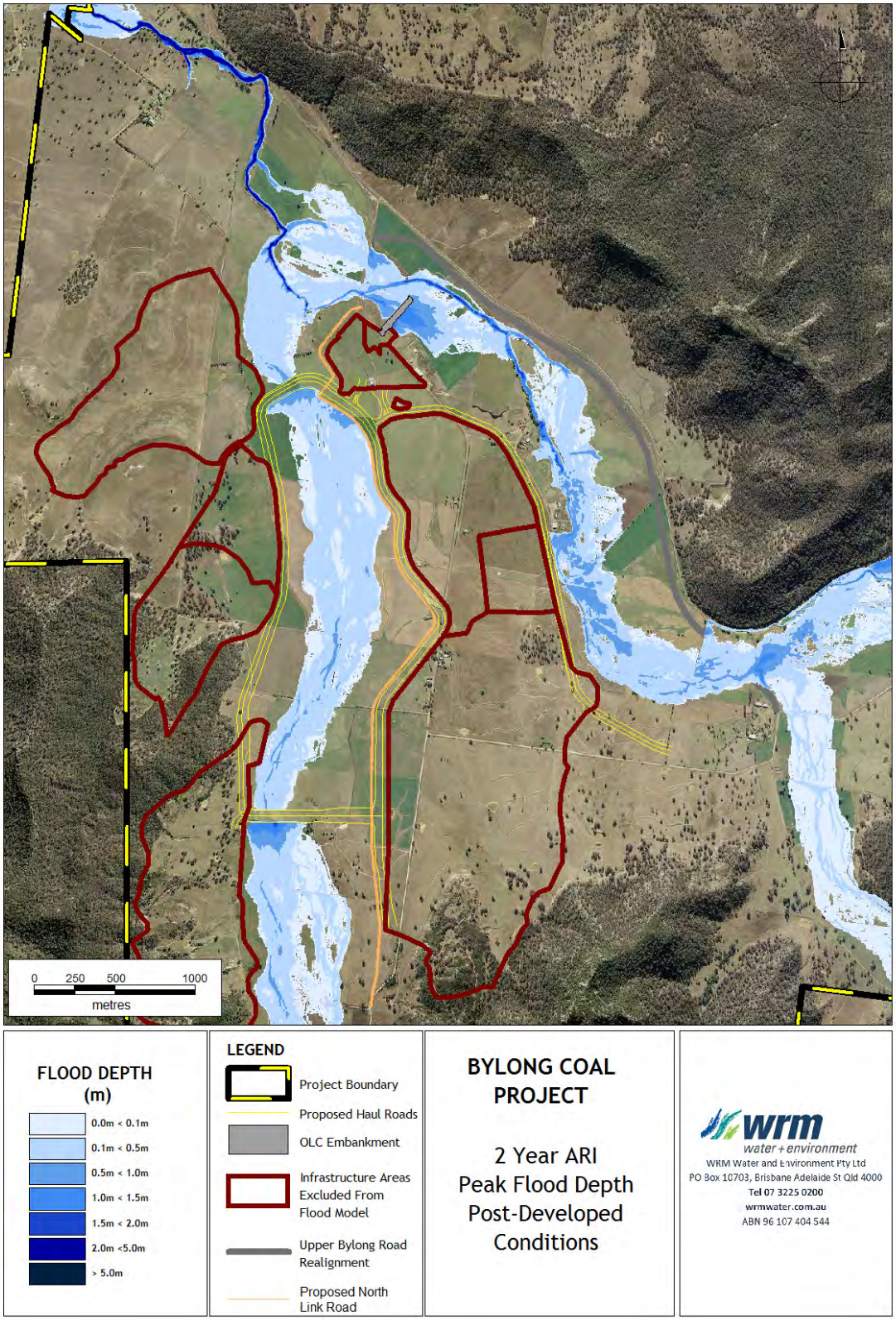

Figure 0.2 – 2 year ARI PY5 Developed Flood Depth, Bylong River Catchment

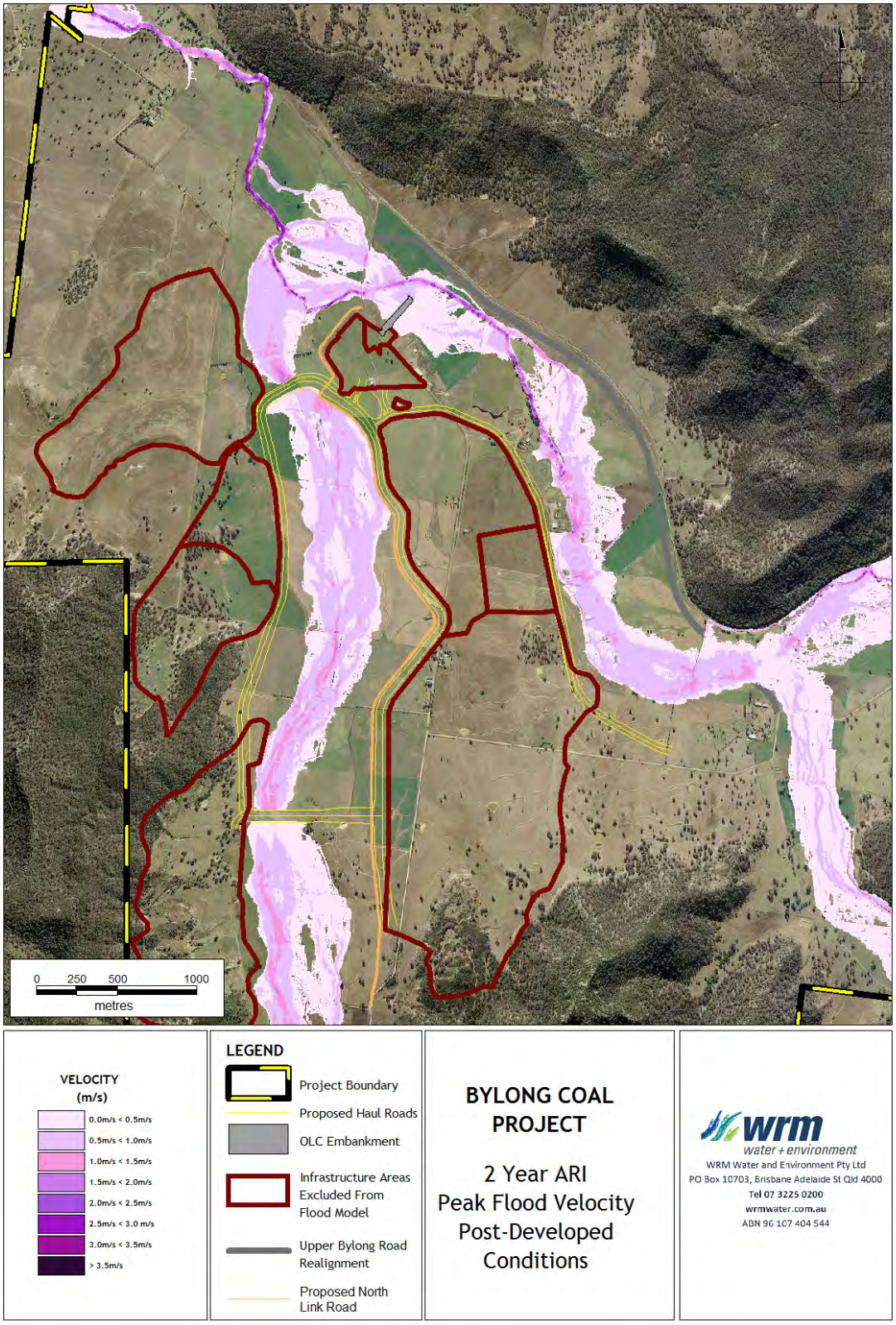

Figure 0.3 – 2 year ARI PY5 Developed Flood Velocity, Bylong River Catchment

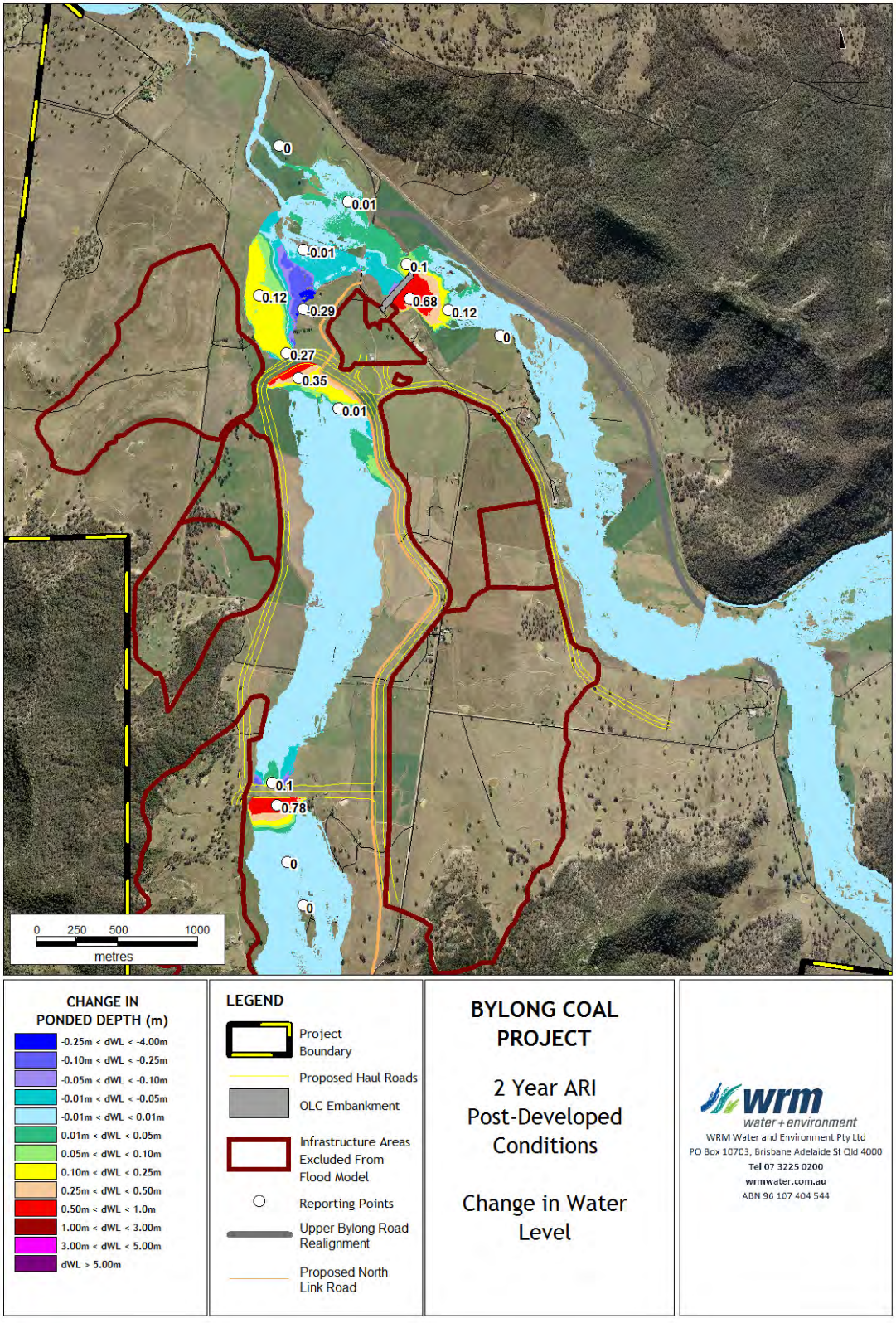

Figure 0.4 – 2 year ARI PY5 Developed Change in Water Level, Bylong River Catchment

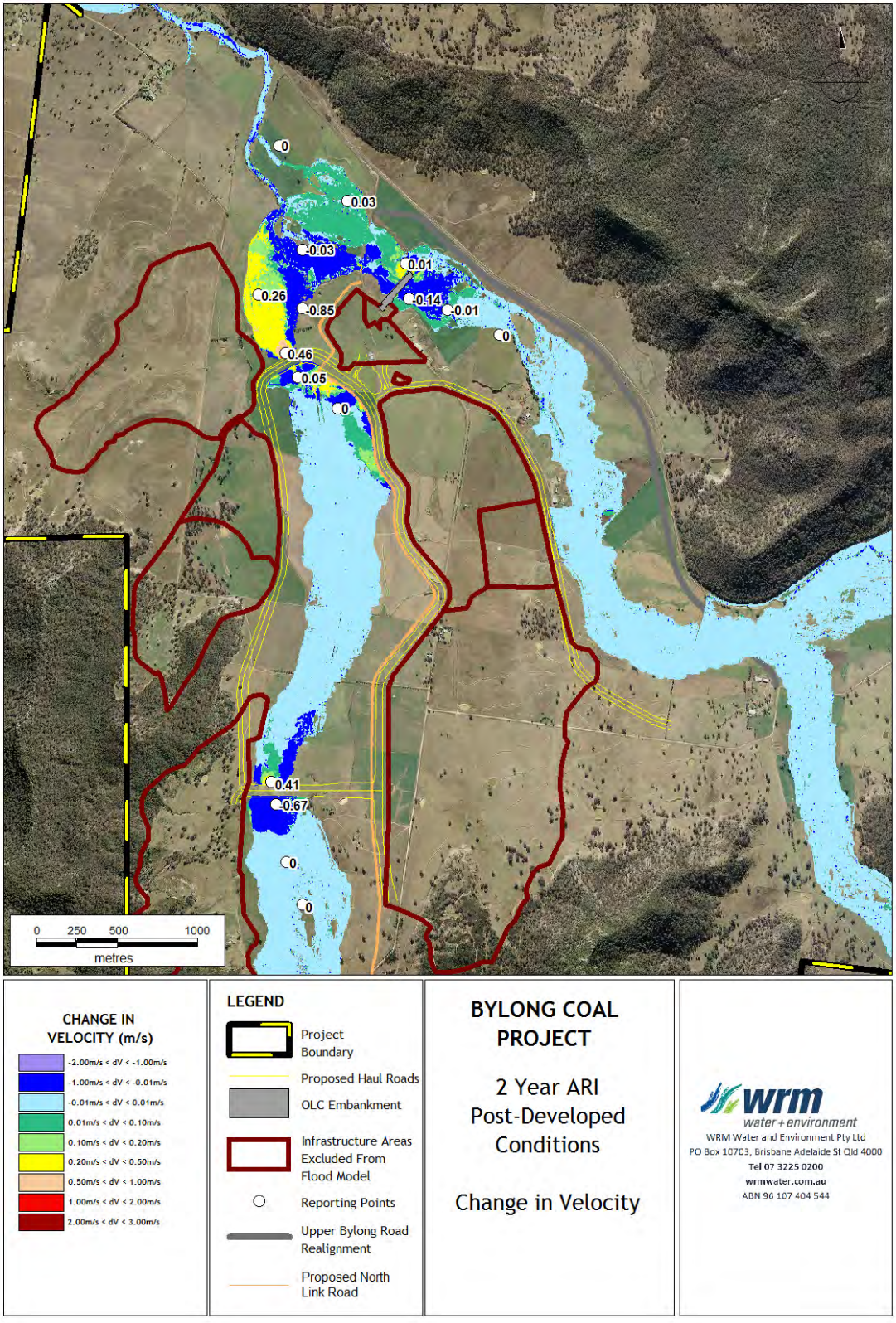

Figure 0.5 – 2 year ARI PY5 Developed Change in Velocity, Bylong River Catchment

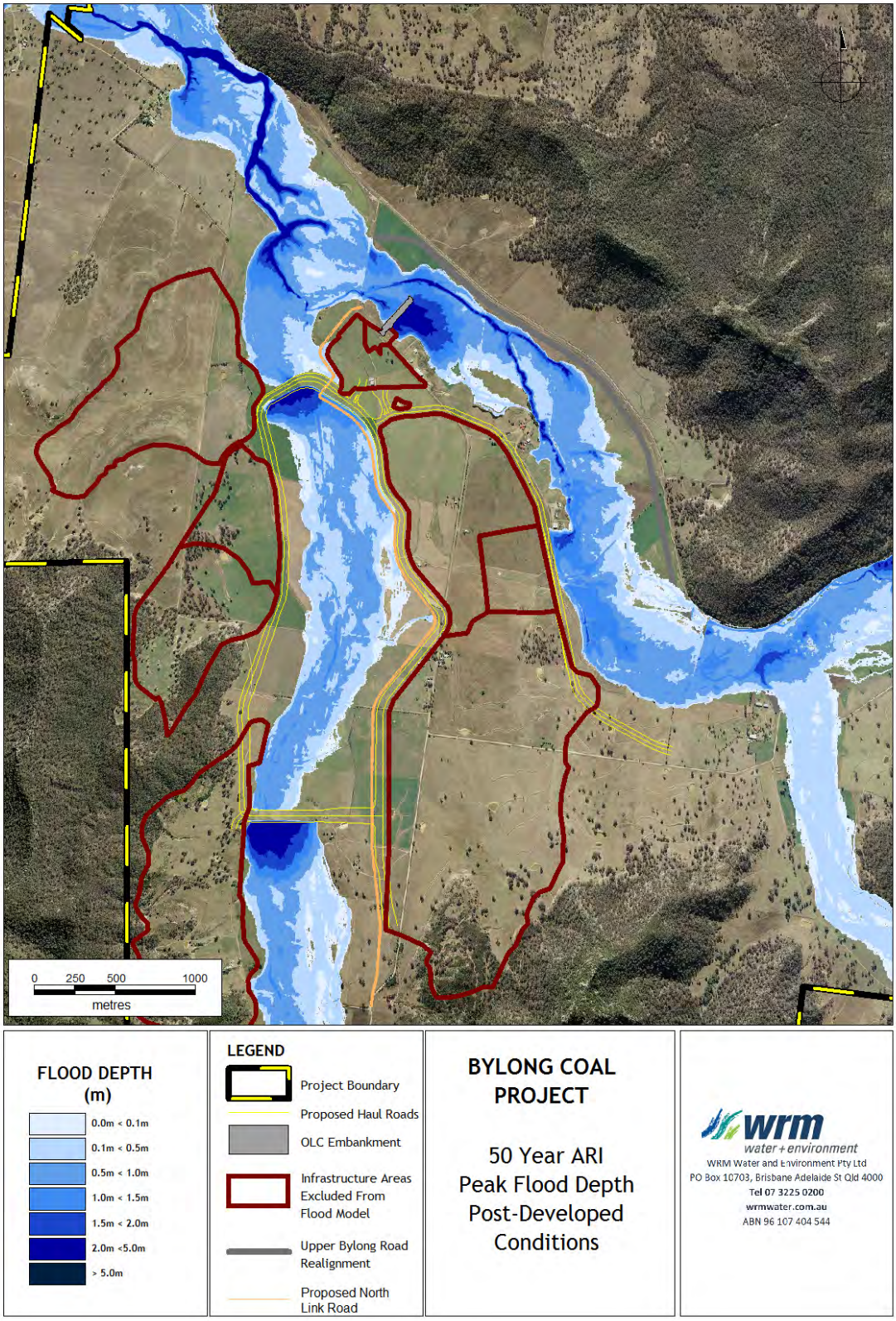

Figure 0.6 – 50 year ARI PY5 Developed Flood Depth, Bylong River Catchment

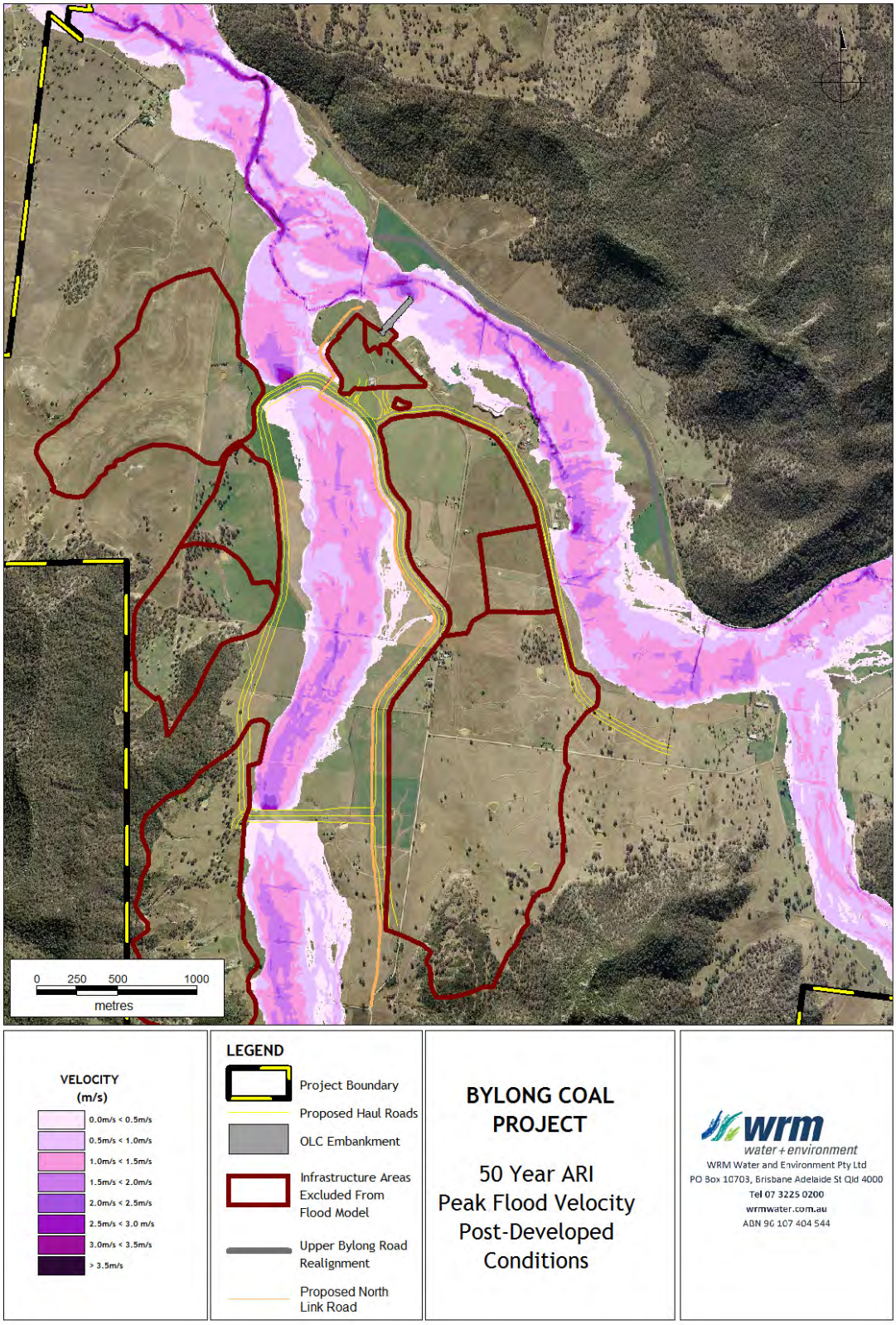

Figure 0.7 – 50 year ARI PY5 Developed Flood Velocity, Bylong River Catchment

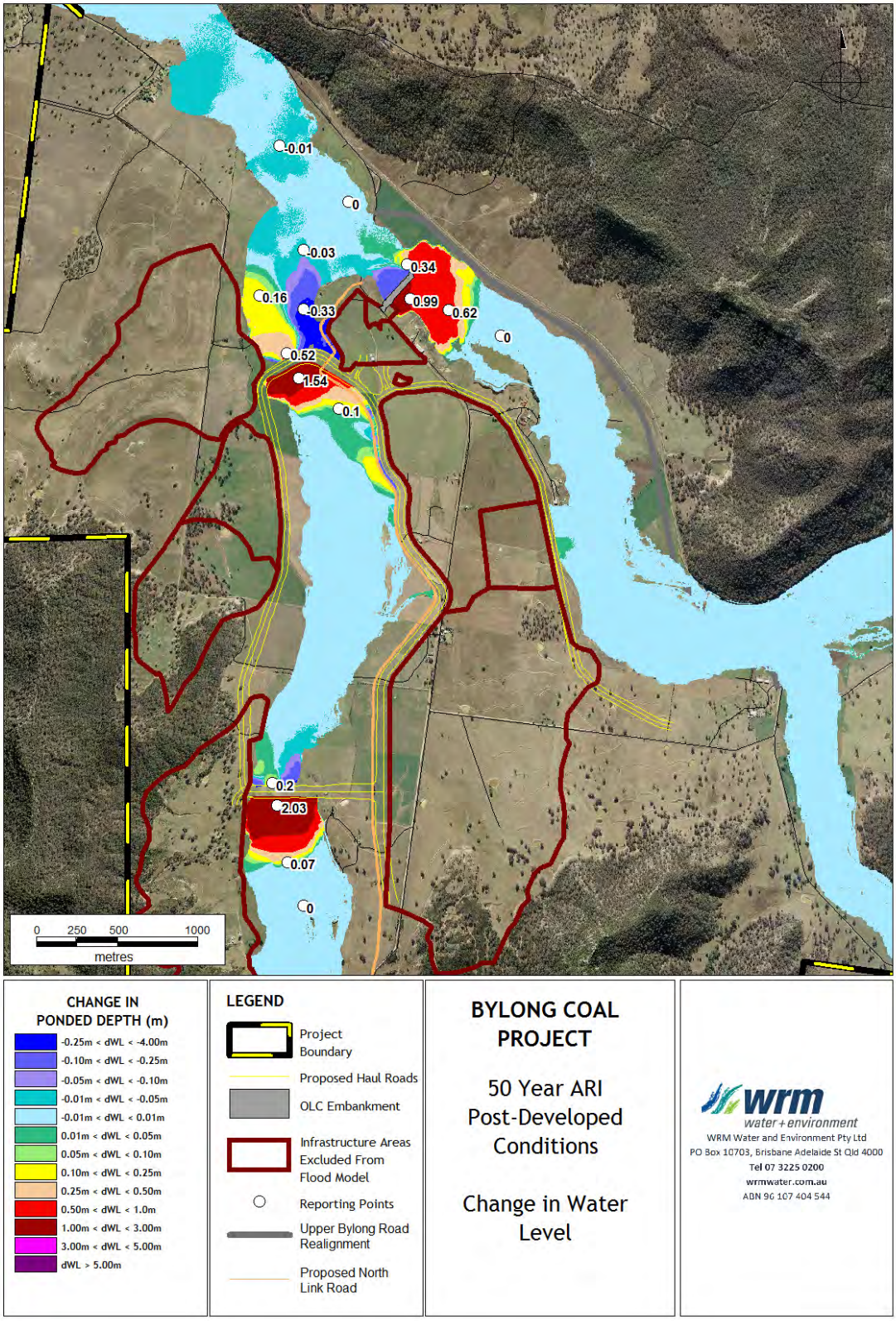

Figure 0.8 – 50 year ARI PY5 Developed Change in Water Level, Bylong River Catchment

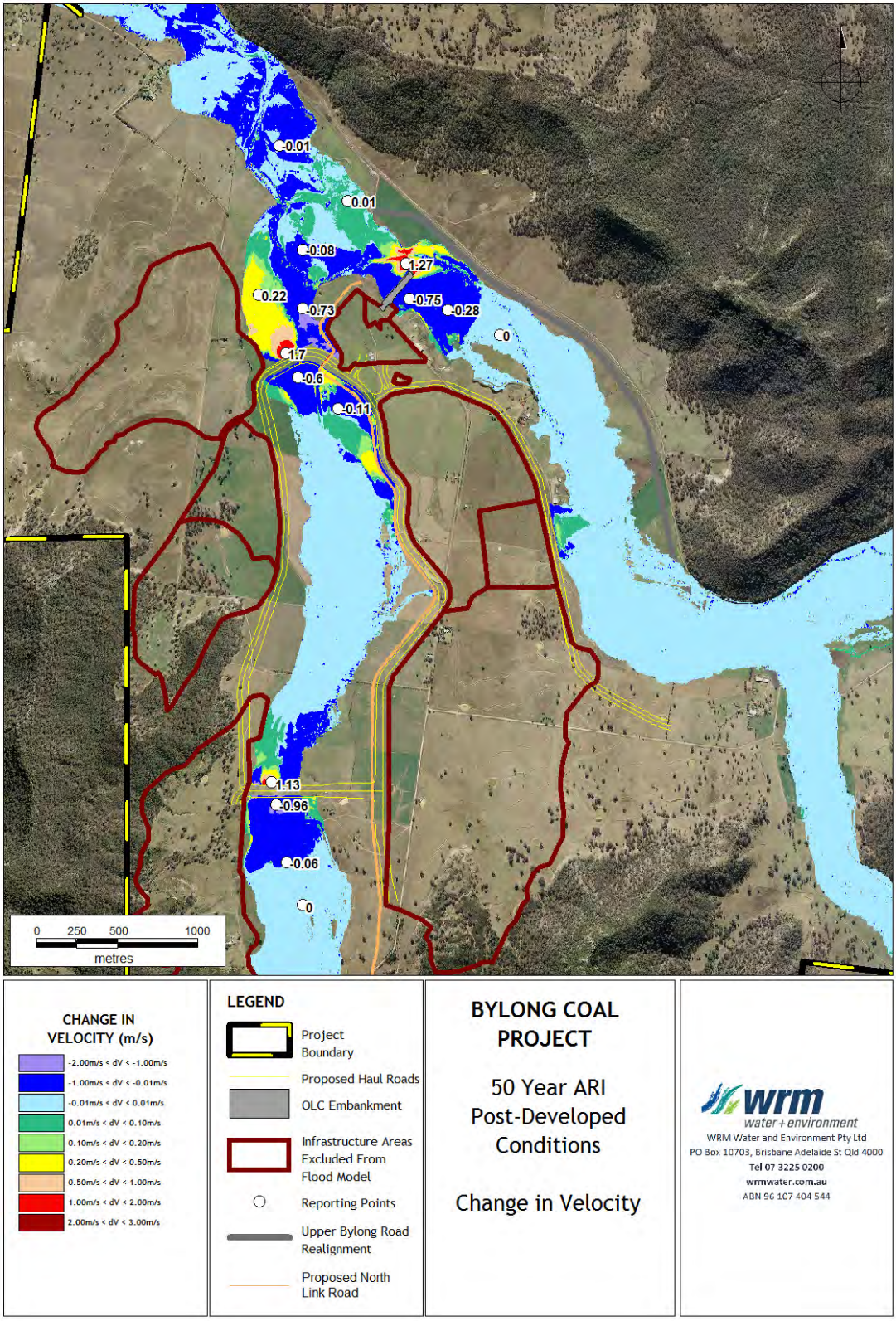

Figure 0.9 – 50 year ARI PY5 Developed Change in Velocity, Bylong River Catchment

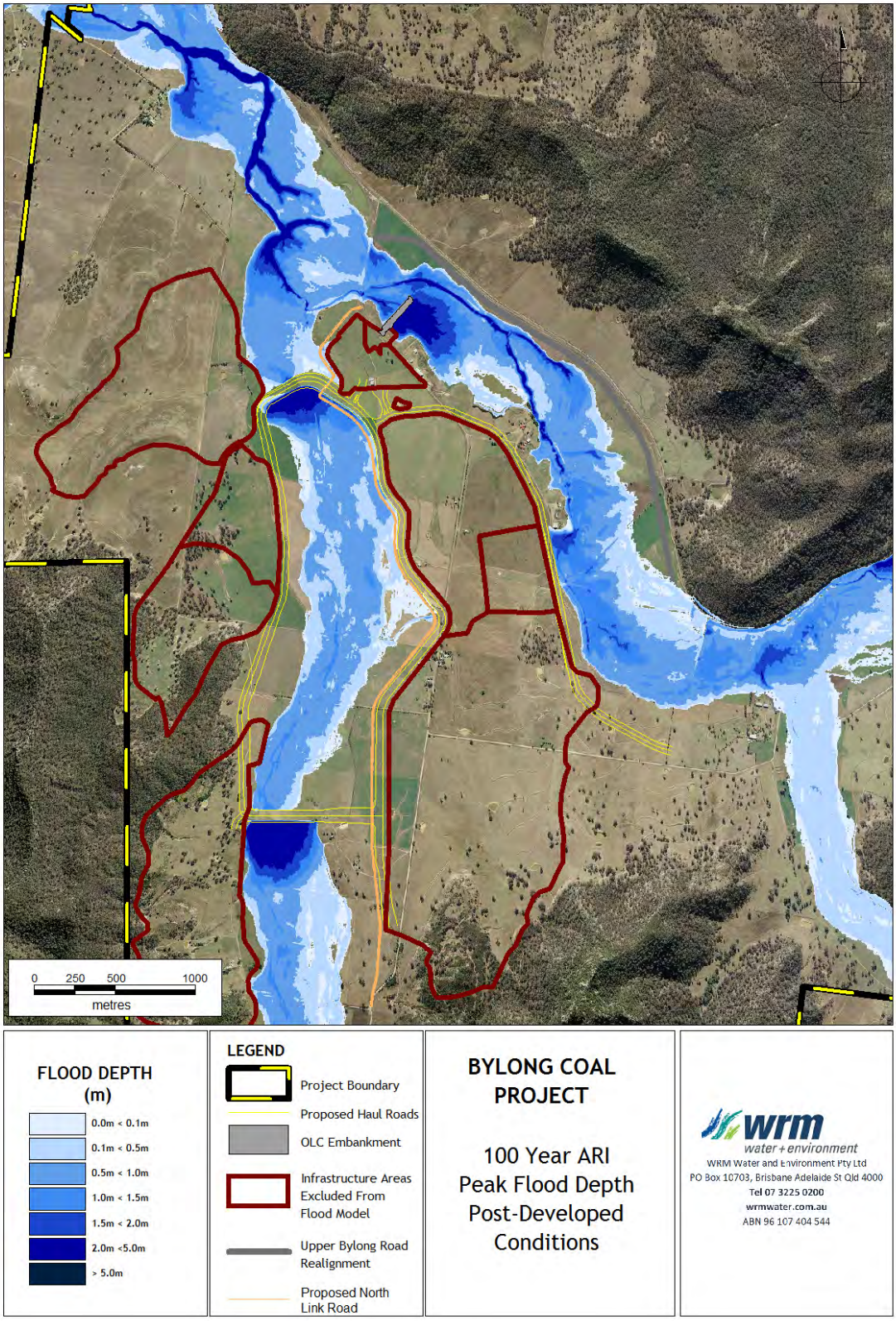

Figure 0.10 – 100 year ARI PY5 Developed Flood Depth, Bylong River Catchment

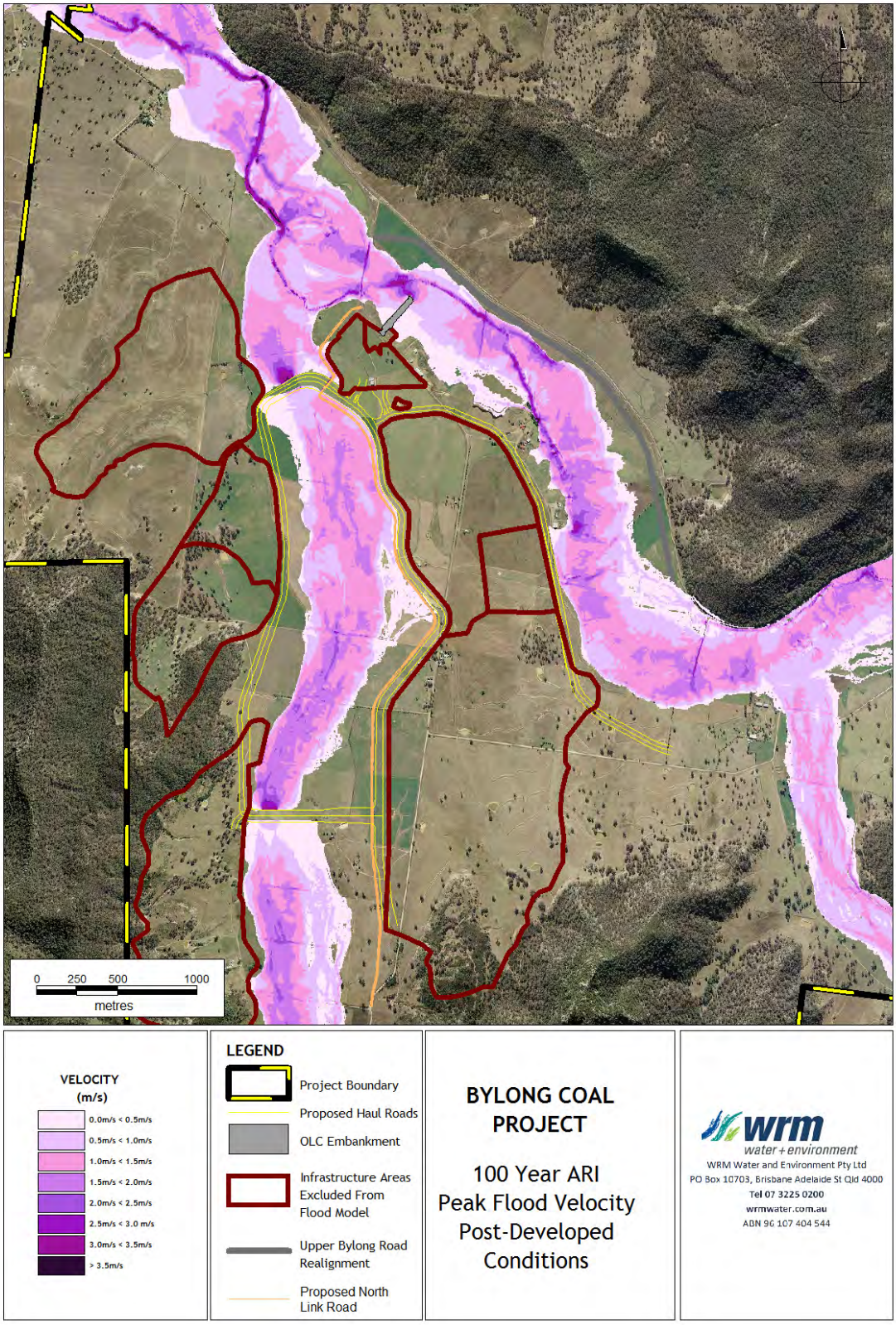

Figure 0.11 – 100 year ARI PY5 Developed Flood Velocity, Bylong River Catchment

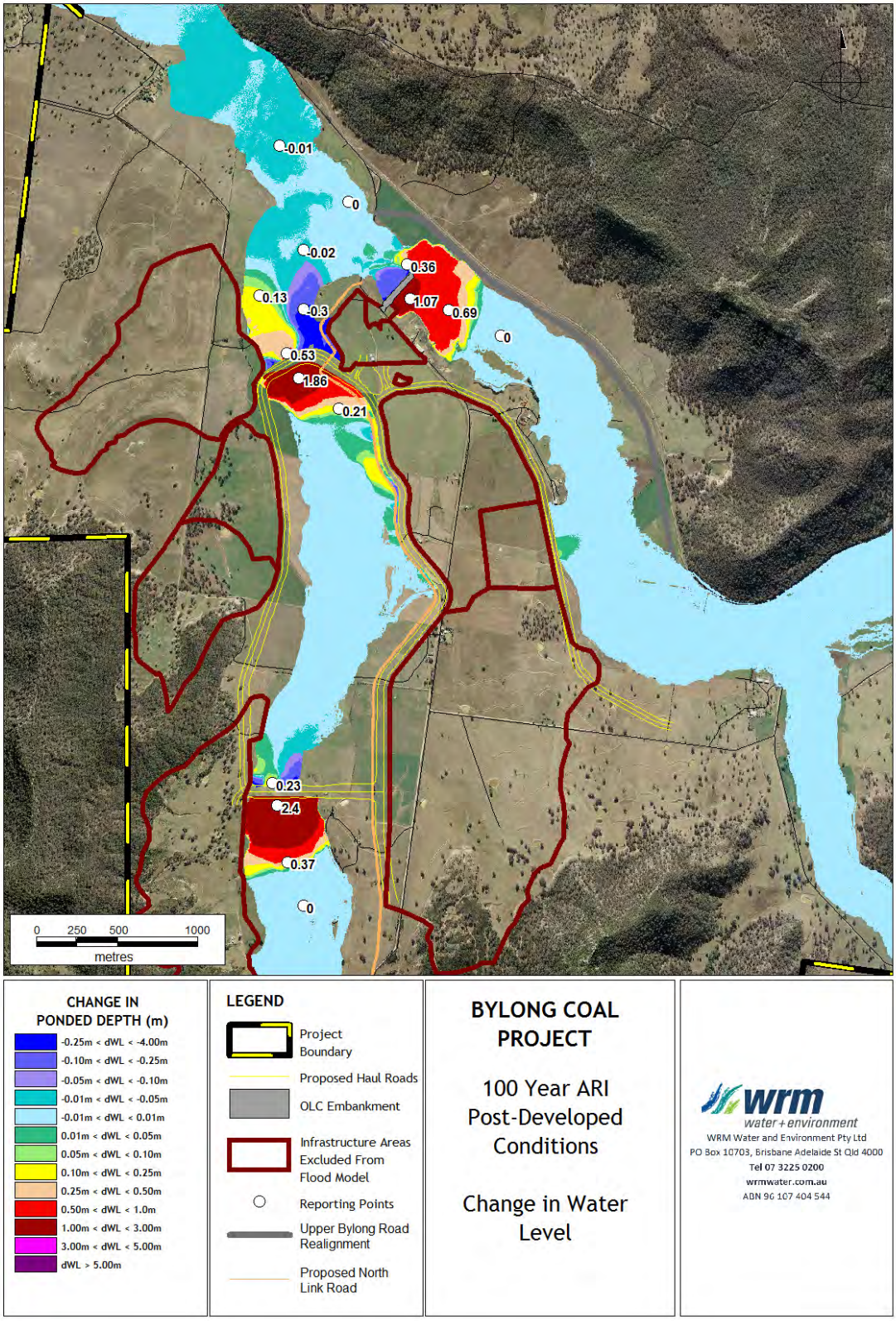

Figure 0.12 – 100 year ARI PY5 Developed Change in Water Level, Bylong River Catchment

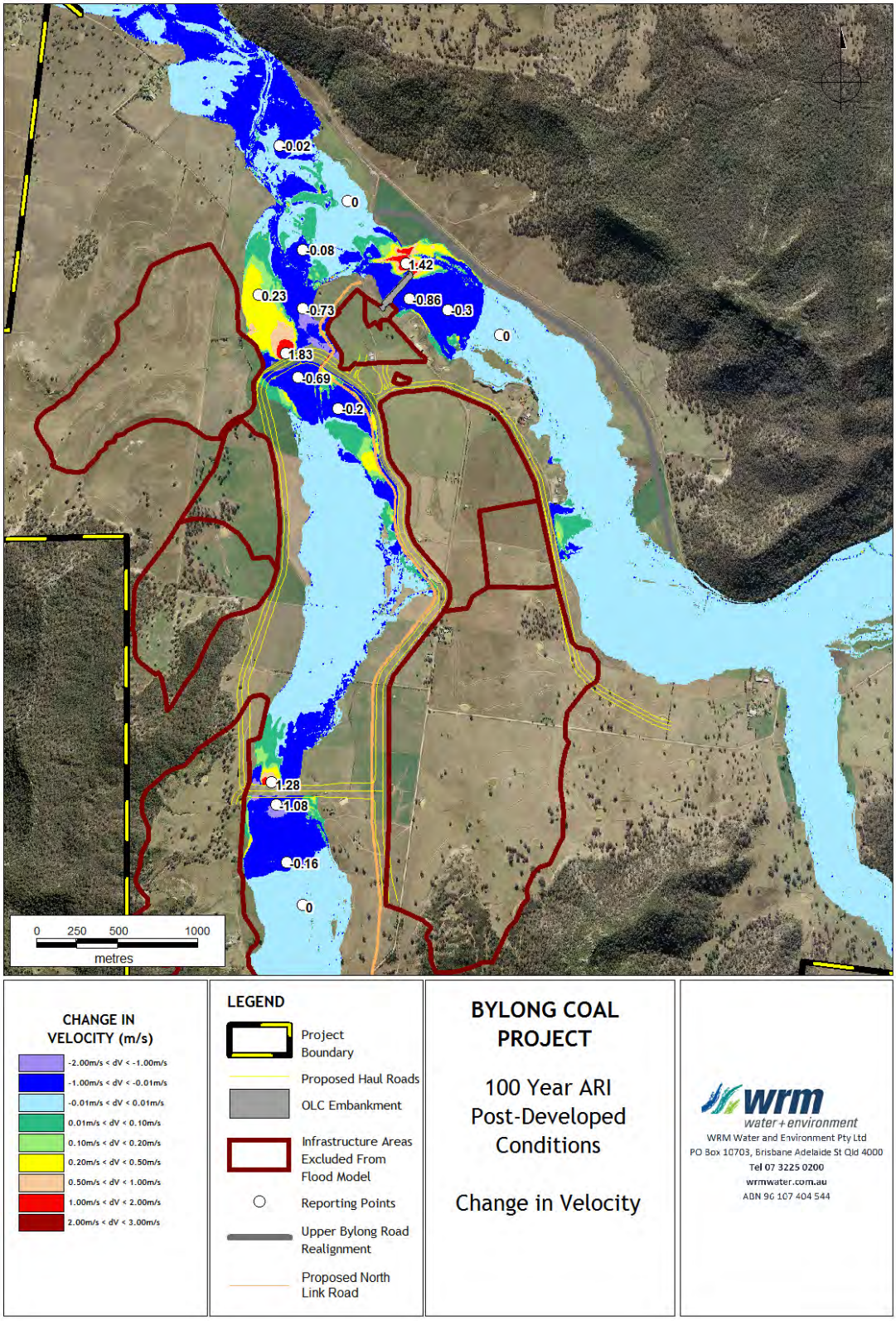

Figure 0.13 – 100 year ARI PY5 Developed Change in Velocity, Bylong River Catchment

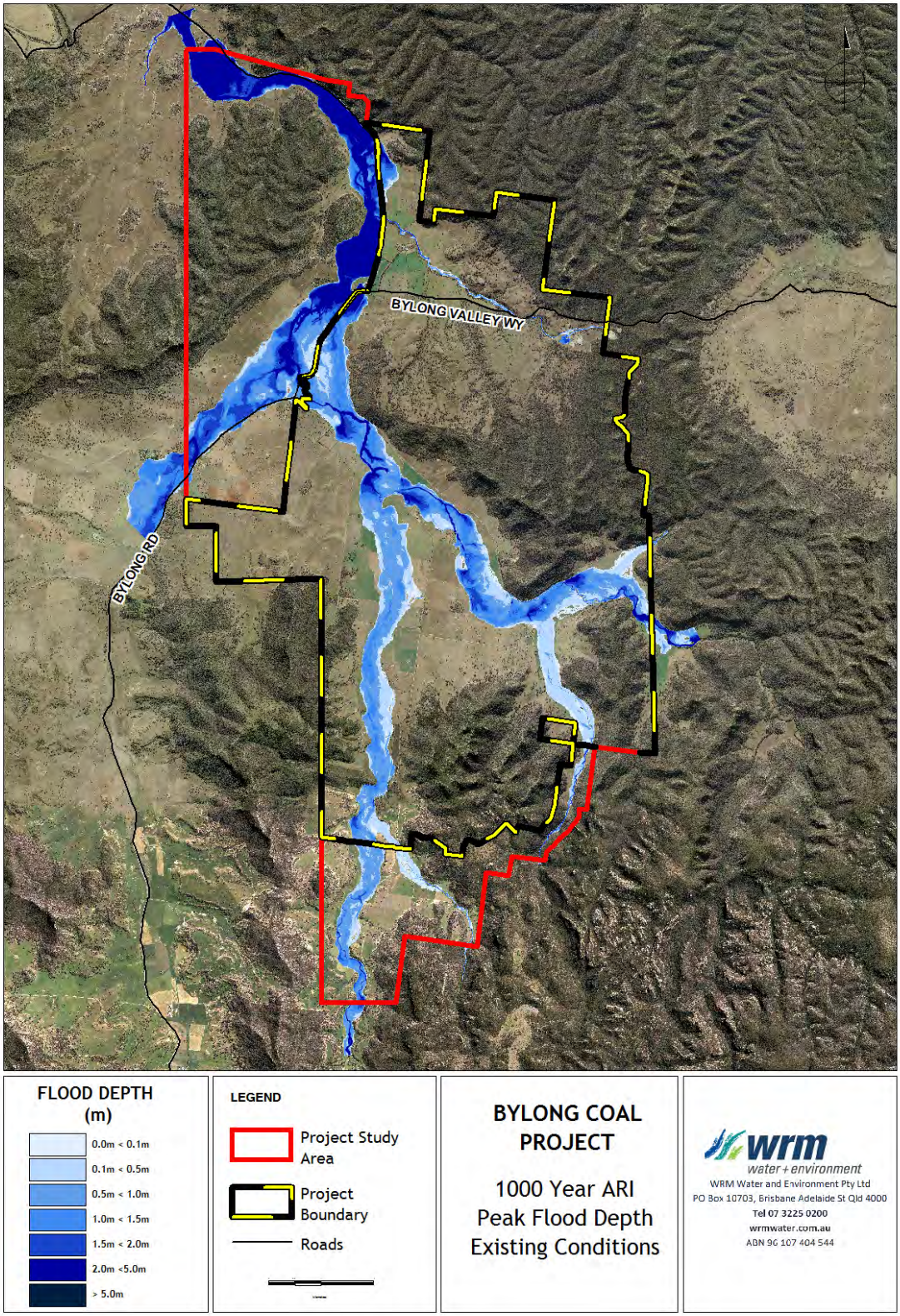

Figure 0.14 – 1000 year ARI Existing Flood Depth, Bylong River Catchment

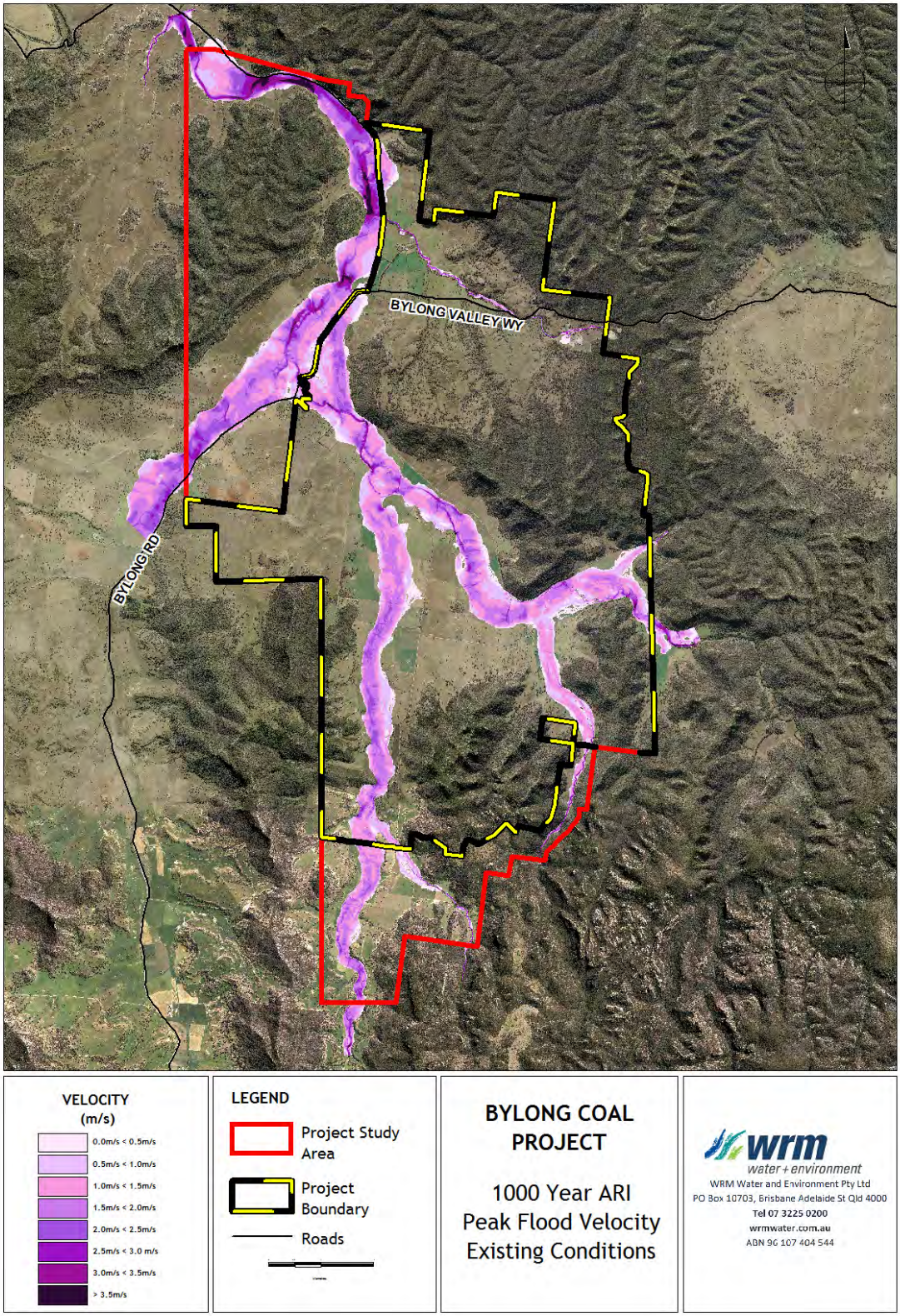

Figure 0.15 – 1000 year ARI Existing Flood Velocity, Bylong River Catchment

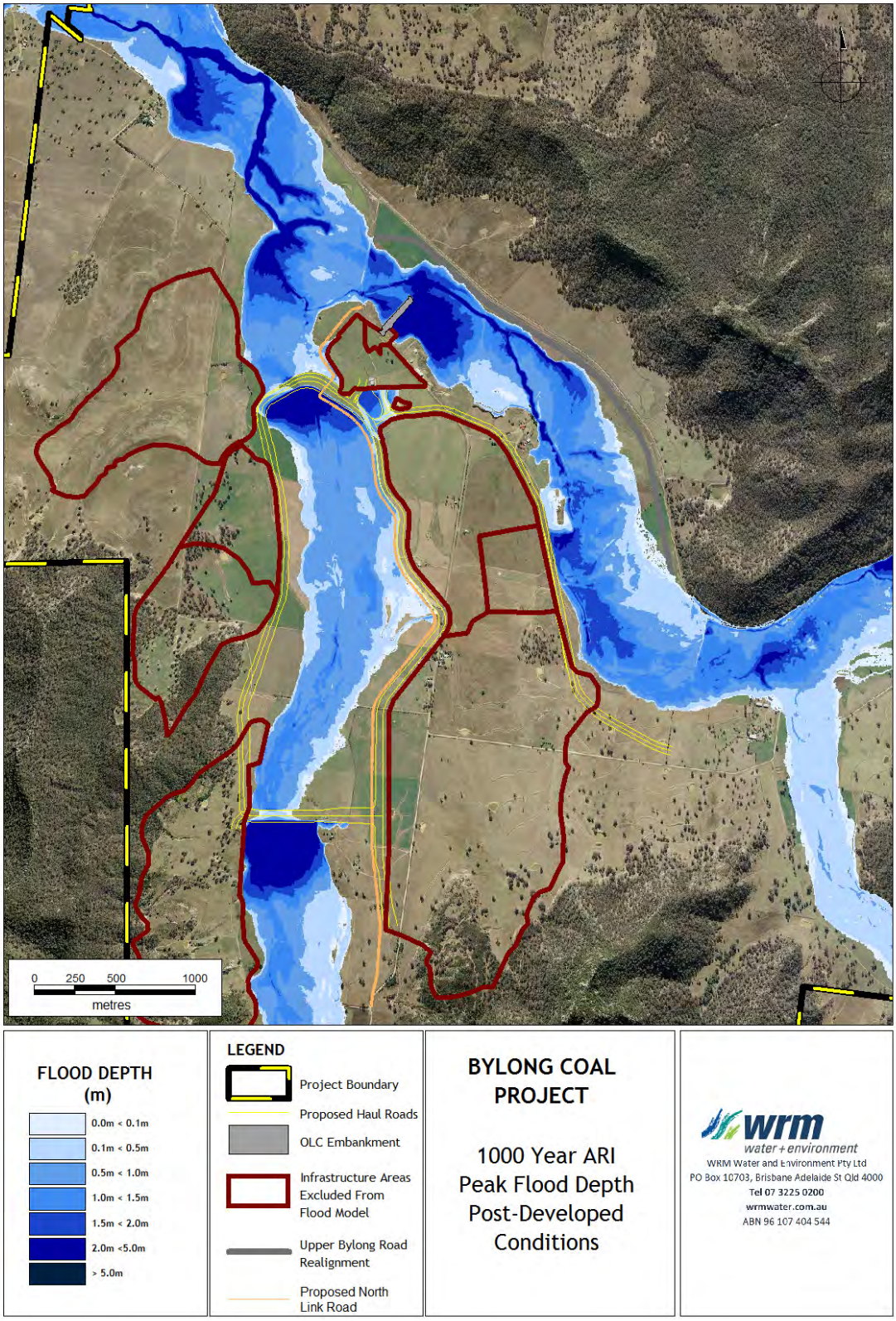

Figure 0.16 – 1000 year ARI PY5 Developed Flood Depth, Bylong River Catchment

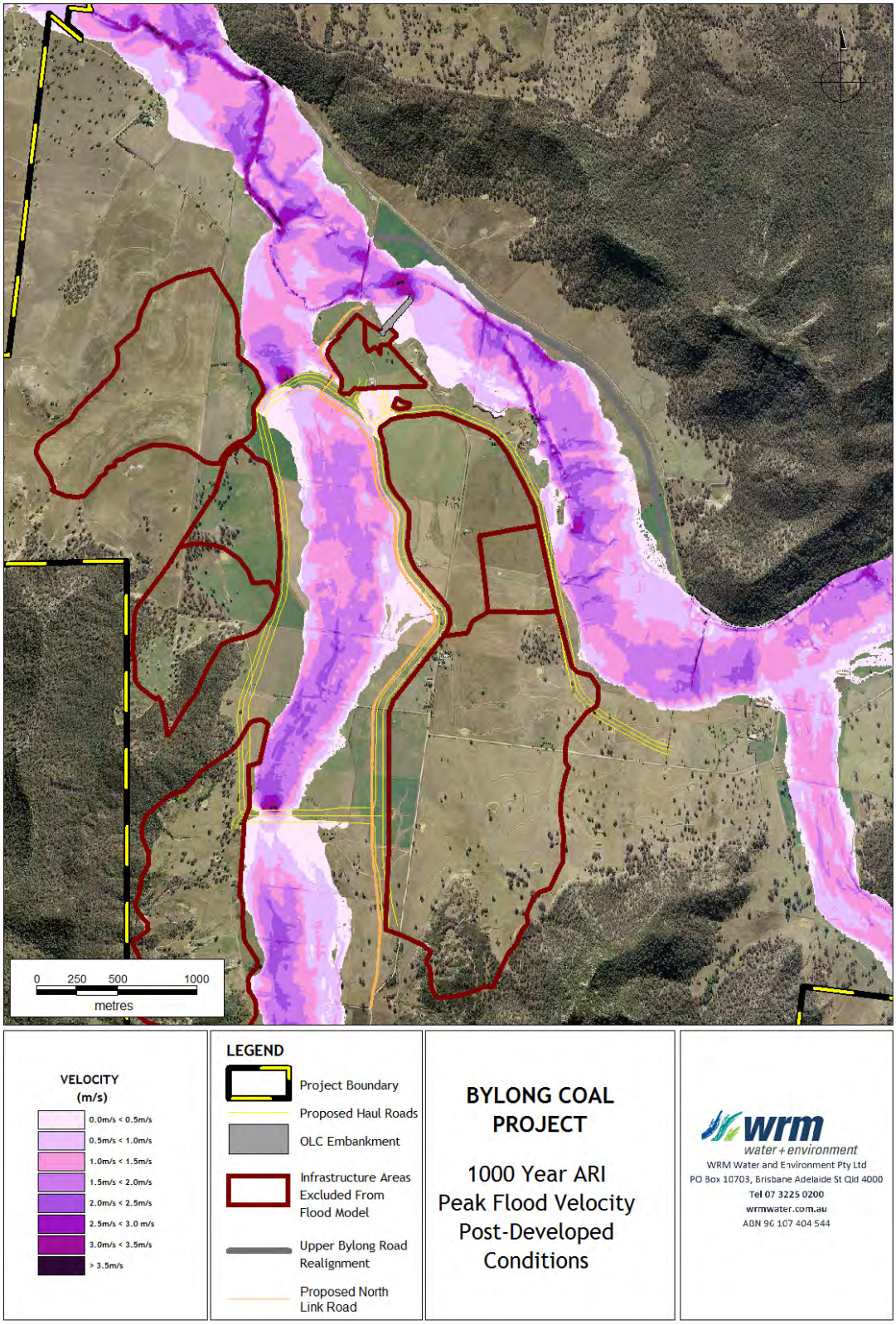

Figure 0.17 – 1000 year ARI PY5 Developed Flood Velocity, Bylong River Catchment

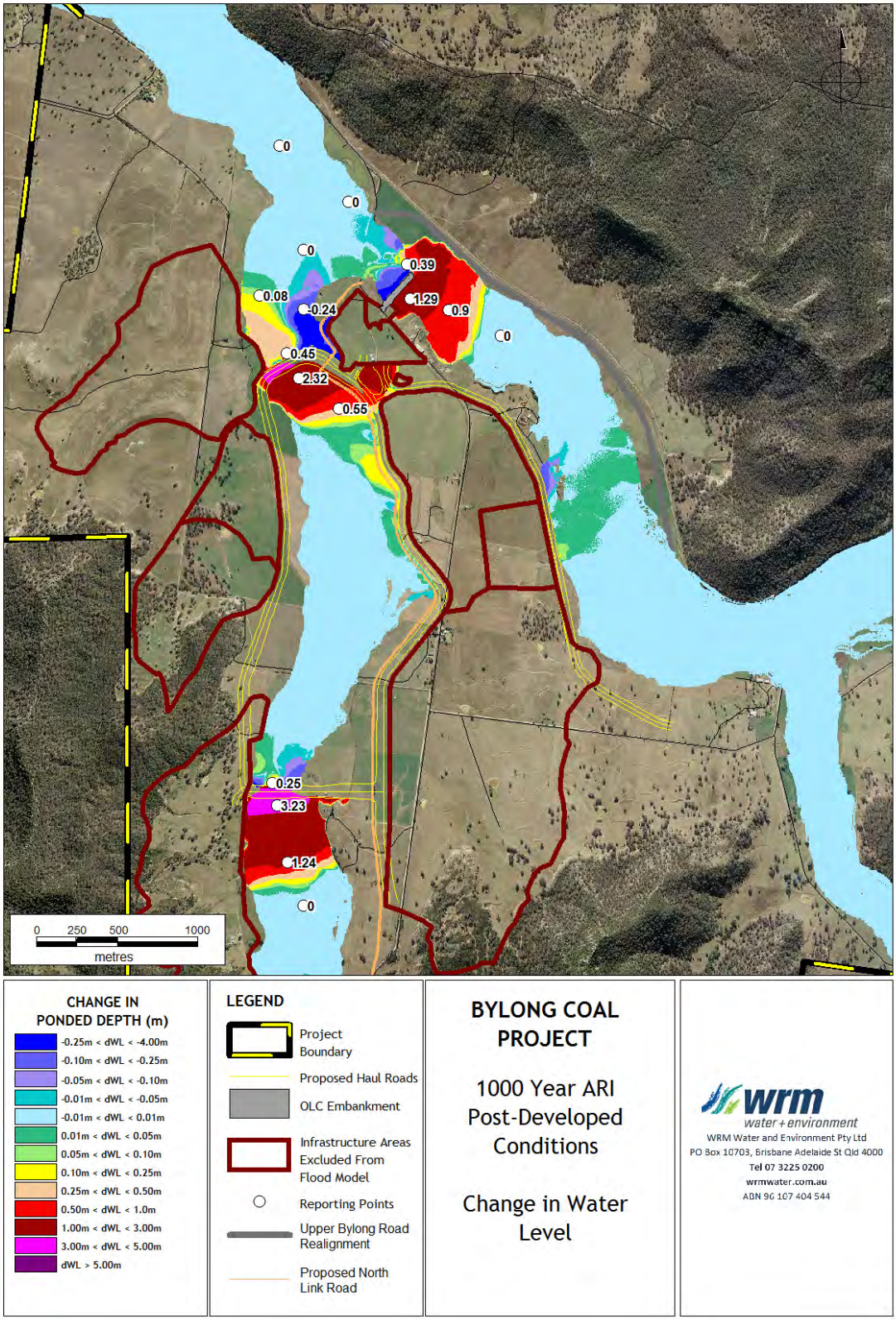

Figure 0.18 – 1000 year ARI PY5 Developed Change in Water Level, Bylong River Catchment

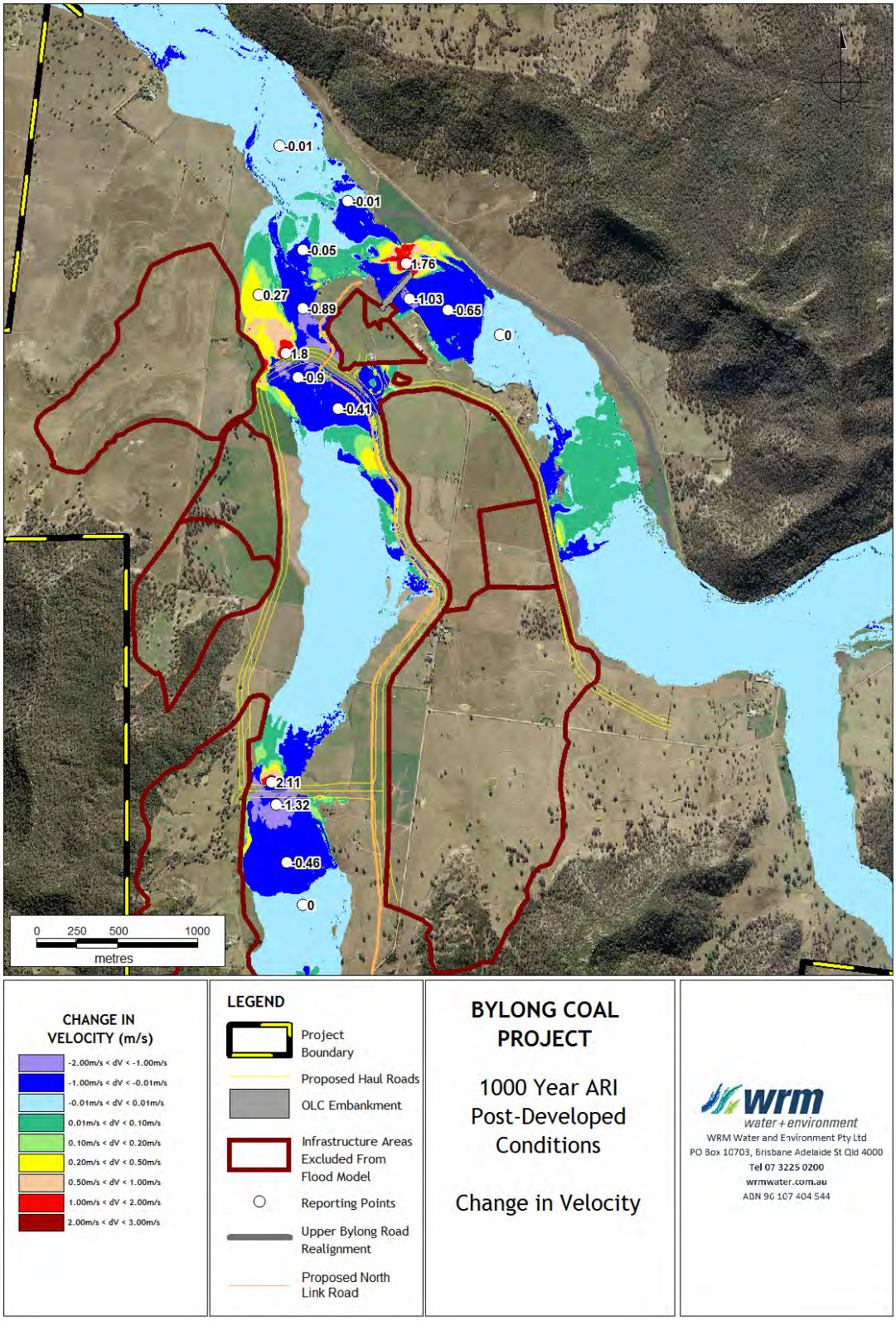

Figure 0.19 – 1000 year ARI PY5 Developed Change in Velocity, Bylong River Catchment