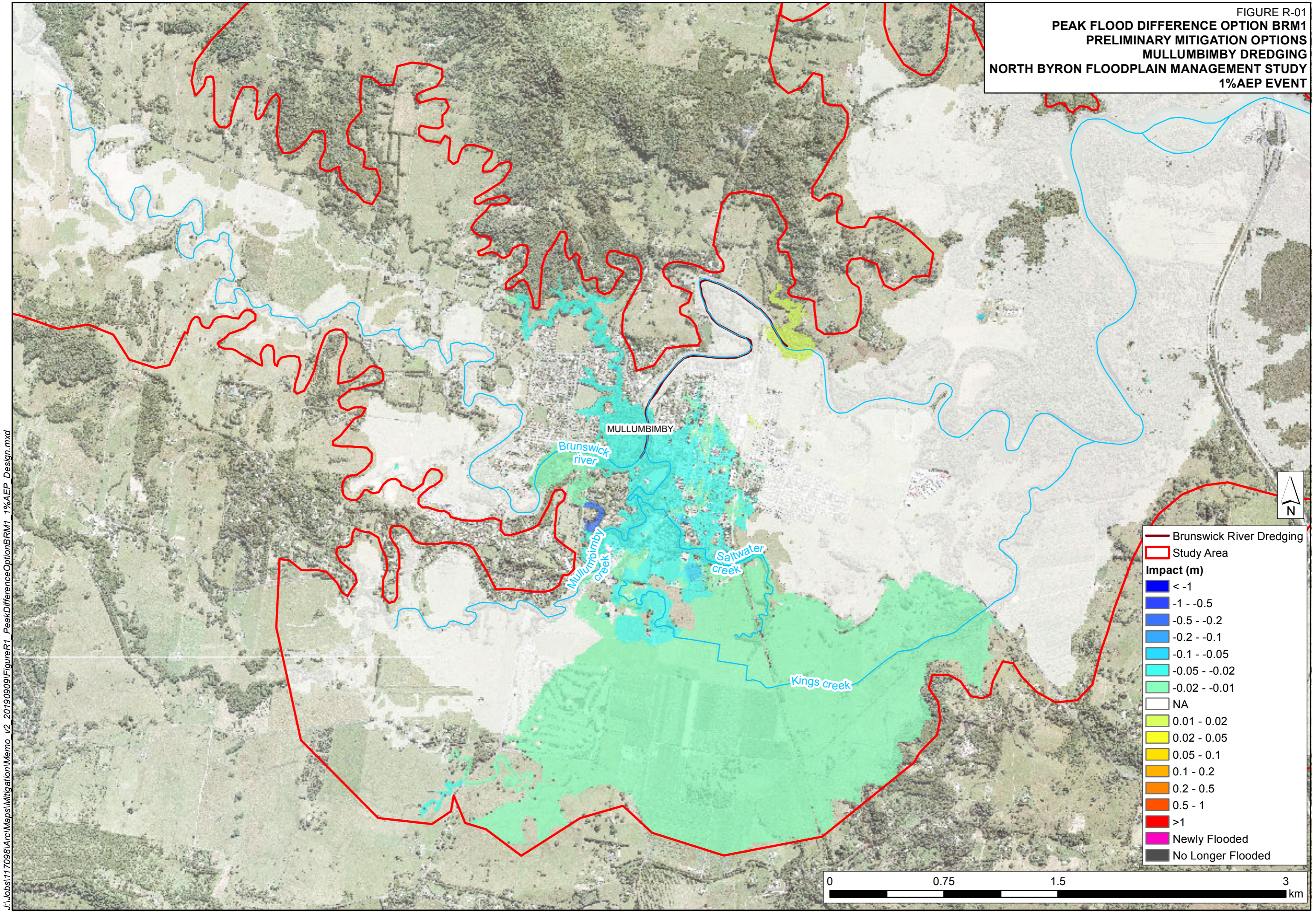




Appendix R

FIGURE R-01
PEAK FLOOD DIFFERENCE OPTION BRM1
PRELIMINARY MITIGATION OPTIONS
MULLUMBIMBY DREDGING
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1%AEP EVENT



— Brunswick River Dredging
 [Red Outline] Study Area

Impact (m)

- [Dark Blue] < -1
- [Blue] -1 - -0.5
- [Light Blue] -0.5 - -0.2
- [Cyan] -0.2 - -0.1
- [Light Cyan] -0.1 - -0.05
- [Teal] -0.05 - -0.02
- [Light Green] -0.02 - -0.01
- [White] NA
- [Light Yellow] 0.01 - 0.02
- [Yellow] 0.02 - 0.05
- [Orange-Yellow] 0.05 - 0.1
- [Orange] 0.1 - 0.2
- [Dark Orange] 0.2 - 0.5
- [Red-Orange] 0.5 - 1
- [Red] >1
- [Pink] Newly Flooded
- [Grey] No Longer Flooded

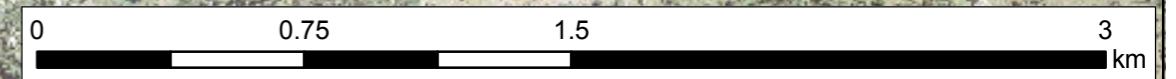
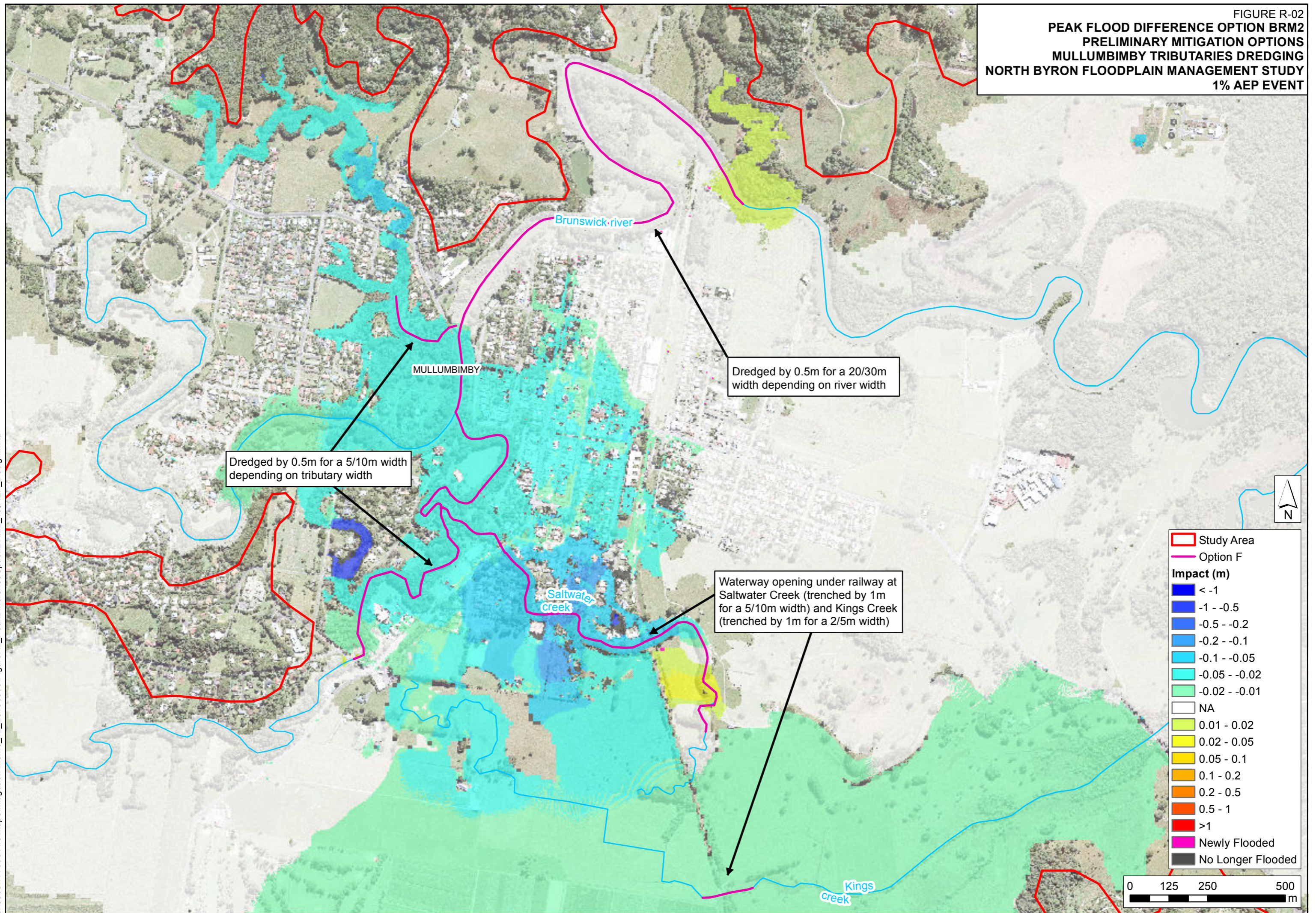


FIGURE R-02
 PEAK FLOOD DIFFERENCE OPTION BRM2
 PRELIMINARY MITIGATION OPTIONS
 MULLUMBIMBY TRIBUTARIES DREDGING
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1% AEP EVENT

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Dredged by 0.5m for a 5/10m width depending on tributary width

Dredged by 0.5m for a 20/30m width depending on river width

Waterway opening under railway at Saltwater Creek (trenched by 1m for a 5/10m width) and Kings Creek (trenched by 1m for a 2/5m width)

- Study Area
- Option F
- Impact (m)**
- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - -0.1
- 0.1 - -0.05
- 0.05 - -0.02
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded

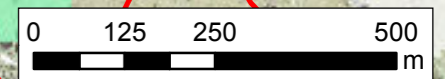
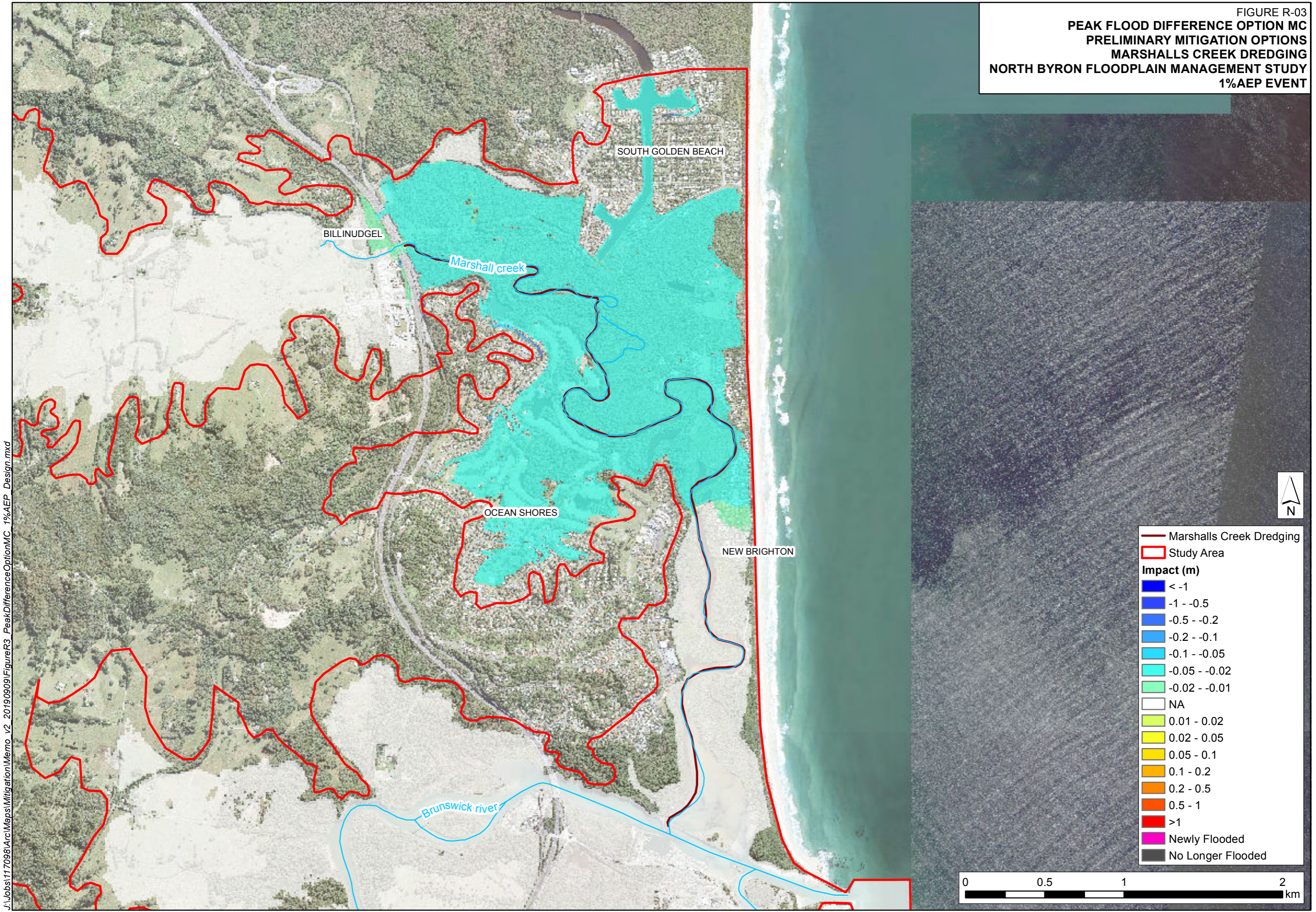
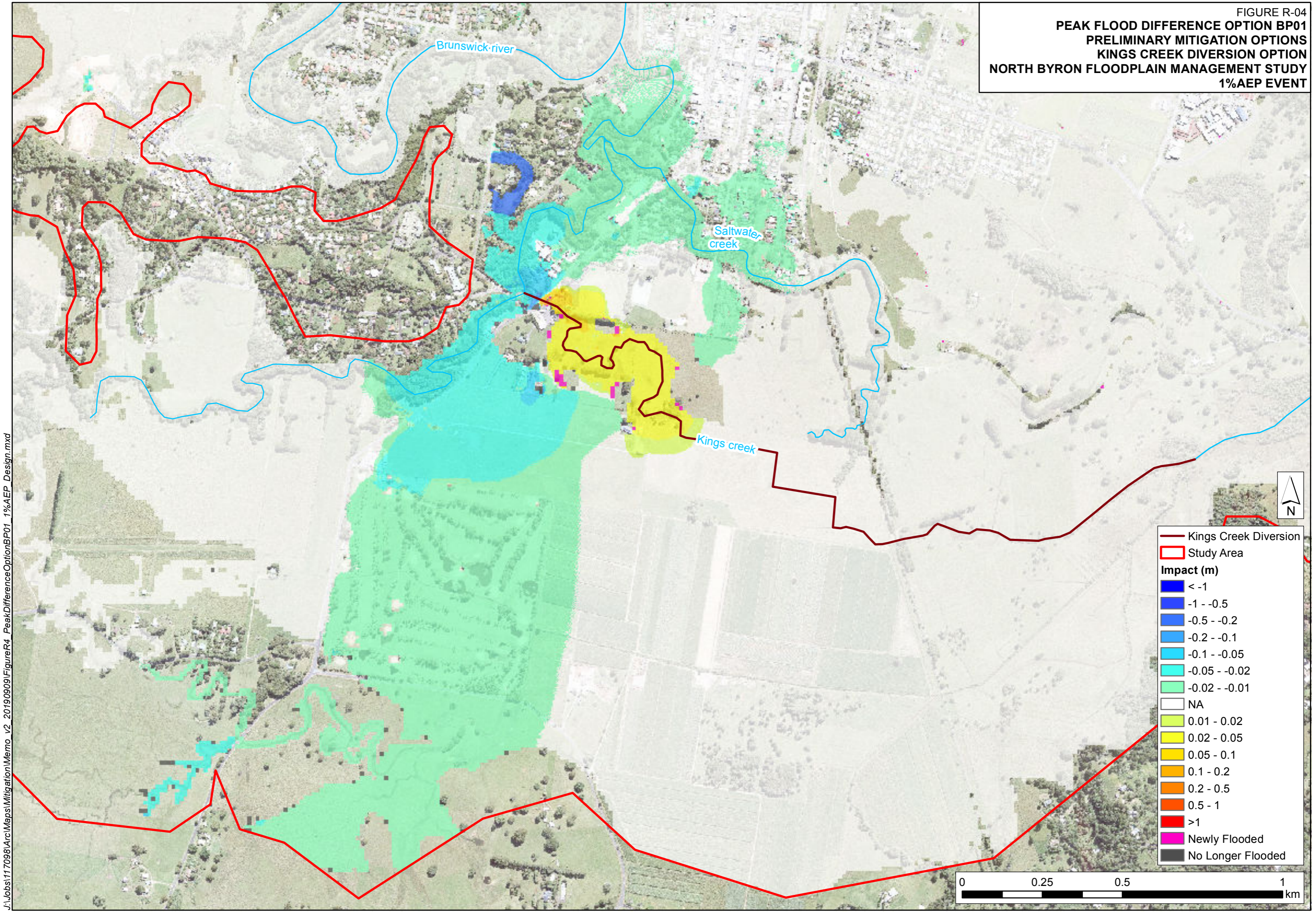


FIGURE R-03
 PEAK FLOOD DIFFERENCE OPTION MC
 PRELIMINARY MITIGATION OPTIONS
 MARSHALLS CREEK DREDGING
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1%AEP EVENT



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FIGURE R-04
PEAK FLOOD DIFFERENCE OPTION BP01
PRELIMINARY MITIGATION OPTIONS
KINGS CREEK DIVERSION OPTION
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1%AEP EVENT



- Kings Creek Diversion
- Study Area
- Impact (m)**
- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - -0.1
- 0.1 - -0.05
- 0.05 - -0.02
- 0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded

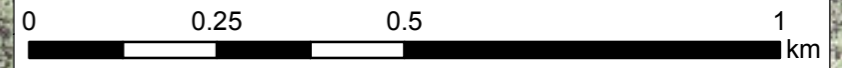
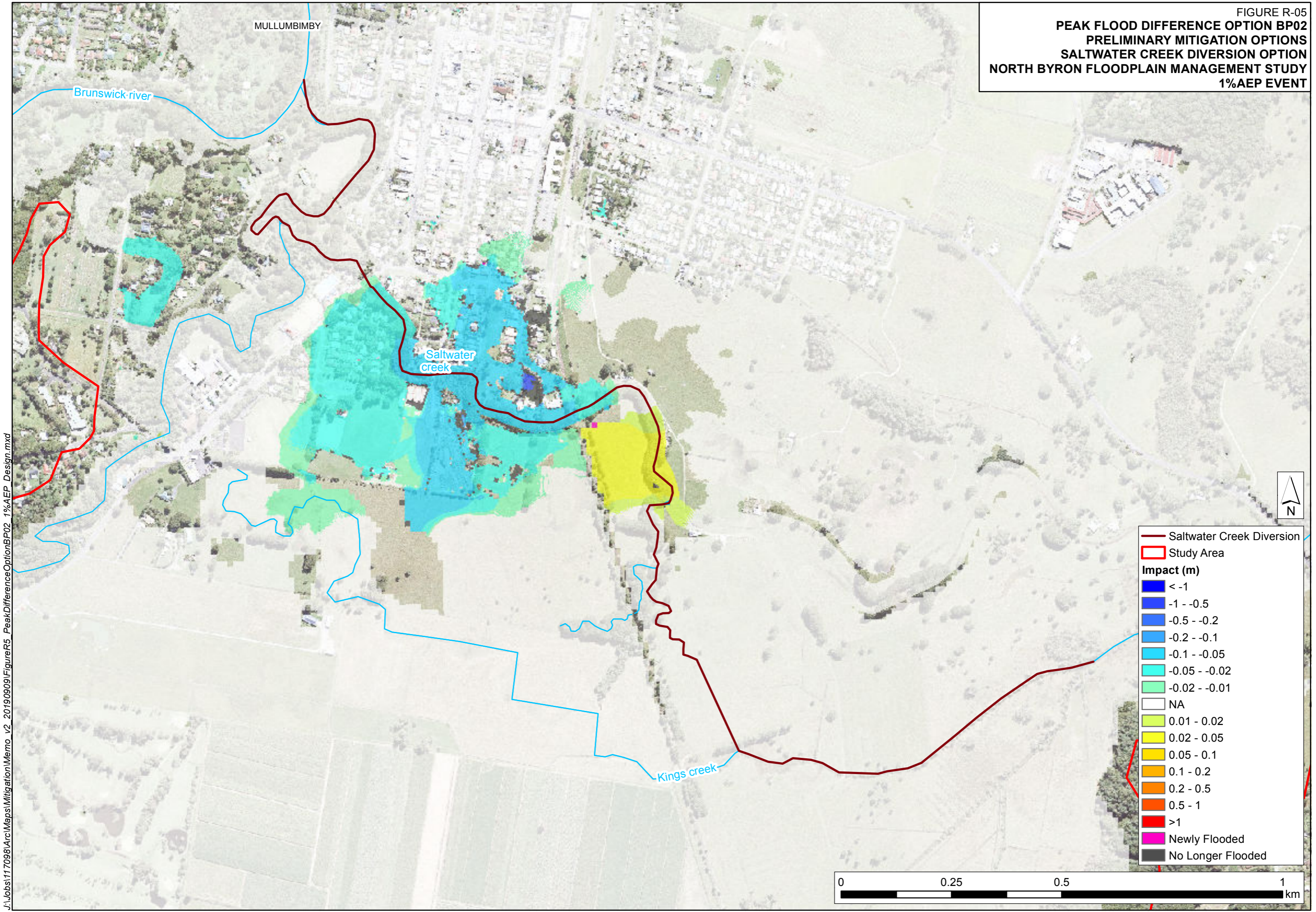
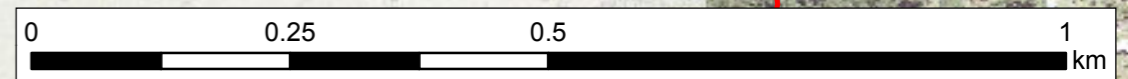


FIGURE R-05
PEAK FLOOD DIFFERENCE OPTION BP02
PRELIMINARY MITIGATION OPTIONS
SALTWATER CREEK DIVERSION OPTION
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT

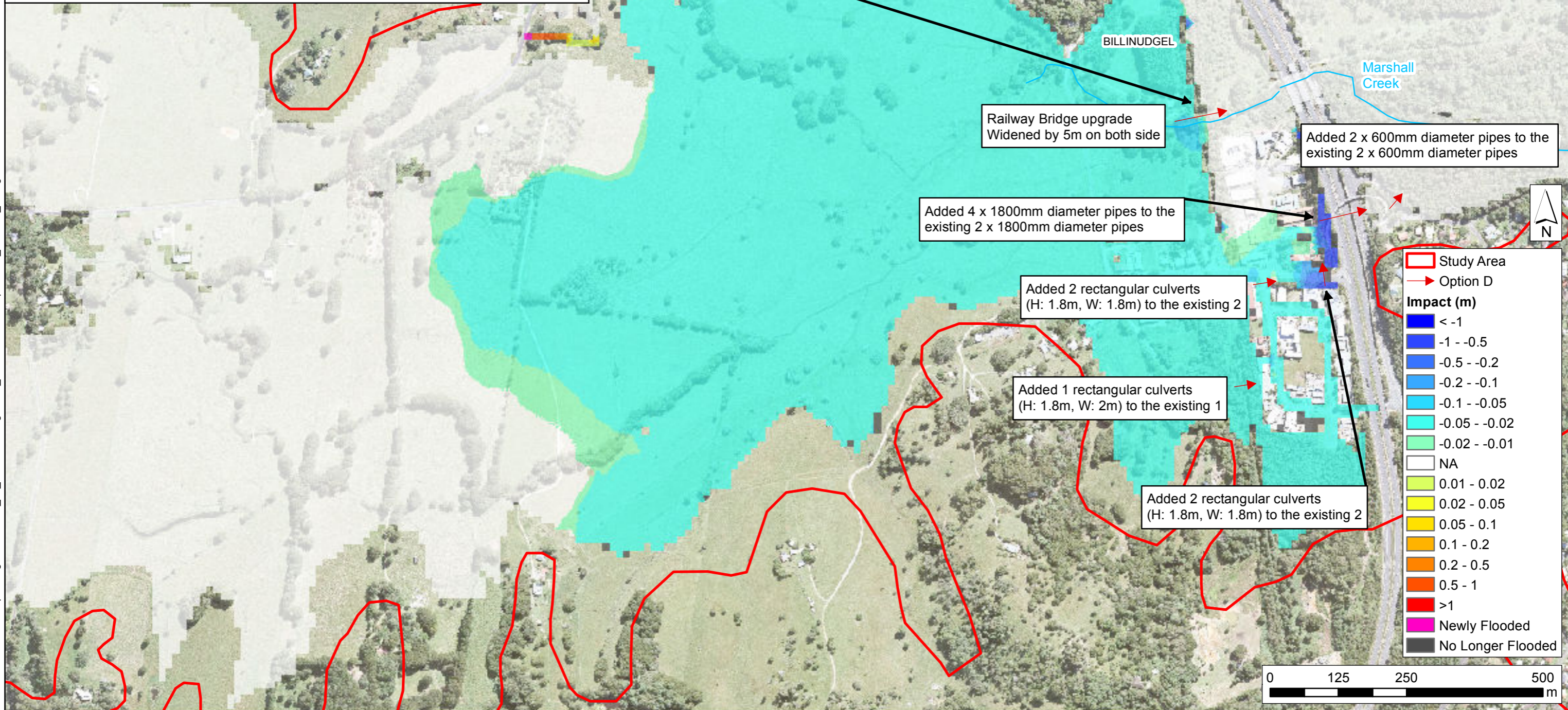
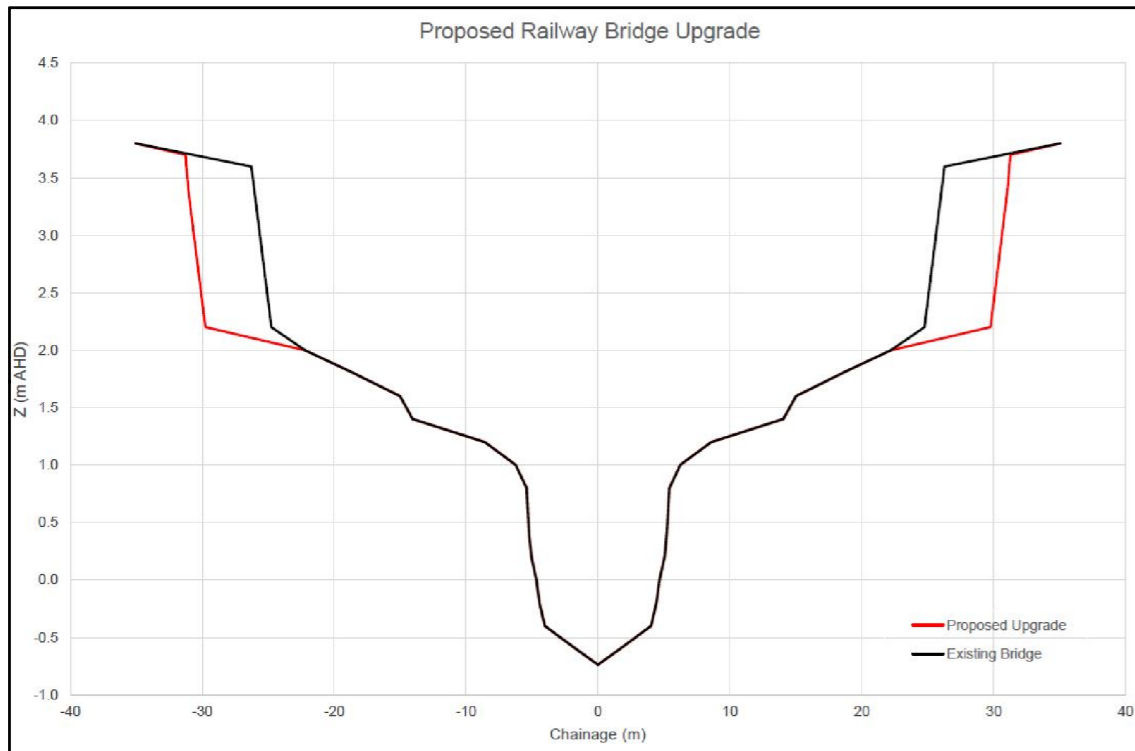


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- Saltwater Creek Diversion
- Study Area
- Impact (m)**
- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - -0.1
- 0.1 - -0.05
- 0.05 - -0.02
- 0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded

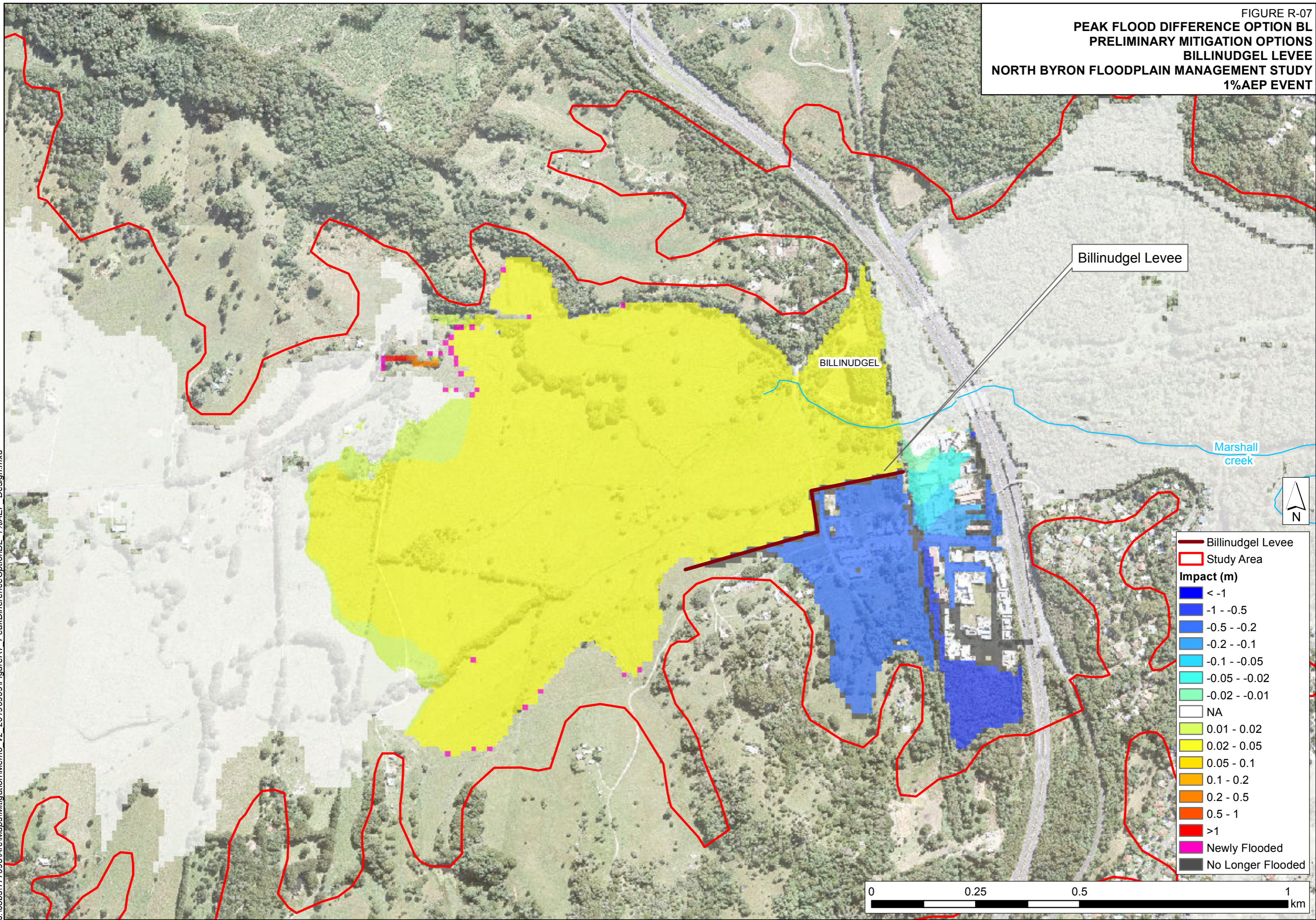


**PEAK FLOOD DIFFERENCE OPTION BM
PRELIMINARY MITIGATION OPTIONS
BILLINUDGEL UPGRADE
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT**



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FIGURE R-07
 PEAK FLOOD DIFFERENCE OPTION BL
 PRELIMINARY MITIGATION OPTIONS
 BILLINUDGEL LEVEL
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1% AEP EVENT



Billinudgel Levee

BILLINUDGEL

Marshall
 creek

- Billinudgel Levee
- Study Area
- Impact (m)**
- < -1
- -1 - -0.5
- -0.5 - -0.2
- -0.2 - -0.1
- -0.1 - -0.05
- -0.05 - -0.02
- -0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- > 1
- Newly Flooded
- No Longer Flooded

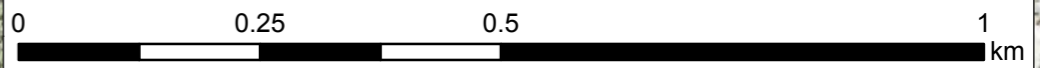
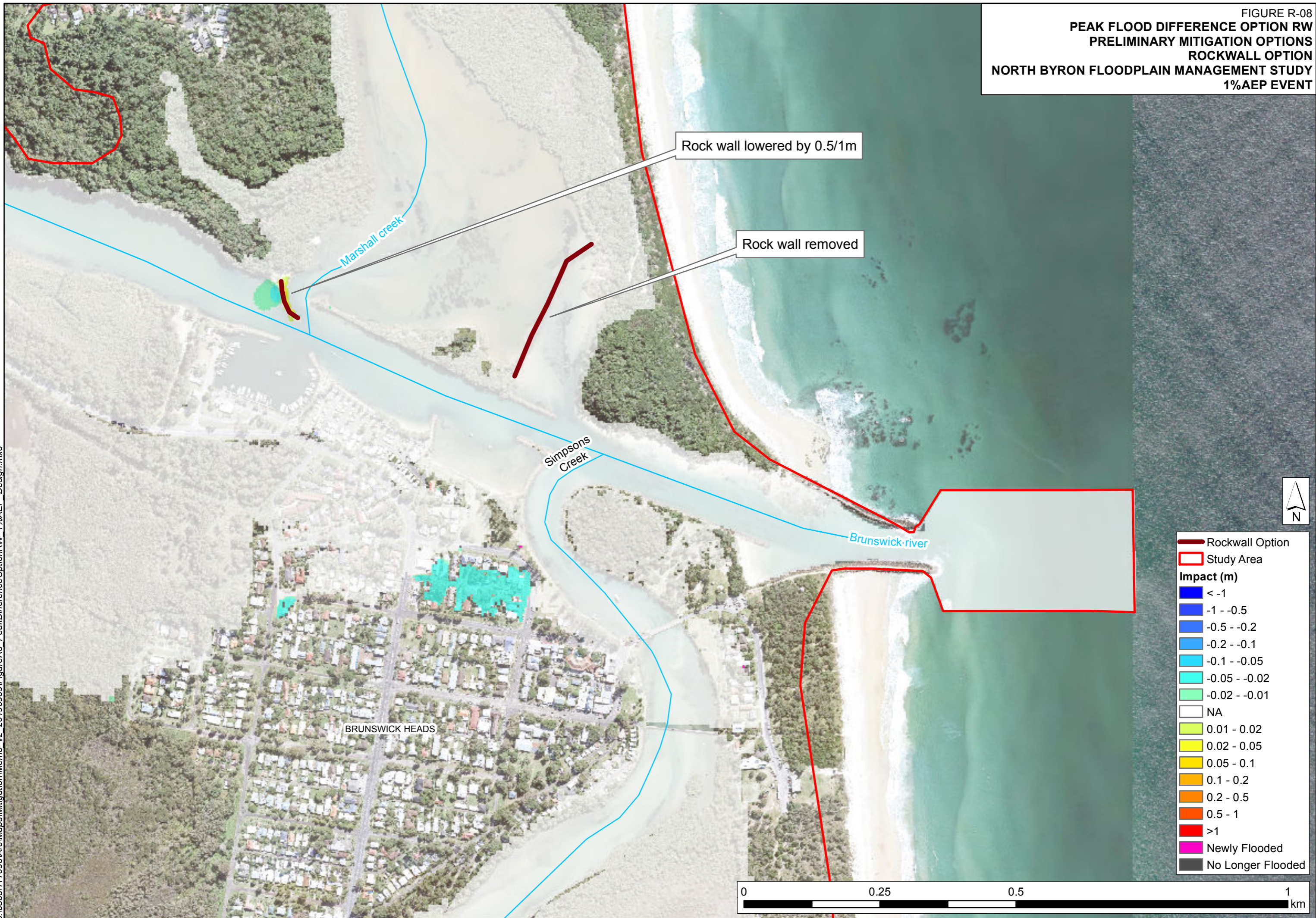


FIGURE R-08
 PEAK FLOOD DIFFERENCE OPTION RW
 PRELIMINARY MITIGATION OPTIONS
 ROCKWALL OPTION
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1%AEP EVENT



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- Rockwall Option
- Study Area
- Impact (m)**
- < -1
- -1 - -0.5
- -0.5 - -0.2
- -0.2 - -0.1
- -0.1 - -0.05
- -0.05 - -0.02
- -0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded

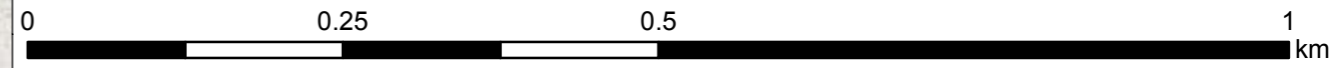
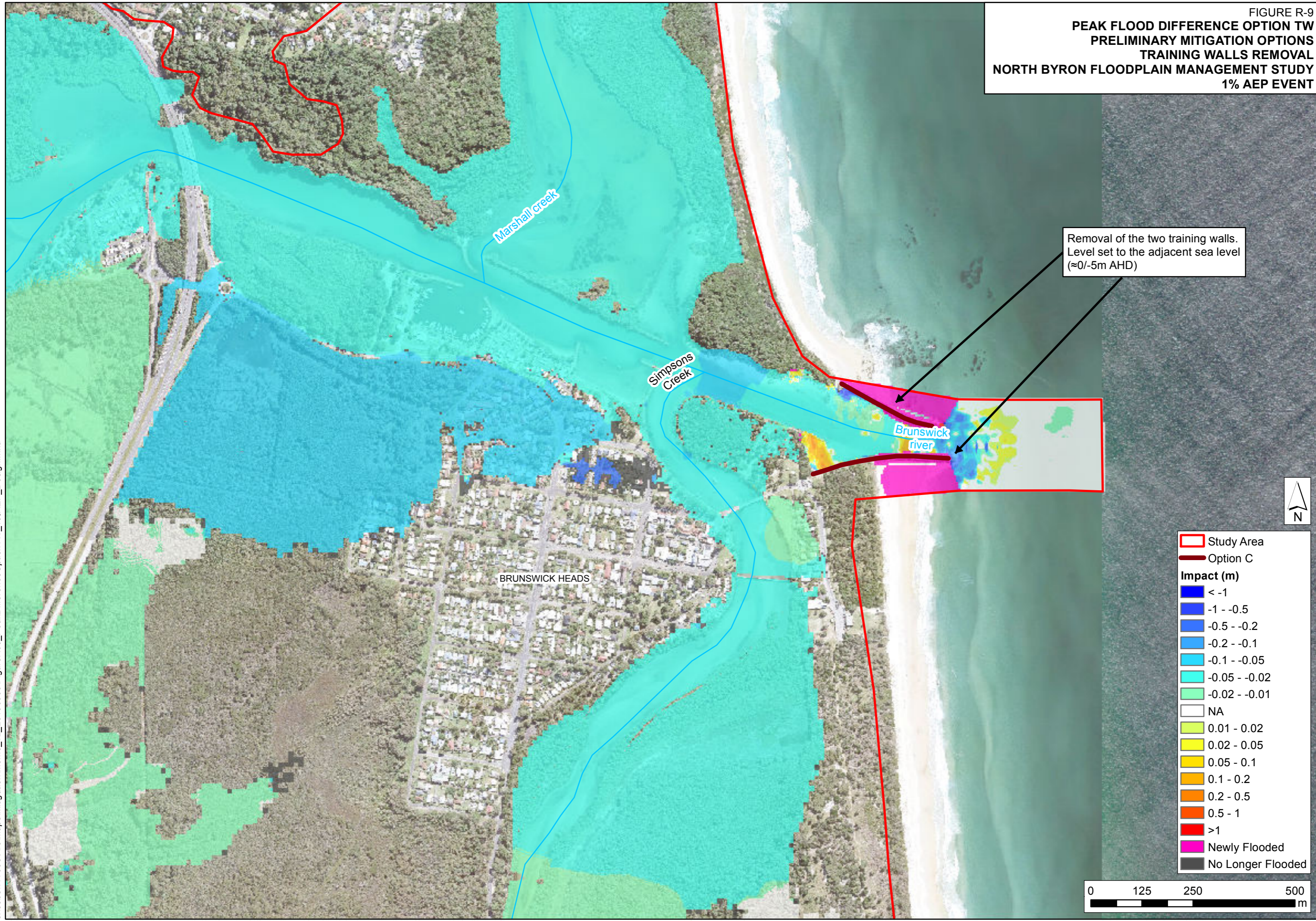


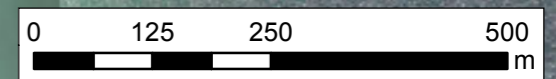
FIGURE R-9
 PEAK FLOOD DIFFERENCE OPTION TW
 PRELIMINARY MITIGATION OPTIONS
 TRAINING WALLS REMOVAL
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1% AEP EVENT

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Removal of the two training walls.
 Level set to the adjacent sea level
 (≈0/-5m AHD)

- Study Area
- Option C
- Impact (m)**
- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - -0.1
- 0.1 - -0.05
- 0.05 - -0.02
- 0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded



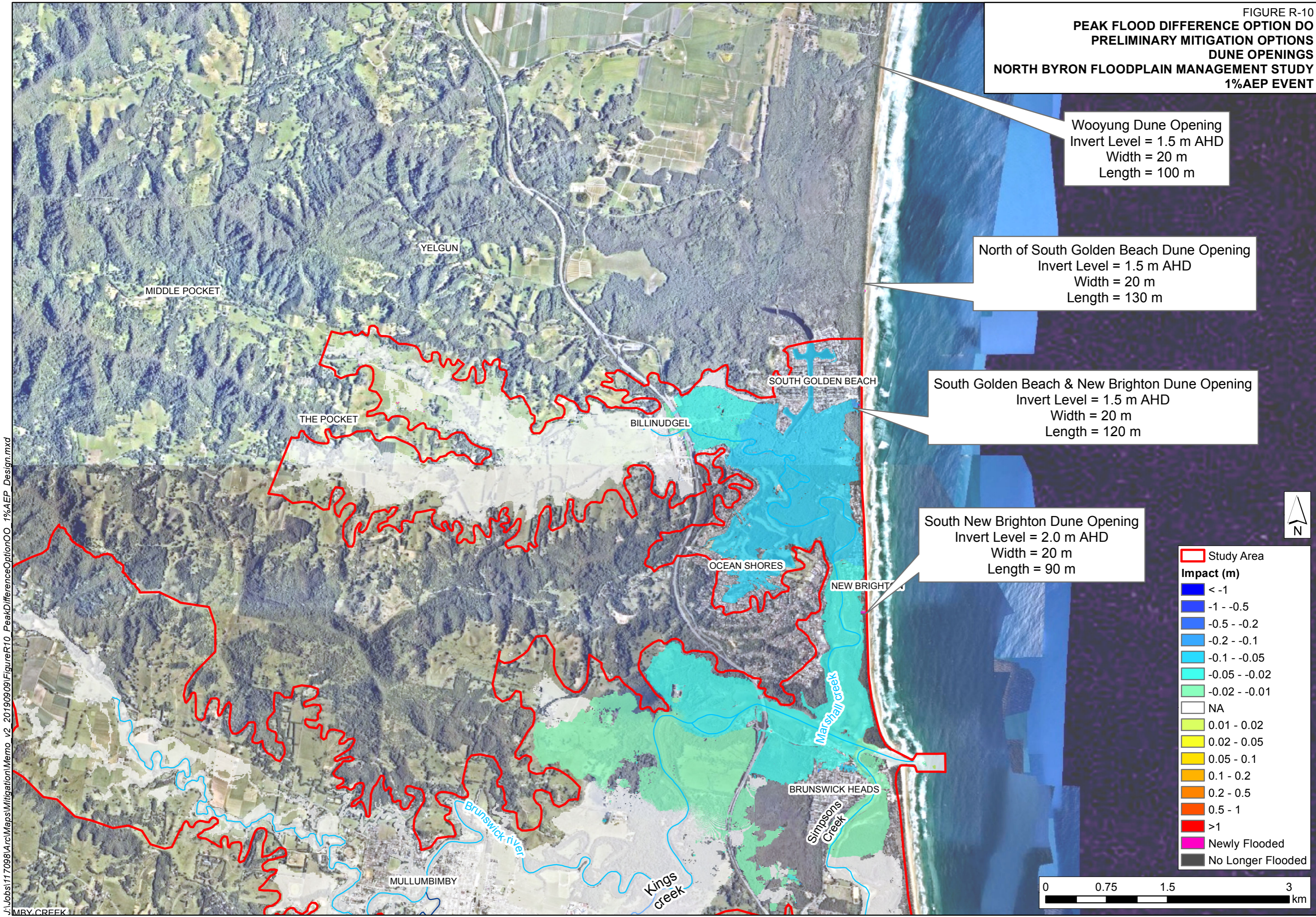
**PEAK FLOOD DIFFERENCE OPTION DO
PRELIMINARY MITIGATION OPTIONS
DUNE OPENINGS
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT**

Wooyung Dune Opening
Invert Level = 1.5 m AHD
Width = 20 m
Length = 100 m

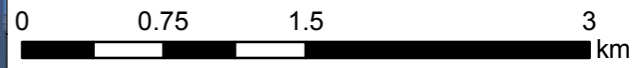
North of South Golden Beach Dune Opening
Invert Level = 1.5 m AHD
Width = 20 m
Length = 130 m

South Golden Beach & New Brighton Dune Opening
Invert Level = 1.5 m AHD
Width = 20 m
Length = 120 m

South New Brighton Dune Opening
Invert Level = 2.0 m AHD
Width = 20 m
Length = 90 m



	Study Area
Impact (m)	
	< -1
	-1 - -0.5
	-0.5 - -0.2
	-0.2 - -0.1
	-0.1 - -0.05
	-0.05 - -0.02
	-0.02 - -0.01
	NA
	0.01 - 0.02
	0.02 - 0.05
	0.05 - 0.1
	0.1 - 0.2
	0.2 - 0.5
	0.5 - 1
	>1
	Newly Flooded
	No Longer Flooded

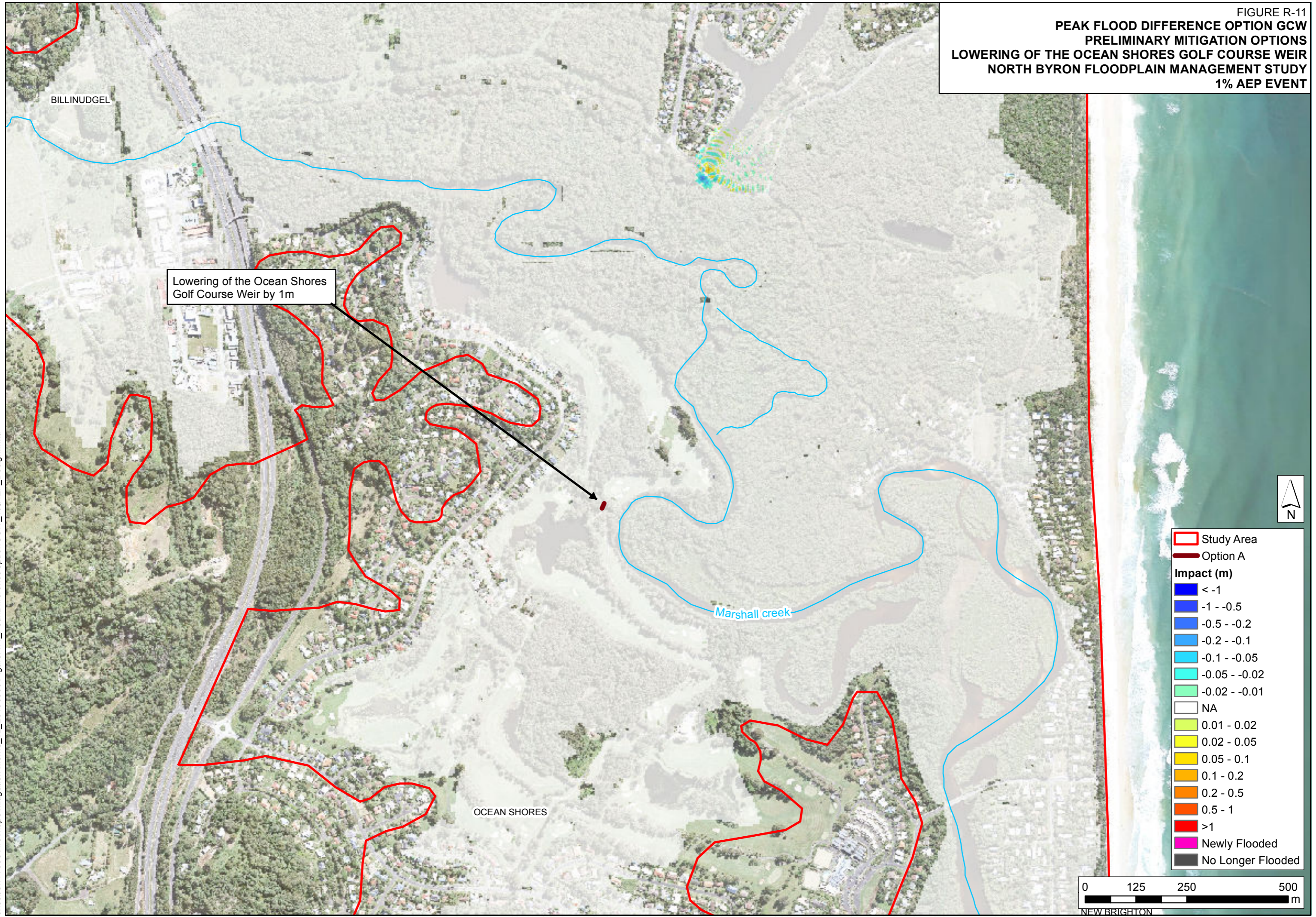


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MBRY.CREEK

FIGURE R-11
**PEAK FLOOD DIFFERENCE OPTION GCW
 PRELIMINARY MITIGATION OPTIONS
 LOWERING OF THE OCEAN SHORES GOLF COURSE WEIR
 NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
 1% AEP EVENT**

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Lowering of the Ocean Shores
 Golf Course Weir by 1m

- Study Area
- Option A
- Impact (m)**
- < -1
- 1 - -0.5
- 0.5 - -0.2
- 0.2 - -0.1
- 0.1 - -0.05
- 0.05 - -0.02
- 0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded

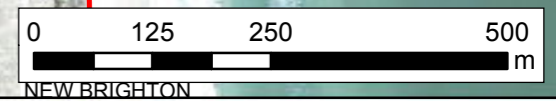
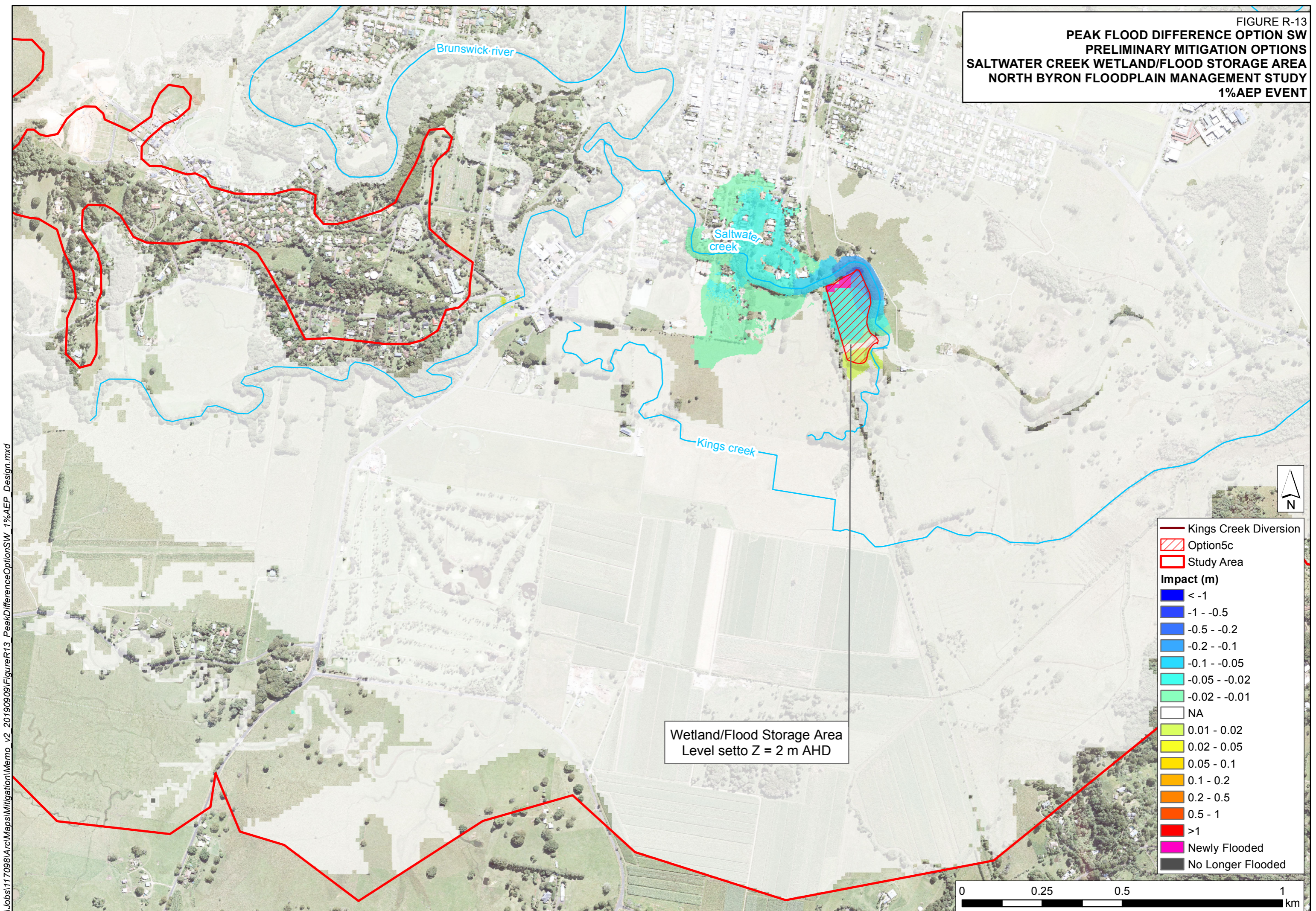


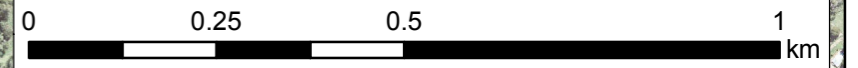
FIGURE R-12
PEAK FLOOD DIFFERENCE OPTION AC
PRELIMINARY MITIGATION OPTIONS
AVOCADO COURT OVERLAND FLOW PATH
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AND 20% AEP EVENT



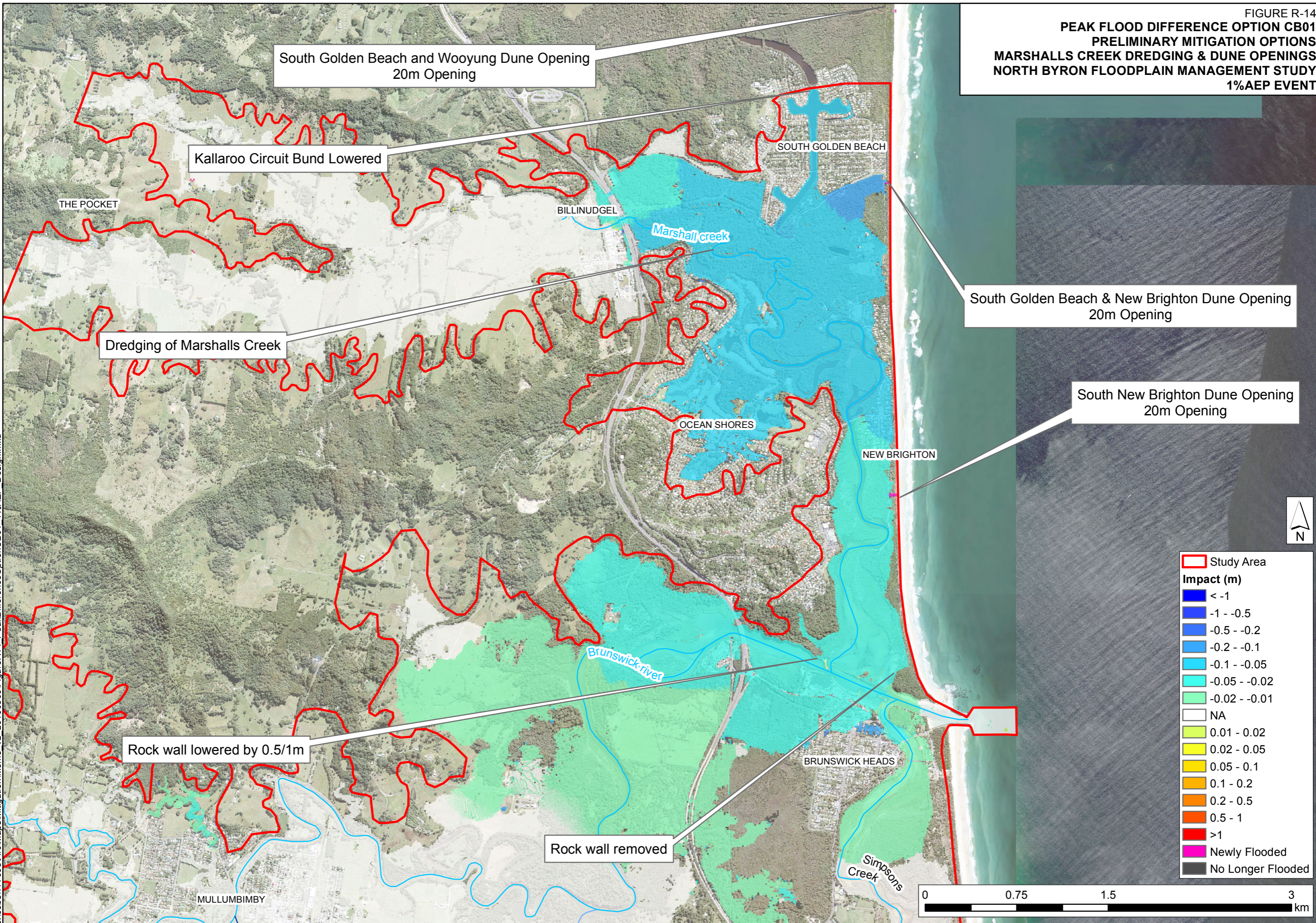
**PEAK FLOOD DIFFERENCE OPTION SW
PRELIMINARY MITIGATION OPTIONS
SALTWATER CREEK WETLAND/FLOOD STORAGE AREA
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT**



- Kings Creek Diversion
- ▨ Option 5c
- ▭ Study Area
- Impact (m)**
- < -1
- -1 - -0.5
- -0.5 - -0.2
- -0.2 - -0.1
- -0.1 - -0.05
- -0.05 - -0.02
- -0.02 - -0.01
- NA
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.1
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- >1
- Newly Flooded
- No Longer Flooded



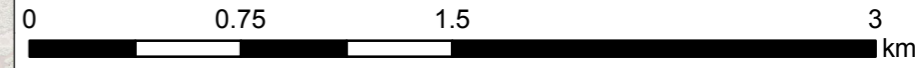
**PEAK FLOOD DIFFERENCE OPTION CB01
PRELIMINARY MITIGATION OPTIONS
MARSHALLS CREEK DREDGING & DUNE OPENINGS
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT**



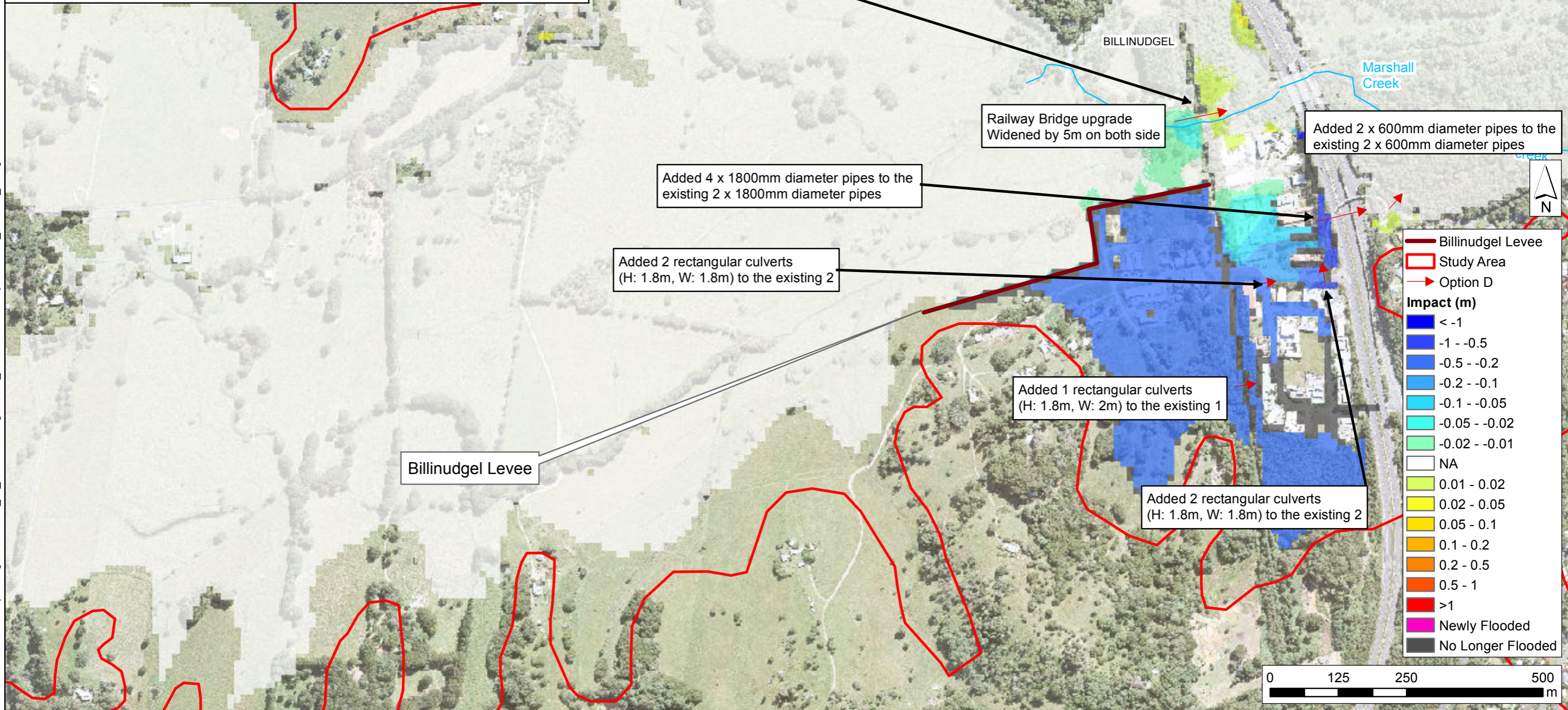
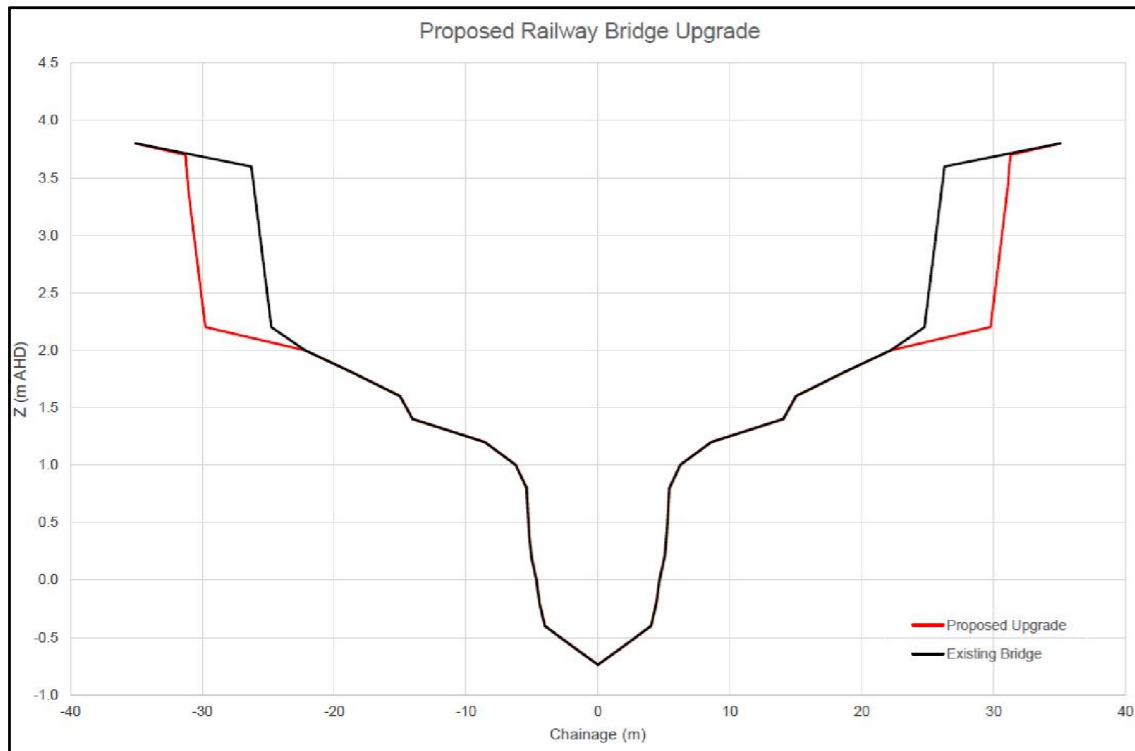
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Study Area	
[Red outline]	Study Area
Impact (m)	
[Dark Blue]	< -1
[Blue]	-1 - -0.5
[Light Blue]	-0.5 - -0.2
[Cyan]	-0.2 - -0.1
[Light Cyan]	-0.1 - -0.05
[Greenish Cyan]	-0.05 - -0.02
[Light Green]	-0.02 - -0.01
[White]	NA
[Light Yellow]	0.01 - 0.02
[Yellow]	0.02 - 0.05
[Orange Yellow]	0.05 - 0.1
[Orange]	0.1 - 0.2
[Dark Orange]	0.2 - 0.5
[Red-Orange]	0.5 - 1
[Red]	>1
[Pink]	Newly Flooded
[Grey]	No Longer Flooded



**PEAK FLOOD DIFFERENCE OPTION CB2
PRELIMINARY MITIGATION OPTIONS
BILLINUDGEL UPGRADE AND LEVEE
NORTH BYRON FLOODPLAIN MANAGEMENT STUDY
1% AEP EVENT**



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