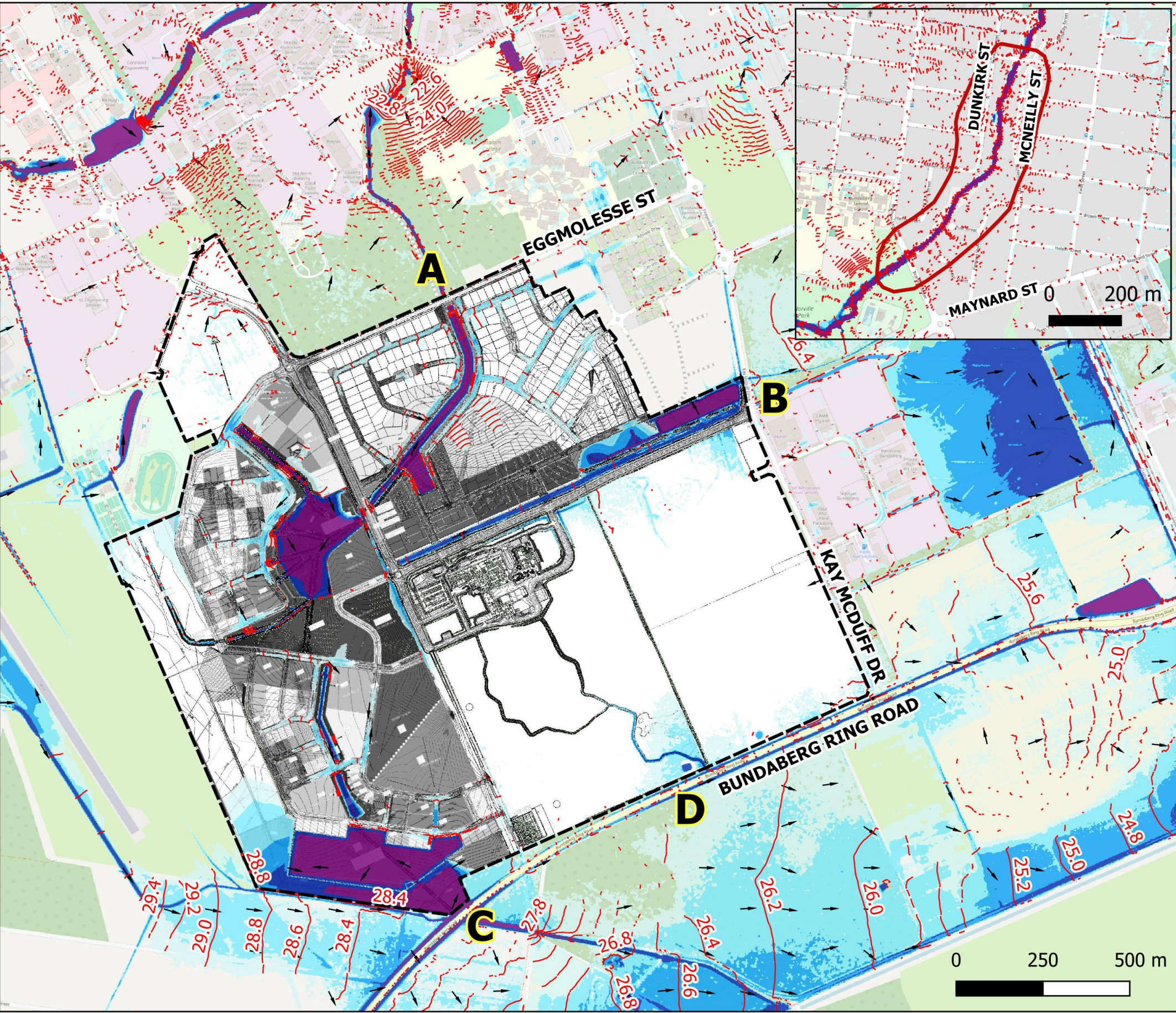
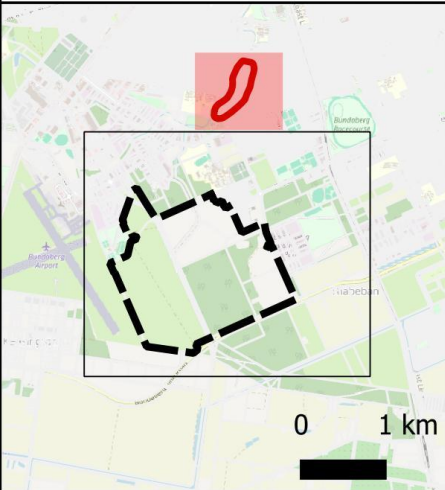




Peak Flood Levels & Depths

39.4% AEP Event

Post-Development
Scenario



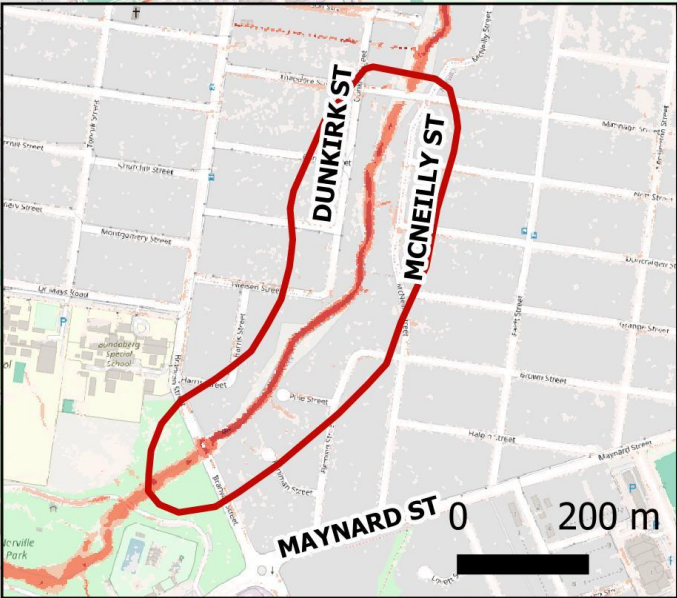
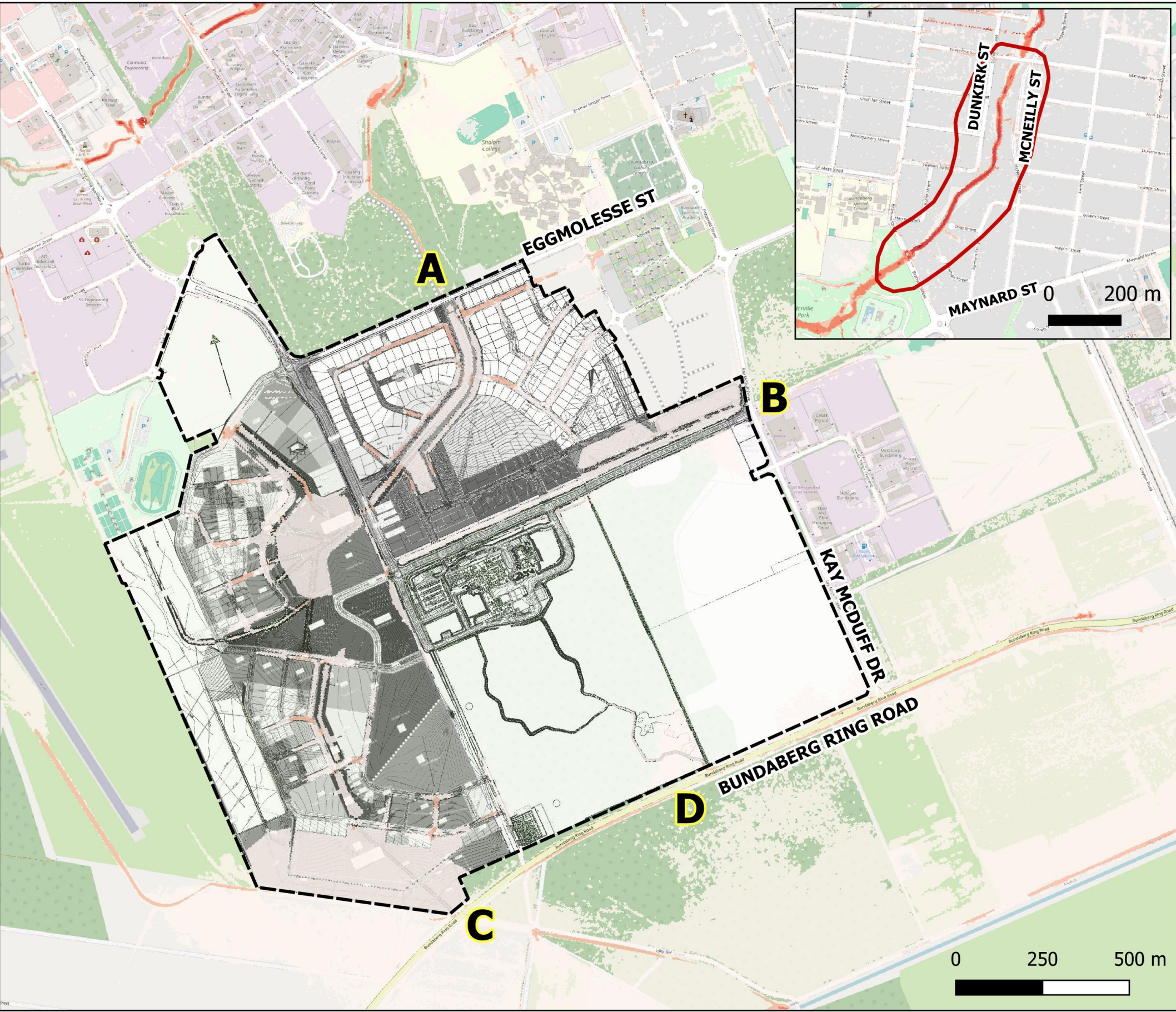
Legend

- Precinct Boundary
- Location E
- Flood Level (mAHd)
- Flood Depths (m)
 - 0.05 to 0.15
 - 0.15 to 0.3
 - 0.3 to 0.5
 - 0.5 to 1.0
 - > 1.0



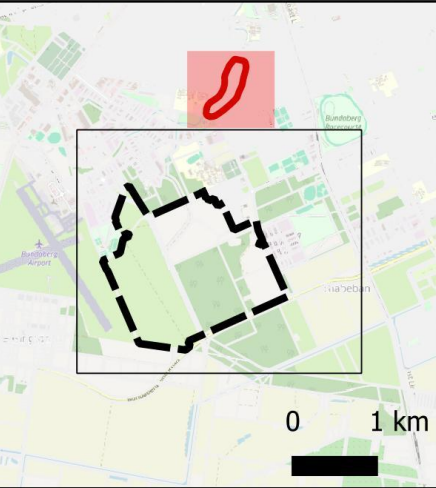
TTW Structural
Civil
Traffic
Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



Peak Flood Velocity

39.4% AEP Event
Post-Development
Scenario



Legend

- Precinct Boundary
- Location E

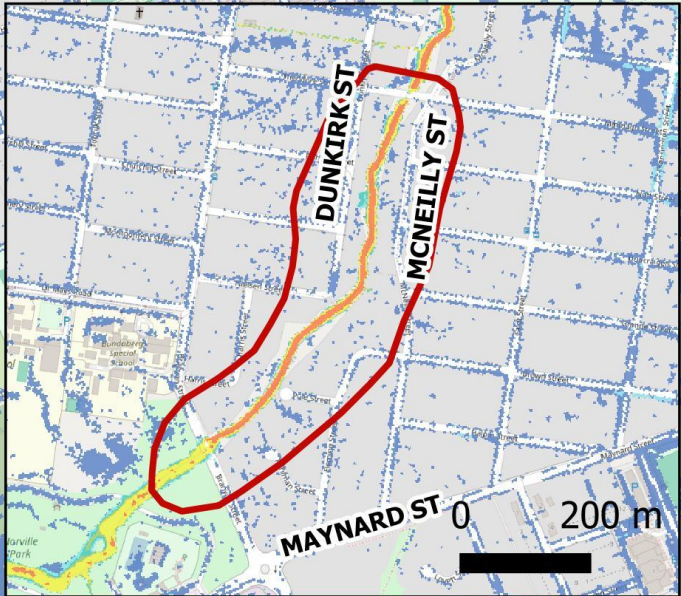
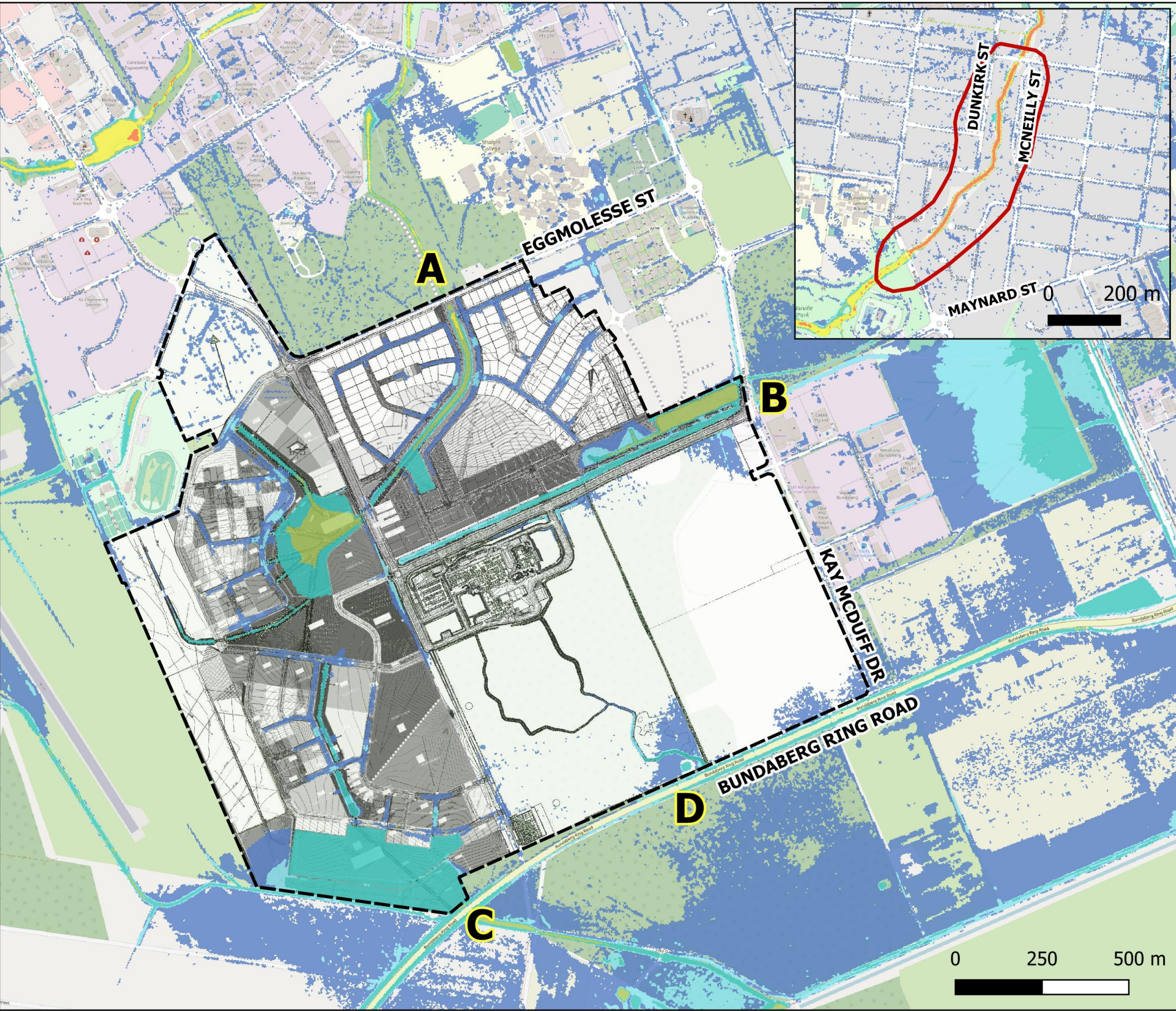
Flood Velocity (m/s)

- ≤ 0.50
- 0.50 - 1.00
- 1.00 - 2.00
- 2.00 - 4.00
- > 4.00



TTW Structural
Civil
Traffic
Façade

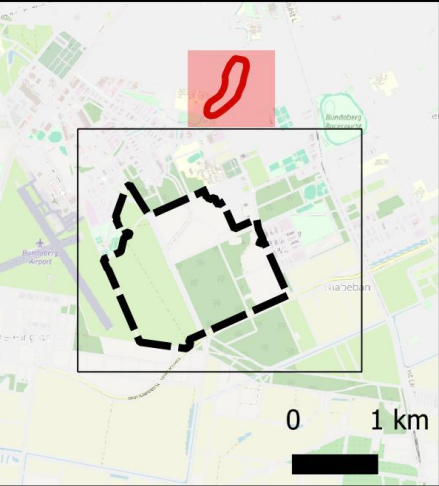
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



Peak Flood Hazard Classification

39.4% AEP Event

Post-Development
Scenario



Legend

 Precinct Boundary

 Location E

Flood Hazard Classification

 H1

 H2

 H3

 H4

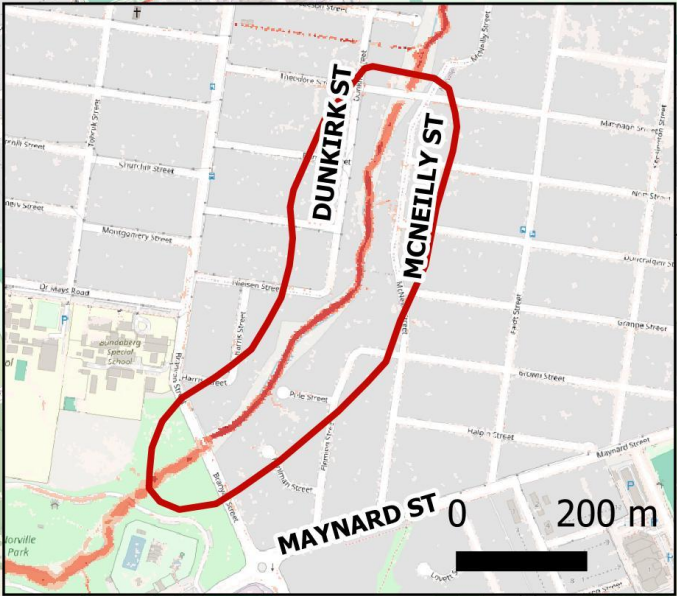
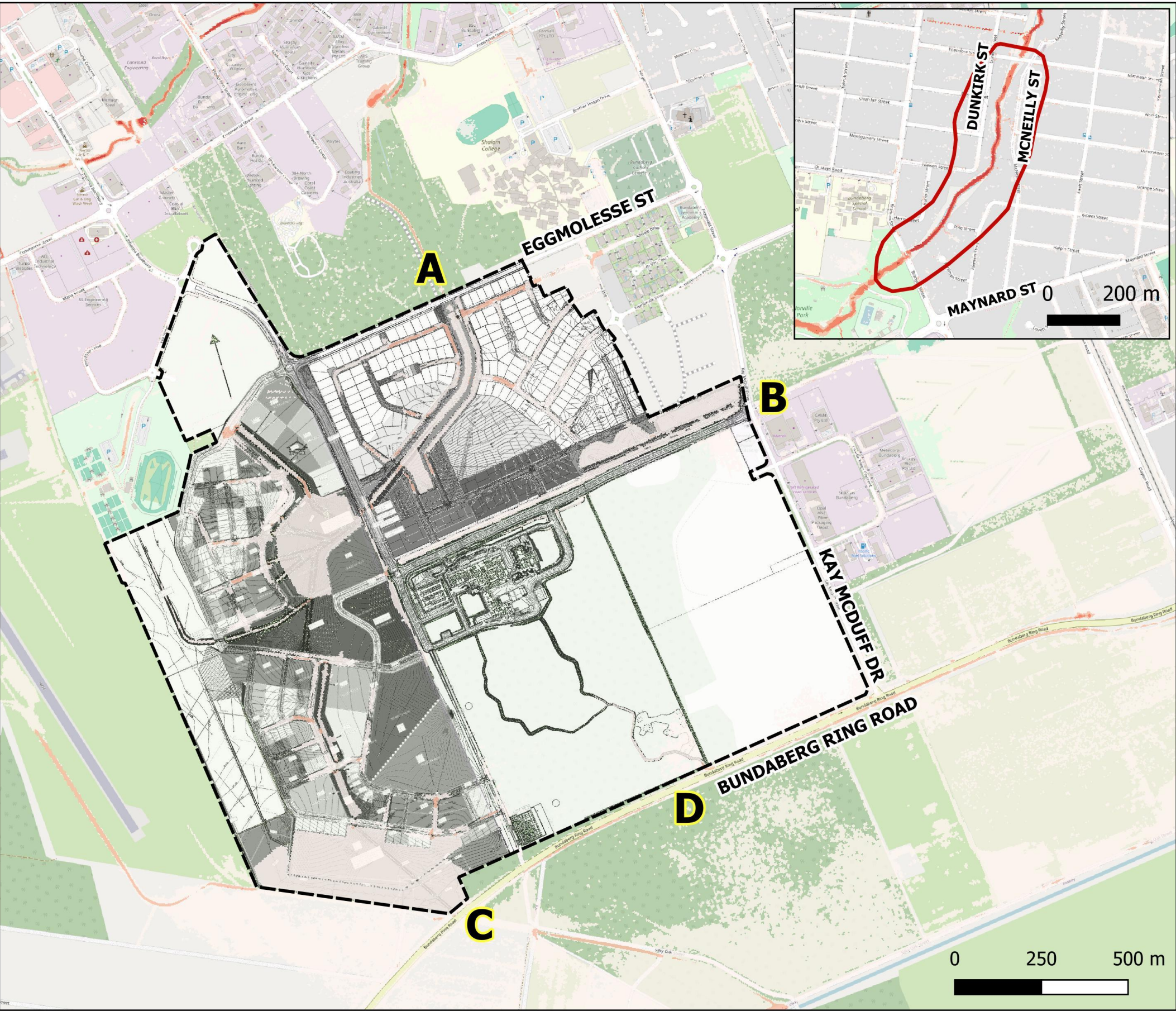
 H5

 H6



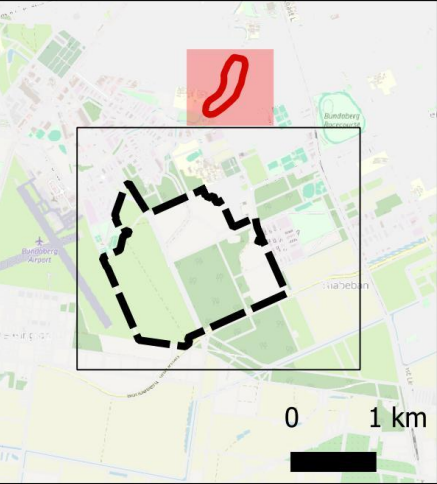
TTW Structural
Civil
Traffic
Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



Peak Flood Velocity

63.2% AEP Event
Post-Development
Scenario



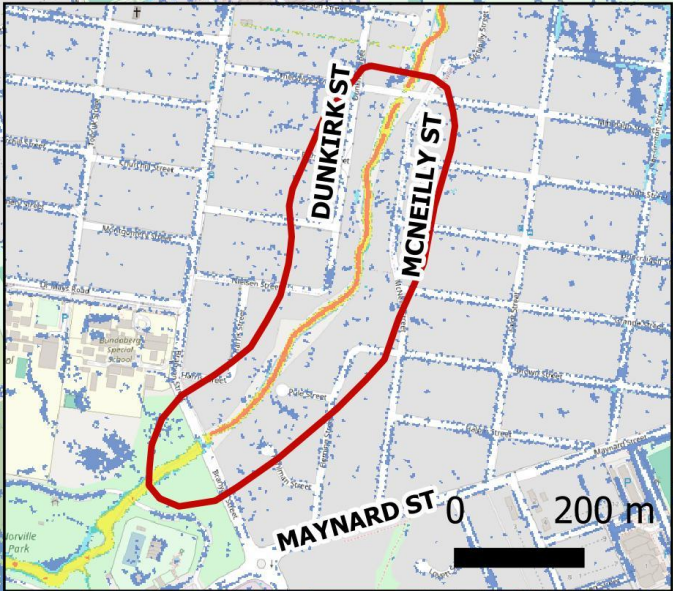
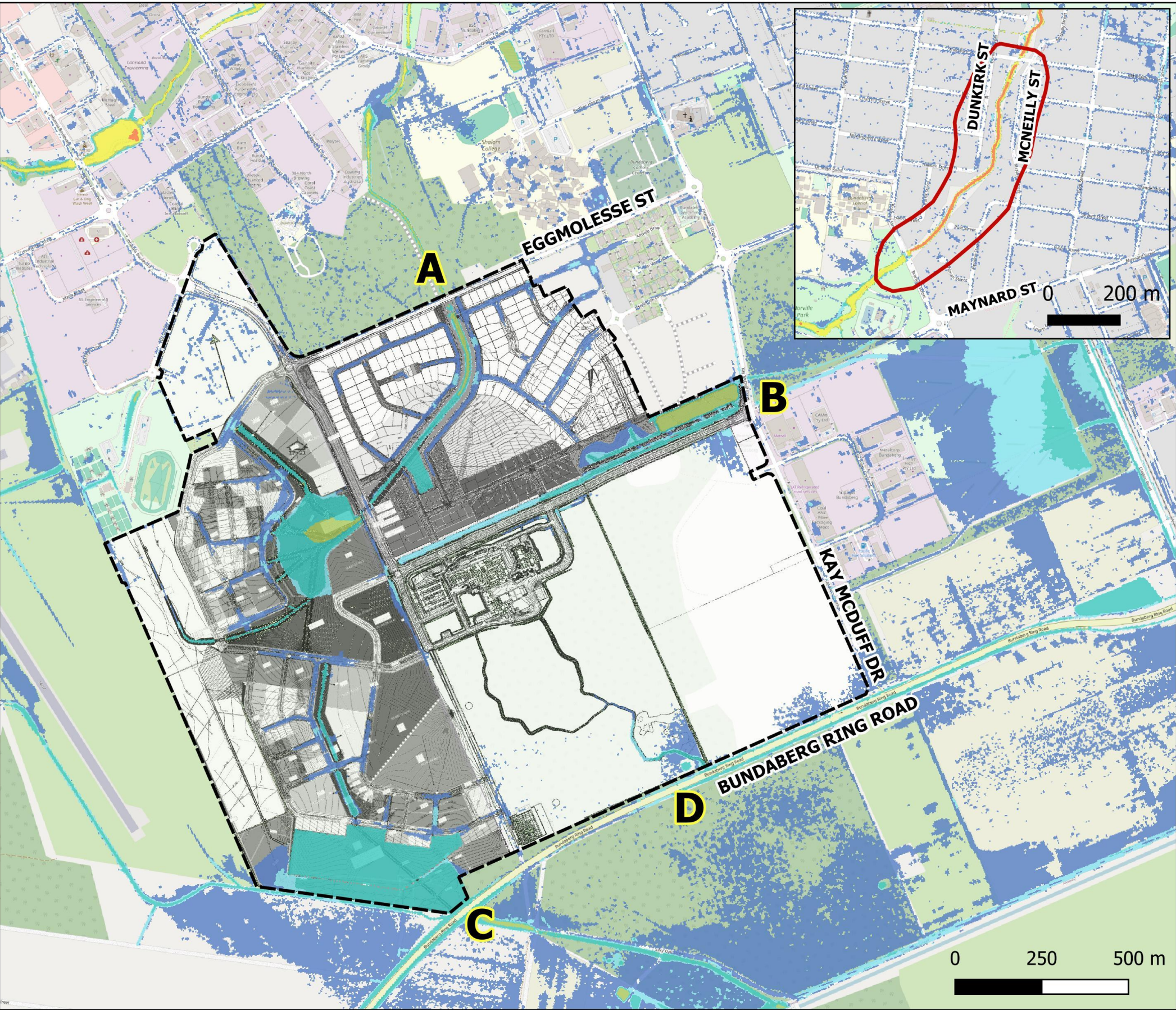
Legend

- Precinct Boundary
- Location E

Flood Velocity (m/s)

- ≤ 0.50
- 0.50 - 1.00
- 1.00 - 2.00
- 2.00 - 4.00
- > 4.00

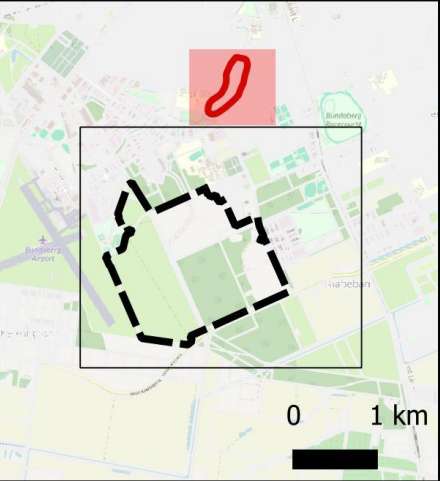




Peak Flood Hazard Classification

63.2% AEP Event

Post-Development Scenario



Legend

Precinct Boundary

Location E

Flood Hazard Classification

H1

H2

H3

H4

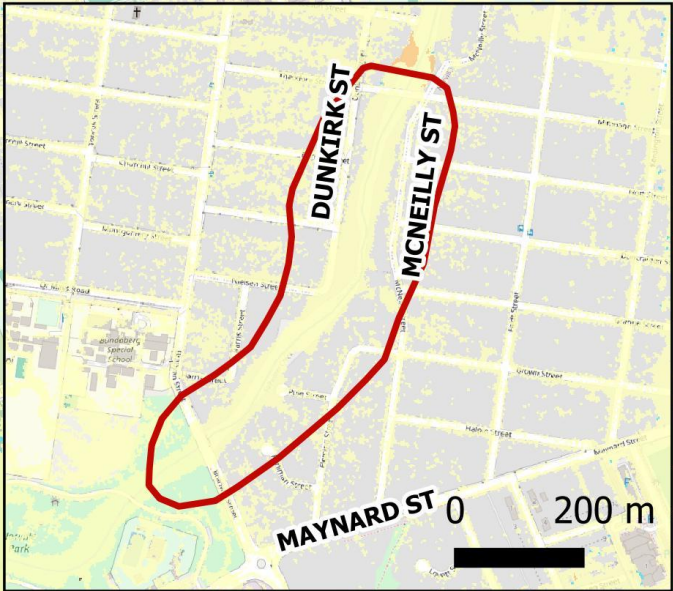
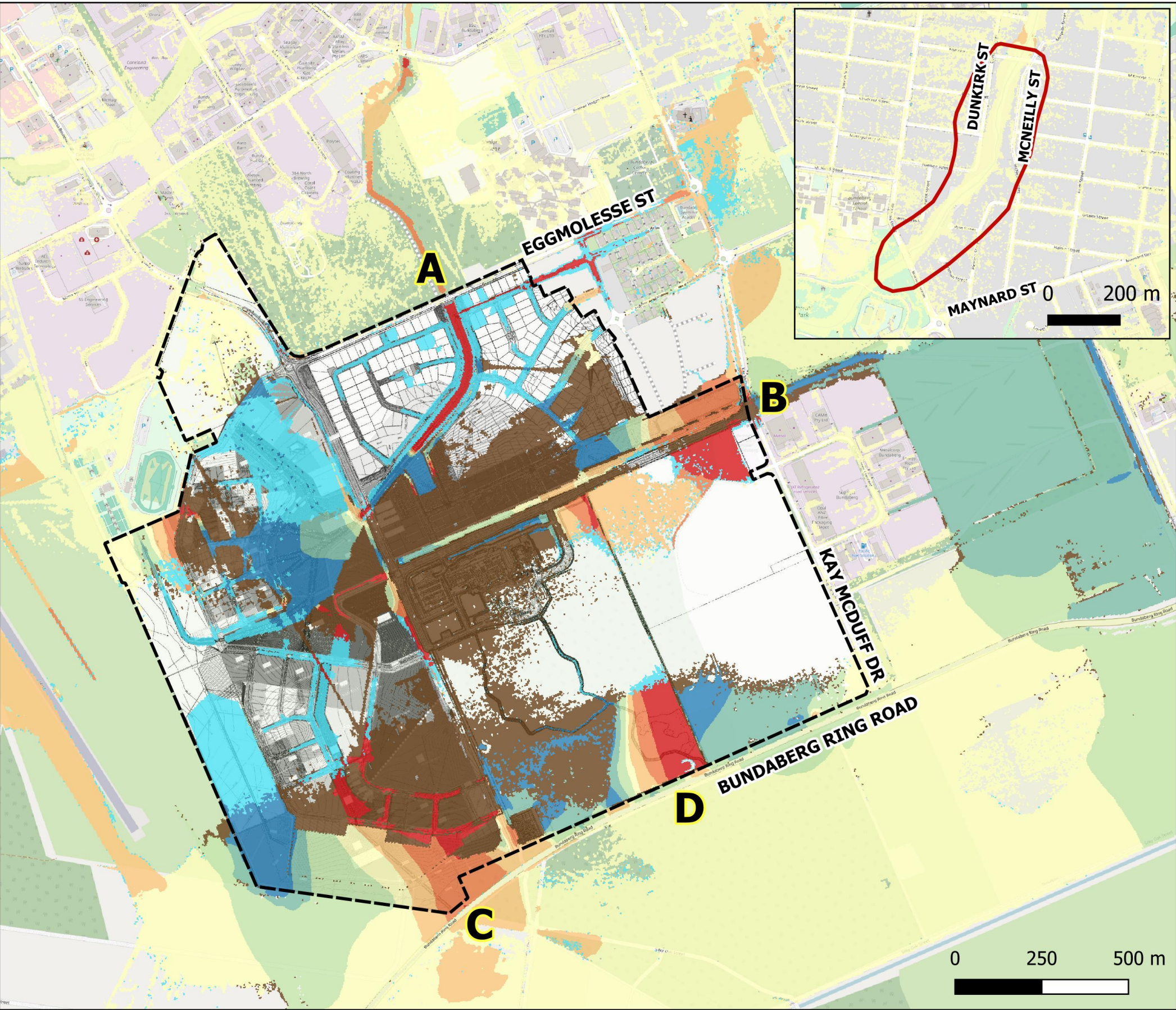
H5

H6



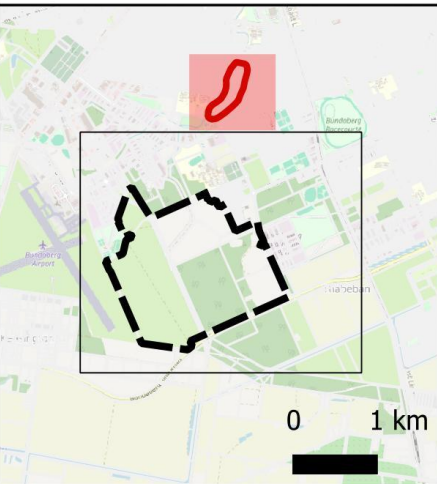
TTW Structural
Civil
Traffic
Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



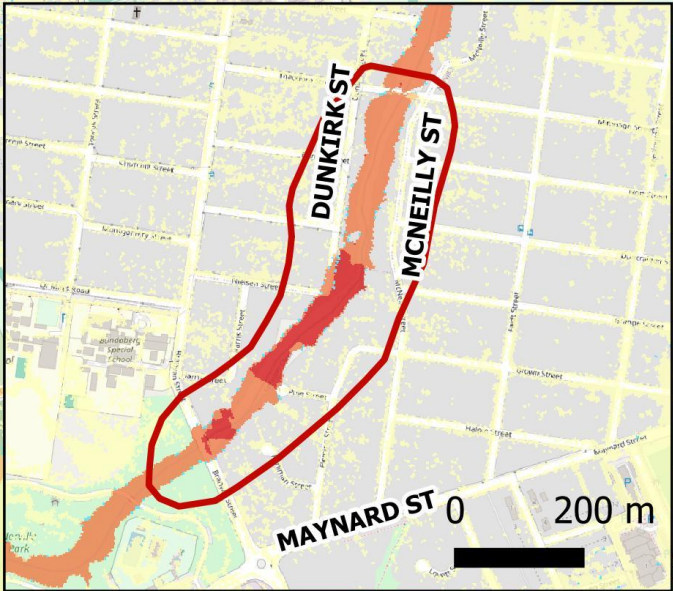
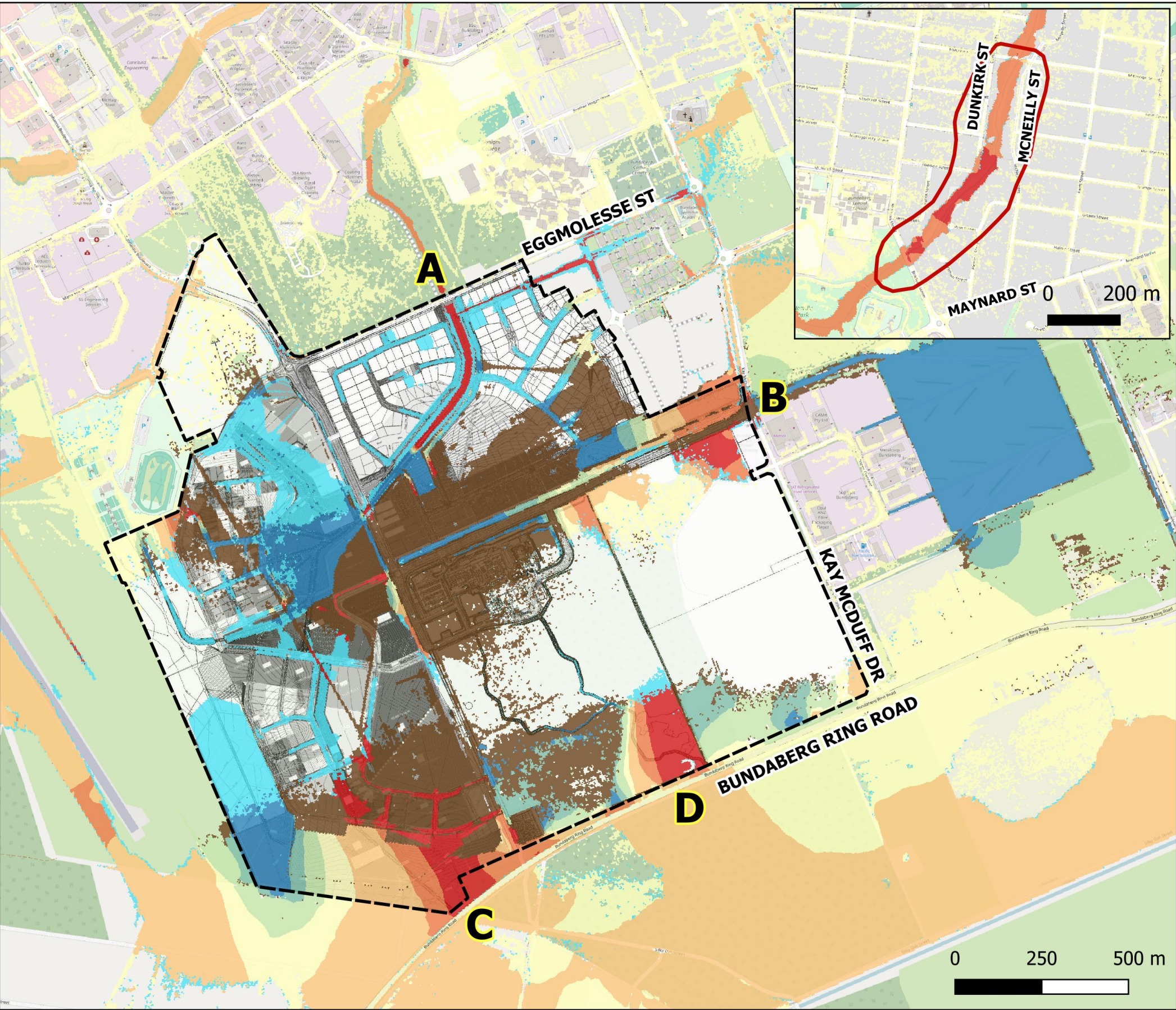
Flood Level Afflux 1% AEP Event +CC

Post vs Existing Flood Level
Afflux



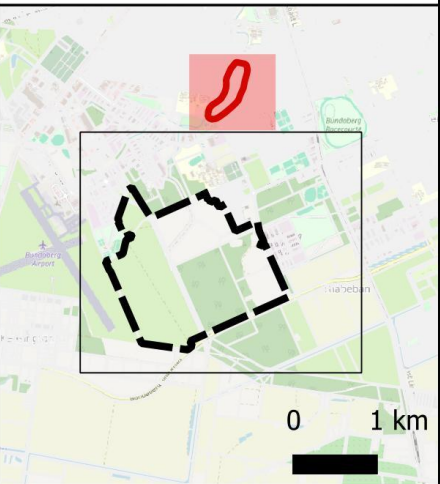
- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - -100mm to -50mm
 - -50mm to -10mm
 - -10mm to $+10\text{mm}$
 - $+20\text{mm}$ to $+50\text{mm}$
 - $+50\text{mm}$ to $+100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry





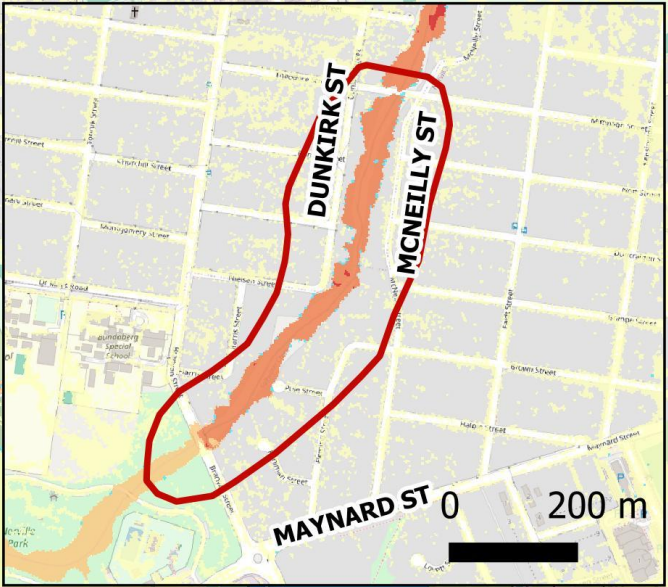
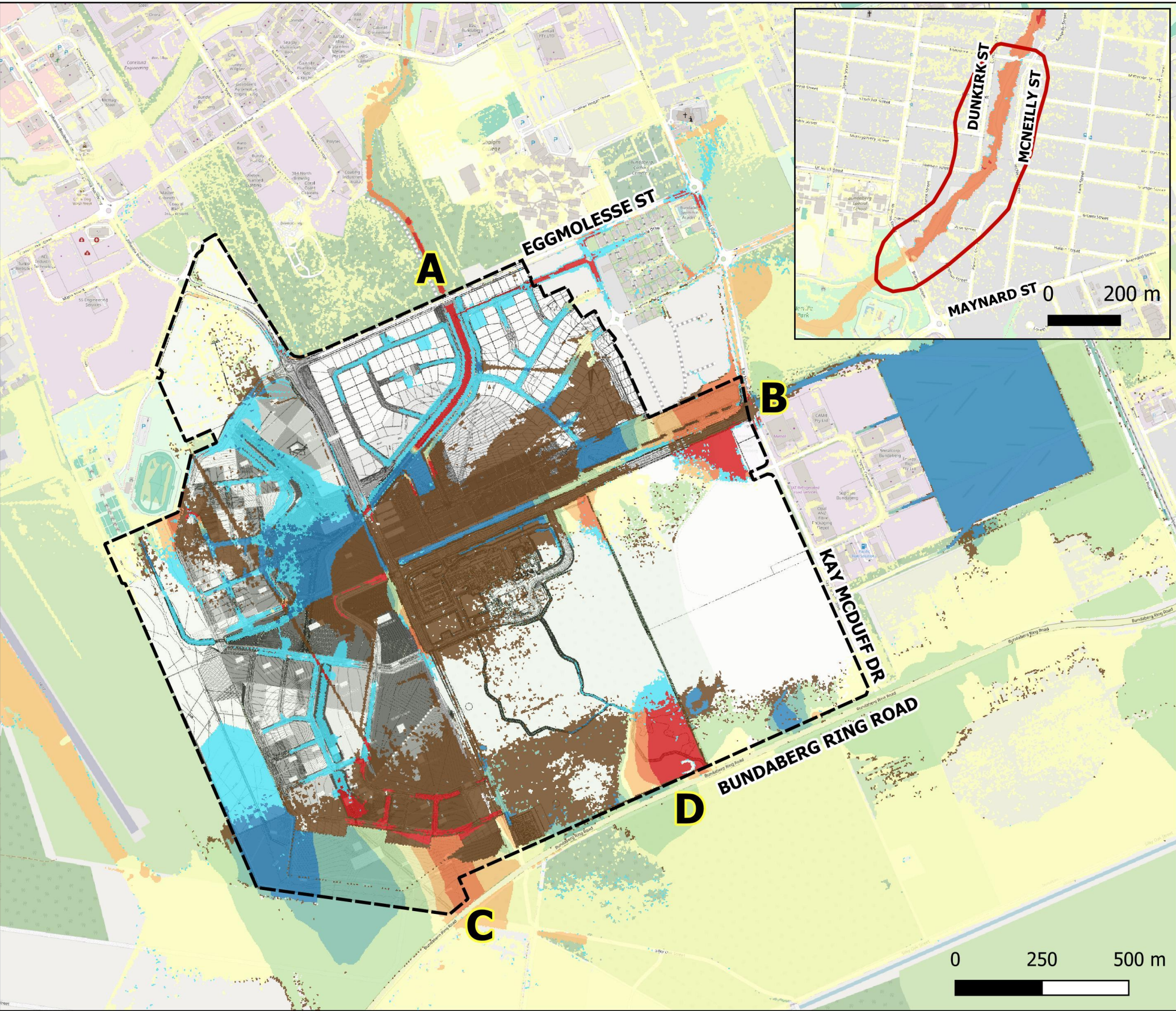
Flood Level Afflux 1% AEP Event

Post vs Existing Flood Level
Afflux

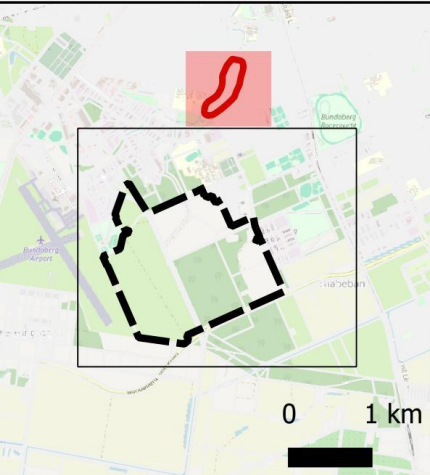


- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - $-100\text{mm to } -50\text{mm}$
 - $-50\text{mm to } -10\text{mm}$
 - $-10\text{mm to } +10\text{mm}$
 - $+20\text{mm to } +50\text{mm}$
 - $+50\text{mm to } +100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry





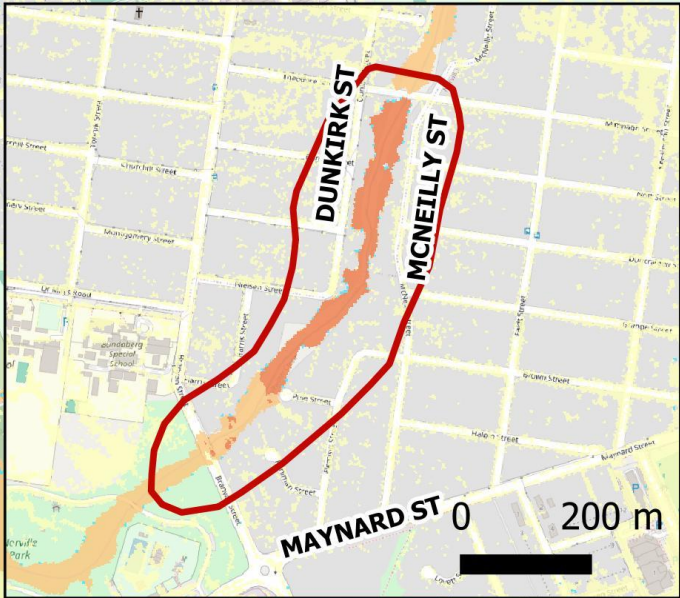
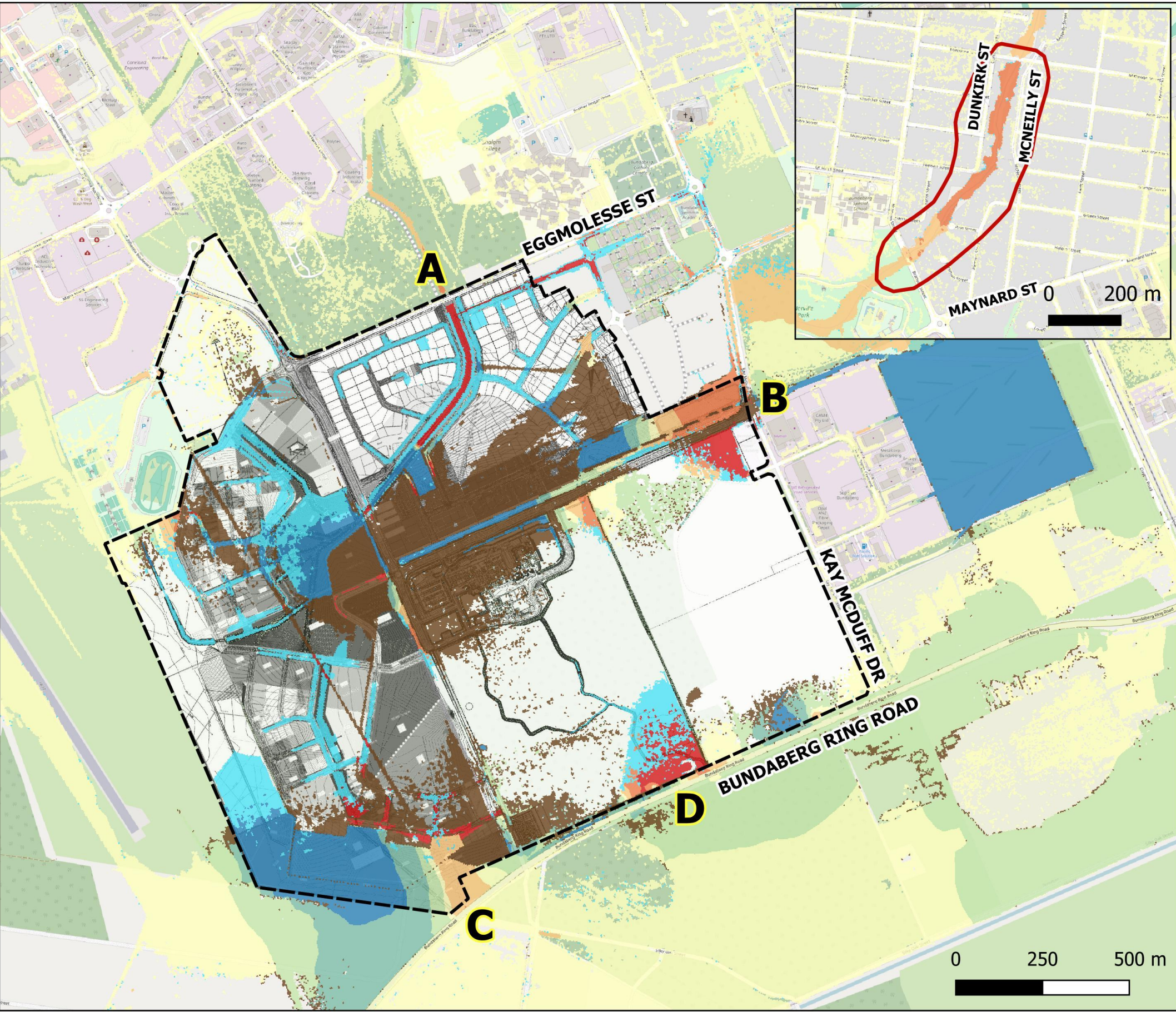
Flood Level Afflux
2% AEP Event
Post vs Existing Flood Level
Afflux



- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - $-100\text{mm to } -50\text{mm}$
 - $-50\text{mm to } -10\text{mm}$
 - $-10\text{mm to } +10\text{mm}$
 - $+20\text{mm to } +50\text{mm}$
 - $+50\text{mm to } +100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry

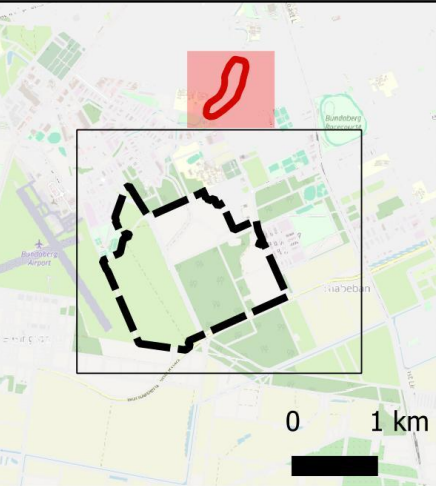
TTW Structural
Civil
Traffic
Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



Flood Level Afflux 5% AEP Event

Post vs Existing Flood Level
Afflux



Legend

- Precinct Boundary
- Location E

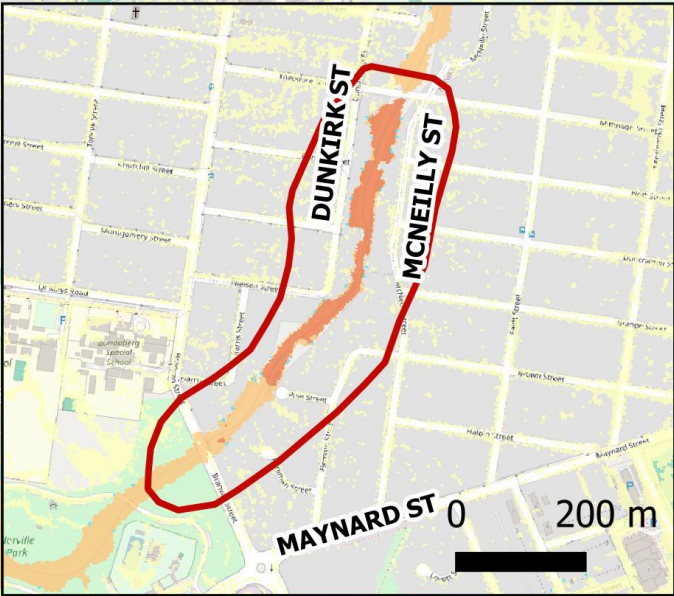
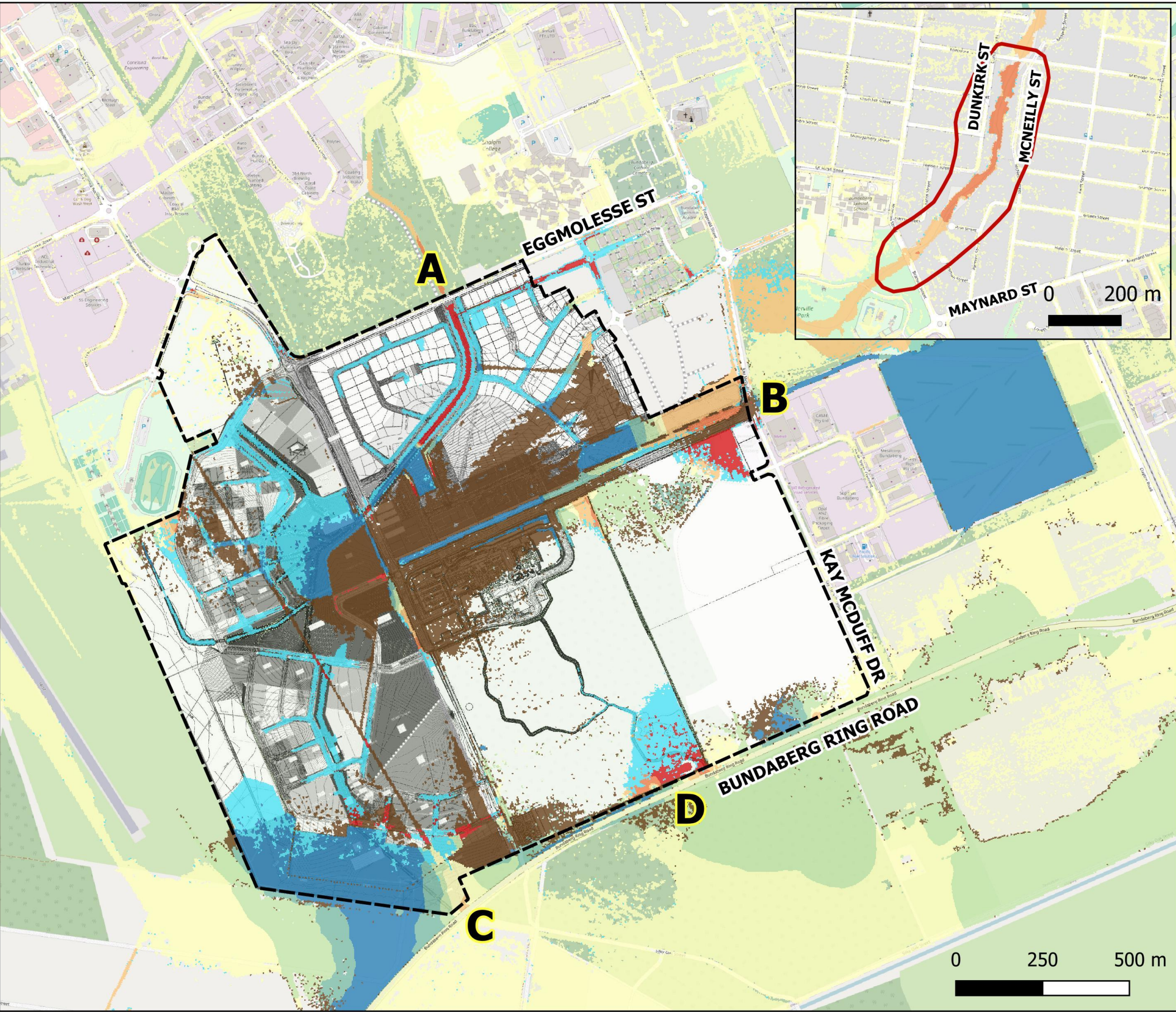
Flood Level Afflux

- $\leq -100\text{mm}$
- -100mm to -50mm
- -50mm to -10mm
- -10mm to $+10\text{mm}$
- $+20\text{mm}$ to $+50\text{mm}$
- $+50\text{mm}$ to $+100\text{mm}$
- $> +100\text{mm}$
- Was dry now wet
- Was wet now dry

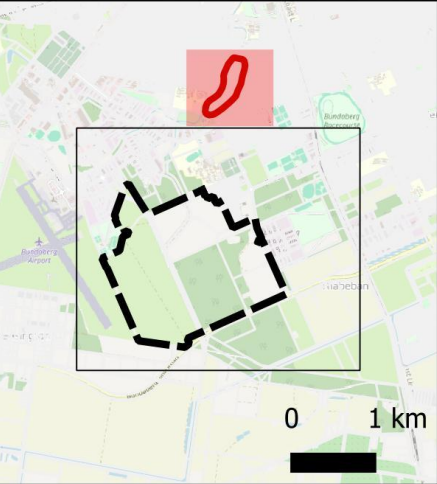


TTW Structural
Civil
Traffic
Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

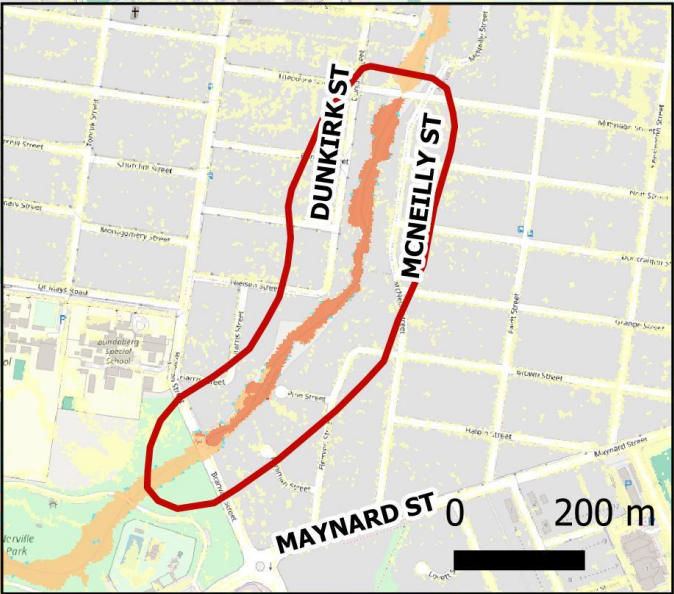
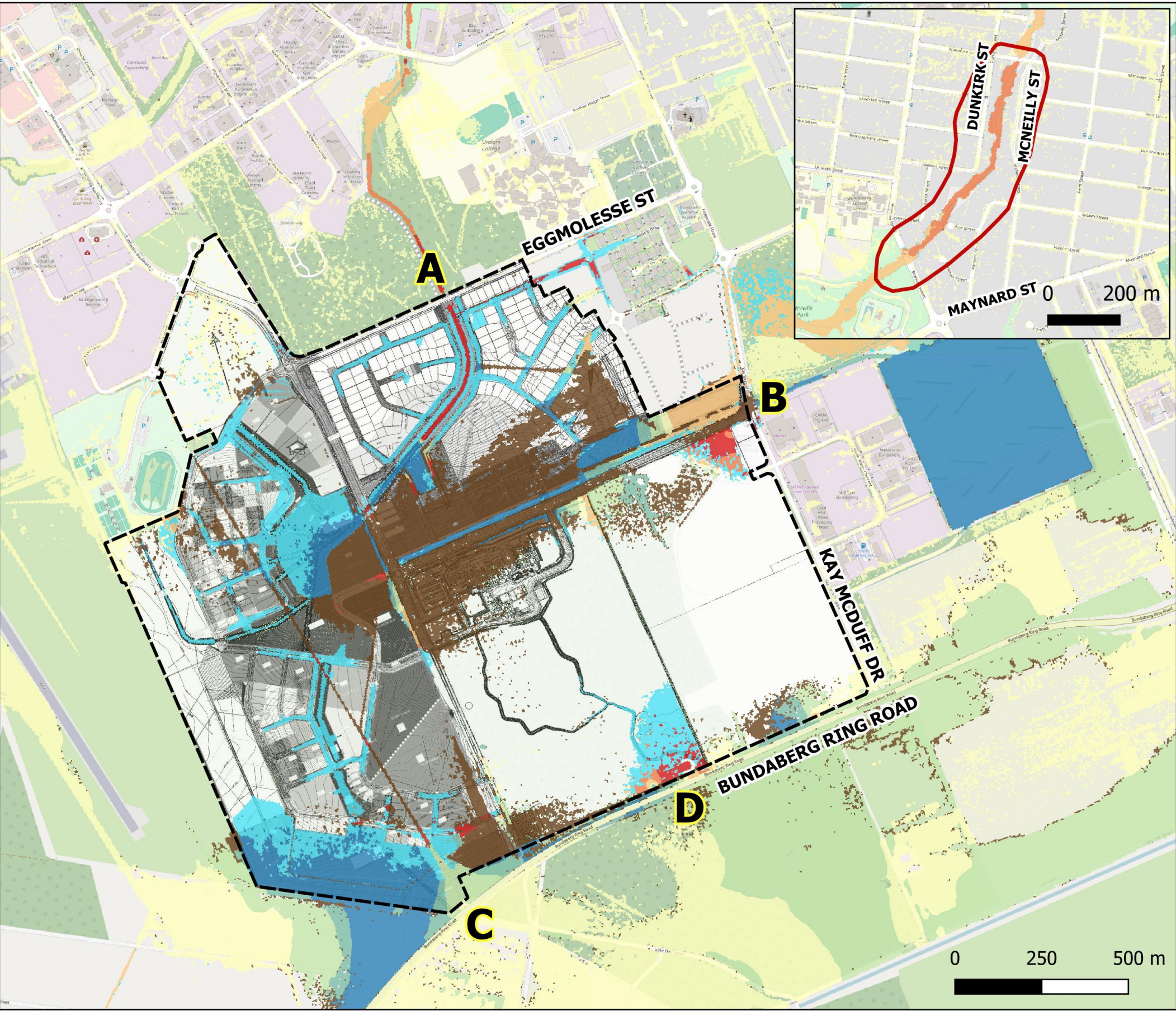


Flood Level Afflux
10% AEP Event
Post vs Existing Flood Level
Afflux

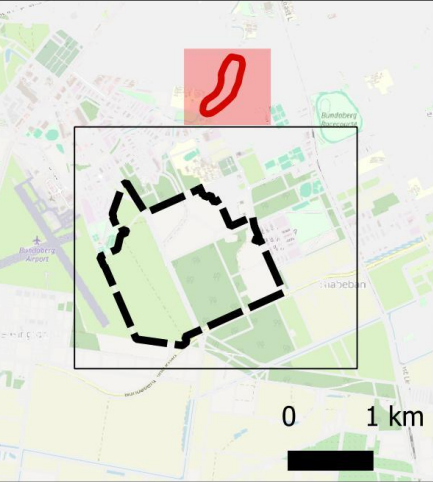


- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - 100mm to -50mm
 - 50mm to -10mm
 - 10mm to +10mm
 - +20mm to +50mm
 - +50mm to +100mm
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry



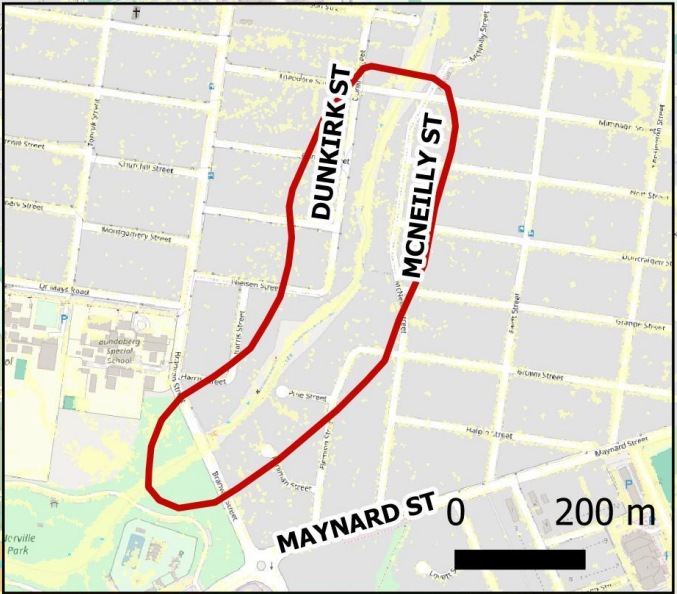
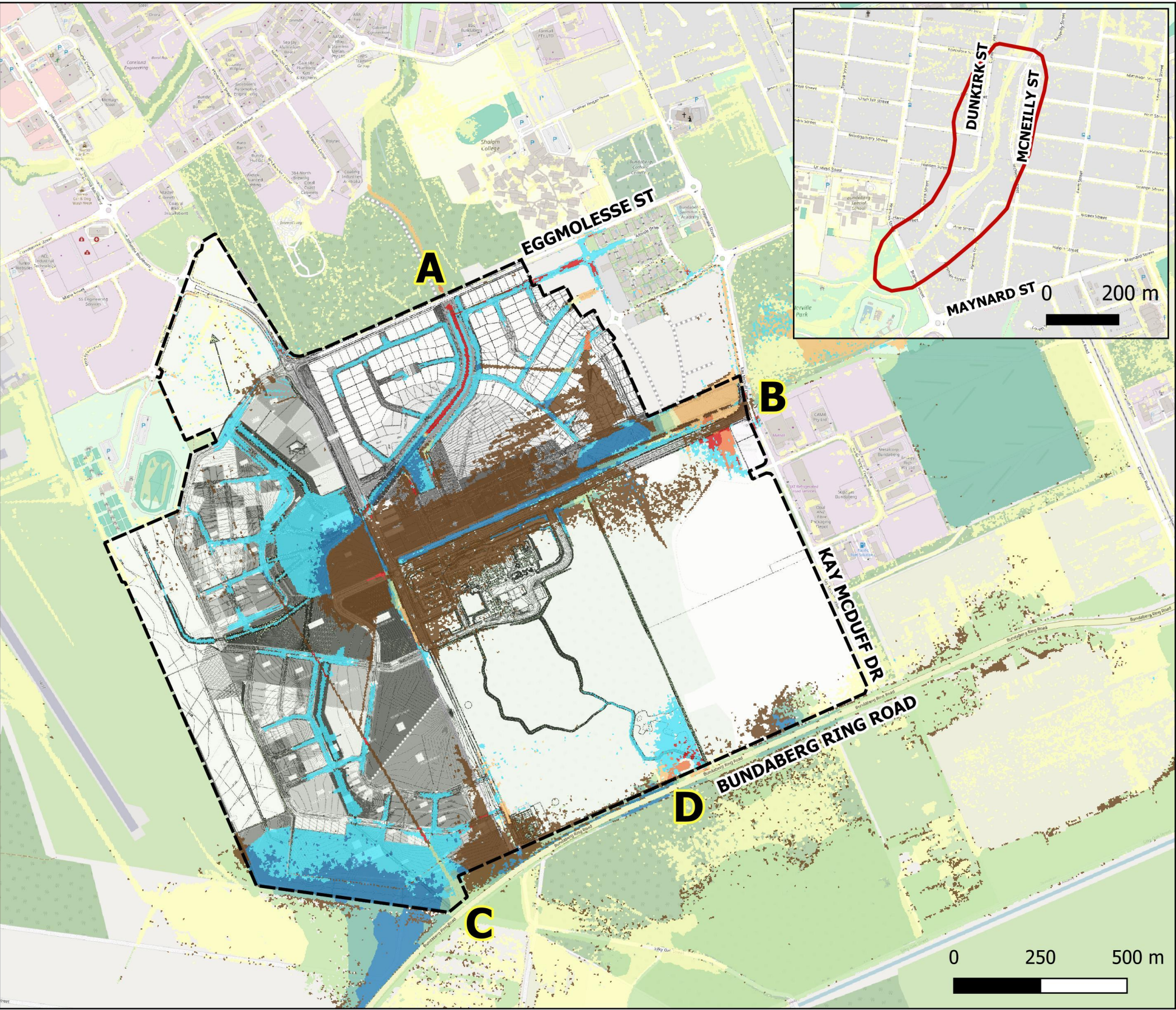


Flood Level Afflux
18.1% AEP Event
Post vs Existing Flood Level
Afflux

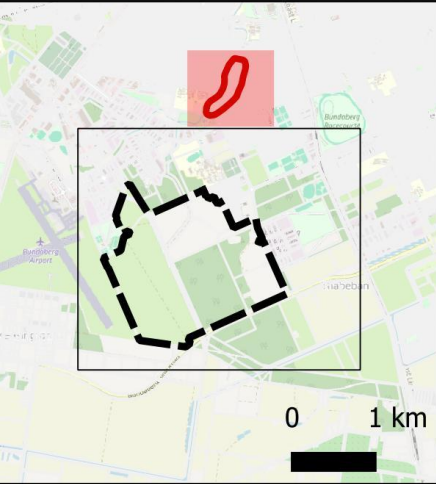


- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - -100mm to -50mm
 - -50mm to -10mm
 - -10mm to $+10\text{mm}$
 - $+20\text{mm}$ to $+50\text{mm}$
 - $+50\text{mm}$ to $+100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry



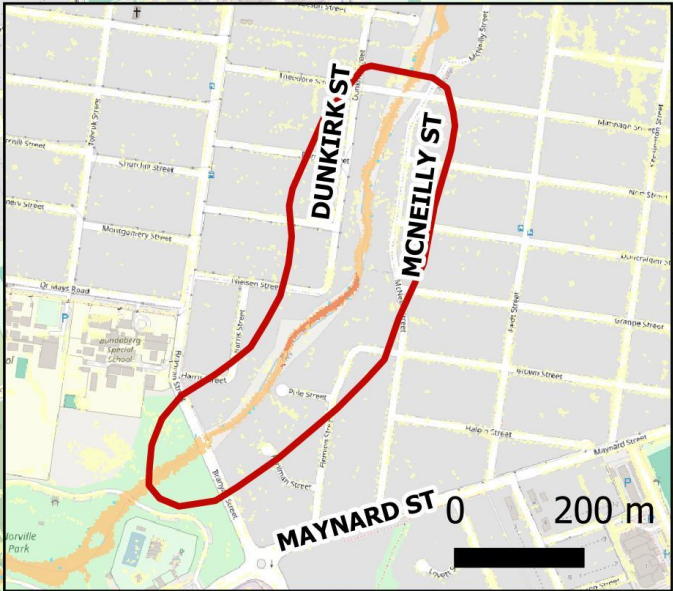
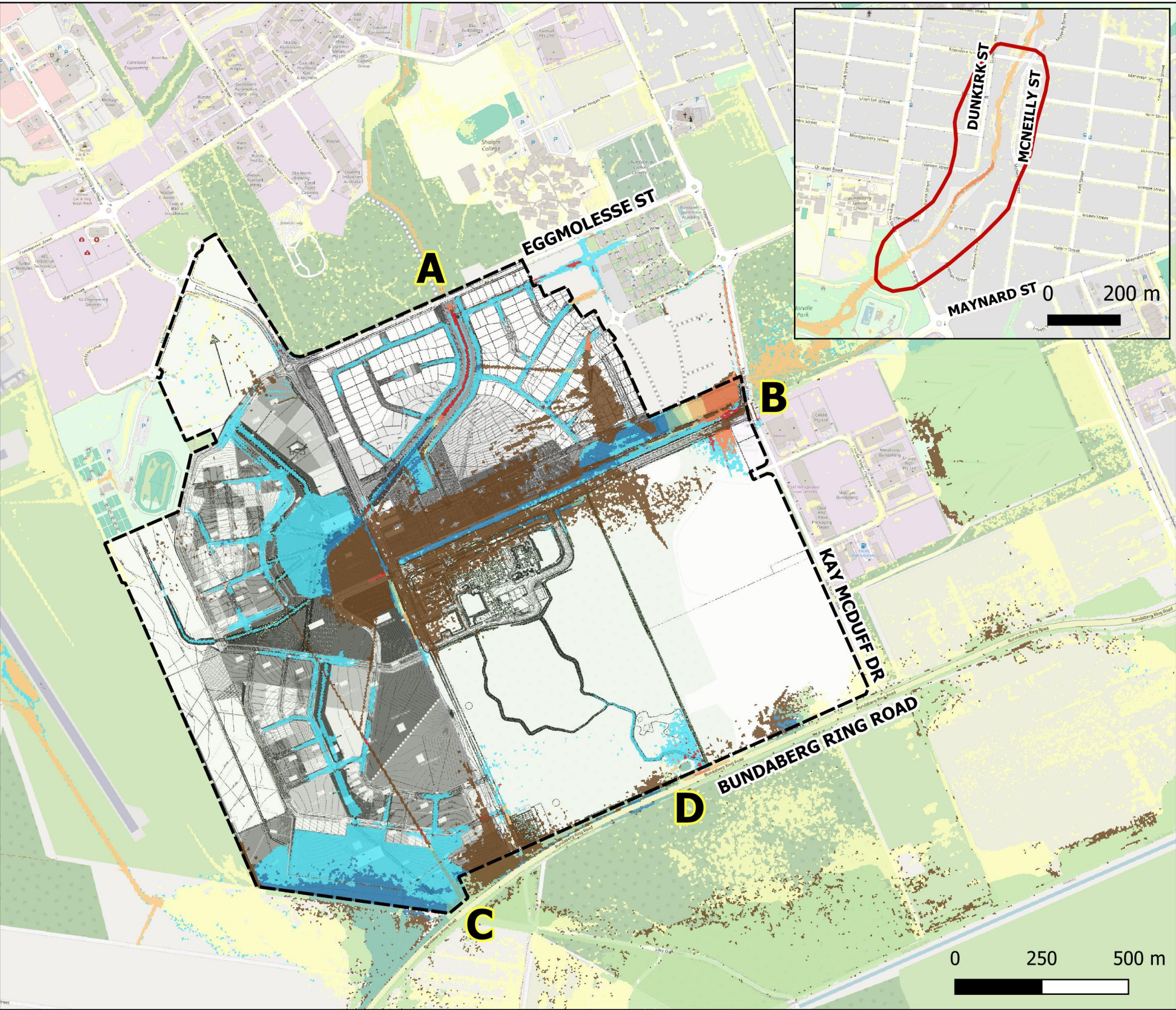


Flood Level Afflux
39.4% AEP Event
Post vs Existing Flood Level
Afflux

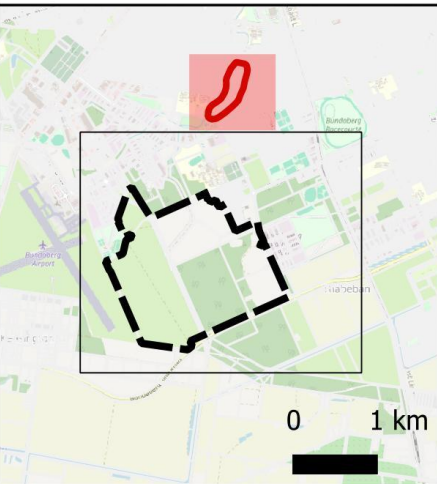


- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - $-100\text{mm to } -50\text{mm}$
 - $-50\text{mm to } -10\text{mm}$
 - $-10\text{mm to } +10\text{mm}$
 - $+20\text{mm to } +50\text{mm}$
 - $+50\text{mm to } +100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry





Flood Level Afflux
63.2% AEP Event
Post vs Existing Flood Level
Afflux



- Legend**
- Precinct Boundary
 - Location E
- Flood Level Afflux**
- $\leq -100\text{mm}$
 - $-100\text{mm to } -50\text{mm}$
 - $-50\text{mm to } -10\text{mm}$
 - $-10\text{mm to } +10\text{mm}$
 - $+20\text{mm to } +50\text{mm}$
 - $+50\text{mm to } +100\text{mm}$
 - $> +100\text{mm}$
 - Was dry now wet
 - Was wet now dry



Appendix H – Pre- and Post Development Peak Flow Summary

Comparison of pre-development and post-development peak flows for each storm duration in the 1% AEP+CC event

Post vs Pre Peak Flow Comparison							Green = Peak									
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)				Point E (Salt_Puie_Line)		
1%CC	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference		Existing Q	Post-Dev Q	Diff Q
30min	14.73	8.87	-5.86	3.88	3.03	-0.85	13.50	6.75	-6.75	1.14	1.12	-0.02		91.87	88.18	-3.69
60min	16.29	14.21	-2.08	6.75	3.68	-3.07	17.56	15.08	-2.48	1.05	1.46	0.41		100.34	98.22	-2.11
90min	16.64	16.83	0.18	7.96	4.40	-3.57	19.36	19.43	0.07	1.01	1.56	0.54		106.13	107.02	0.89
120min	17.32	18.86	1.54	9.47	4.98	-4.49	20.76	22.26	1.50	1.44	1.82	0.38		113.93	115.69	1.76
270min	16.82	18.78	1.97	13.14	4.72	-8.42	22.22	24.52	2.30	2.33	1.99	-0.34		112.98	115.40	2.42
360min	17.18	19.03	1.85	11.79	4.69	-7.11	21.73	24.03	2.30	2.05	2.04	-0.01		125.54	125.39	-0.15

Comparison of pre-development and post-development peak flows for each storm duration in the 1% AEP event

Post vs Pre Peak Flow Comparison				Green = Peak												
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)			
1% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q	
30min	11.81	8.04	-3.76	3.14	2.55	-0.59	10.77	6.28	-4.49	1.04	1.02	-0.02	74.69	71.61	-3.09	
60min	13.46	10.54	-2.92	5.37	3.29	-2.08	15.16	14.37	-0.79	1.04	1.25	0.22	85.29	82.23	-3.05	
90min	13.39	13.08	-0.30	6.35	3.58	-2.77	17.03	18.83	1.80	1.12	1.30	0.18	87.59	86.20	-1.39	
120min	13.90	15.71	1.81	7.62	4.24	-3.38	18.83	21.83	3.00	1.09	1.53	0.45	87.25	90.14	2.89	
270min	13.68	16.73	3.04	10.73	4.19	-6.55	20.91	24.25	3.34	1.64	1.74	0.11	92.02	97.03	5.02	
360min	11.26	15.62	4.36	9.96	3.67	-6.29	19.62	23.62	4.00	1.31	1.53	0.23	84.00	87.52	3.52	

Comparison of pre-development and post-development peak flows for each storm duration in the 2% AEP event

Post vs Pre Peak Flow Comparison				Green = Peak														
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)					
2% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q			
30min	9.76	7.04	-2.72	2.68	2.30	-0.39	8.67	3.80	-4.88	0.98	1.04	0.06	63.89	61.78	-2.11			
60min	11.81	8.72	-3.09	4.45	3.05	-1.40	13.23	9.32	-3.91	0.99	1.14	0.15	76.40	74.15	-2.25			
90min	11.68	10.54	-1.14	5.42	3.25	-2.18	15.35	14.48	-0.87	0.98	1.16	0.17	79.08	77.32	-1.76			
120min	11.60	12.73	1.13	6.44	3.74	-2.71	17.08	18.17	1.09	0.99	1.17	0.18	78.56	80.53	1.97			
270min	11.76	14.53	2.77	9.18	3.79	-5.40	19.70	21.44	1.73	1.26	1.28	0.03	73.98	77.14	3.16			
360min	11.69	15.12	3.43	8.33	3.81	-4.52	18.79	20.06	1.27	0.97	1.34	0.37	77.10	79.24	2.14			

Comparison of pre-development and post-development peak flows for each storm duration in the 5% AEP event

Post vs Pre Peak Flow Comparison						Green = Peak									
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)		
5% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q
30min	7.46	5.13	-2.33	2.13	1.87	-0.27	6.27	3.07	-3.20	0.92	1.01	0.09	52.93	51.95	-0.99
60min	9.01	7.88	-1.13	3.07	2.62	-0.45	10.21	5.64	-4.57	0.98	1.28	0.30	60.54	60.32	-0.22
120min	9.93	9.23	-0.71	5.05	3.12	-1.93	14.64	14.81	0.17	0.99	1.06	0.07	71.99	71.47	-0.52
180min	10.74	11.54	0.80	6.73	3.45	-3.28	17.27	17.62	0.35	1.20	1.18	-0.02	74.15	75.90	1.75
270min	8.83	12.21	3.38	6.97	3.36	-3.61	16.57	17.55	0.98	1.13	1.34	0.21	65.35	68.02	2.67
360min	8.32	11.80	3.49	7.45	3.28	-4.17	17.13	18.12	0.99	1.04	1.15	0.12	70.78	71.53	0.75

Comparison of pre-development and post-development peak flows for each storm duration in the 10% AEP event

Post vs Pre Peak Flow Comparison						Green = Peak										
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)			
10% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q	
30min	5.96	3.93	-2.03	1.78	1.55	-0.24	5.04	2.55	-2.49	0.86	0.85	-0.01	43.77	43.19	-0.58	
60min	7.34	6.20	-1.14	2.40	2.29	-0.11	8.25	3.55	-4.70	0.99	1.07	0.08	50.66	50.40	-0.25	
120min	8.15	7.92	-0.23	3.97	2.91	-1.06	12.22	11.52	-0.70	0.95	1.08	0.13	59.99	60.33	0.34	
180min	8.44	9.01	0.56	5.44	3.16	-2.28	15.06	14.64	-0.42	1.03	1.15	0.11	65.39	66.90	1.51	
270min	7.29	9.79	2.49	5.67	3.12	-2.55	14.60	14.98	0.38	1.07	1.18	0.11	57.06	59.82	2.76	
360min	6.90	10.00	3.10	6.17	3.15	-3.02	15.19	15.38	0.19	1.01	1.07	0.06	61.45	62.78	1.34	

Comparison of pre-development and post-development peak flows for each storm duration in the 18.1% AEP event

Post vs Pre Peak Flow Comparison						Green = Peak										
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)			
18.1% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q	
30min	4.51	3.46	-1.05	1.39	1.23	-0.16	3.98	2.06	-1.92	0.79	0.84	0.05	36.58	37.03	0.45	
90min	5.89	5.62	-0.28	2.44	2.33	-0.11	8.29	4.86	-3.44	1.09	1.07	-0.02	47.40	47.81	0.41	
180min	6.77	7.77	1.00	4.31	2.98	-1.33	12.53	11.05	-1.48	1.04	1.10	0.06	59.96	61.54	1.59	
270min	6.07	8.14	2.08	4.40	3.04	-1.36	12.30	12.09	-0.21	0.99	0.99	0.00	50.97	53.02	2.05	
360min	6.45	8.36	1.91	5.03	3.01	-2.02	13.55	12.96	-0.60	0.96	1.05	0.09	54.97	56.83	1.87	
540min	5.21	8.02	2.81	4.77	2.76	-2.00	11.84	11.76	-0.08	1.02	1.03	0.00	44.44	47.76	3.32	

Comparison of pre-development and post-development peak flows for each storm duration in the 39.4% AEP event

Post vs Pre Peak Flow Comparison				Green = Peak														
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)					
39.4% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q			
30min	2.94	3.16	0.22	0.88	0.80	-0.08	2.28	1.24	-1.03	0.66	0.77	0.11	26.99	28.47	1.48			
90min	4.28	3.61	-0.67	1.73	1.77	0.04	5.86	2.19	-3.67	0.99	0.94	-0.05	35.59	35.65	0.06			
180min	4.28	4.17	-0.11	2.45	2.36	-0.09	8.24	6.34	-1.91	1.15	0.89	-0.26	45.86	46.13	0.27			
270min	4.07	4.20	0.13	2.80	2.51	-0.28	9.02	8.11	-0.90	0.98	0.93	-0.05	40.83	40.92	0.09			
360min	4.15	4.88	0.73	3.29	2.51	-0.78	9.92	8.82	-1.10	1.02	0.95	-0.07	43.21	43.54	0.32			
540min	2.97	3.50	0.54	2.69	1.90	-0.79	7.31	7.58	0.27	0.88	0.94	0.06	24.95	26.06	1.11			

Comparison of pre-development and post-development peak flows for each storm duration in the 63.2% AEP event

Post vs Pre Peak Flow Comparison				Green = Peak																	
Post	Point A (Culv0211)			Point B (HP5)			Point C (Culv0445)			Point D (Culv0600)			Point E (Salt_Puie_Line)								
63.2% AEP	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing	Post-Dev	Difference	Existing Q	Post-Dev Q	Diff Q						
30min	1.70	2.71	1.01	0.49	0.38	-0.11	1.37	0.61	-0.76	0.60	0.55	-0.05	16.17	19.73	3.56						
90min	2.96	3.16	0.20	1.17	1.23	0.06	3.95	1.25	-2.70	0.77	0.78	0.01	23.57	23.88	0.31						
180min	3.19	3.34	0.15	1.61	1.78	0.17	5.73	3.74	-2.00	0.98	0.77	-0.21	34.47	35.40	0.93						
270min	2.77	3.27	0.51	1.96	1.94	-0.02	6.57	5.21	-1.36	0.76	0.97	0.21	31.35	31.93	0.58						
360min	2.30	3.09	0.79	2.10	1.73	-0.37	6.89	5.86	-1.03	0.72	0.81	0.09	23.37	23.85	0.49						
540min	2.48	3.32	0.84	1.84	1.60	-0.24	5.83	5.26	-0.57	0.85	0.85	0.00	28.84	29.36	0.52						