



## DAVISTOWN CATCHMENT FLOOD STUDY VOLUME 2 - FIGURES



**Cardno Lawson Treloar Pty Ltd**

ABN 55 001 882 873

Level 2, 910 Pacific Highway

Gordon New South Wales

2072 Australia

**Telephone: 02 9499 3000**

Facsimile: 02 9499 3033

International: +61 2 9499 3000

cltnsw@cardno.com.au

www.cardno.com.au

**Report Copy No. ....**

Document Control						
Version	Status	Date	Author		Reviewer	
			Name	Initials	Name	Initials
1	Preliminary	11 Feb 2009	Andrew Reid	AR		
2	Draft for Exhibition	15 May 2009	Andrew Reid	AR		
3	Revised Draft	13 July 2009	Andrew Reid	AR		
4	Exhibition Draft	14 August 2009	Andrew Reid	AR	Brett Phillips	BCP
5	Final	9 December 2009	Andrew Reid	AR		
6	Final Printing	25 January 2010	Andrew Reid	AR	Brett Phillips	BCP

"This document is produced by Cardno Lawson Treloar Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Lawson Treloar Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

It is the responsibility of the reader to verify the currency of the version number of this report. All subsequent releases will be made directly to the Client.

**Uncontrolled Document**

**LIST OF FIGURES**

– Some figures are included in Volume 1 Report.

- Figure 1.1 Site Locality [PRINTED IN VOLUME 1]  
Figure 2.1 Floodplain Management Process [PRINTED IN VOLUME 1]  
Figure 4.1 Questionnaire Responses  
Figure 5.1 Model Extent  
Figure 5.2 Pipeline Layout  
Figure 5.3 Model Elevations  
Figure 5.4 Roughness Layout  
Figure 5.5 Rainfall Stations Locations [PRINTED IN VOLUME 1]  
Figure 5.6 Kincumber Rainfall Depth per two-minutes [PRINTED IN VOLUME 1]  
Figure 5.7 Koolewong Water Level Time Series [PRINTED IN VOLUME 1]  
Figure 5.8 June 07 Peak Depth  
Figure 6.1 Sensitivity Reference Locations  
Figure 6.2 PMF Critical Duration  
Figure 6.3 1% AEP Critical Duration  
Figure 6.4 20% AEP Critical Duration  
Figure 6.5 PMF Peak Extent  
Figure 6.6 0.5% AEP Peak Extent  
Figure 6.7 1% AEP Peak Extent  
Figure 6.8 2% AEP Peak Extent  
Figure 6.9 5% AEP Peak Extent  
Figure 6.10 10% AEP Peak Extent  
Figure 6.11 20% AEP Peak Extent  
Figure 6.12 50% AEP Peak Extent  
Figure 6.13 100% AEP Peak Extent  
Figure 6.14 PMF Peak Water Level  
Figure 6.15 0.5% AEP Peak Water Level  
Figure 6.16 1% AEP Peak Water Level  
Figure 6.17 2% AEP Peak Water Level  
Figure 6.18 5% AEP Peak Water Level  
Figure 6.19 10% AEP Peak Water Level  
Figure 6.20 20% AEP Peak Water Level  
Figure 6.21 50% AEP Peak Water Level  
Figure 6.22 100% AEP Peak Water Level  
Figure 6.23 PMF Peak Depth

---

Figure 6.24	0.5% AEP Peak Depth
Figure 6.25	1% AEP Peak Depth
Figure 6.26	2% AEP Peak Depth
Figure 6.27	5% AEP Peak Depth
Figure 6.28	10% AEP Peak Depth
Figure 6.29	20% AEP Peak Depth
Figure 6.30	50% AEP Peak Depth
Figure 6.31	100% AEP Peak Depth
Figure 6.32	PMF Peak Speed
Figure 6.33	0.5% AEP Peak Speed
Figure 6.34	1% AEP Peak Speed
Figure 6.35	2% AEP Peak Speed
Figure 6.36	5% AEP Peak Speed
Figure 6.37	10% AEP Peak Speed
Figure 6.38	20% AEP Peak Speed
Figure 6.39	50% AEP Peak Speed
Figure 6.40	100% AEP Peak Speed
Figure 7.1	Sensitivity Blockage Layout
Figure 8.1	Provisional Hazard Classification [PRINTED IN VOLUME 1]
Figure 8.2	PMF Hazard
Figure 8.3	1% AEP Hazard
Figure 8.4	5% AEP Hazard
Figure 8.5	20% AEP Hazard
Figure 9.1	PMF Hydraulic Categories
Figure 9.2	1% AEP Hydraulic Categories
Figure 9.3	5% AEP Hydraulic Categories
Figure 9.4	20% AEP Hydraulic Categories
Figure 10.1	Residential Flood Damage Curve [PRINTED IN VOLUME 1]
Figure 11.1	Peak Depth Climate Change– 0.2m Estuary Level Rise and Additional Rainfall
Figure 11.2	Peak Depth Climate Change– 0.91m Estuary Level Rise and Additional Rainfall

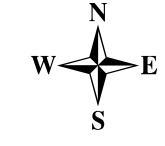
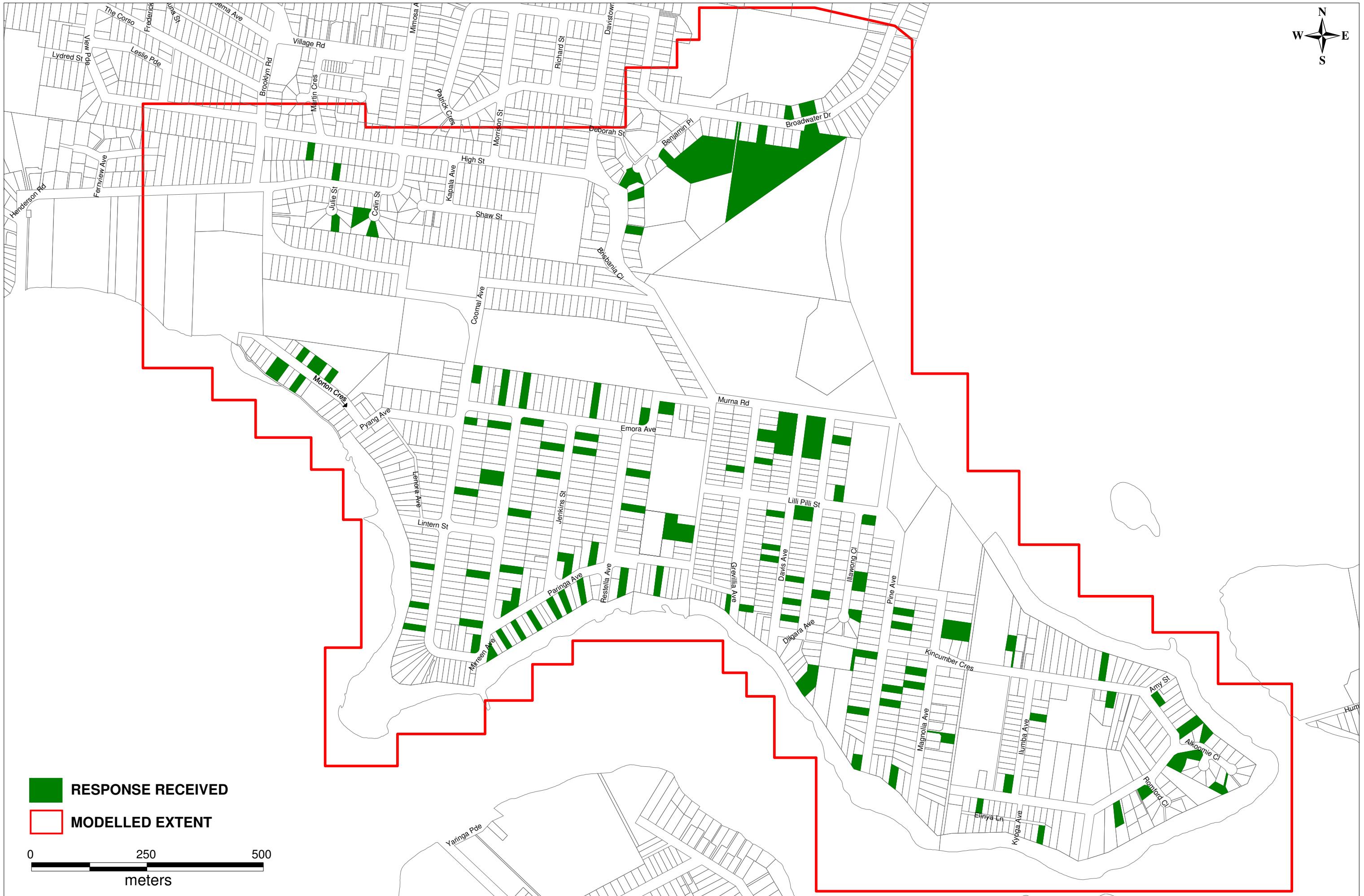
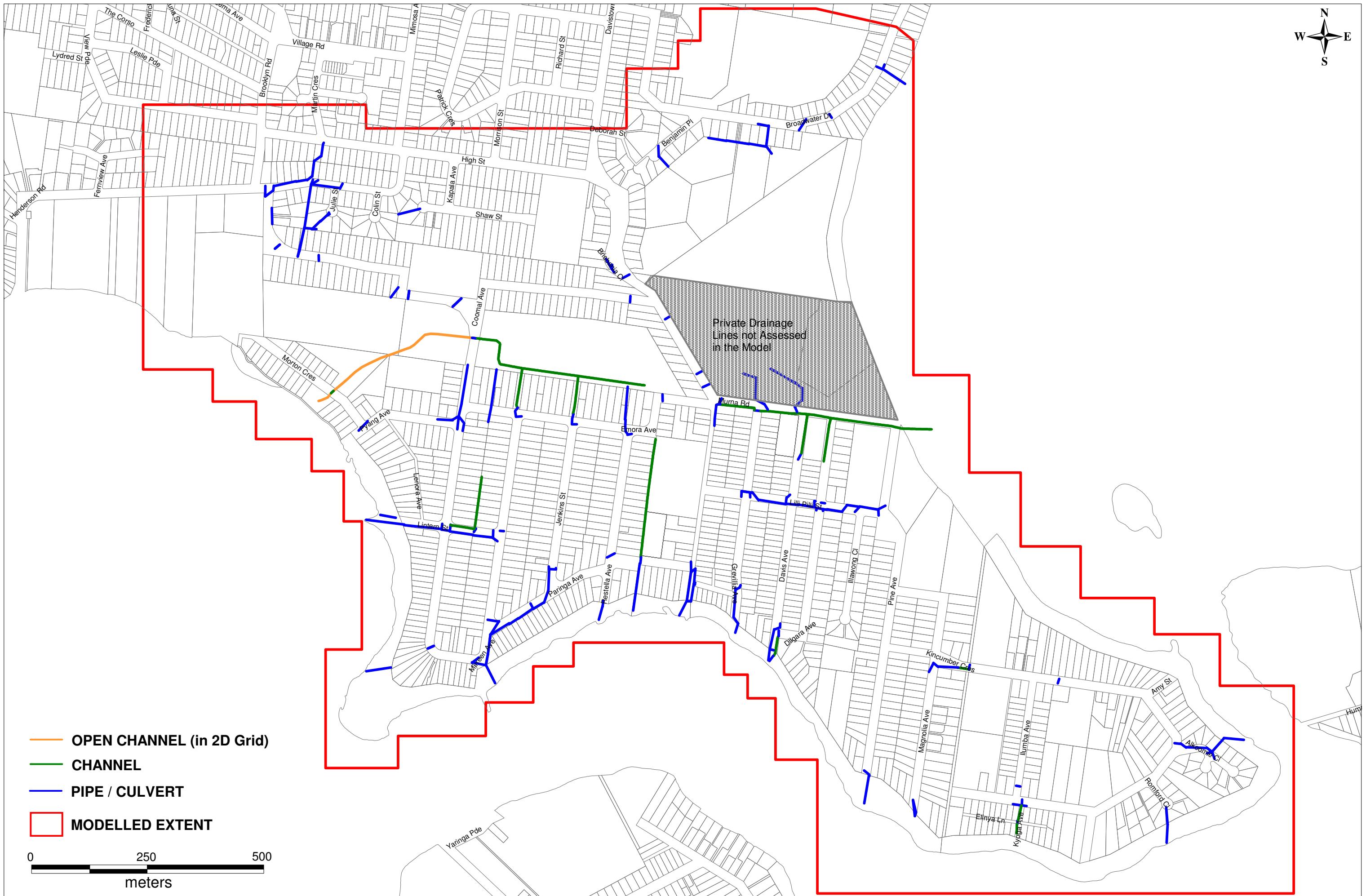


FIGURE 4.1  
QUESTIONNAIRE RESPONSES



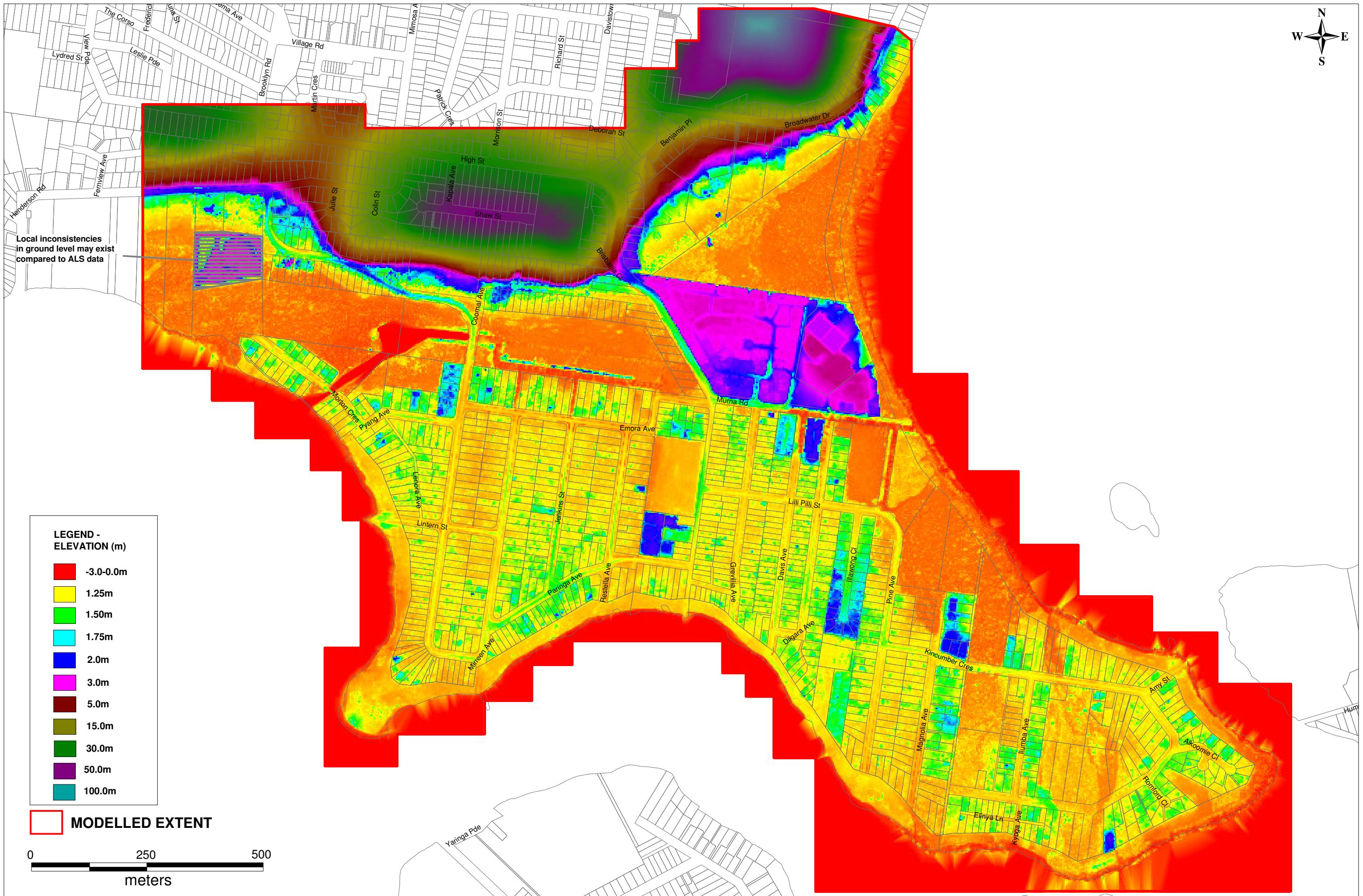


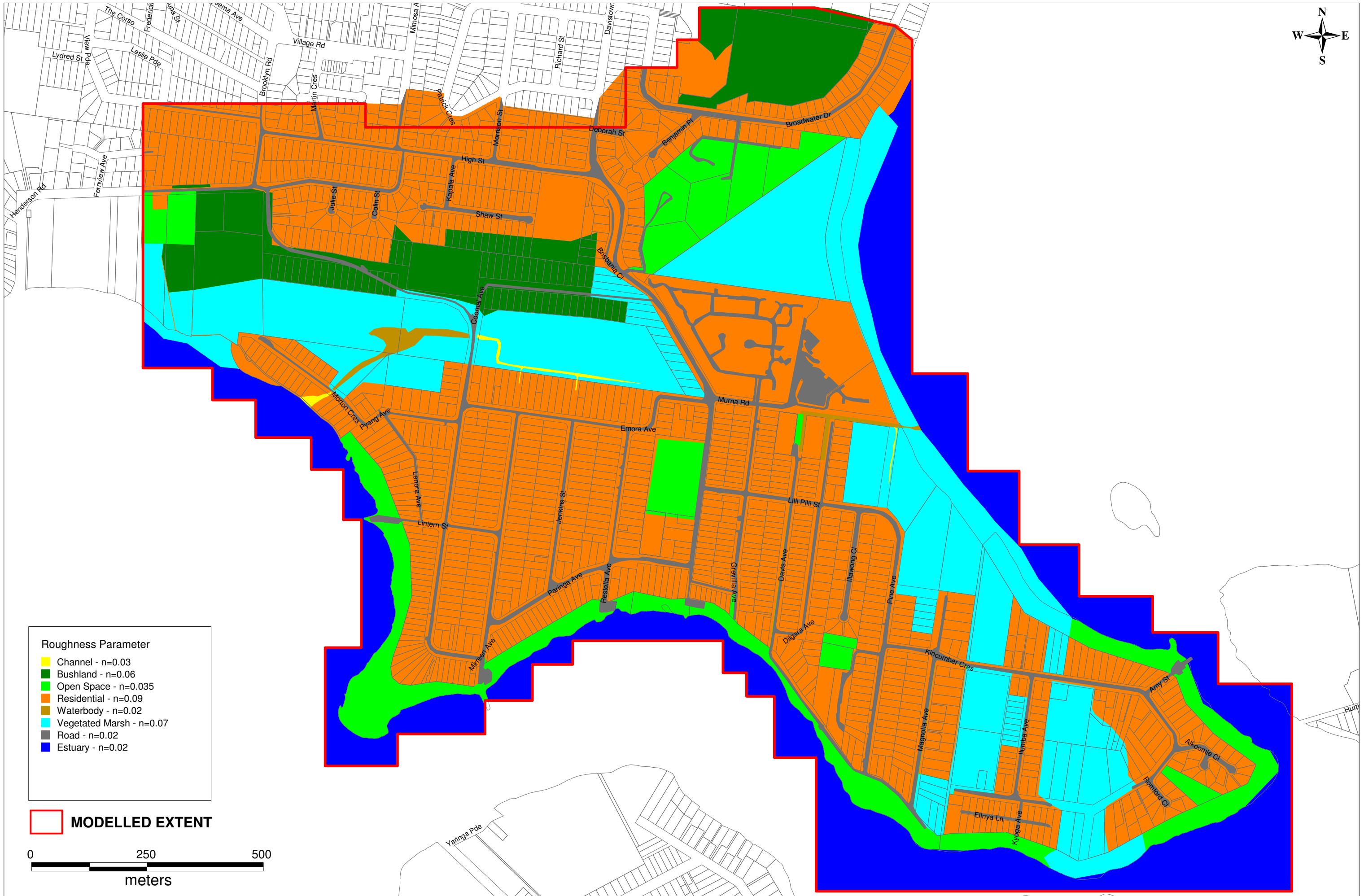
FINAL

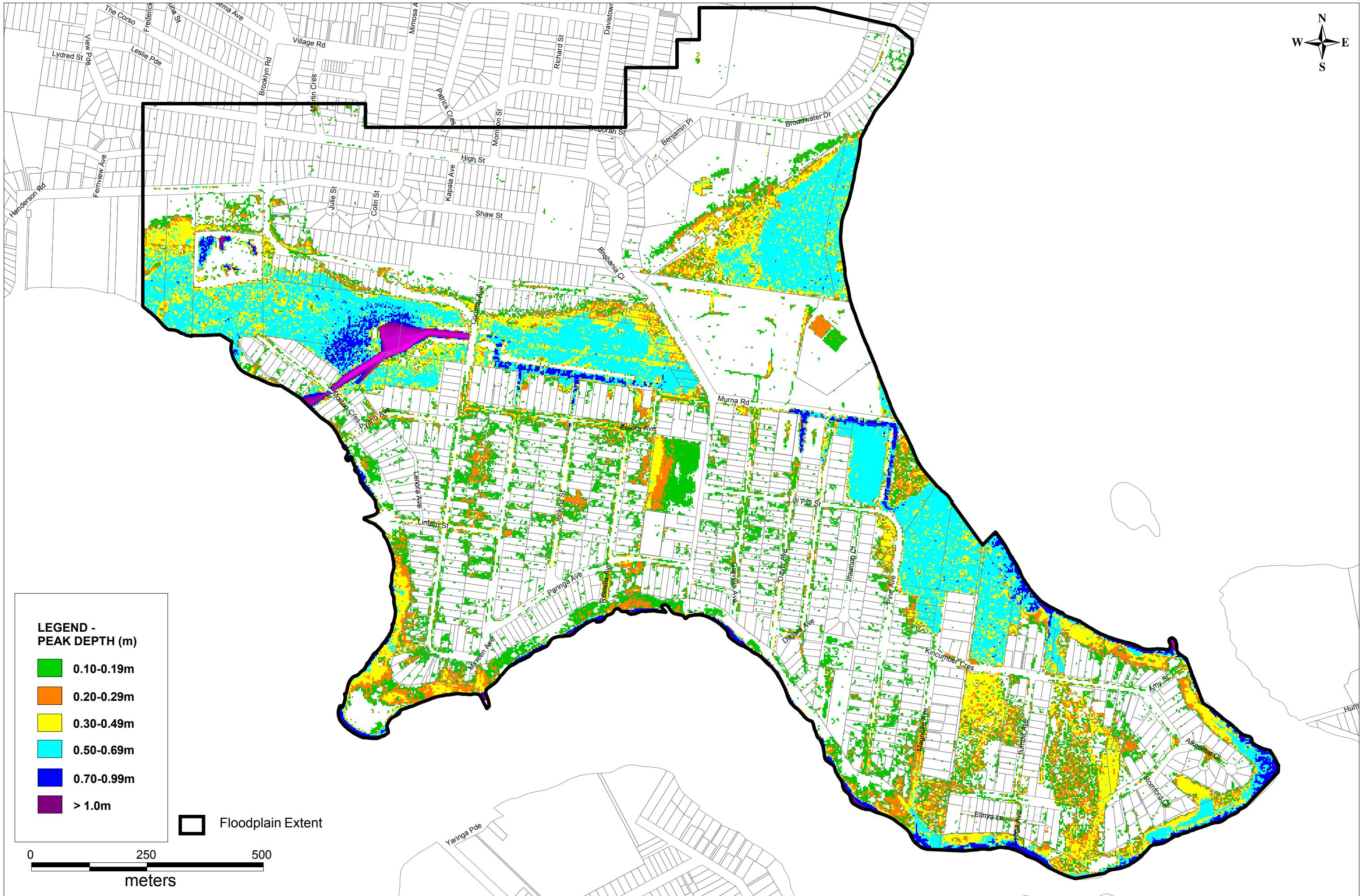
Davistown Catchment Flood Study

FIGURE 5.2

SOBEK MODEL - 1D DRAINAGE SYSTEMS

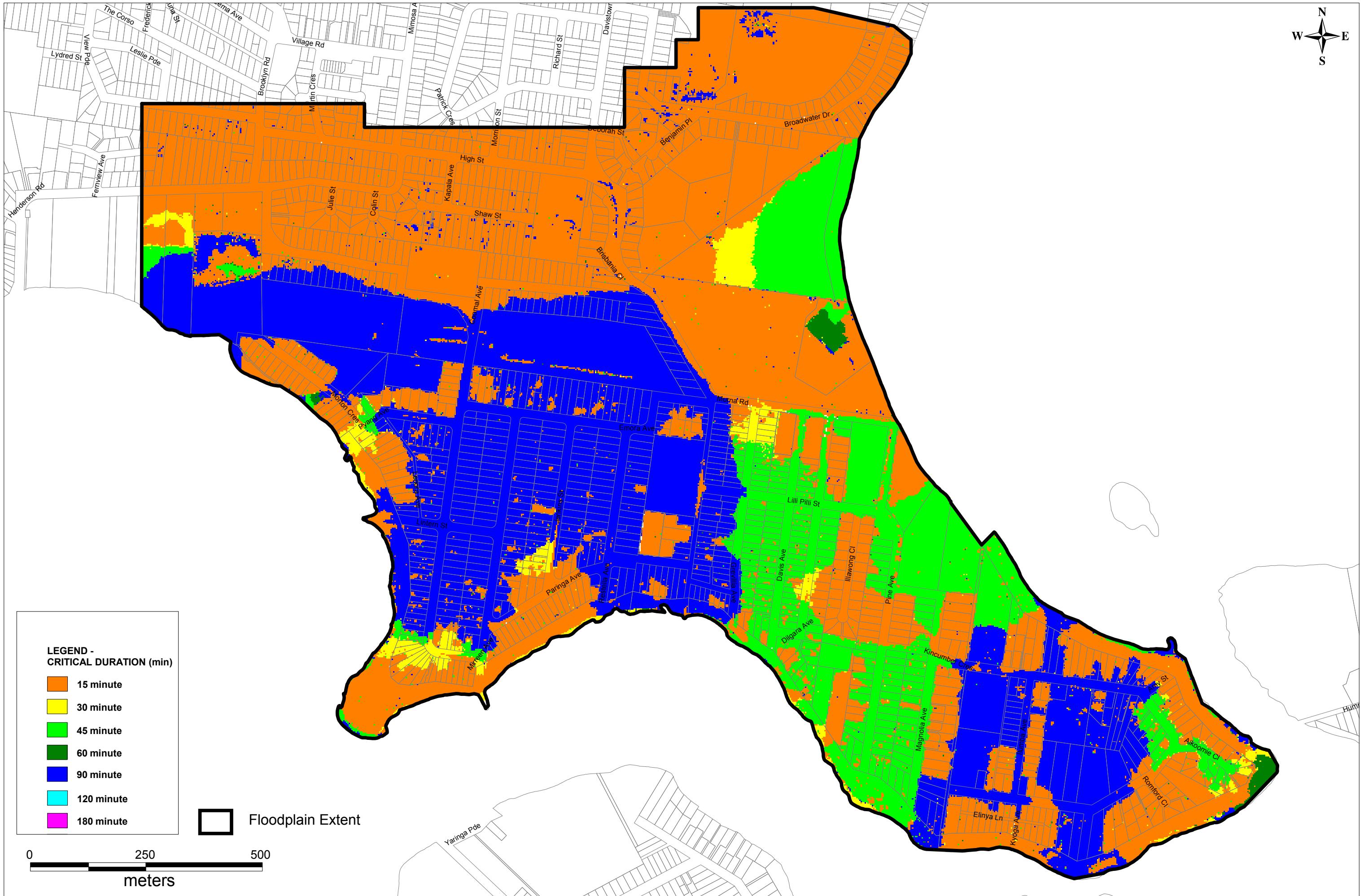






**FIGURE 5.8**  
PEAK DEPTH - 7 to 10 June 2007





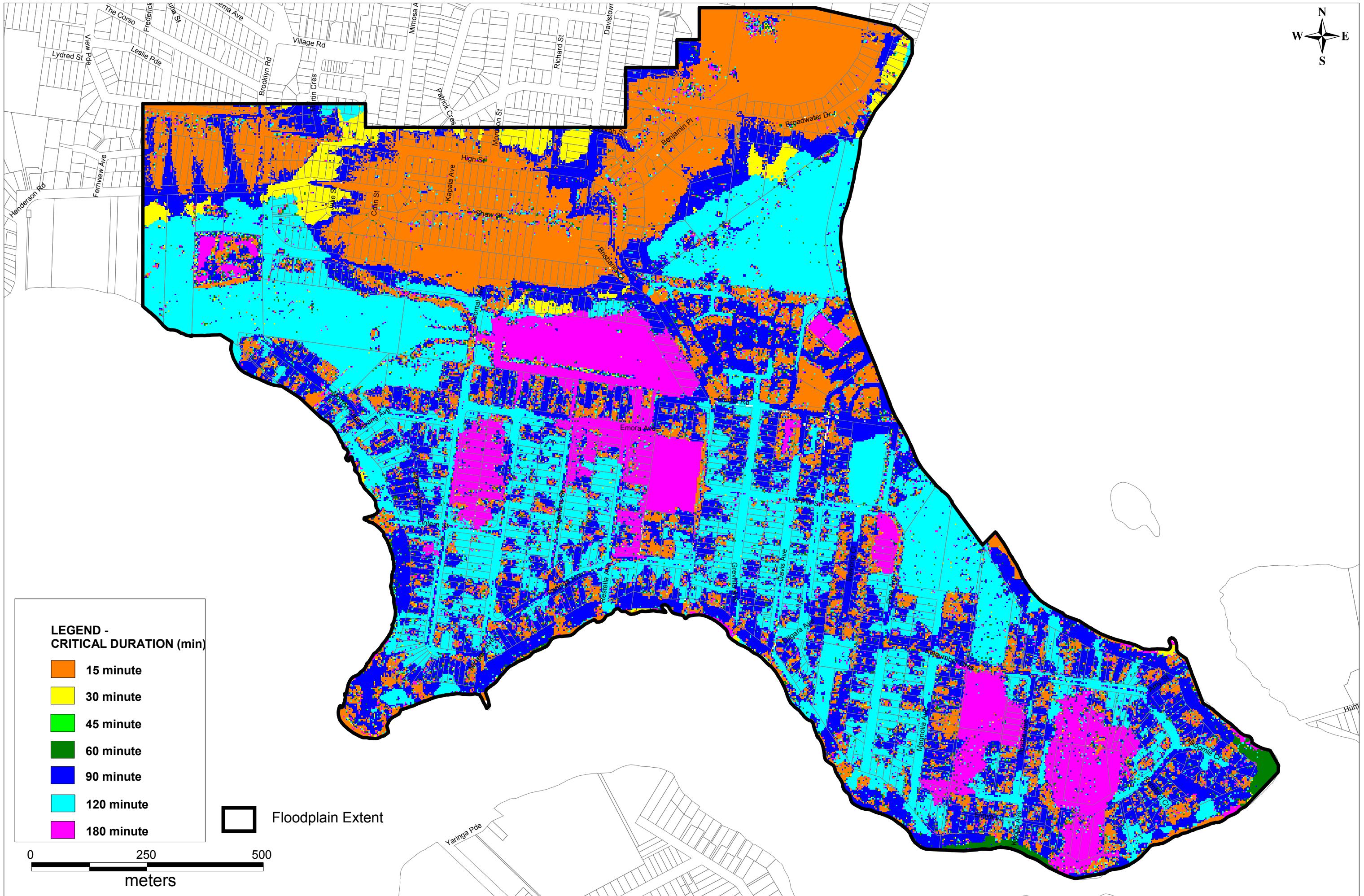
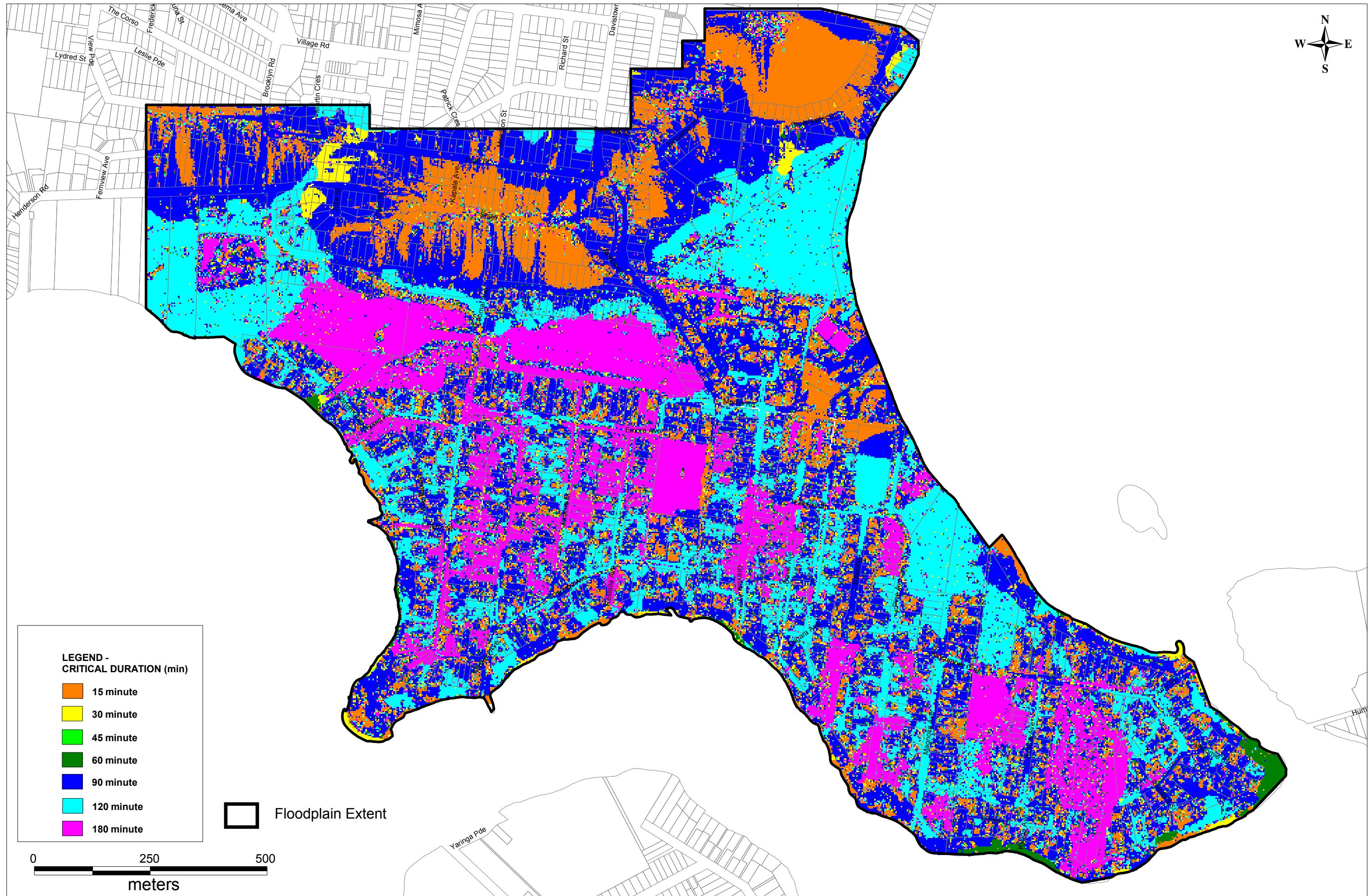
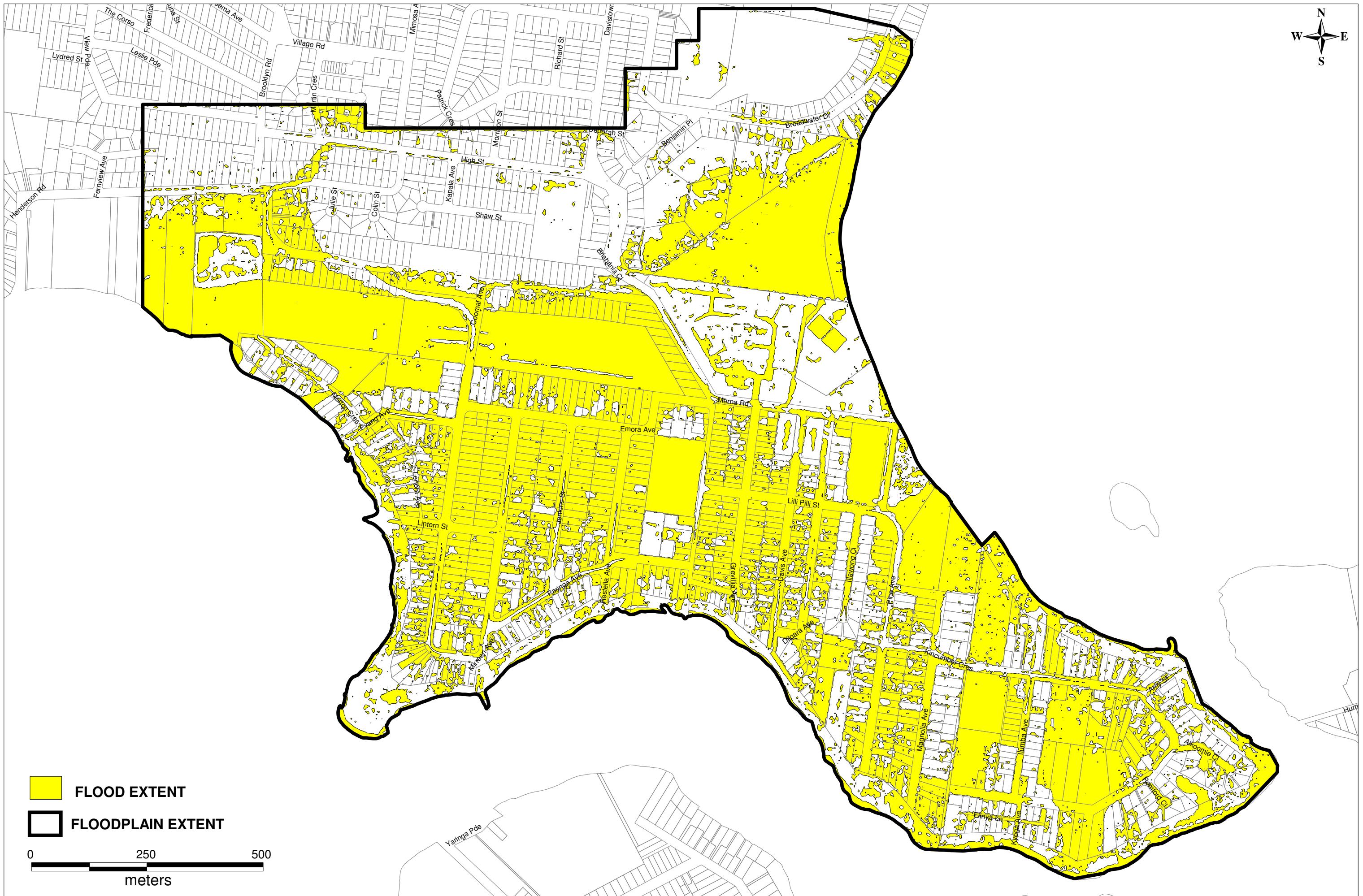


FIGURE 6.3  
1% AEP CRITICAL DURATION





FINAL

Davistown Catchment Flood Study

FIGURE 6.5  
FLOOD EXTENT - PMF

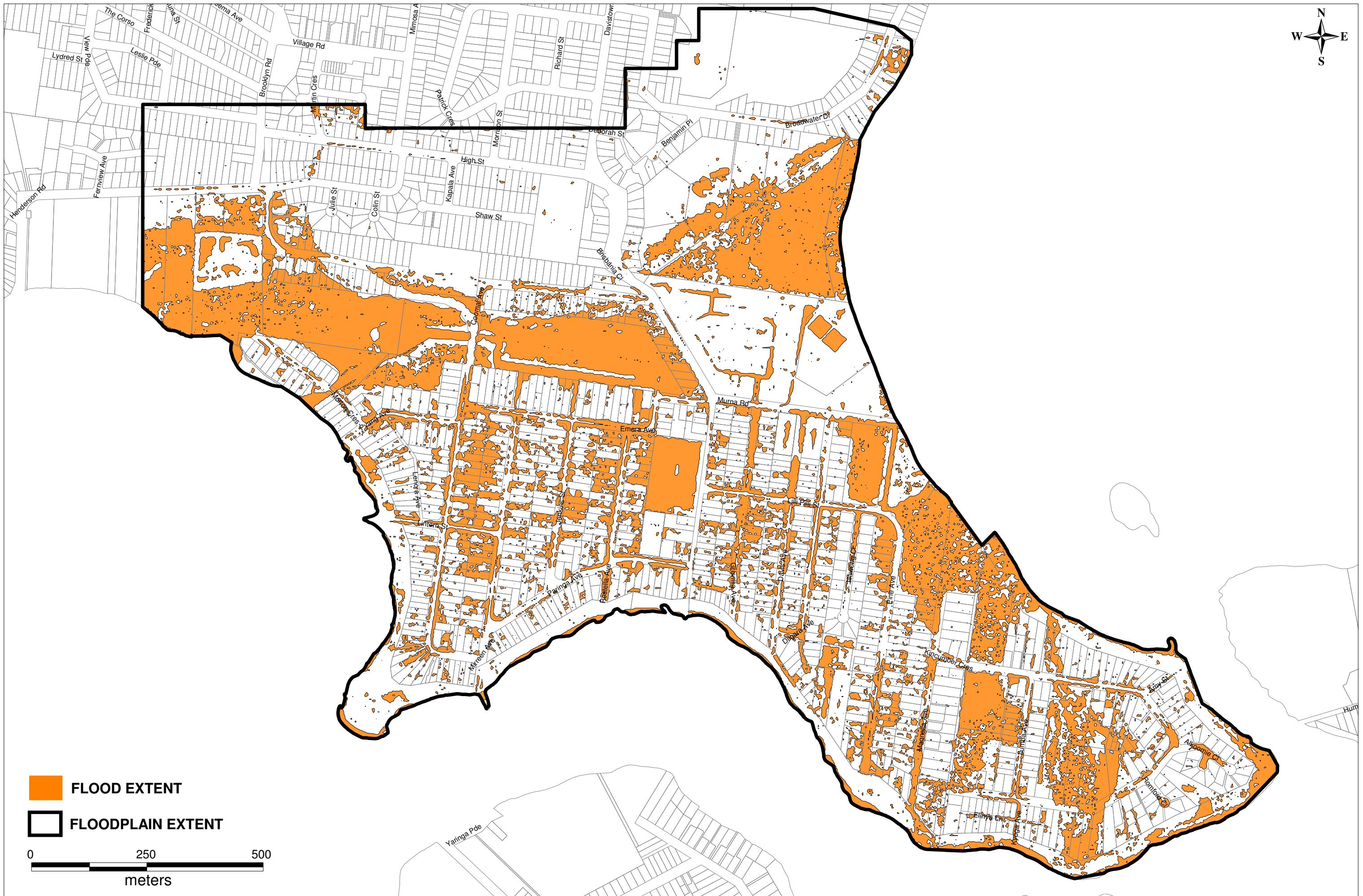


FIGURE 6.6  
FLOOD EXTENT - 0.5% AEP

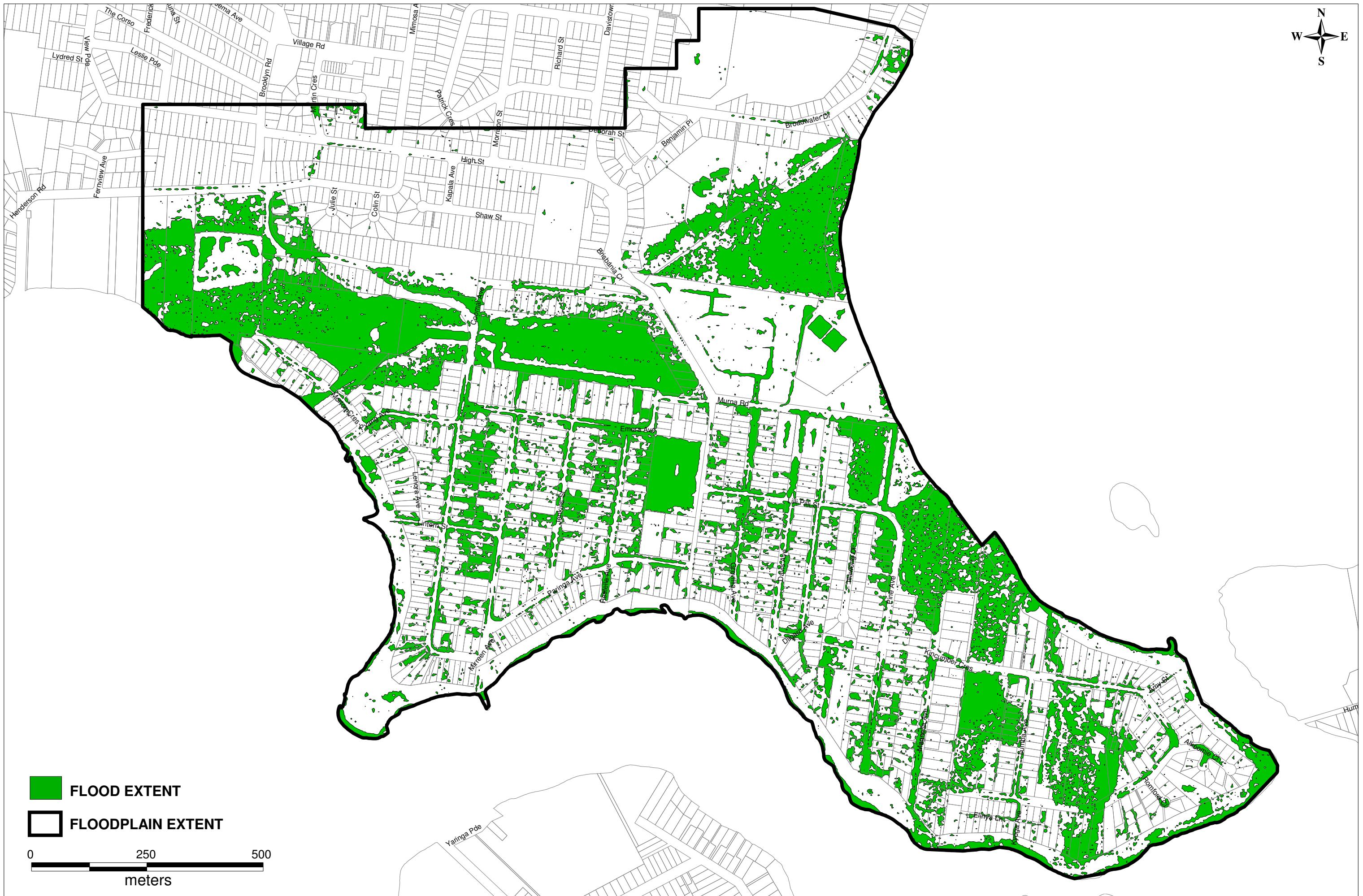
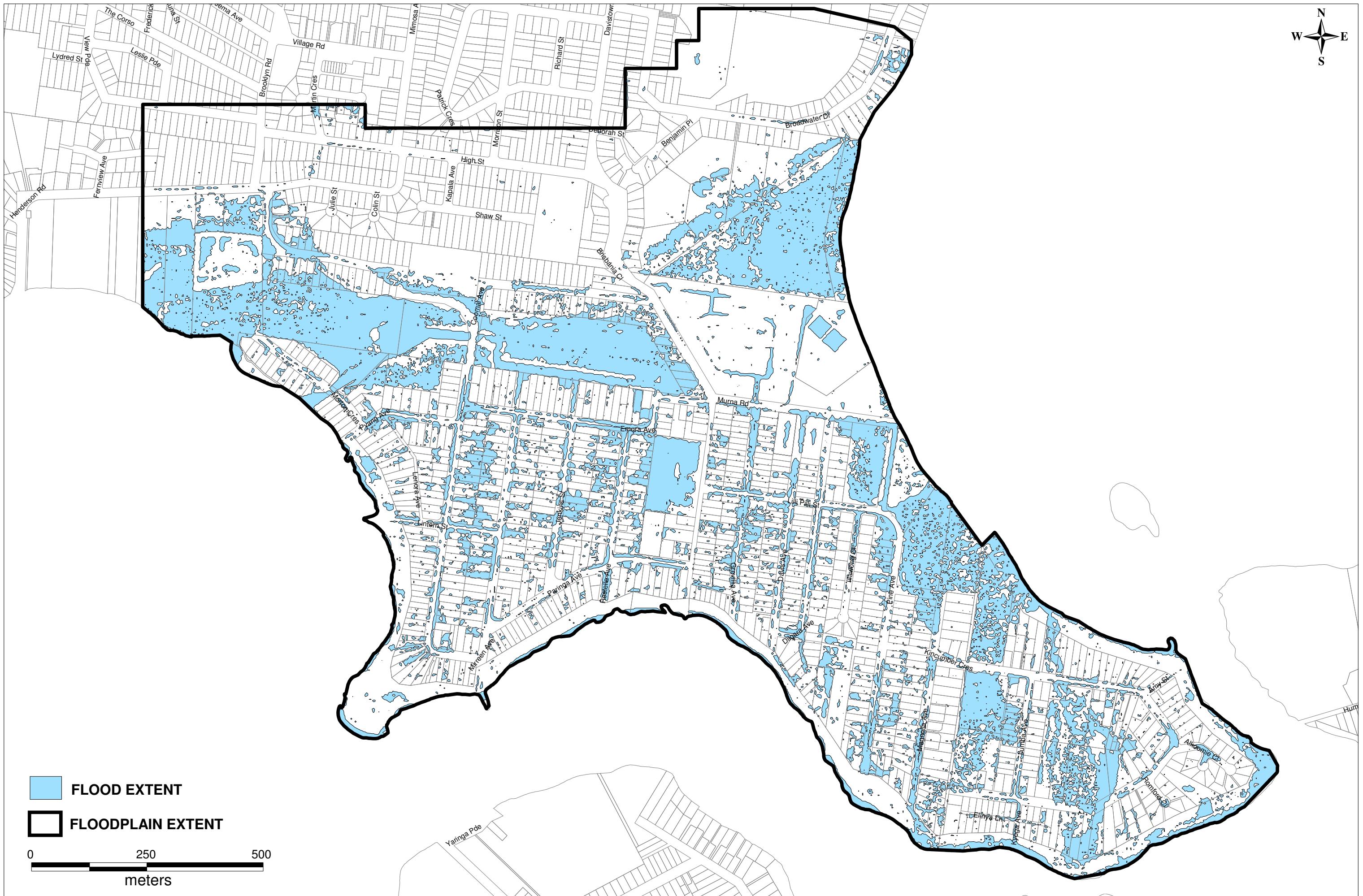


FIGURE 6.7  
FLOOD EXTENT - 1% AEP





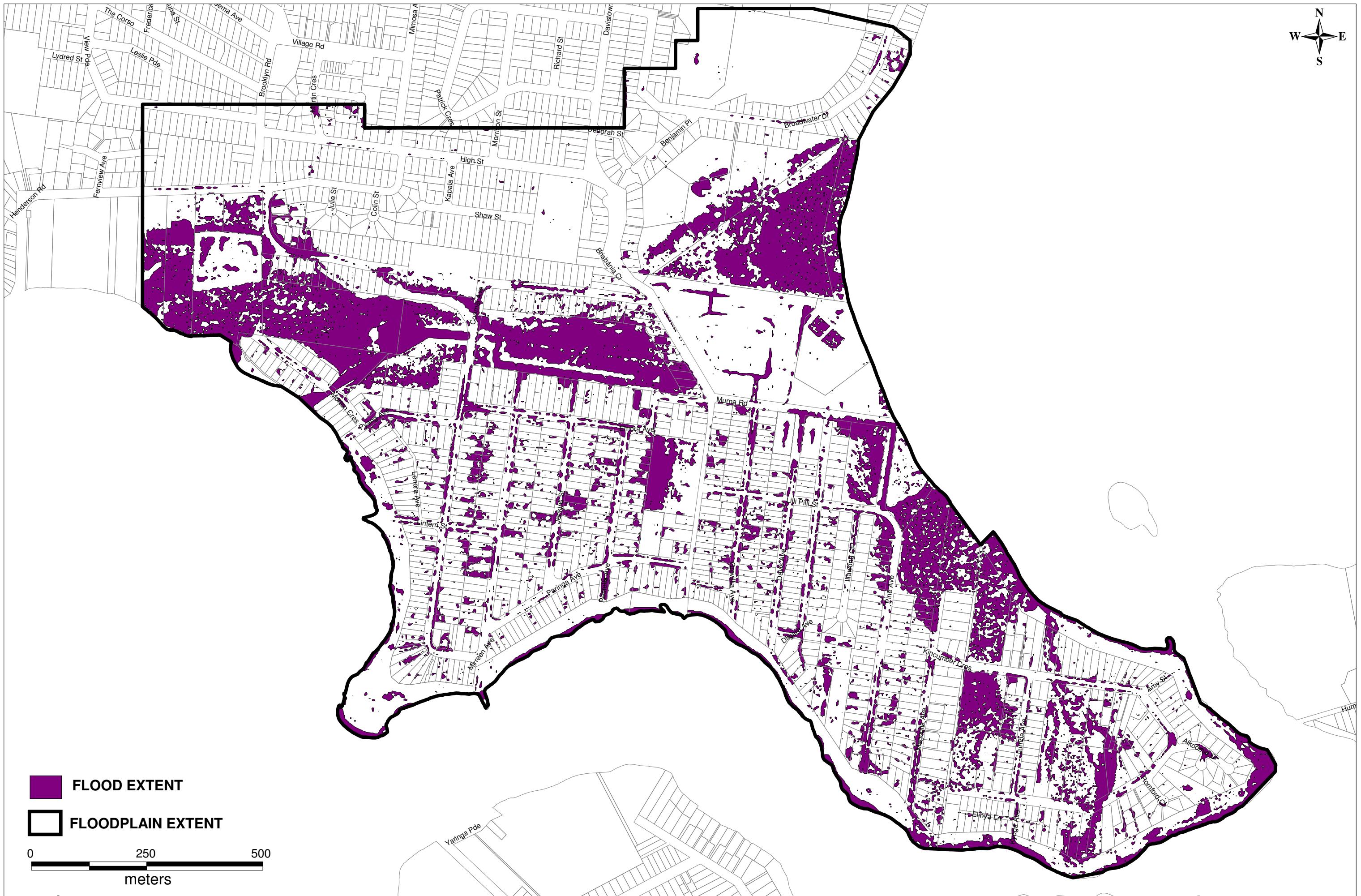
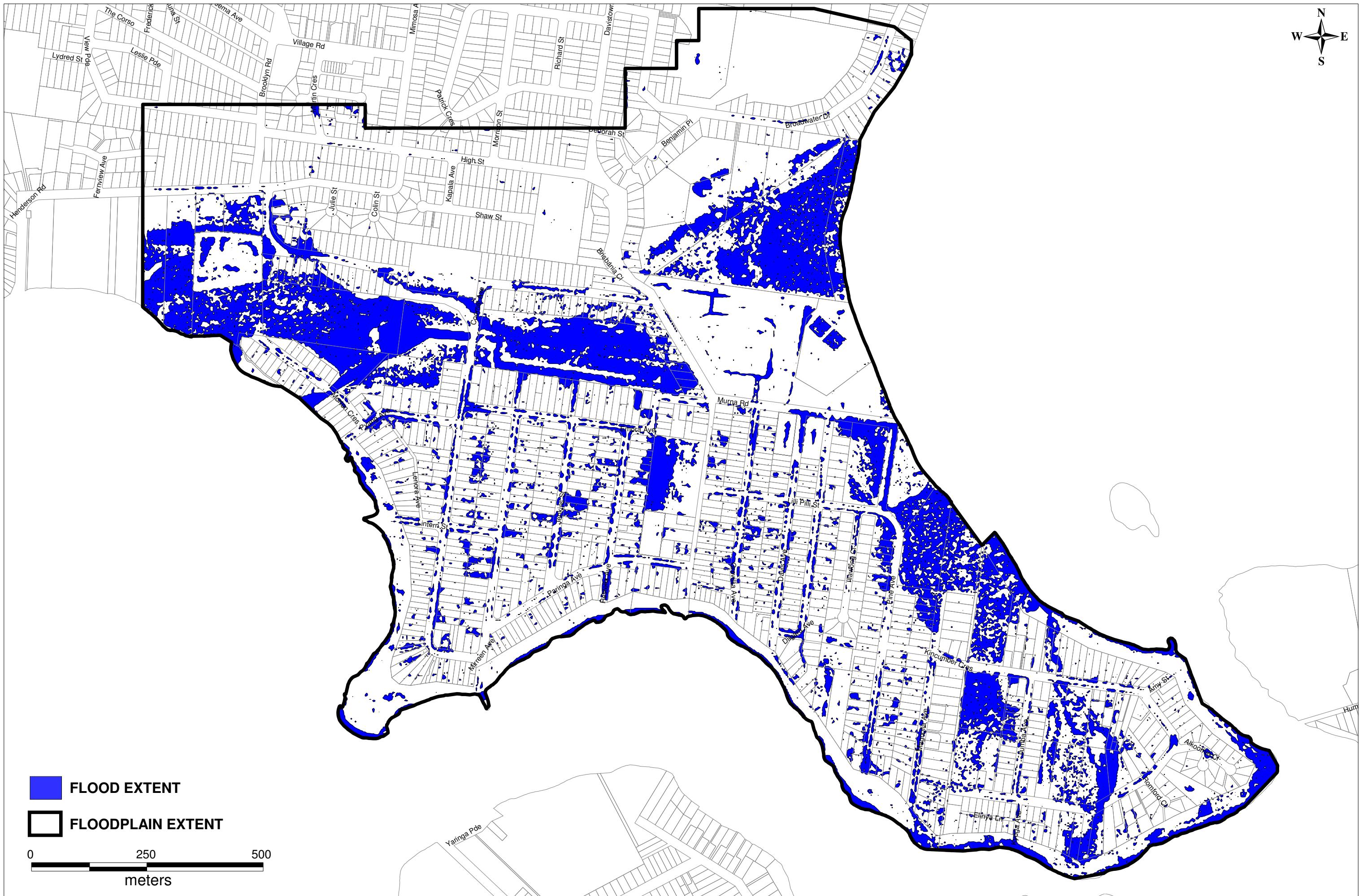


FIGURE 6.10  
FLOOD EXTENT - 10% AEP



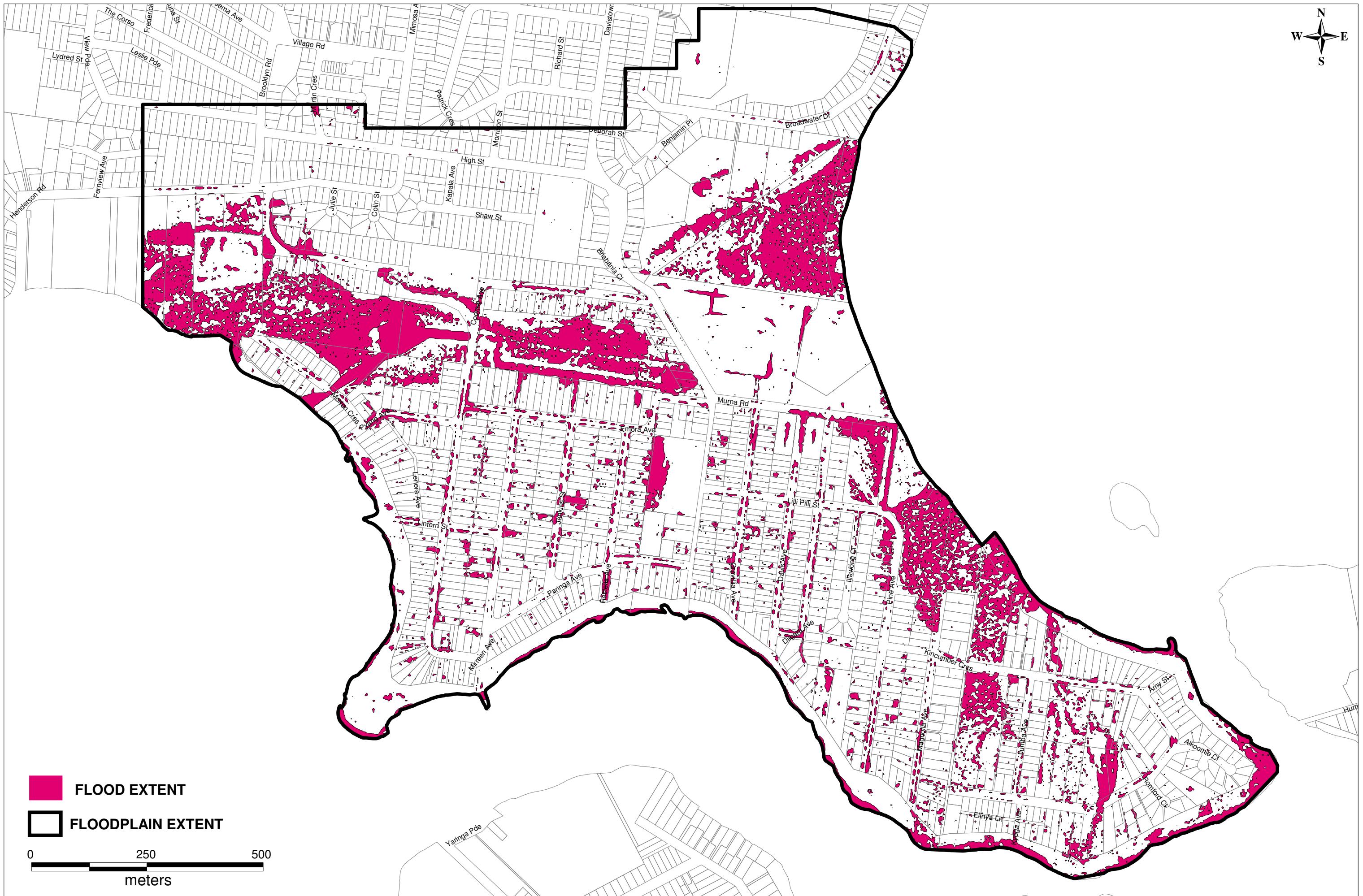


FIGURE 6.12  
FLOOD EXTENT - 50% AEP

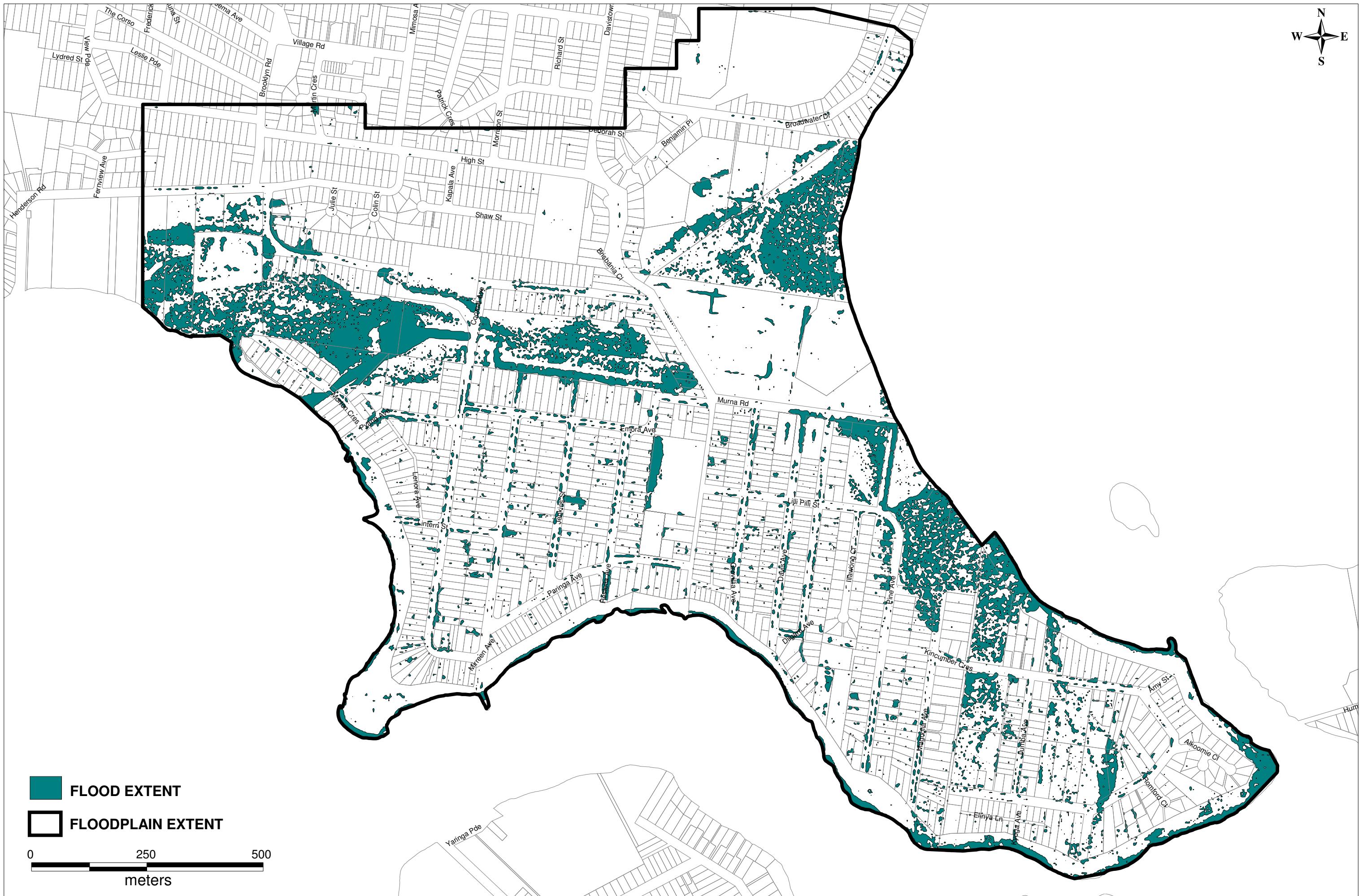
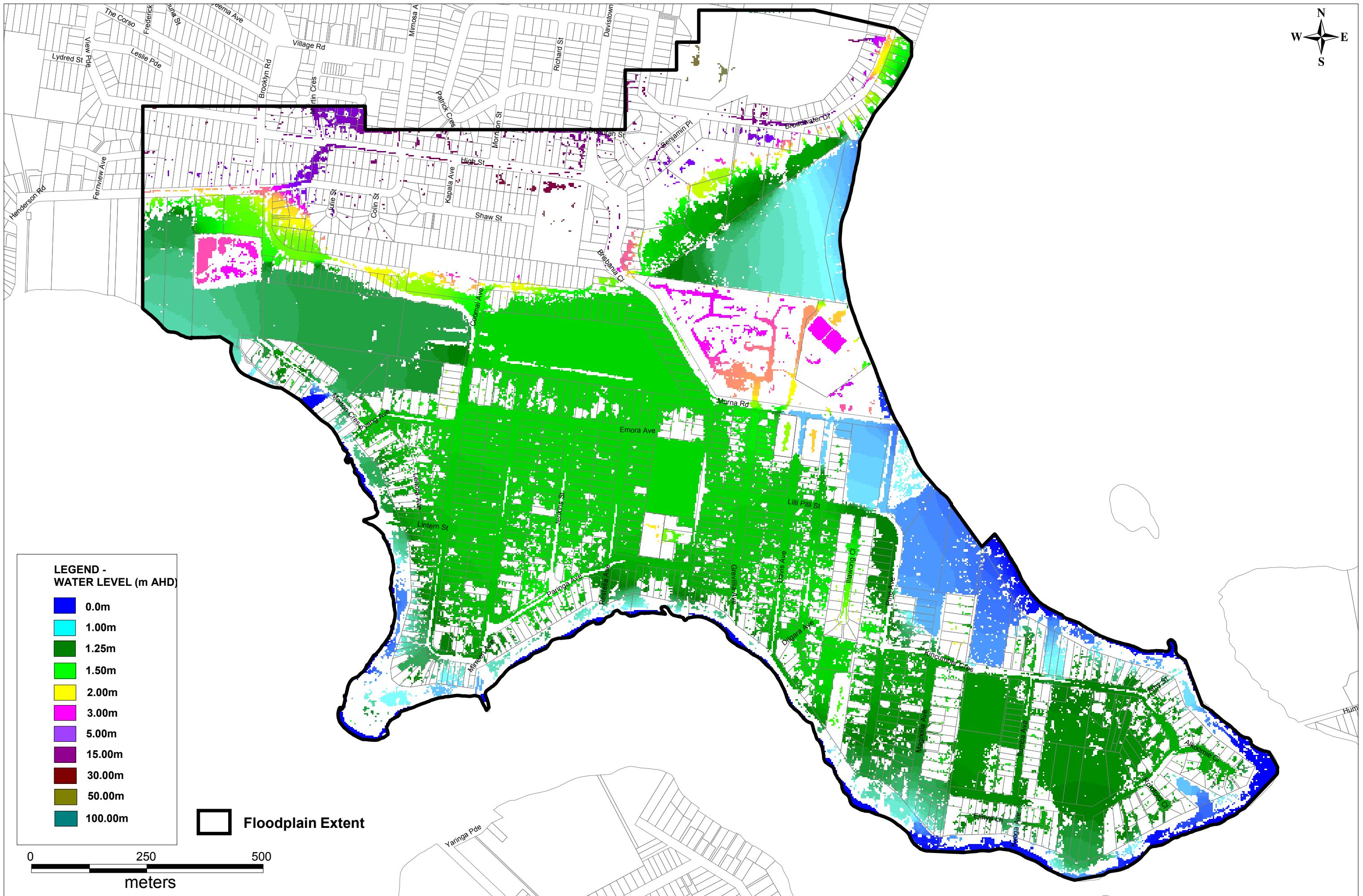
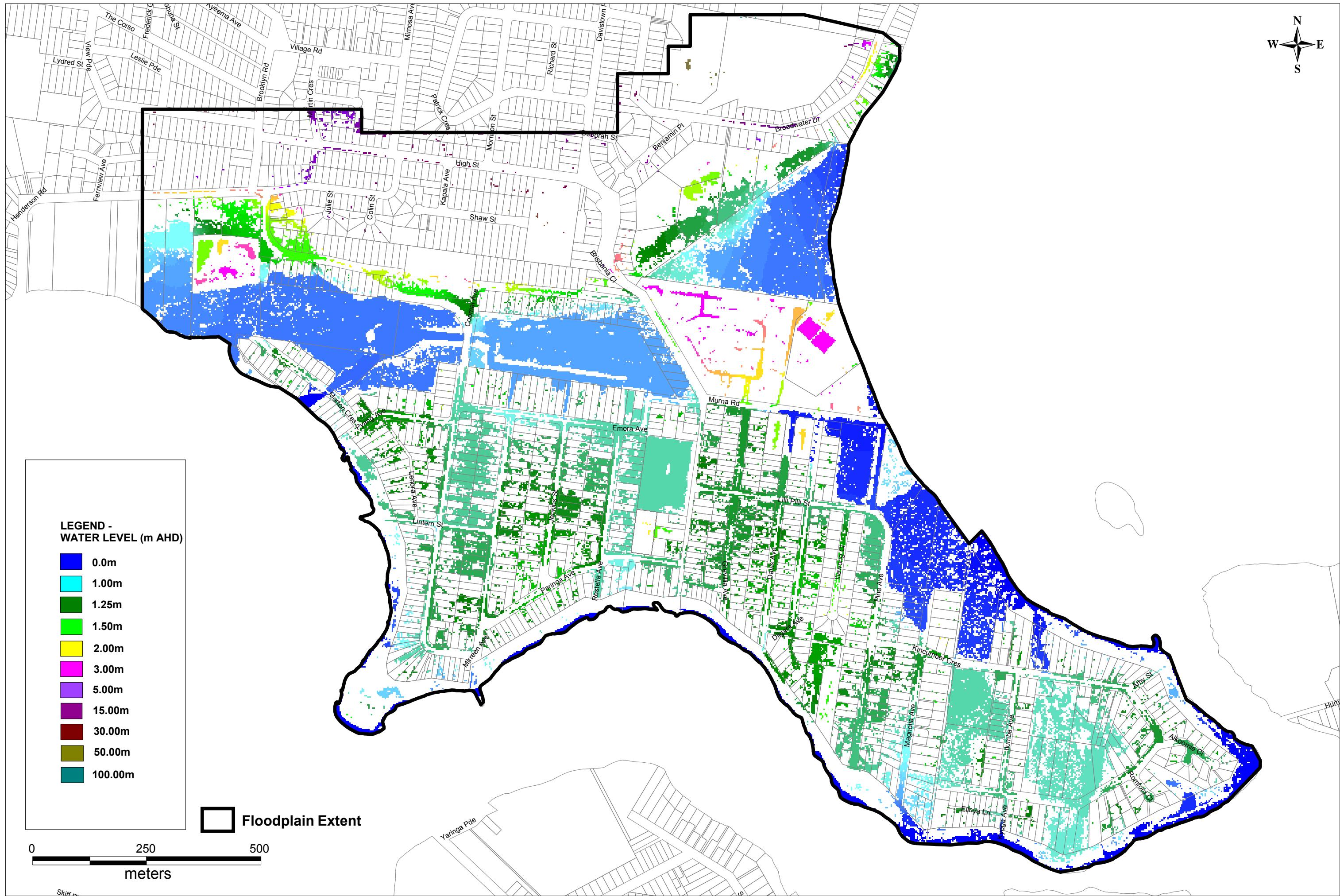


FIGURE 6.13  
FLOOD EXTENT - 100% AEP





FINAL

Davistown Catchment Flood Study

FIGURE 6.15  
PEAK WATER LEVEL - 0.5% AEP

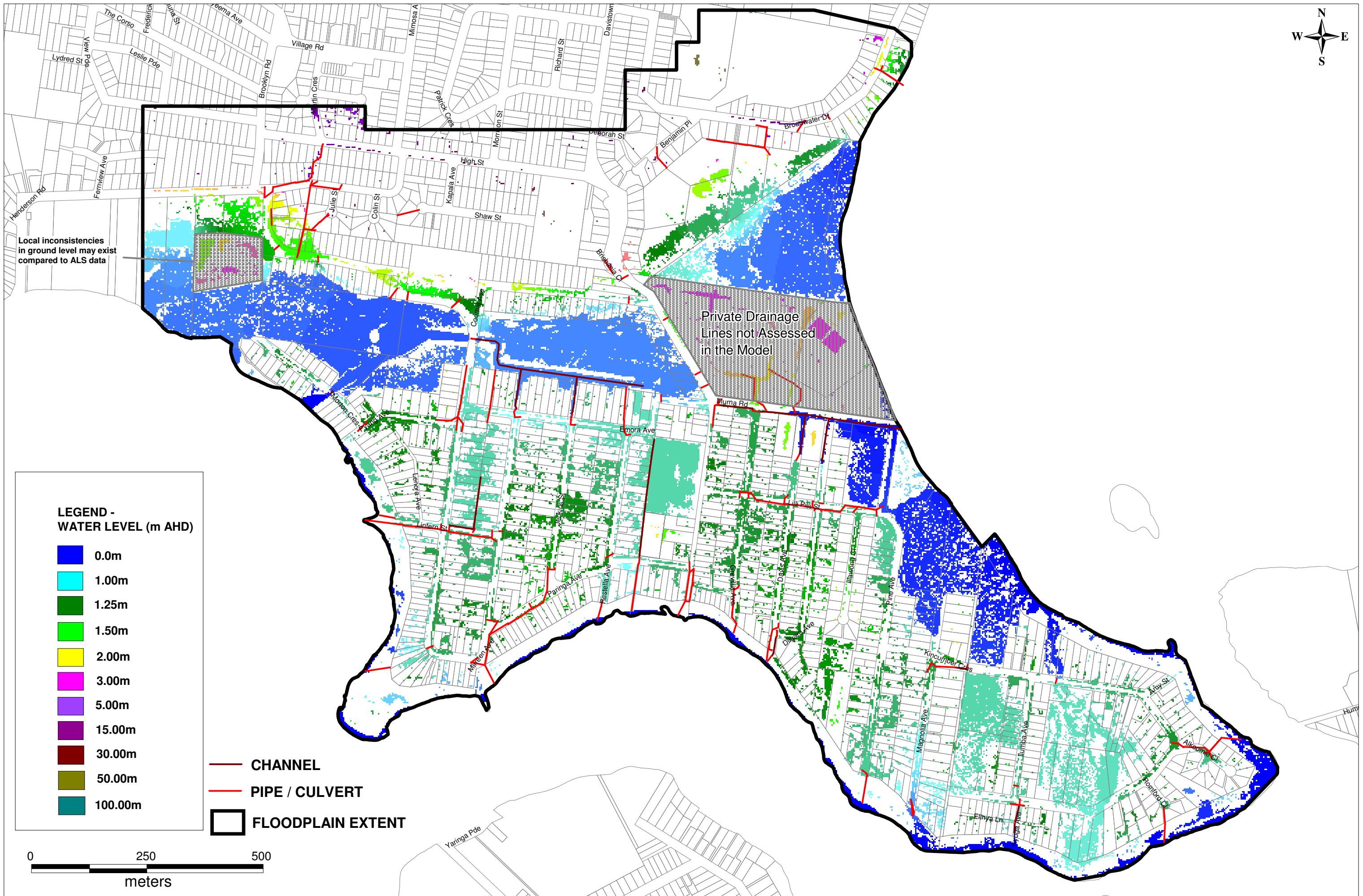
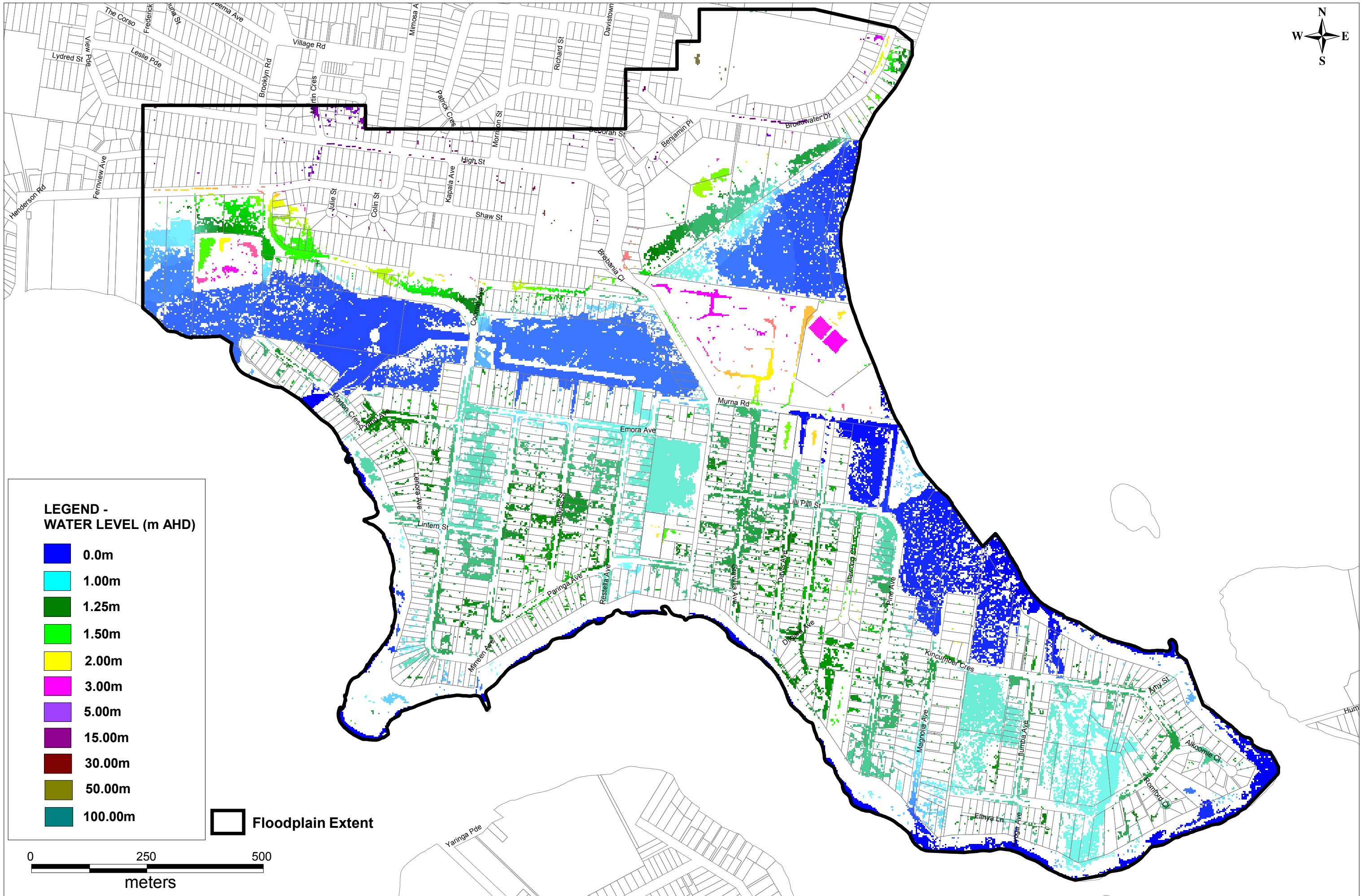
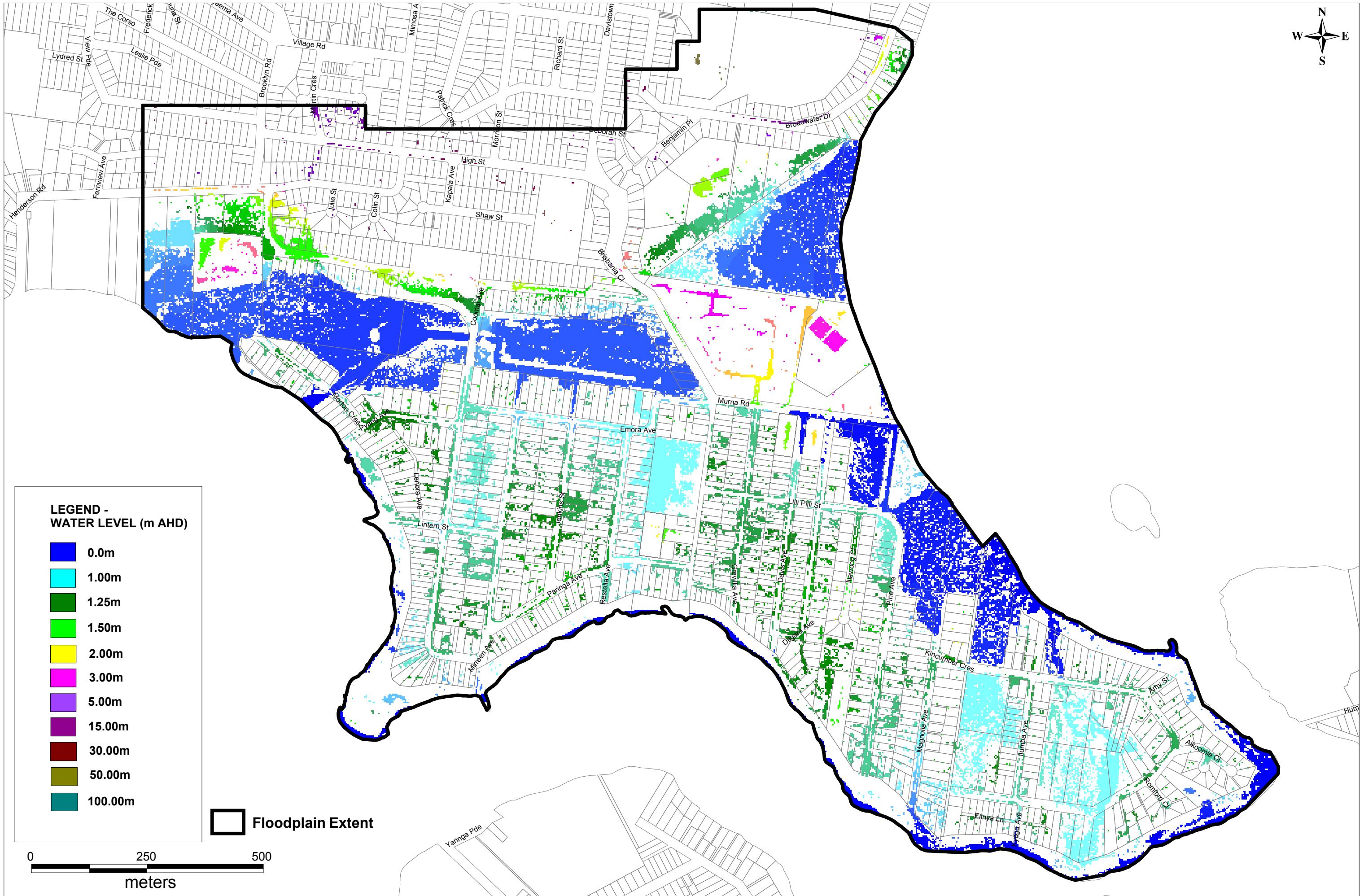


FIGURE 6.16  
PEAK WATER LEVEL - 1% AEP



FINAL

Davistown Catchment Flood Study



FINAL

Davistown Catchment Flood Study

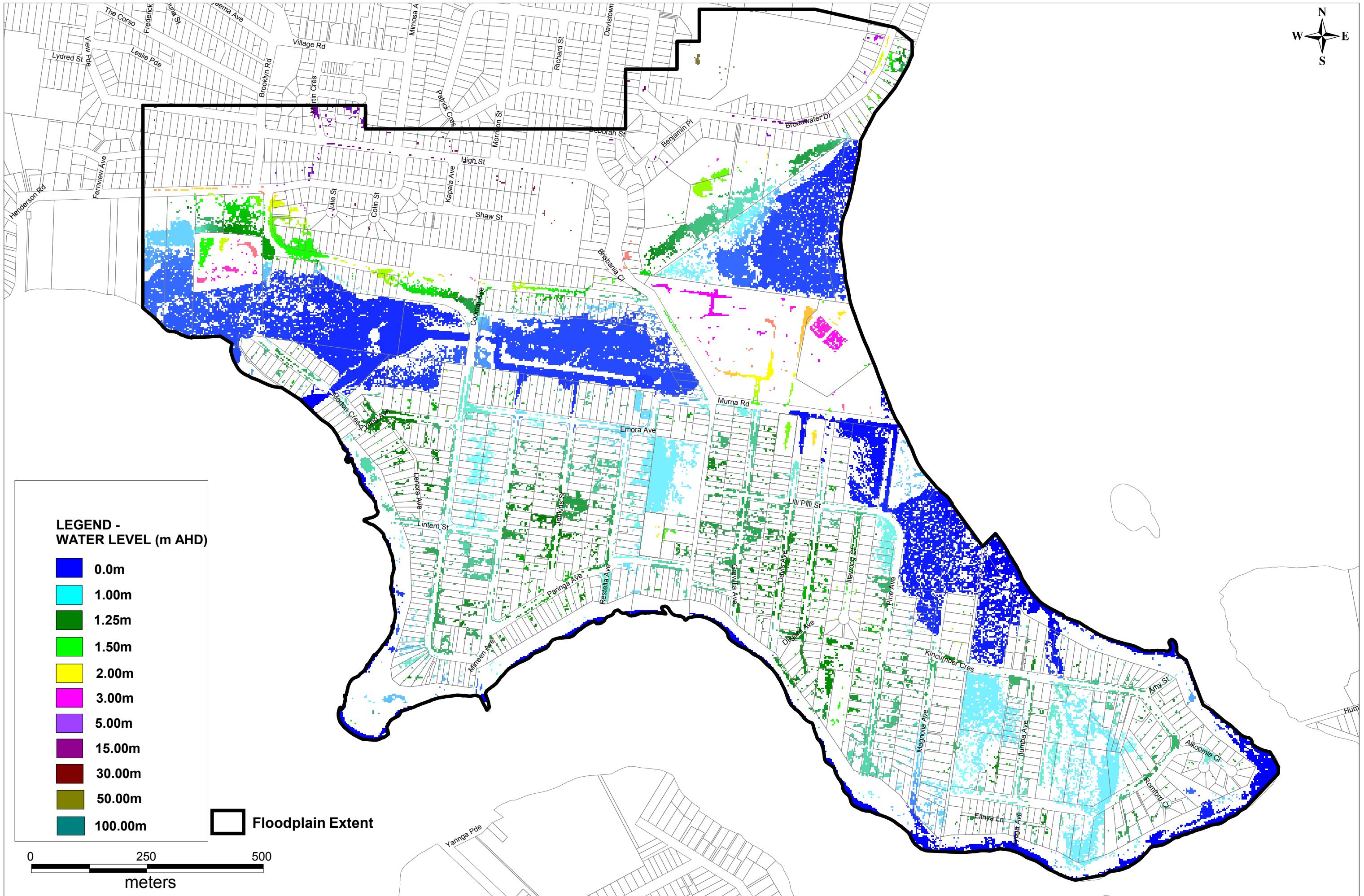
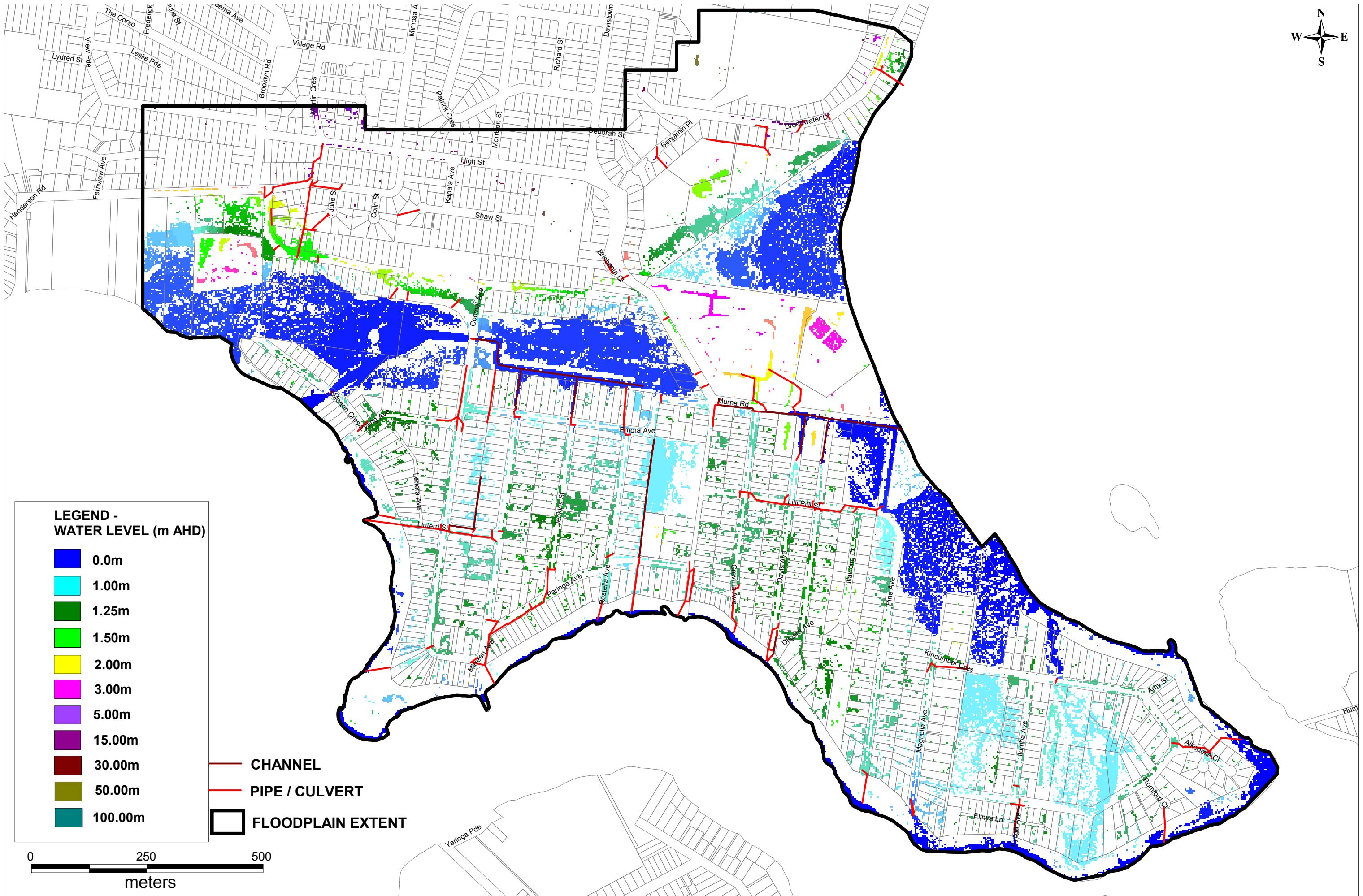


FIGURE 6.19

PEAK WATER LEVEL - 10% AEP



**FIGURE 6.20**  
PEAK WATER LEVEL - 20% AEP

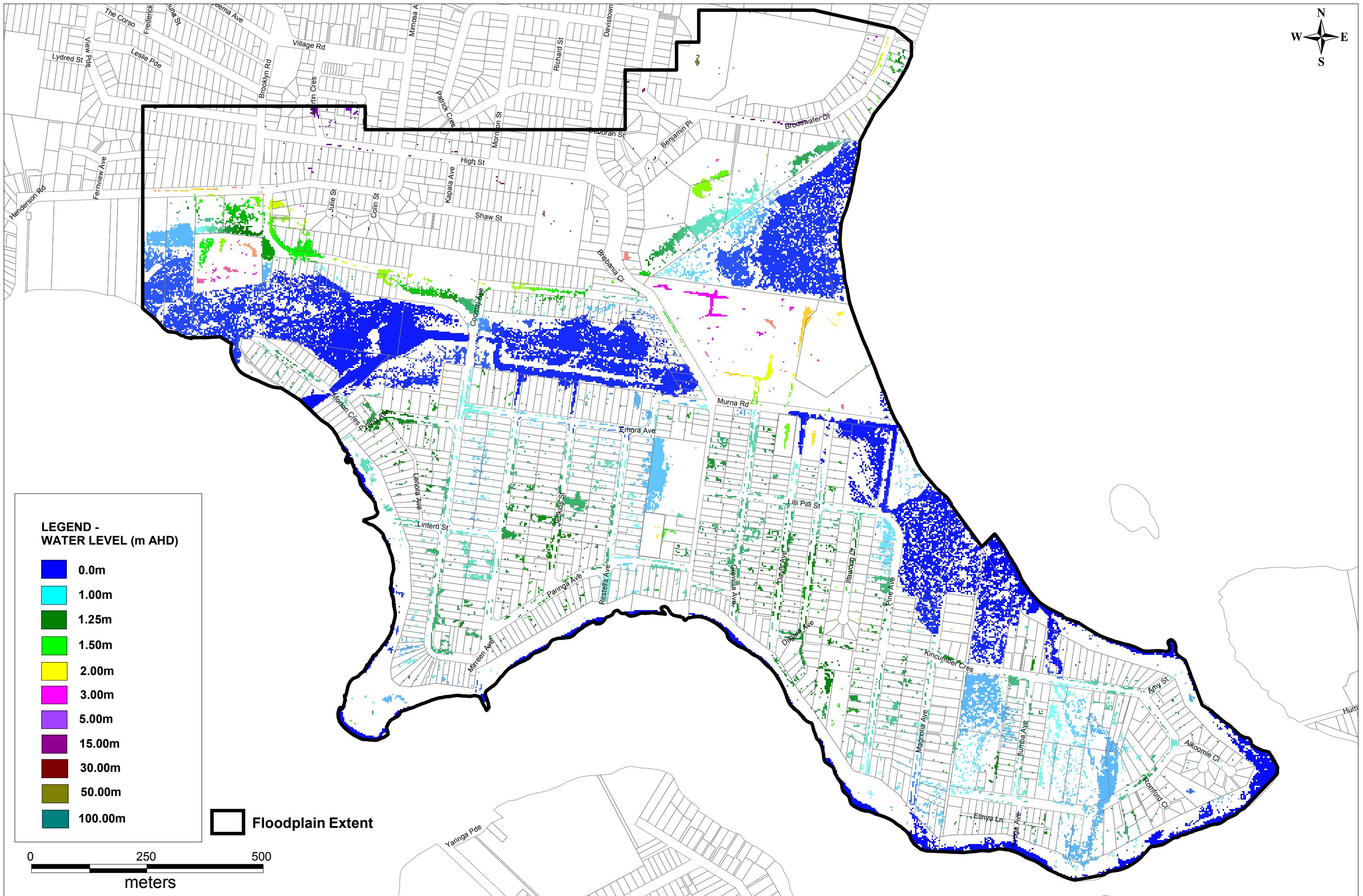
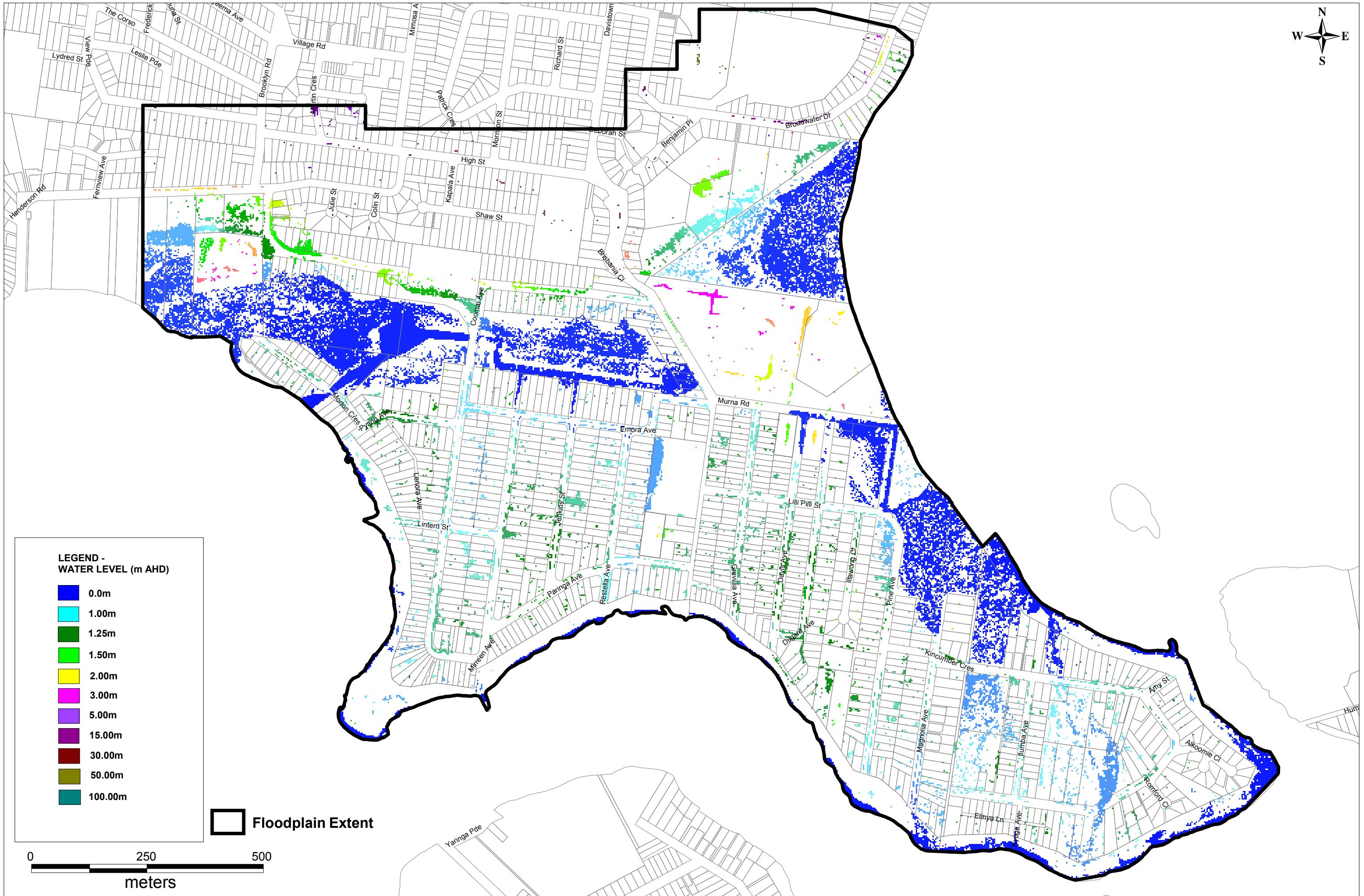


FIGURE 6.21  
PEAK WATER LEVEL - 50% AEP



FINAL

Davistown Catchment Flood Study

FIGURE 6.22  
PEAK WATER LEVEL - 100% AEP

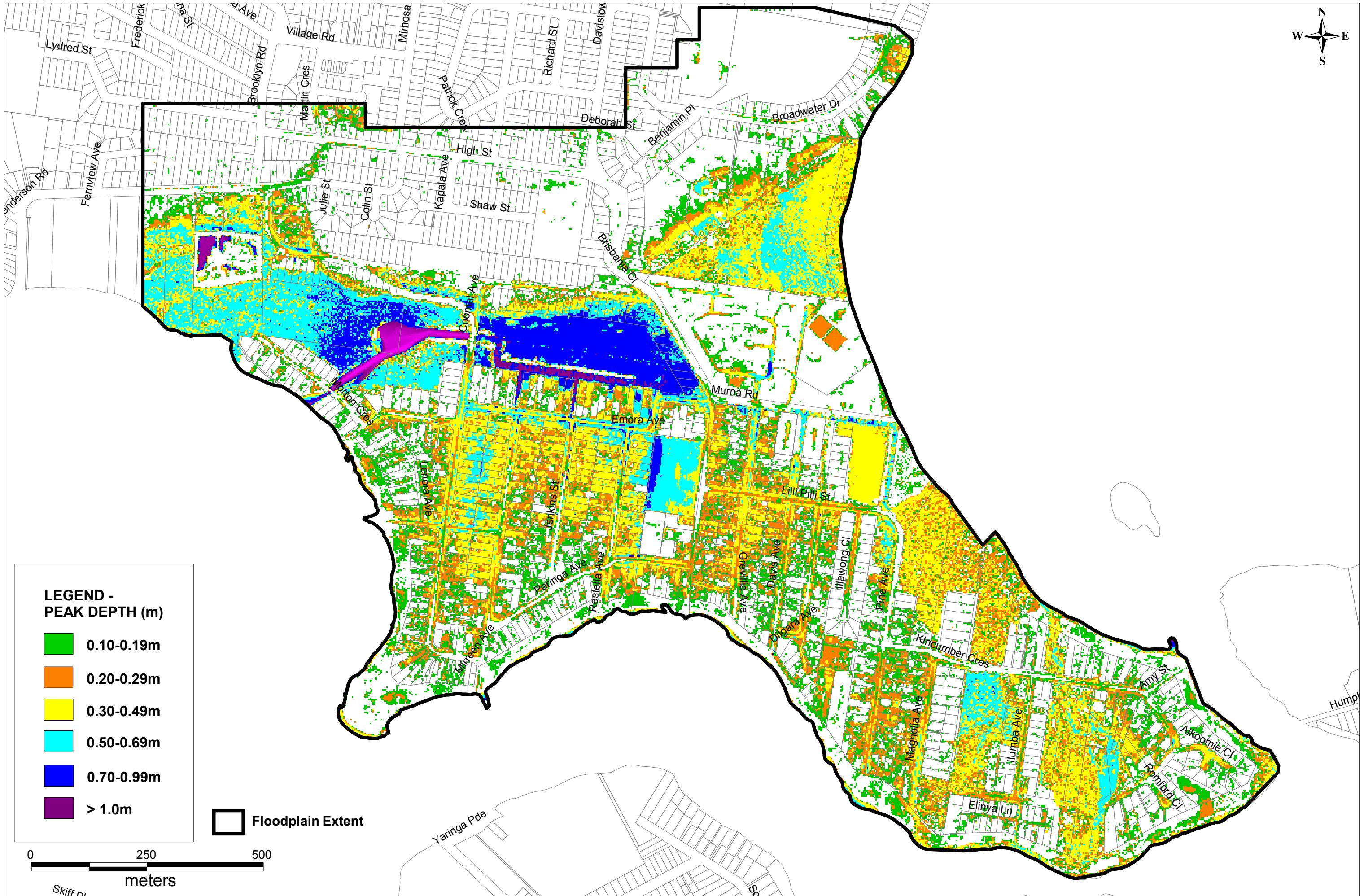


FIGURE 6.23  
PEAK DEPTH - PMF

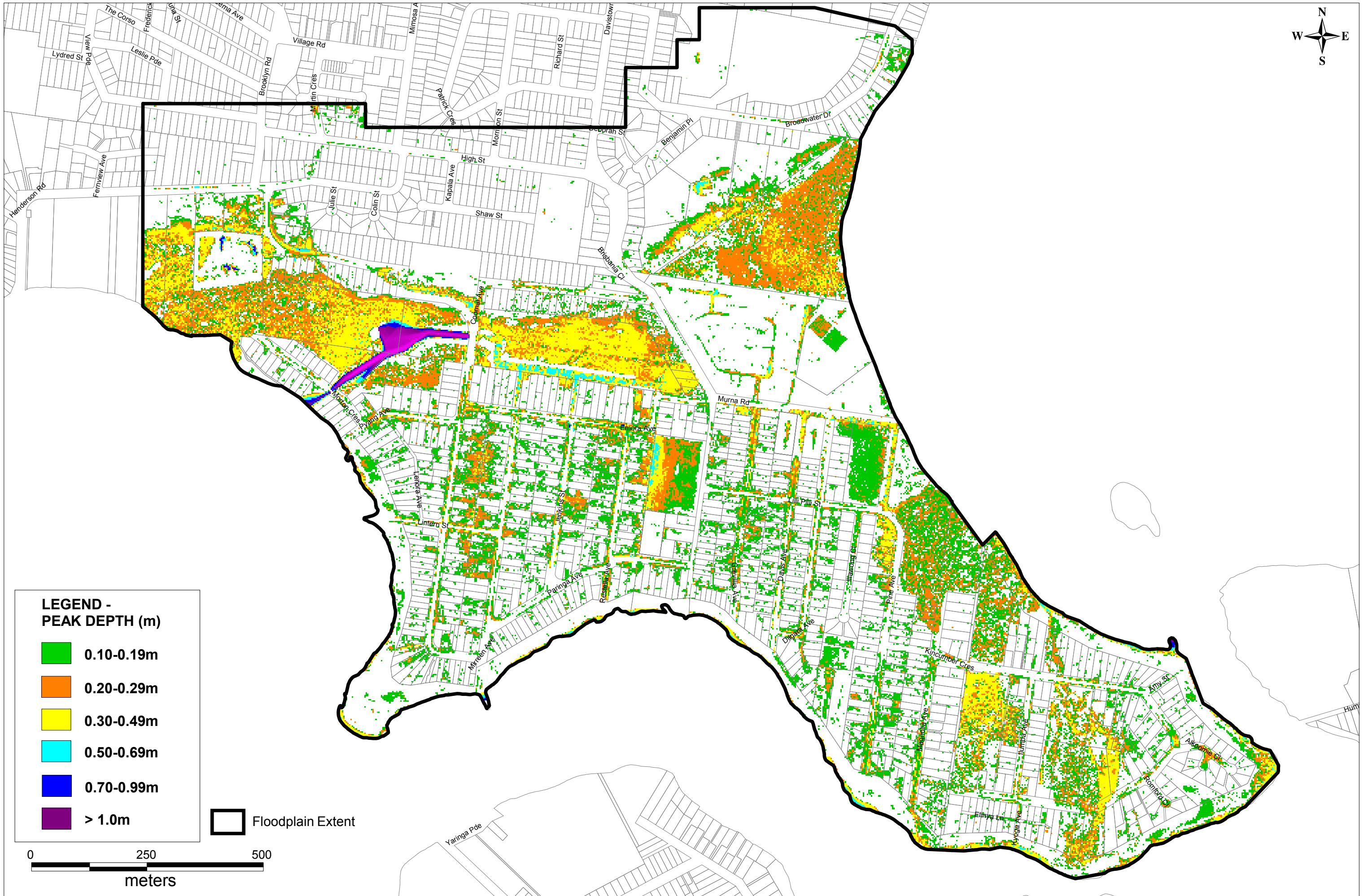
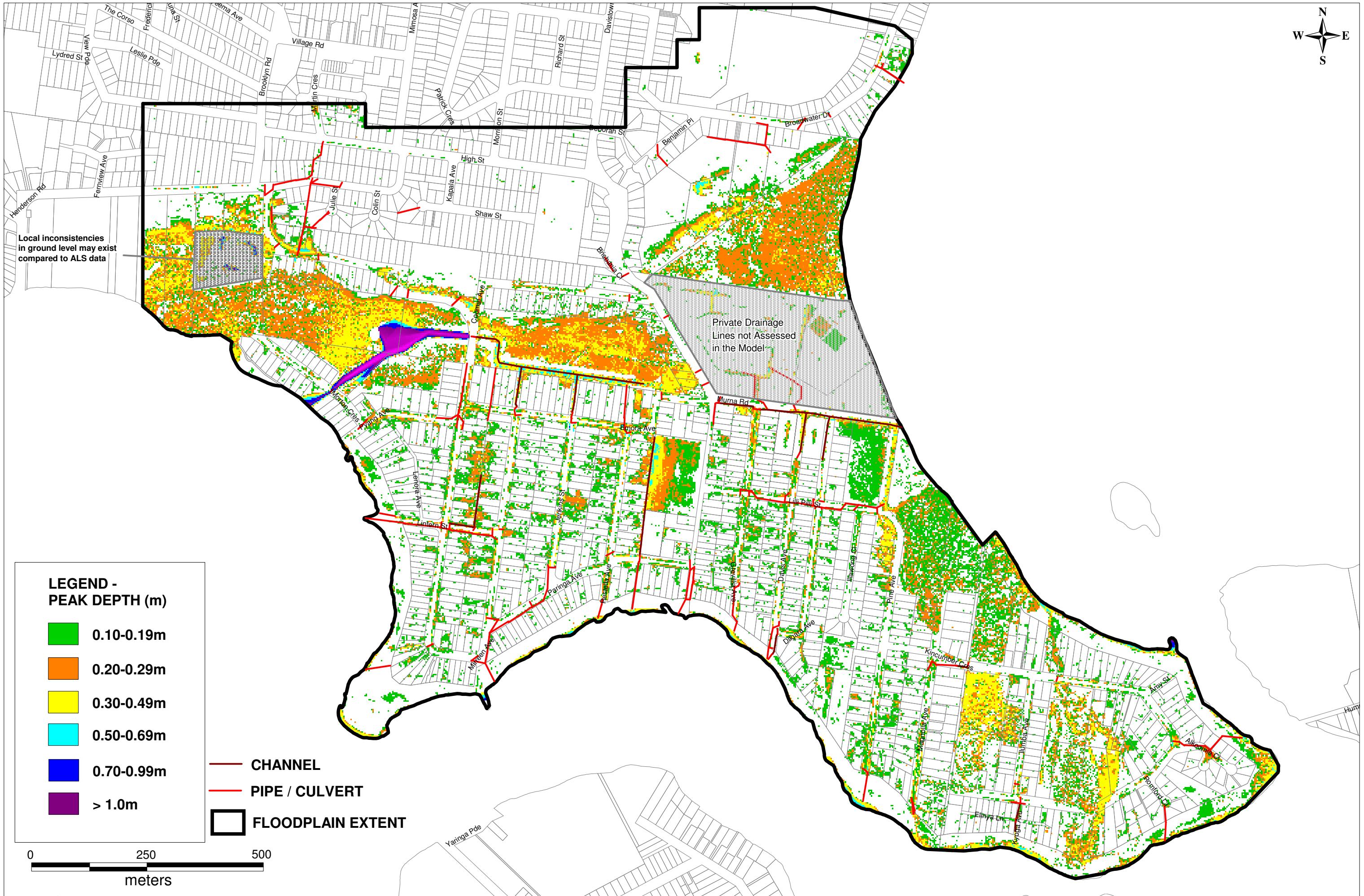


FIGURE 6.24  
PEAK DEPTH - 0.5% AEP



FINAL

Davistown Catchment Flood Study

FIGURE 6.25  
PEAK DEPTH - 1% AEP

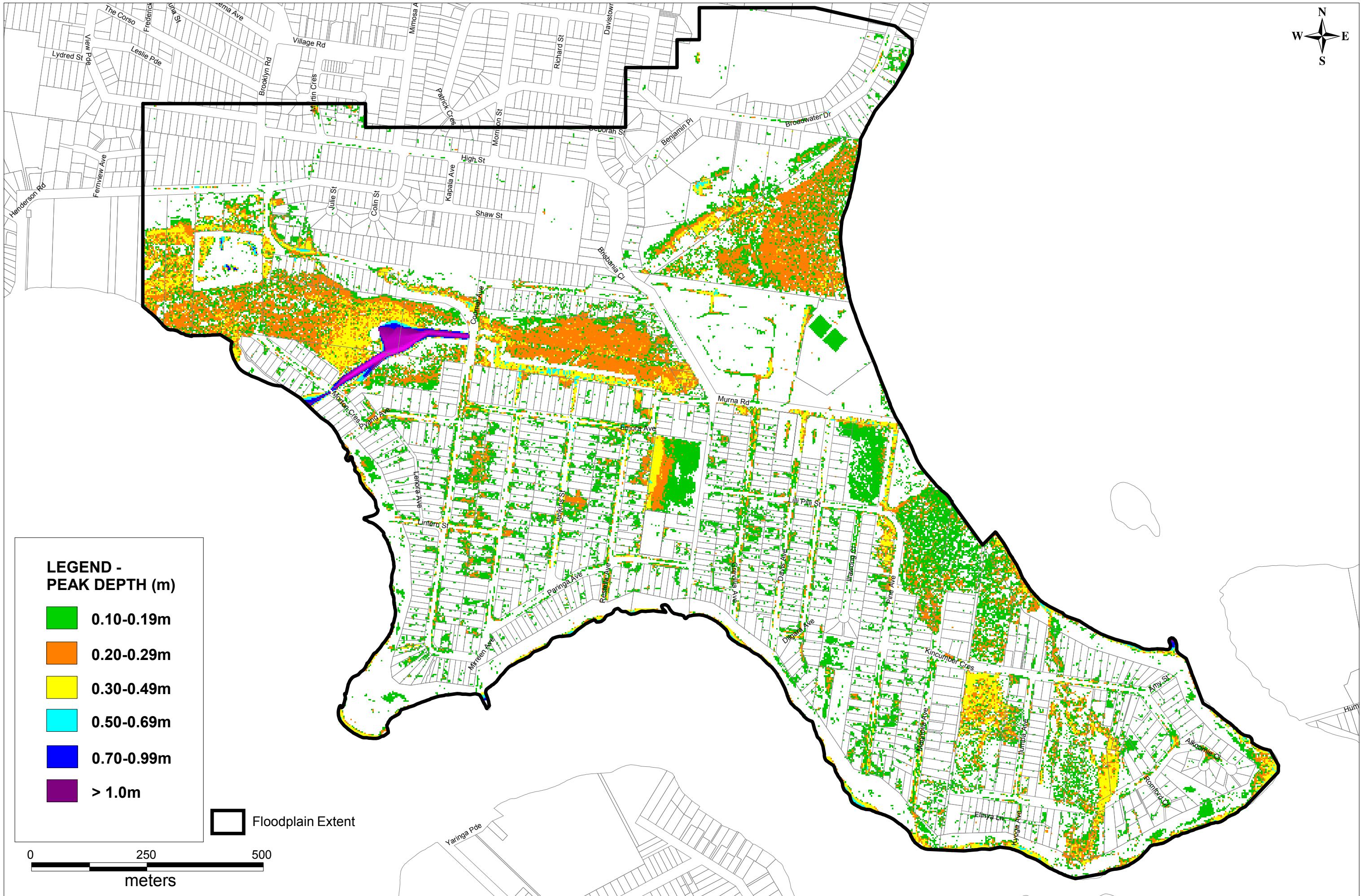


FIGURE 6.26  
PEAK DEPTH - 2% AEP

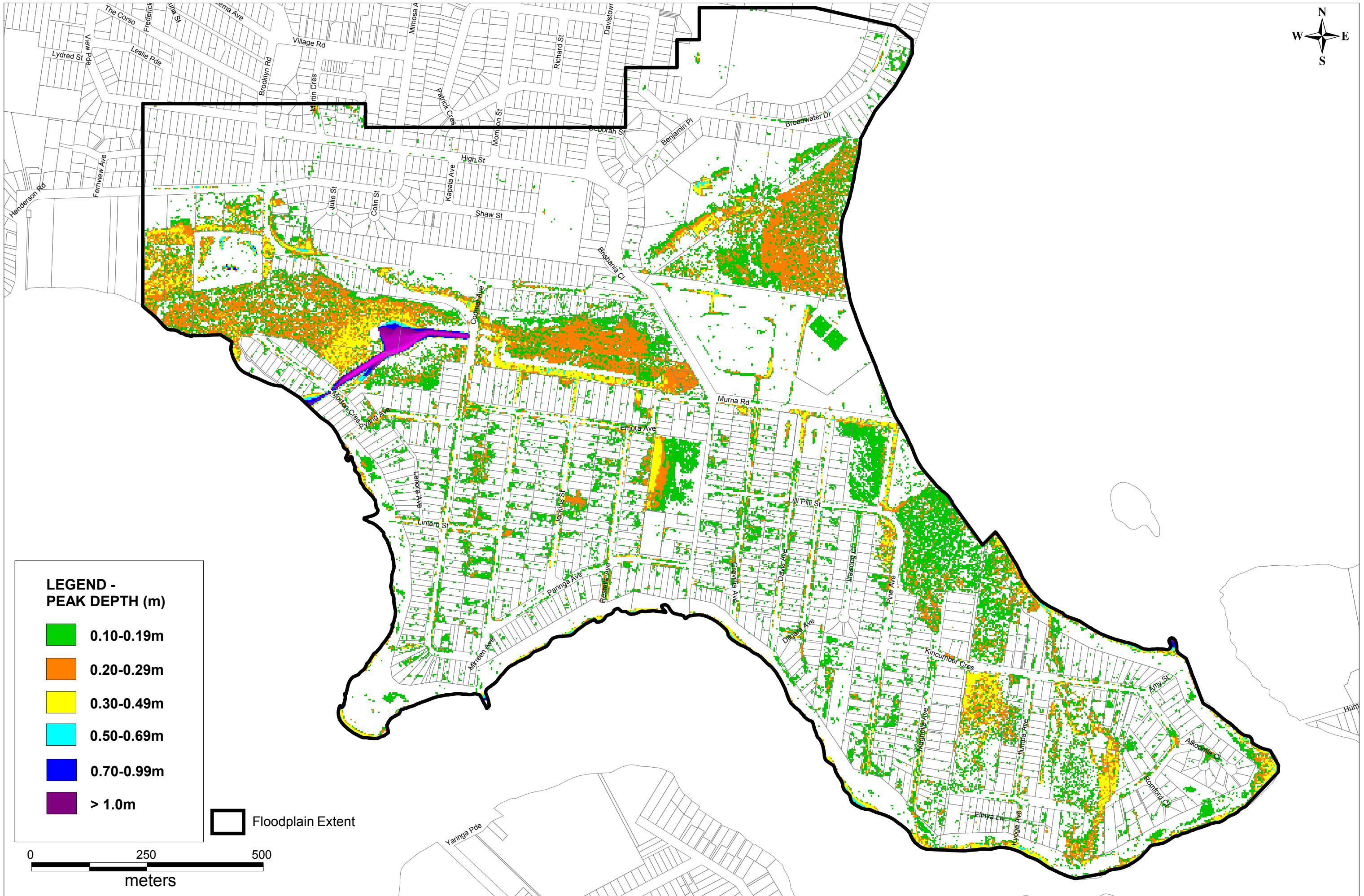


FIGURE 6.27  
PEAK DEPTH - 5% AEP

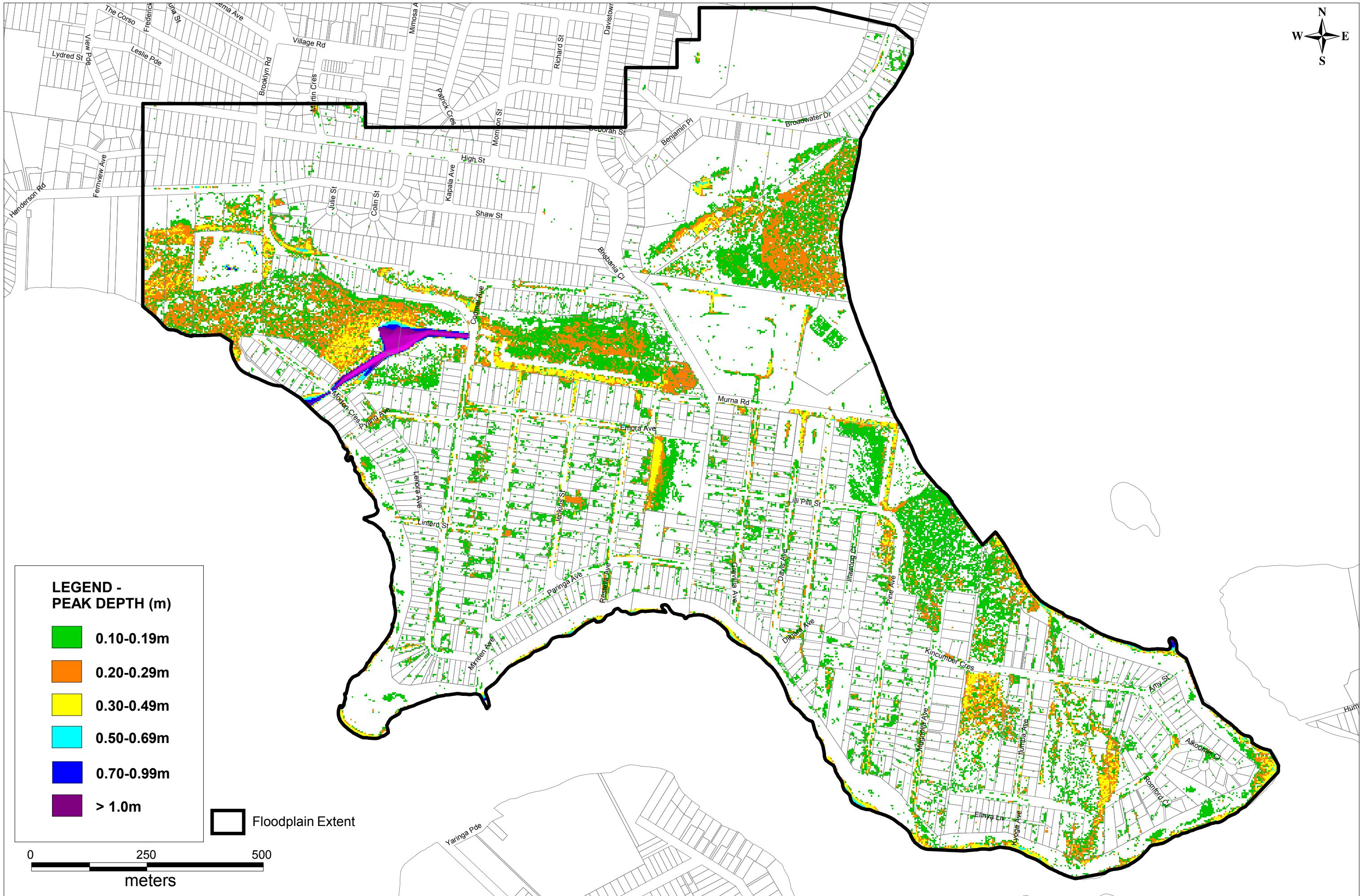
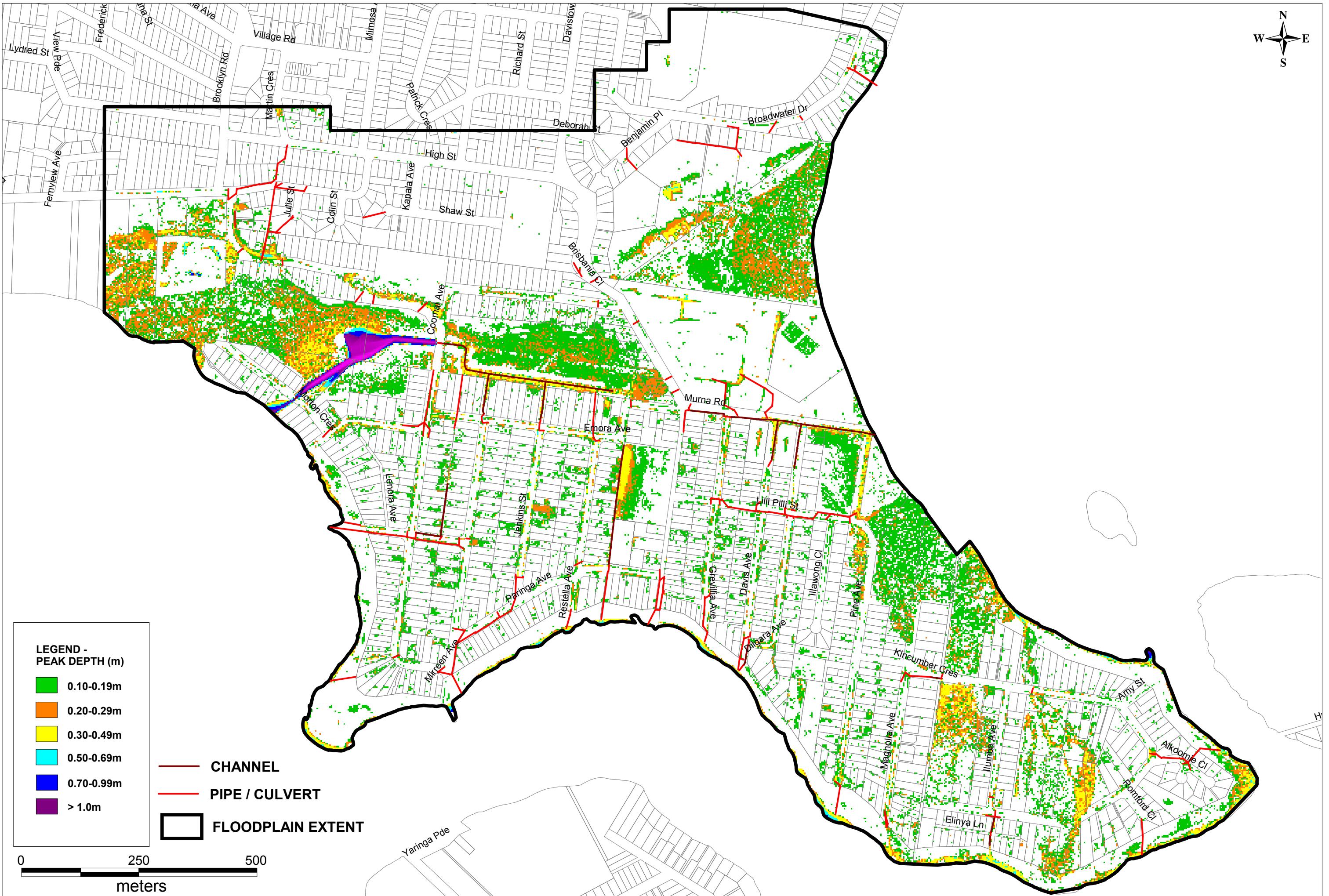


FIGURE 6.28  
PEAK DEPTH - 10% AEP



FINAL

Davistown Catchment Flood Study

FIGURE 6.29  
PEAK DEPTH - 20% AEP

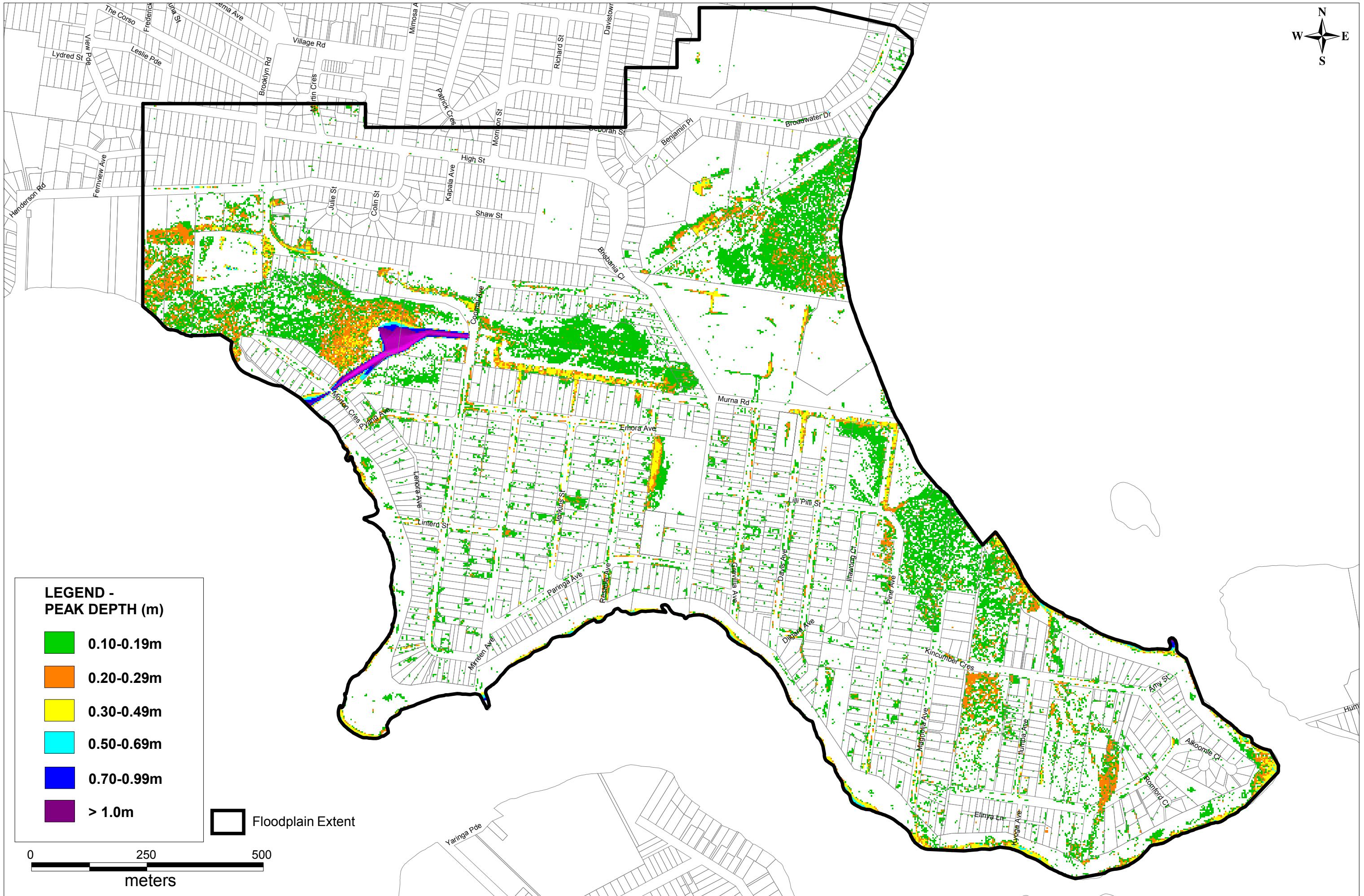
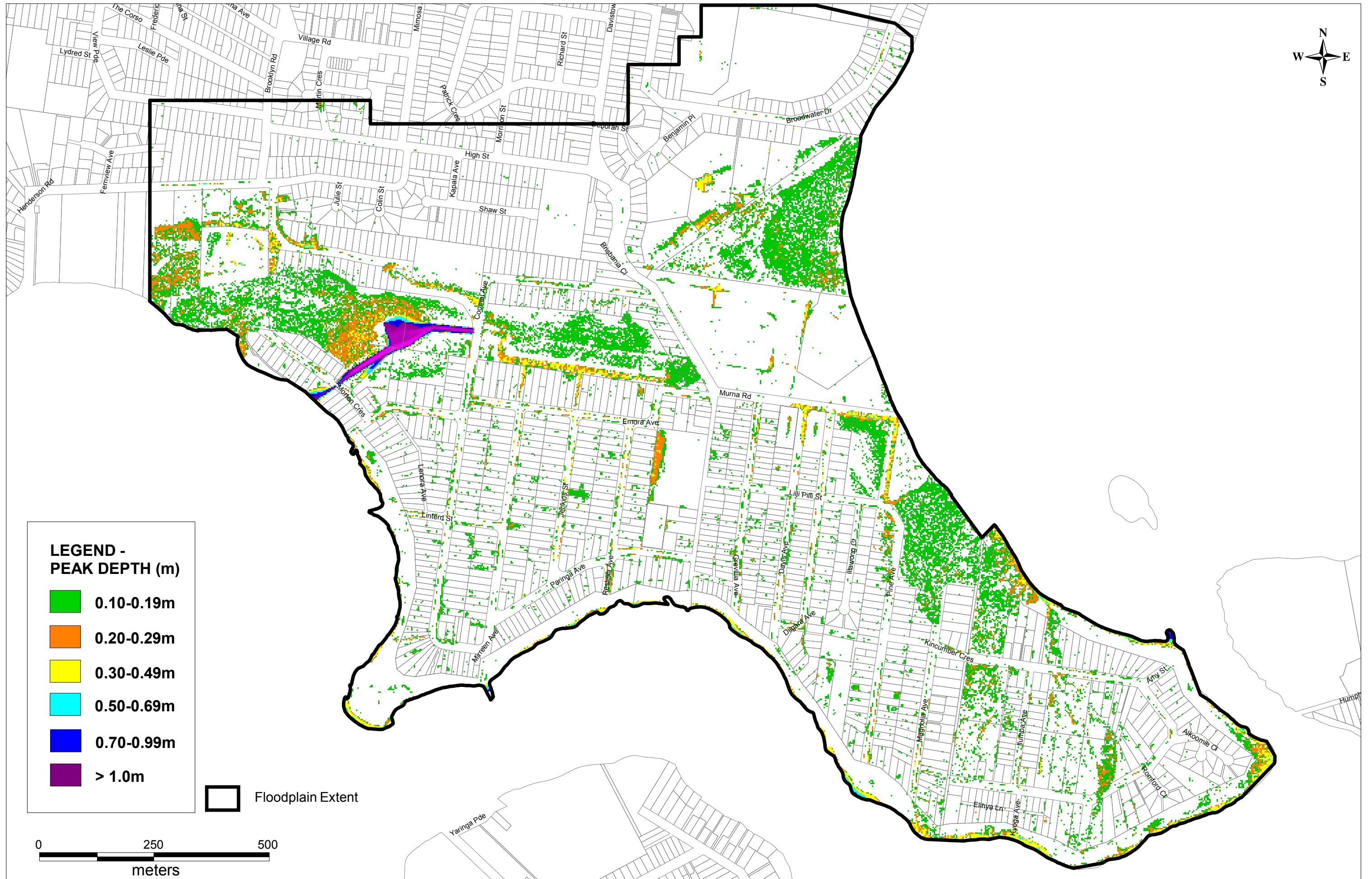


FIGURE 6.30  
PEAK DEPTH - 50% AEP



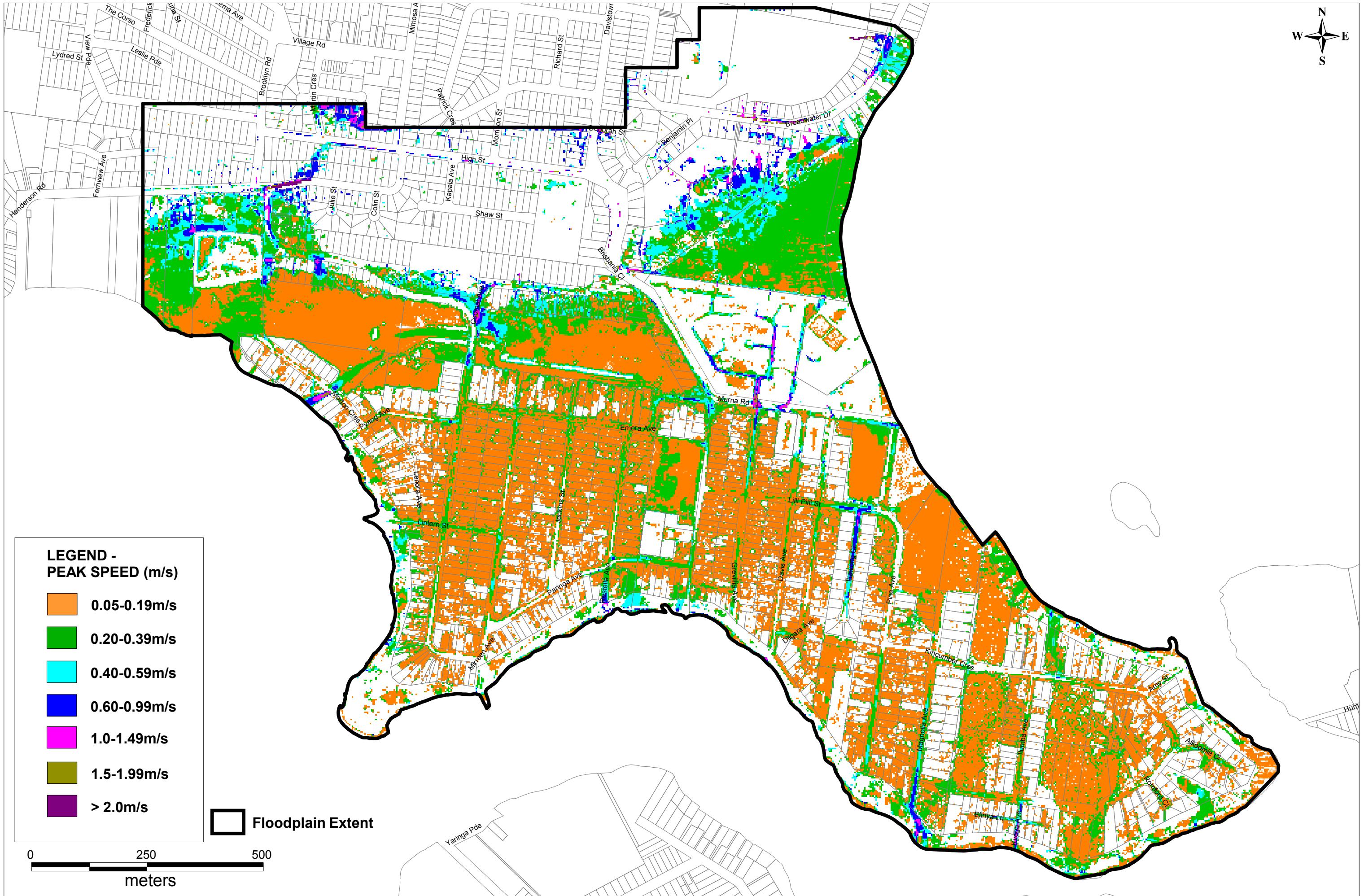
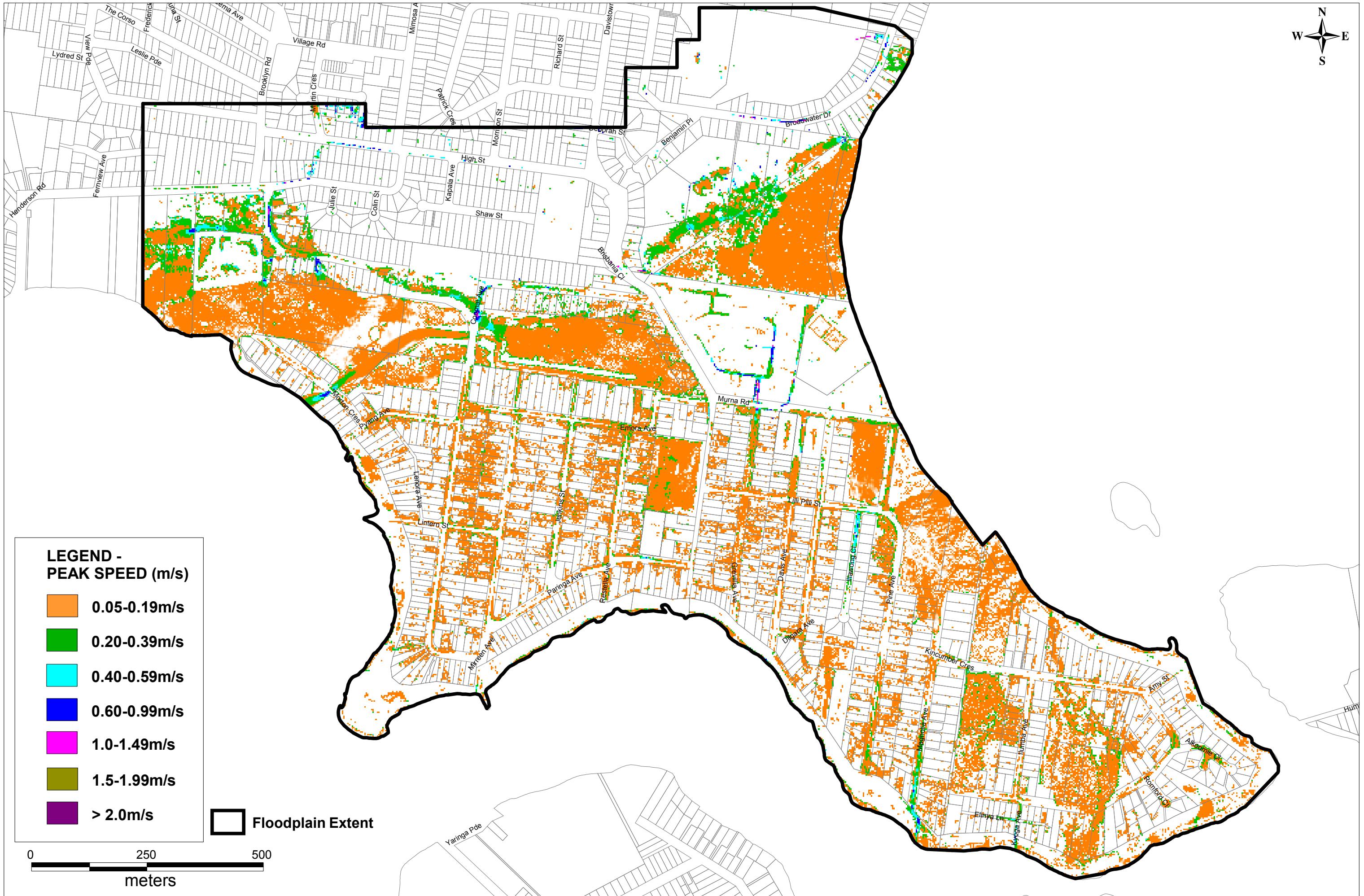


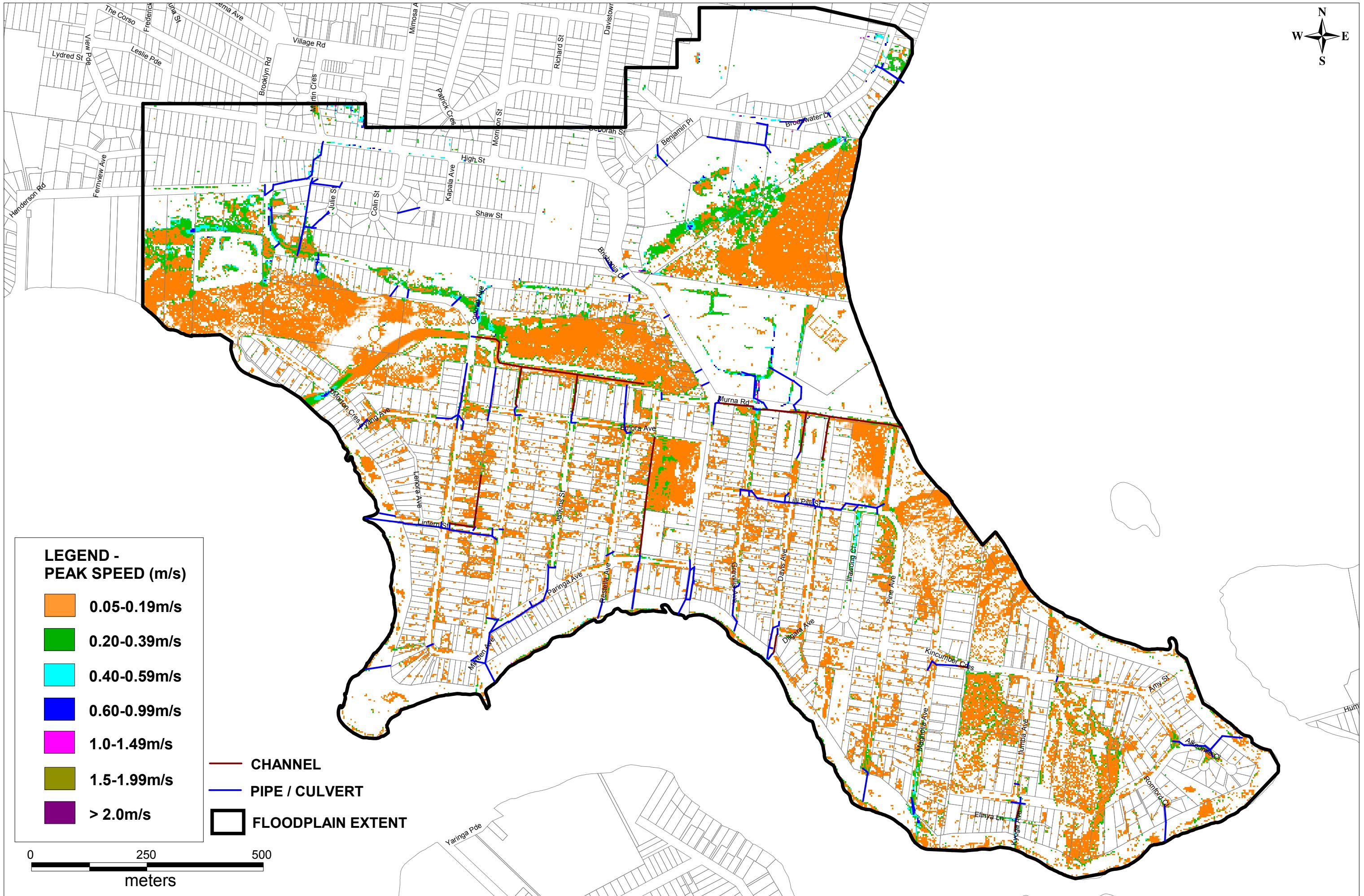
FIGURE 6.32  
PEAK SPEED - PMF



FINAL

Davistown Catchment Flood Study

FIGURE 6.33  
PEAK SPEED - 0.5% AEP



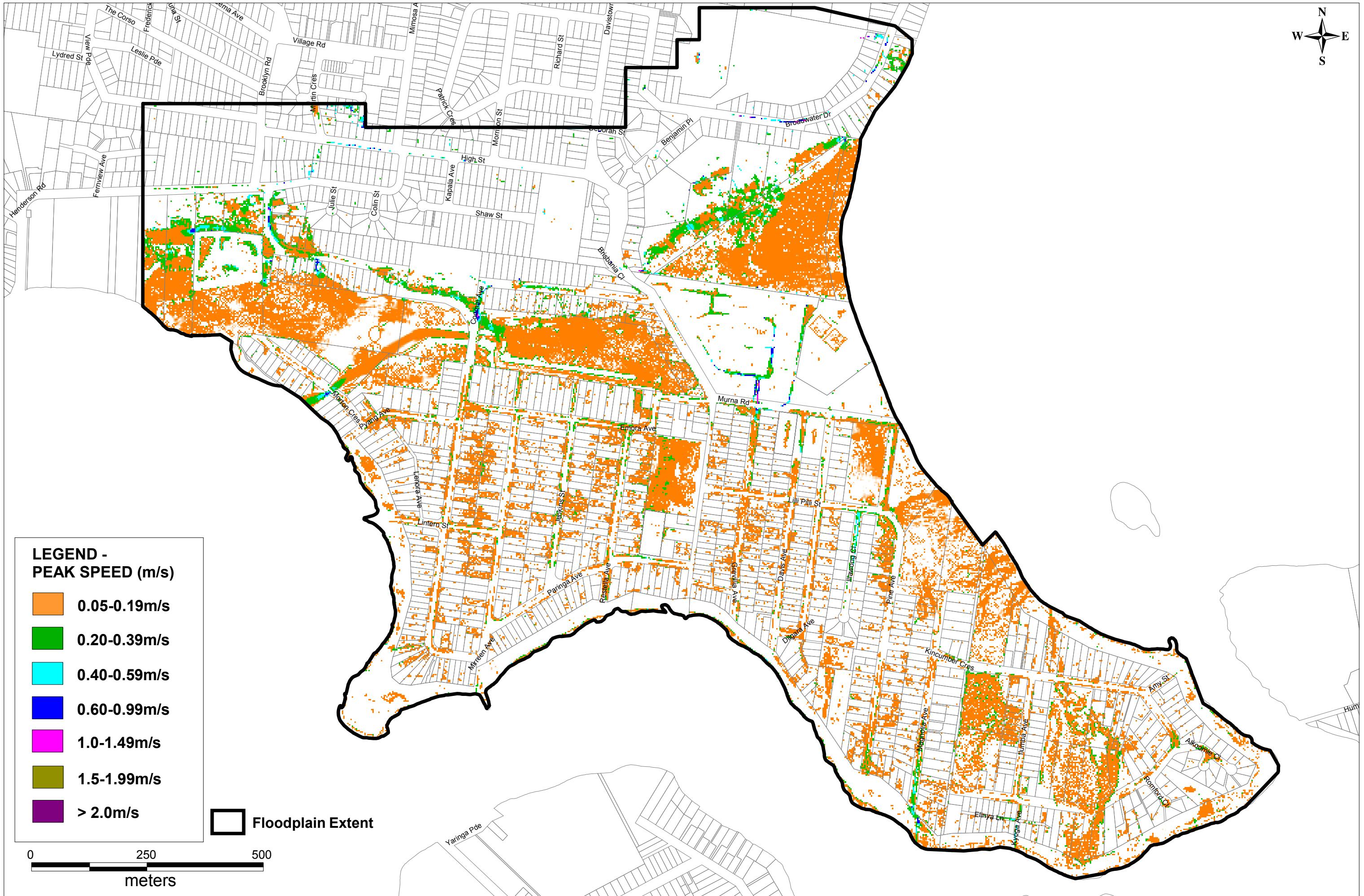
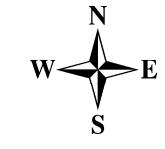
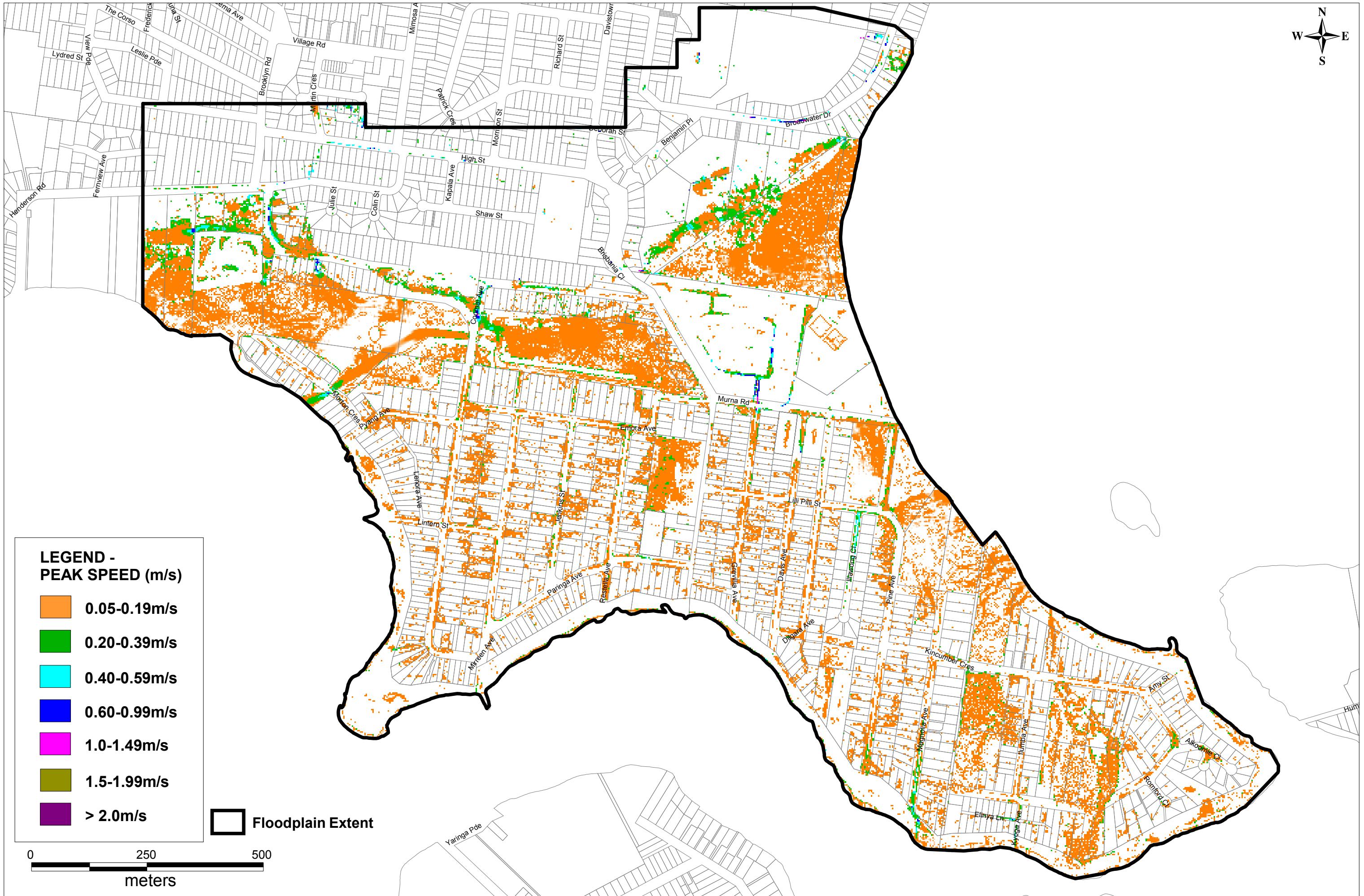
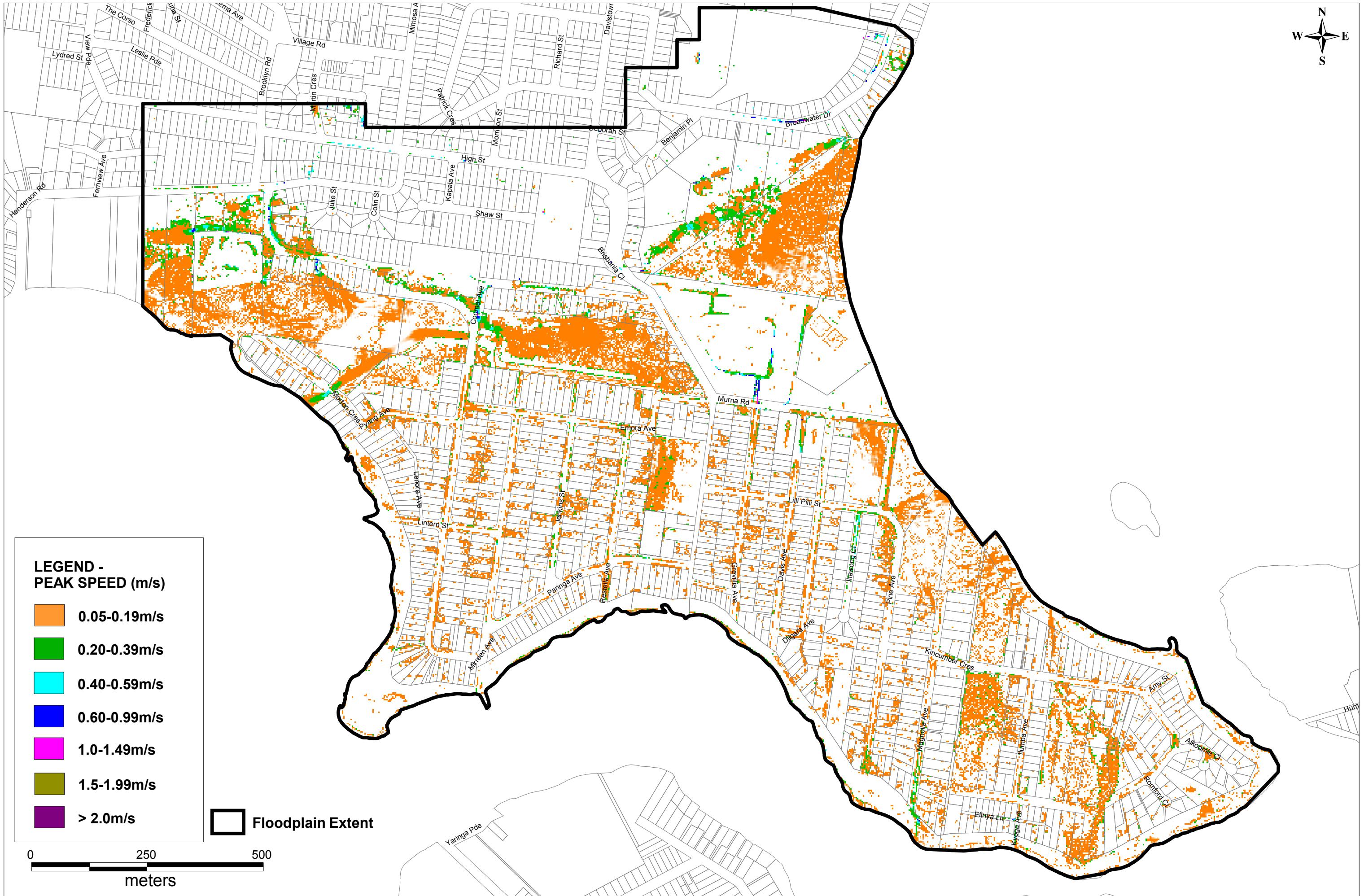


FIGURE 6.35  
PEAK SPEED - 2% AEP

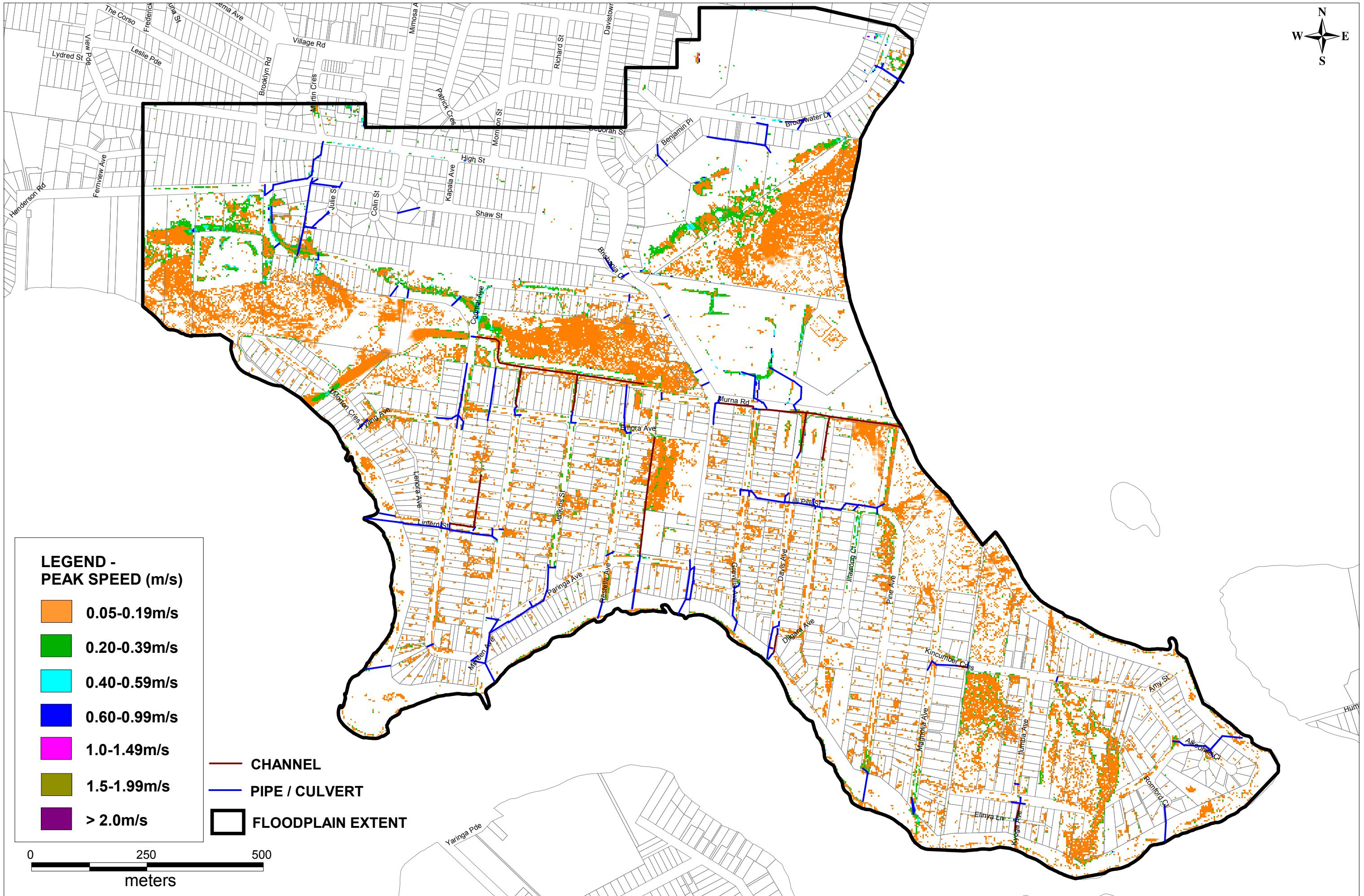


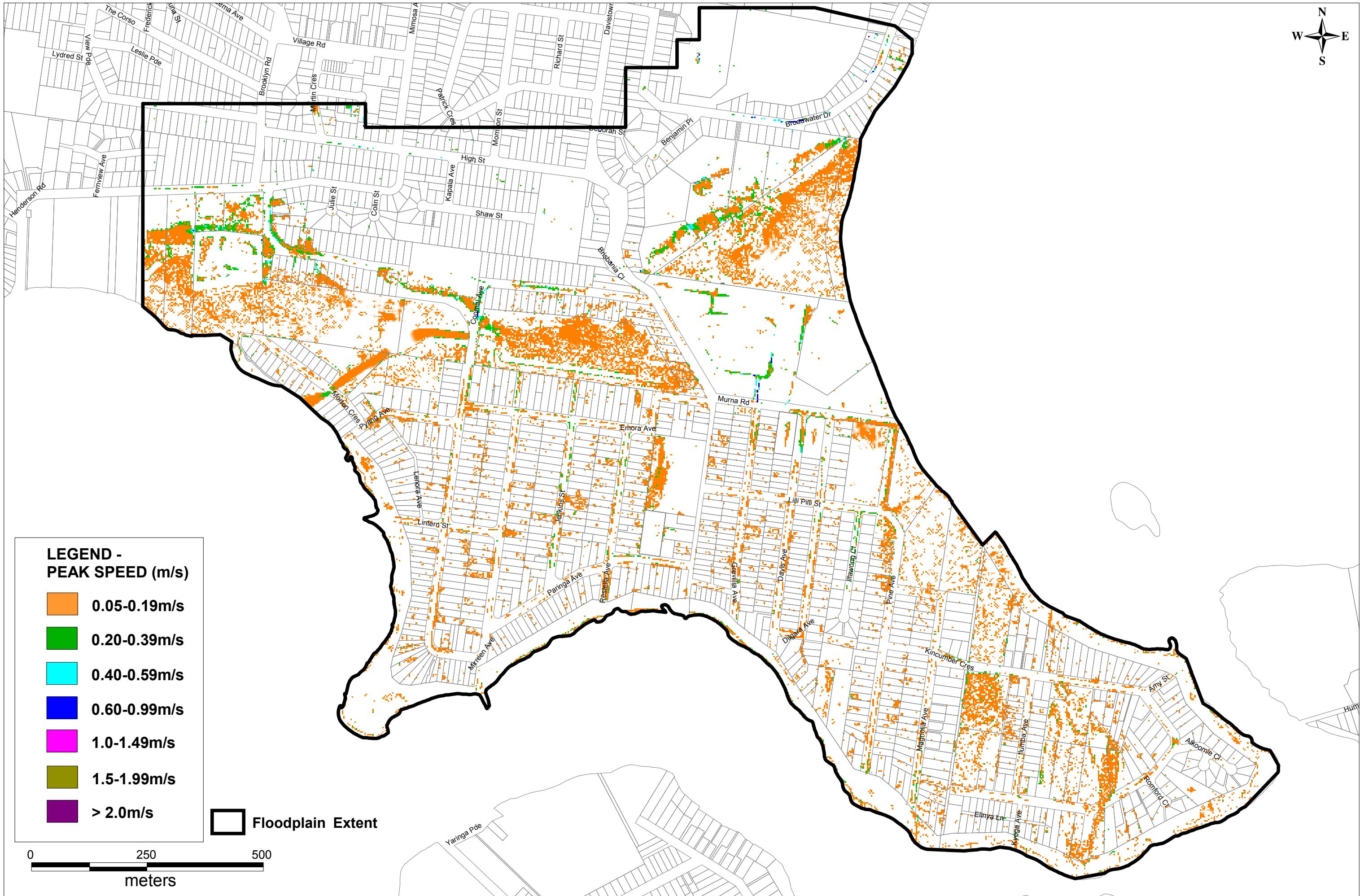
**FIGURE 6.36**  
PEAK SPEED - 5% AEP



**FINAL**  
Davistown Catchment Flood Study

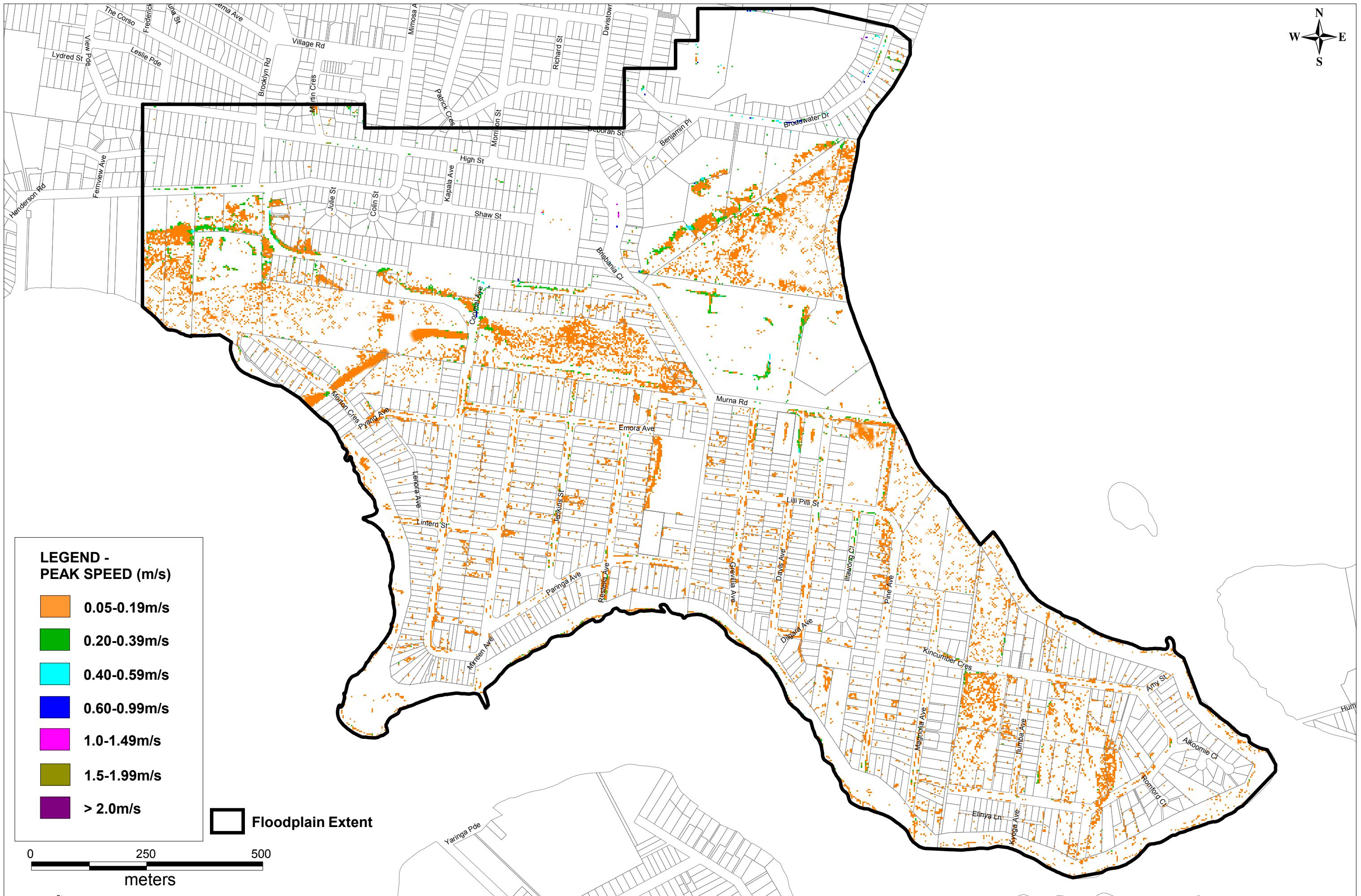
**FIGURE 6.37**  
**PEAK SPEED - 10% AEP**

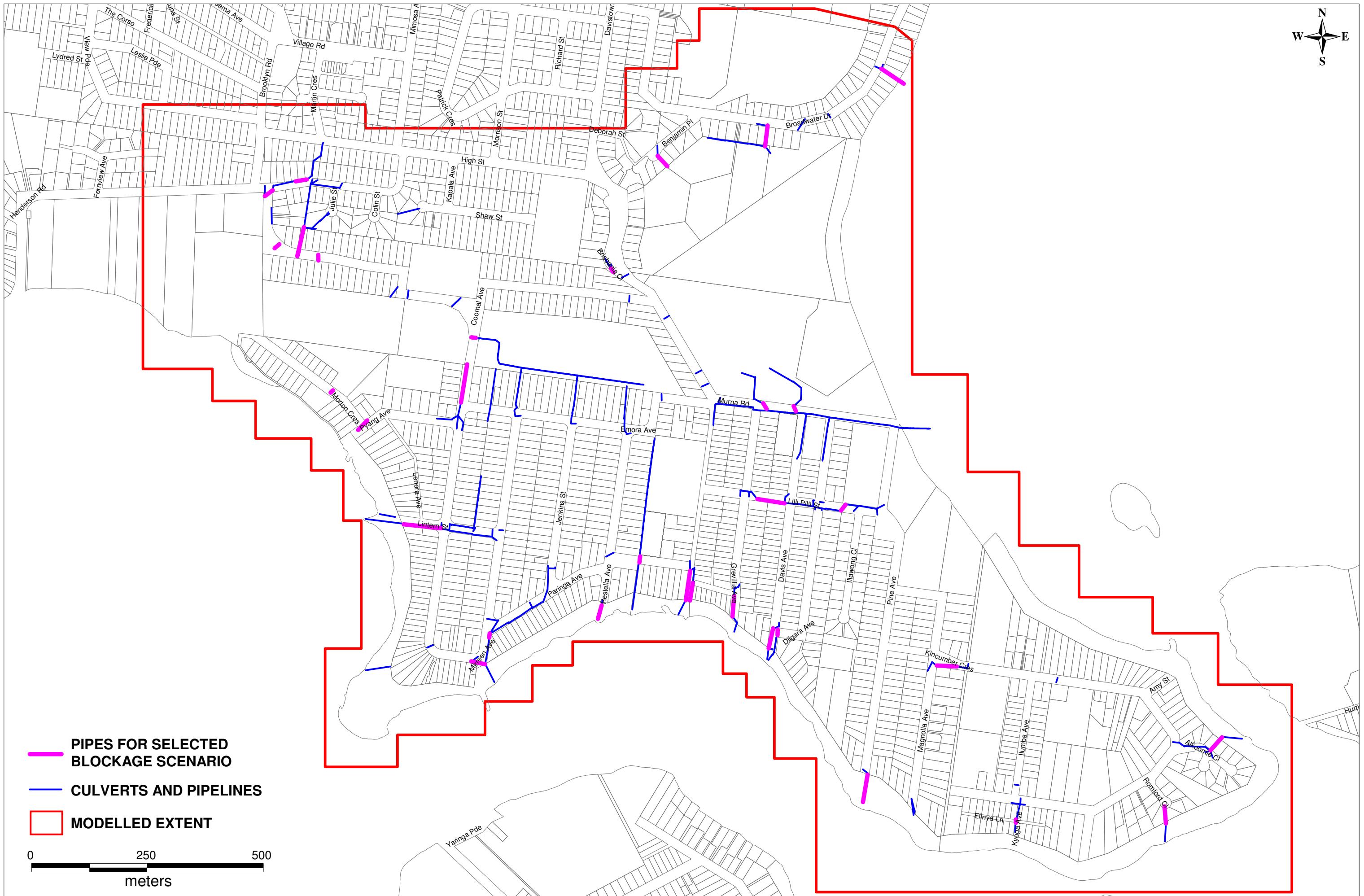


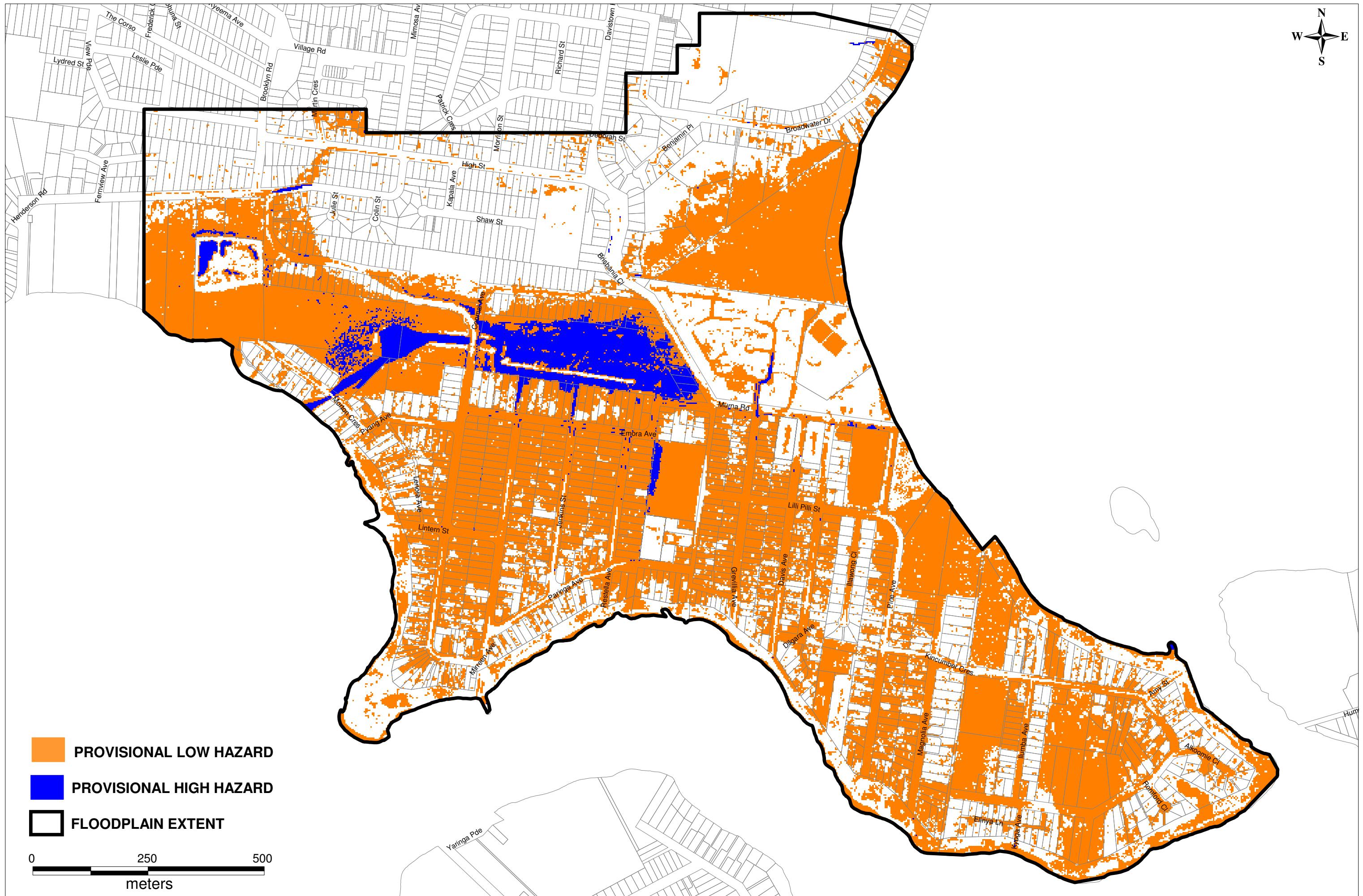


Davistown Catchment Flood Study

FIGURE 6.39  
PEAK SPEED - 50% AEP







FINAL

Davistown Catchment Flood Study

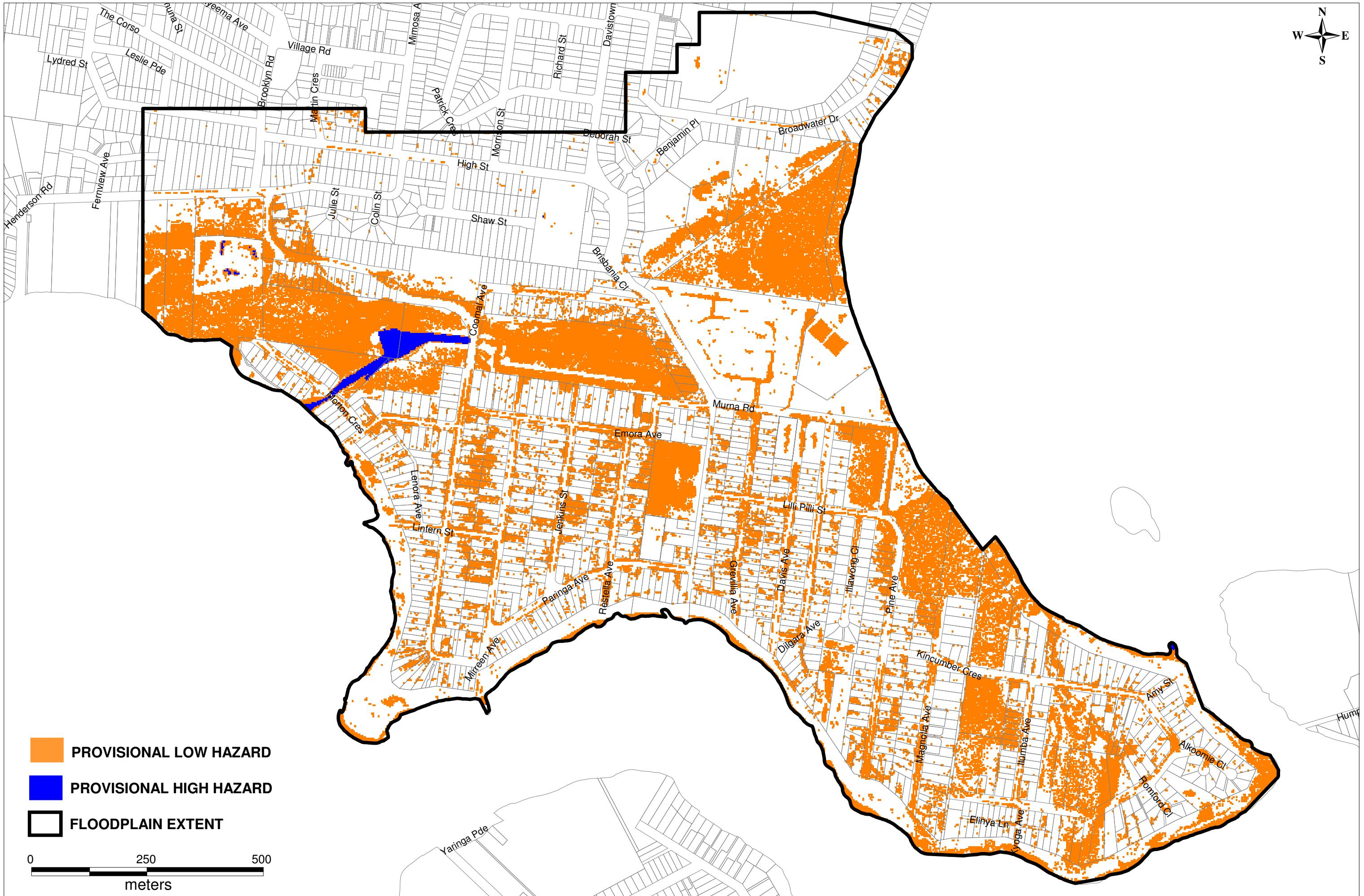
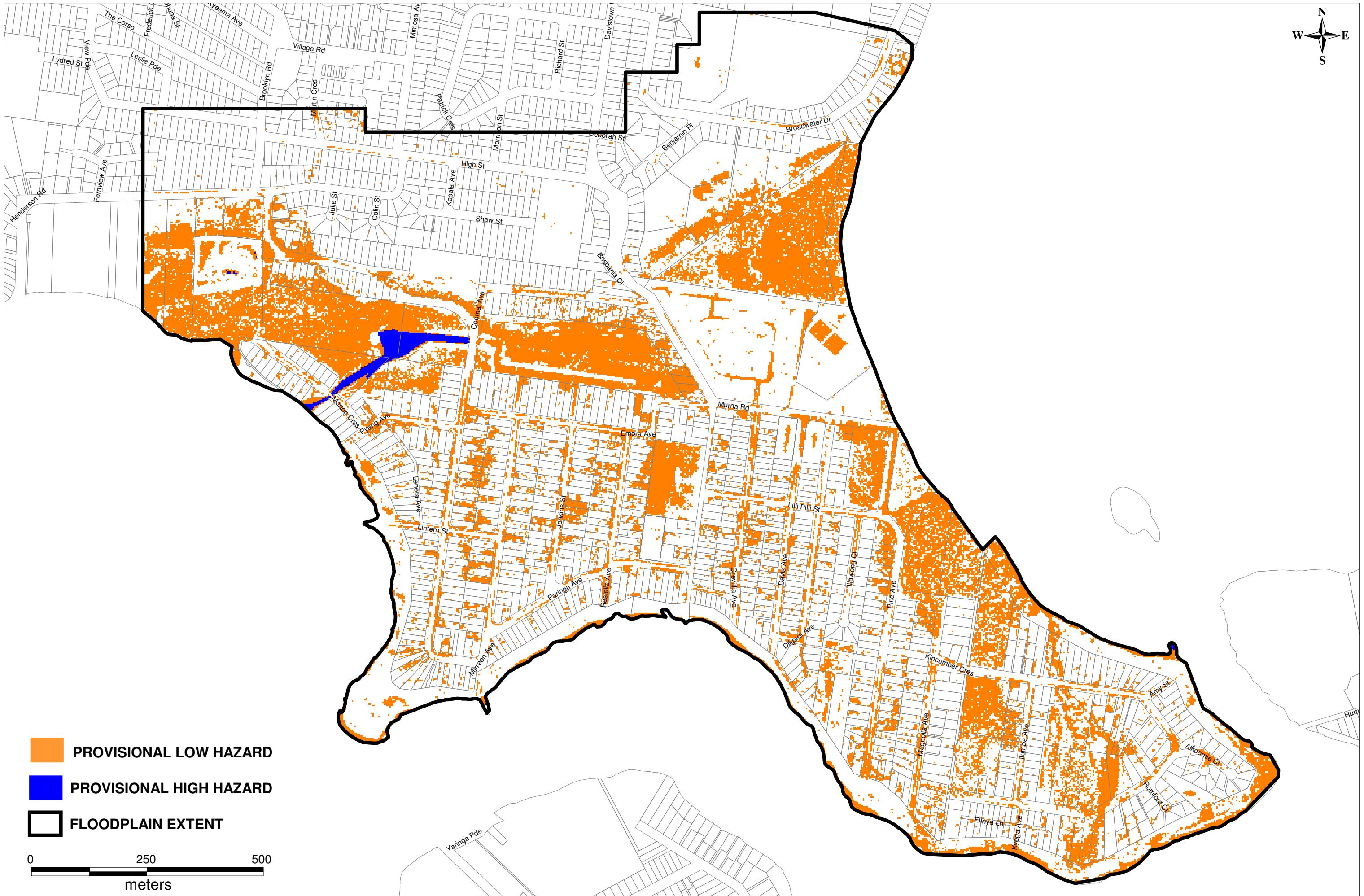


FIGURE 8.3  
PROVISIONAL HAZARD - 1% AEP



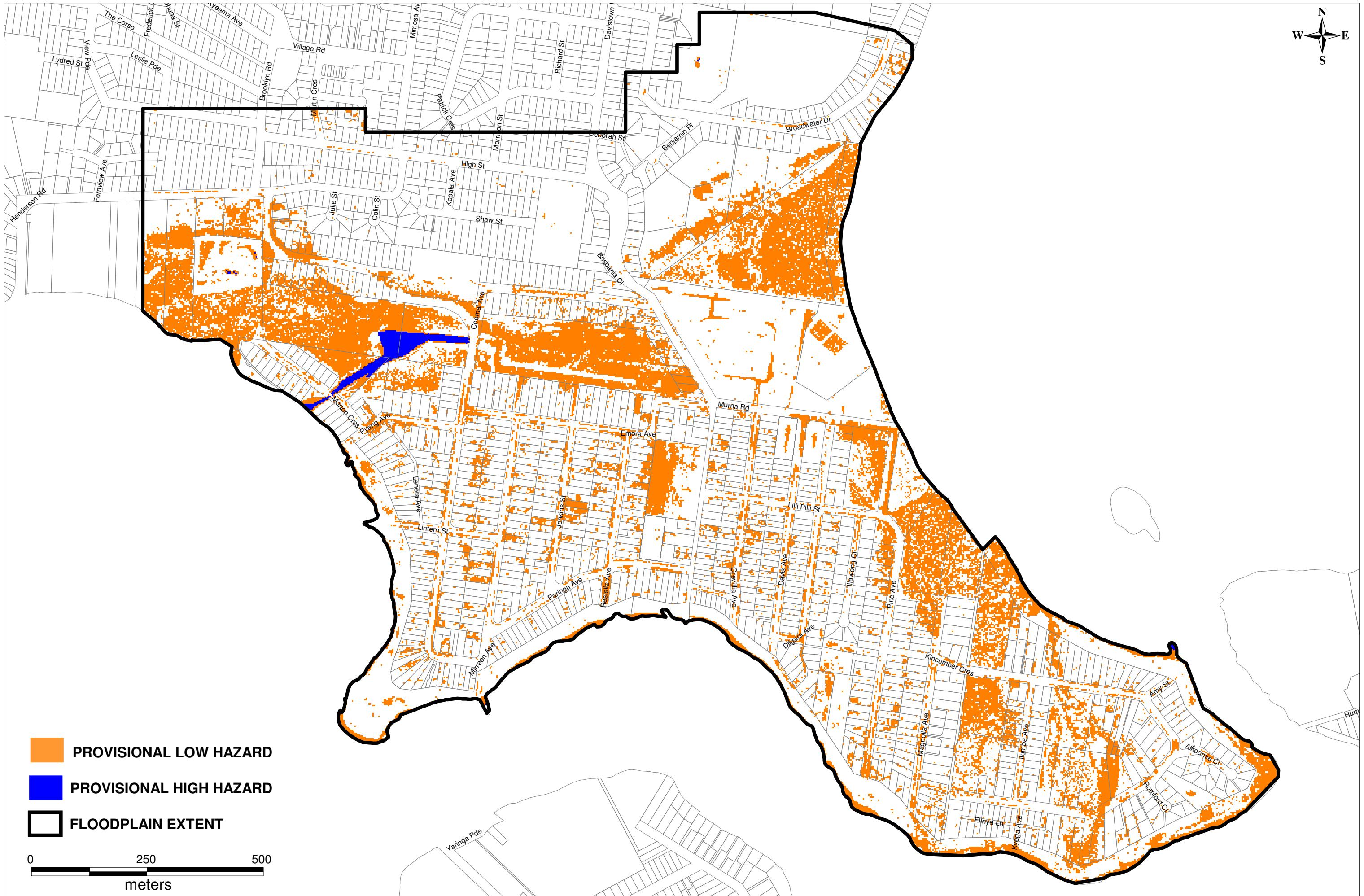


FIGURE 8.5  
PROVISIONAL HAZARD -20% AEP

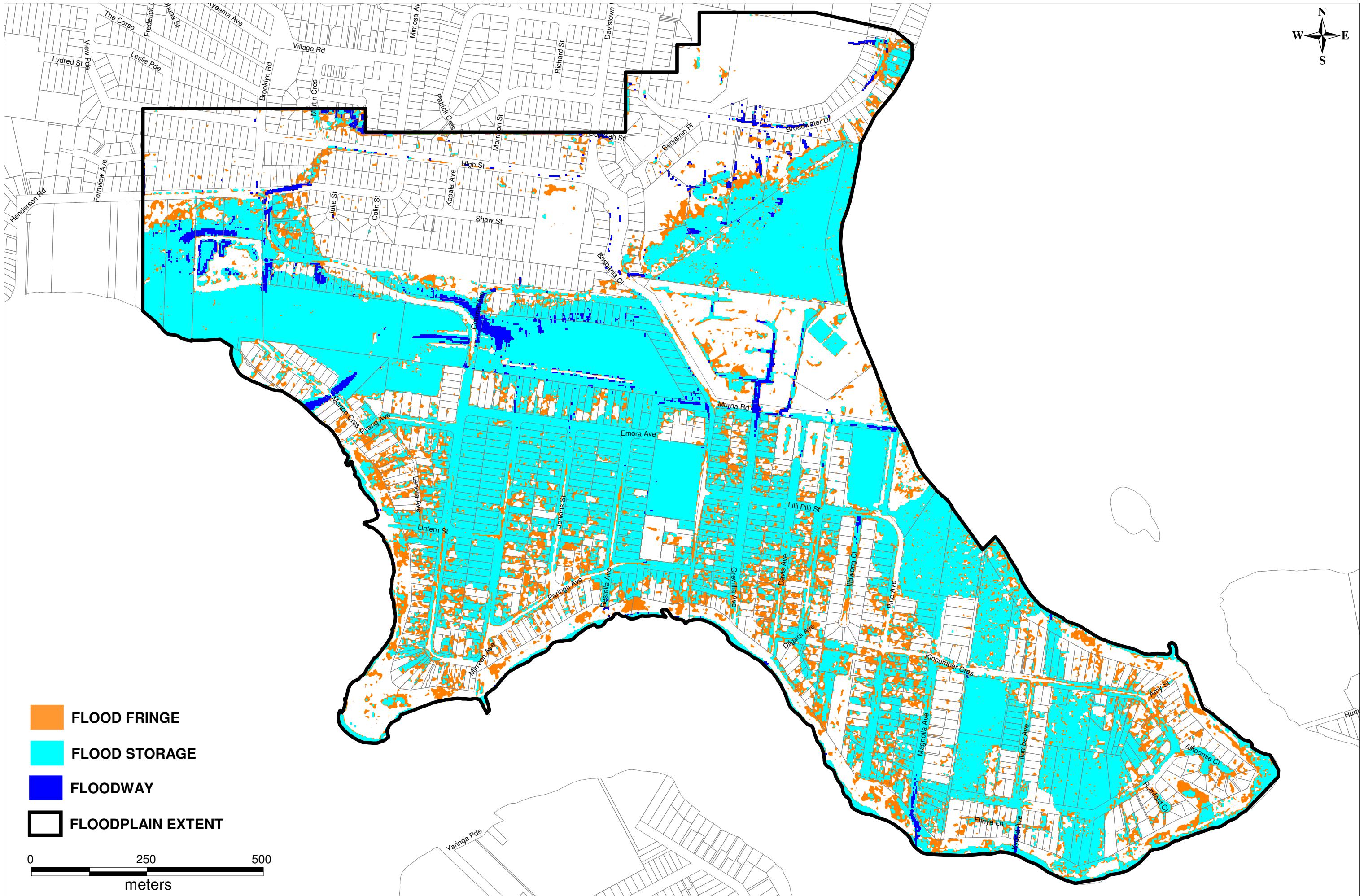
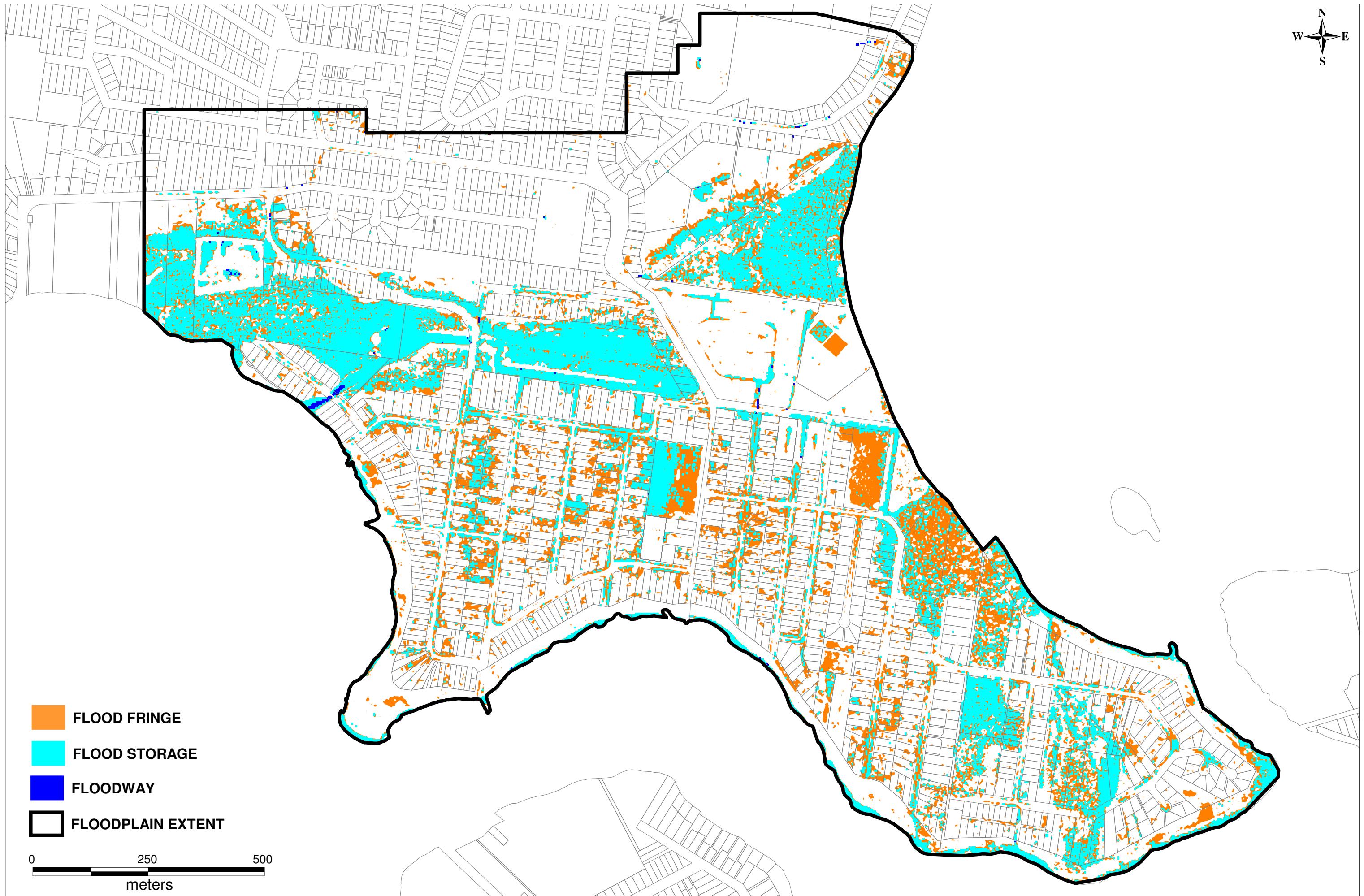


FIGURE 9.1  
HYDRAULIC CATEGORY - PMF



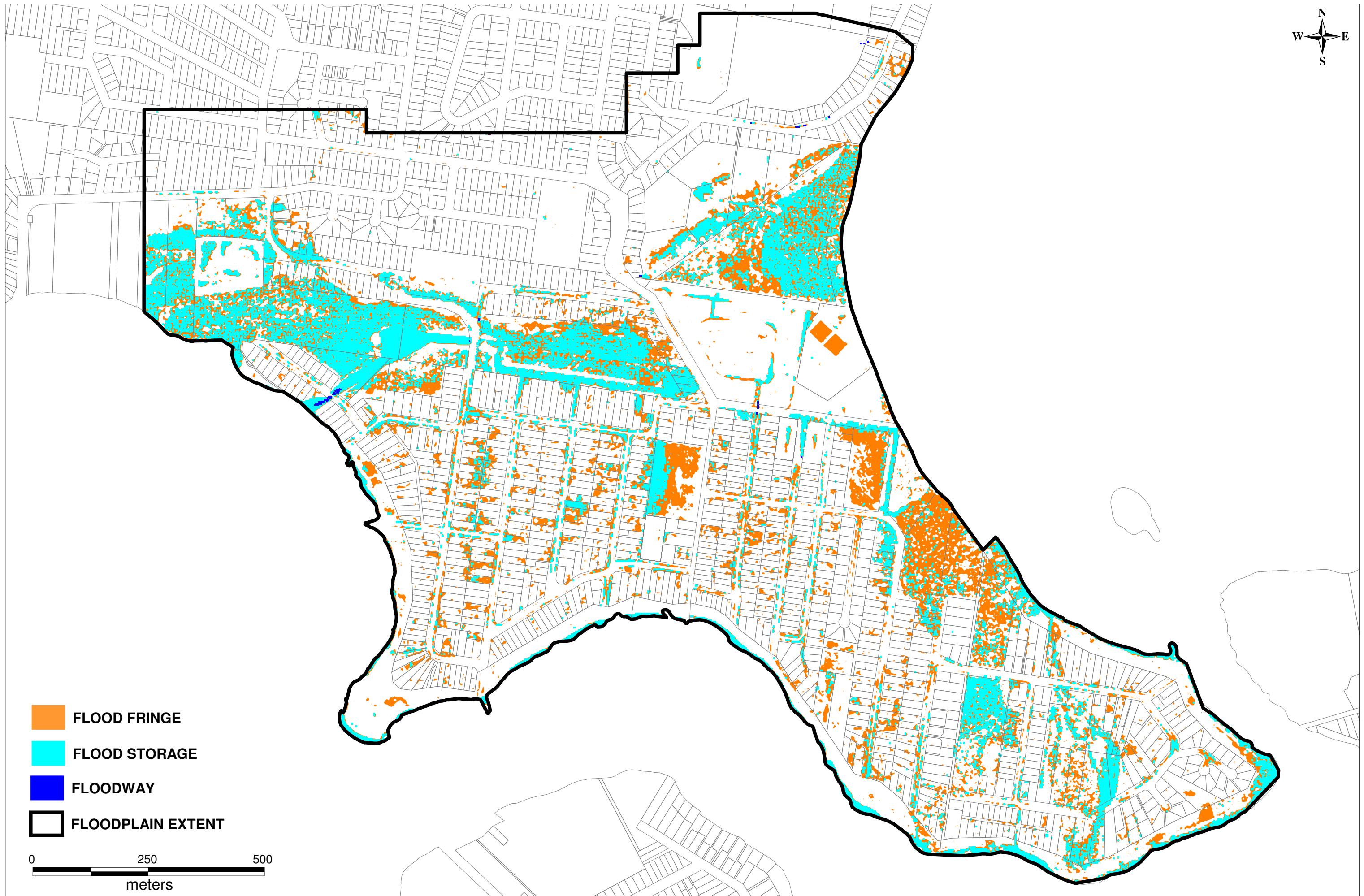


FIGURE 9.3  
HYDRAULIC CATEGORY - 5% AEP

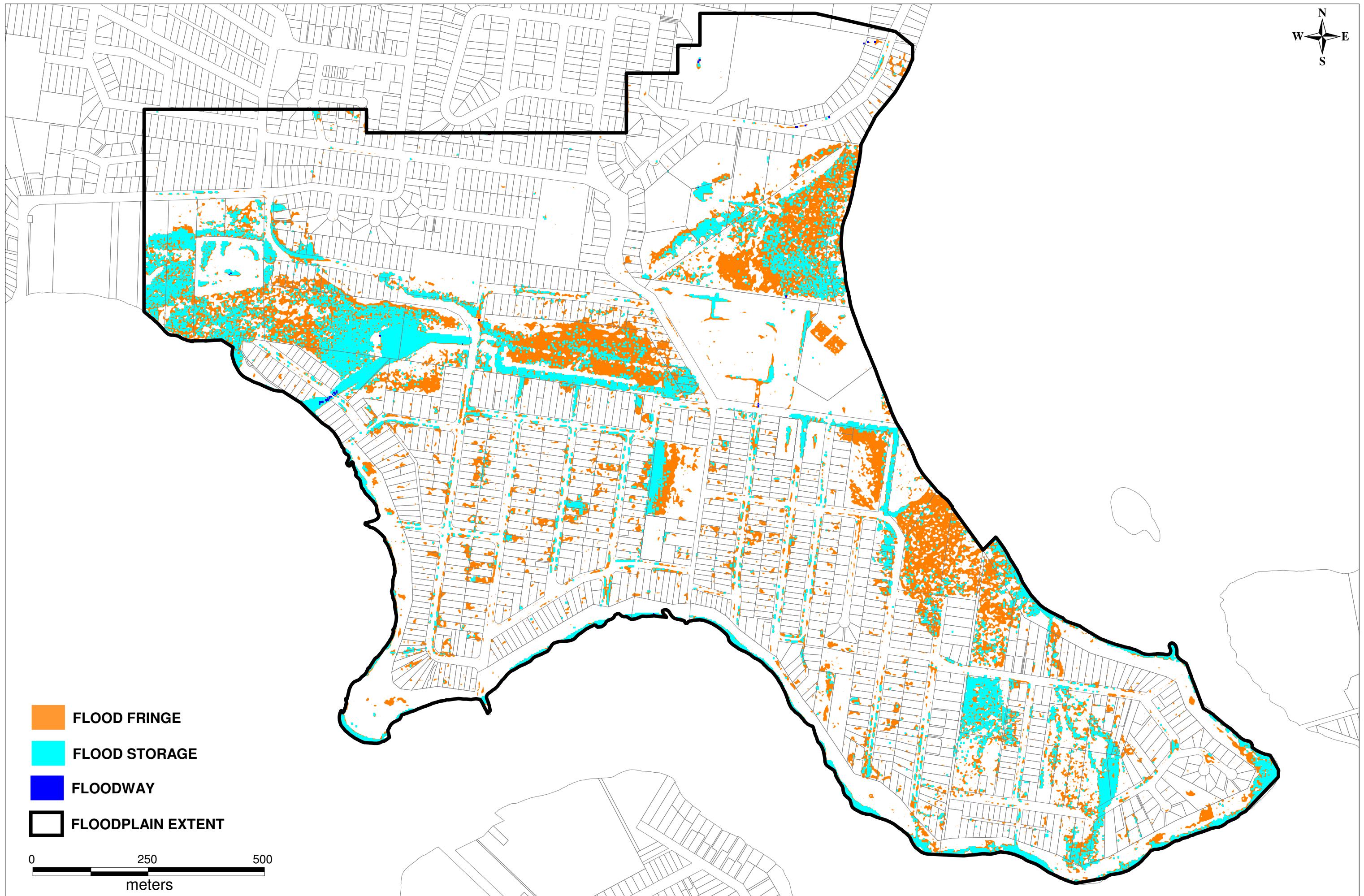
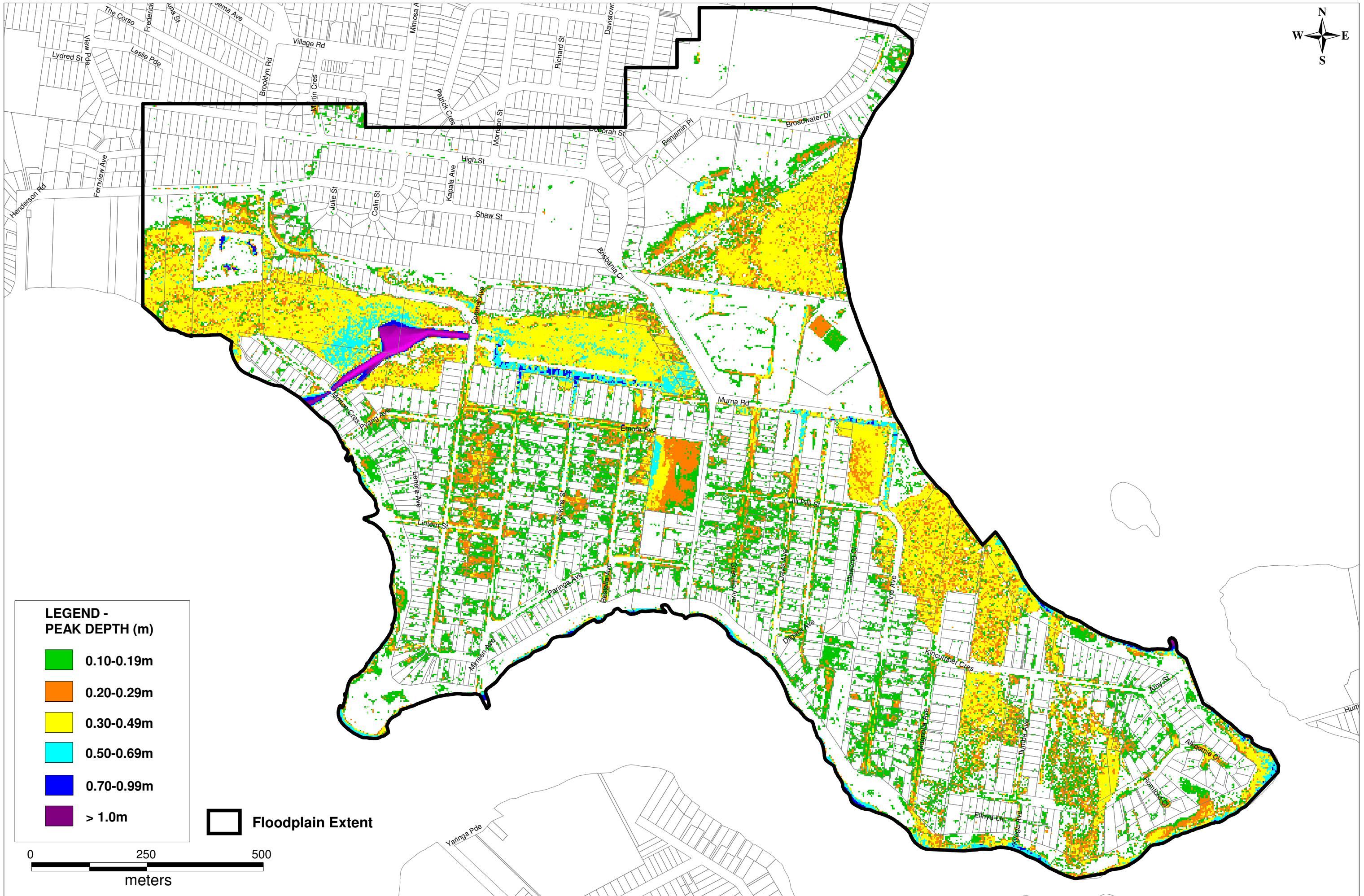


FIGURE 9.4  
HYDRAULIC CATEGORY - 20% AEP



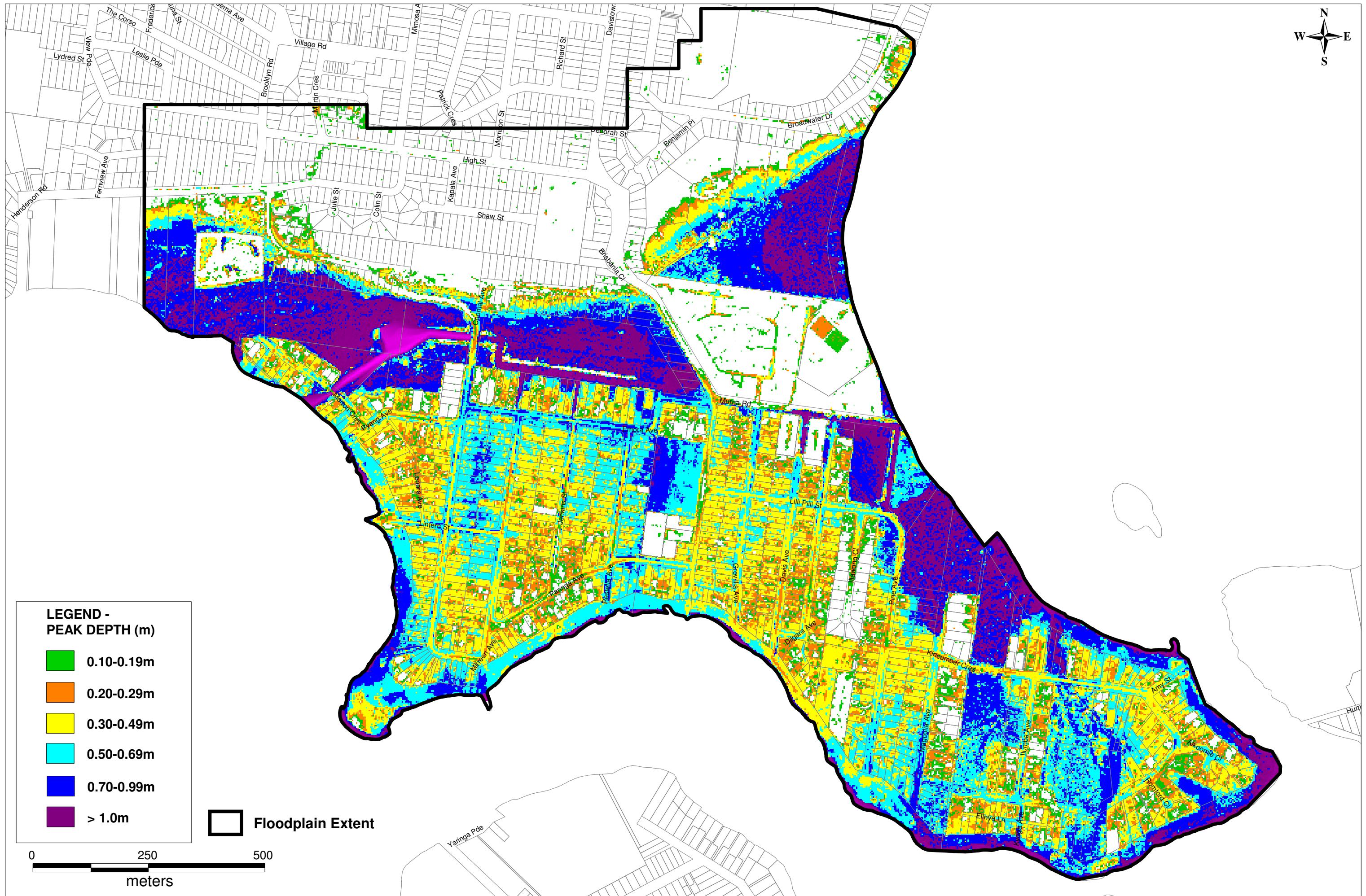
FINAL

Davistown Catchment Flood Study

FIGURE 11.1

PEAK DEPTH - CLIMATE CHANGE 1% AEP 2h

30% INCREASE IN RAINFALL & 0.2m RISE IN ESTUARY LEVEL



FINAL

Davistown Catchment Flood Study

FIGURE 11.2

PEAK DEPTH - CLIMATE CHANGE 1% AEP 2h  
30% INCREASE IN RAINFALL & 0.91m RISE IN ESTUARY LEVEL