



WARRINGAH
COUNCIL

ATTACHMENT BOOKLET 6b

ORDINARY COUNCIL MEETING

TUESDAY 27 AUGUST 2013



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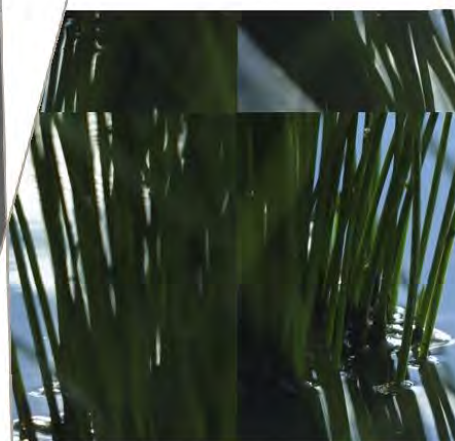
8.13 ADOPTION OF THE DEE WHY SOUTH CATCHMENT FLOOD STUDY

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Stage 3: Flood Study Report

Dee Why South Catchment Flood Study

W4961



Prepared for
Warringah Council

27 June 2013

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Document Control

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Amended Draft	17 April 2013	Andrew Reid	AR	Rhys Thomson	RST
Exhibition Draft	29 April 2013	Andrew Reid	AR	Rhys Thomson	RST
Final Draft	27 June 2013	Andrew Reid	AR	Brett Phillips	BCP

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Dee Why South Catchment Flood
Study

APPENDIX A

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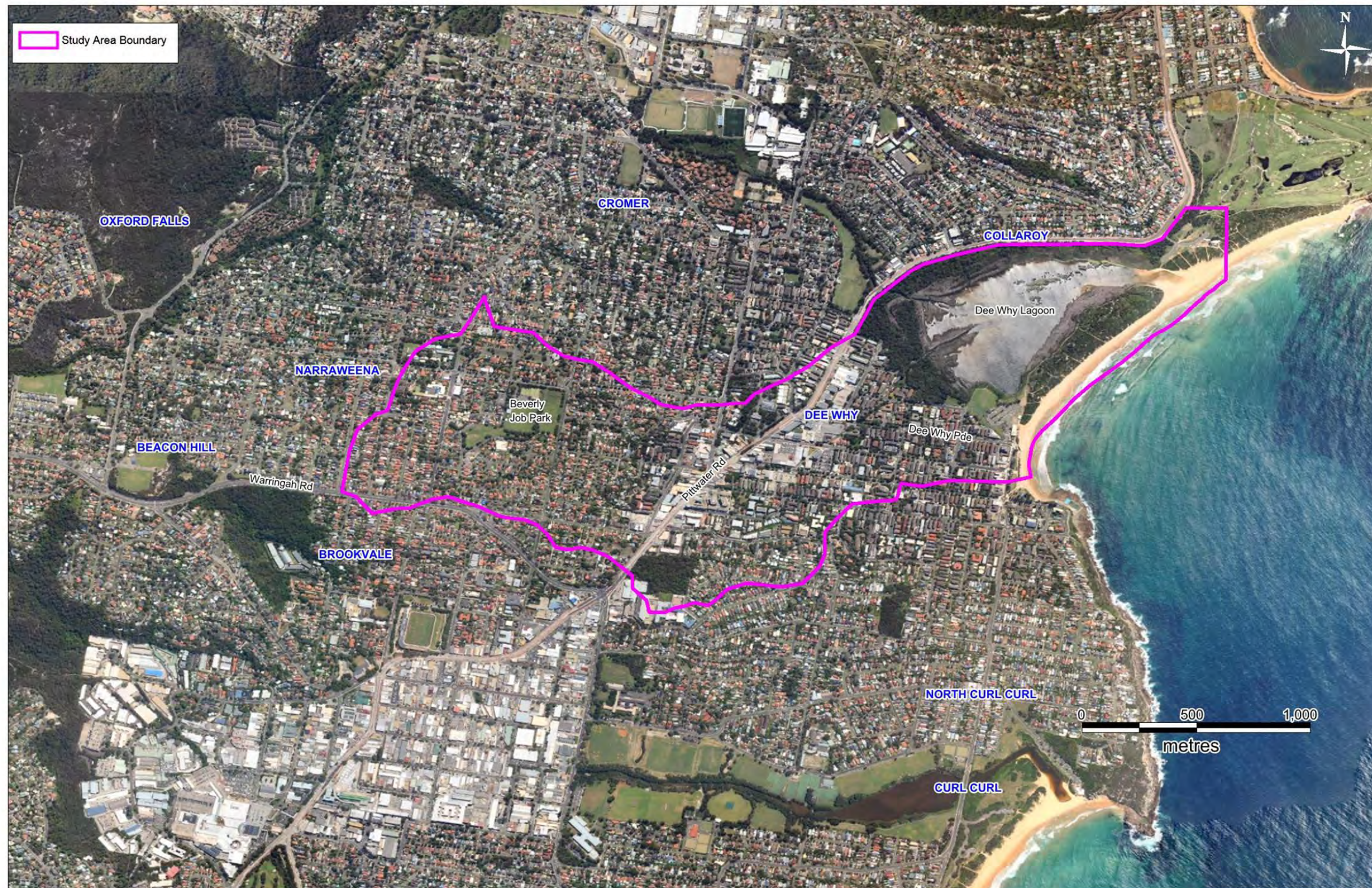


Figure 2-1 General Layout of the SMEC XP-SWMM Model

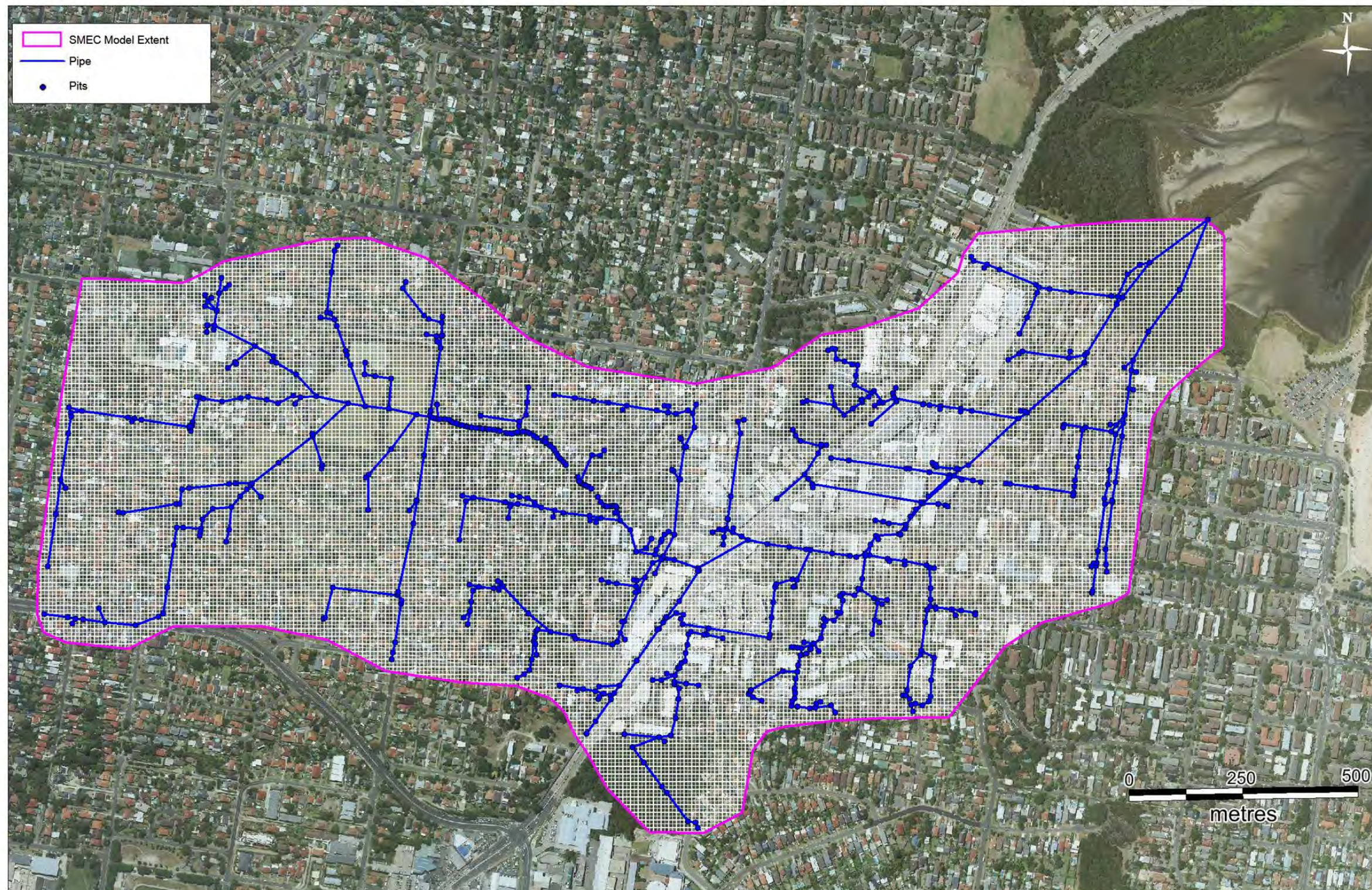


Figure 2-2 Rainfall-on-Grid XP-SWMM Model Layout (Cardno)

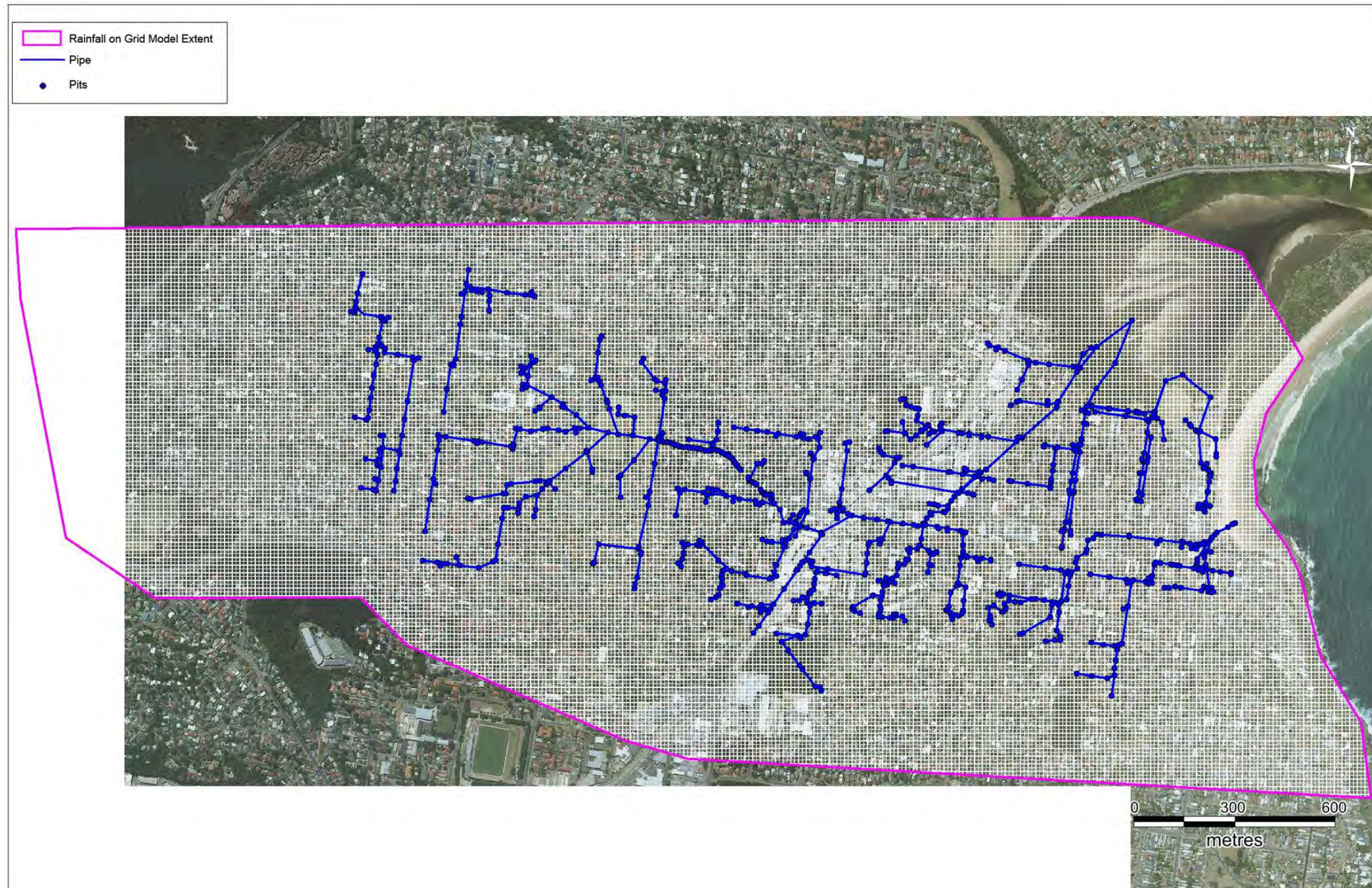


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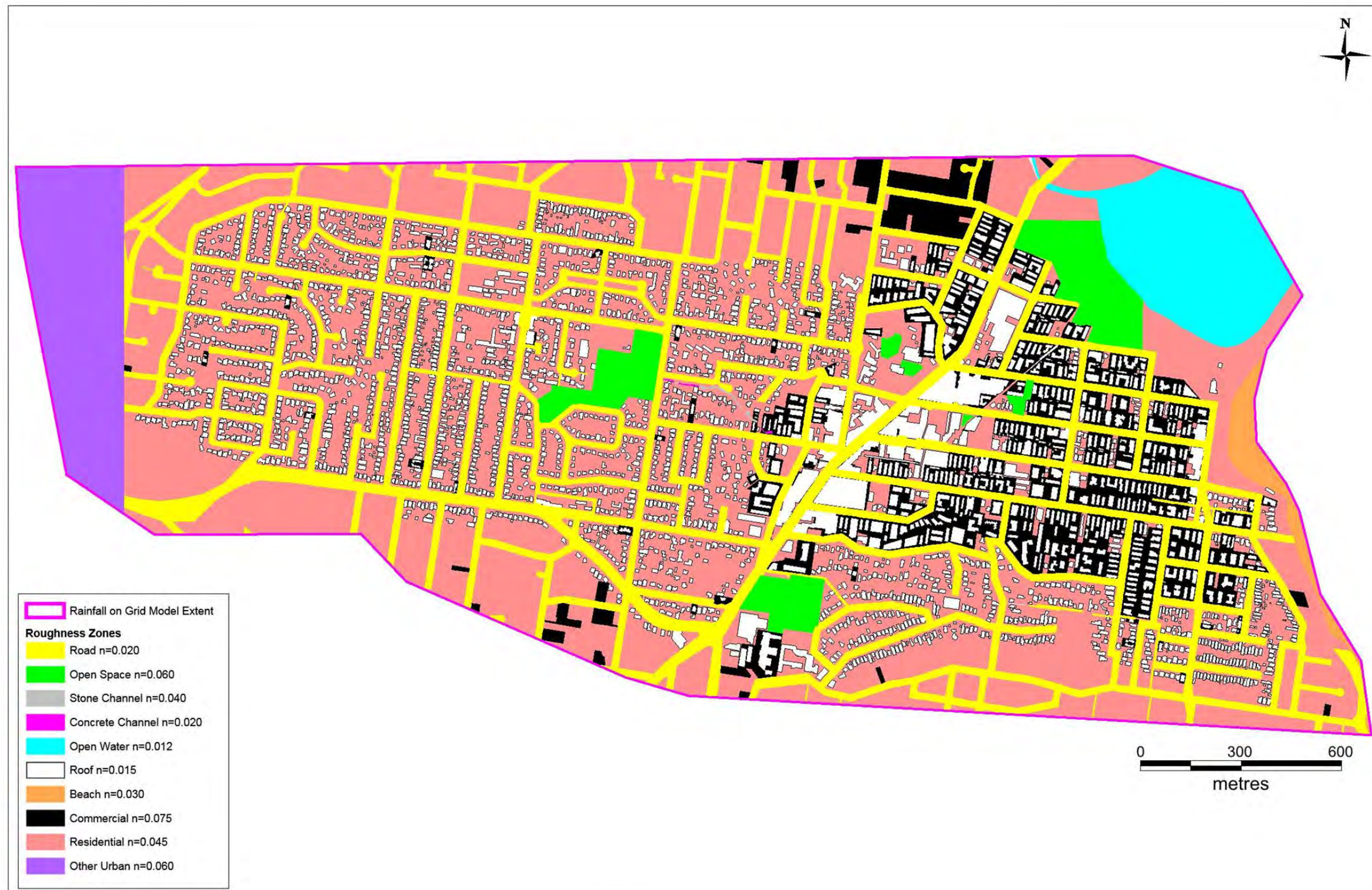


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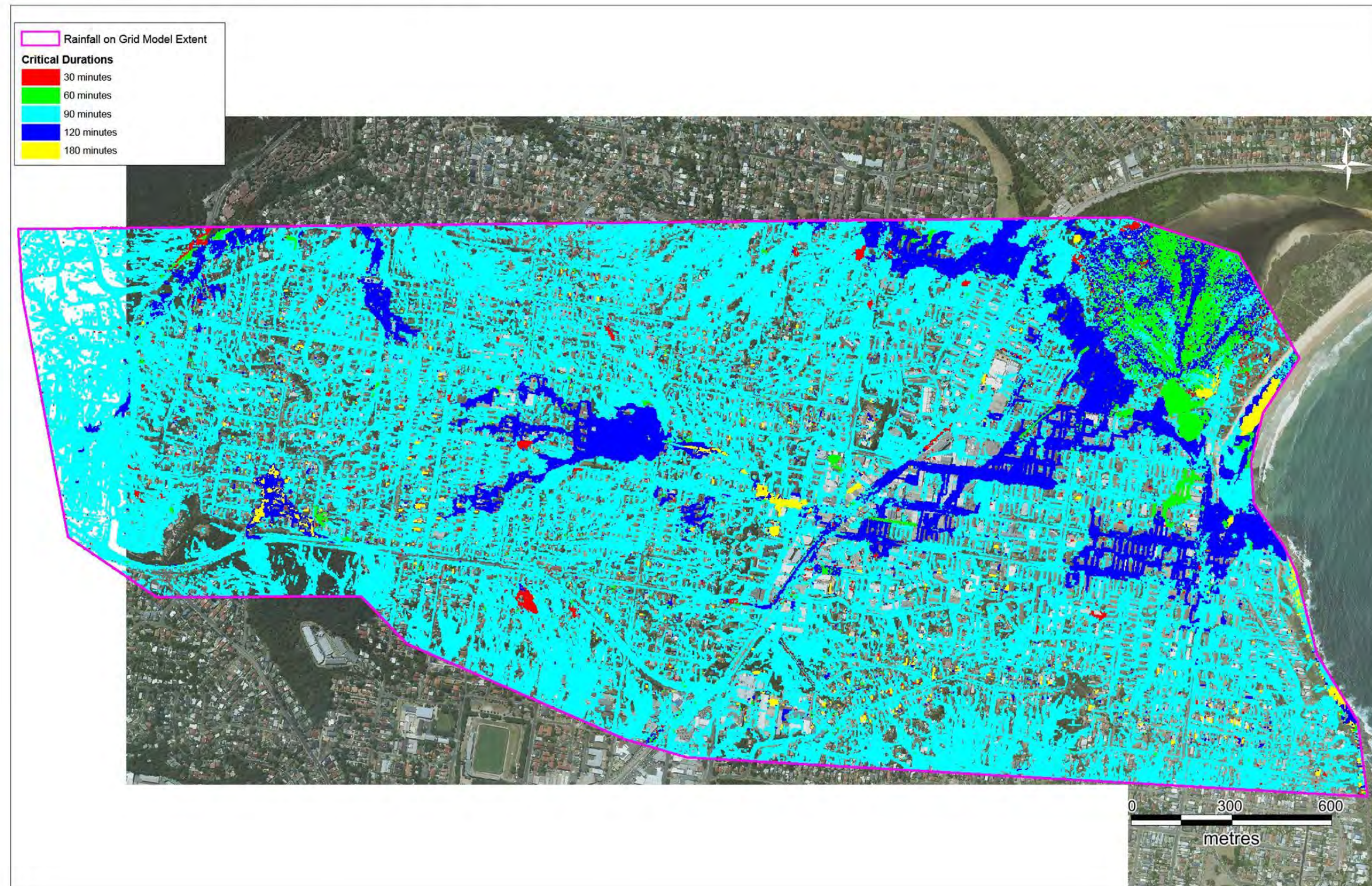
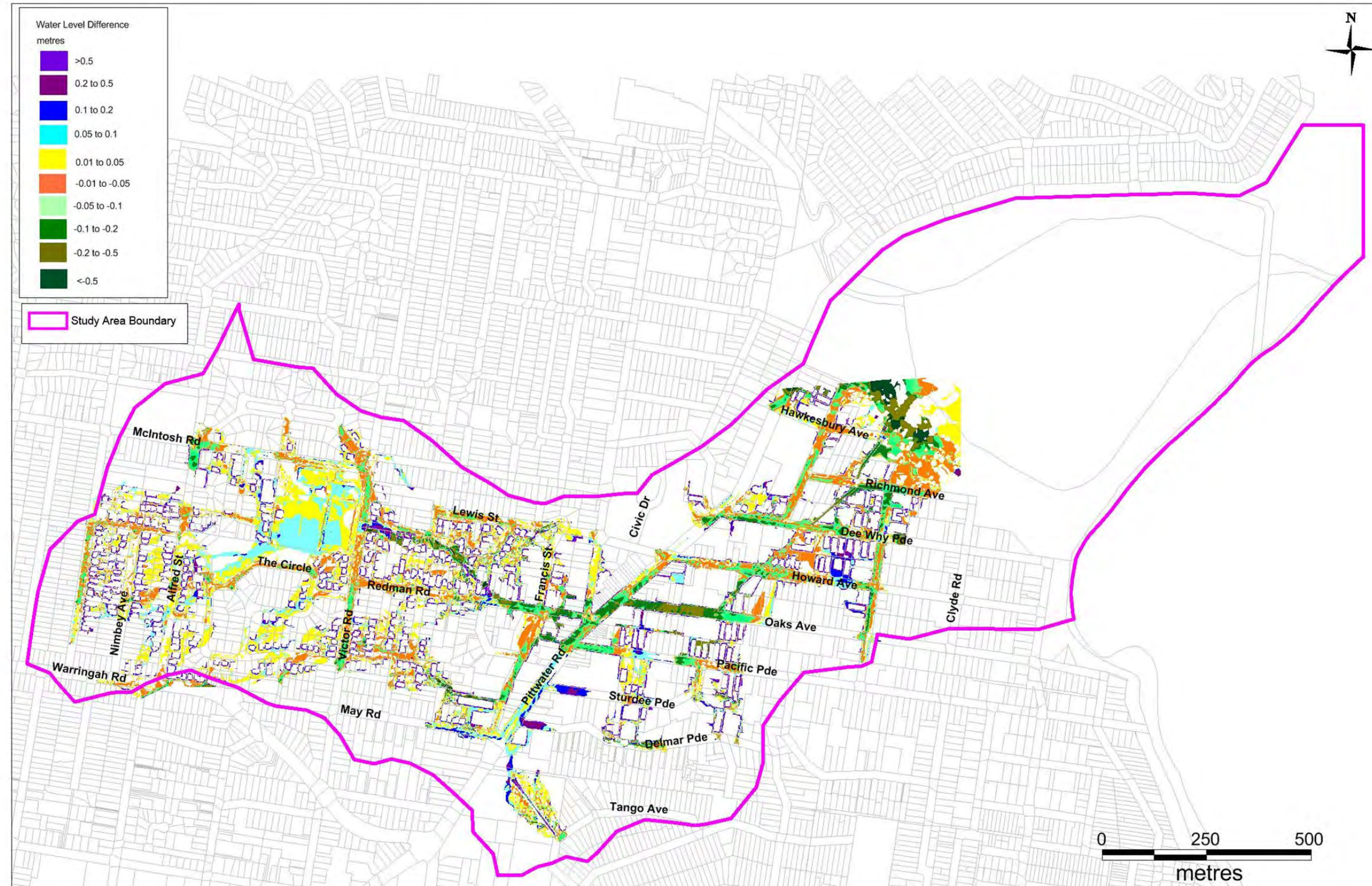


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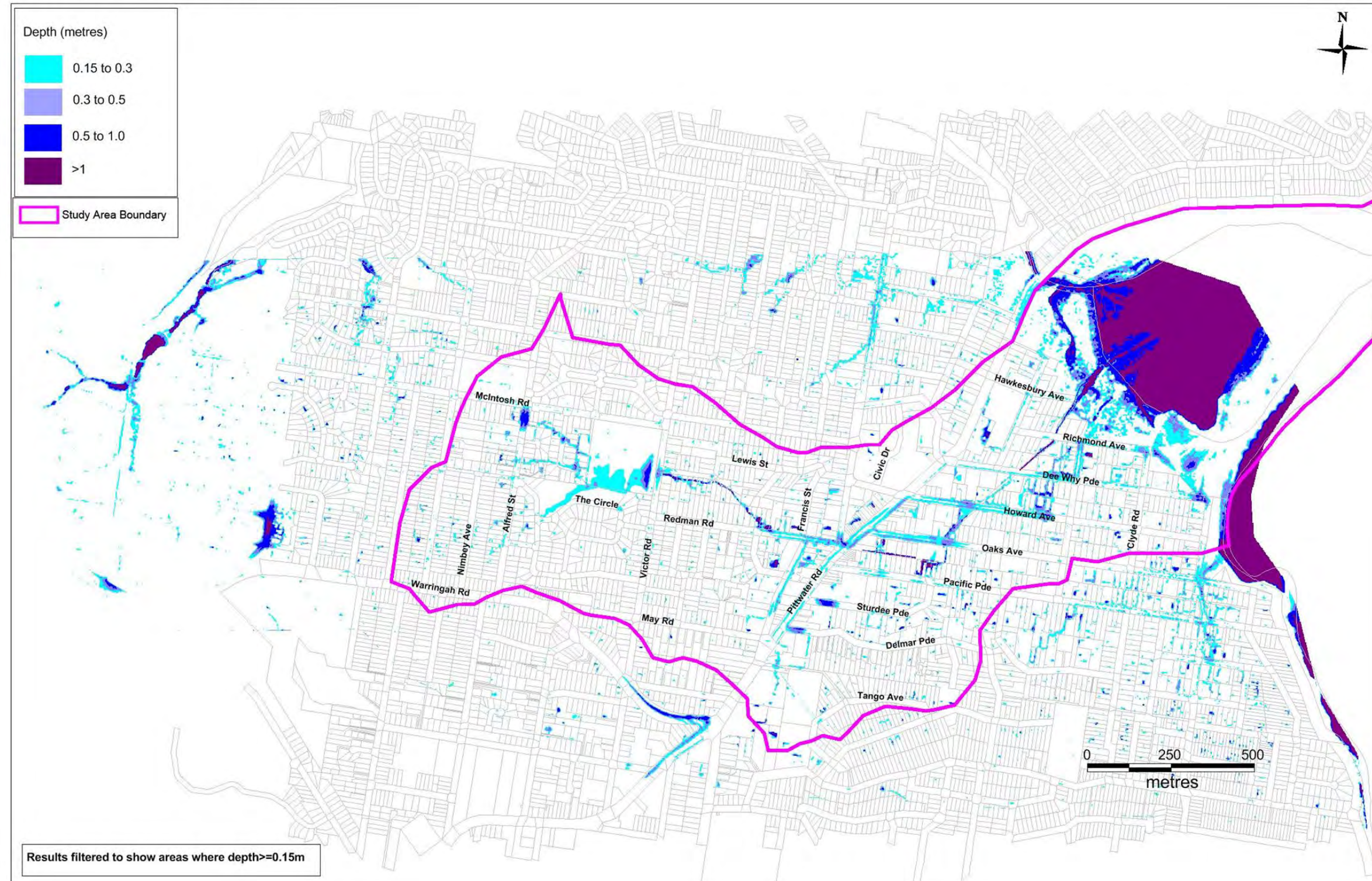


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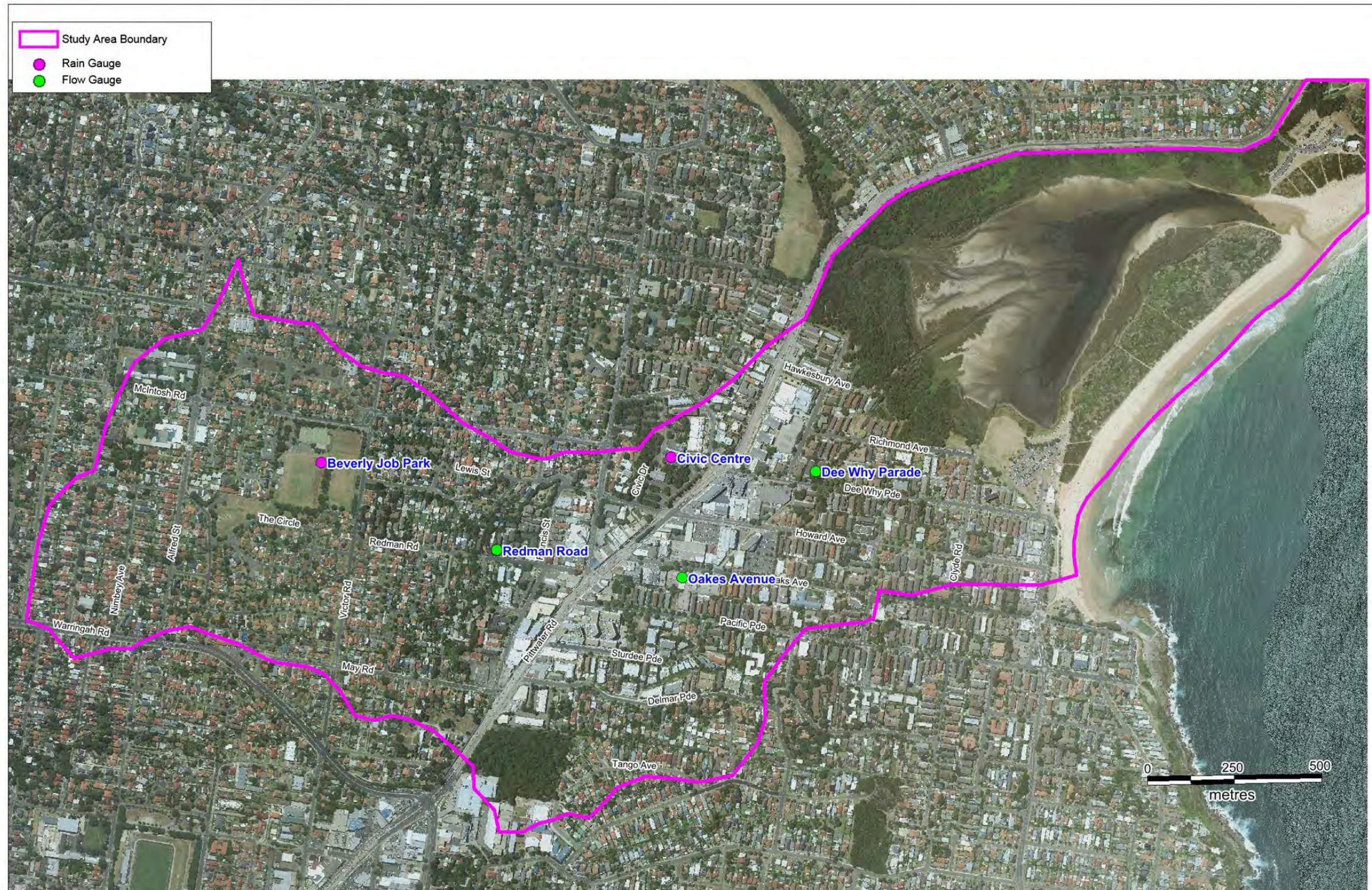
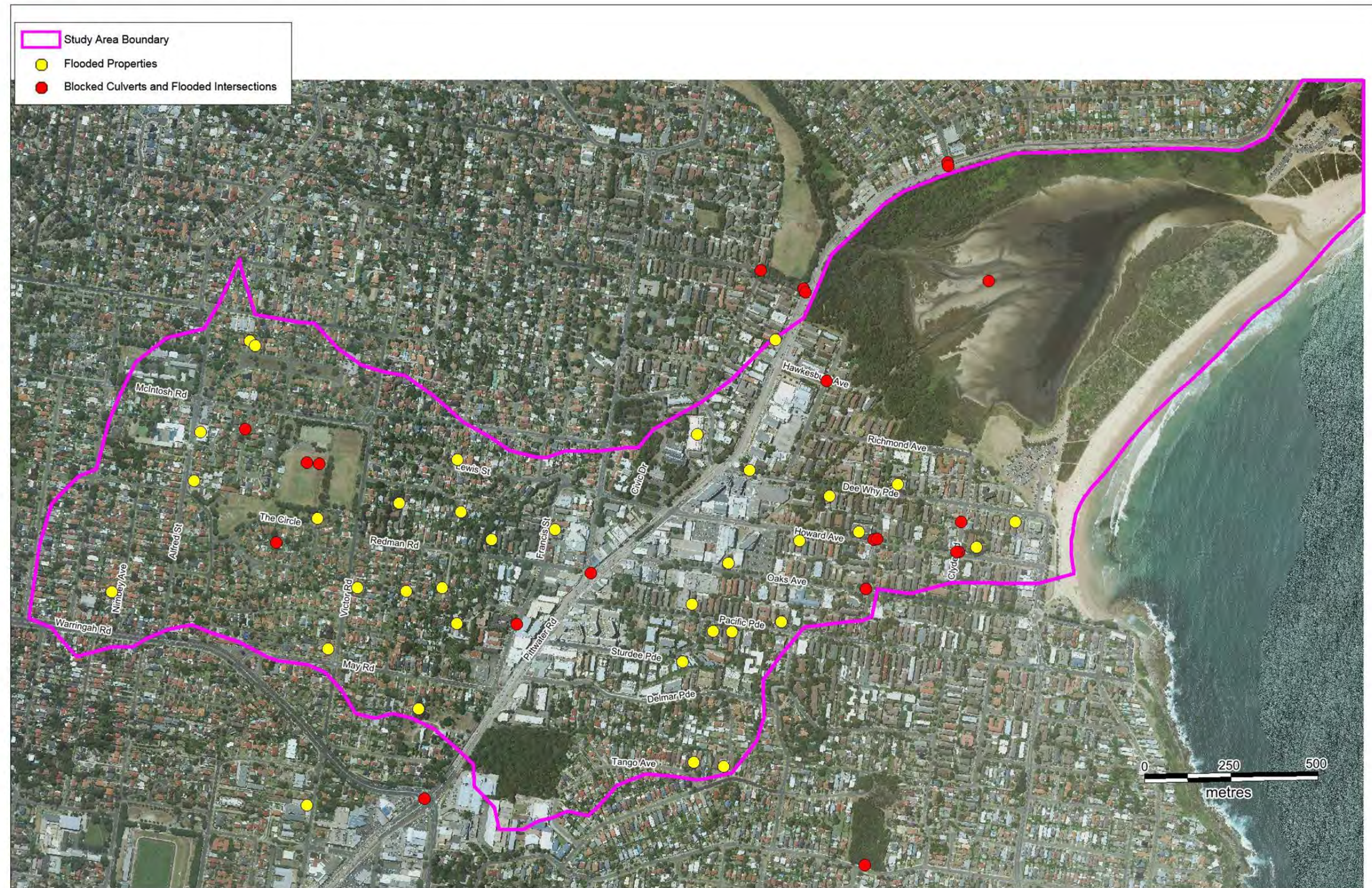


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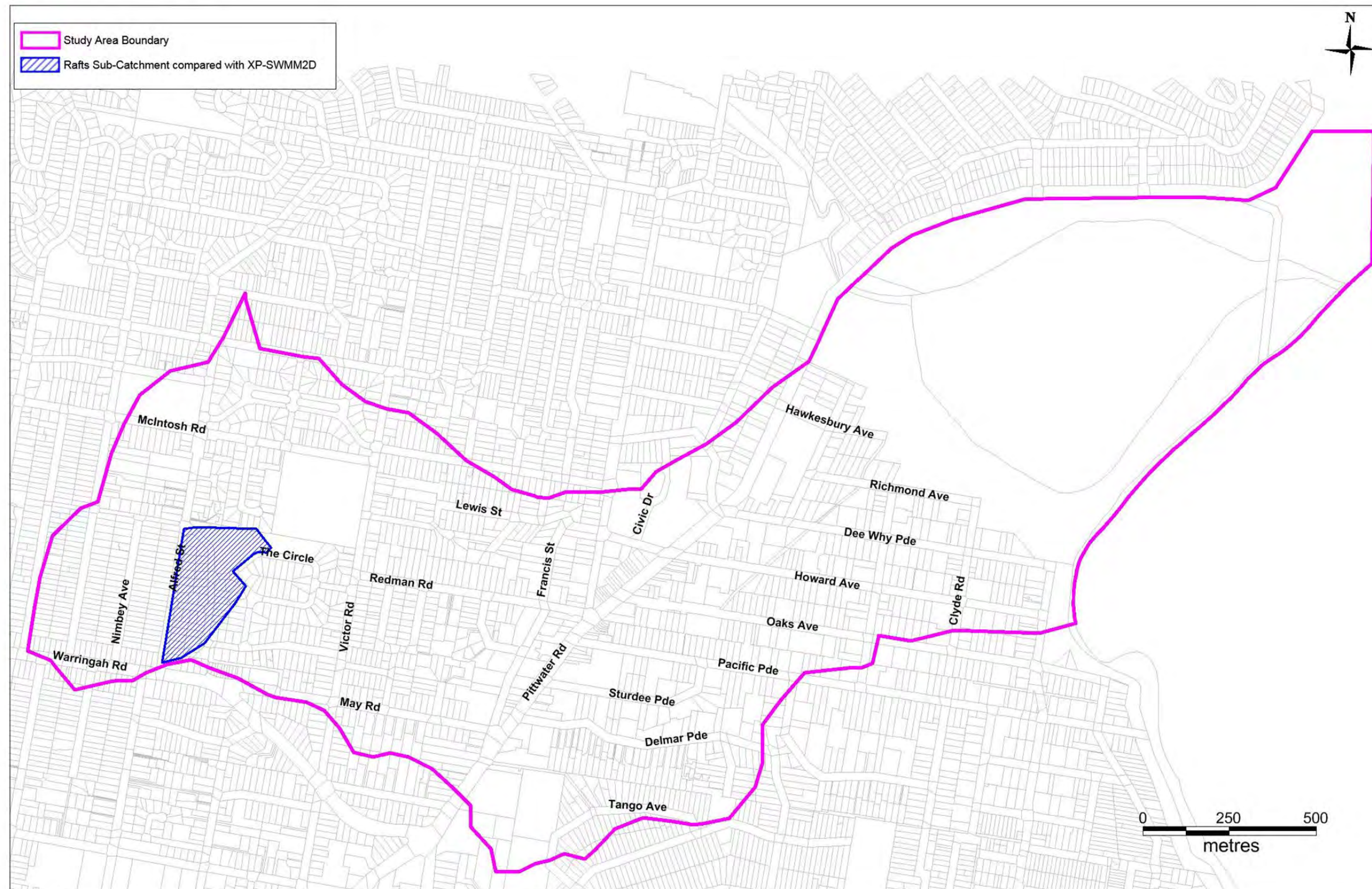
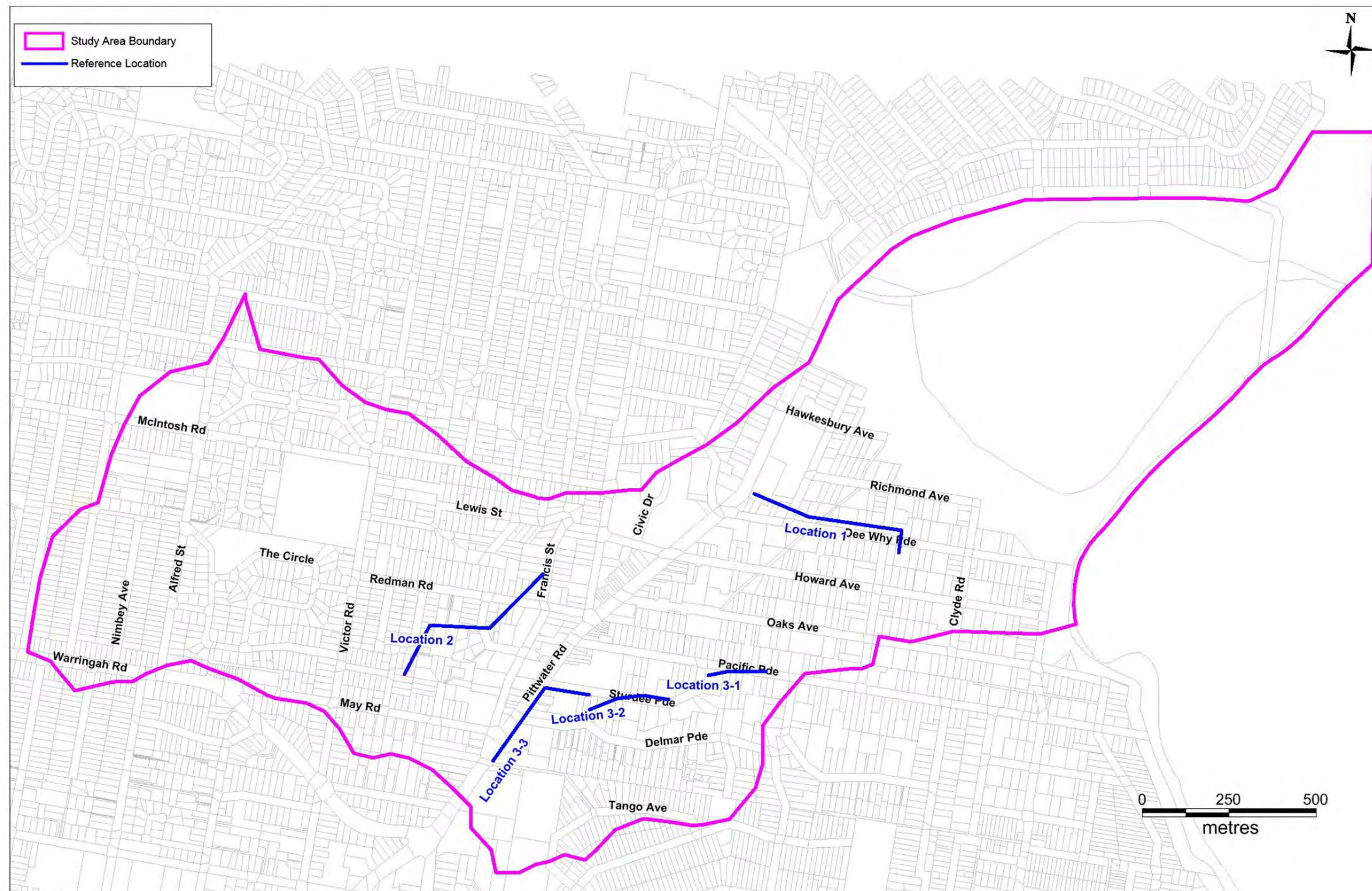


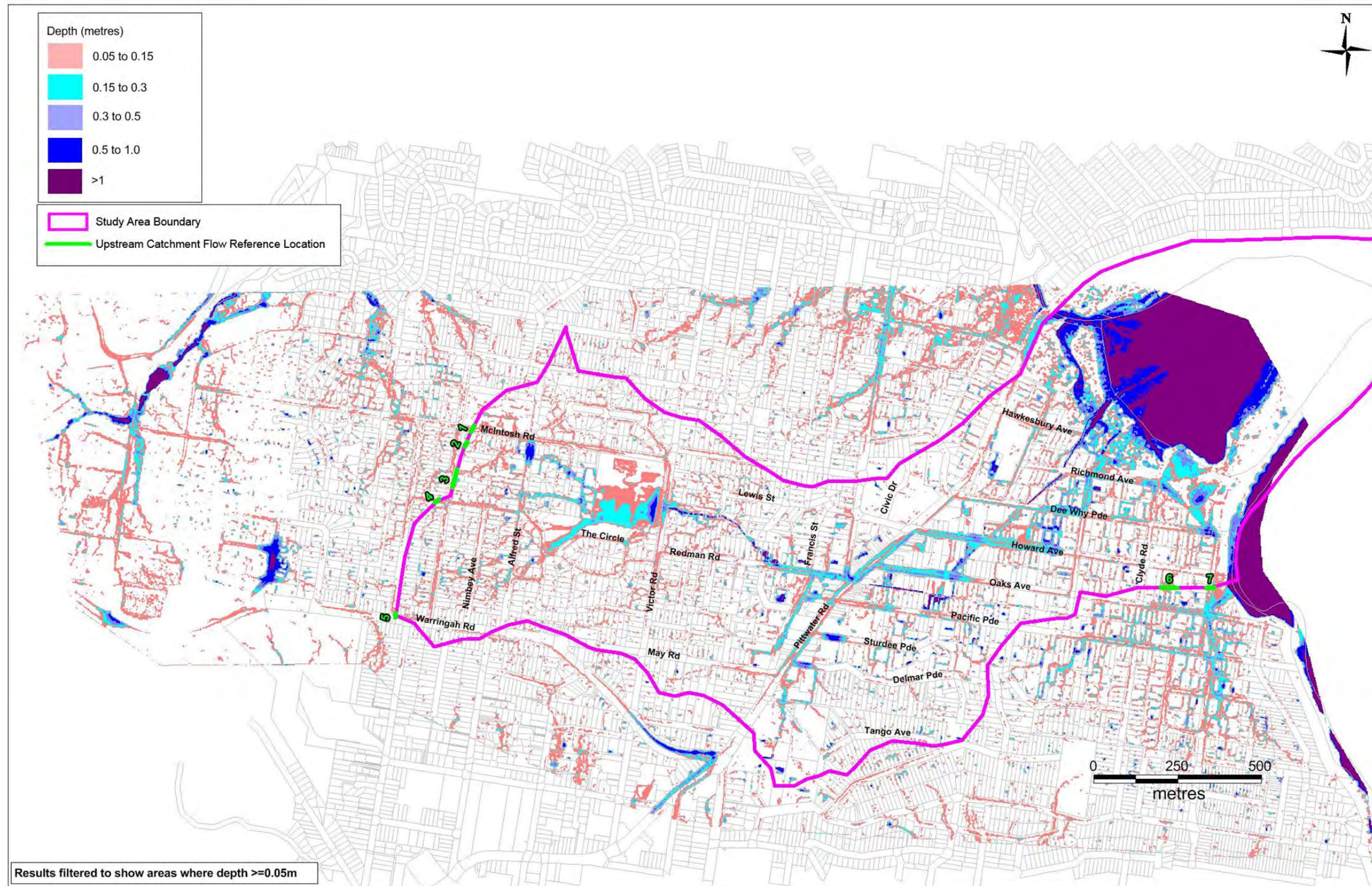
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Figure 5-3 1% AEP External Catchment Extent



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Figure 5-4 5 Year ARI External Catchment Extent

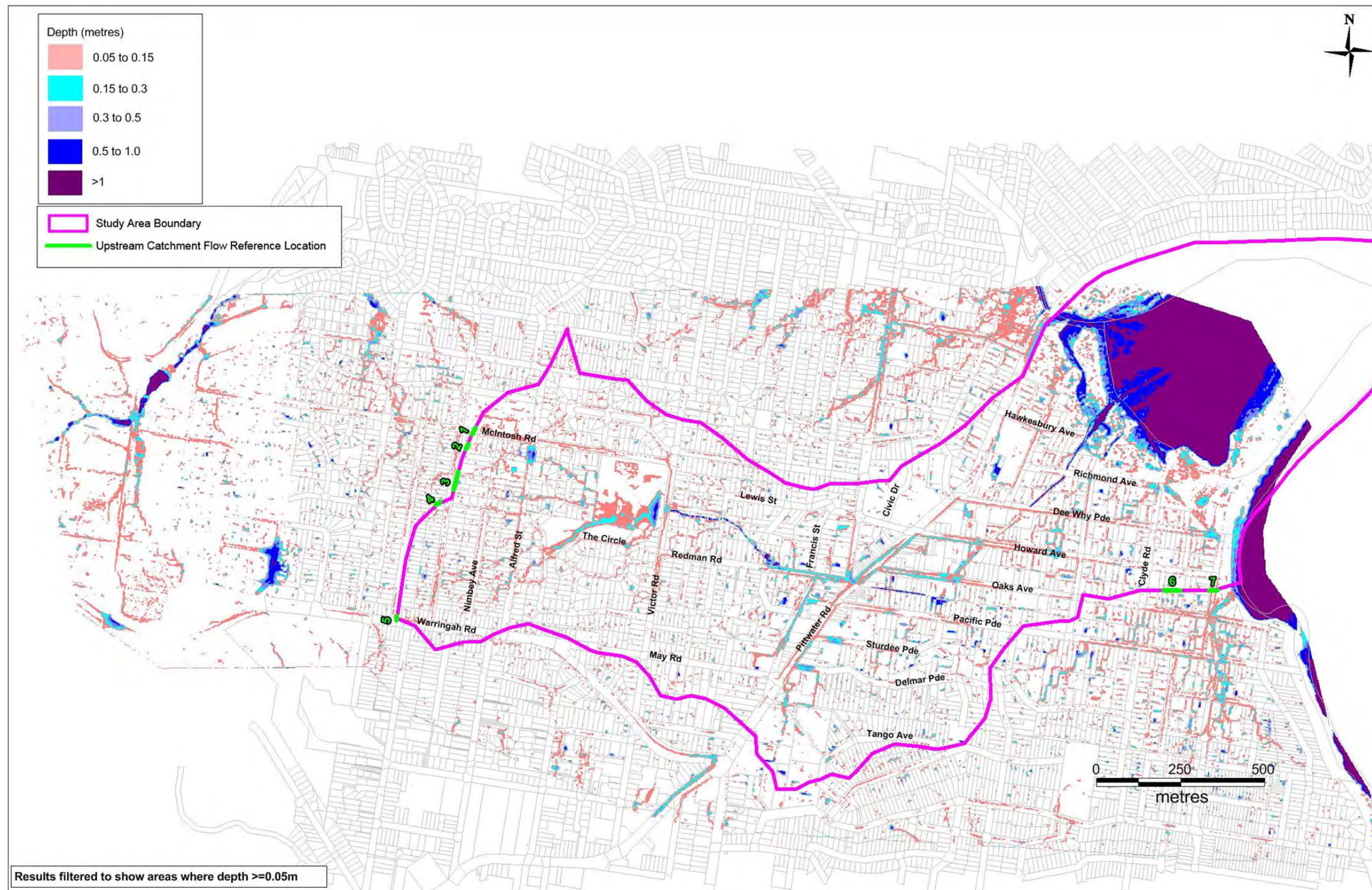
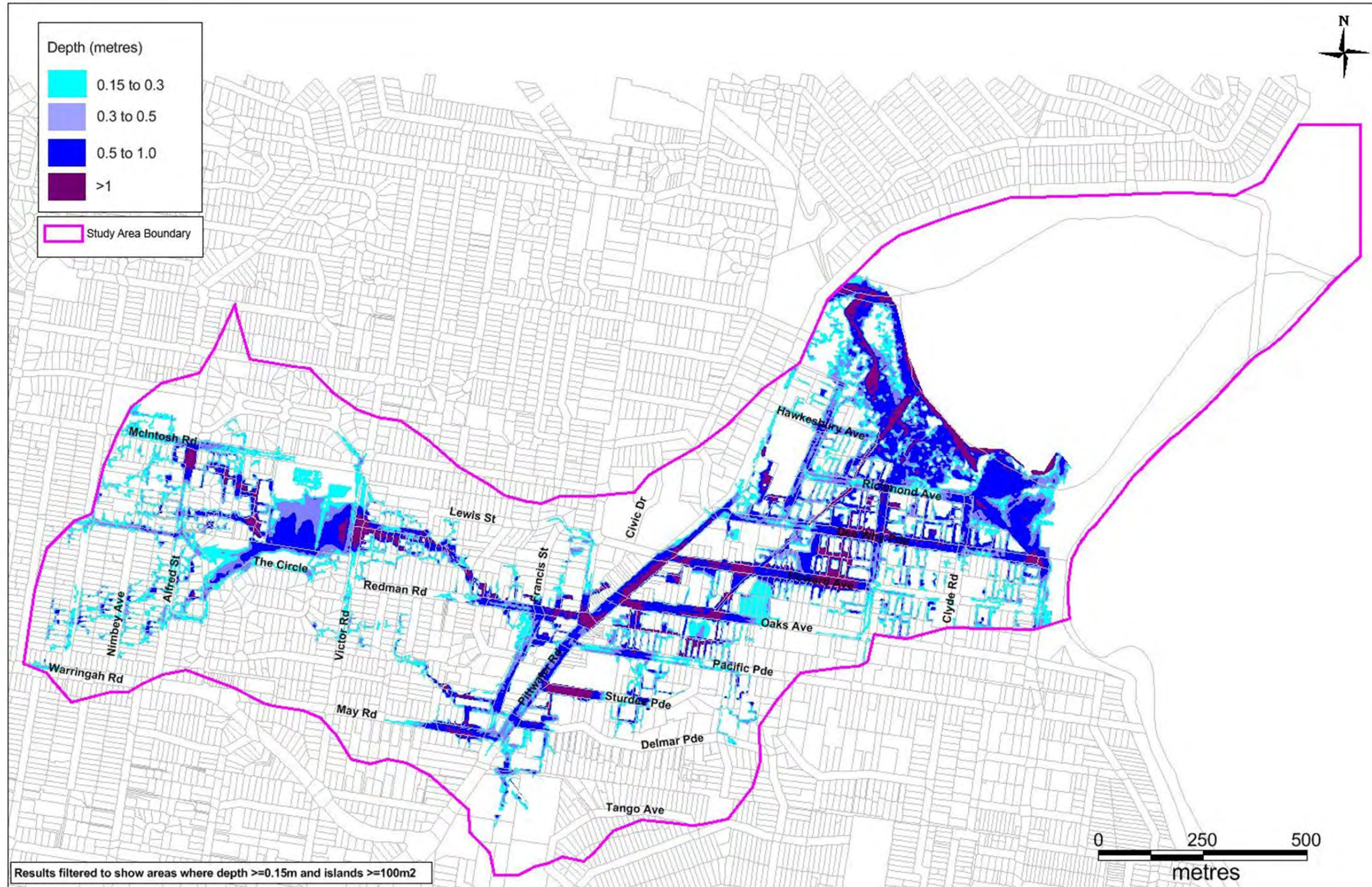


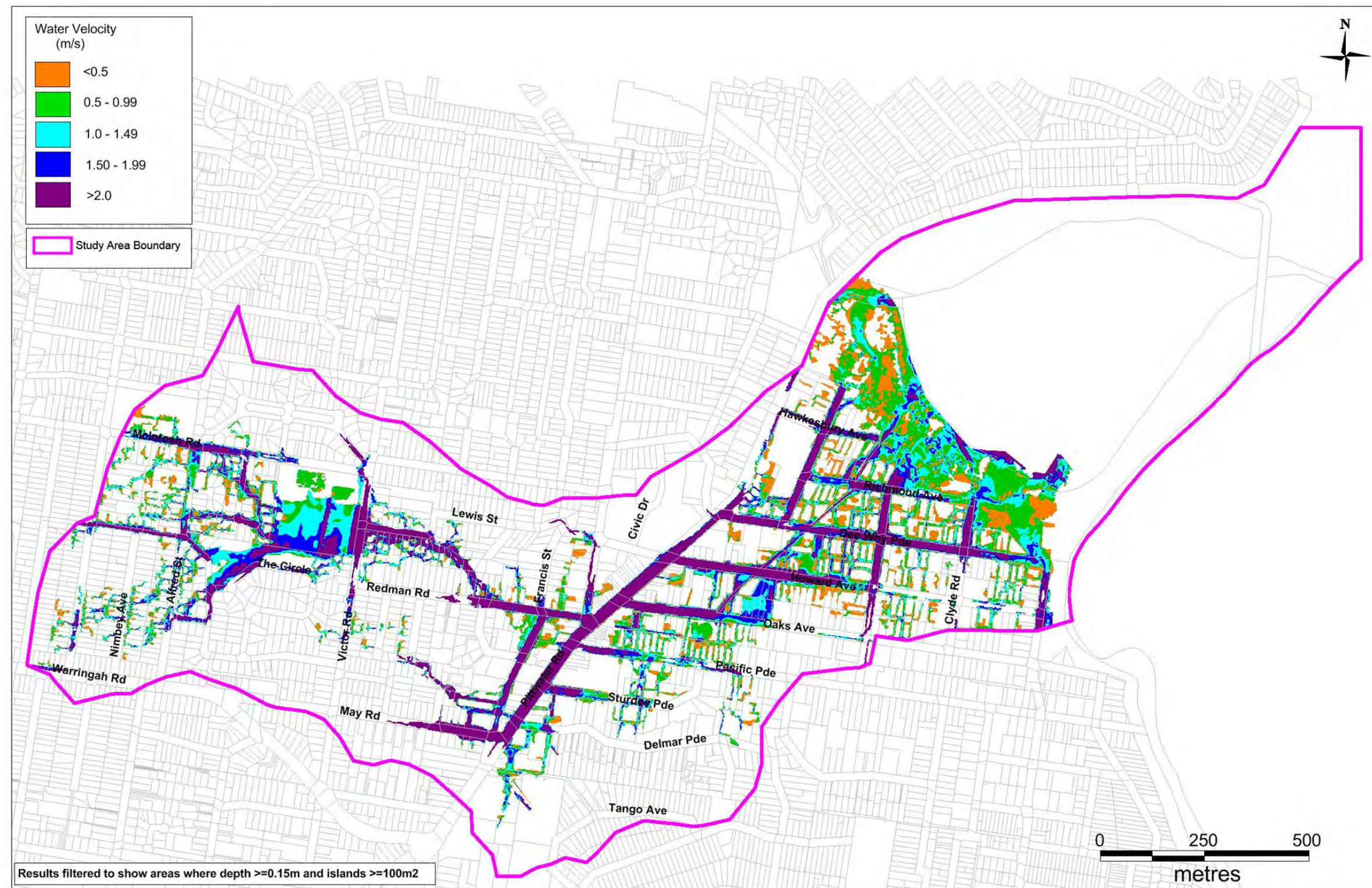
Figure 6-1 Design Event PMF Peak Depth



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Figure 6-2 Design Event PMF Peak Velocity



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Figure 6-3 Design Event 0.1% AEP Peak Depth

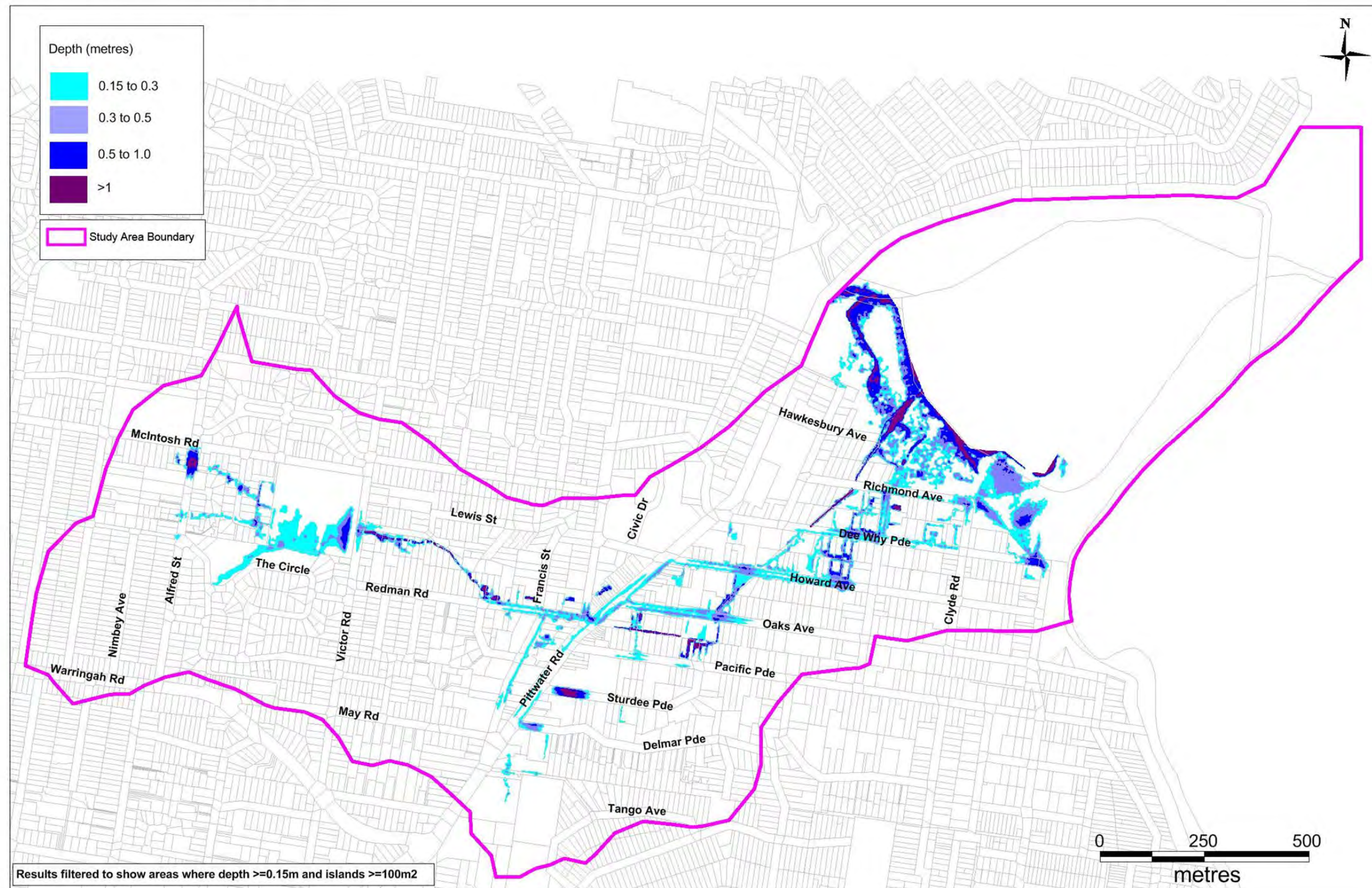
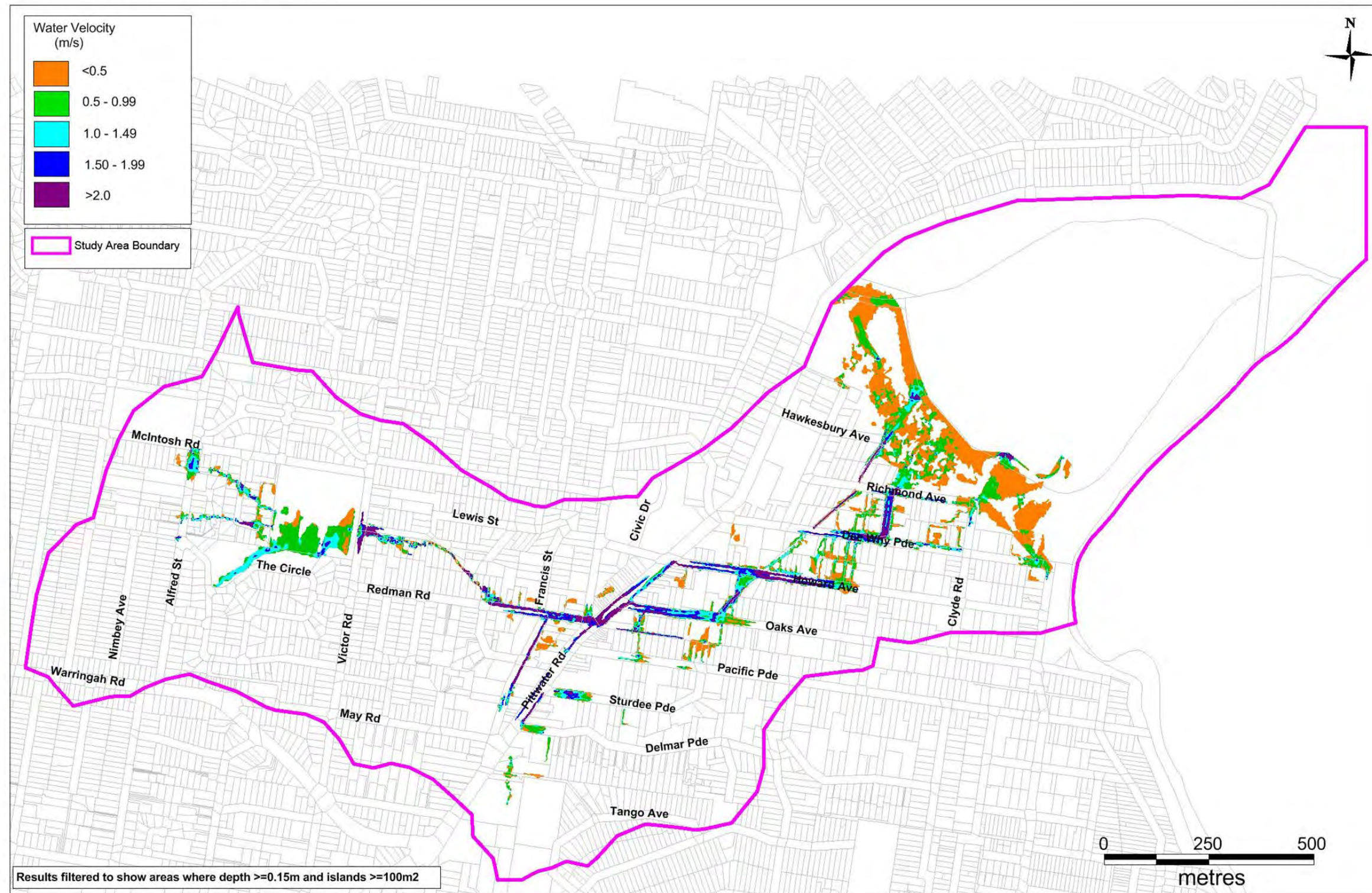


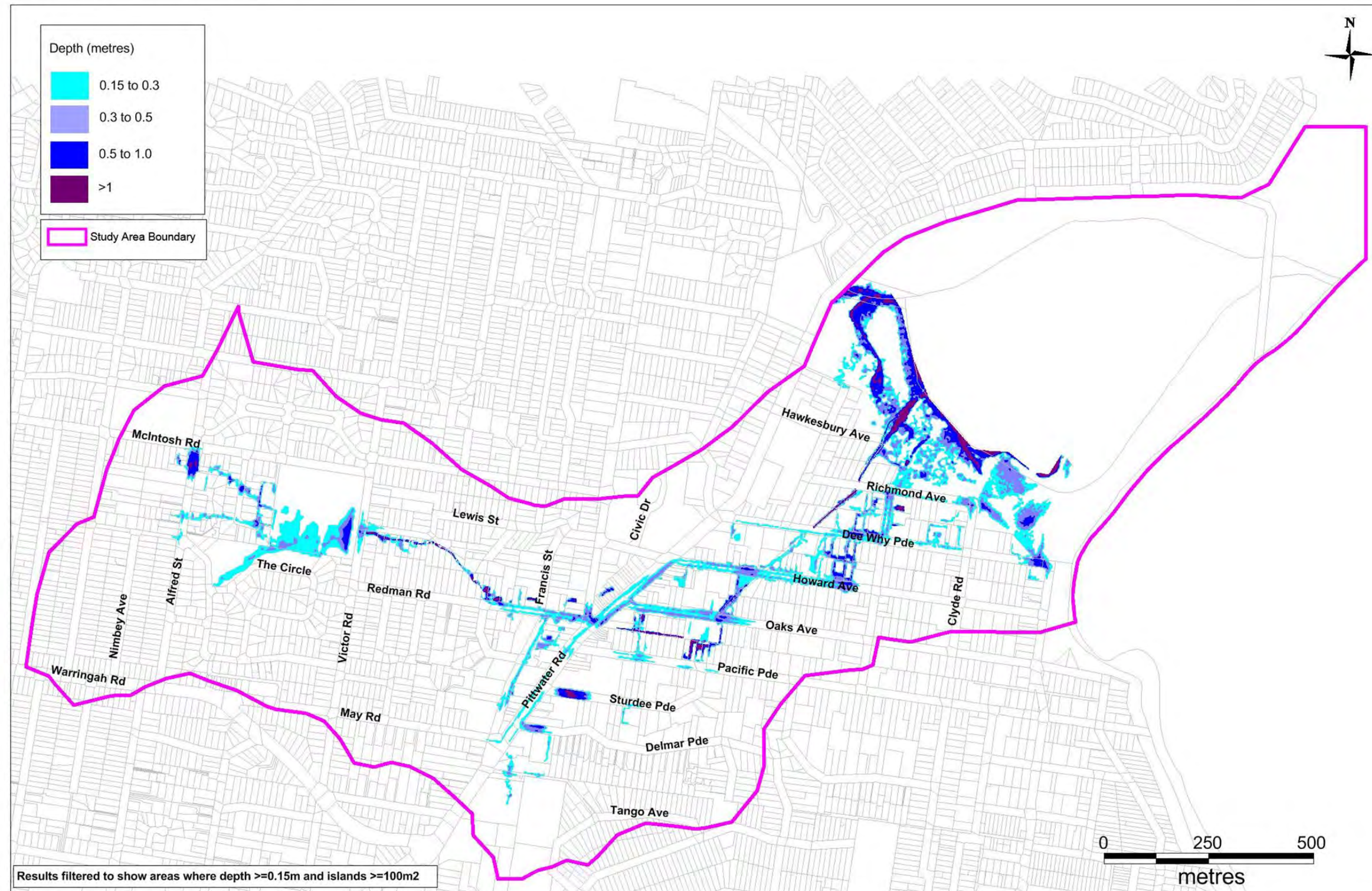
Figure 6-4 Design Event 0.1% AEP Peak Velocity



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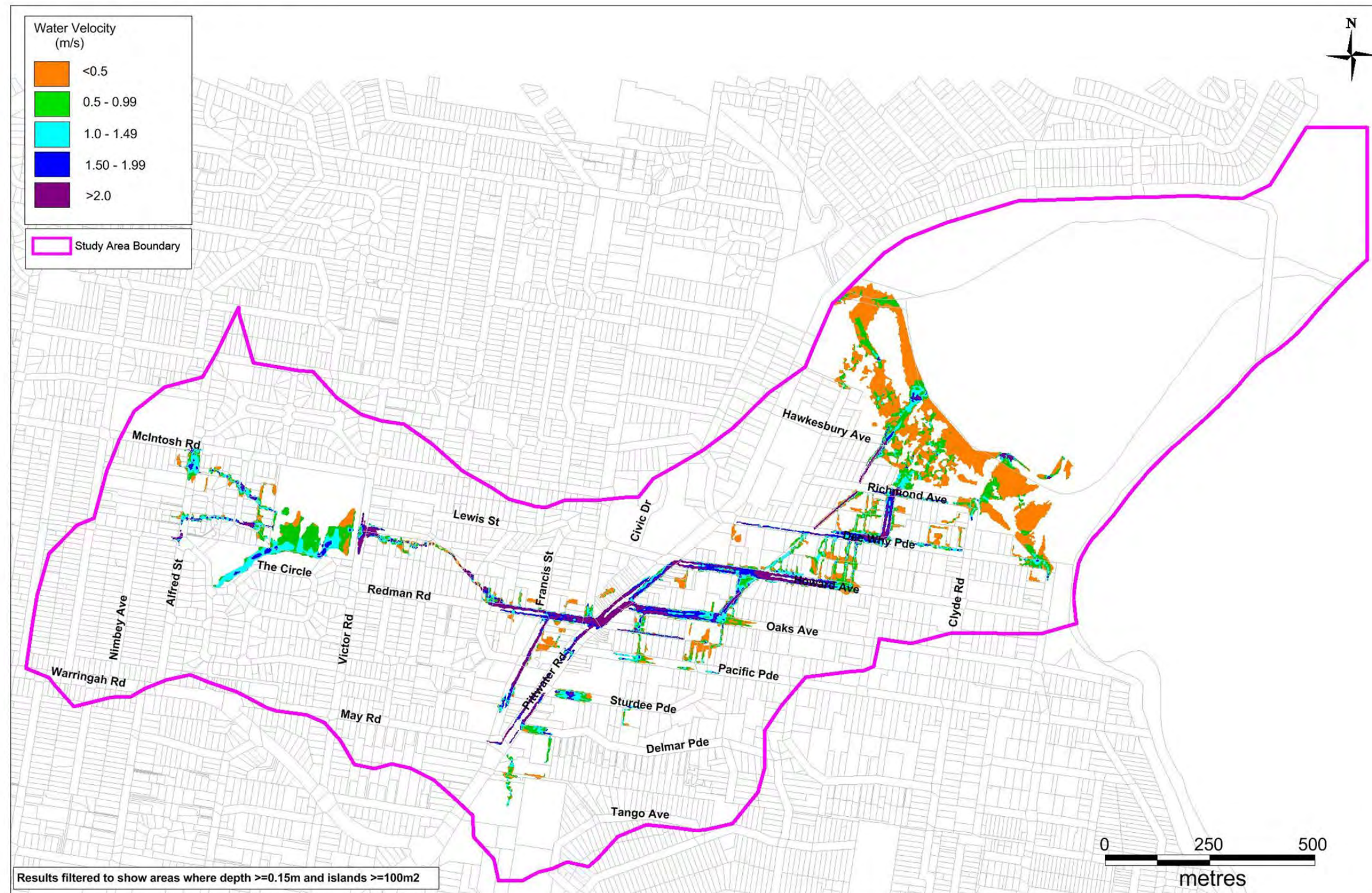
Figure 6-5 Design Event 0.5% AEP Peak Depth



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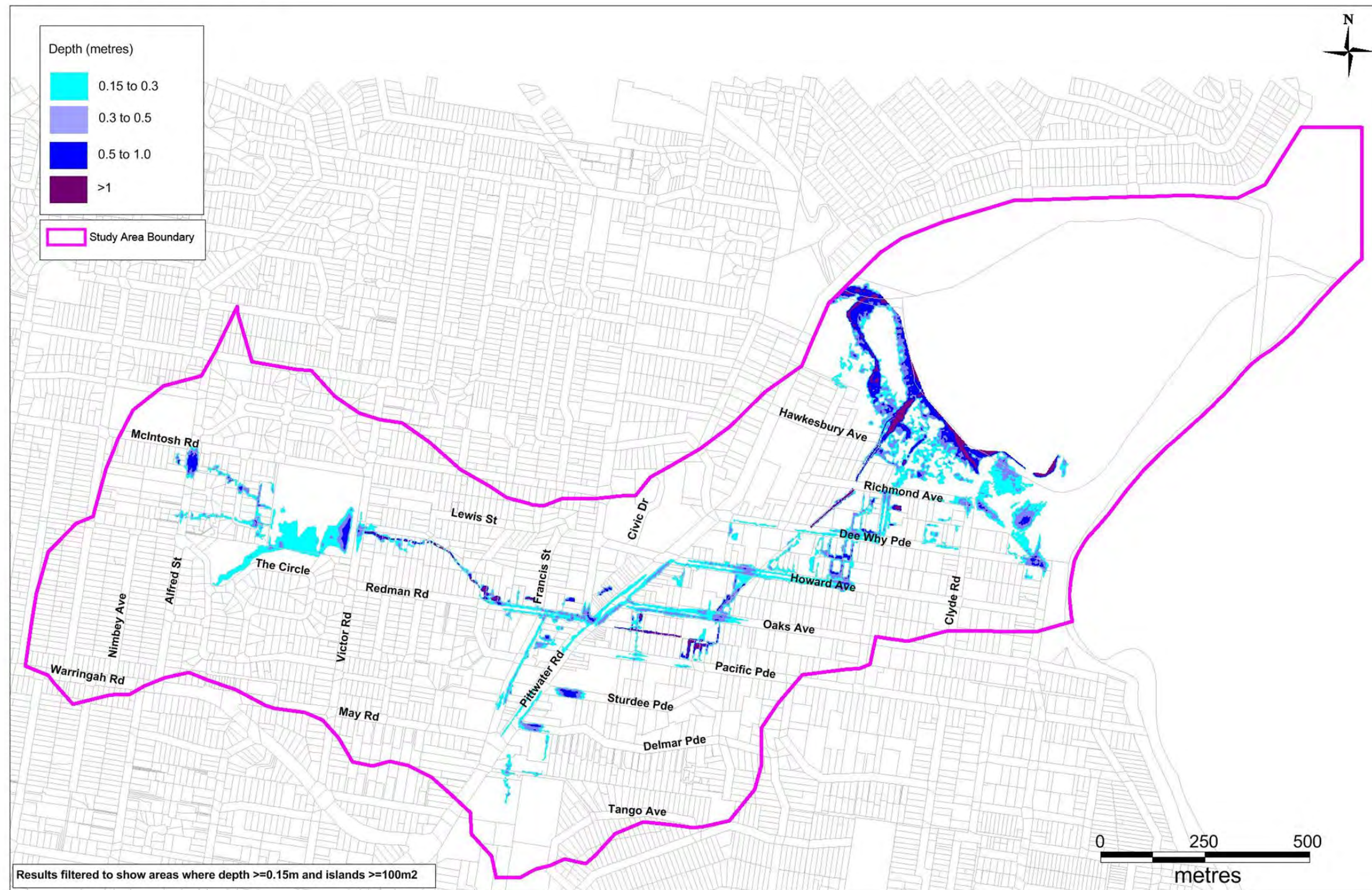
Figure 6-6 Design Event 0.5% AEP Peak Velocity



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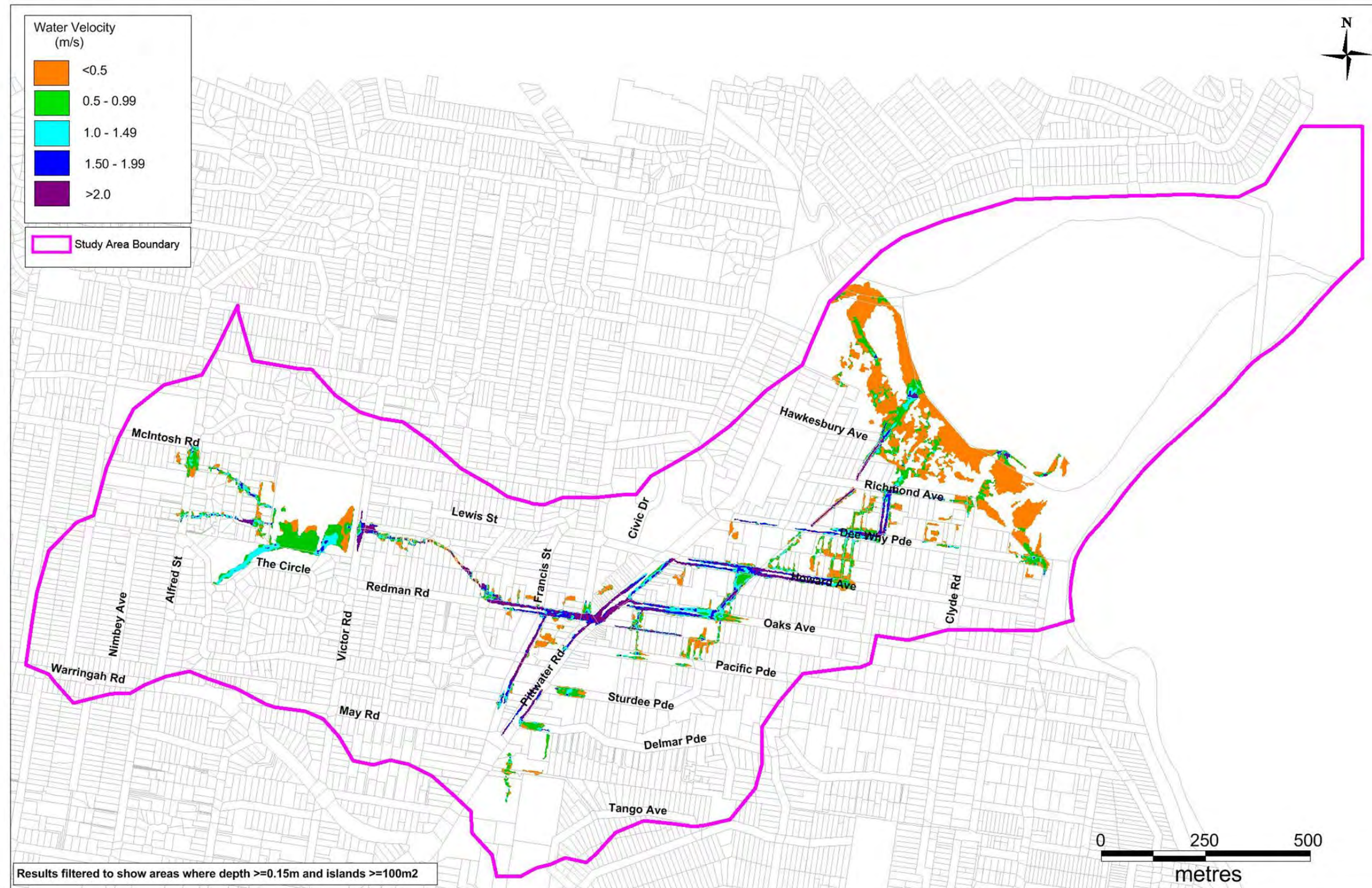
Figure 6-7 Design Event 1% AEP Peak Depth



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Figure 6-8 Design Event 1% AEP Peak Velocity



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Figure 6-9 Design Event 5% AEP Peak Depth

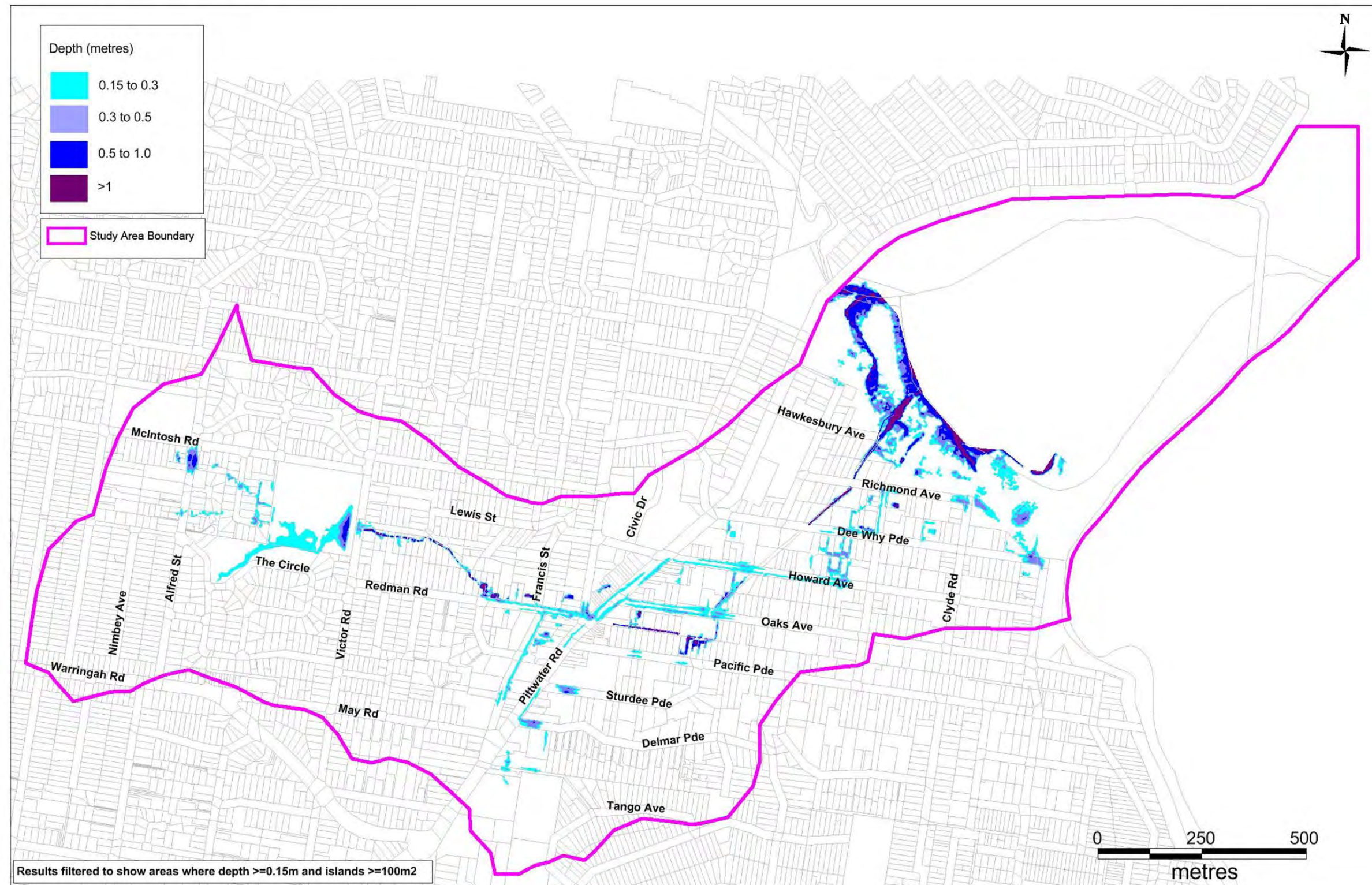
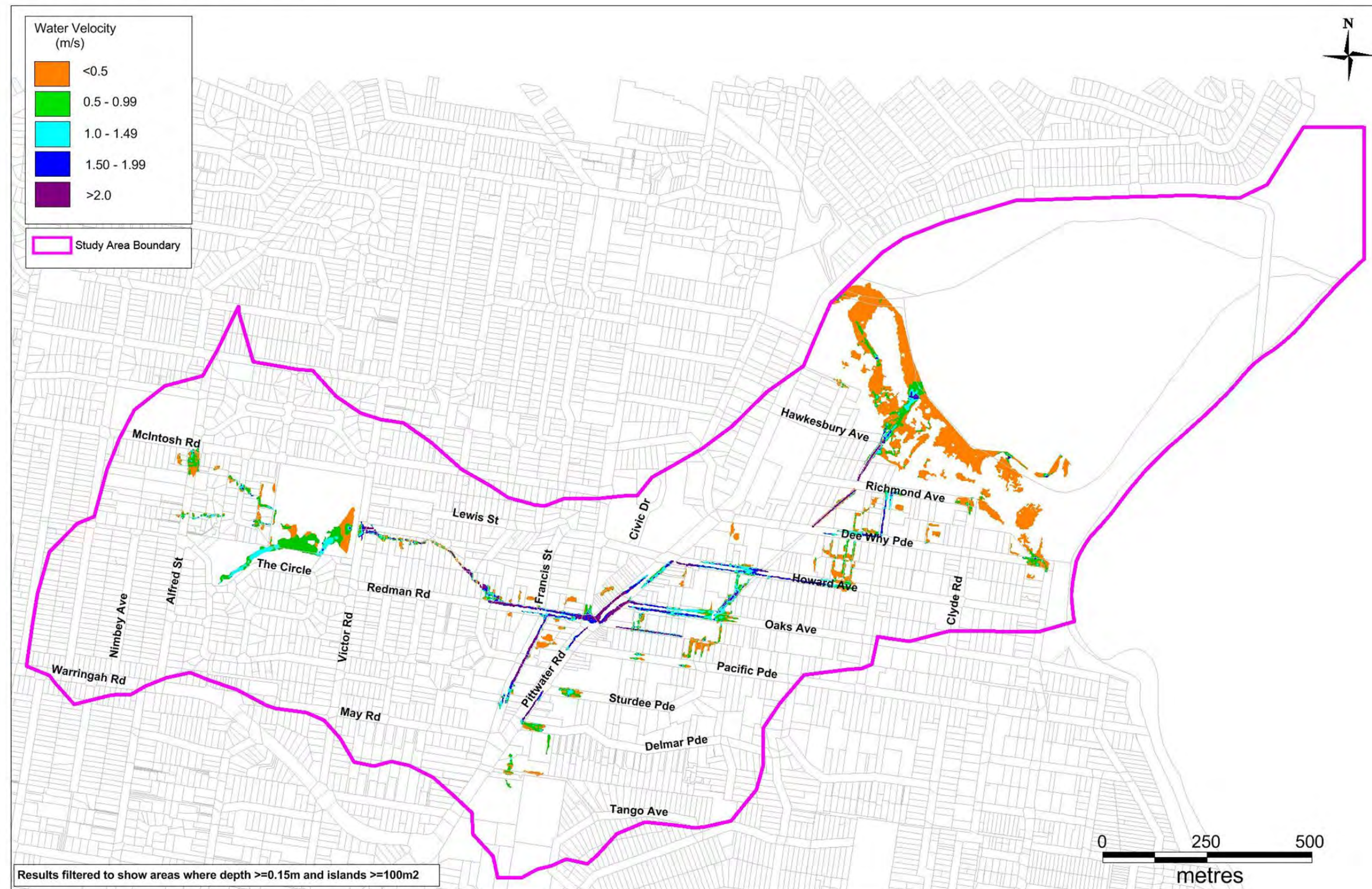


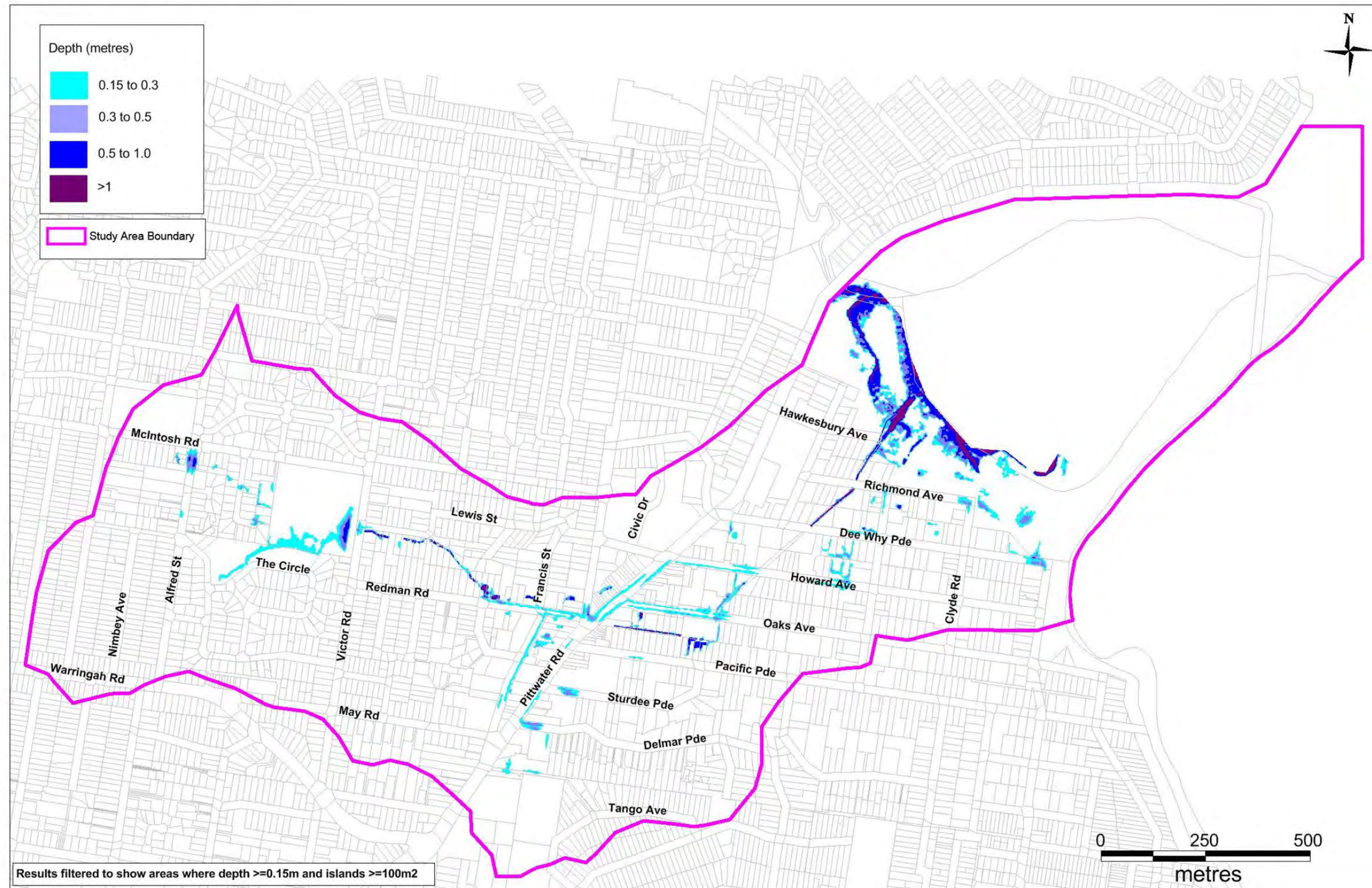
Figure 6-10 Design Event 5% AEP Peak Velocity



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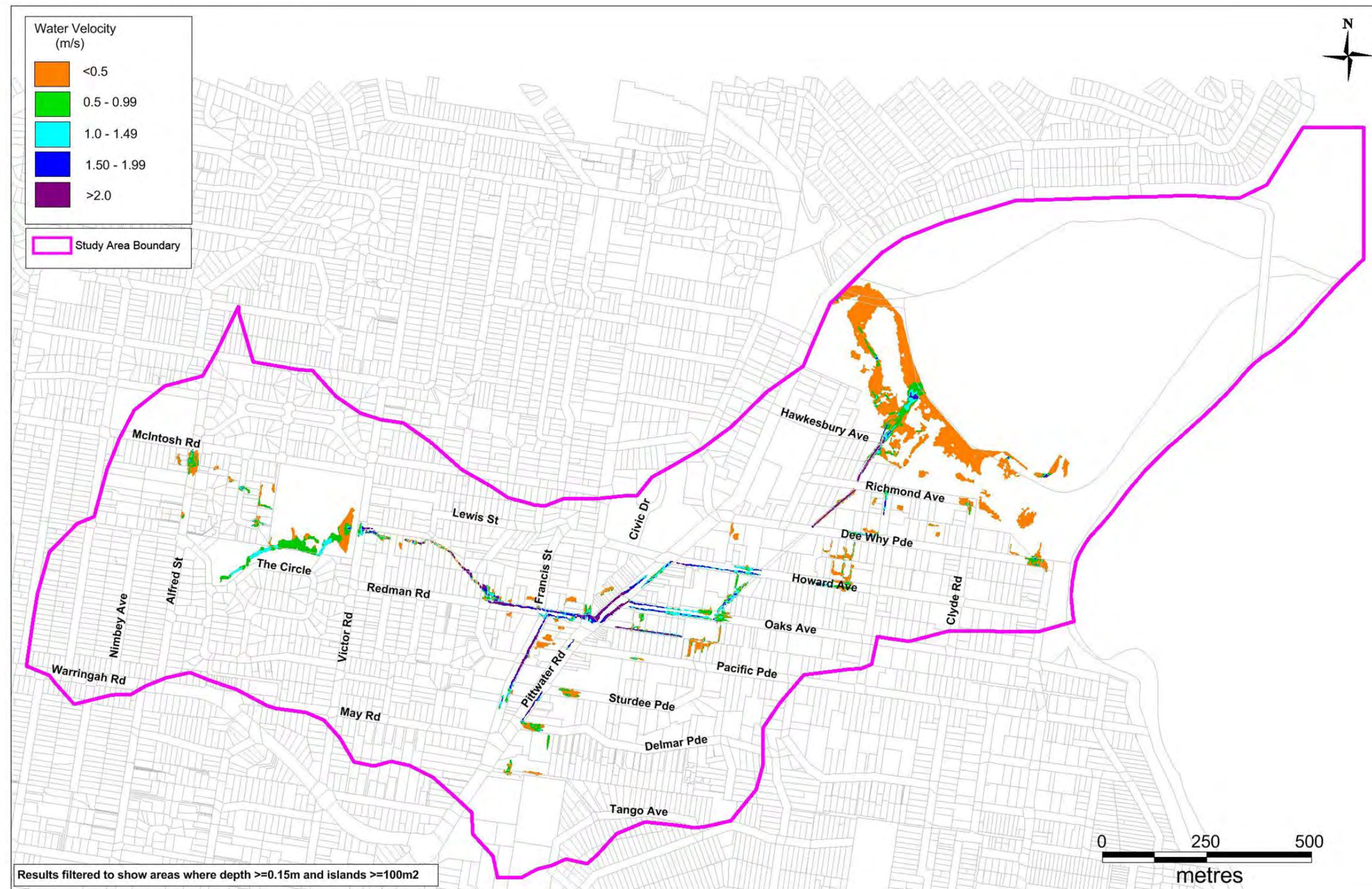
Figure 6-11 Design Event 10% AEP Peak Depth



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Figure 6-12 Design Event 10% AEP Peak Velocity



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Figure 6-13 Design Event 5 Year ARI Peak Depth

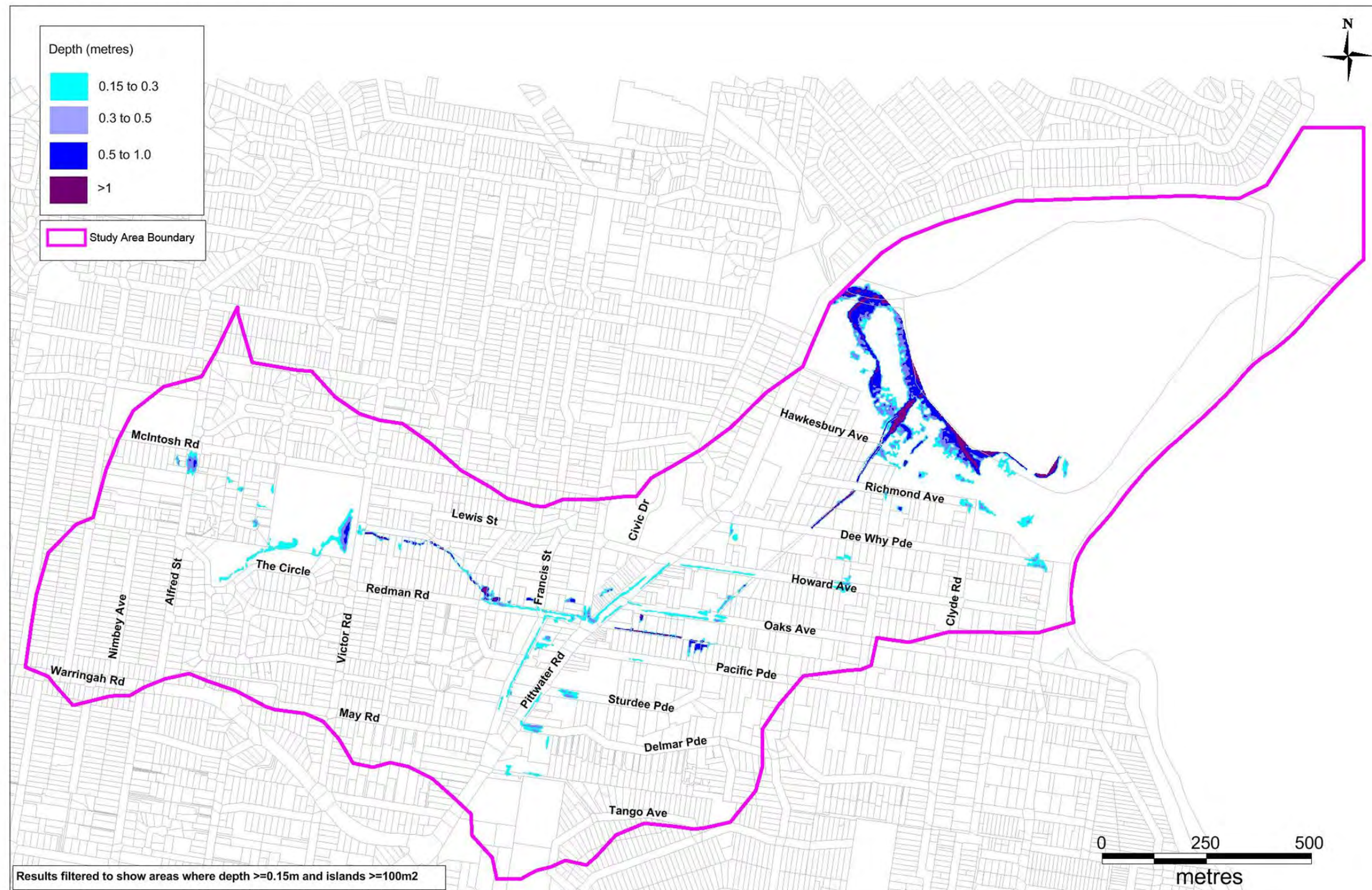
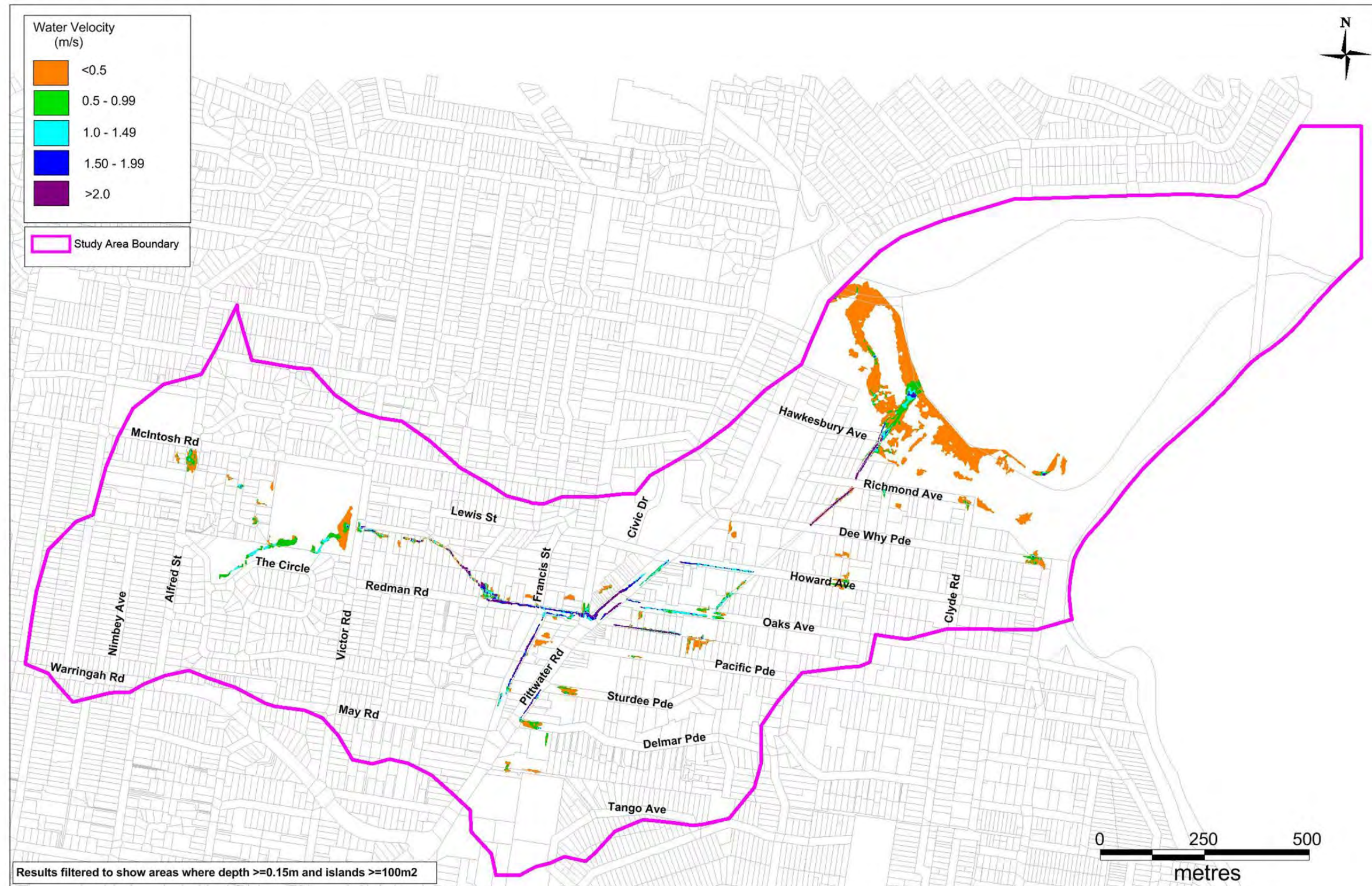


Figure 6-14 Design Event 5 Year ARI Peak Velocity



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Figure 6-15 Design Event 1 Year ARI Peak Depth

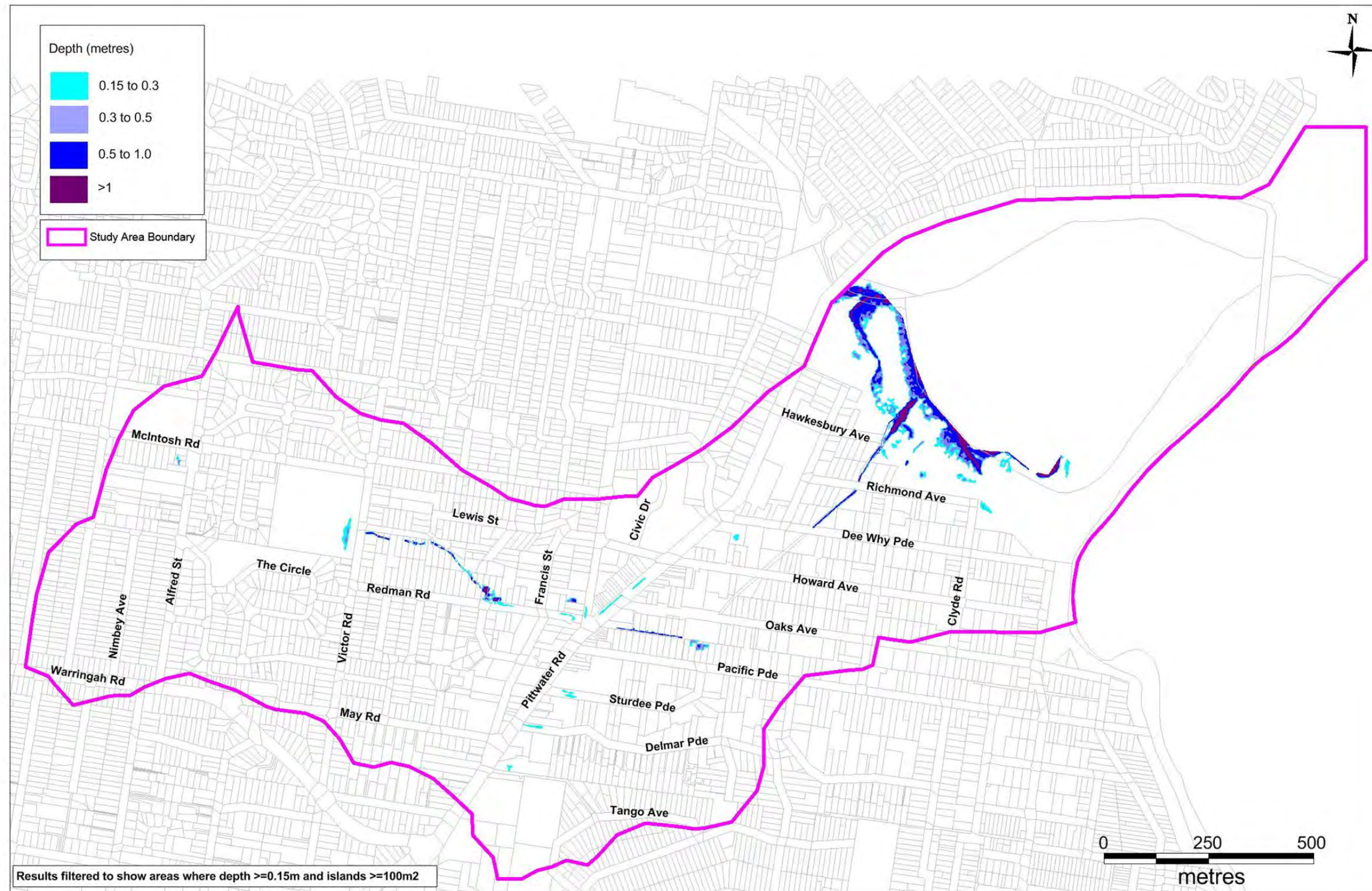


Figure 6-16 Design Event 1 Year ARI Peak Velocity

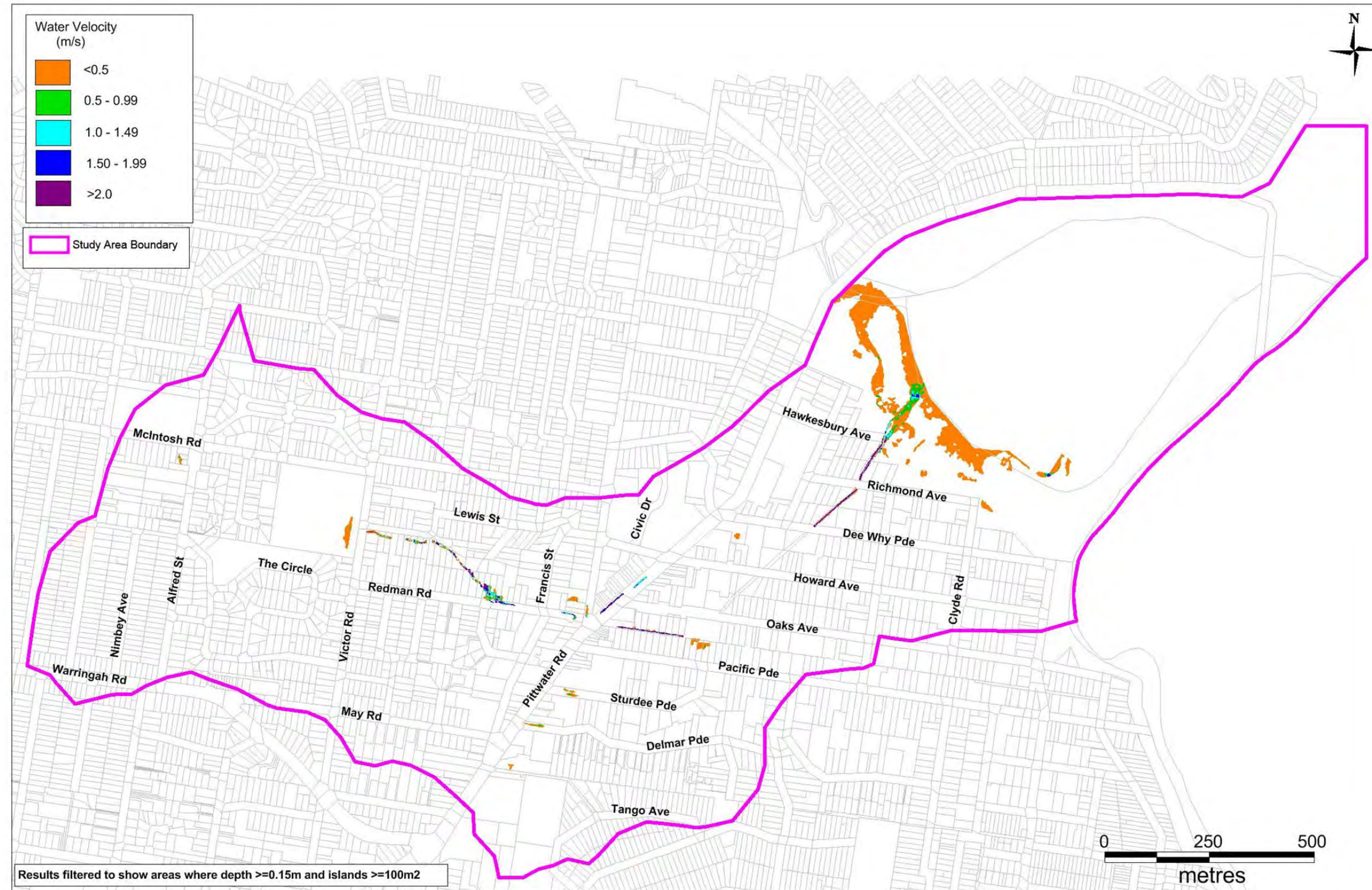
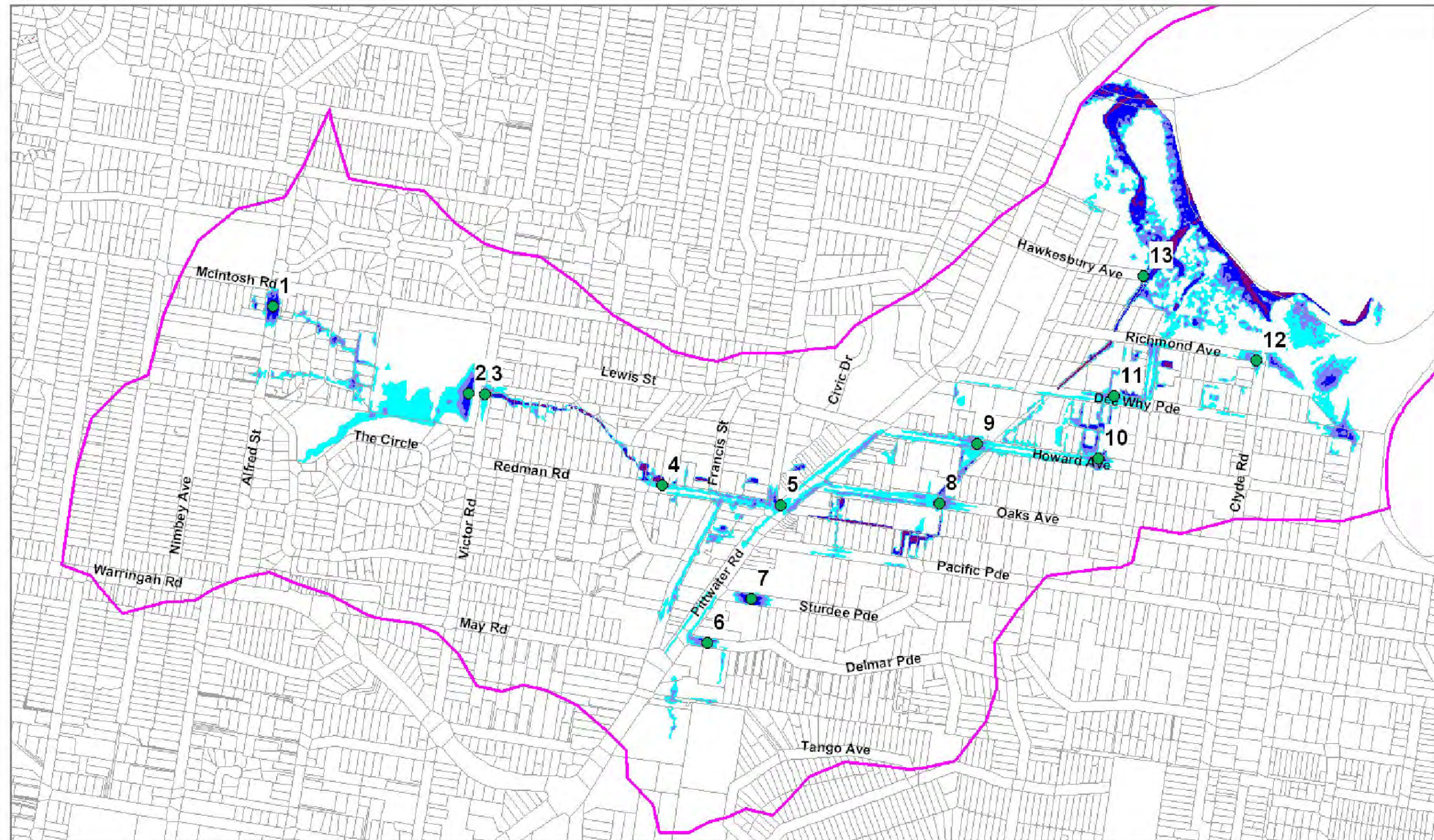


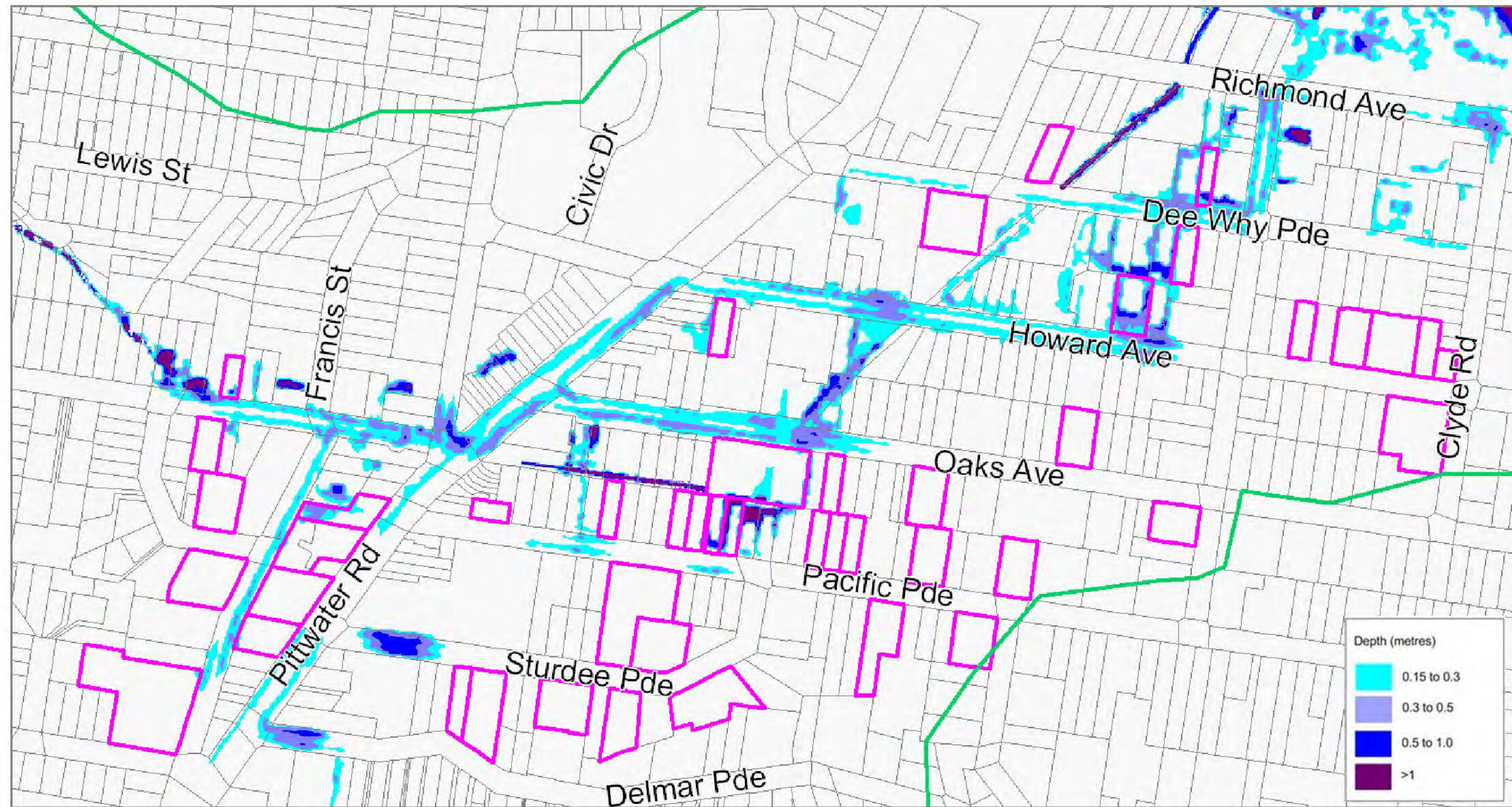
Figure 6-17 Peak Flood Level Reference Locations



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Figure 6-19 Basement Car Park – Peak Depths 1% AEP



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Figure 6-20 Basement Car Park – Peak Depths PMF

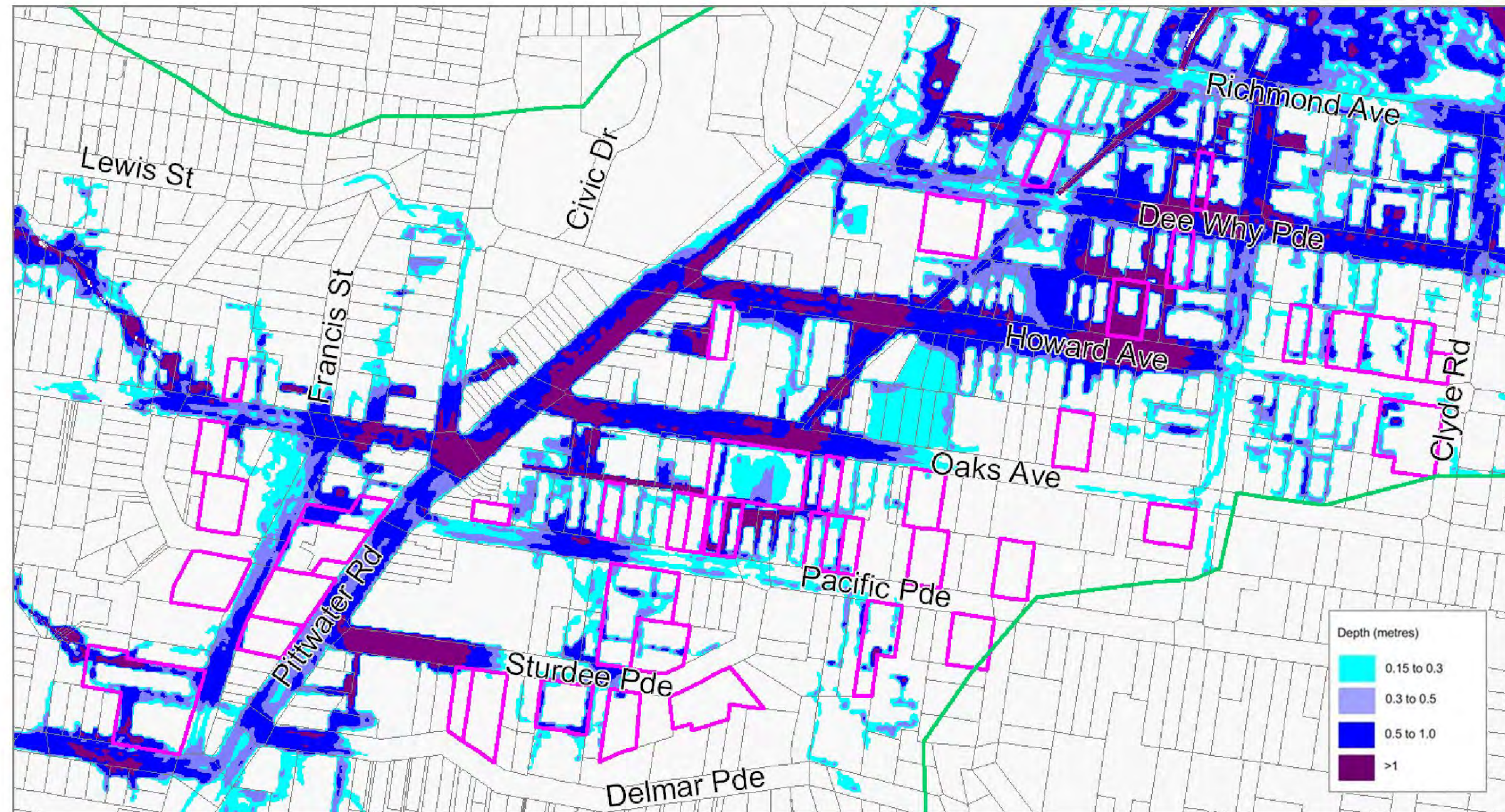


Figure 7-1 Sensitivity – Surface Roughness +20%

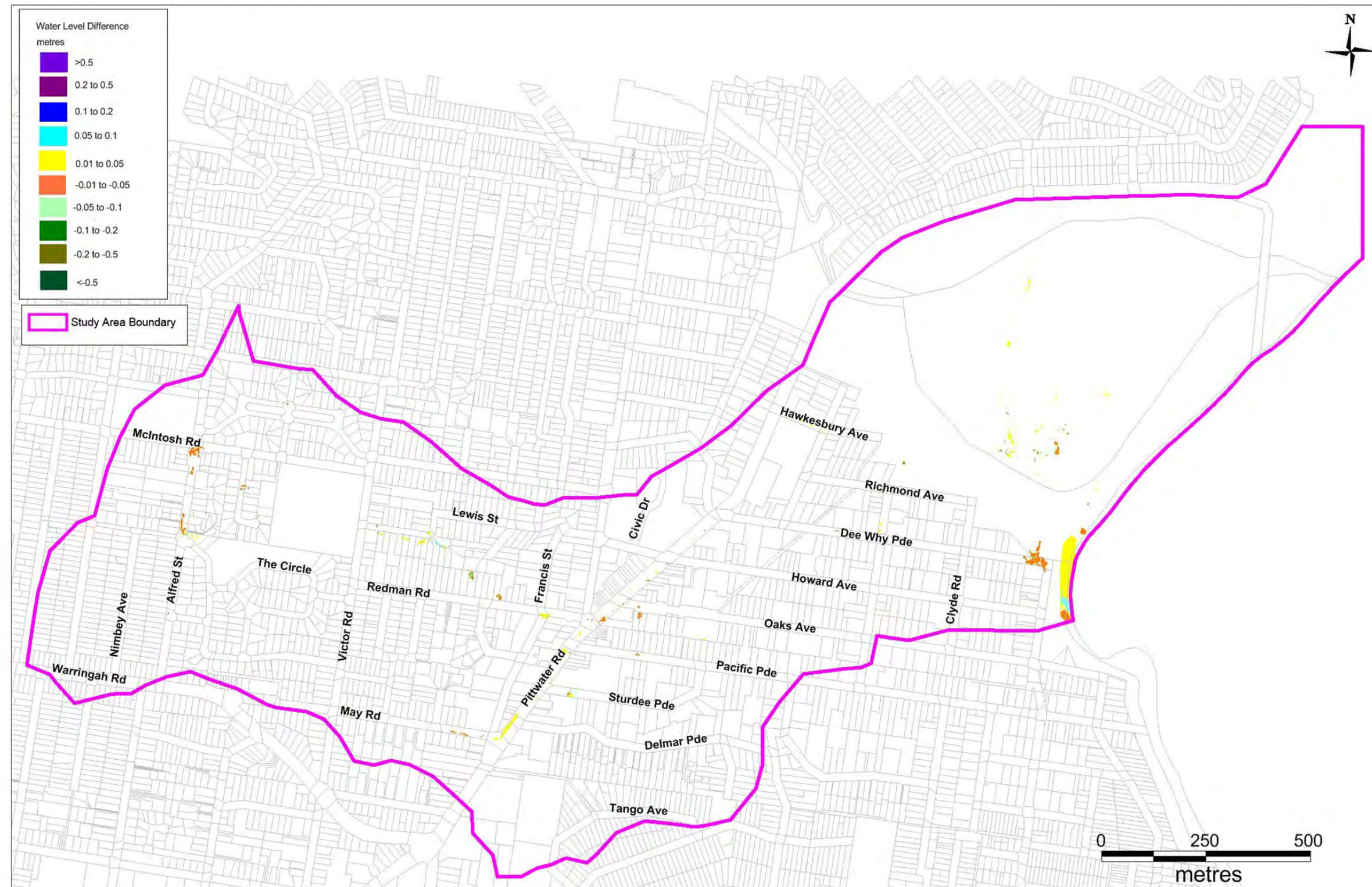


Figure 7-2 Sensitivity – Surface Roughness -20%

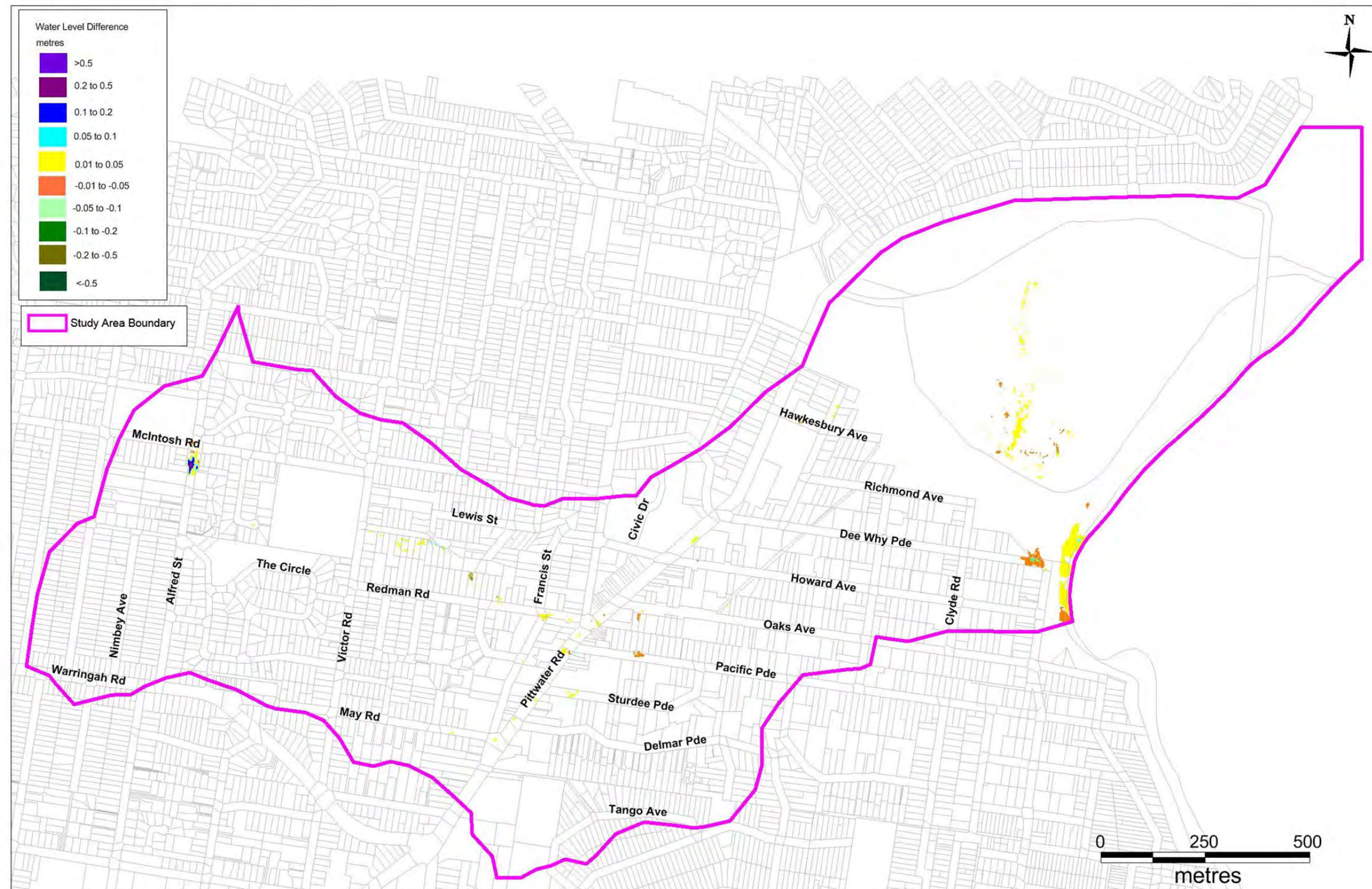
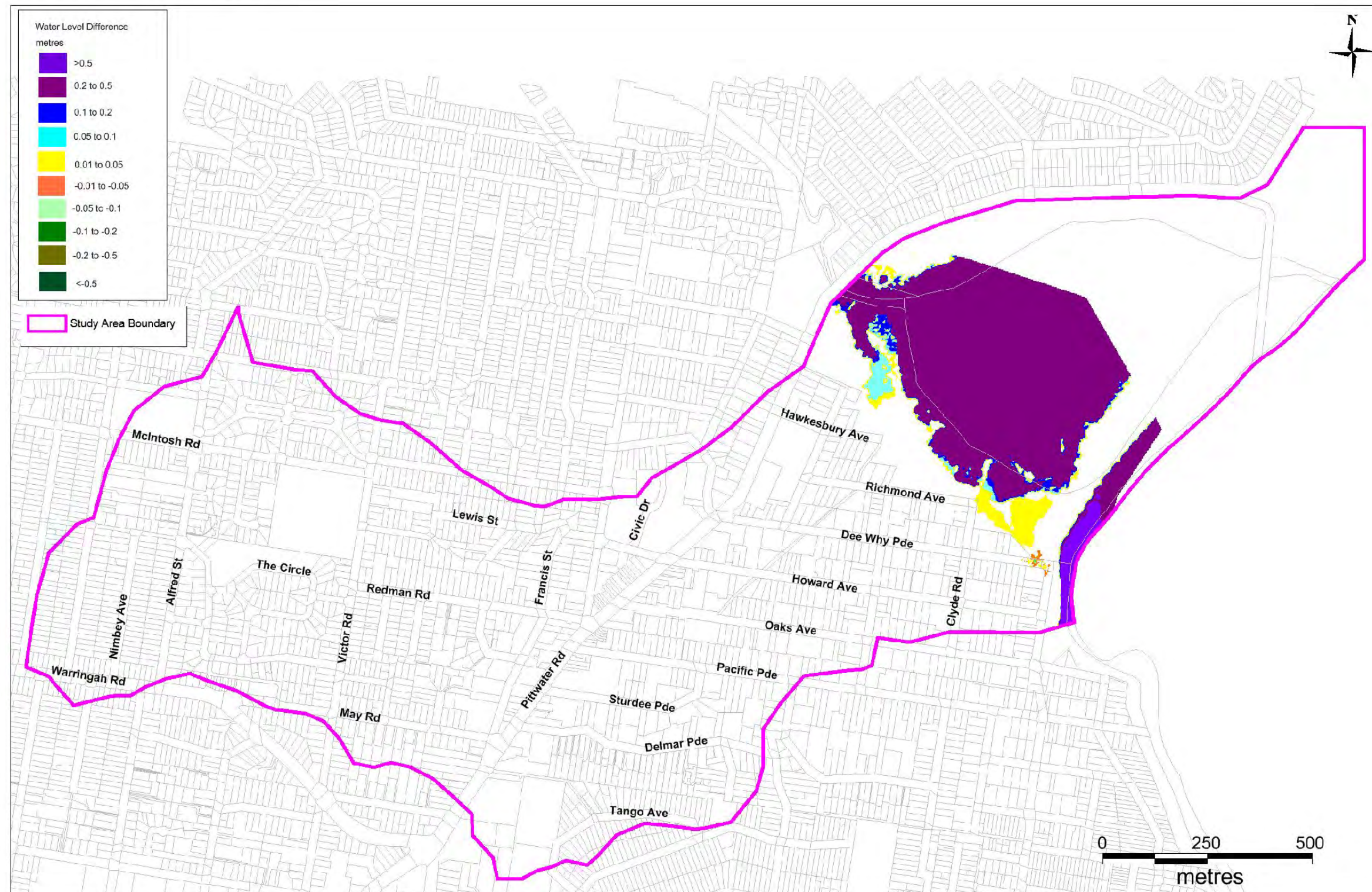


Figure 7-3 Sensitivity – Boundary Level +20%



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Figure 7-4 Sensitivity – Boundary Level -20%



Figure 7-5 Sensitivity – Conduit Roughness +20%

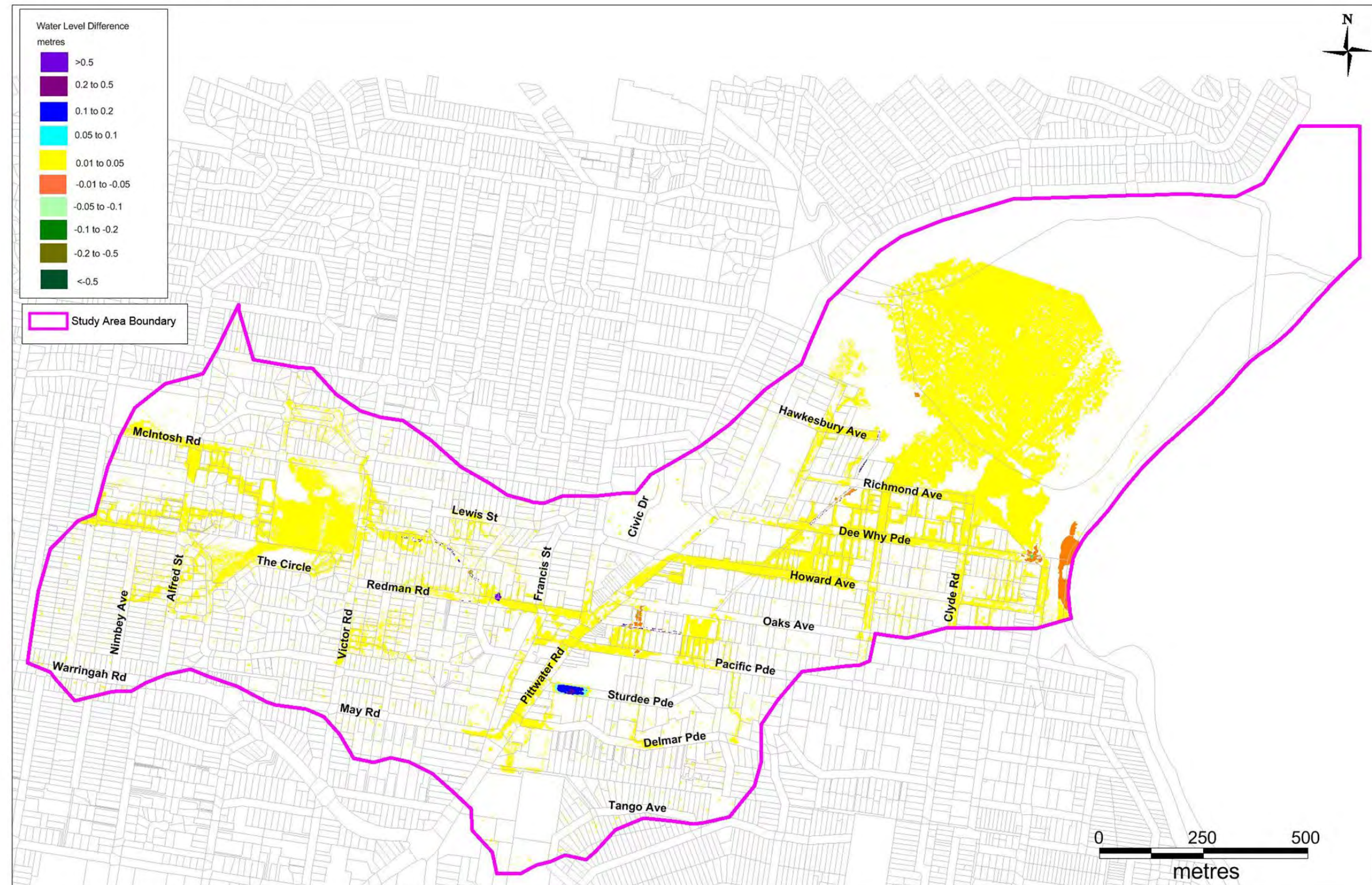


Figure 7-6 Sensitivity – Conduit Roughness -20%

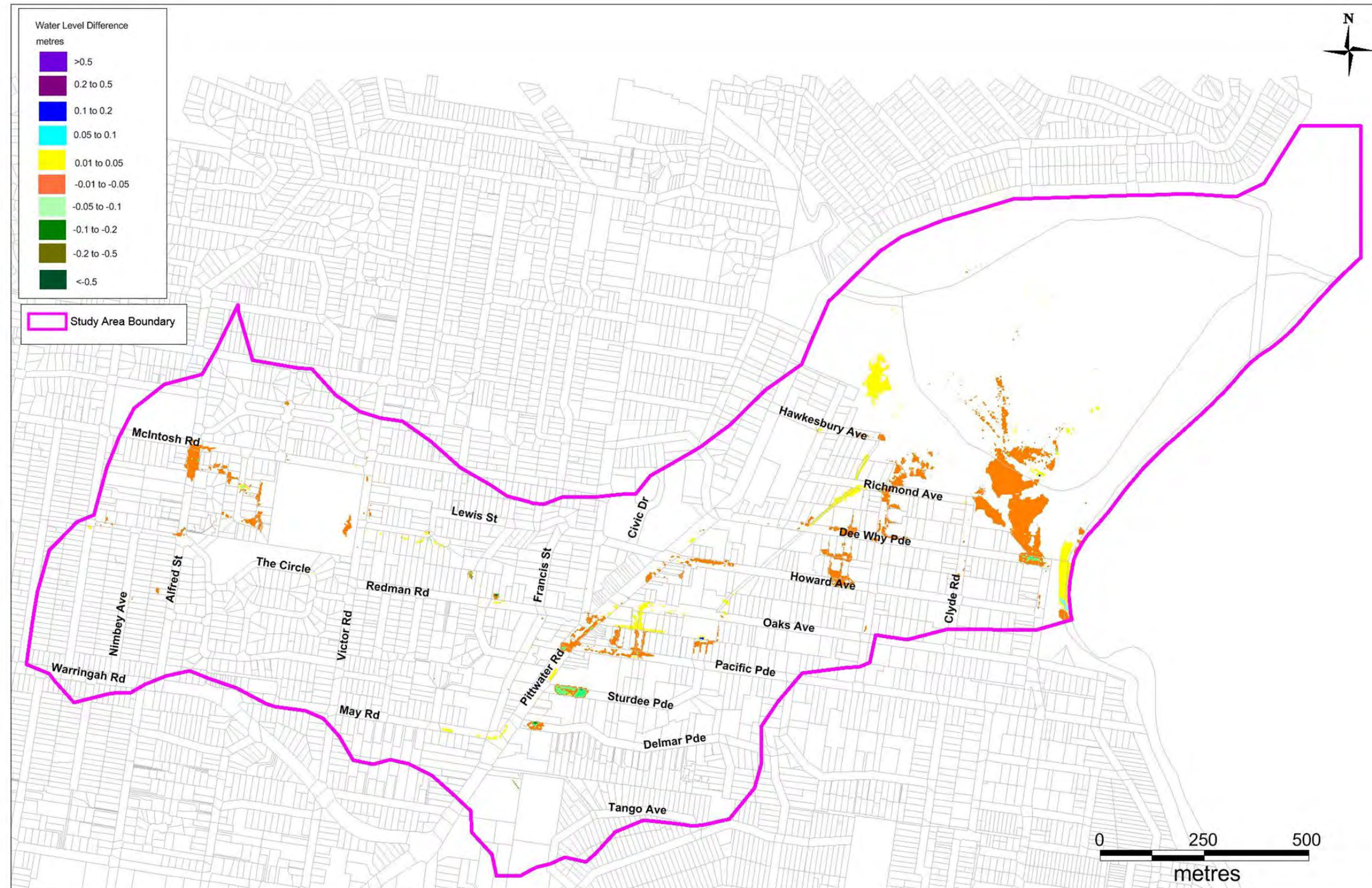


Figure 7-7 Sensitivity – Pervious Area Rainfall Losses +20%

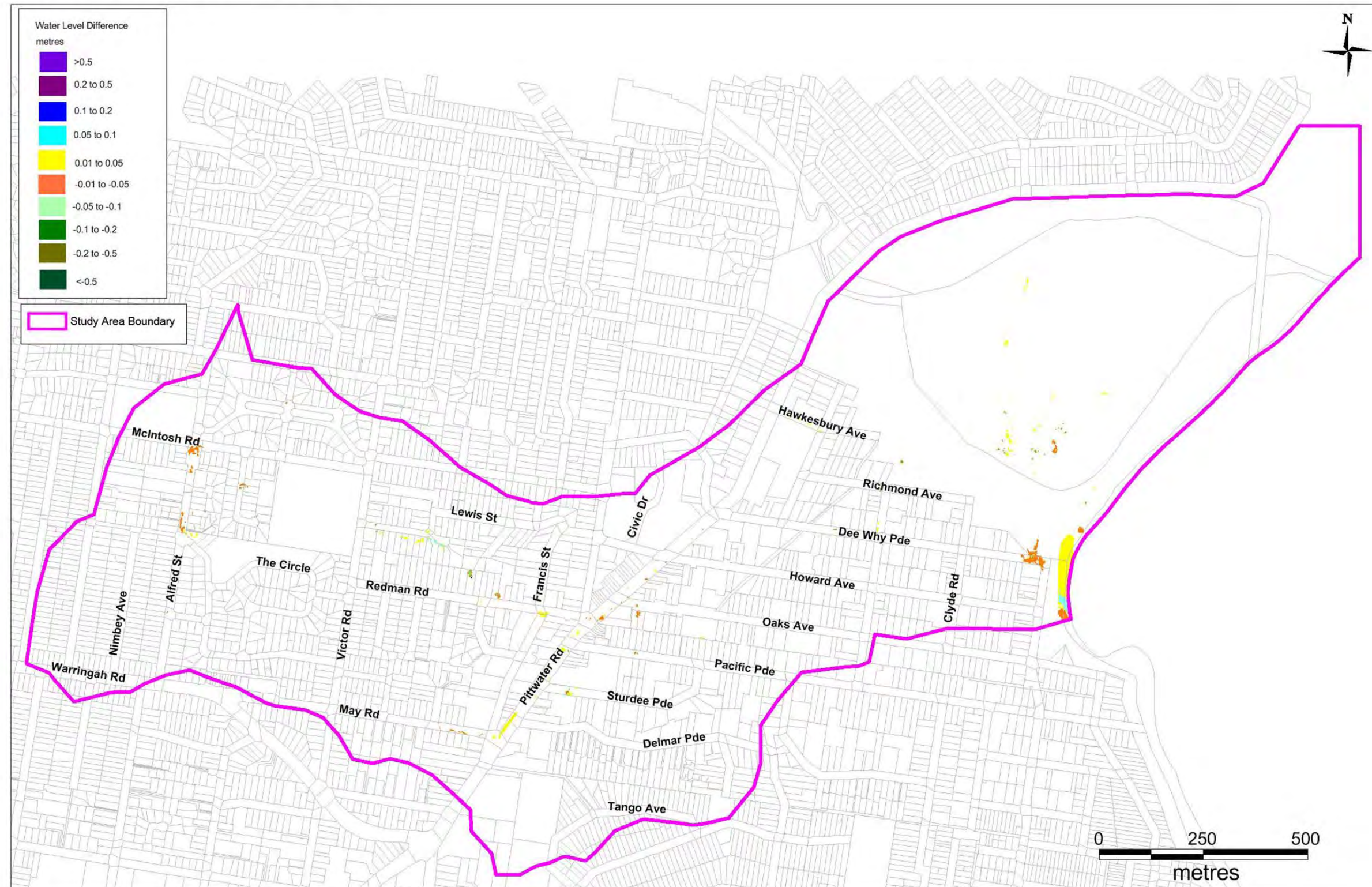
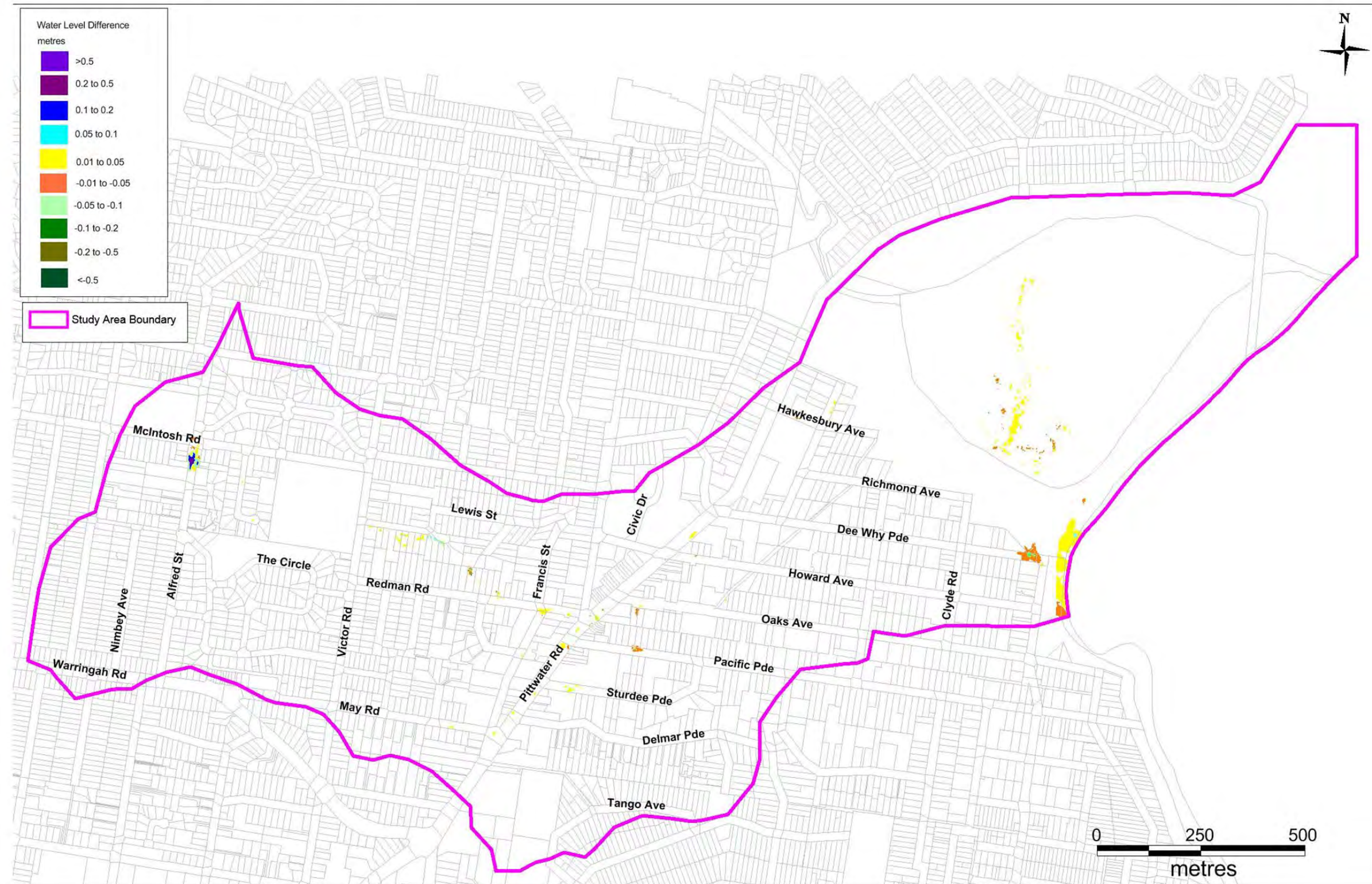


Figure 7-8 Sensitivity – Pervious Area Rainfall Losses -20%



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Figure 7-9 Sensitivity – Unlimited Inlet Capacity (0% Blockage)

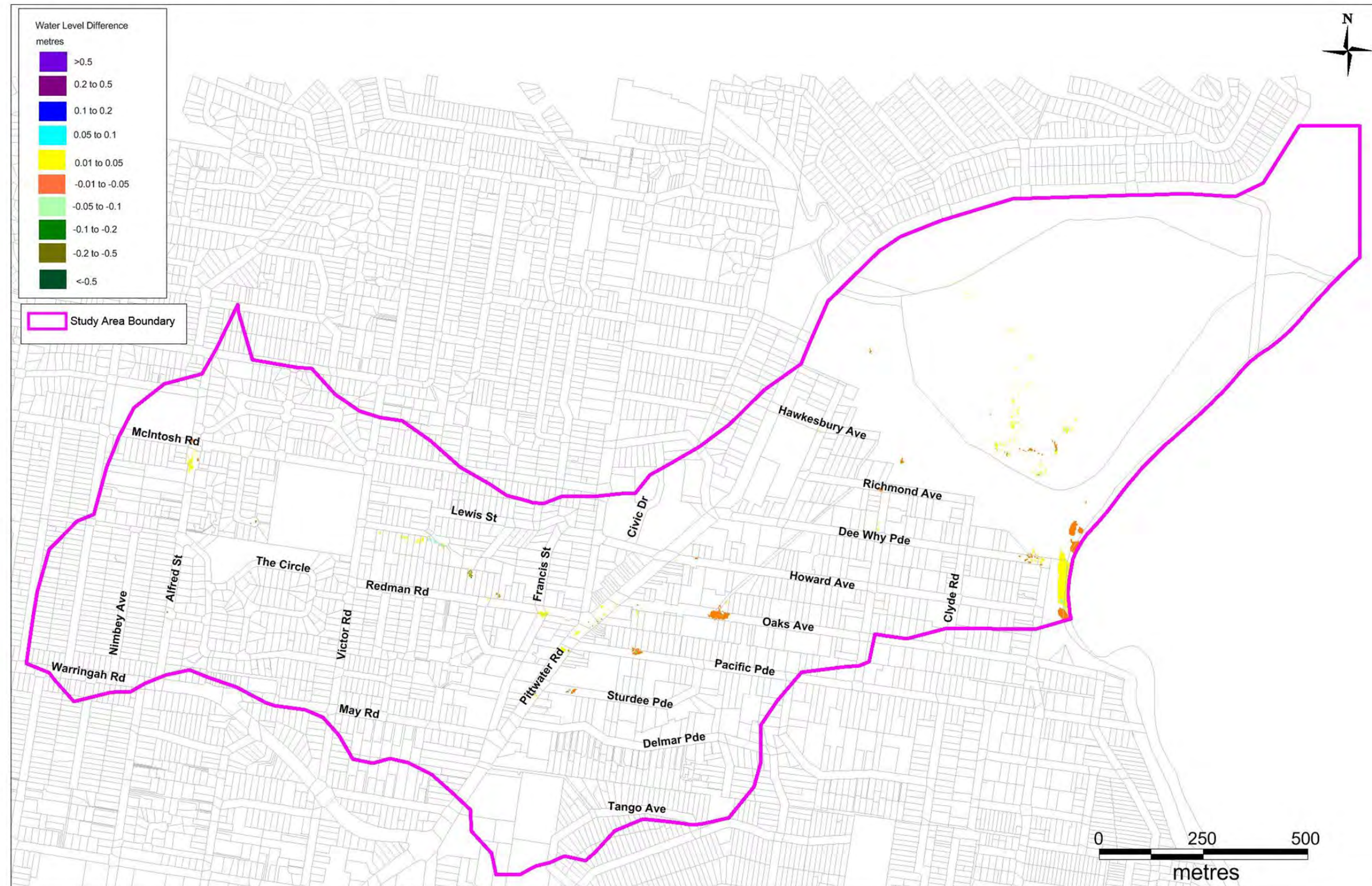


Figure 7-10 Sensitivity – Complete Inlet Blockage (0% Piped Conveyance)

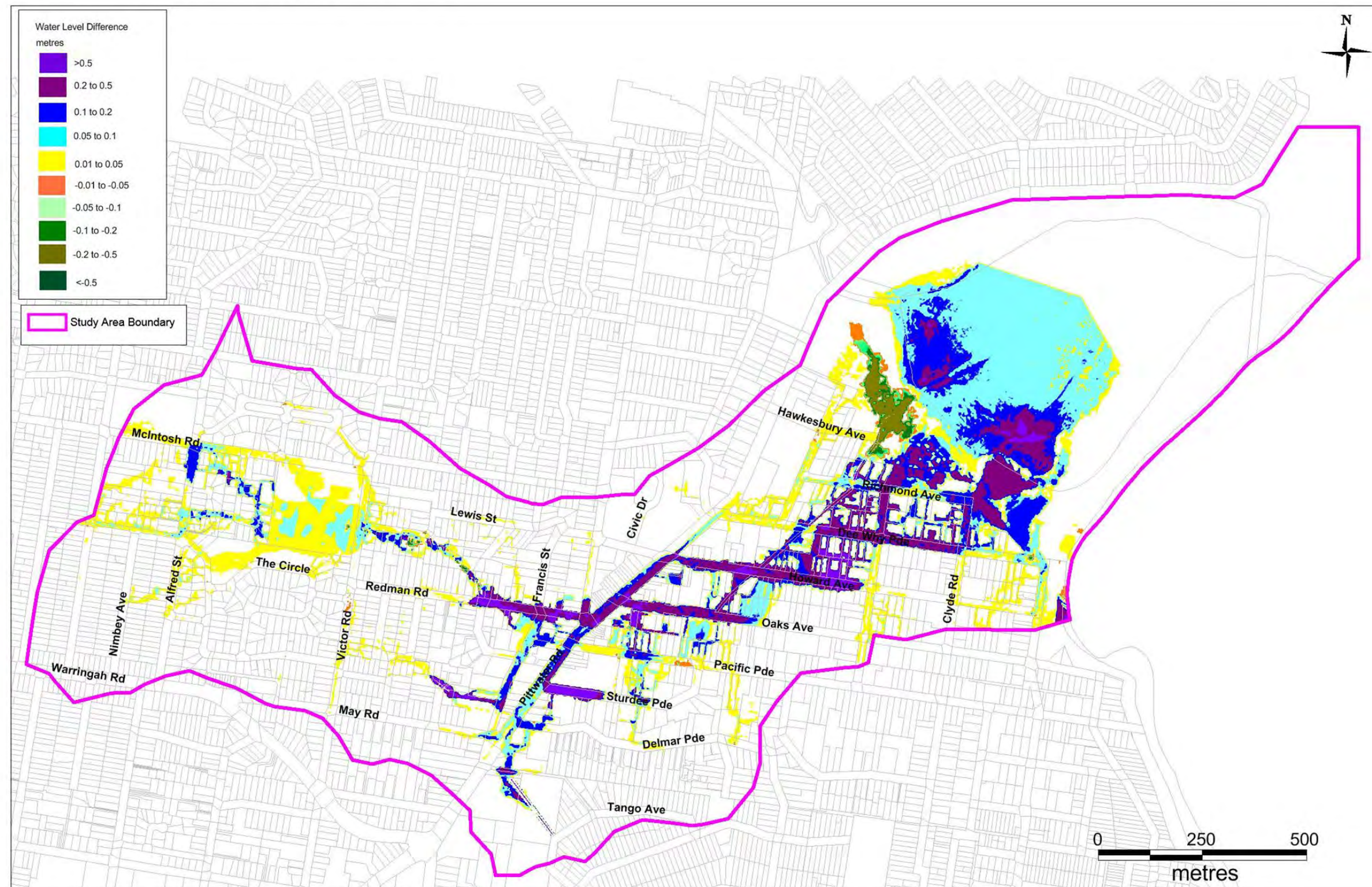


Figure 7-11 Sensitivity – Energy Losses at Structures +20%

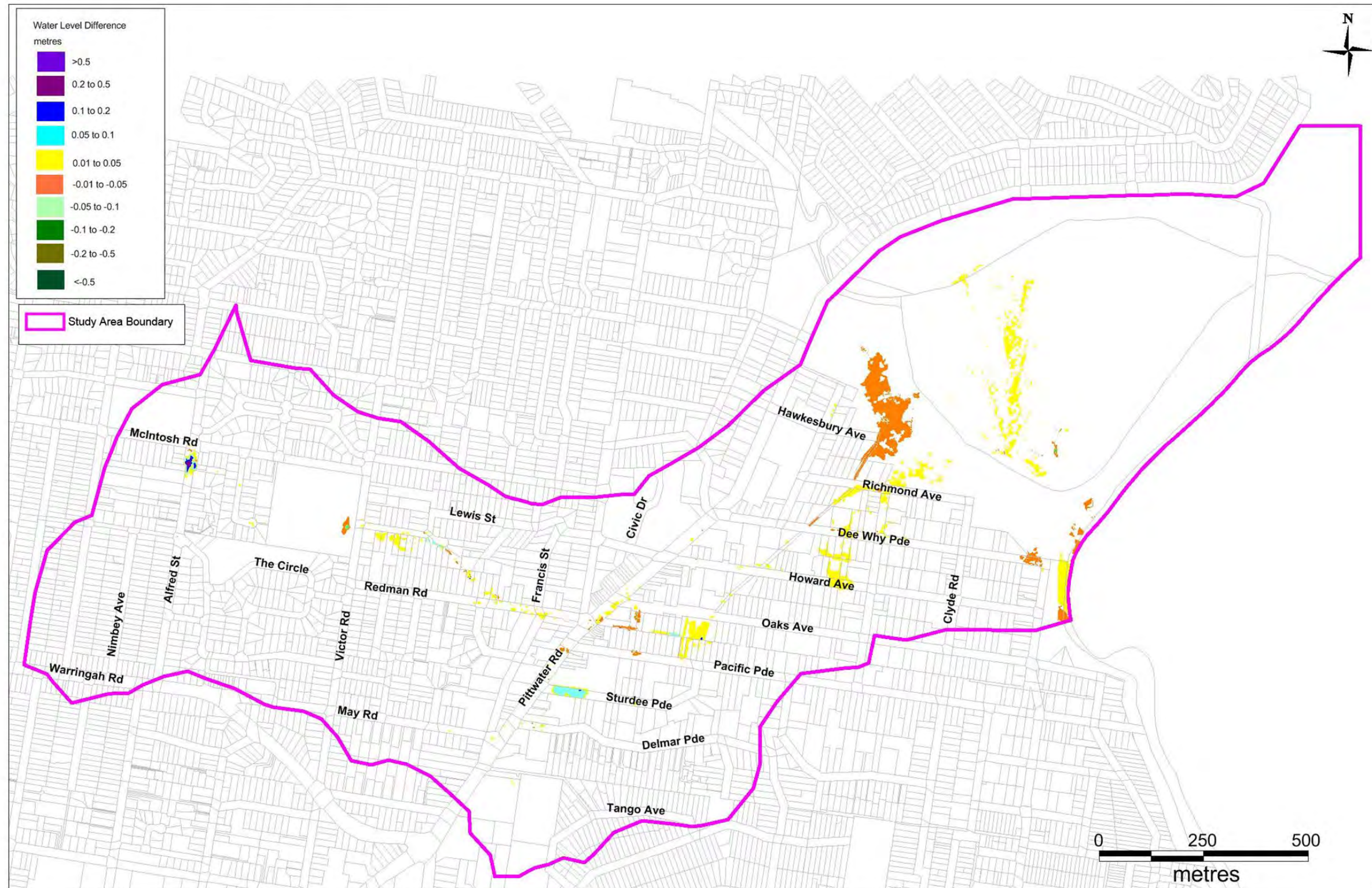
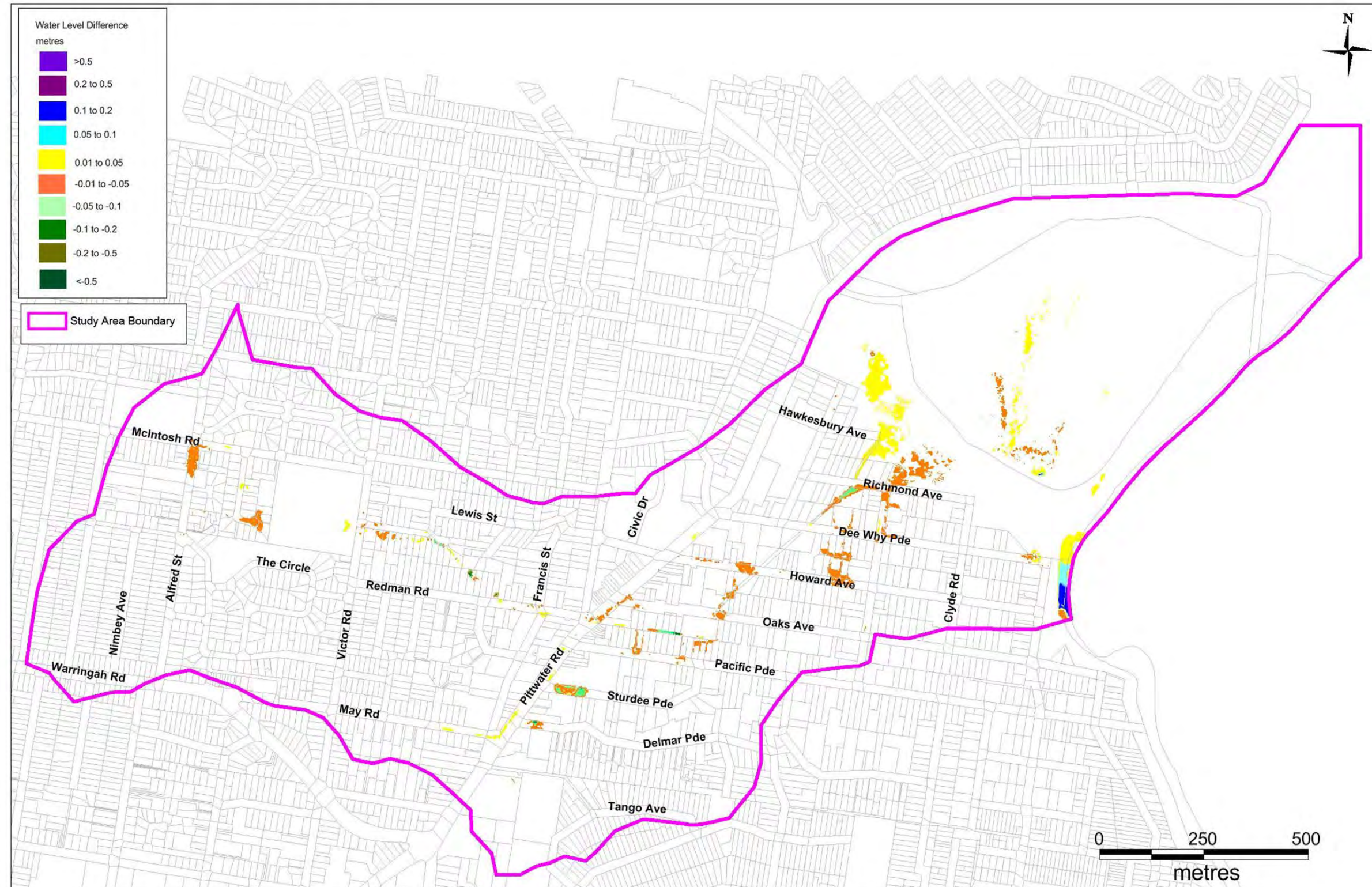


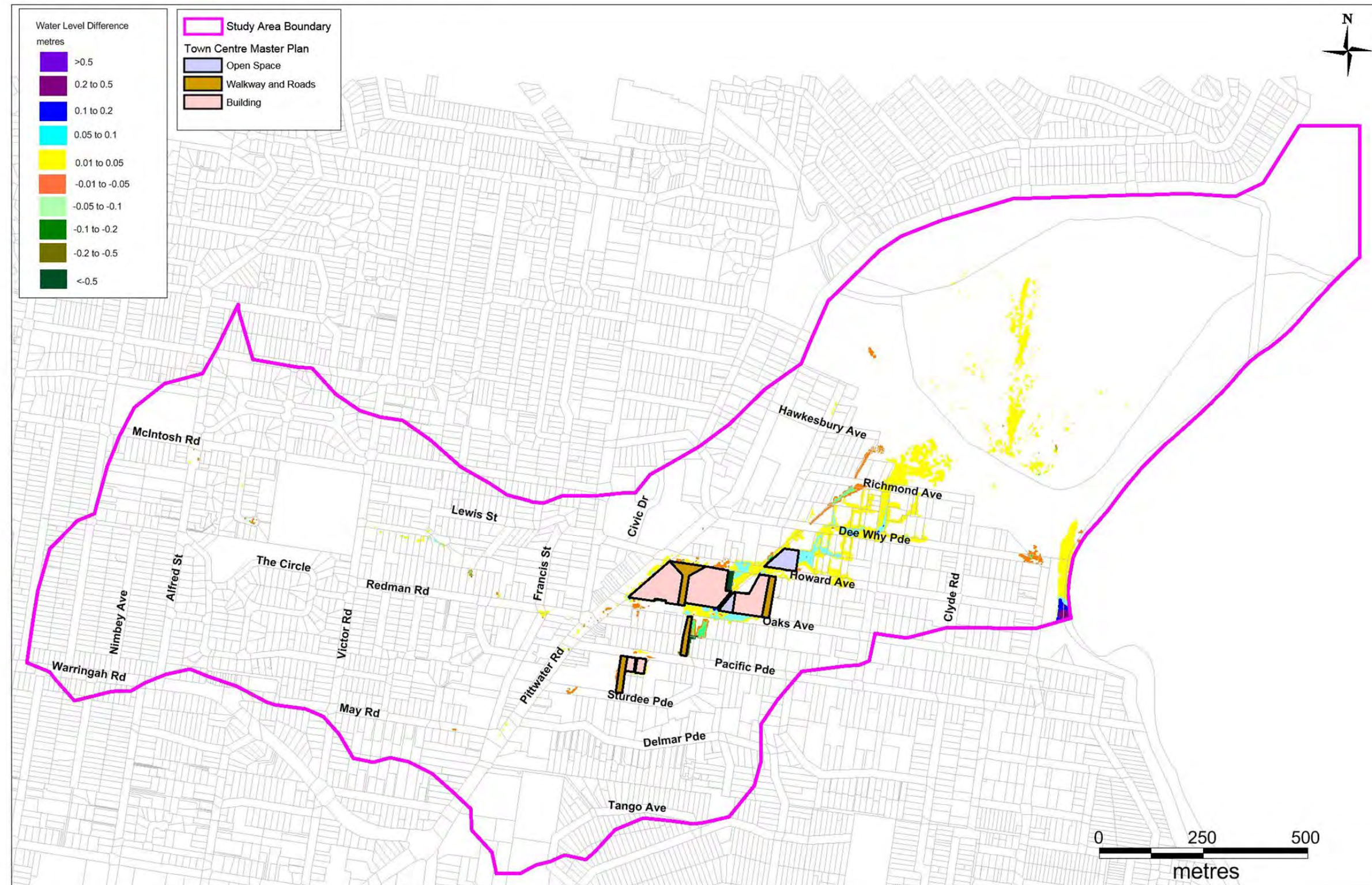
Figure 7-12 Sensitivity – Energy Losses at Structures -20%



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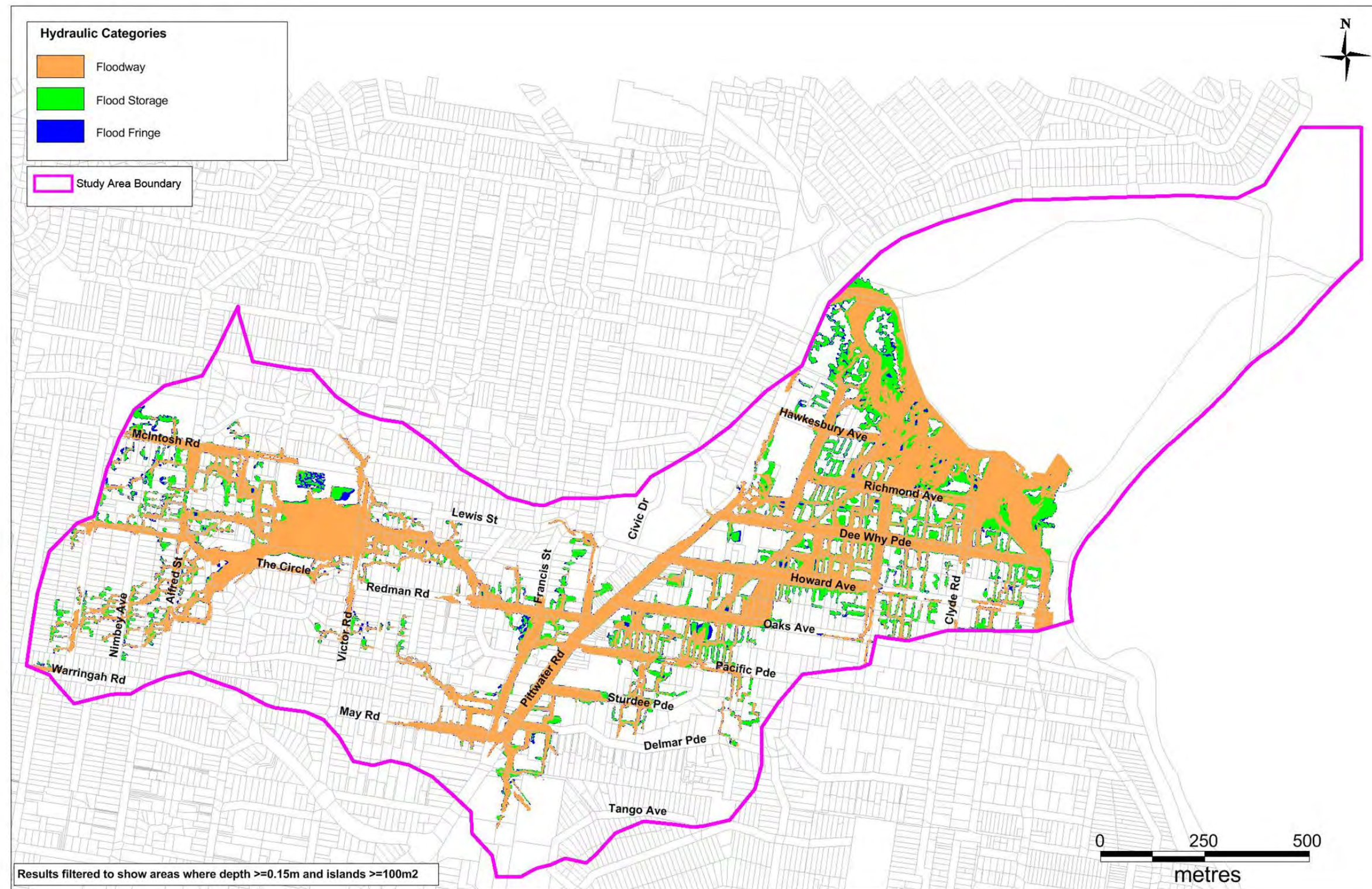
Figure 7-14 Sensitivity –Dee Why Town Centre Masterplan Development Scenario



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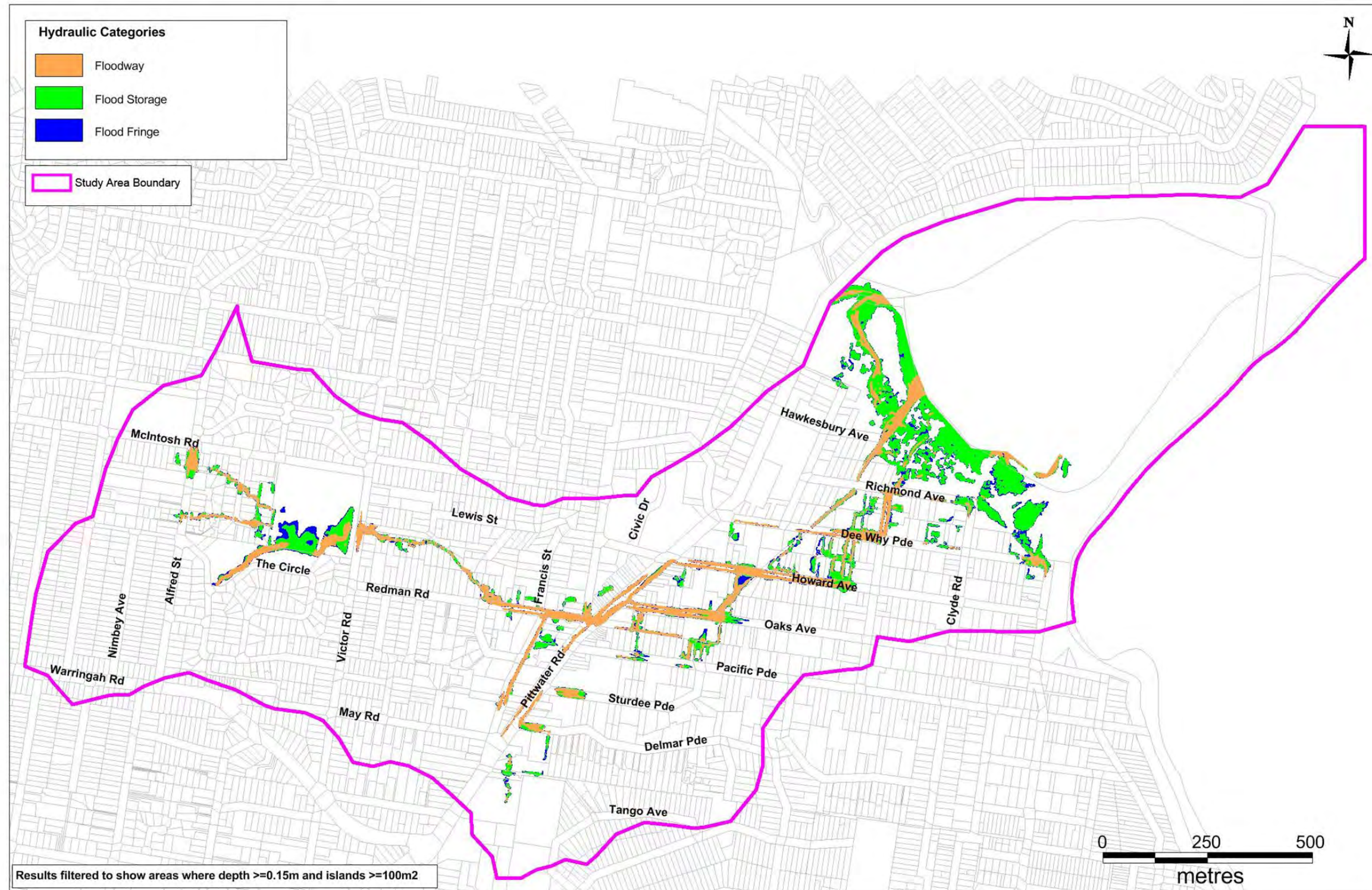
Figure 8-1 Hydraulic Categorisation PMF Event



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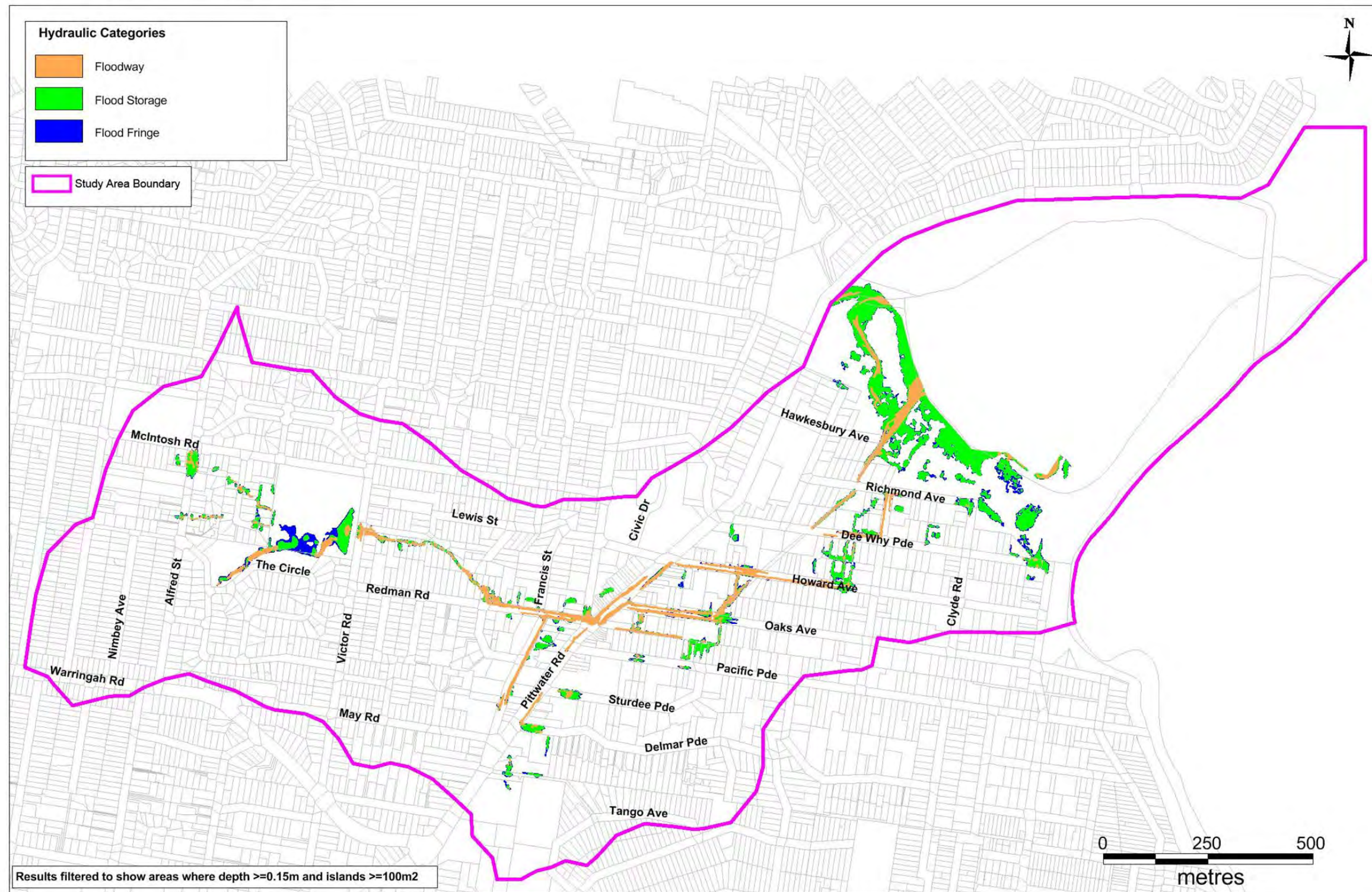
Figure 8-2 Hydraulic Categorisation 1% AEP Event



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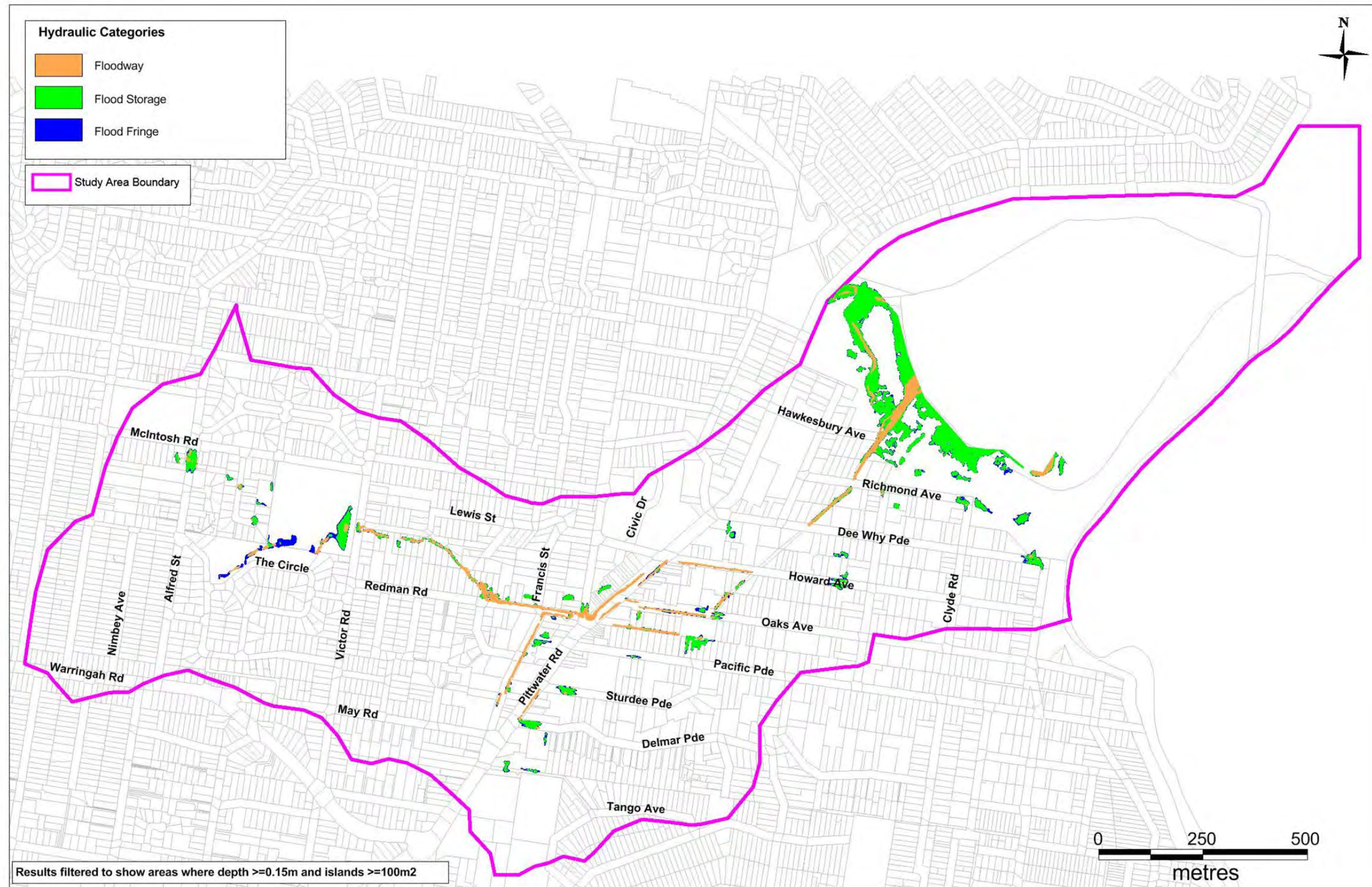
Figure 8-3 Hydraulic Categorisation 5% AEP Event



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

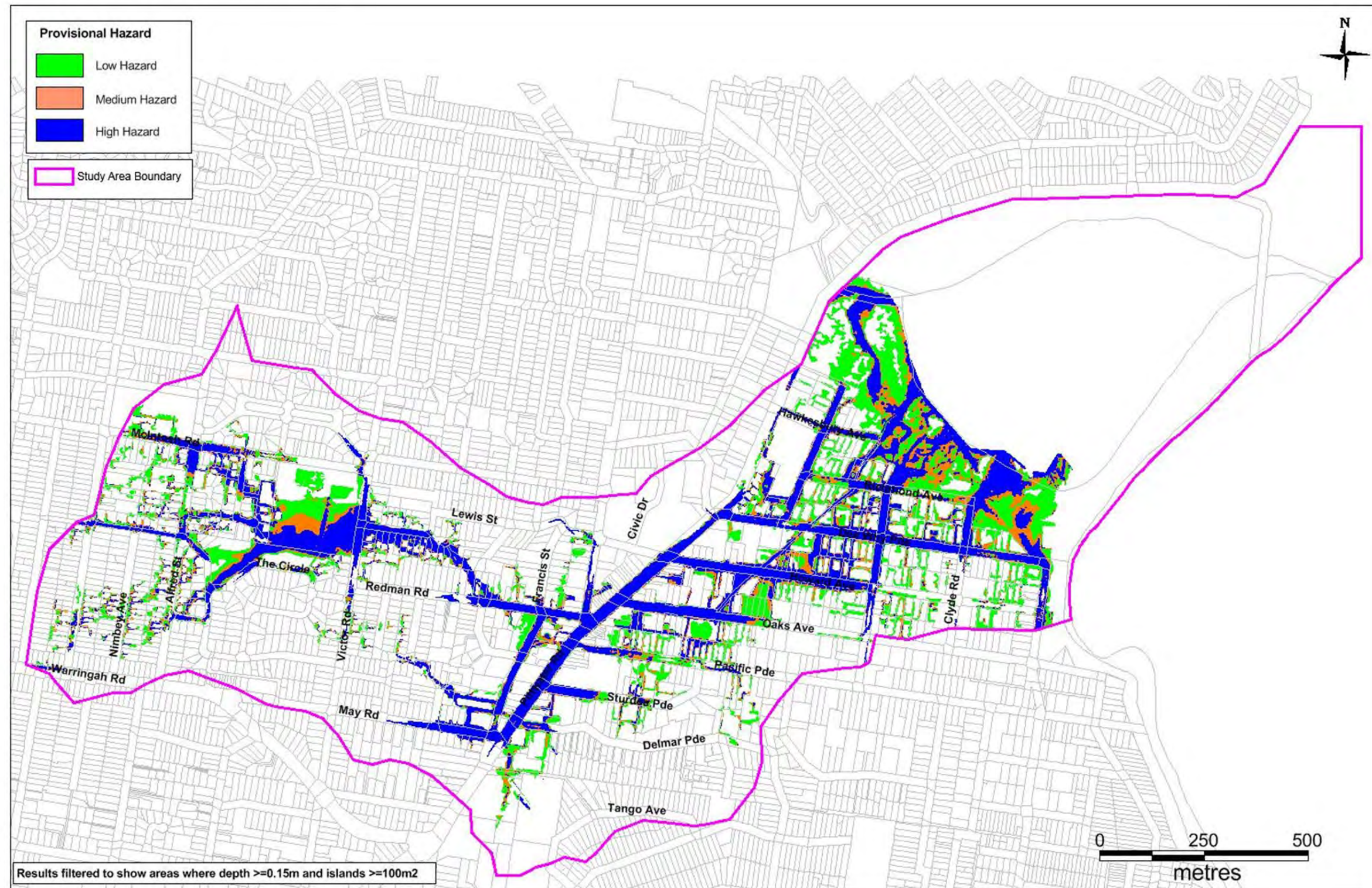
Figure 8-4 Hydraulic Categorisation 5 Year ARI Event



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 8-6 Provisional Hazard Classification PMF Event



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 8-7 Provisional Hazard Classification 1% AEP Event

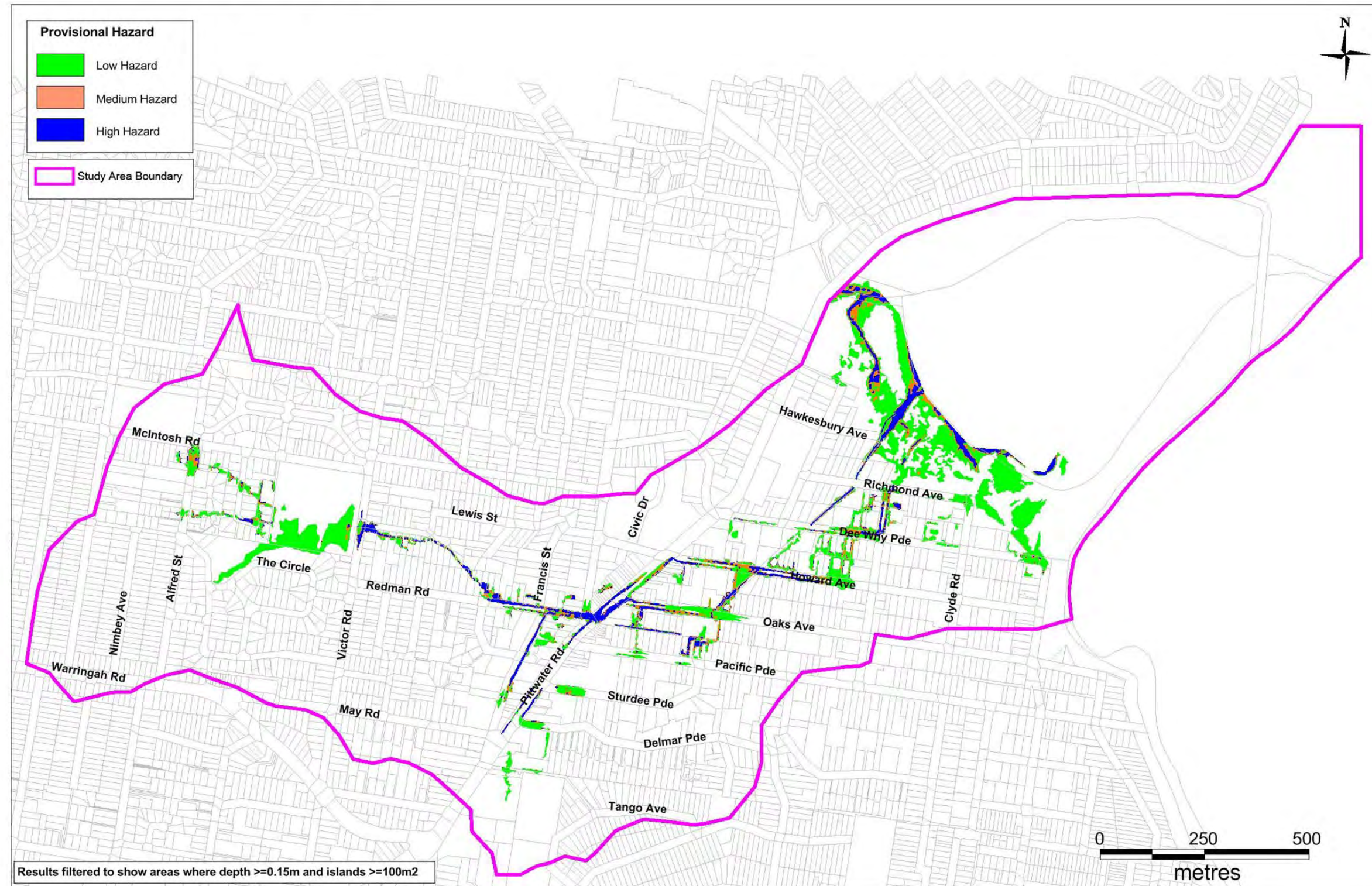


Figure 8-8 Provisional Hazard Classification 5% AEP Event

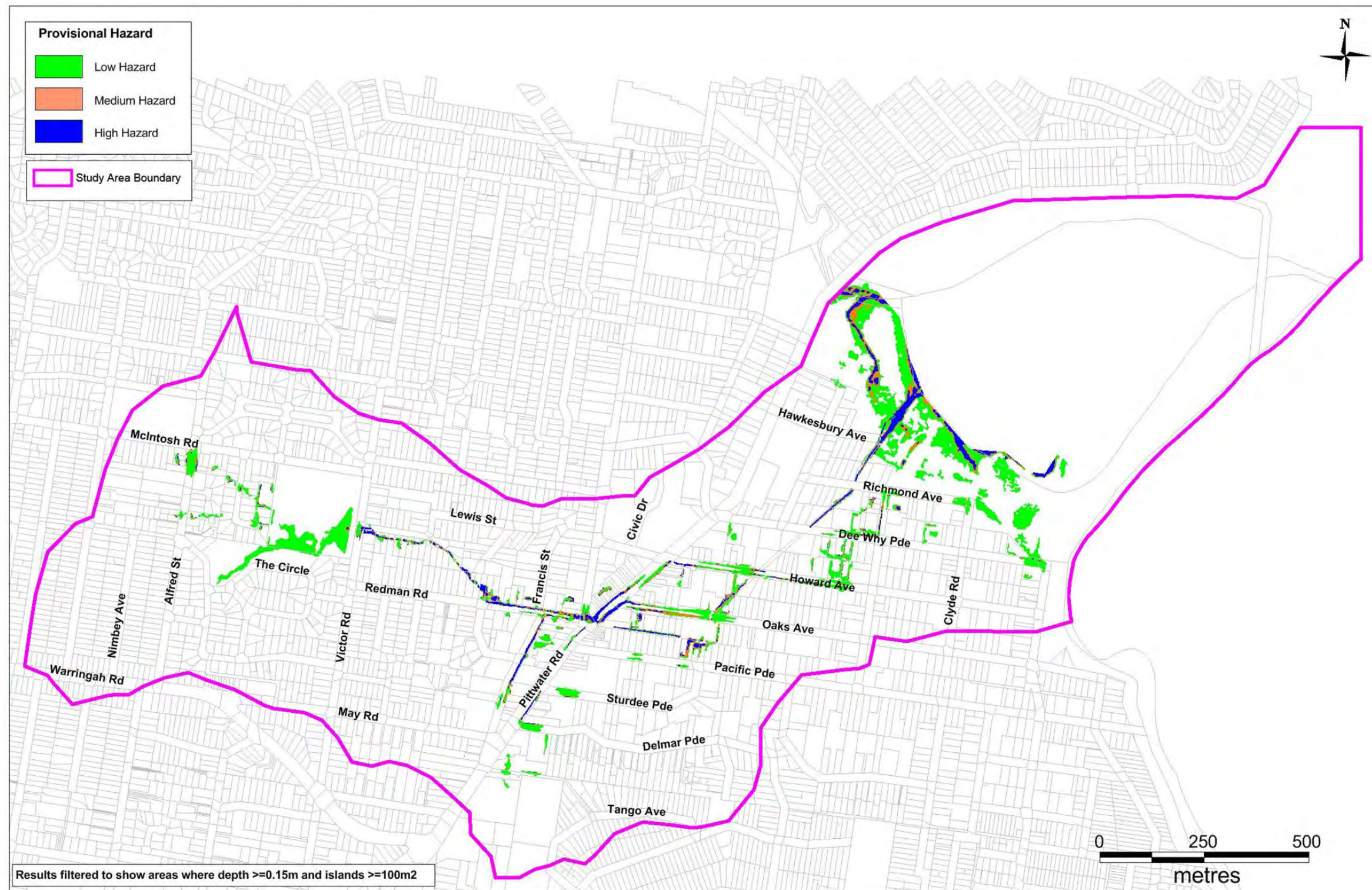


Figure 8-9 Provisional Hazard Classification 5 Year ARI Event

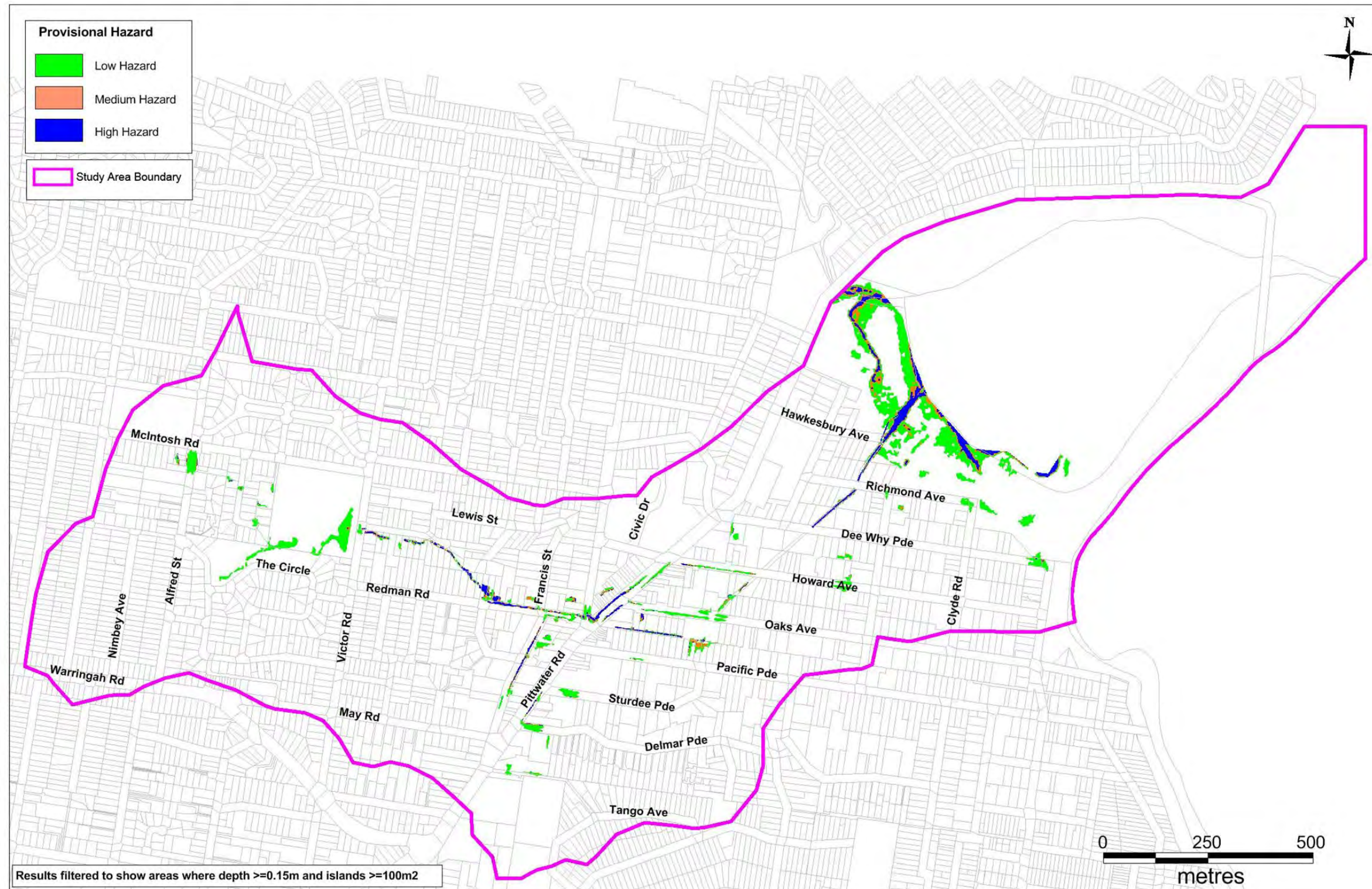


Figure 9-1 Stormwater Infrastructure Capacity – ARI Event to 100% Capacity

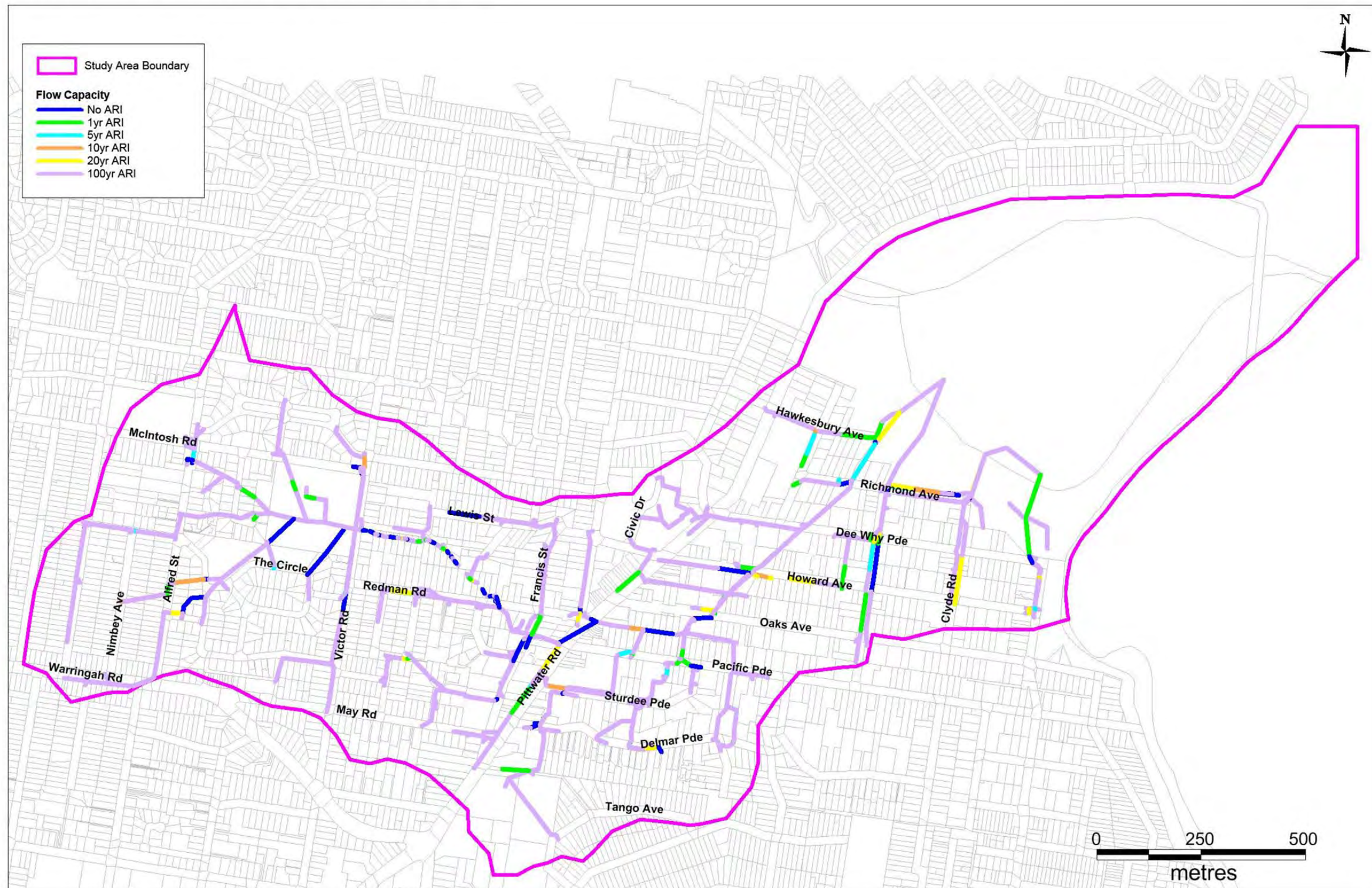


Figure 9-2 Stormwater Infrastructure Capacity – % Capacity in 5 Year ARI

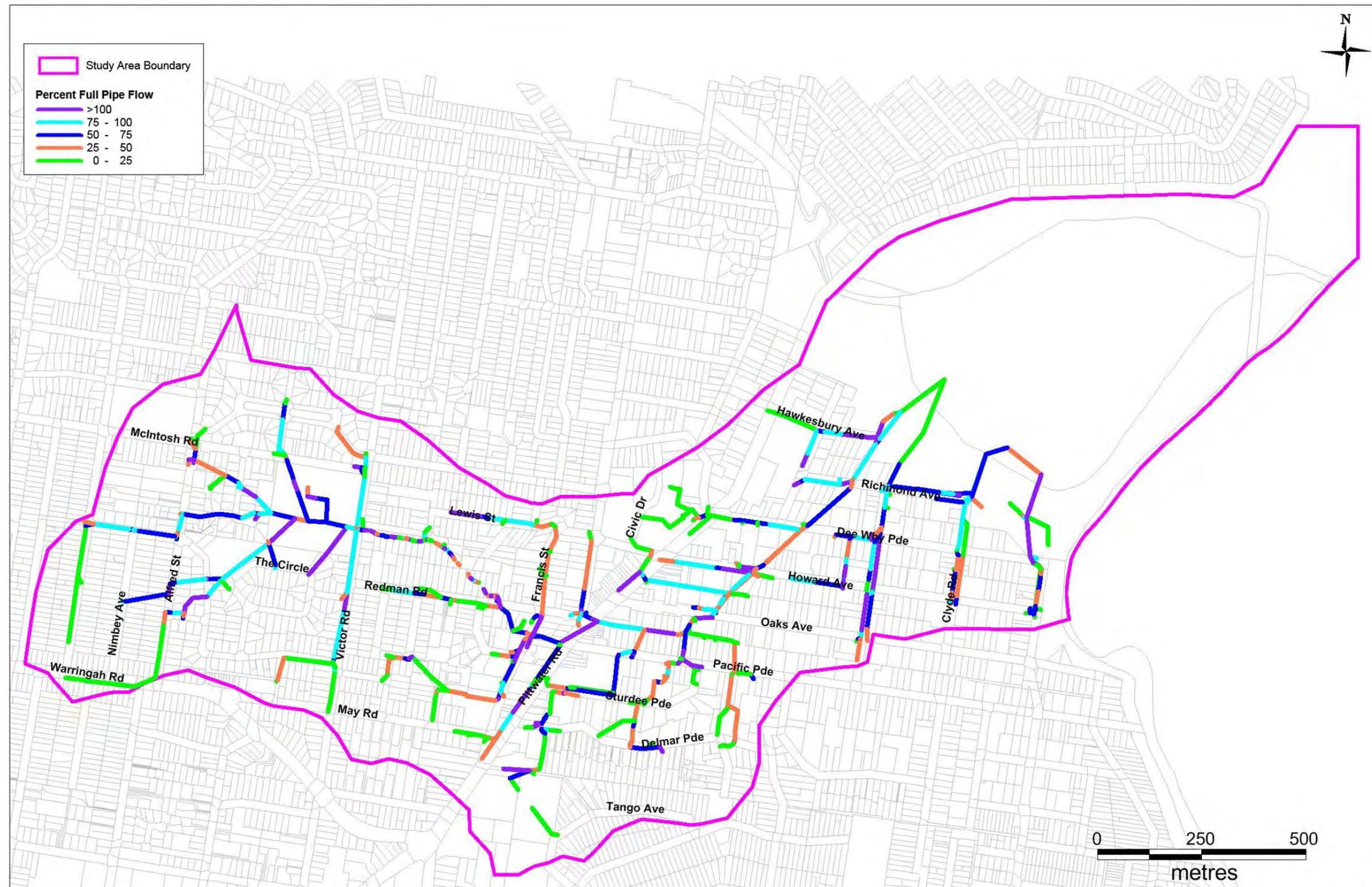
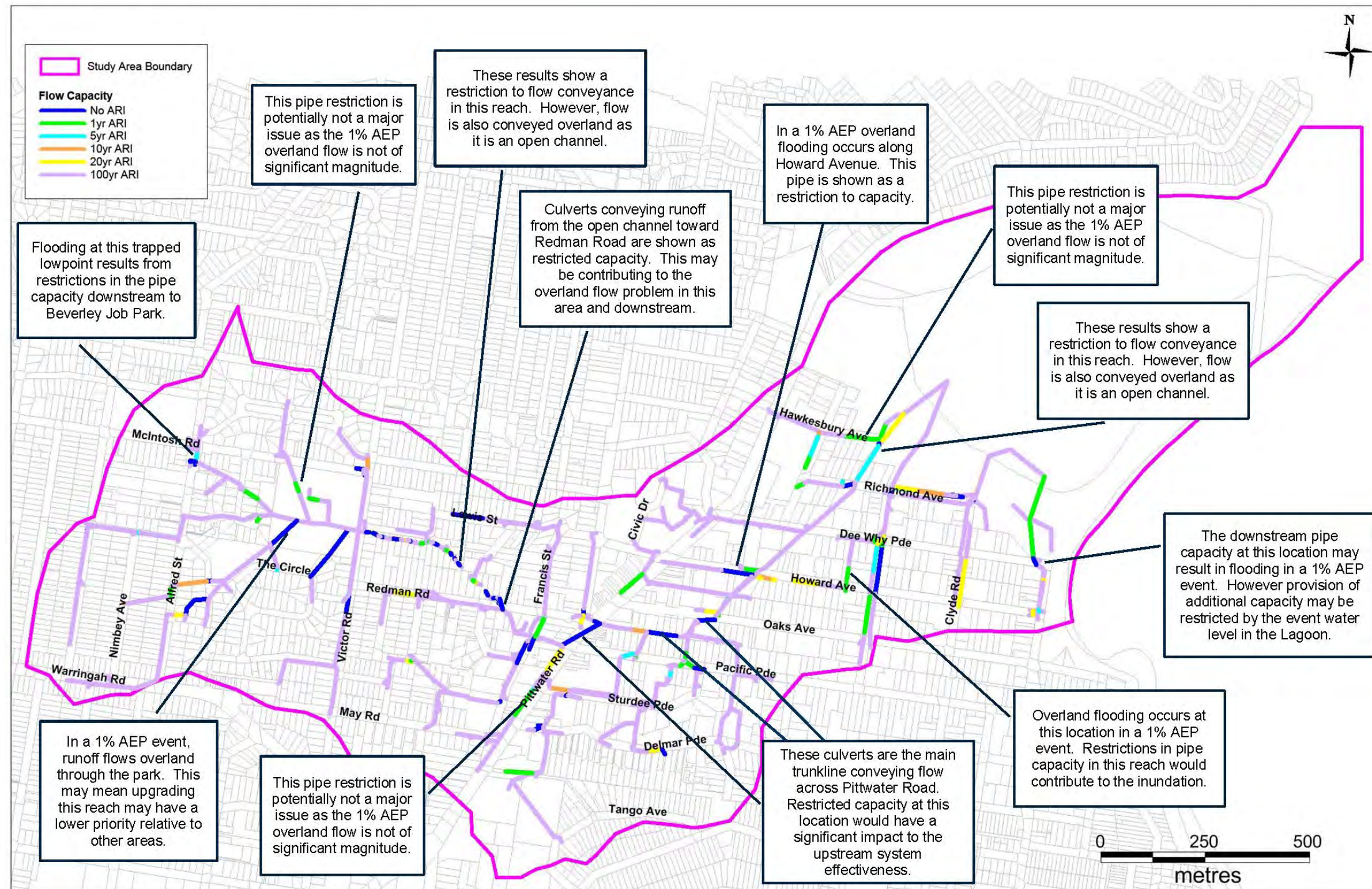


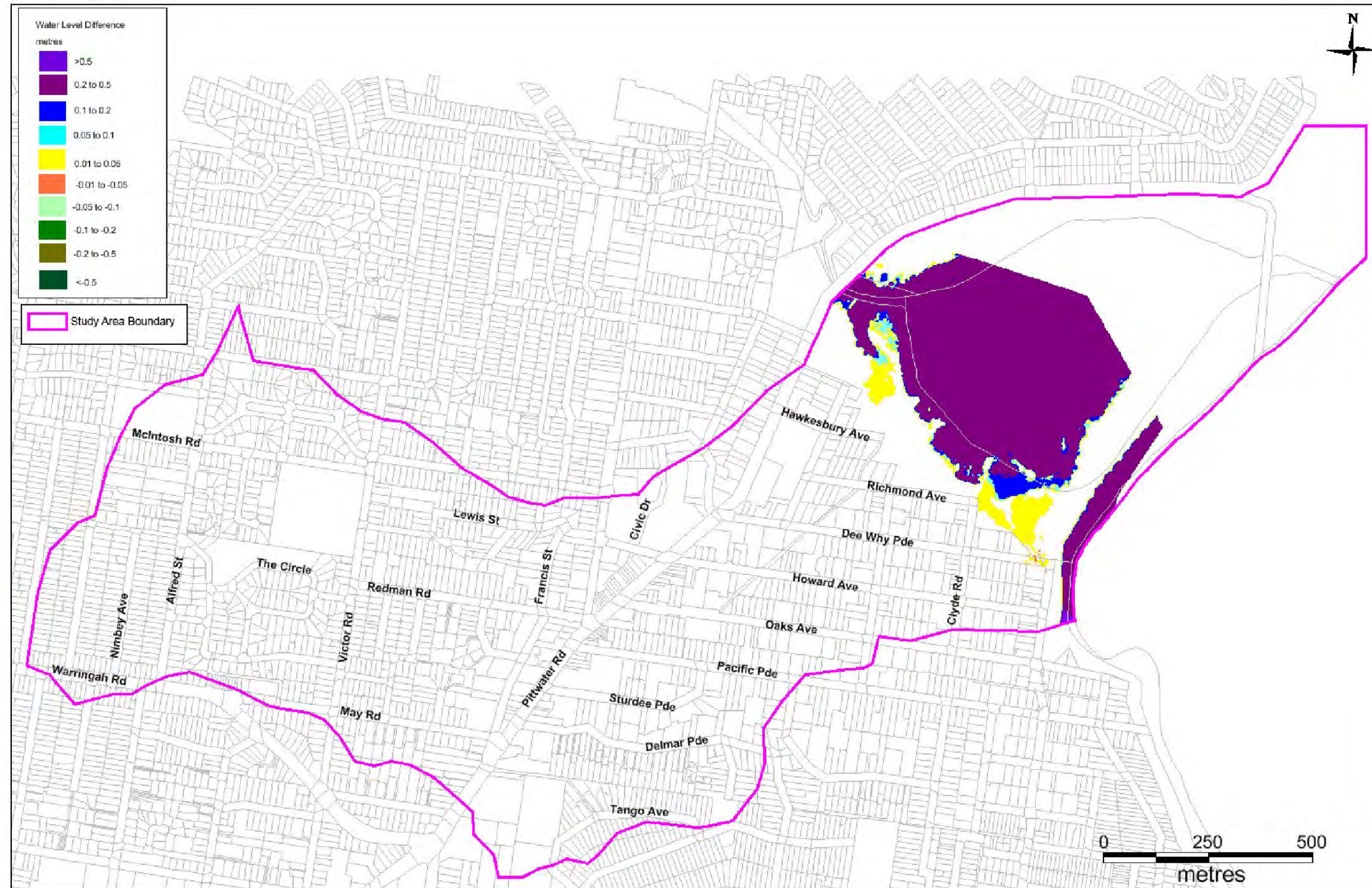
Figure 9-3 Review of Stormwater Infrastructure Capacity



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 11-1 Sea Level Rise 0.4 m



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 11-2 Sea Level Rise 0.9 m

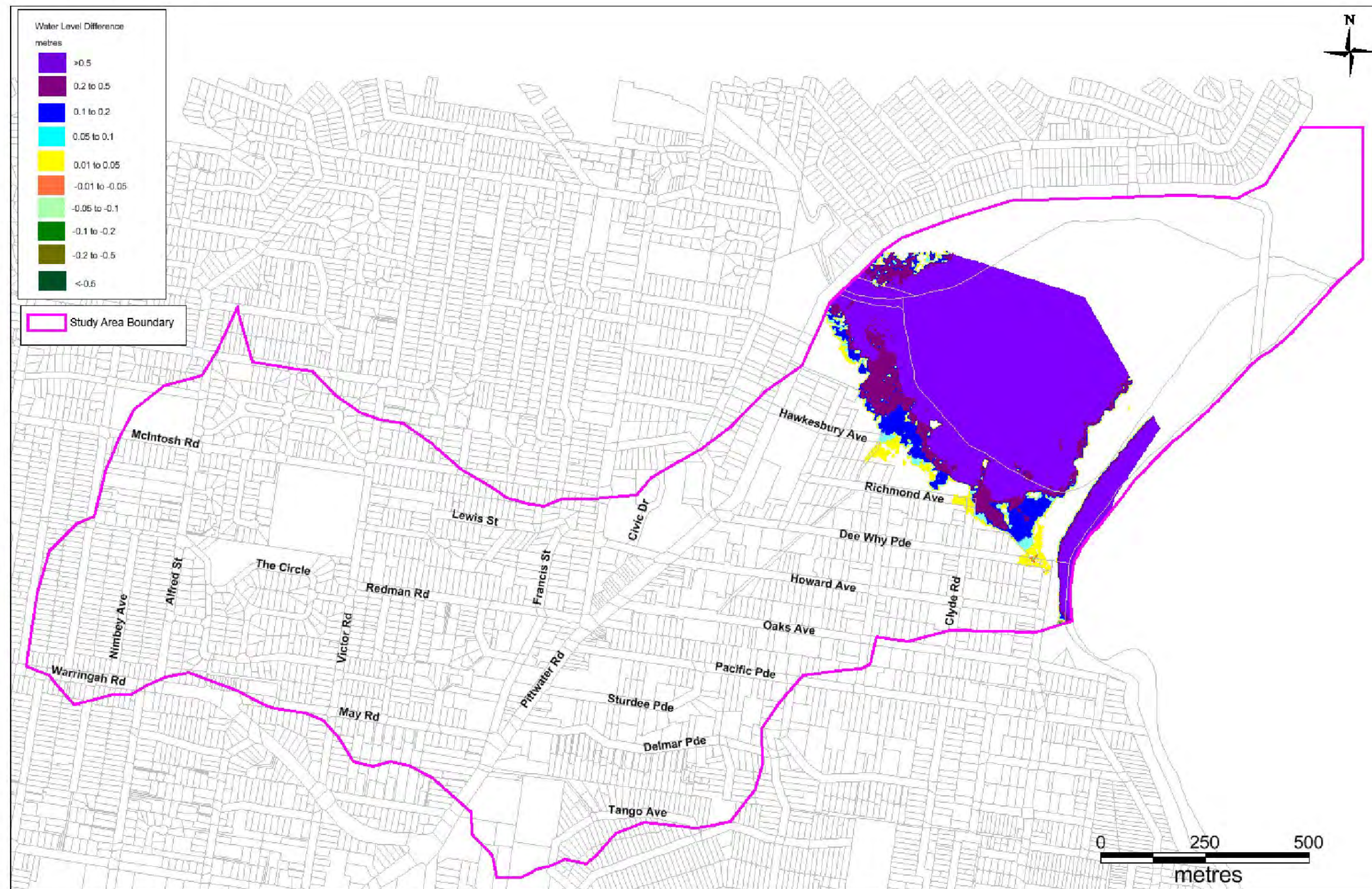


Figure 11-3 Rainfall Intensity Increase 10%

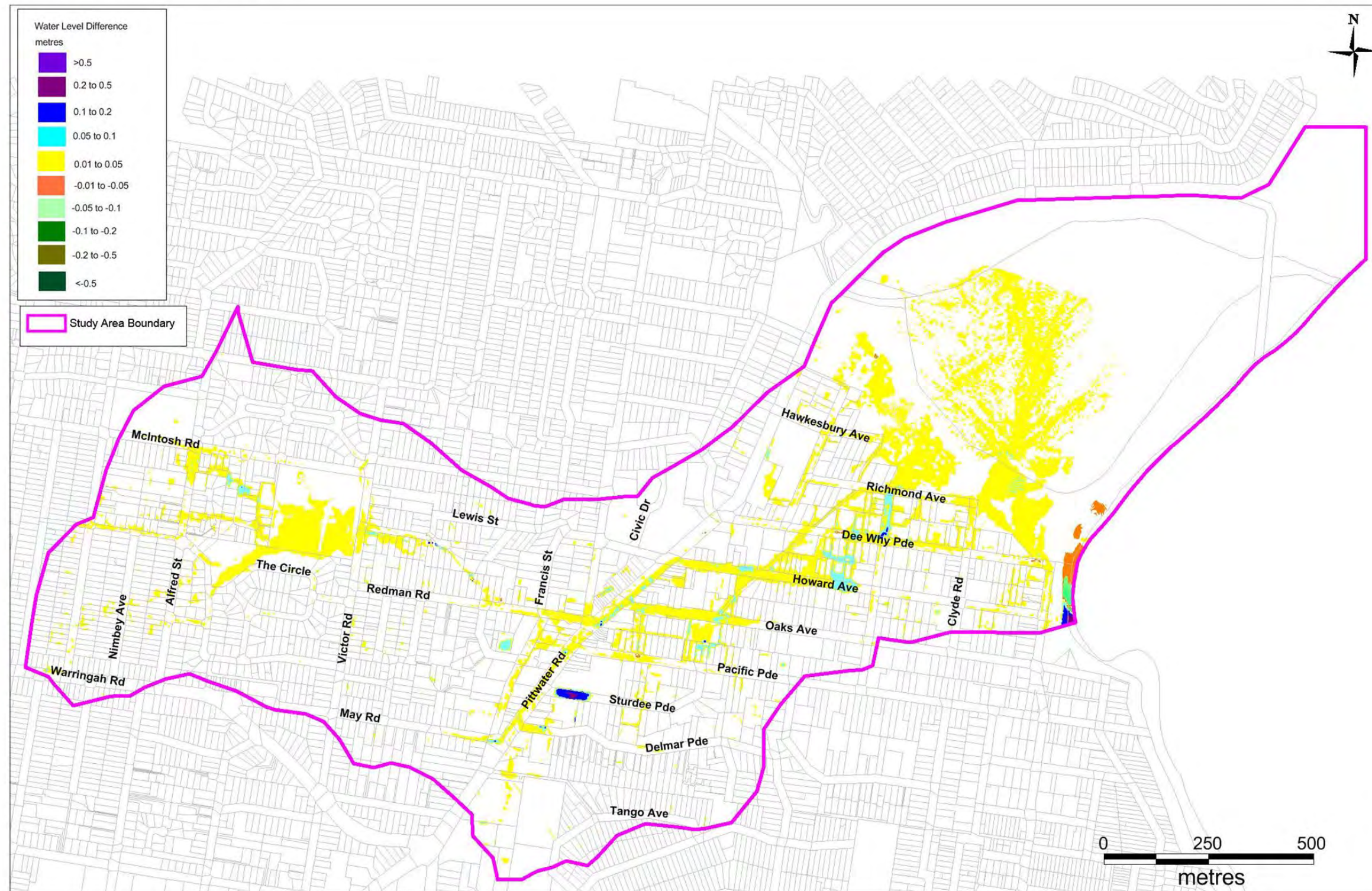


Figure 11-4 Rainfall Intensity Increase 20%

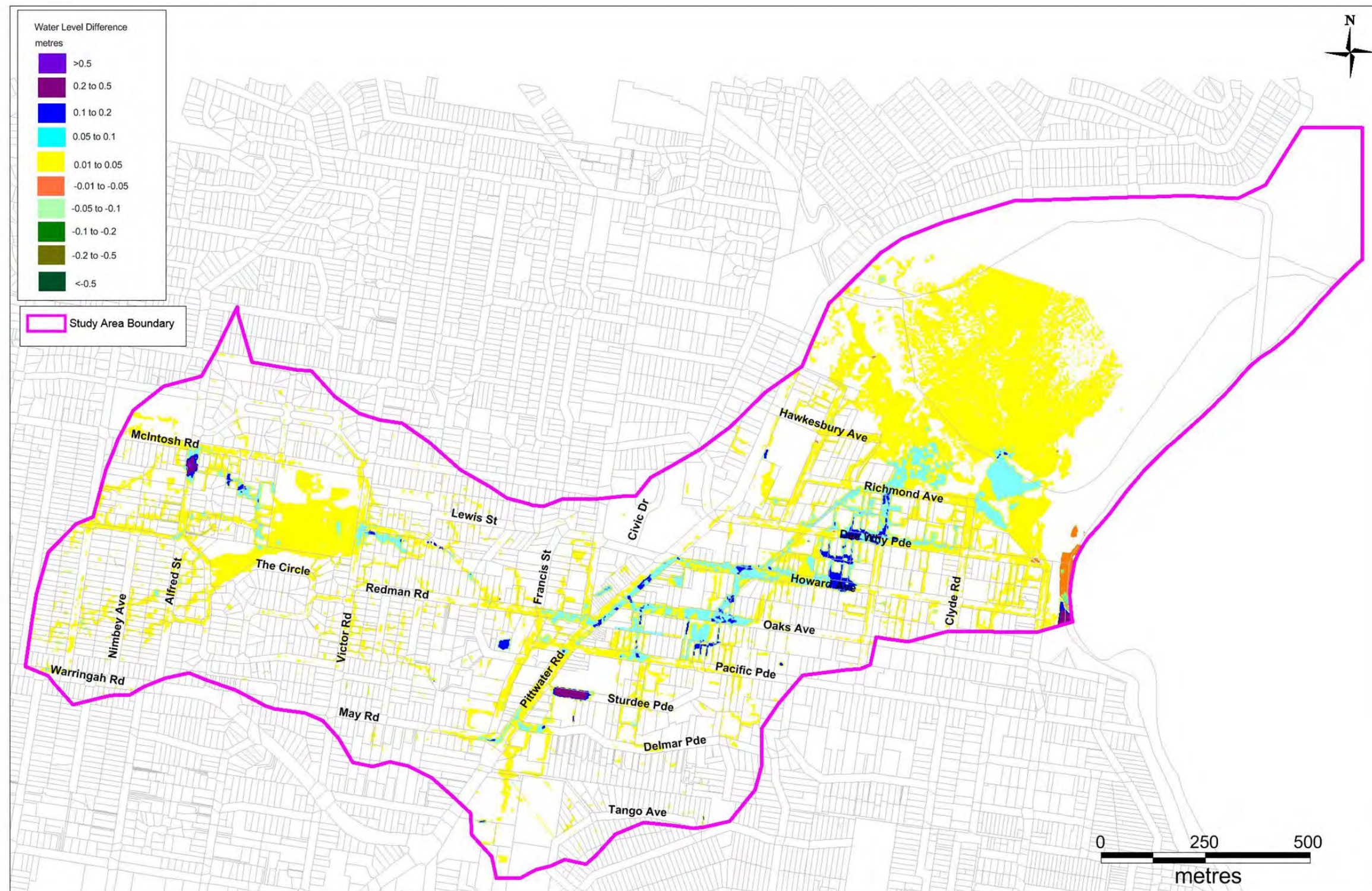
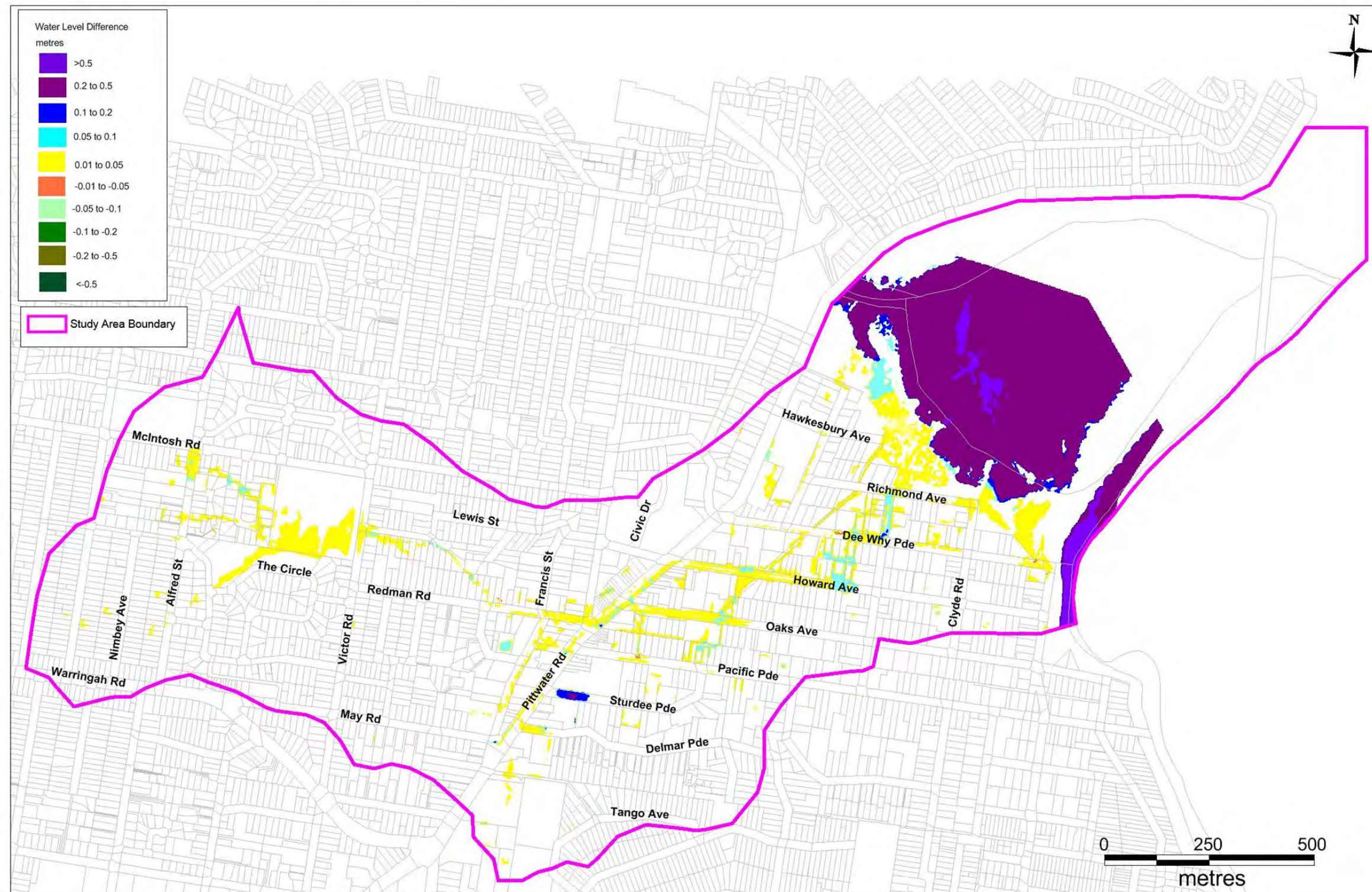


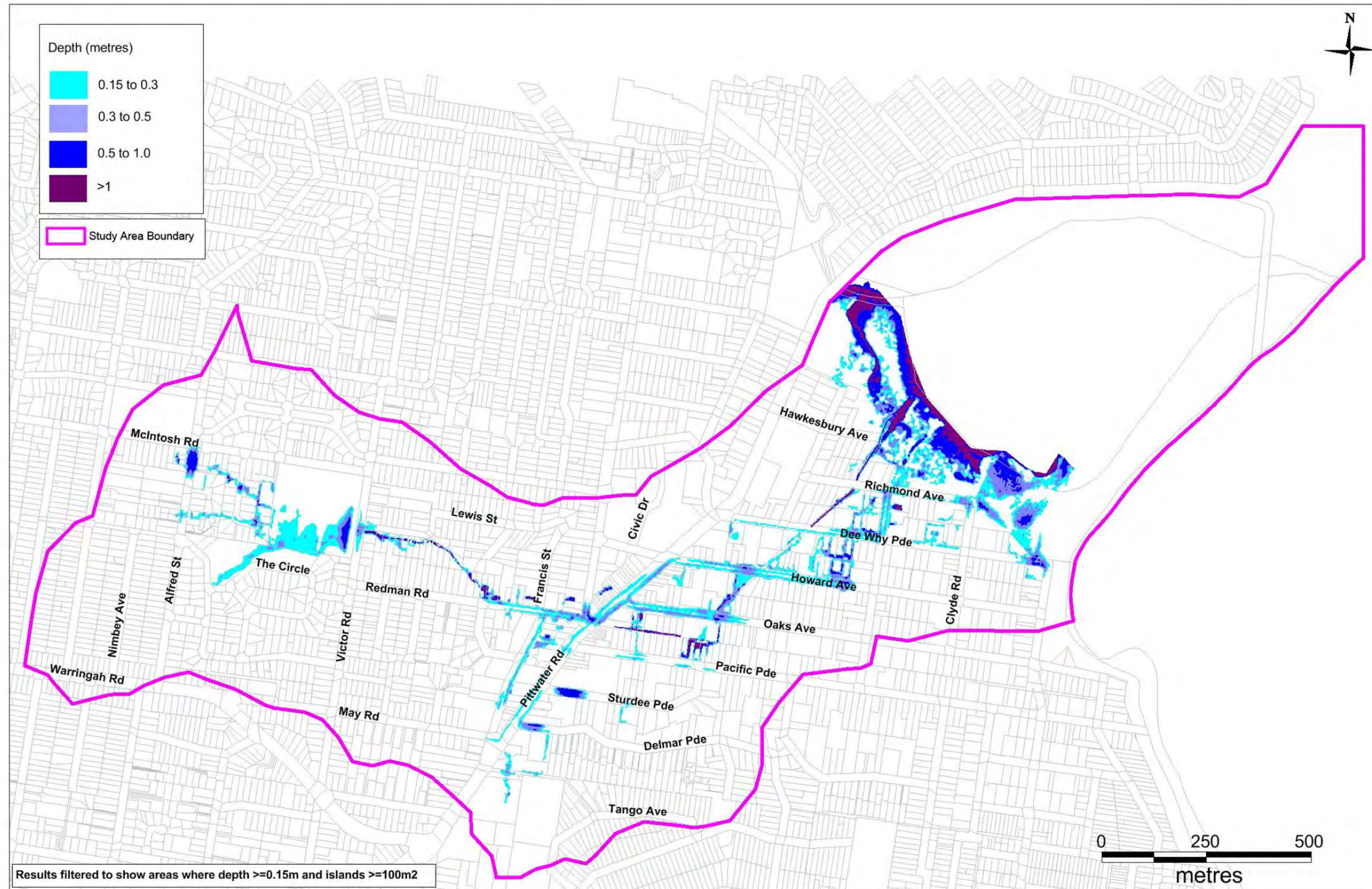
Figure 11-5 Sea Level Rise 0.4 m and Rainfall Intensity Increase 10%



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Stage 3: Flood Study Report DRAFT

Figure 11-6 Flood Depth - Sea Level Rise 0.4 m and Rainfall Intensity Increase 10%



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Figure 11-7 Flood Hazard - Sea Level Rise 0.4 m and Rainfall Intensity Increase 10%

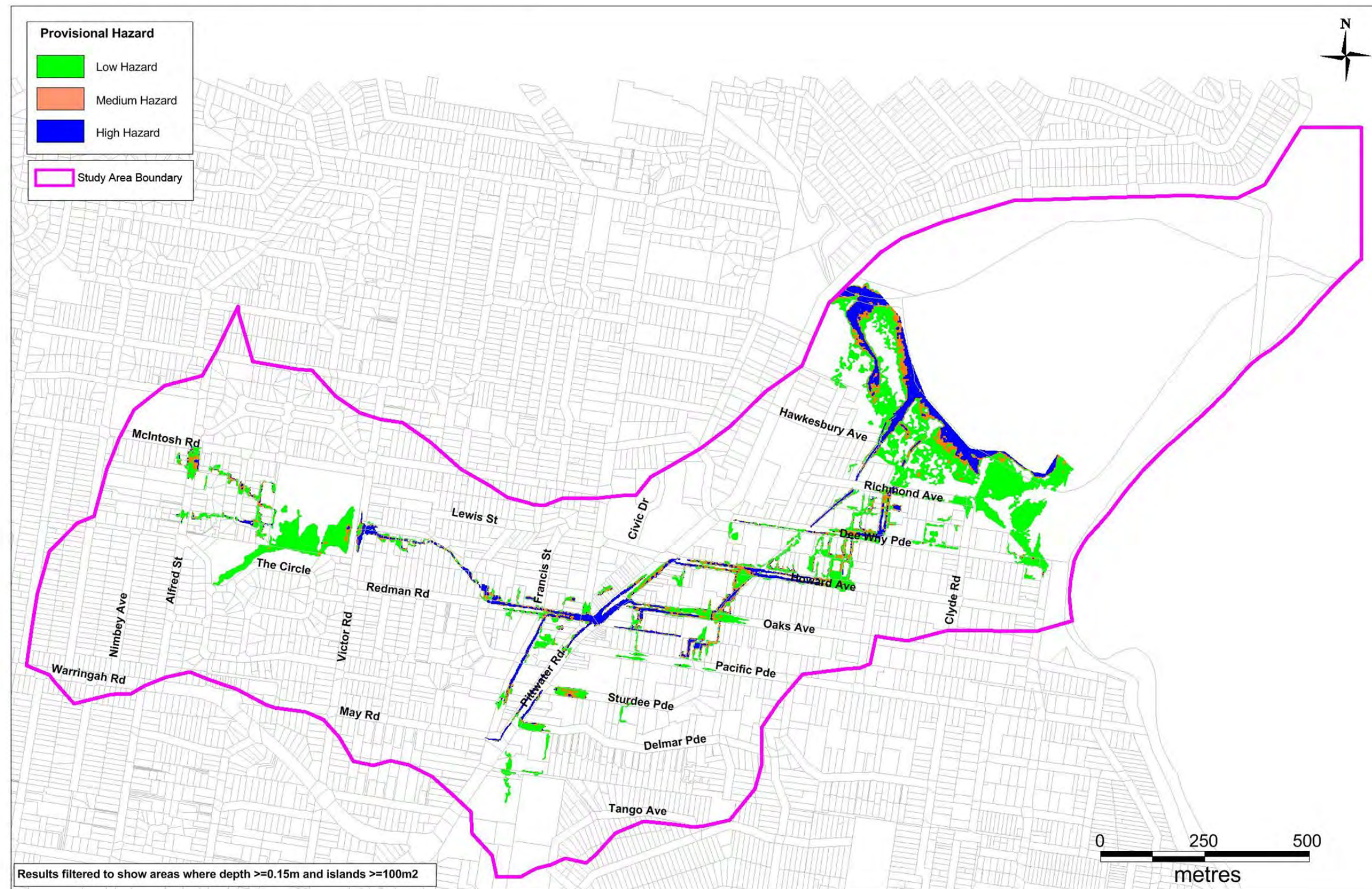
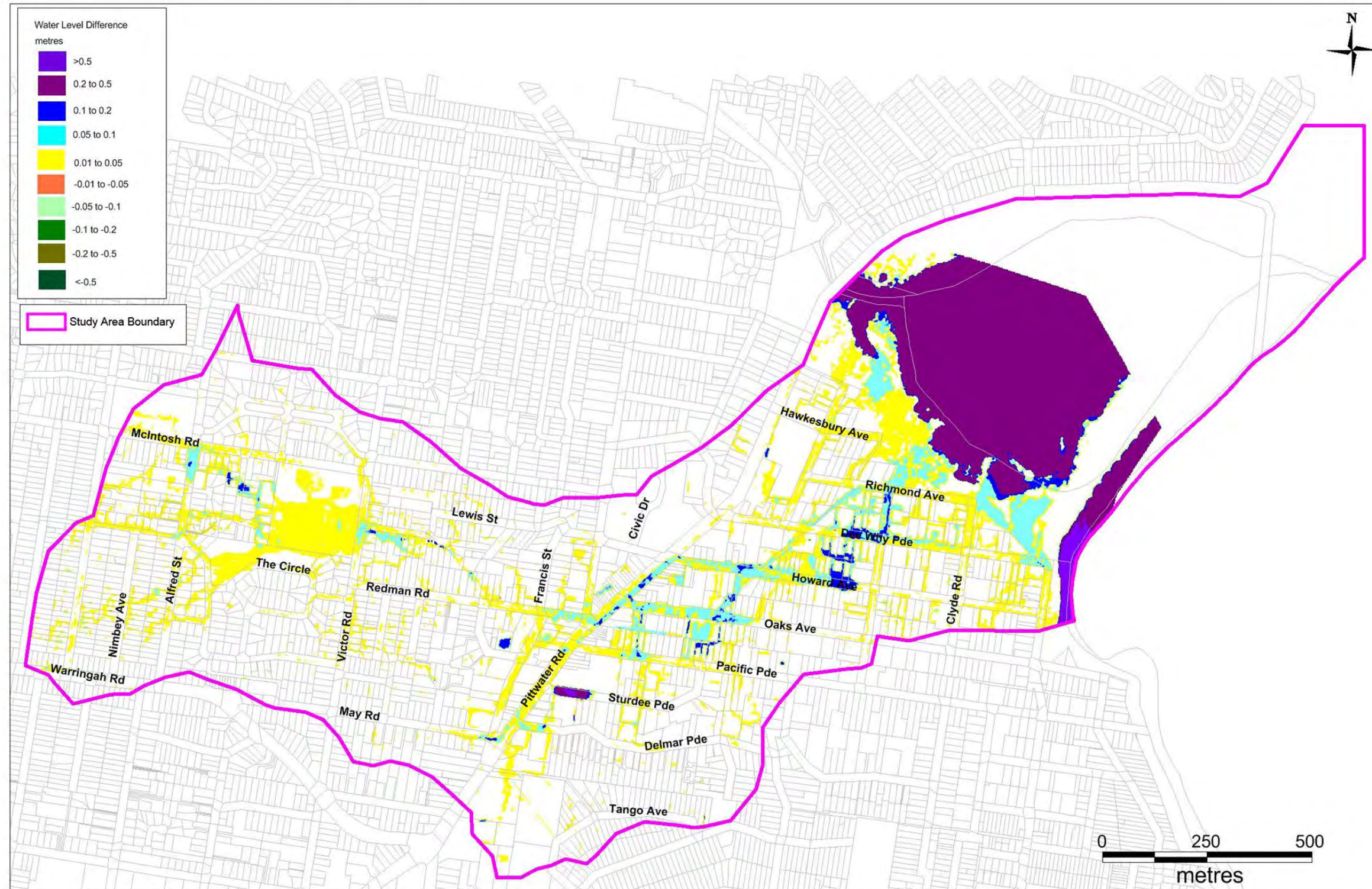


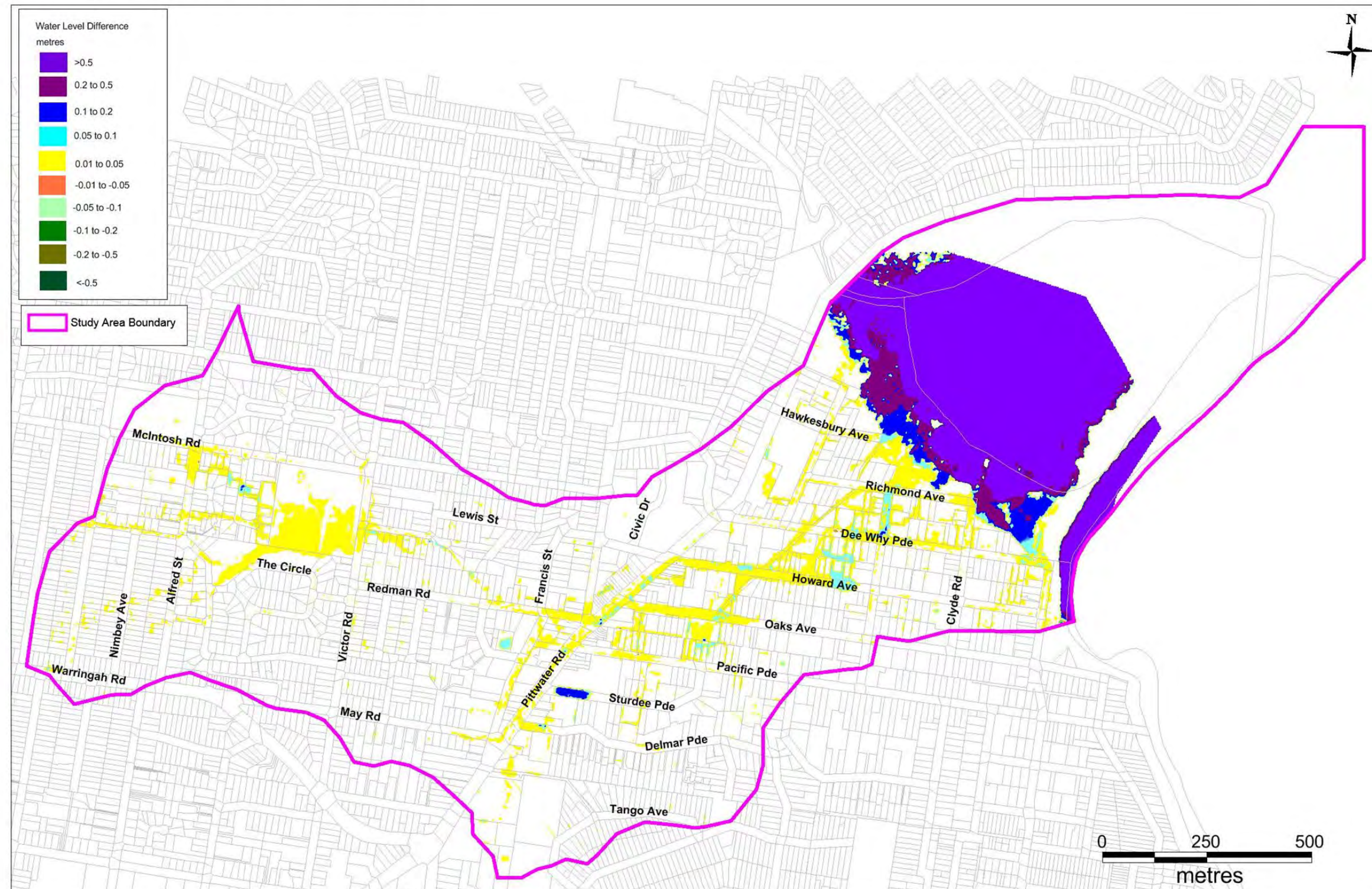
Figure 11-8 Sea Level Rise 0.4 m and Rainfall Intensity Increase 20%



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

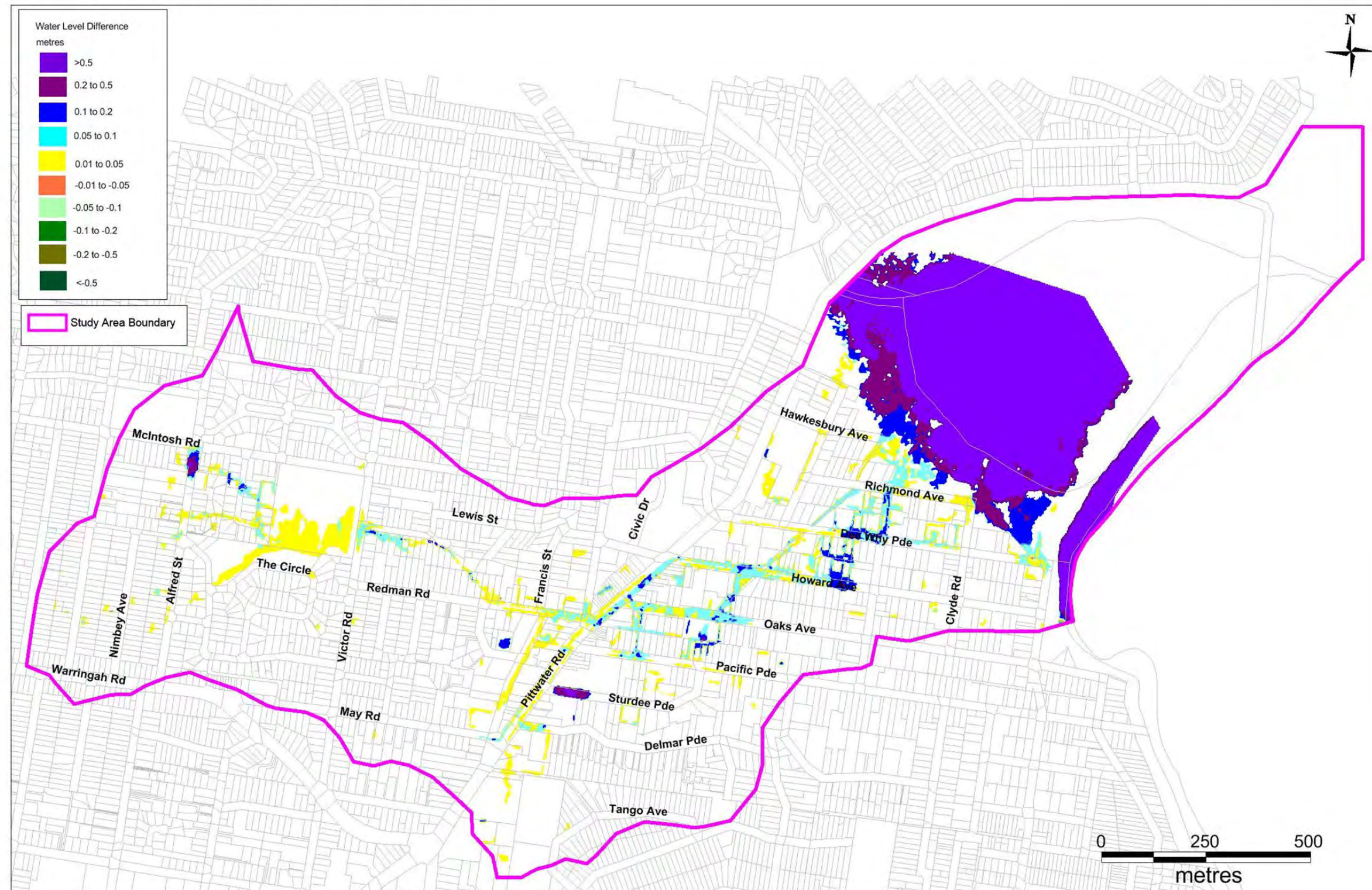
Figure 11-9 Sea Level Rise 0.9 m and Rainfall Intensity Increase 10%



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

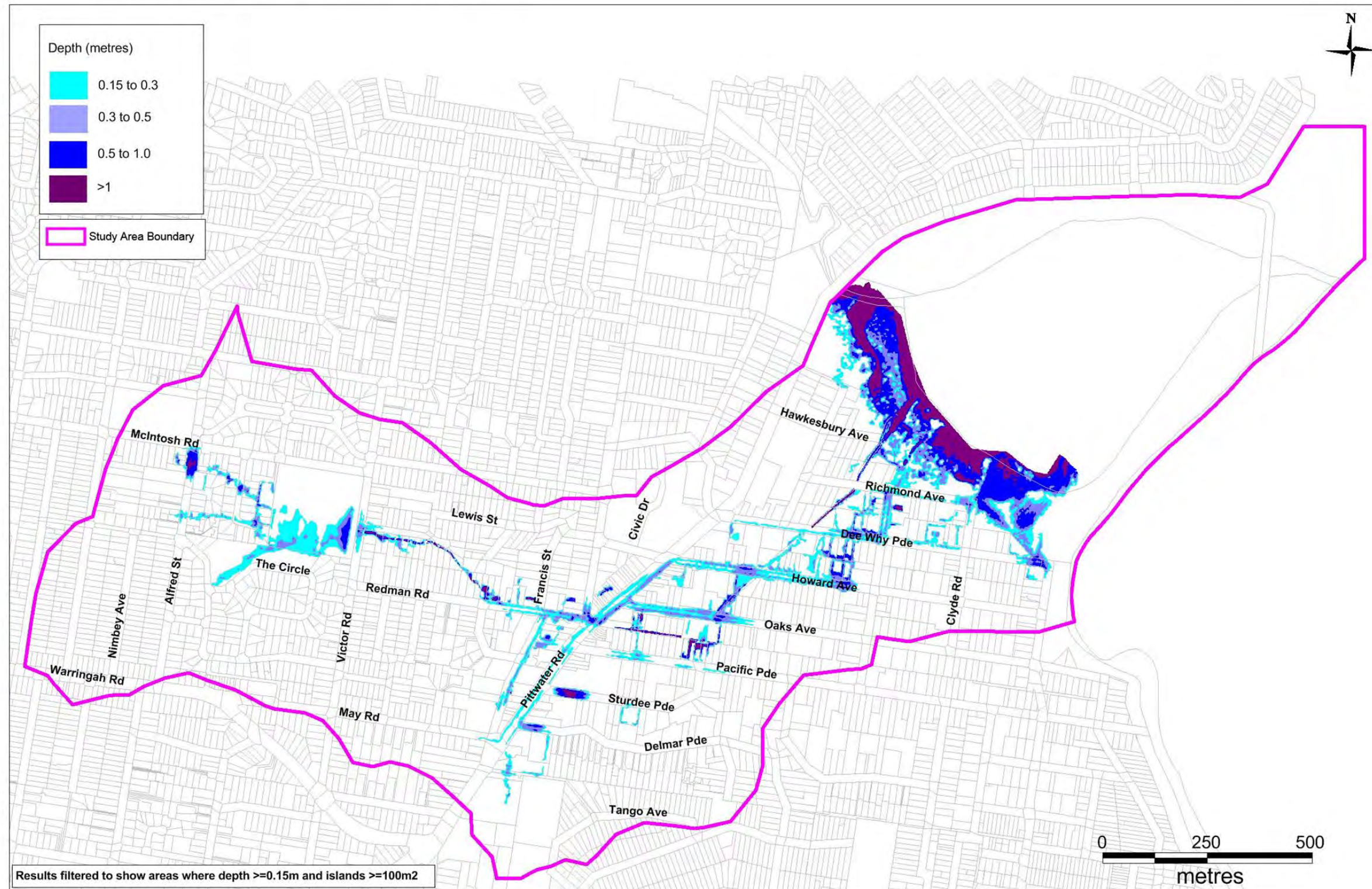
Figure 11-10 Sea Level Rise 0.9 m and Rainfall Intensity Increase 20%



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

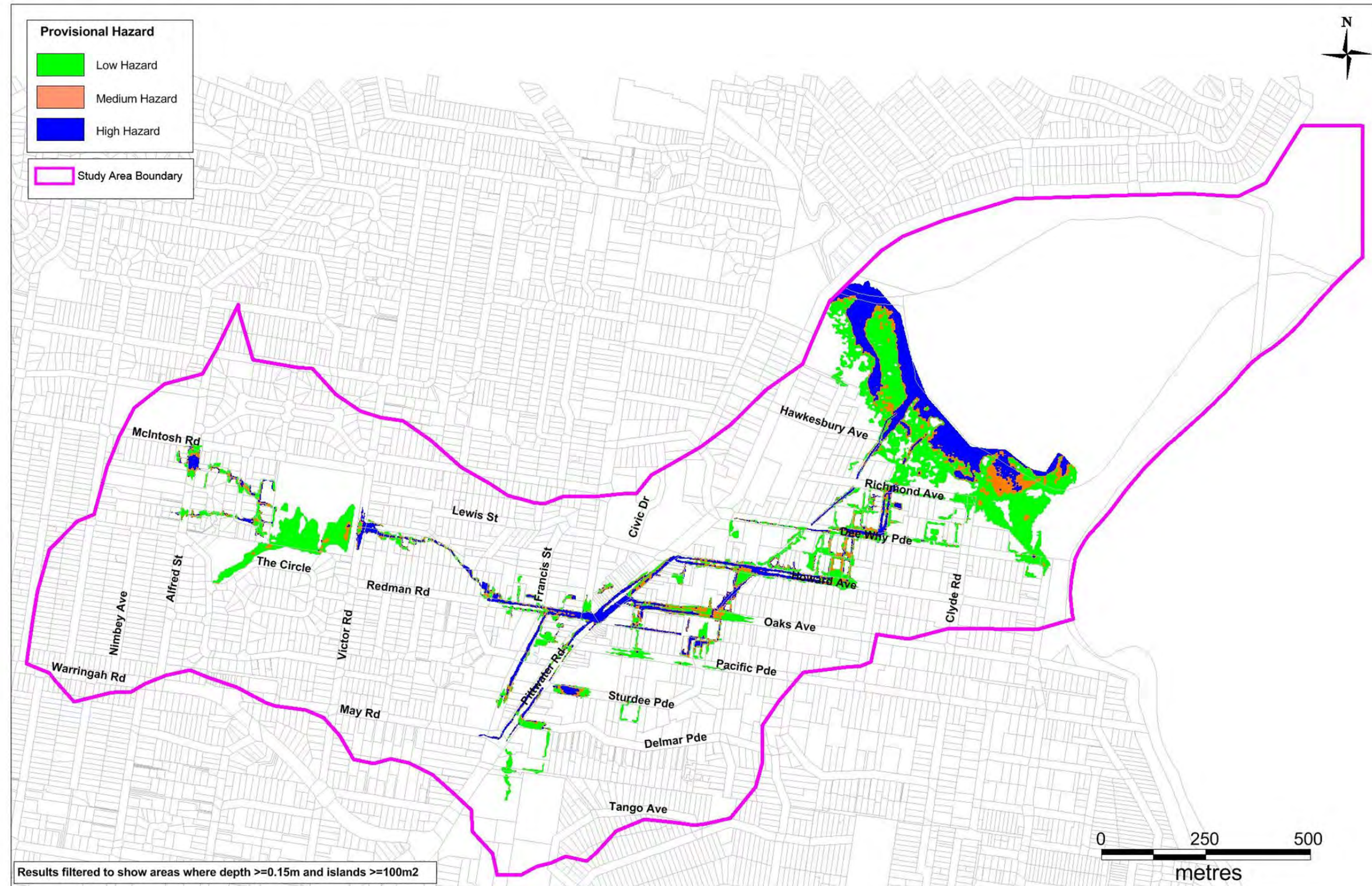
Figure 11-11 Flood Depth - Sea Level Rise 0.9 m and Rainfall Intensity Increase 20%



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 11-12 Sea Level Rise 0.9 m and Rainfall Intensity Increase 20%



Warringah Council

Dee Why South Catchment Flood Study
Stage 3: Flood Study Report DRAFT

Figure 11-13 1% AEP from Dee Why Creek, Sea Level Rise 0.4 m and Rainfall Intensity Increase 20%

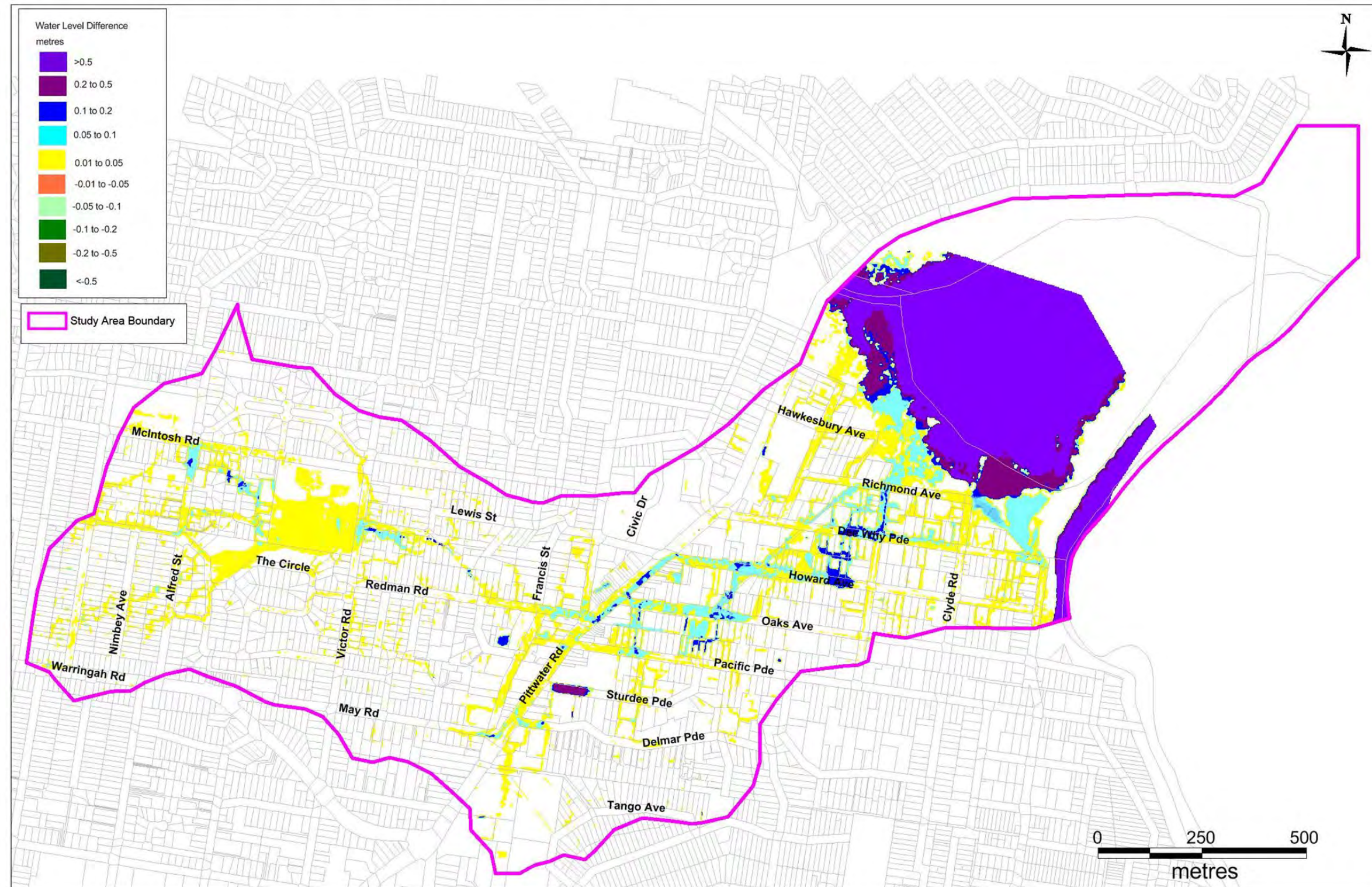


Figure 11-14 1% AEP from Dee Why Creek, Sea Level Rise 0.9 m and Rainfall Intensity Increase 20%

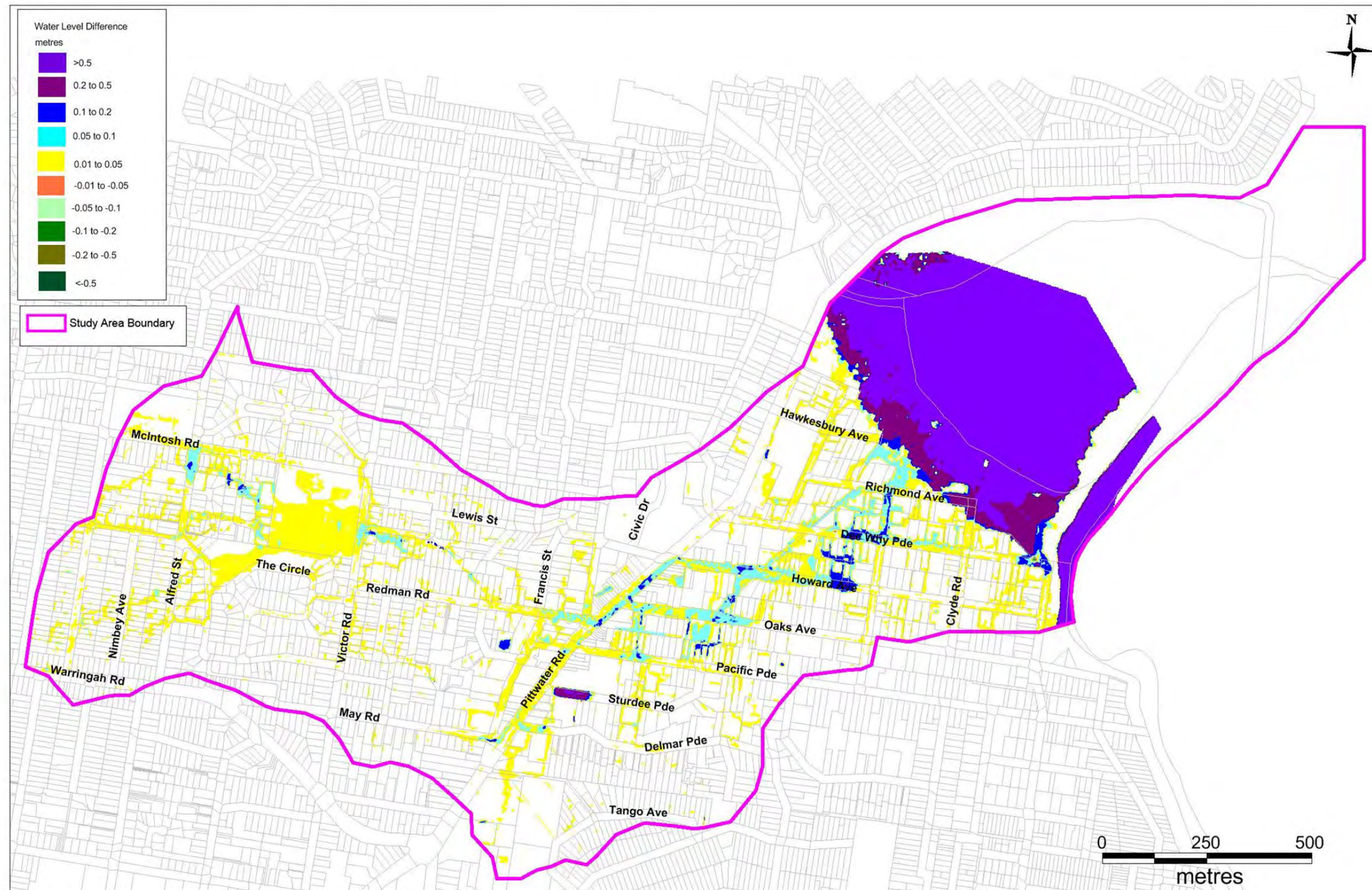


Figure 12-1 Flood Planning Level Extent

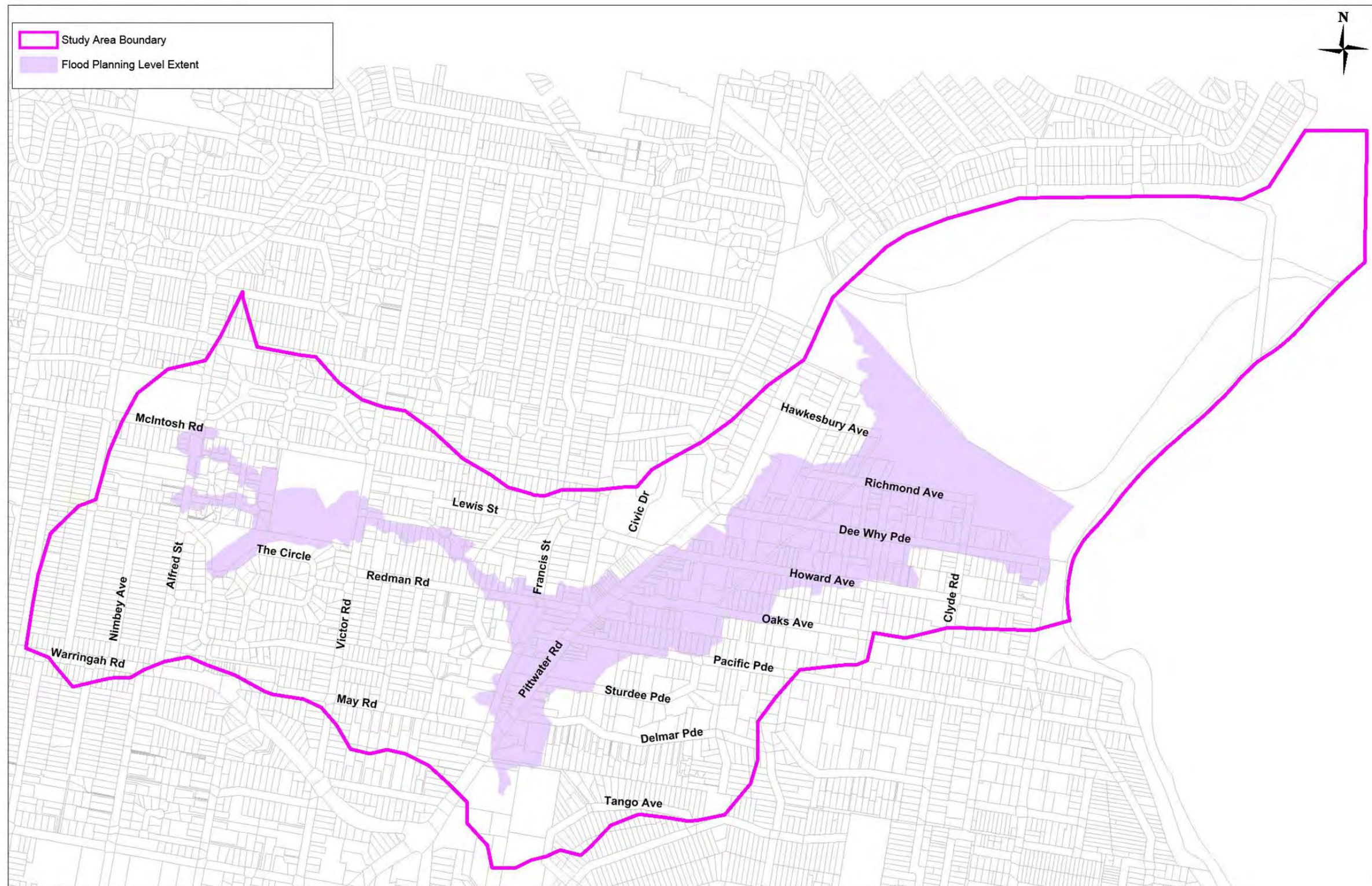
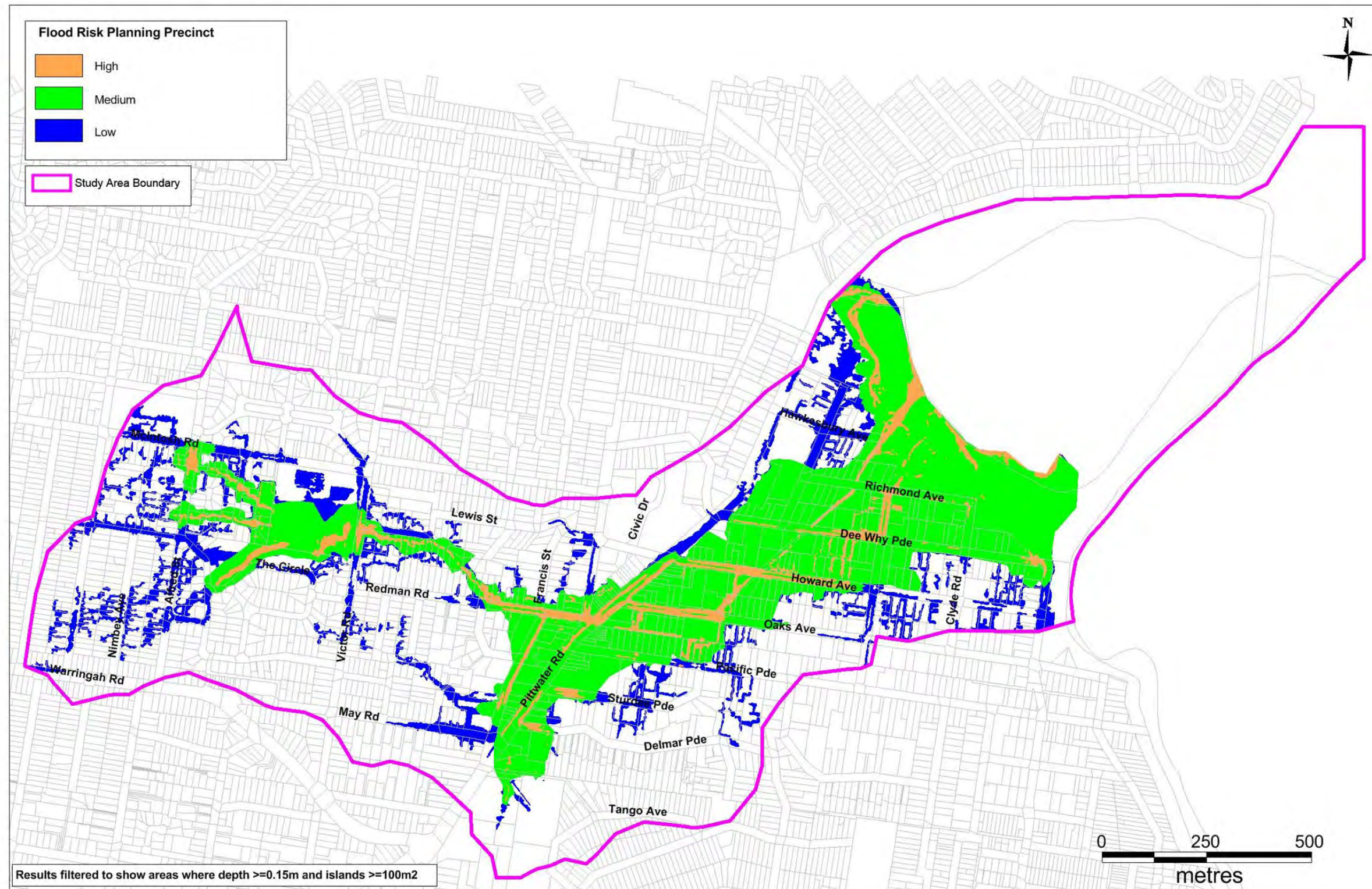


Figure 12-2 Flood Risk Planning Precincts



Dee Why South Catchment Flood
Study

APPENDIX B
COMMUNITY QUESTIONNAIRE
DOCUMENTS

DEE WHY/NARRAWEENA

Flood study needs your local input

ONLINE QUESTIONNAIRE

John Morcombe

WARRINGAH Council is undertaking a flood study for the Dee Why South Catchment, which covers 158ha and includes parts of Narraweena and the Dee Why shops area.

This will be the first formal flood study for the whole catchment.

Warringah Mayor Michael Regan said the study aims to define existing flood behaviour and identify problem areas in the catchment.

"It will help improve the council's planning and management of the catchment, such as setting flood levels for development and improving flood emergency responses," he said.

Cr Regan said community input will be an important part of the flood study: "We

are asking residents and business to provide details and photos of their flood experience and concerns about flooding."

An online questionnaire about the study is at yoursay.warringah.com.au, which closes on October 26. The council is also calling for interested representatives to be a part of the Dee Why South Catchment Flood Study Working Group, which will be set up later this year to provide input and guide the council in the implementation of a floodplain risk management plan. Interested parties in Dee Why and Narraweena should register expressions of interest to duncan.howley@warringah.nsw.gov.au.

For information call Duncan
Howley on 9942 2111.

Figure B1 – Manly Daily Newspaper Article

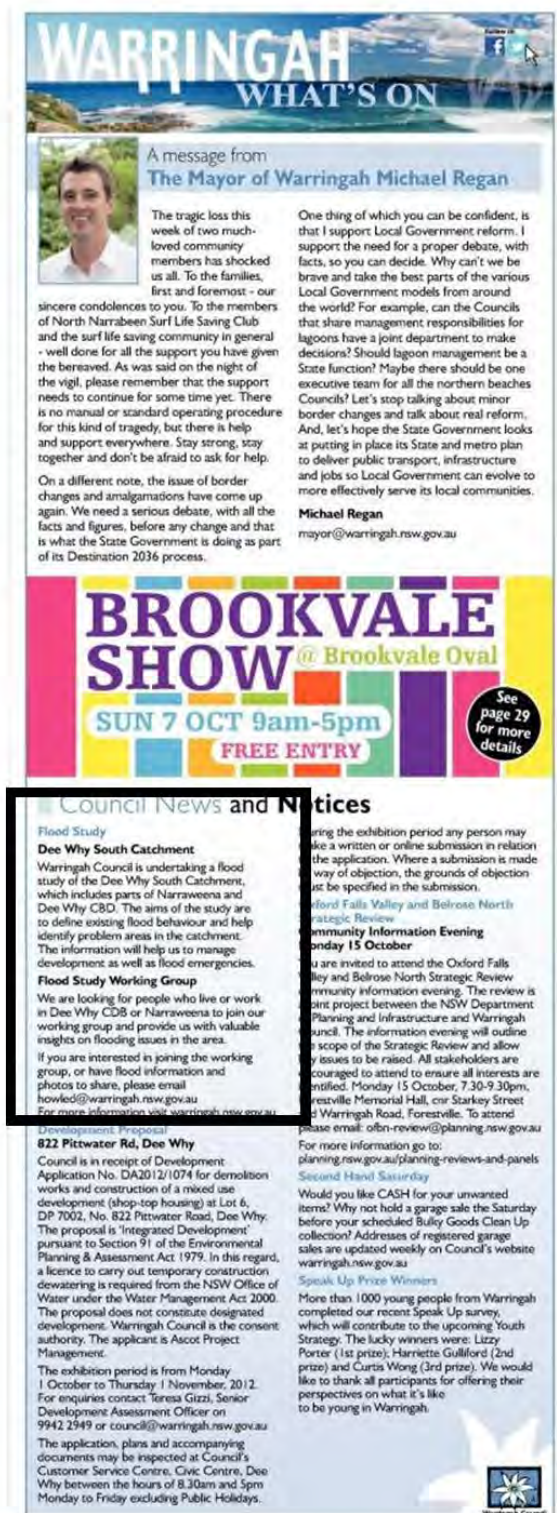


Figure B2 – Council Column in Manly Daily



Figure B3 – Extract from Council's Website

Figure B4 - Community Consultation Cover Letter (this page) and Questionnaire (following two pages)

27 September 2012

«PostalBarCode»
 «Owner»
 «Postal1»
 «Postal2»
 «Postal3» «State» «Pcode»

Dear Owner / Occupier

Re: Dee Why South Catchment Flood Study

Relevant Property: «Property_Address1», «Property_Address2»

Warringah Council is undertaking a detailed Flood Study of the Dee Why South Catchment which includes parts of Narraweena and Dee Why CBD. The study will build on previous flood investigations in the area to develop a formalised flood study of the whole catchment.

The aims of the study are to define existing flood behaviour and help identify flooding problem areas in the catchment. The study will help improve council's planning and management of the catchment, such as setting flood levels for development and improving flood emergency responses.

The Flood Study is receiving financial and technical support from the NSW Office of Environment and Heritage.

You can help us by passing on information or photos about flooding you may have experienced. We would be grateful if you could also complete the questionnaire provided with this letter and return it to Warringah Council at the following address:

Dee Why South Catchment Flood Study
 Warringah Council
 Reply Paid 74140
 Dee Why NSW 2099

This information is strictly confidential and only used for the study.

Alternatively, you can also fill out the questionnaire online as well as upload any photos. For more information visit: <http://www.warringah.nsw.gov.au>
 Your help is most appreciated - for further enquiries please contact Duncan Howley on 9942 2111.

Yours faithfully


Adrian Turnbull
A/Group Manager Natural Environment

Ref: EC04830

Figure B4 - Community Consultation Cover Letter (previous page) and Questionnaire



Warringah Council are in the process of carrying out a flood study and would like your feedback.

The aims of a flood study are: to define existing flood behaviour, help identify flood problem areas in the Dee Why South Catchment including Narraweena and Dee Why CBD. The study will help improve flood planning and management, such as setting design flood levels for development control and improving flood emergency responses. This information is strictly confidential and only used for the study. **Please complete this survey by 26 October 2012.**

Go online to warringah.nsw.gov.au for more information and to complete the online survey. Alternatively you can send your comments and feedback via email to: Council@warringah.nsw.gov.au marked Dee Why South Catchment Flood Study.

If you have any queries please contact Councils Flood Study Team on 9942 2111. Thank you for your time and input.

<p>1. How many years have you lived and/or worked in the Dee Why South Catchment area? <input type="text"/></p> <p>2. How aware are you of flooding within streets or from channels in the catchment?</p> <p><input type="checkbox"/> Very aware</p> <p><input type="checkbox"/> Some awareness</p> <p><input type="checkbox"/> Not aware</p> <p>3. Have you ever experienced flooding living and/or working in the catchment?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>3a. If you answered Yes, please select one or more of the following to describe the event:</p> <p><input type="checkbox"/> My daily routine was affected (i.e. it was difficult to get to work)</p> <p><input type="checkbox"/> My safety was threatened</p> <p><input type="checkbox"/> Access to my property was affected (i.e. driveways or roads were flooded)</p> <p><input type="checkbox"/> My property and/or its contents were damaged</p> <p><input type="checkbox"/> My business was unable to operate during the flood</p> <p><input type="checkbox"/> Other <input type="text"/></p> <p>3b. Please provide details of the flood event (i.e. date, location, description)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table> <p>4. Has your residential/commercial property been flooded because of uncontrolled floodwater/stormwater from streets or channels in the catchment?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>					<p>4a. If you answered Yes - please select one or more of the following to describe where your property was flooded:</p> <p><input type="checkbox"/> Front yard or backyard</p> <p><input type="checkbox"/> Garage or shed</p> <p><input type="checkbox"/> Residential – below floor level</p> <p><input type="checkbox"/> Residential – above floor level</p> <p><input type="checkbox"/> Commercial (i.e. shops) – below floor level</p> <p><input type="checkbox"/> Commercial (i.e. shops) – above floor level</p> <p><input type="checkbox"/> Industrial (i.e. factories)</p> <p><input type="checkbox"/> Other <input type="text"/></p> <p>5. Did you notice if any drains or culverts were blocked during the flood event?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>5a. If you answered Yes - please specify roughly how much the drain or culvert was blocked:</p> <p><input type="checkbox"/> A little (<25%)</p> <p><input type="checkbox"/> A quarter (25%)</p> <p><input type="checkbox"/> Half (50%)</p> <p><input type="checkbox"/> Mostly (75%)</p> <p><input type="checkbox"/> Almost entirely (>75%)</p> <p><input type="checkbox"/> Don't know</p> <p>5b. Please specify where the blocked drain or culvert was located (i.e. street, suburb):</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table>				

Figure B4 - Community Consultation Cover Letter (previous page) and Questionnaire

<p>5c. Please specify what was causing the blockage (i.e. leaves, garbage):</p> <div style="border: 1px solid black; height: 60px; margin-bottom: 10px;"></div> <p>6. Have you ever seen flooding in other locations within the catchment?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure</p> <p>6a. If you answered Yes – please provide details of where/when the flooding occurred (i.e. date, location, description and property types affected – residential, commercial, parks/open space, roads/footpaths):</p> <div style="border: 1px solid black; height: 60px; margin-bottom: 10px;"></div> <p>7. Do you have any evidence of past flood events in the catchment (i.e. photos, video footage, watermarks on walls or posts)?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>7a. If you answered Yes, please provide as much detail as possible. Please attach photos or send via email to howled@warringah.nsw.gov.au.</p> <div style="border: 1px solid black; height: 60px;"></div>	<p>7b. If you answered Yes, would you be willing to share your material with us for the purposes of this study?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>8. If you have any additional information that would assist in the Dee Why South Catchment Flood Study, please provide as much detail as possible:</p> <div style="border: 1px solid black; height: 200px;"></div>
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Could you please provide us with the following details? We may contact you to discuss some of the information that you provide in this questionnaire. Please note that your personal information and any information supplied through this questionnaire will remain completely confidential.

Title First Name Surname

Street Address

Suburb Postcode

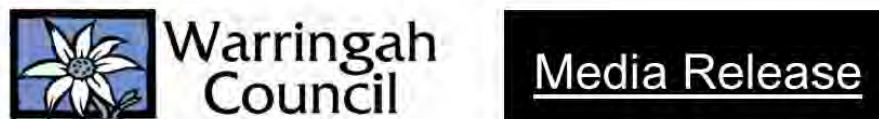
Email

Telephone

Dee Why South Catchment Flood
Study

APPENDIX C

PUBLIC EXHIBITION DOCUMENTS

Figure C1 – Public Exhibition Media Release (Page 1 of 2)

29 May, 2013

Dee Why South Catchment Flood Study

Warringah Council is exhibiting a draft Flood Study of the Dee Why South Catchment and you are invited to have your say.

The final Dee Why South Catchment Flood Study will define current and future flood behaviour in the Dee Why South Catchment – which includes the Dee Why CBD, other parts of Dee Why and parts of Narraweena – and will be on public exhibition from Thursday 30 May to Wednesday 19 June.

The draft study will improve Council's planning and management of the catchment and is being prepared to meet the objectives of the NSW State Government's Flood Prone Land Policy.

NSW Local Governments are responsible for identifying and managing the risk to life and property from flooding, and have a duty of care to disclose this information to the community.

One of the most important steps in this process is increasing our community's awareness of flooding so that people are better able to understand and plan for the flood risks they face.

For most people, there will be no immediate change to their situation.

However, property owners who are planning redevelopment of their property may need to take some additional steps as part of the consent process because flood-related development controls apply. For example, the construction of new buildings will need to be set at or above the Flood Planning Level (1 in 100 year flood plus 0.5m) and out of flood danger.

"The draft Dee Why South Catchment Flood Study is an important document and will help Council and the community to better understand and manage floods of varying frequency and severity when planning for the future," said flooding expert Dr Brett C Phillips, Director of Cardno – the infrastructure and environmental services company undertaking the study.

Community information sessions:
Warringah Council Civic Centre, Dee Why
Saturday 15 June, 10am – 12pm
Thursday 6 & 13 June, 6 – 8pm

For more information please call 9942 2678 or media@warringah.nsw.gov.au

Figure C1 – Public Exhibition Media Release (Page 2 of 2)



Bookings essential on 9942 2111 or council@warringah.nsw.gov.au

Public exhibition

Thursday 30 May to Wednesday 19 June. The study is available at warringah.nsw.gov.au, Civic Centre and Warringah libraries.

NSW Office of Environment and Heritage is providing financial and technical support for the project.

For more information please call 9942 2678 or media@warringah.nsw.gov.au

Figure C2 – Public Exhibition Letter (Page 1 of 2)

29 May 2013

«PostalBarCode»

«Owner»

«Postal1»

«Postal2»

«Suburb» «State» «Pcode»

Our ref: DC00494

Dear Owner / Resident

Re: Public Exhibition of Flood Study

Relevant Property: «Address1», «Address2»

Warringah Council is responsible for the identification of flood prone land in the Warringah Local Government Area (LGA). Council also has a key role in the management of risks to life and property from flooding. In this regard, one of the most important activities undertaken by Council is to increase our community's awareness of flooding so that people are better able to understand and plan for the flood risks they face.

The recently completed draft Dee Why South Catchment Flood Study (April 2013) identifies those areas predicted to be flood affected throughout the Dee Why South Catchment. For most people, no action is required at this point in time other than to be aware of the flood risk on your block.

However, property owners who are planning redevelopment of their property may need to take some additional steps as part of the consent process because flood related development controls may apply. Your block has been identified as being located below the Flood Planning Level (FPL), which is based on the 1 in 100 year flood with an additional 0.5m freeboard.

Blocks located below the FPL are potentially subject to flood related development controls, which could include the requirement to have the floor levels of new residential developments raised out of flood danger. For more information on development controls please refer to Council's eServices web pages at warringah.nsw.gov.au

The draft Flood Study report is on public exhibition from 30 May to 19 June 2013. It will be available at the Civic Centre, Council's libraries and online at warringah.nsw.gov.au

If you would like to attend a community information session or require property specific information please contact me (02) 9942 2381 or duncan.howley@warringah.nsw.gov.au. community information sessions will be held at the Warringah Council Civic Centre on:

- Thursday 6 June: 6 – 8 pm
- Thursday 13 June: 6 – 8 pm
- Saturday 15 June: 10am - 12pm

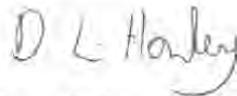
Figure C2 – Public Exhibition Letter (Page 2 of 2)

Council welcomes written submissions on the draft Flood Study. Submissions should be marked 'Submission – draft Dee Why South Catchment Flood Study' and be addressed to the General Manager, Warringah Council, 725 Pittwater Road, Dee Why NSW 2099. Submissions may also be emailed to council@warringah.nsw.gov.au. The closing date for submissions is 19 June 2013 at 5pm.

We look forward to your input on this important document and to working together to reduce the impact of flooding within the Dee Why South Catchment.

Should you have any queries or require further information please do not hesitate to contact me on (02) 9942 2381

Yours sincerely



Duncan Howley
Environment Officer – Floodplain Management

Figure C3 - Community Guide (Page 1 of 6)

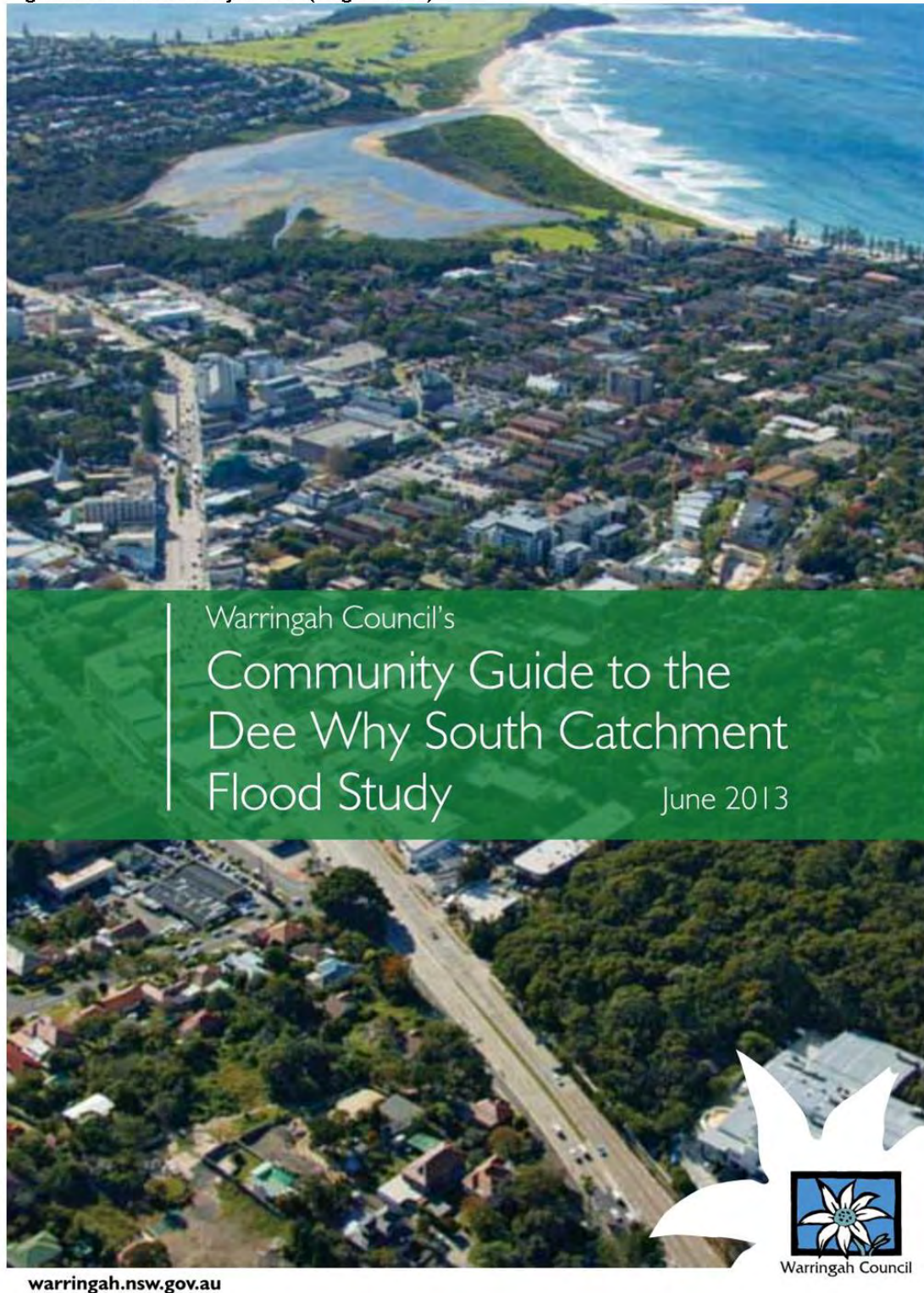


Figure C3 - Community Guide (Page 2 of 6)

Warringah Council is carrying out a flood study to understand flood risks in the Dee Why South Catchment. The study includes areas draining to Dee Why Lagoon such as Dee Why Central Business District (CBD) and Narraweena. This is the first formal flood study undertaken in the catchment in line with the NSW Government's Flood Prone Land Policy.

The study is on public exhibition from Thursday 30 May to Wednesday 19 June, 2013 and you are invited to have your say.

Flooding in the Dee Why South Catchment

The main aim of the study is to understand current and future flood behaviour in the Dee Why South Catchment. Flooding in the Dee Why South Catchment mainly comes from significant catchment rainfall, although ocean inundation (tide and storm surge) may also have an impact under extreme circumstances.

Floodplain Risk Management Process

Under the NSW Government's Flood Prone Land Policy, councils have the primary responsibility for managing flood prone areas, with financial and technical support provided by the State Government. Floodplain risk management considers the consequences of flooding on the community and aims to develop appropriate actions to minimise and mitigate the impacts of flooding.



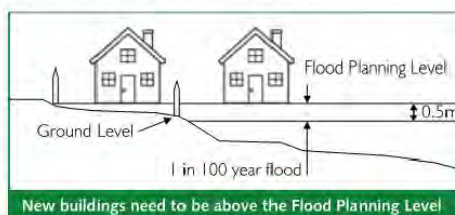
What is flood prone land?

Flood prone land is defined as:

- The area affected by the Probable Maximum Flood (i.e. the largest flood that could conceivably occur).
- Properties affected by the Flood Planning Level (further explanation in FAQs)

How am I affected?

Properties affected by the Flood Planning Level (i.e. the 1 in 100 year flood plus 0.5m freeboard, see image below and explanation in FAQs) are shaded on the map.



Certain flood related development controls may apply to flood prone properties. For example, residential properties affected by the Flood Planning Level may be subject to minimum floor level requirements.

What happens next?

After the public exhibition of the draft Dee Why South Catchment Flood Study, all comments will be reviewed and final amendments made to the study. Once adopted by Warringah Council, the study will be used in the preparation of the Dee Why South Catchment Floodplain Risk Management Study and Plan.

The Floodplain Risk Management Study will outline what can be done to manage flooding in the Dee Why South Catchment, through the identification, assessment and comparison of various risk management options.

The Floodplain Risk Management Plan will contain a number of management measures and strategies. These will help guide and coordinate the responsibilities of government and the community in undertaking flood management works and initiatives. Preferred options will be publicly exhibited and subject to revision in light of community response.

Community Input

Community involvement in managing flood risks is essential for:

- raising awareness in the community about the potential for flooding in the catchment
- improving the decision making process
- identifying local concerns and values

As part of the community consultation, the draft Dee Why South Catchment Flood Study is on public exhibition from Thursday 30 May to Wednesday 19 June, 2013. You are invited to participate in the study by providing comment on the draft report, available from warringah.nsw.gov.au, Council's Civic Centre and Warringah Libraries.

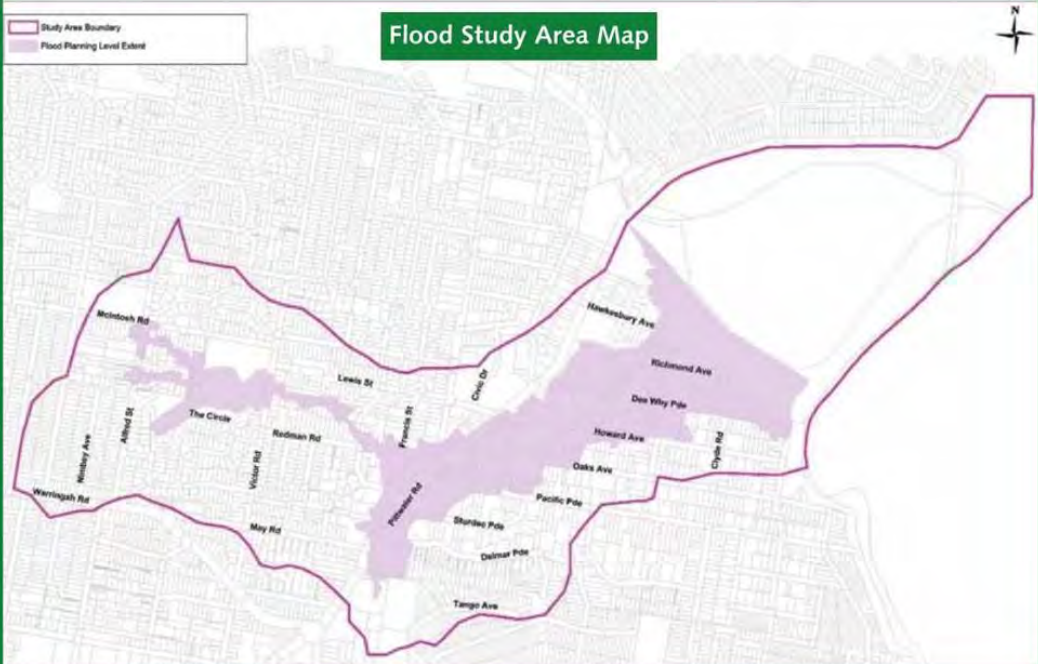


Figure C3 - Community Guide (Page 3 of 6)

Study Area Boundary

Flood Planning Level Extent

Flood Study Area Map



What can I do?

To make a submission on the draft Dee Why South Catchment Flood Study, write to Council's General Manager, marked 'Submission – Draft Dee Why South Catchment Flood Study'

Warringah Council
 725 Pittwater Road
 Dee Why NSW 2099

or email council@warringah.nsw.gov.au

Submissions close Wednesday 19 June 2013

Community information sessions


Warringah Council Civic Centre, Dee Why

Thursday 6 June: 6 - 8pm

Thursday 13 June: 6 - 8pm

Saturday 15 June: 10am - 12pm

Bookings essential on 9942 2381
 or duncan.howley@warringah.nsw.gov.au



Pittwater Road, Dee Why 1947

Figure C3 - Community Guide (Page 4 of 6)

Frequently Asked Questions

1. Why does Council study flooding?

NSW Local Governments have responsibility for identifying and then managing the risk to life and property from flooding, and have a duty of care to disclose this information to the community. Local Governments must act in accordance with the NSW Flood Prone Land Policy, which aims to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property. One of the most important steps in this process is increasing our community's awareness of flooding so that people are better able to understand and plan for the flood risks they face.

2. Which areas are included in the draft Dee Why South Catchment Flood Study?

The Flood Study investigates flooding in the entire Dee Why South Catchment including the suburbs of Dee Why and Narraweena, with the Dee Why CBD located in its lower reaches.

3. Which areas could be flooded?

The draft Dee Why South Catchment Flood Study Area Map shows properties affected by the Flood Planning Level (i.e. the 1 in 100 year flood plus 0.5m freeboard).

4. What is a 1 in 100 year flood?

A 1 in 100 year flood is a major rain event that occurs on average once every 100 years, i.e. there is a 1% chance of a flood of this size occurring at a particular location in any given year. This does not mean that if a location floods one year, it will definitely not flood for the next 99 years. Nor, if it has not flooded for 99 years that it will necessarily flood the next year. Some parts of Australia have received a couple of 1 in 100 year floods within a decade of each other.

5. What is Freeboard?

Freeboard is included in the Flood Planning Level as a buffer, to account for factors such as wind, waves, unforeseen blockages, other localised hydraulic effects and uncertainties in the modelling and determination of flood levels. Freeboard is typically 0.5m above a flood level.

6. What does this mean for property owners?

For most people, there is nothing for you to do in response to this flood study, as there is no immediate change to your situation. However, property owners who are planning redevelopment of their property may need to take some additional steps as part of the consent process because flood-related development controls apply. This could include the requirement to have the floor levels of new residential developments set at or above the Flood Planning Level and out of flood danger.

7. My property was never classified as 'flood prone' or 'flood liable' before, and now it is. Why?

A number of different investigations into flooding in this area have been undertaken since 1975. However, a formal flood study for the whole catchment in line with the NSW State Government's Flood Policy has never been undertaken. This will be the first flood study to formally notify owners of the flood risk for their property.

8. What are Councils doing to manage flood risk?

Councils prepare Flood Studies and Plans according to the NSW Government's Floodplain Development Manual (2005), and implement associated recommendations with the financial and technical assistance of the NSW Government through its Flood Prone Land Policy. Land-use planning through development controls is one of the most effective means of managing flood risk in the catchment. Additional flood mitigation measures in the catchment currently include: the management of the Dee Why Lagoon entrance, implementing a flood warning network and raising flood awareness in the community.

9. Will this affect property values?

An actual flood event, rather than a flood planning notation on a Section 149 Certificate, is more likely to have an effect on property values.

10. What is a Section 149 Certificate?

Section 149 Planning Certificates are issued in accordance with the Environmental Planning & Assessment Act 1979. They contain information on how a property may be used, and the restrictions on development. These are normally obtained when people are buying and selling properties. If a property is known to be flood affected, the Section 149 Certificate will state that flood related development controls apply.



Figure C3 - Community Guide (Page 5 of 6)



Aerial views of the Dee Why South Catchment Flood Study area



Figure C3 - Community Guide (Page 6 of 6)

11. Will this affect my insurance premiums?

Individual insurance companies typically identify Flood Prone Land and assess risk through their own flood studies, analysis and flood mapping exercises, irrespective of whether Council has undertaken a flood study. The information is then used to set policies and premiums. These calculations are outside Council's control.

12. What should I do in the event of a flood?

If it is a life threatening situation call 000. In the event of floods, storms or tsunamis, please contact the State Emergency Service (SES) on 132 500 or visit their website at ses.nsw.gov.au.

13. What can I do to prepare in case of a flood?

The State Emergency Service has a useful website providing advice on how to manage flood risk. Visit floodsafe.com.au for more information.

14. Where can I find out about Council's flood related development controls?

Links to flood related development controls can be found at warringah.nsw.gov.au.

15. The map shows that only a small part of my block is affected so why have I been classified as flood prone?

The map highlights which property blocks will be affected by flooding. Development controls are applied to a whole block and cannot be split, regardless of flood extent, however, application of the control depends where on the block the proposed development is located, and what type it is.

16. My home is on a hill so why am I affected?

If there is significant rain at the top of the hill, the rain will run downhill through low lying gullies, channels and surface depressions. The speed of floodwaters and depths may be less at the top of the catchment than further down the hill, but still be significant enough to cause damage.

17. How was this flood study funded?

The draft Dee Why South Catchment Flood Study was carried out under NSW Government Floodplain Management Program, and is two-thirds funded by the NSW Government with Warringah paying the remaining third. This funding arrangement is also available for implementing actions and recommendations.

Further information

The draft Flood Study Report and more Frequently Asked Questions
can be found at warringah.nsw.gov.au



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