



APPENDICES



A. Environment Agency Correspondence

Piotrowski, Michael

From: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>
Sent: 16 January 2015 14:15
To: Piotrowski, Michael
Cc: CMBLNC Info Requests
Subject: CL3568MG Response from the Environment Agency - MPSC Rufford Road, Southport, PR9 8LA
Attachments: SITE LOCATION PLAN.PDF; Standard_Notice.pdf; CL3568MG.PDF; Flood Defence Data -CL3568MG.XLSX; CL3568 - Southport - LEVELS & BREACH.PDF

Michael

Enquiry regarding MPSC Rufford Road, Southport, PR9 8LA

Thank you for your enquiry which was received on 19 December 2014 and subsequent payment received on 8 January 2015.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. Our responses are given in blue and some data is also attached.

We have been commissioned to investigate the risk of flooding to the Site. I would be grateful if you could provide information relating to the following:

1. Our initial investigations into flood risk indicate that the Site lies within Flood Zones 1, 2 and 3, based on the current information indicated on the Environment Agency website. However due to the presence of defences, interrogation of the online flood maps show that there is a Very Low likelihood of flooding occurring. Please could you confirm this and provide a more detailed Flood Zone map if one exists. – [The NaFRA banding is displayed as low but the land between the location and the coast is actually benefitting from coastal defences.](#)
2. Please could you provide the modelled flood levels at/in the vicinity of the Site. Please provide all flood levels (to include the lower order events), with and without climate change for the River Wey at this location. – [Attached](#)
3. Please could you also provide the most up to date breach mapping that you have available on record. [Attached](#)
4. Could you please provide details of local fluvial / tidal defences and confirm the Standard of Protection (SOP) that is offered by both natural and man-made defences. [Attached](#)
5. Could you please provide a map showing the location of any Main River channels or Ordinary Watercourses near the Site, and note any development restrictions that would therefore apply. [We can provide details on developments on/ next to Main Rivers but not ordinary watercourses so the customer would speak to Sefton Metropolitan Borough Council in this instance.](#)
[The nearest Main Rivers to the proposed site are Captains Watercourse and Three Pools Watercourse. The site itself \(assumed to be the “works” shown on the mapping\) is not adjacent to any watercourse designated Main River. Please check with Sefton Metropolitan Borough Council for any Ordinary Watercourses in this location.](#)
[For information, with regards to developments adjacent to Main Rivers: The Environment Agency has a right of entry to watercourses classified as Main River, and a right to carry out maintenance and improvement works. Any works in, under or over a watercourse classified as main river, or within 8m of the top of the bank \(easement\) would require Flood Defence Consent from the Environment Agency.](#)
6. Mapping included within the Level 1 SFRA shows that the site has not been affected by historic tidal / fluvial flooding. Please could you provide us with more detailed information regarding any historic tidal, fluvial,

groundwater, surface water or sewer flooding affecting or in the vicinity of the site. Alternatively, please confirm that you have no further records of flooding in the vicinity of the Site. [We hold no record of flooding at this site.](#)

7. Please could you confirm the likely groundwater levels in the vicinity of the Site. [We do not hold any ground water information.](#)
8. Please could you provide a detailed version of your 'Updated Flood Map for Surface Water' in the vicinity of the Site. [We do not hold this information so you would have to speak to Lancashire County Council in this instance.](#)
9. Please could you confirm any requirements with regard to floodplain compensation if further development is proposed at the Site. Please also advise any requirements you would have to set proposed finished floor levels appropriately. The information requested is detailed development design information which will be available from our Sustainable Places team and will be a chargeable service. They can be contacted at clplanning@environment-agency.gov.uk
10. If new development is proposed, surface water runoff would be restricted to the existing rate, accounting for the impacts of climate change for the lifetime of the development. Please could you confirm that this would be acceptable. The information requested is detailed development design information which will be available from our Sustainable Places team and will be a chargeable service. They can be contacted at clplanning@environment-agency.gov.uk

We are also writing to United Utilities and Sefton Metropolitan Borough Council who are the Lead Local Flood Authority, requesting details of recorded flooding incidents and flood levels. If you are aware of any other parties that may have useful information please let me know.

I have attached our Standard Notice or licence which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours Sincerely

Mark

Mark Goucher | Customers and Engagement Officer
Customers and Engagement Team | Cumbria and Lancashire + Greater Manchester, Merseyside and Cheshire
Environment Agency | Richard Fairclough House, Knutsford Road, Warrington WA4 1HT
Contact | 01925 542980 | Internal: 721 2980



www.gov.uk/government/organisations/environment-agency

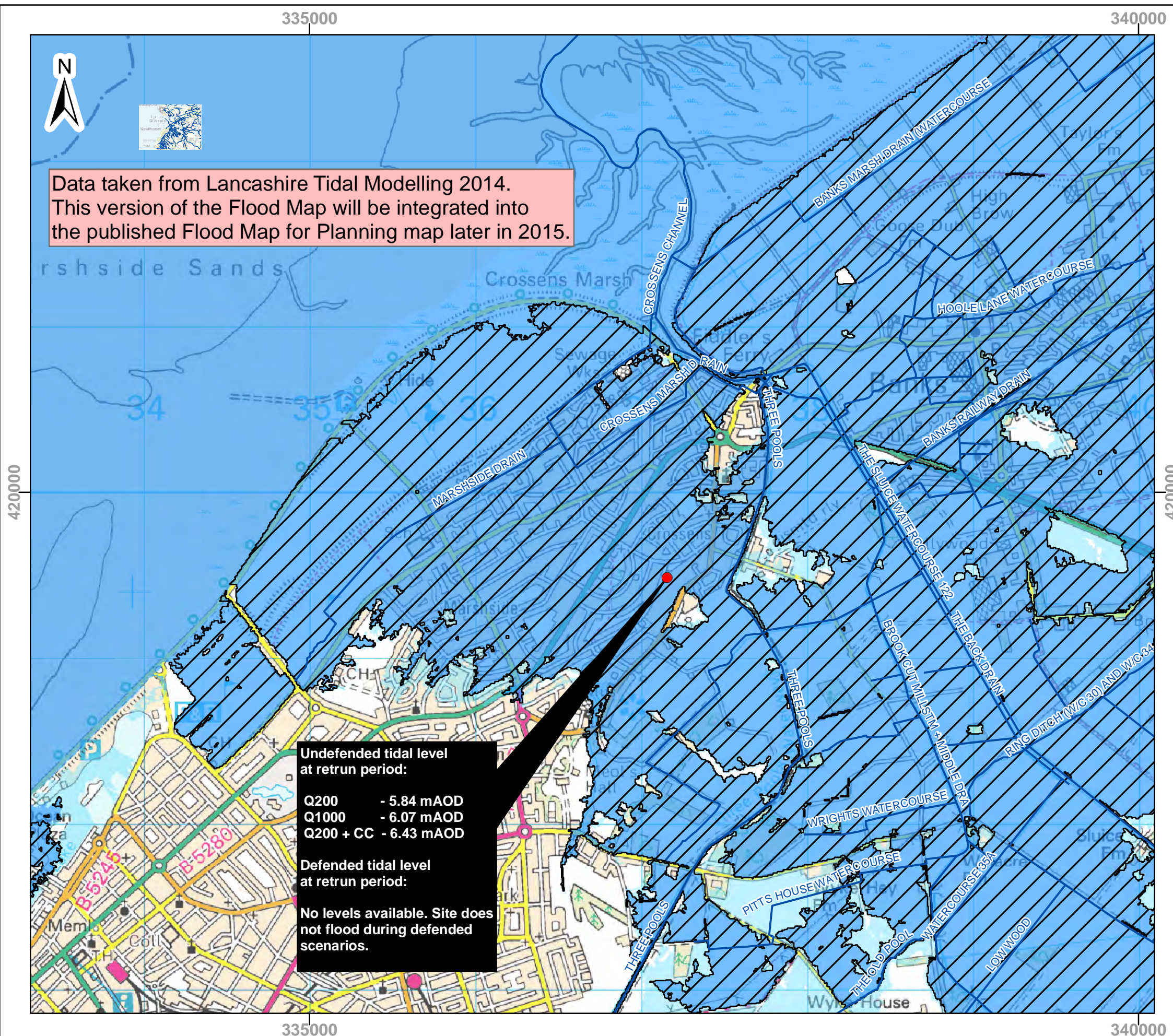
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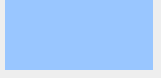
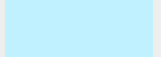
We have checked this email and its attachments for viruses. But you should still check any attachment before opening it.

Tidal Flood Level Map Southport

Produced: 15 January 2015
Our Ref: CL3590
Grid Ref: SD 37168 19476

Data taken from Lancashire Tidal Modelling 2014.
This version of the Flood Map will be integrated into
the published Flood Map for Planning map later in 2015.



-  Main River
-  Tidal ABD
-  Tidal Flood Zone 3
-  Tidal Flood Zone 2

Flood Zone 3 shows the area that could be affected by flooding:

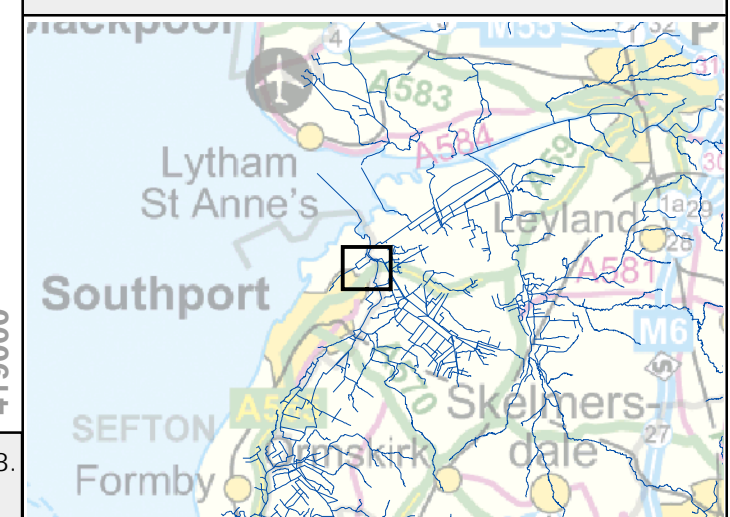
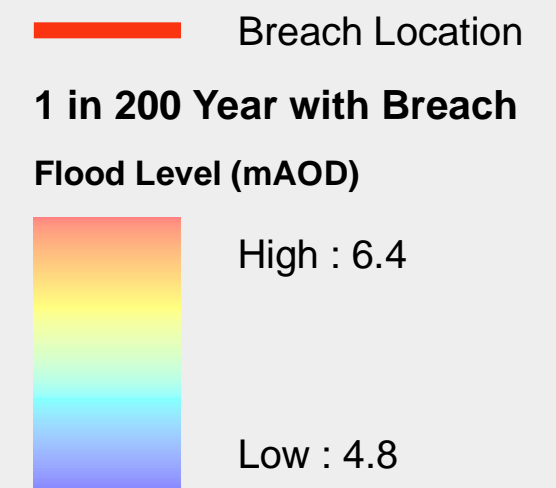
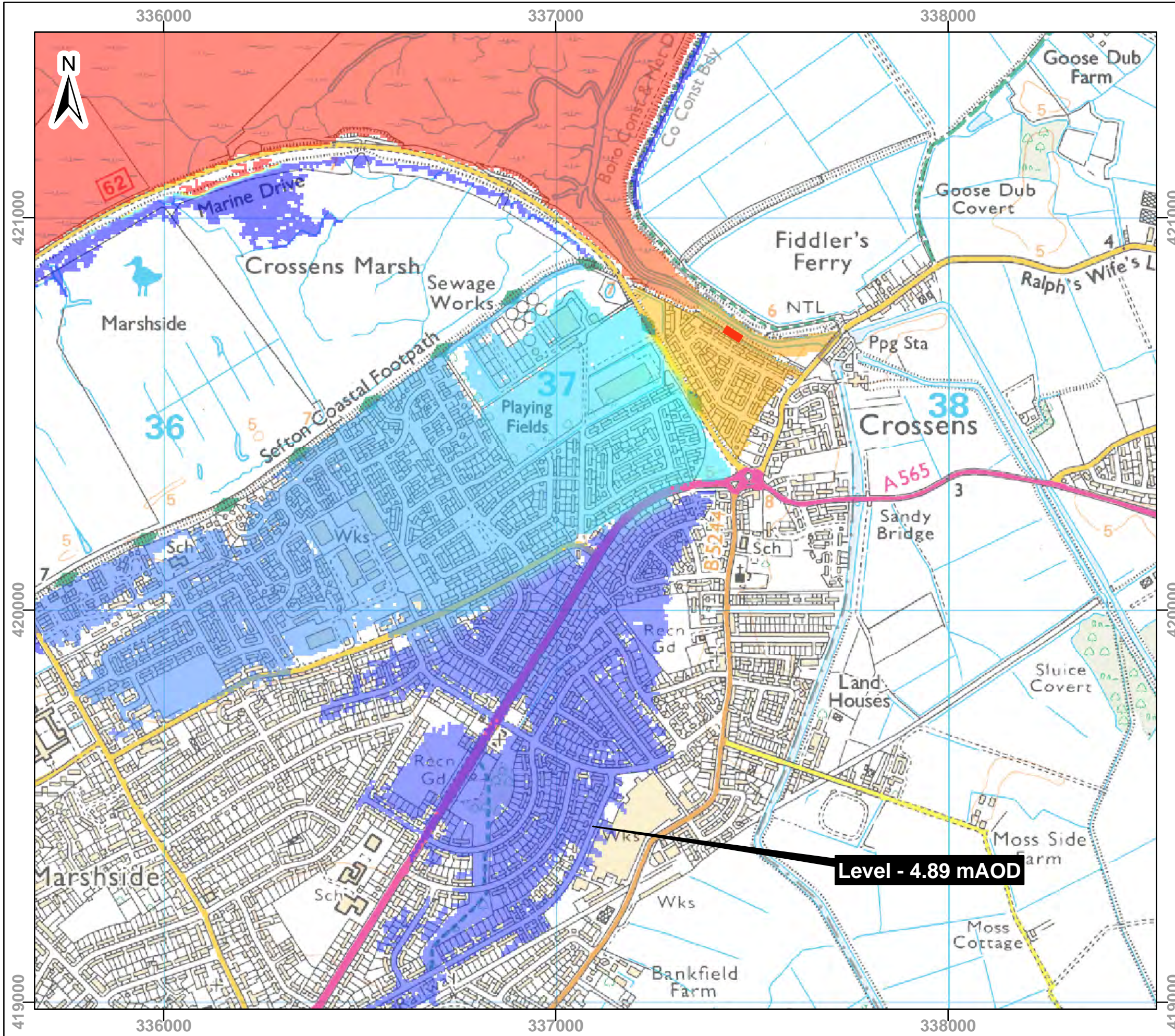
- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

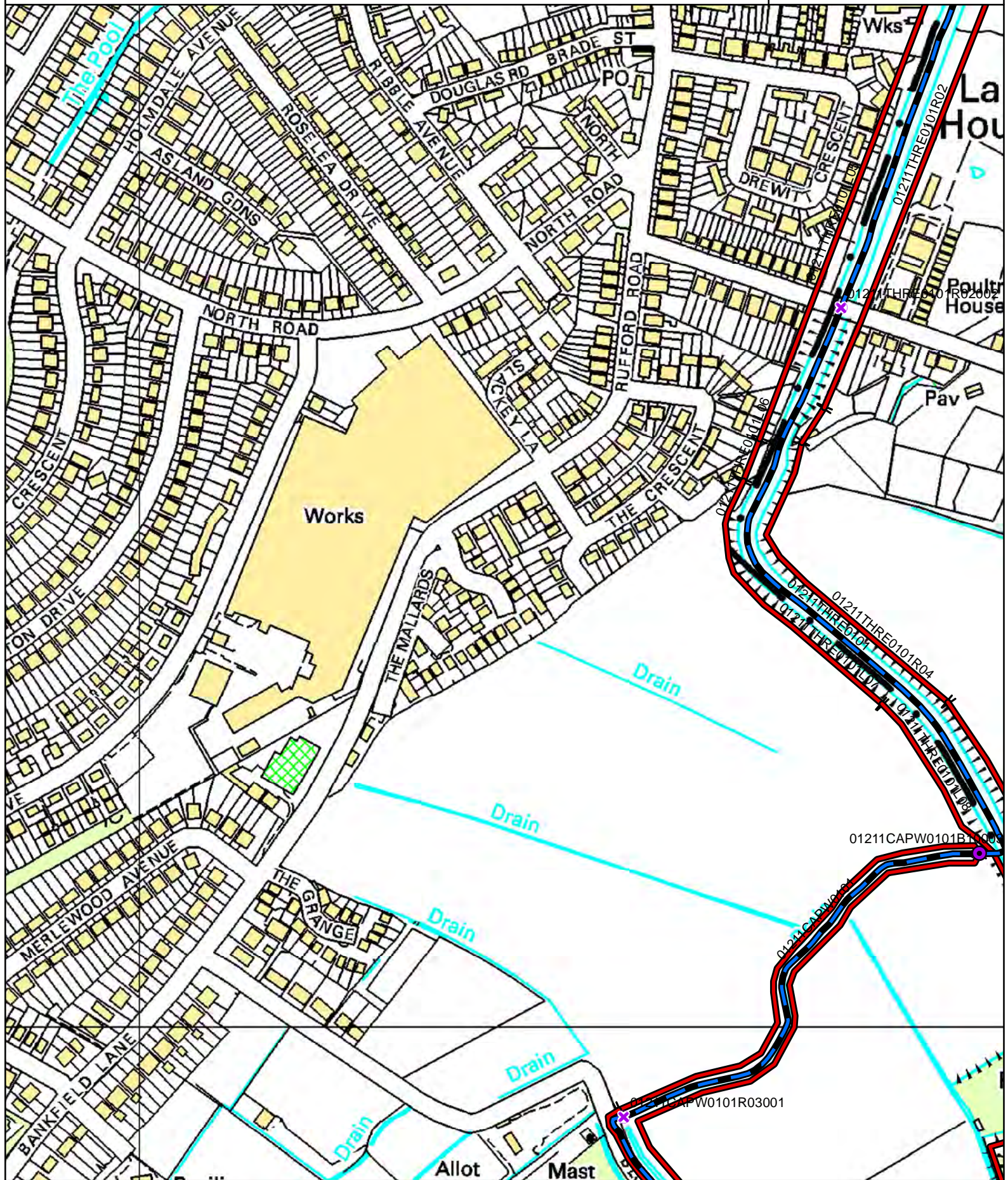
Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

ABDs (Areas Benefiting from Defences) show the area benefiting from defences during a 1 in 200 tidal, or 1 in 100 fluvial flood event.

Tidal Breach Map Southport

Produced: 15 January 2015
 Our Ref: CL3590
 Grid Ref: SD 37168 19476





Channel Crossings	Buildings	Asset Systems - Non FRMS
Structures	Channels	Asset Systems - FRMS
Beach Structures	Defences	Attributes On Asset
Linear Beach Structures	Public Safety Trees	Attributes Near Asset
Major Civils	Public Safety Land/Water Assets	Linear Attributes On Asset
Instruments	Land	Linear Attributes Near Asset
Aids to Navigation	Sites	Documents For Asset

0 0.035 0.07 0.105 0.14
Kilometers

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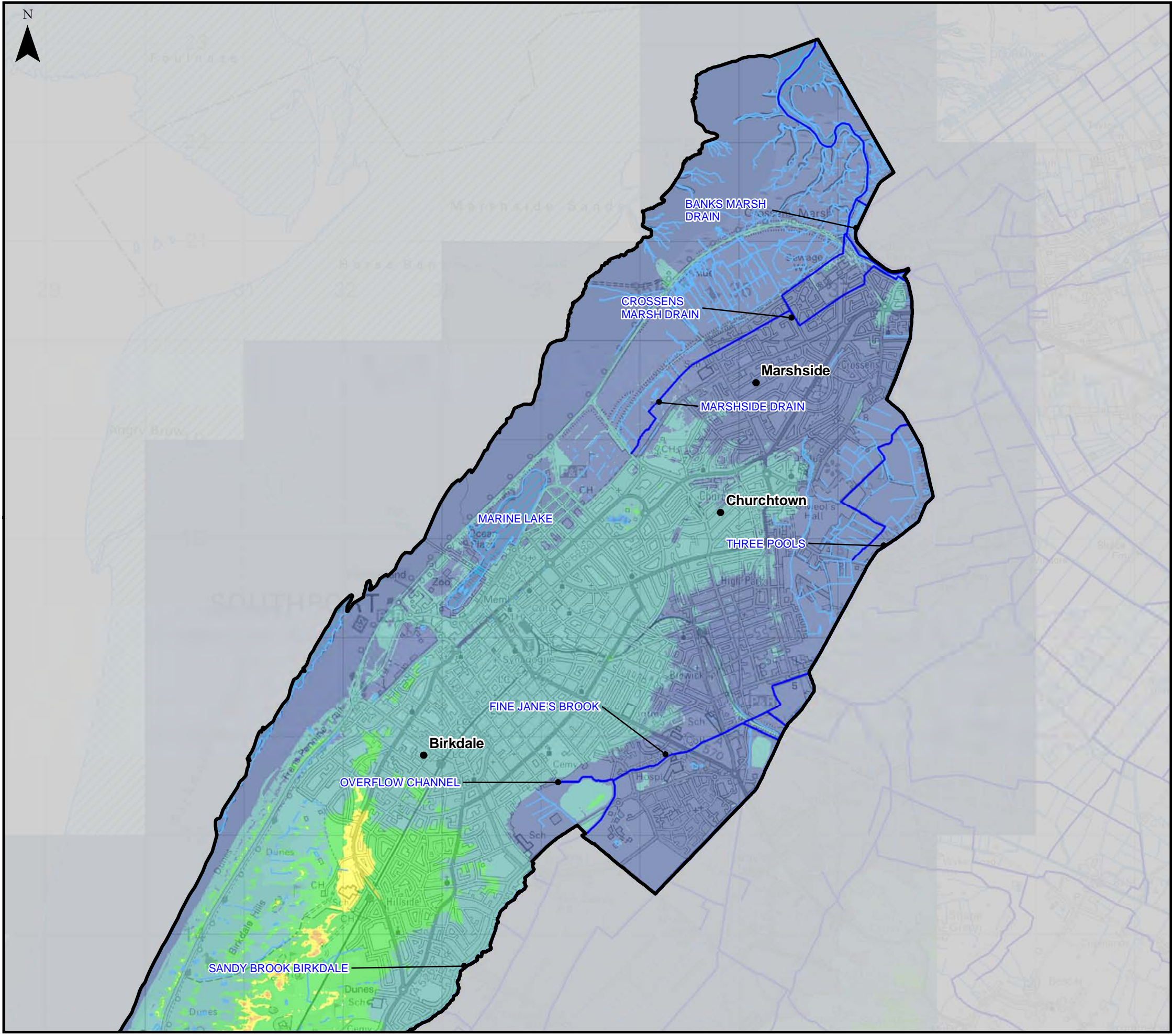
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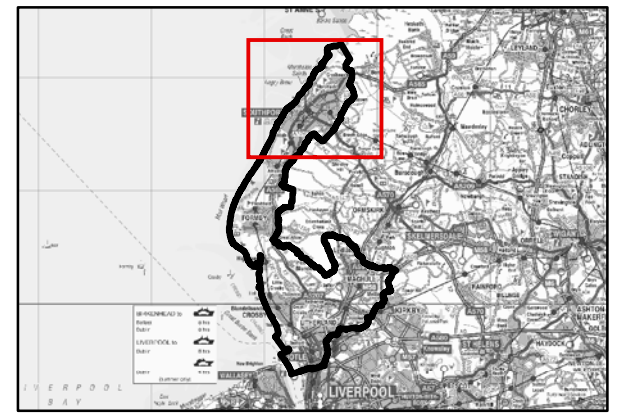


B. Strategic Flood Risk Assessment Mapping



Legend

- Borough Administrative Boundary
 - Main River
 - Ordinary Watercourse
 - Leeds and Liverpool Canal
 - Permanent Water Bodies
- | Terrain Height (mAOD) | |
|-----------------------|---------|
| | < 5 |
| | 5 - 10 |
| | 10 - 15 |
| | 15 - 20 |
| | 20 - 25 |
| | 25 - 30 |



Notes

THERE ARE GAPS IN THE LIDAR COVERAGE WITHIN SEFTON THAT HAVE BEEN FILLED WHERE NECESSARY WITH ALTERNATIVE SOURCES OF DIGITAL TOPOGRAPHICAL DATA.

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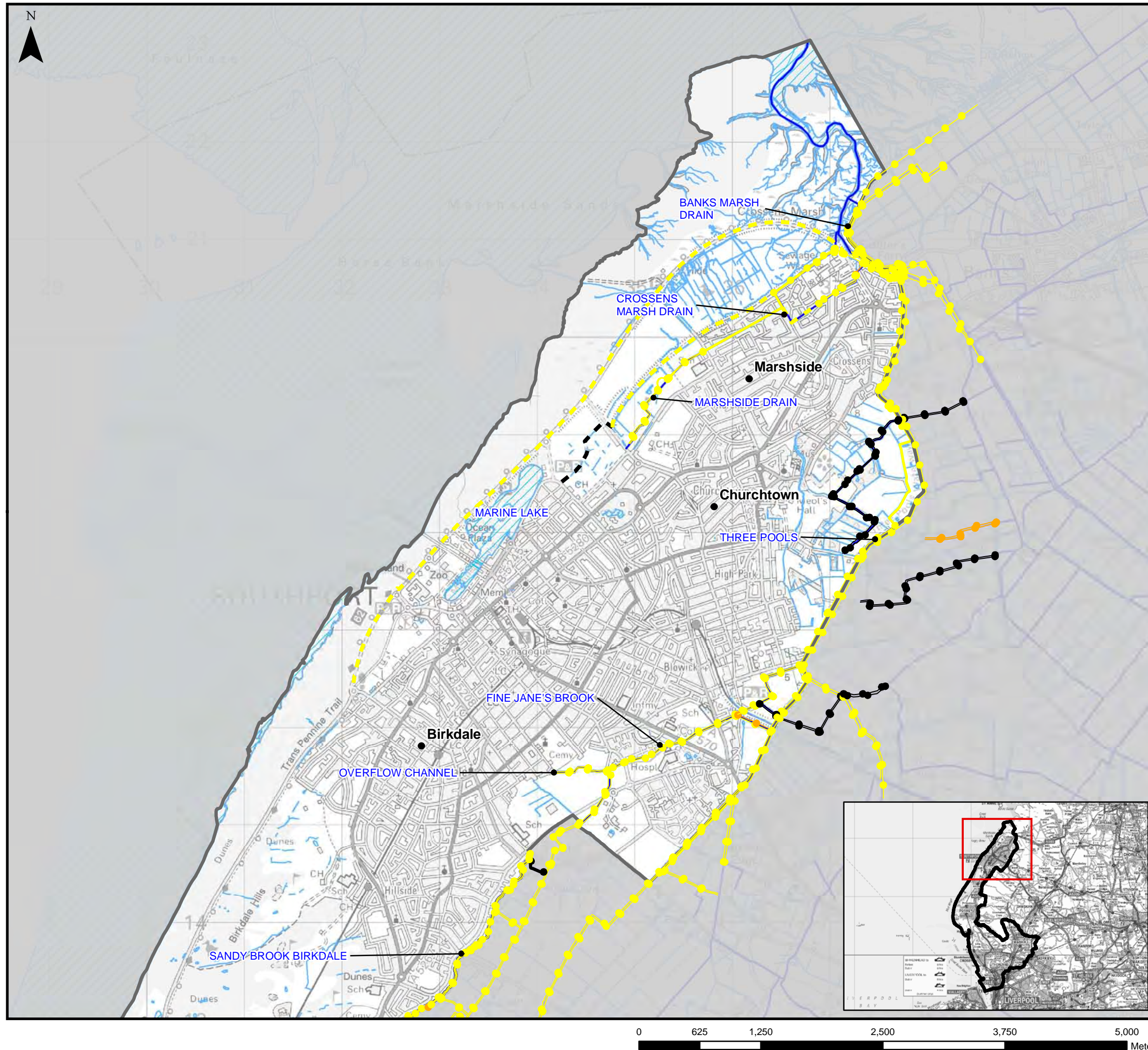
Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 2-1
Topographical Data**

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Sheffield,
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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Flood Defences - Man-made
 - Defence condition - Good (EA maintained)
 - Defence condition - Fair (EA maintained)
 - Defence condition - Poor (EA maintained)
 - Defence condition - Unspecified (EA maintained)
 - Defence condition - Good (LA maintained)
 - Defence condition - Fair (LA maintained)
 - Defence condition - Poor (LA maintained)
 - Defence condition - Unspecified (LA maintained)
 - Defence condition - Good (Privately maintained)
 - Defence condition - Fair (Privately maintained)
 - Defence condition - Poor (Privately maintained)
 - Defence condition - Unspecified (Privately maintained)

Notes

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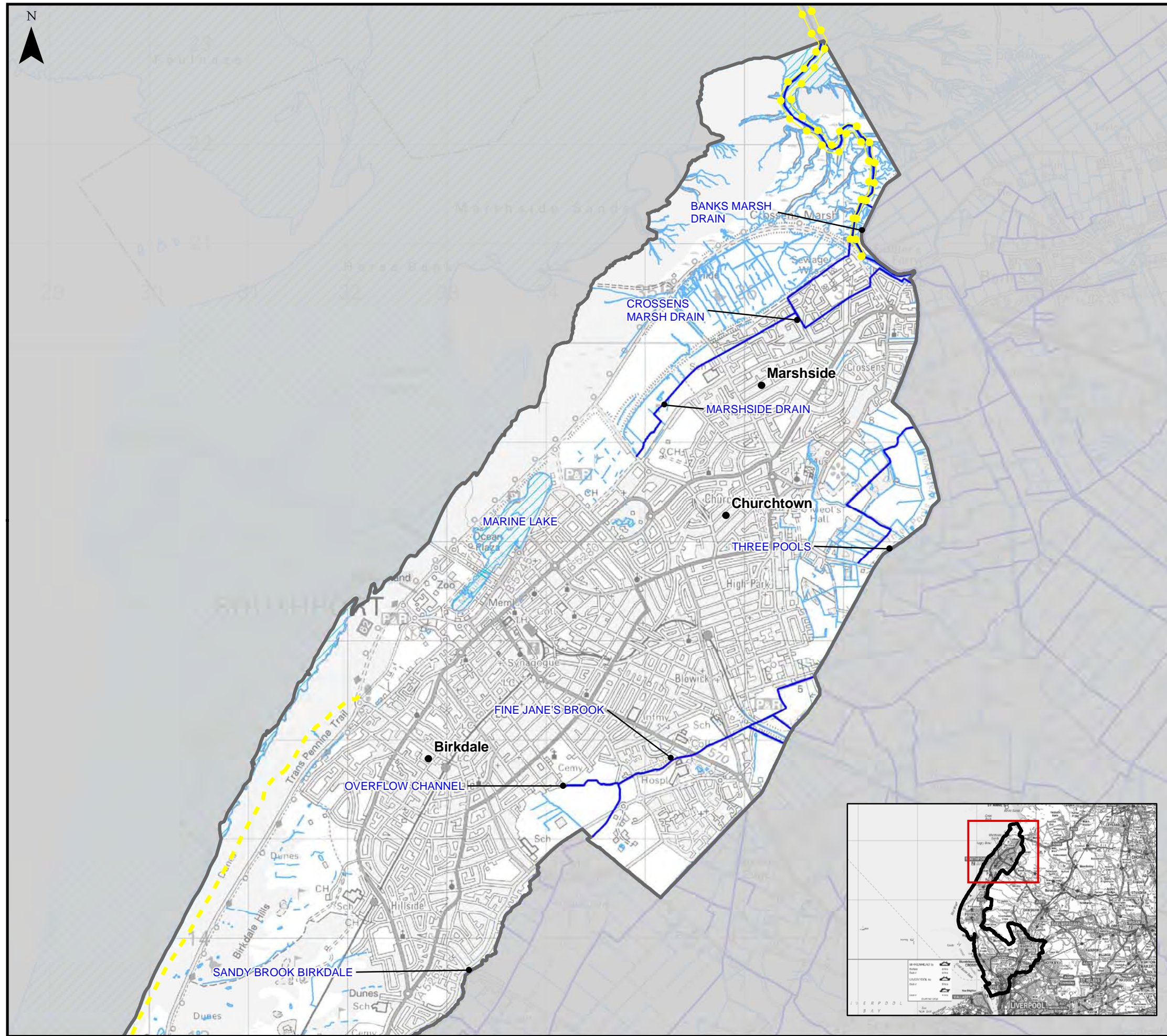
Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 11a-1
Flood Defences - Man-made**

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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Flood Defences - Natural
 - Defence condition - Good (EA maintained)
 - Defence condition - Fair (EA maintained)
 - Defence condition - Poor (EA maintained)
 - Defence condition - Unspecified (EA maintained)
 - Defence condition - Good (LA maintained)
 - Defence condition - Fair (LA maintained)
 - Defence condition - Poor (LA maintained)
 - Defence condition - Unspecified (LA maintained)
 - Defence condition - Good (Privately maintained)
 - Defence condition - Fair (Privately maintained)
 - Defence condition - Poor (Privately maintained)
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Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 11b-1
Flood Defences - Natural**

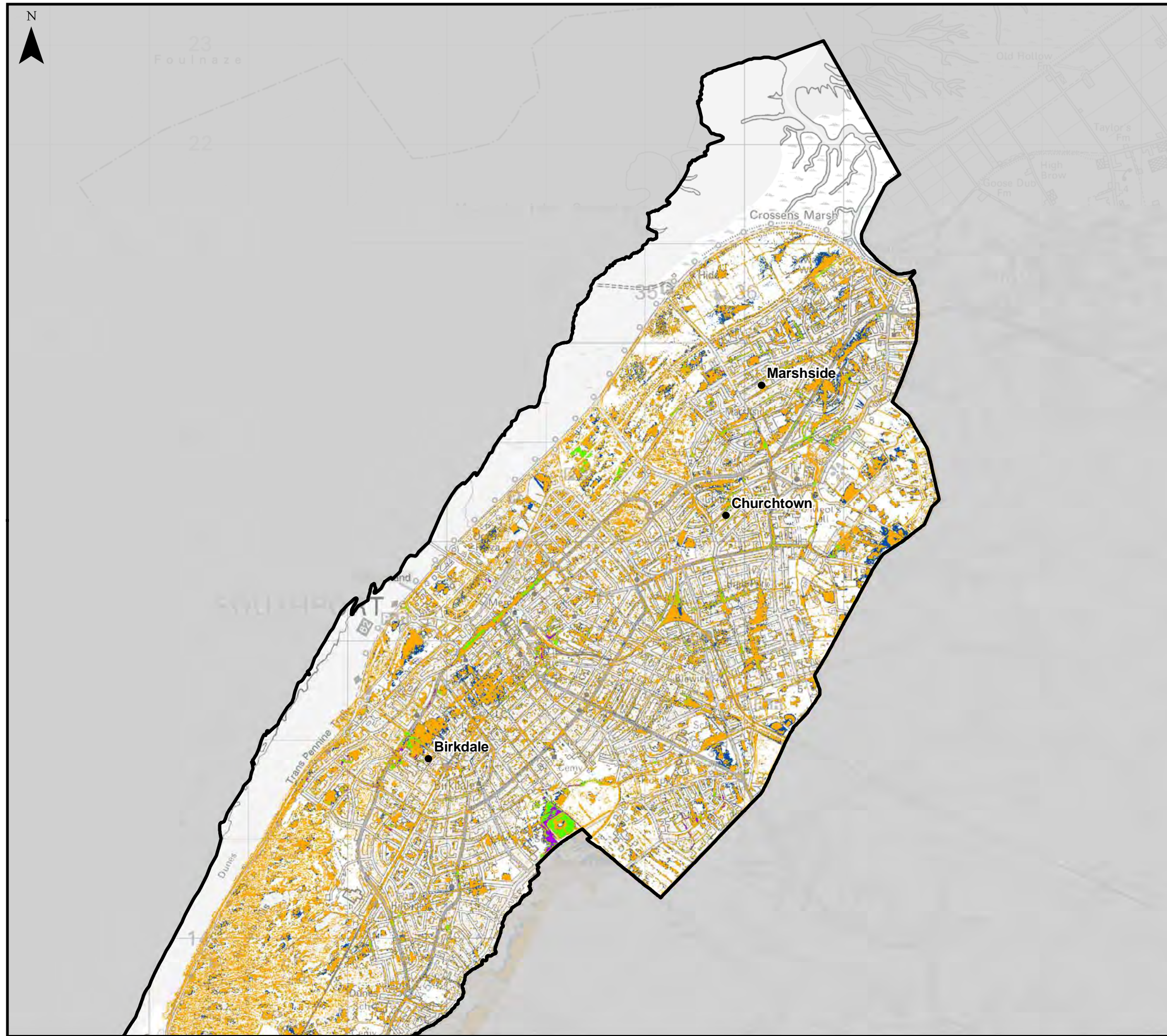
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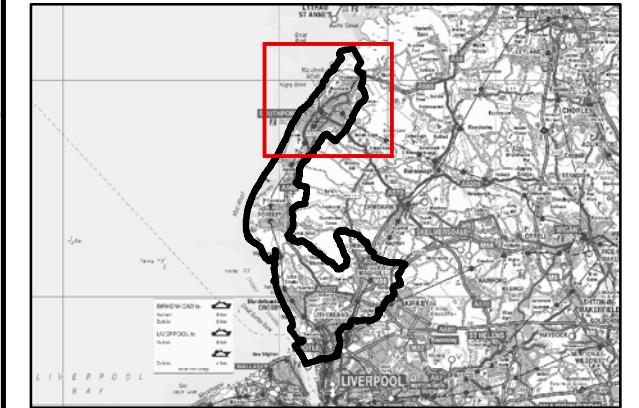
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REV
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Legend

- Borough Administrative Boundary
- 30yr Rainfall Event
- 100yr Rainfall Event
- 5yr Rainfall Event
- 100yr+CC Rainfall Event



Notes

THE SWMP OUTPUTS ARE PRESENTED ONLY WHERE MODELING WAS UNDERTAKEN.

THE 1 IN 5 AND THE 1 IN 30 ANNUAL PROBABILITY EVENT OUTPUTS ARE BASED ON MODELLING THE PREDICTED MAXIMUM FLOODING VOLUME AT MANHOLES AS INFLOWS THAT ARE DISCHARGED OVER A 1.5 HOUR PERIOD. THIS ASSUMES THEREFORE THAT THE SEWER SYSTEM RECEIVES ALL RAINFALL IN THESE EVENTS AND THAT FLOODING IS SOLELY CAUSED BY INADEQUACY OF THE SEWERS' HYDRAULIC CAPACITY. FOR THE 1 IN 100 ANNUAL PROBABILITY EVENT AND THE 1 IN 100 ANNUAL PROBABILITY EVENT WITH AN ALLOWANCE FOR CLIMATE CHANGE, THE OUTPUTS ARE BASED ON MODELLING OF DIRECT RAINFALL WITH A 6.5MM ALLOWANCE FOR THE CAPACITY OF THE SEWER SYSTEM PLUS MANHOLE FLOODING FROM THE 1 IN 30 ANNUAL PROBABILITY EVENT. THIS ASSUMES THAT THE SEWERS ARE LARGELY AT CAPACITY AND THAT EXCESS RAINFALL BECOMES SURFACE WATER RUNOFF.

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Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 12-1
SWMP Outputs**

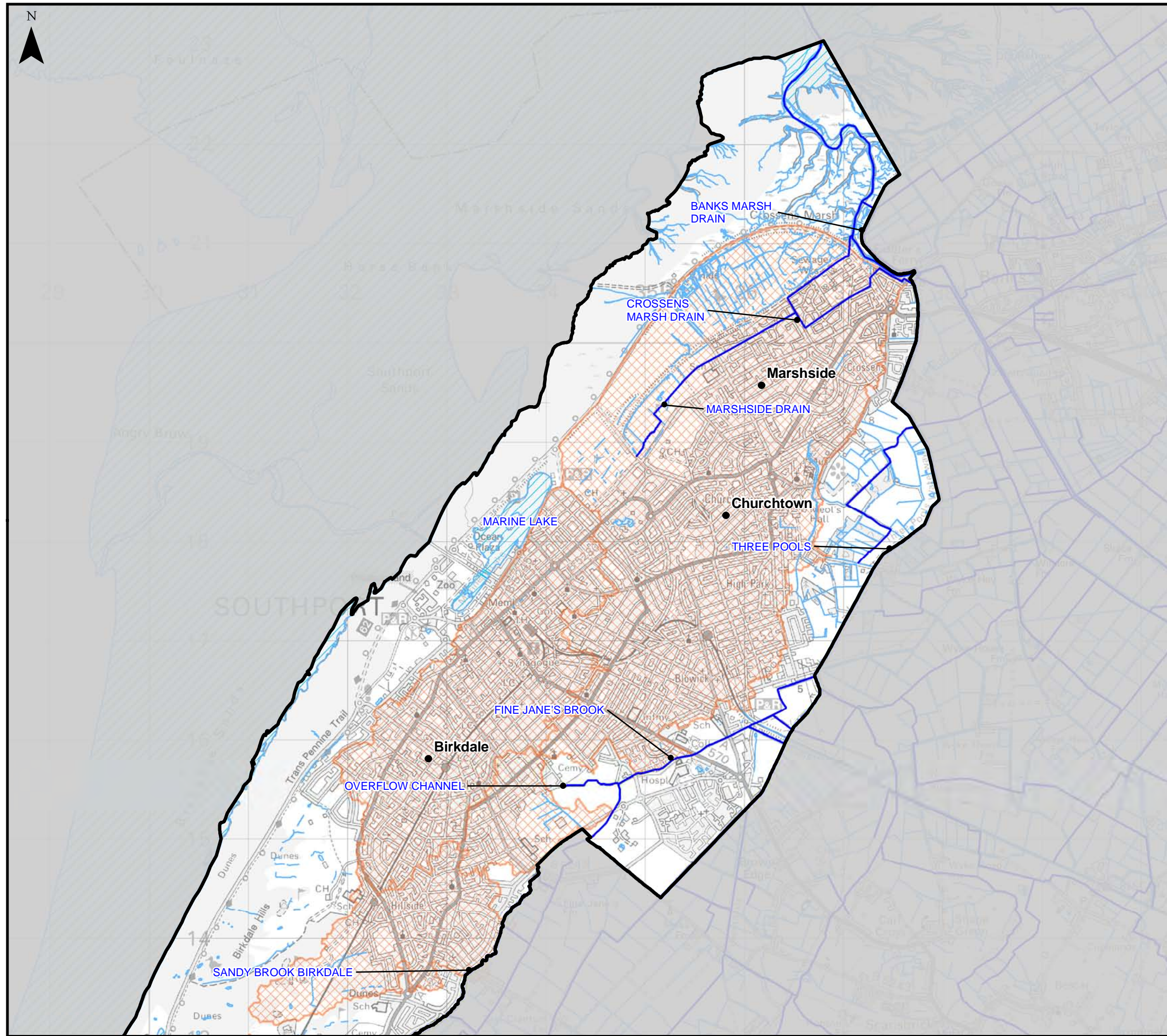
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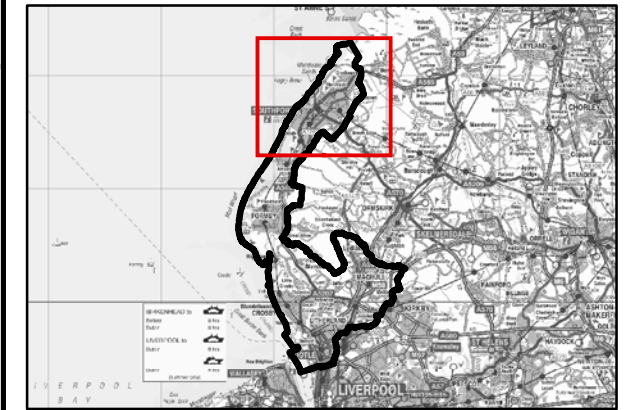
DRAWING NUMBER
CS057949/Fig 11-1

REV
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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Critical Drainage Areas



Notes

CRITICAL DRAINAGE AREAS (CDAs) HAVE BEEN DEFINED BY IDENTIFYING THE CATCHMENT AREAS THAT CONTRIBUTE TO FLOODING IN THOSE LOCAL FLOOD RISK ZONES THAT COULD RESULT IN LOCALLY SIGNIFICANT SURFACE WATER FLOODING, I.E. THOSE IN WHICH MORE THAN 8 PROPERTIES OR 20 PEOPLE MAY BE IMPACTED.

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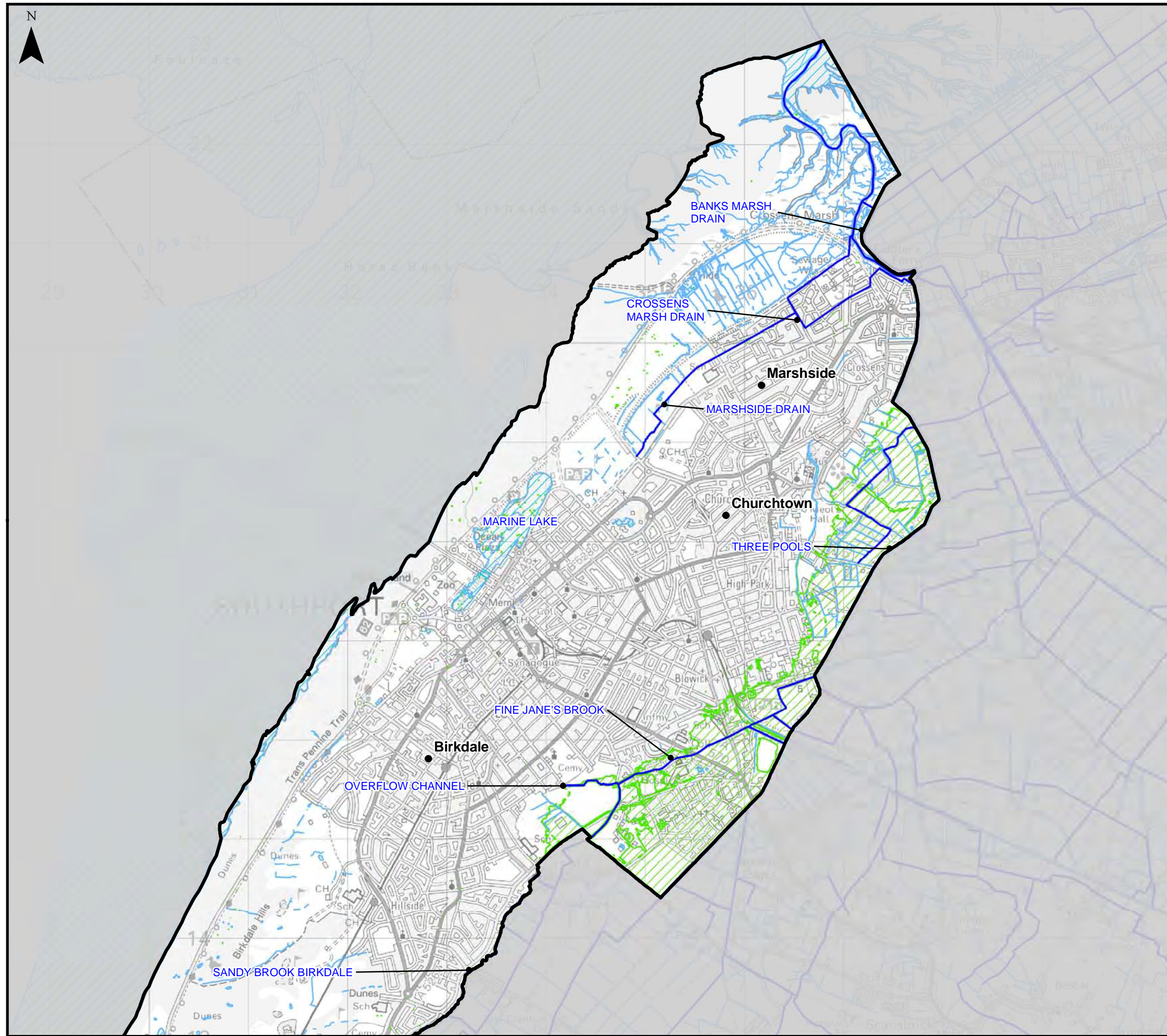
Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 14-1
Critical Drainage Areas**

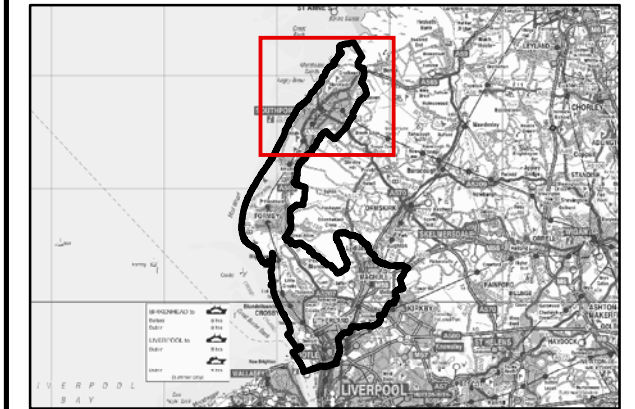
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Legend

-  Borough Administrative Boundary
-  Main River
-  Ordinary Watercourse
-  Leeds and Liverpool Canal
-  Permanent Water Bodies
-  Groundwater Emergence Map



Notes

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Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 17-1
Groundwater Flood Risk**

Consultants

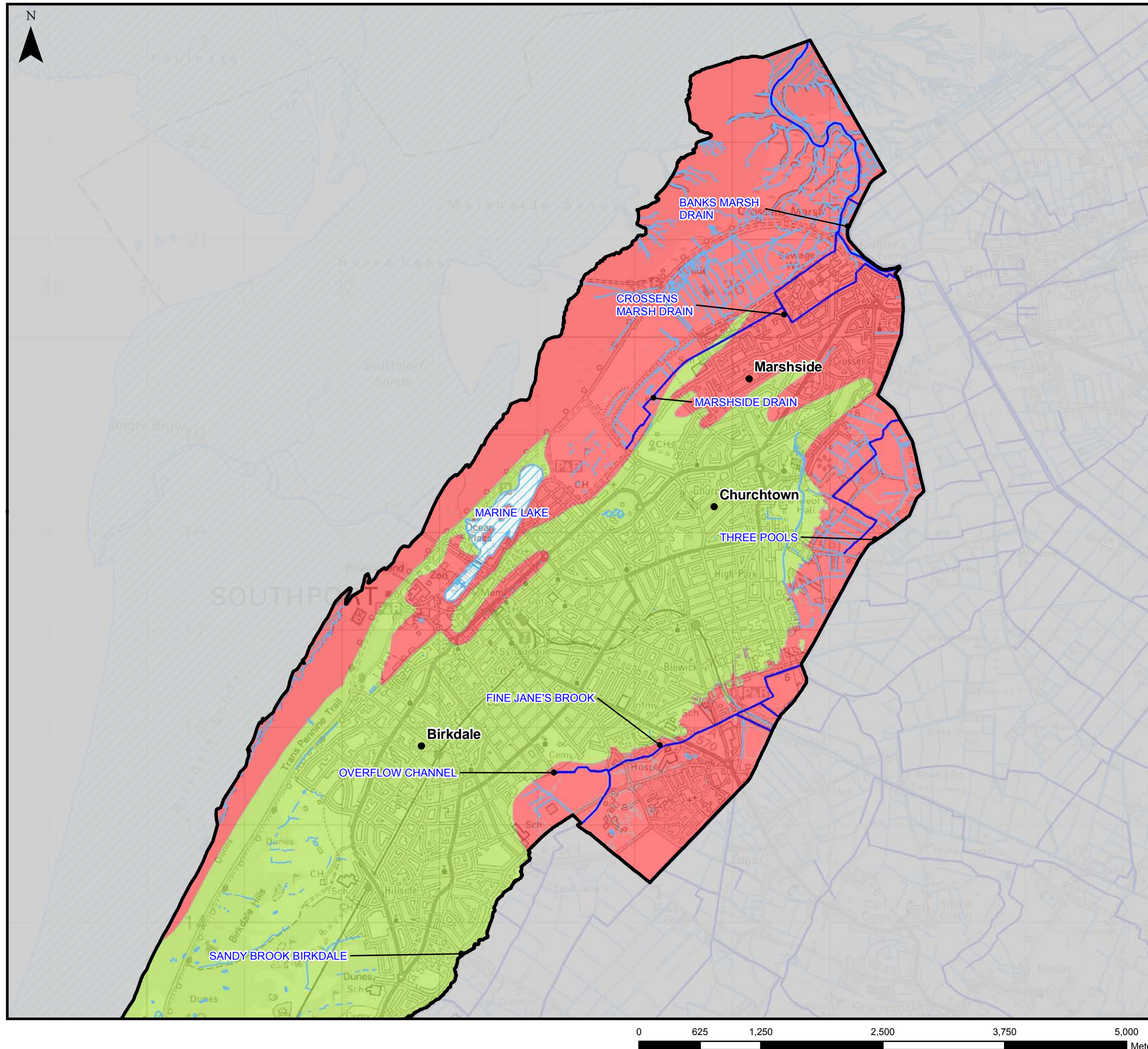
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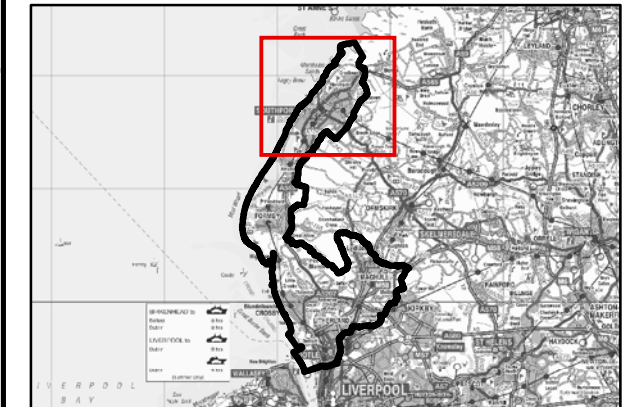
REV
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Legend

- | | |
|---------------------------------|----------------------------|
| Borough Administrative Boundary | SuDS Suitability Very High |
| Main River | SuDS Suitability High |
| Ordinary Watercourse | SuDS Suitability Moderate |
| Leeds and Liverpool Canal | SuDS Suitability Low |
| Permanent Water Bodies | SuDS Suitability Very Low |



Notes

THE SUDS SUITABILITY IS BASED ON A COMBINATION OF THE PERMEABILITY OF THE OVERLYING DRIFT AND THE UNDERLYING GEOLOGY. AREAS IDENTIFIED AS BEING SUSCEPTIBLE TO GROUNDWATER EMERGENCE HAVE BEEN IDENTIFIED AS 'VERY LOW' REGARDLESS OF THE UNDERLYING DRIFT OR SOLID GEOLOGY. IT SHOULD ALSO BE NOTED THAT IN AREAS WITH A BETTER SUDS SUITABILITY CLASSIFICATION THERE MAY ALSO BE SHALLOW GROUNDWATER OR POTENTIALLY CONTAMINATION THAT COULD RESTRICT OR ENTIRELY PREVENT THE USE OF INFILTRATION SUDS. WHERE INFILTRATION SUDS ARE PROPOSED IT IS STRONGLY RECOMMENDED THAT LOCATION-SPECIFIC SOAKAWAY TESTS IN LINE WITH BRE365 OR SIMILAR ARE USED TO CONFIRM THE SUITABILITY OF THE GROUND CONDITIONS. THIS SHOULD BE COMPLETED AT THE CONCEPTUAL DESIGN STAGE TO AVOID POST-PLANNING CONSENT ISSUES ARISING.

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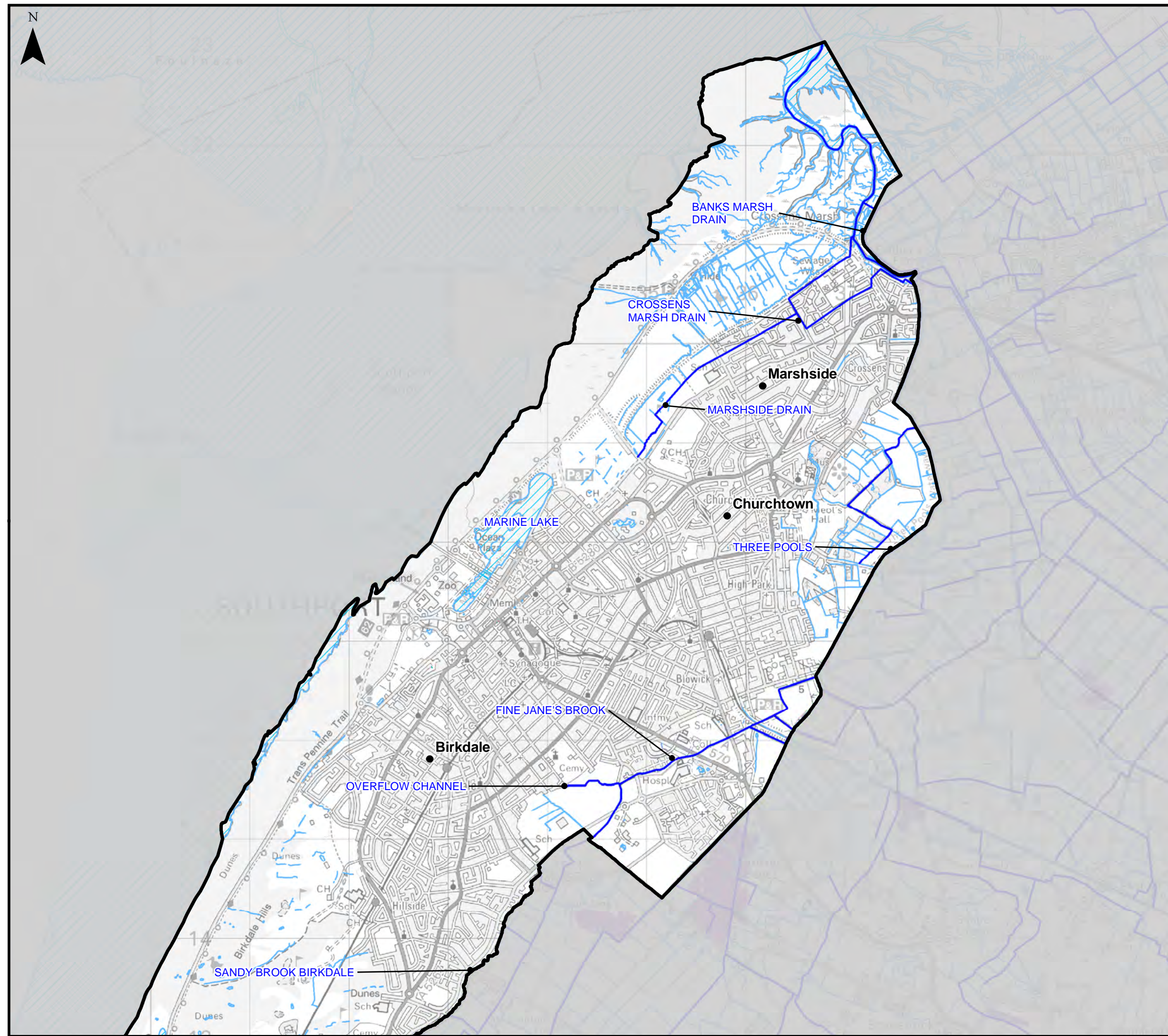
Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 21-1
SuDS Suitability**

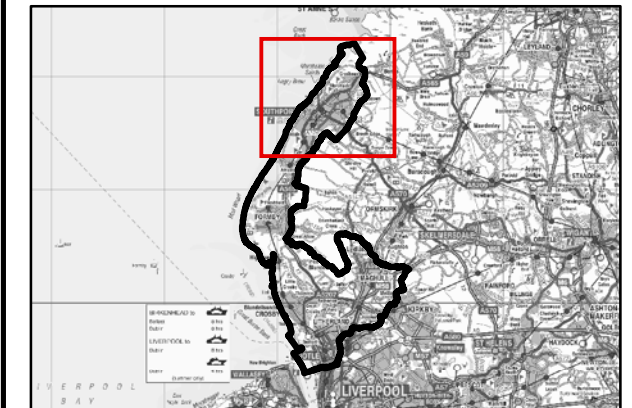
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DRAWING NUMBER CS057949/Fig 21-1	REV -
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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Defended fluvial model flood outlines
- Flood Zone 3b



Notes

FLOOD ZONE 3B IS SHOWN ONLY WHERE THERE IS INFORMATION AVAILABLE FOR THE 1 IN 25 ANNUAL PROBABILITY FLUVIAL FLOOD EVENT. THERE ARE NO AREAS INLAND FROM EXISTING SEA AND COASTAL DEFENCES THAT ARE SHOWN TO BE AT RISK FROM THE 1 IN 25 ANNUAL PROBABILITY EXTREME SEA LEVEL. THIS FLOOD EXTENT TAKES INTO ACCOUNT THE PRESENCE OF FLOOD DEFENCES.

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**Sefton Level 2
Strategic Flood Risk Assessment**

Scale at A3 1:40,000	Date 21/11/2012	Drawn by ER	Approved by PR
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**Figure 8-1
Flood Zone 3b**

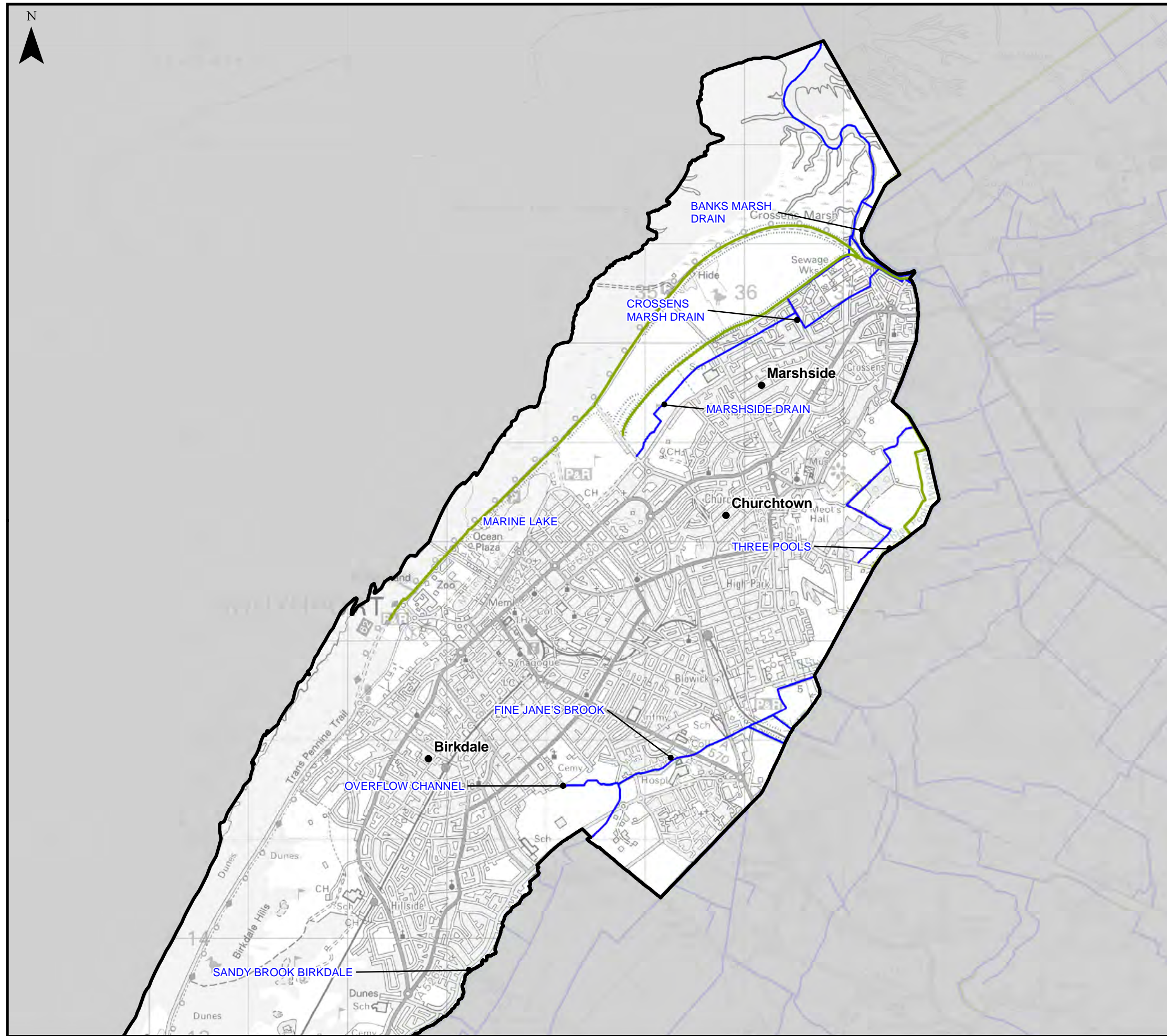
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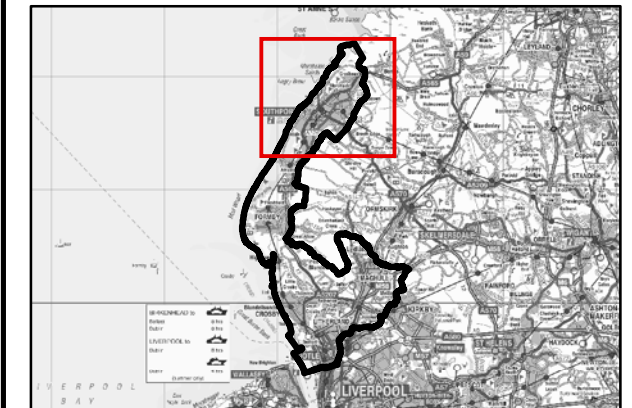
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CS057949/Fig 8-1

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Legend

- Borough Administrative Boundary
- Main River
- Leeds and Liverpool Canal
- Defences
- Flood Depth (1 in 100 Annual Probability plus Climate Change)
 - < 0.1m
 - 0.1m to 0.3m
 - 0.3m to 0.6m
 - 0.6m to 1m
 - 1m to 1.5m
 - > 1.5m



Notes

THE INFORMATION PRESENTED HAS BEEN OBTAINED FROM AVAILABLE HYDRAULIC MODELS THAT SHOW THE POTENTIAL DEPTH OF FLUVIAL FLOODING WITHIN SEFTON IN A 1 IN 100 ANNUAL PROBABILITY EVENT WITH AN ALLOWANCE FOR CLIMATE CHANGE.

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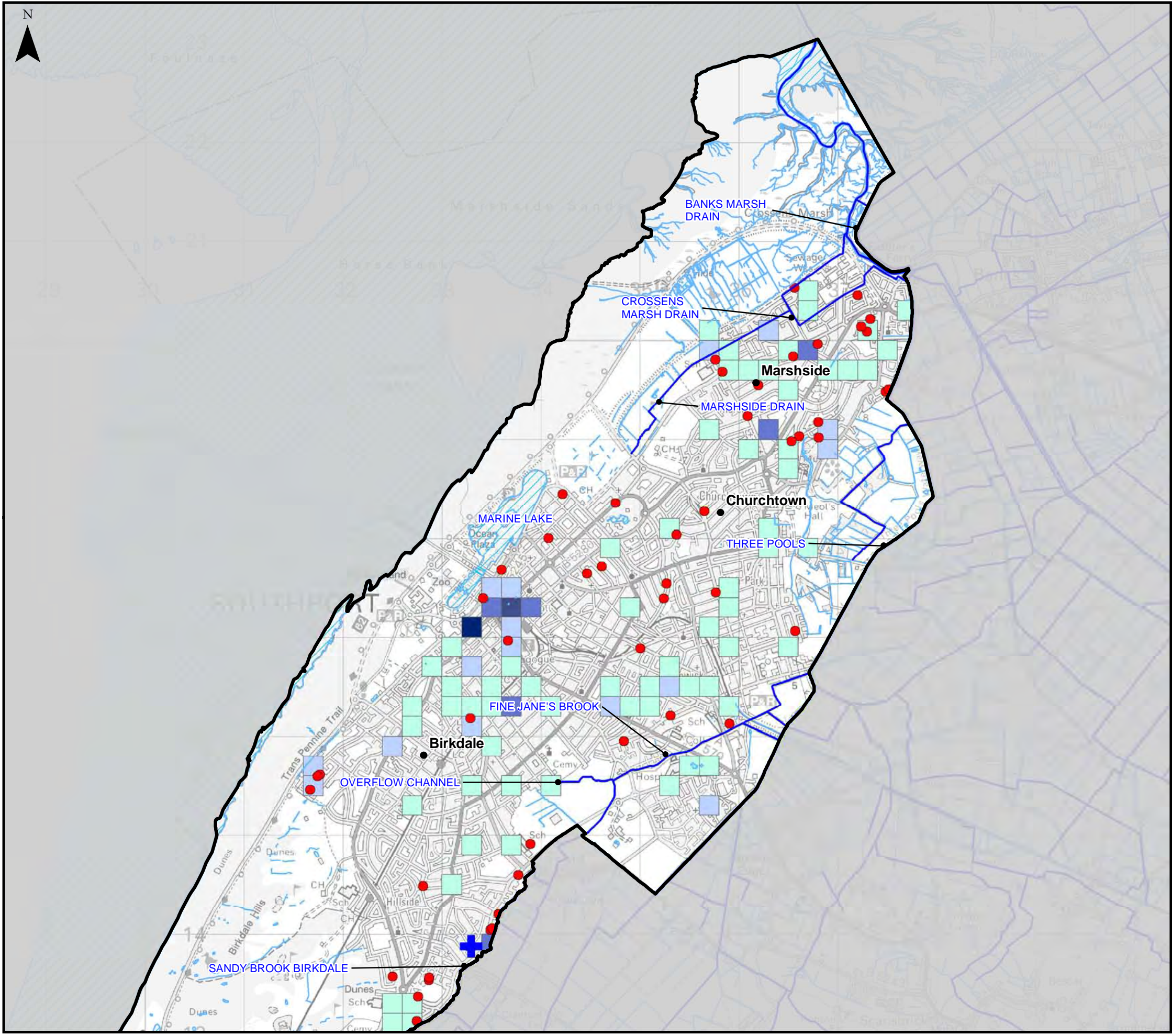
Sefton Level 2 Strategic Flood Risk Assessment

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 9-1
Fluvial Flood Depths with Defences
(1 in 100 annual probability plus climate change)**

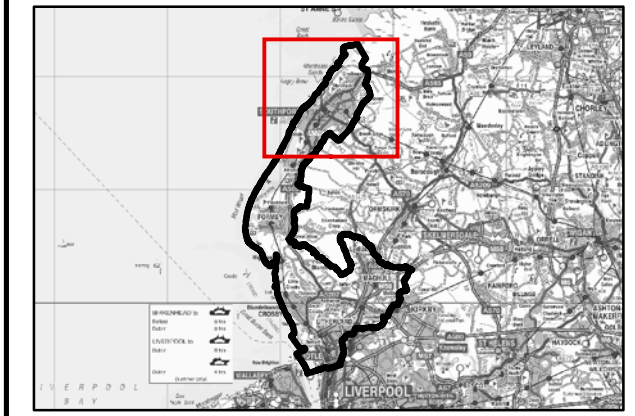
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Legend

- Borough Administrative Boundary
 - Main River
 - Ordinary Watercourse
 - Leeds and Liverpool Canal
 - Permanent Water Bodies
 - Surface Water Flooding Incidents (Sefton Drainage Report data)
 - Surface Water Flooding Incidents (Sefton, 2012)
- | Surface Water Flooding Incidents (data provided by United Utilities data) | |
|---|--------|
| | 5 to 8 |
| | 4 to 5 |
| | 3 to 4 |
| | 2 to 3 |
| | 1 to 2 |



Notes

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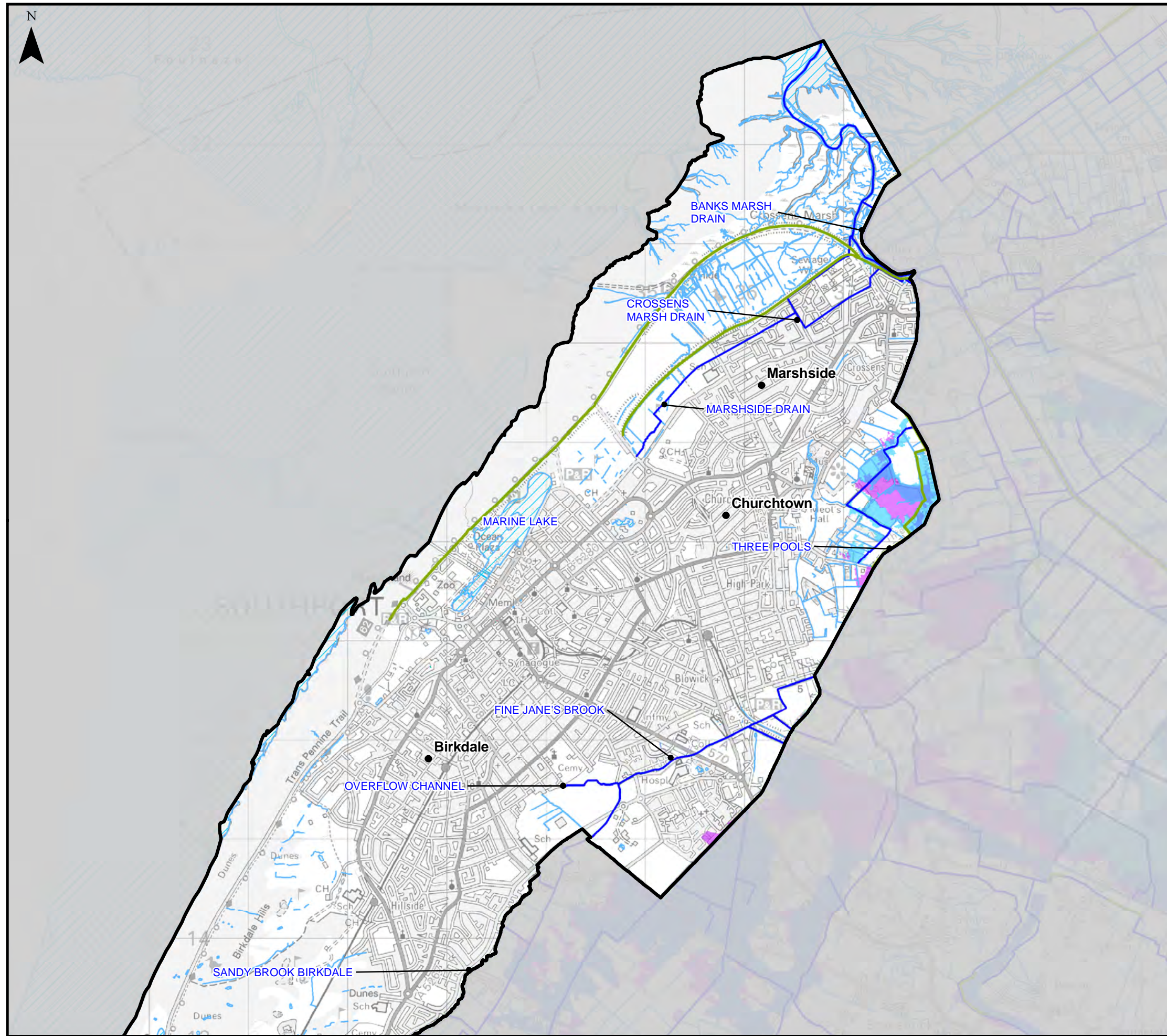
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**Figure 16-1
Historical Surface Water and Sewer Flooding Incidents**

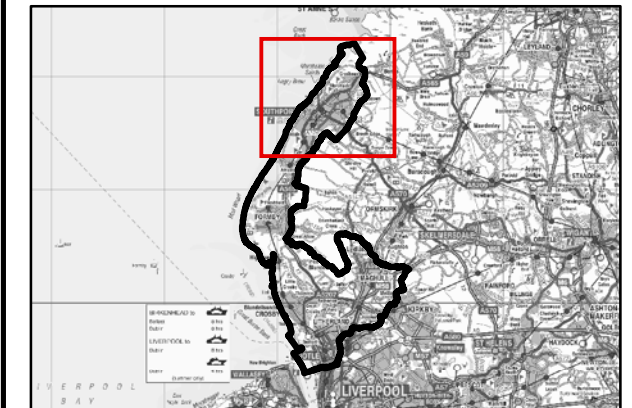
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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Defences
- Permanent Water Bodies
- Flood Zone 3 Fluvial
- Flood Zone 2 Fluvial



Notes

FLUVIAL FLOOD ZONE 3 IS EQUIVALENT TO THE UNDEFENDED 1 IN 100 ANNUAL PROBABILITY FLOOD EVENT AND FLUVIAL FLOOD ZONE 2 IS EQUIVALENT TO THE UNDEFENDED 1 IN 1000 ANNUAL PROBABILITY FLOOD EVENT.

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**Figure 3-1
EA Fluvial Flood Zones**

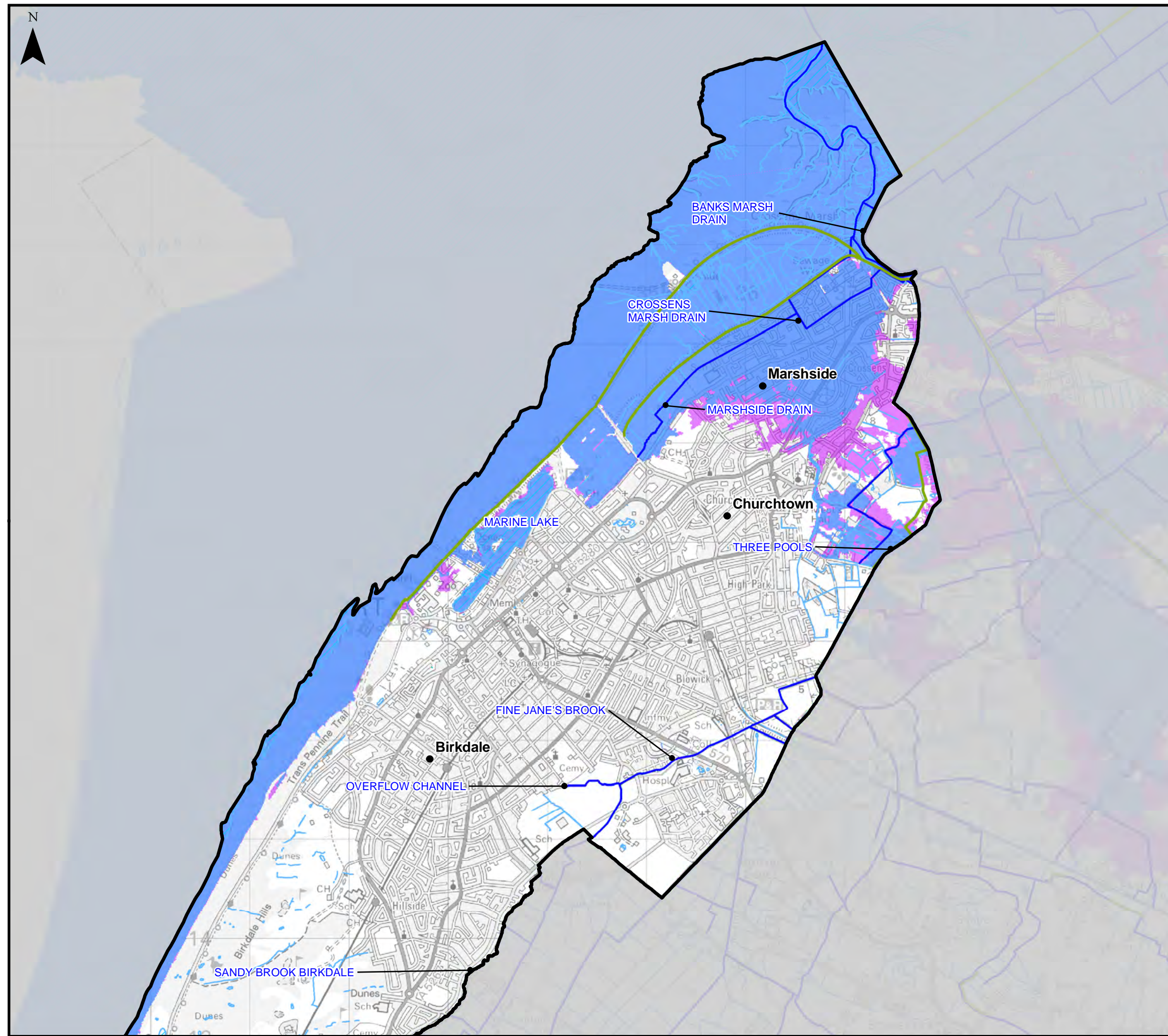
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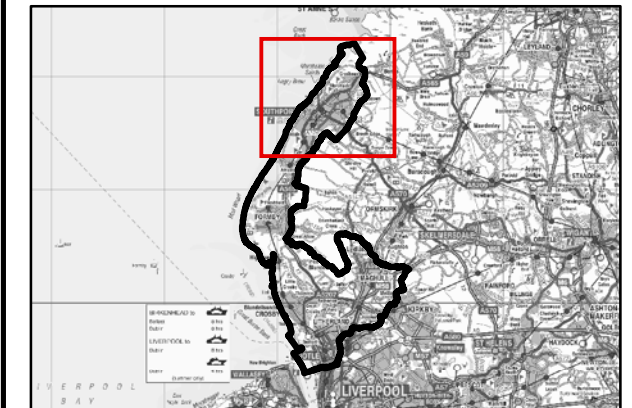
DRAWING NUMBER
CS057949/Fig 3-1

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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Defences
- Permanent Water Bodies
- Flood Zone 3 Tidal
- Flood Zone 2 Tidal



Notes

TIDAL FLOOD ZONE 3 IS EQUIVALENT TO THE UNDEFENDED 1 IN 200 ANNUAL PROBABILITY FLOOD EVENT AND TIDAL FLOOD ZONE 2 IS EQUIVALENT TO THE UNDEFENDED 1 IN 1000 ANNUAL PROBABILITY FLOOD EVENT.

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Strategic Flood Risk Assessment**

Scale at A3 1:40,000	Date 25/10/2012	Drawn by ER	Approved by PR
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**Figure 4-1
EA Tidal Flood Zones**

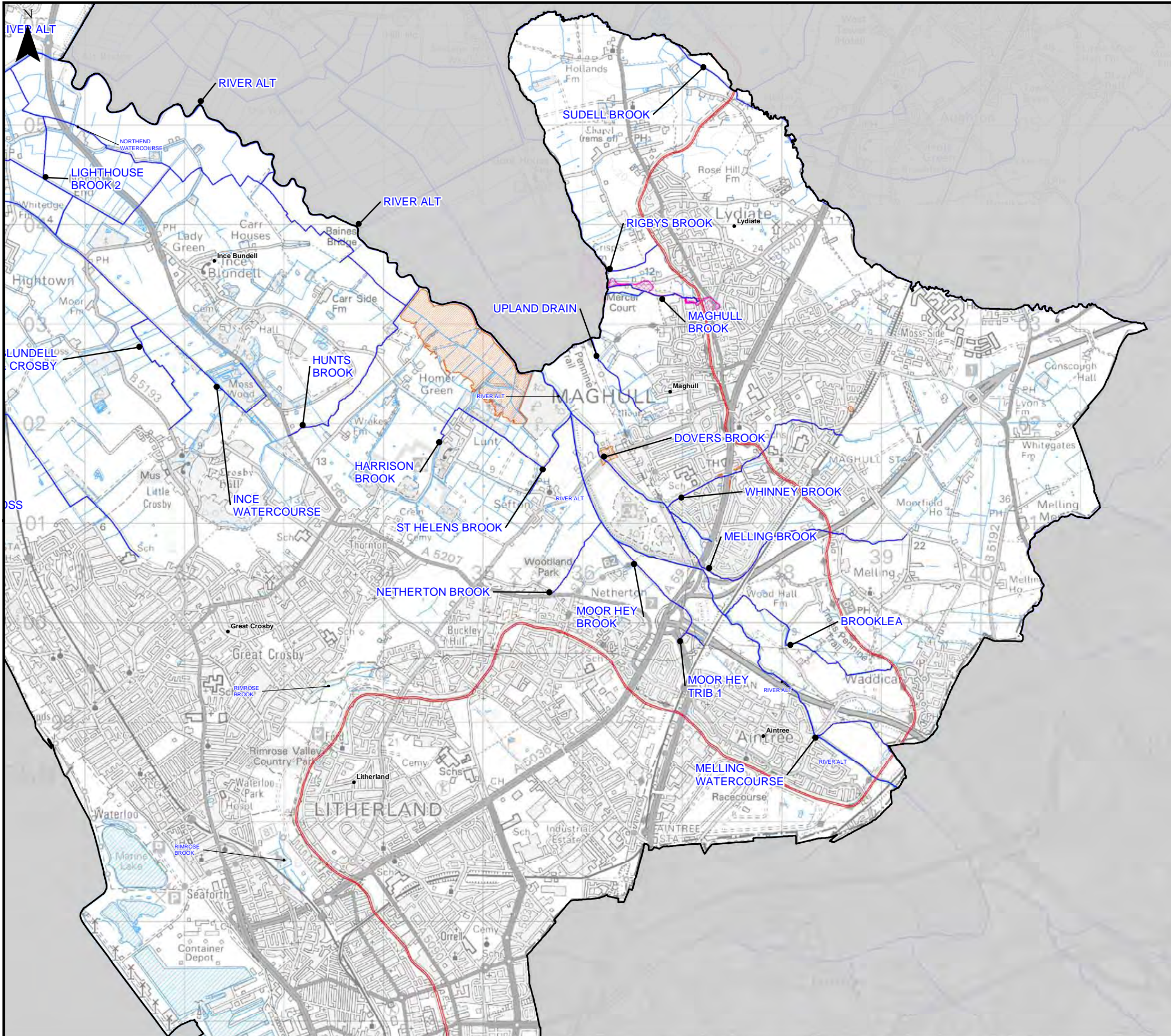
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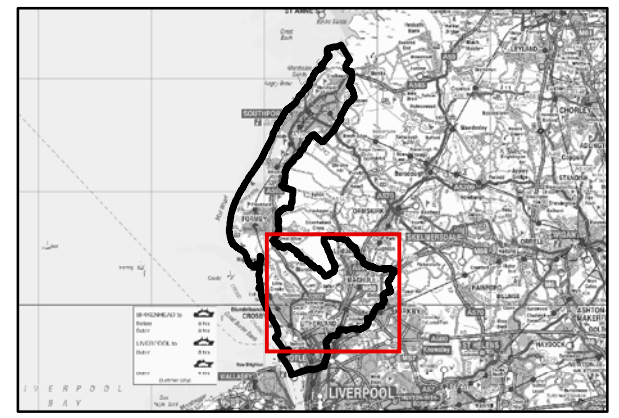
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Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Leeds and Liverpool Canal
- Permanent Water Bodies
- Historic Flood Map
- Leeds and Liverpool Canal Breach (Oct 1994)



Notes

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Sefton Level 2 Strategic Flood Risk Assessment

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**Figure 18
Historical Flooding Incidents**

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