Preliminary Geo-environmental Site Assessment for:

New Property Development
20-24 Sussex Street, Sydney, New South Wales, 2000

Sample

Report Date: 01 January 2021

Budget Report

Project/Site Name:	New Property Development	**Prepared For:**	Smart Projects Pty Ltd
Site Address:	20-24 Sussex St, Sydney, NSW 2000	**Report Type:**	Basic
		Client Ref:	SJ-00248
Lot / DP:	1/-/DP1033719	**GroundCheck Ref:**	210012-DTB

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ATTACHMENTS

☑ Indicates information has been identified within the local report search extent* and is included in this report

☐ Indicates information may exist within the local report search extent*, but it is not included in this type of report. Optional extra data can be purchased by ordering online through www.georeports.com.au

☐ Indicates no information has been identified within the local report search extent* and therefore is not attached to this report.

☐ A - NSW ePlanning Property Report (Premium Reports only)
☐ B – NSW Land Registry Cadastral Records Search (Premium Reports only)
☐ C - Relevant Soil Landscape Data Sheets (Premium Reports only)
☐ D – Soil Profile Reports (Premium Reports only)**
☐ E – Detailed Investigation Borehole Logs / Reports (Premium Reports only)**
☐ F - WaterNSW Groundwater Bore Records (Premium Reports only)**
☐ A1 – Optional Property Reports (Sewer, Land Titles, Lot Plans, Nearby DAs)**

* Refer to following section for definition of search extents
** Subject to availability of re-publishable information in the within the local report search extent*

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1. Scope of this report

This GroundCheck report provides a preliminary assessment of site conditions based unique sources of published and unpublished geo- environmental data, prepared and presented by qualified and experienced geo-environmental consulting professionals. It describes the general distribution of expected subsurface materials including mapped geology, soil landscapes, acid sulfate soils, topography, flooding, insights from selected reports and borehole data, published groundwater and site contamination data in addition to optional detailed borehole log information (premium report only).

Commentary and mapping information herein is preliminary and general in nature and does not explicitly identify potential geo-environmental hazards such as, but not limited to, site-specific landslip/instability, effects of man-made fill, reactive sites (shrink/swell), site-specific flooding or erosion risk, coastal erosion, chemically aggressive soils or groundwater, unpublished soil or groundwater contamination, presence of existing structures, utilities, etc.

This Report is intended to provide basic overview of site conditions suitable for typical Council development application (DA) requirements and pre-feasibility assessment. However, the level of information required by some Authorities for some sites varies and prescriptive investigation and reporting requirements may apply which are beyond the scope of this report. The user should check relevant approval authority requirements to assess whether this report meets the site-specific approval requirements for the planning stage under consideration. Depending on site conditions, zoning and/or approval authority requirements, additional information beyond this report may include but not be limited to intrusive soil and/or groundwater investigations, sampling and testing, detailed risk assessment, site visits, detailed environmental site assessment and/or consideration of detailed groundwater impacts affecting the proposed or adjacent properties. This report is not intended to meet the full requirements of NSW EPA Stage 1 or 2 Environmental Site Assessment Report requirements although may be used as supporting information for these studies.

Information contained in this report is primarily factual and reliant on third party data providers. Users should seek professional opinion or advice on site specific constraints or hazards which may affect the study area or development under consideration. This information is provided as guidance only and is not intended to be an exhaustive statement of potential ground engineering constraints. Users should make their own assessment of ground engineering and site contamination risk and seek further advice to identify and mitigate potential geo-environmental risks.

The coverage area of this report varies according to search parameter and is summarised below.

Search Extent	Description
Local (R1):	Search extent typically 500m radius

Default search extents used in this report may vary according to the size of the subject site and density of available information nearby.

Search extents used in this report

Sample

Disclaimer: This report provides indicative overview of geo-environmental site conditions at the subject site based on selected information within the identified search extents. The information is preliminary in nature and is intended to provide general guidance appropriate for pre-feasibility assessments. The scope of this report is limited to desktop review of published and privately held information, without undertaking any physical site inspection, intrusive investigation or site-specific sampling or any physical or chemical testing of any type.
Users of this report must satisfy themselves as to the suitability of the site for its intended use(s) by engaging professional advice regarding site conditions and site-specific risks. This should include undertaking appropriate site inspections, review of other available reports and records, intrusive investigations and testing, as required. This report does not purport to provide legal advice or an opinion on the value of the property or its condition. For any site development, further intrusive investigations are recommended to enable further characterisation of the type and distribution of subsurface materials, groundwater or any potential contamination. You should obtain independent advice before you make any decision based on the information within the report. Detailed Terms, Conditions and Limitations applicable to use of this report are set out at the end of this report.

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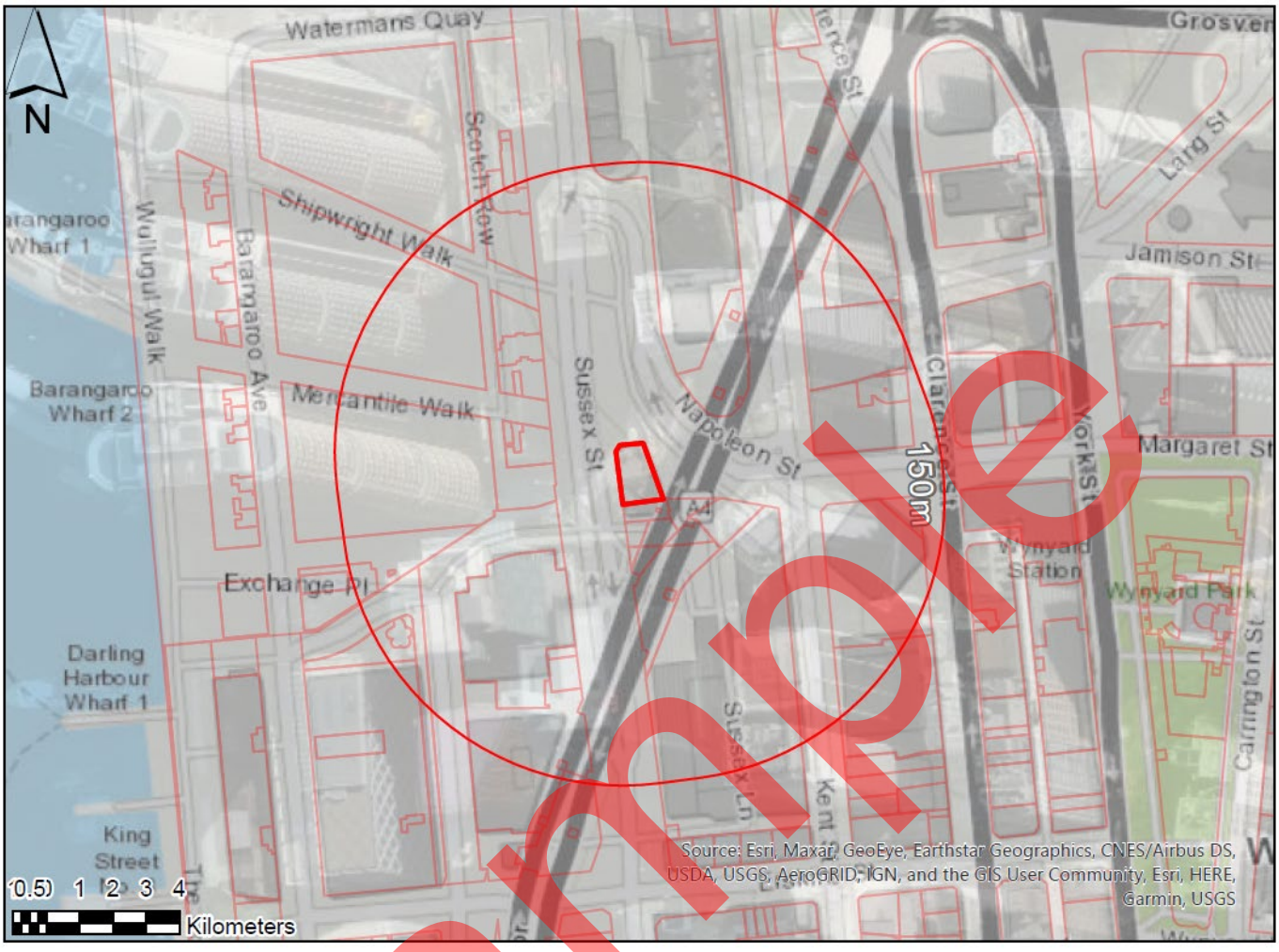
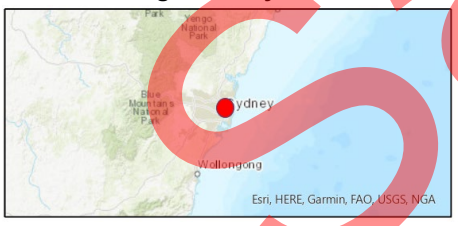
2. Site location



Sample

Figure 2.1 Site Location Plan

Regional Key Plan



Local Key Plan

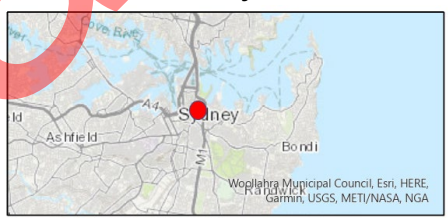


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Table 2.1 Property Details

Address:	20-24 Sussex St, Sydney, NSW 2000
Lot / Section / DP:	1/-/DP1033719

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3. Site imagery – Recent (2018)

Figure 3.1: Recent Site Imagery

About this map

Recent satellite photography provides a record of site conditions and local land uses. Applications include topographic mapping, architecture, engineering, ecology, cultural heritage site characterisation and land use assessment.

Key Plan

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Source2: © State of New South Wales. For current information go to www.nsw.gov.au

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4. Topography

Figure 4.1 Site Topography

About this map

This map provides elevation contours, derived from a Digital Elevation Model (DEM). Further information about these map layers can be obtained from:
Topographic Metadata
Cadastral Metadata

Key Plan

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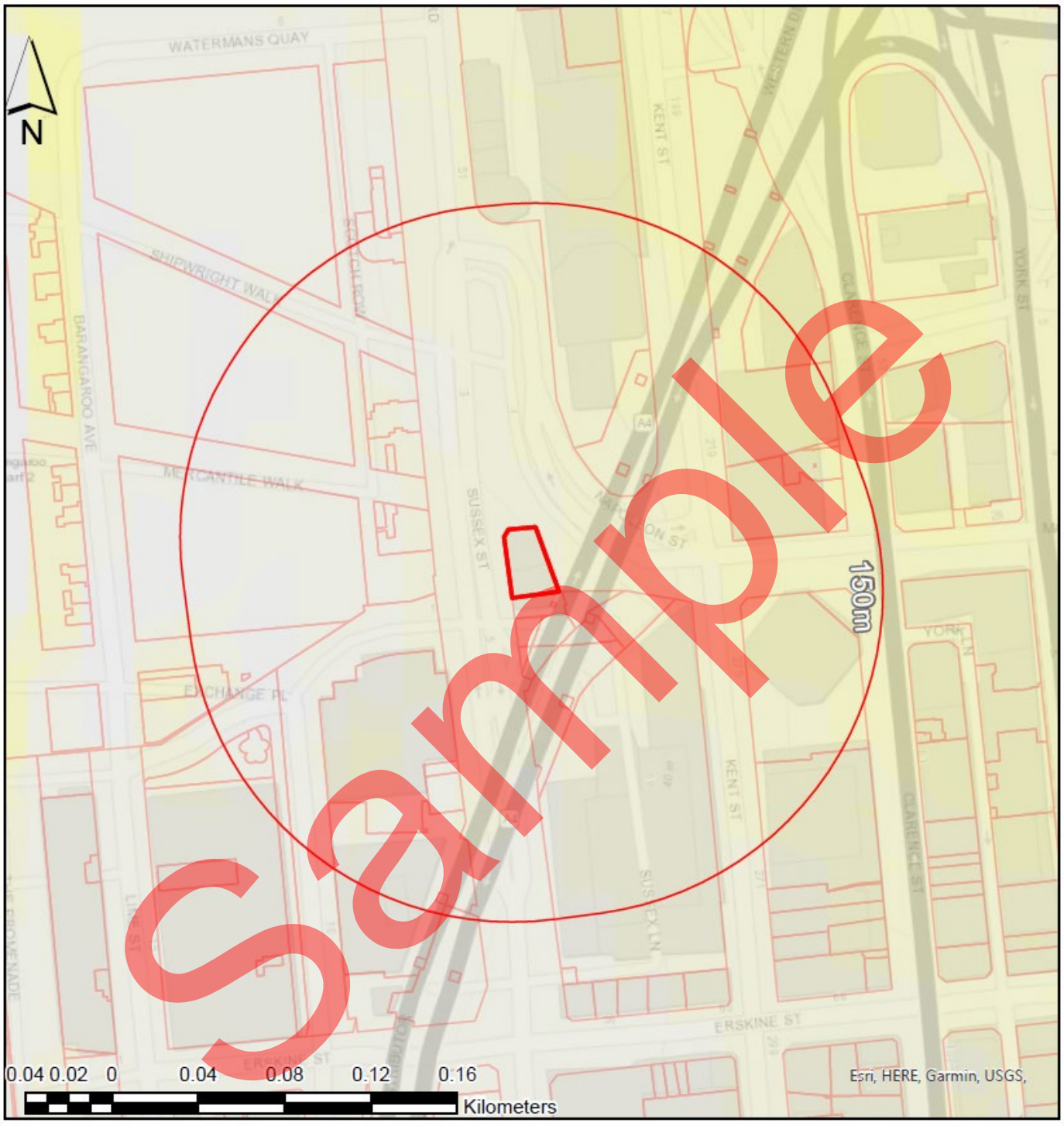
5. Site Terrain



Sample

Figure 5.1 Site Terrain

About this map

This map provides a colorized representation of slope, overlaid with shading derived from a Digital Elevation Model (DEM). Site gradients indicate the potential for slope instability and is used by some Councils to screen for slope instability risk and to applying zoning restrictions to properties.

Terrain Legend

Gently Sloping	Moderately Sloping	Steeply Sloping

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6. Geology

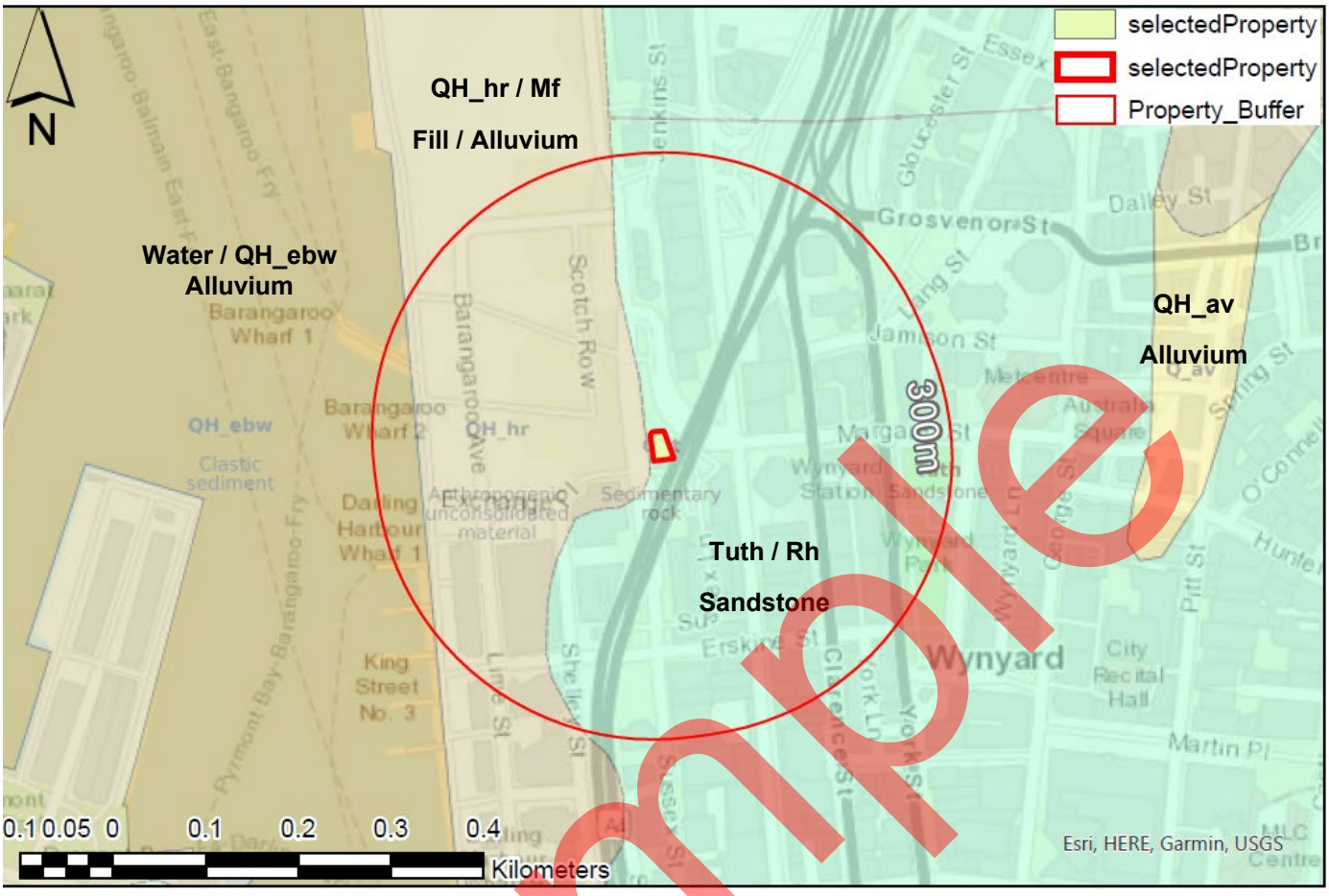
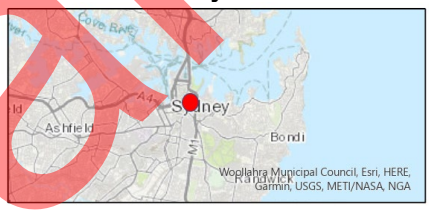


Figure 6.1: Geological Map

About this map

This map shows the distribution of surface geology as published by Geoscience Australia. It features natural soils, man-made fill areas and outcropping bedrock. This can be used to broadly characterise the expected materials occurring near ground surface.

Key Plan



Source / Licence / Attribution

Source 1: New South Wales Seamless Geology dataset, version 1.1 [Digital Dataset]. Geological Survey of New South Wales, NSW Department of Planning and Environment, Maitland Source2: © State of New South Wales and Department of Regional NSW 2020

Geology Details

Further details on the type and characteristics of mapped geology are available through our Basic / Premium Reports or from Geoscience Australia (https://www.ga.gov.au/data-pubs/maps).

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7. Soil landscape

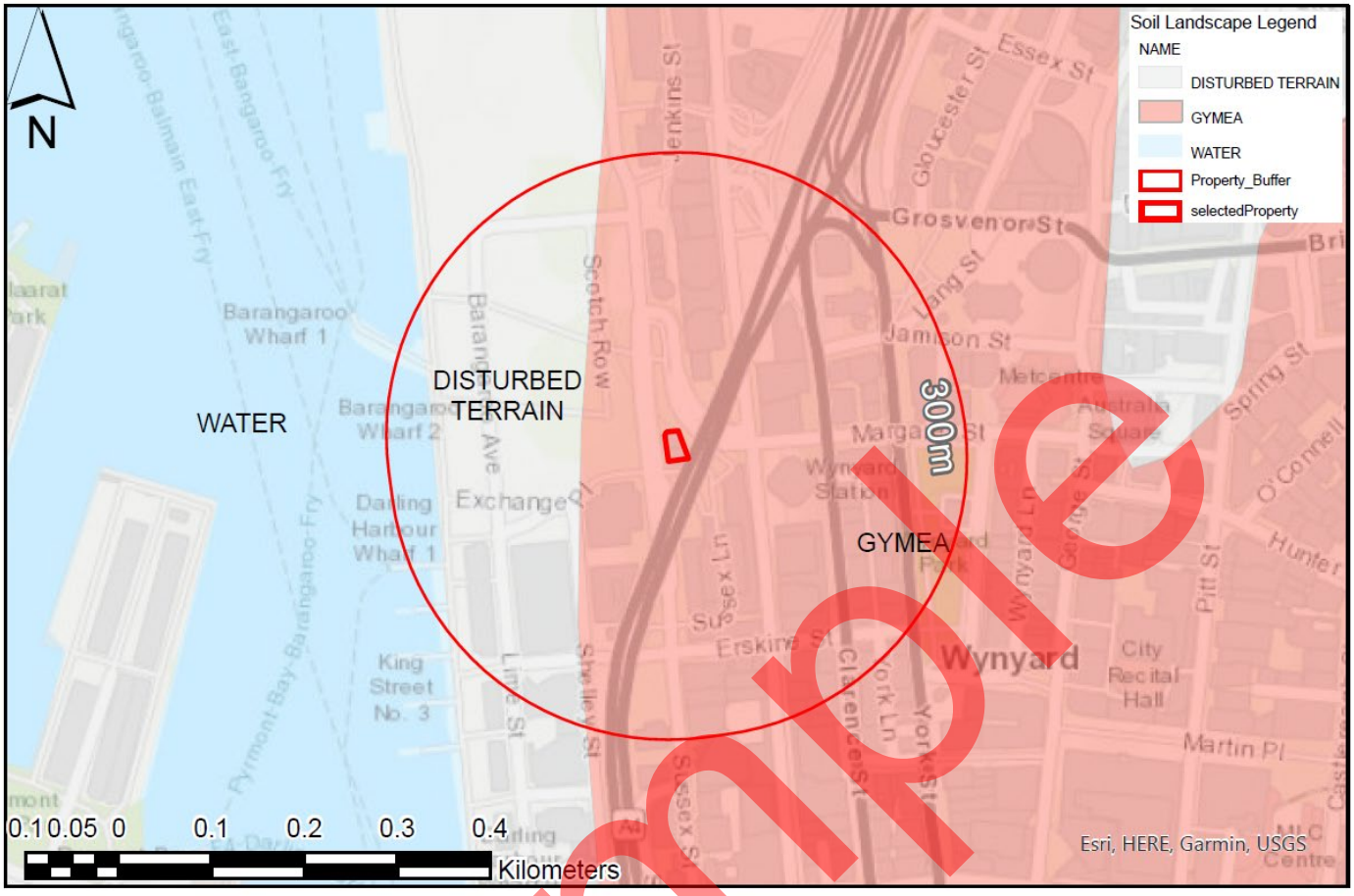
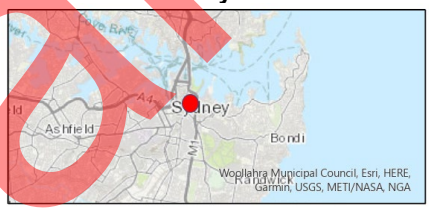


Figure 7.1: Soil Landscape Map

About this map

This soil landscape map provides an inventory of soil and landscape properties of the area and identifies major soil and landscape qualities and constraints. It integrates soil and topographic features into single units with relatively uniform land management requirements.

Key Plan



Source / Licence / Attribution

Source: Soil Landscapes mapping information from espade.environment.nsw.gov.au © State of NSW and Office of Environment and Heritage 2020

Soil Landscape Details

Further details on the type and characteristics of mapped soil landscape are available through our Basic / Premium Reports or from https://www.environment.nsw.gov.au/topics/land-and-soil/information.

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8. Landslip and mine subsidence

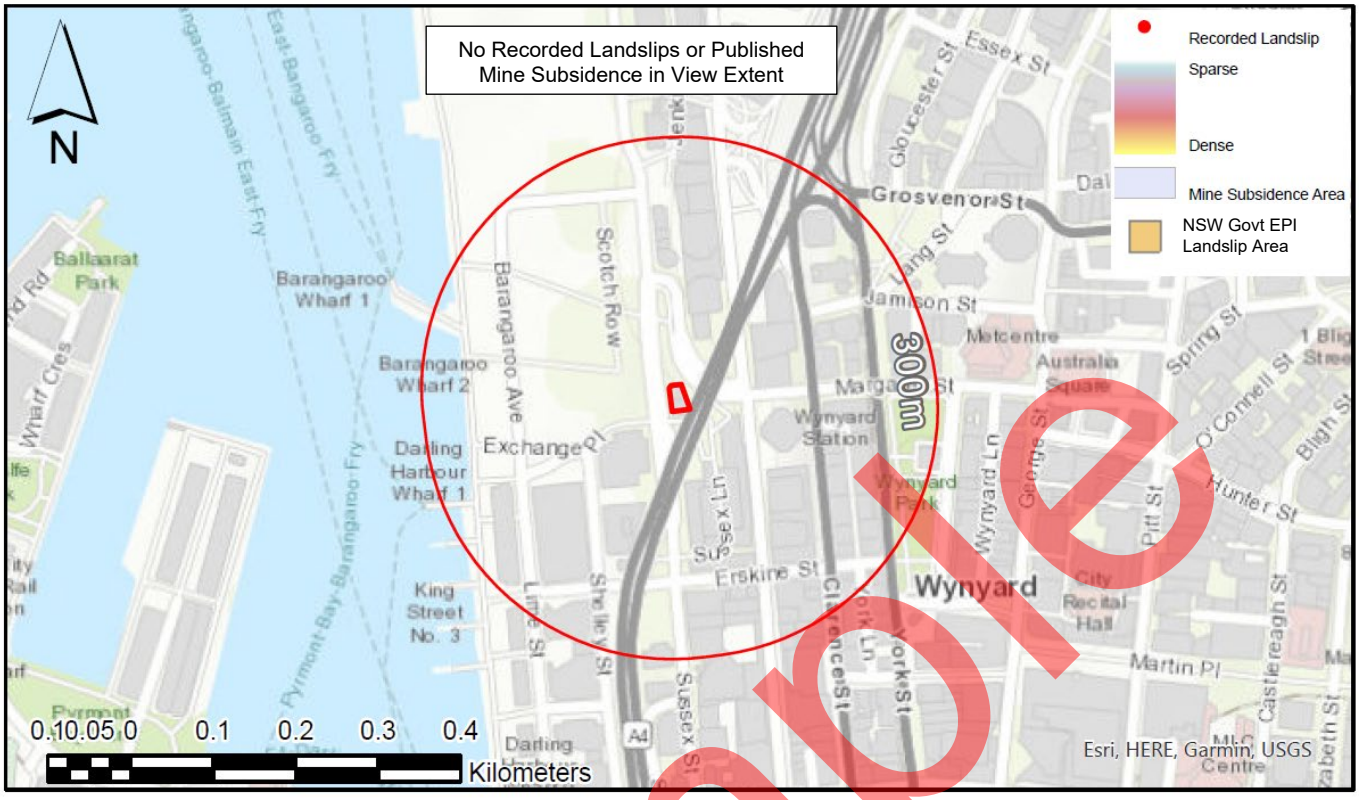
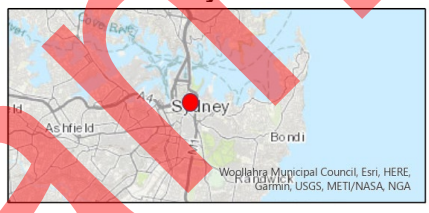


Figure 8.1: Landslip and mine subsidence map

About this map

This map layer identifies land potentially affected by landslip and/or mine subsidence. It includes areas zoned as susceptible to these hazards by the relevant NSW planning authorities and also areas near recorded landslips as published by Geoscience Australia and relevant technical journals.

Key Plan



Source / Licence / Attribution

Source 1: https://www.planningportal.nsw.gov.au
Source 2: https://sdi.nsw.gov.au/nswsdi
© State Government of NSW and Department of Planning and Environment 2014.
Others: See references below.

Landslip mapping overview

Landslip hazard mapping in this report utilizes a range of information sources to characterize the potential susceptibility this type of geo-hazard. Information sources are described in more detail below:

- The landslip risk map layer published by Department of Planning and Environment NSW identifies land where development implications exist for areas prone to Landslide Risk as designated by the relevant NSW environmental planning instrument (EPI) The EPI contains provisions relating to landslide susceptibility conditions and identifies the how risks of development are managed. These are "Additional Local Provisions" that can be found in Part 6 of the EPI.
- A landslip heat-map generated using the Australian Landslide Database (2012) provided by Geoscience Australia which has more than 3,000 entries detailing landslides and sets of landslides since 1842 throughout Australia, Lord Howe Island, Norfolk Island and Macquarie Island. This heatmap has been filtered to exclude human-induced landslides and has been augmented with published landslide occurrences in the Pittwater local government area, published by Macgregor et al, Australian Geomechanics Vol 42 No 1 March 2007.

Mine subsidence mapping overview

A mine subsidence district is a land zoning tool administered by Subsidence Advisory (SA) NSW under the Coal Mine Subsidence Compensation Act 2017 to help protect homes and other structures from potential mine subsidence damage. Districts are proclaimed in areas where there are potential subsidence risks from underground coal mining that has occurred or may take place in the future. SA NSW regulates building and subdivision works within districts so that new homes and structures are built to an appropriate standard that reduces the risk of damage should subsidence occur. If you are planning to build or subdivide within a district, you need to obtain prior approval from SA NSW. Applications must be submitted and approved before you commence work. For more information, visit: https://www.subsidenceadvisory.nsw.gov.au/development-guidelines

Note: This information is indicative only; Users of this report must satisfy themselves as to the site-specific risks and suitability of the site for its intended use(s) by engaging professional advice regarding site conditions and site-specific risks.

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9. Acid sulfate soils (ASS) and salinity

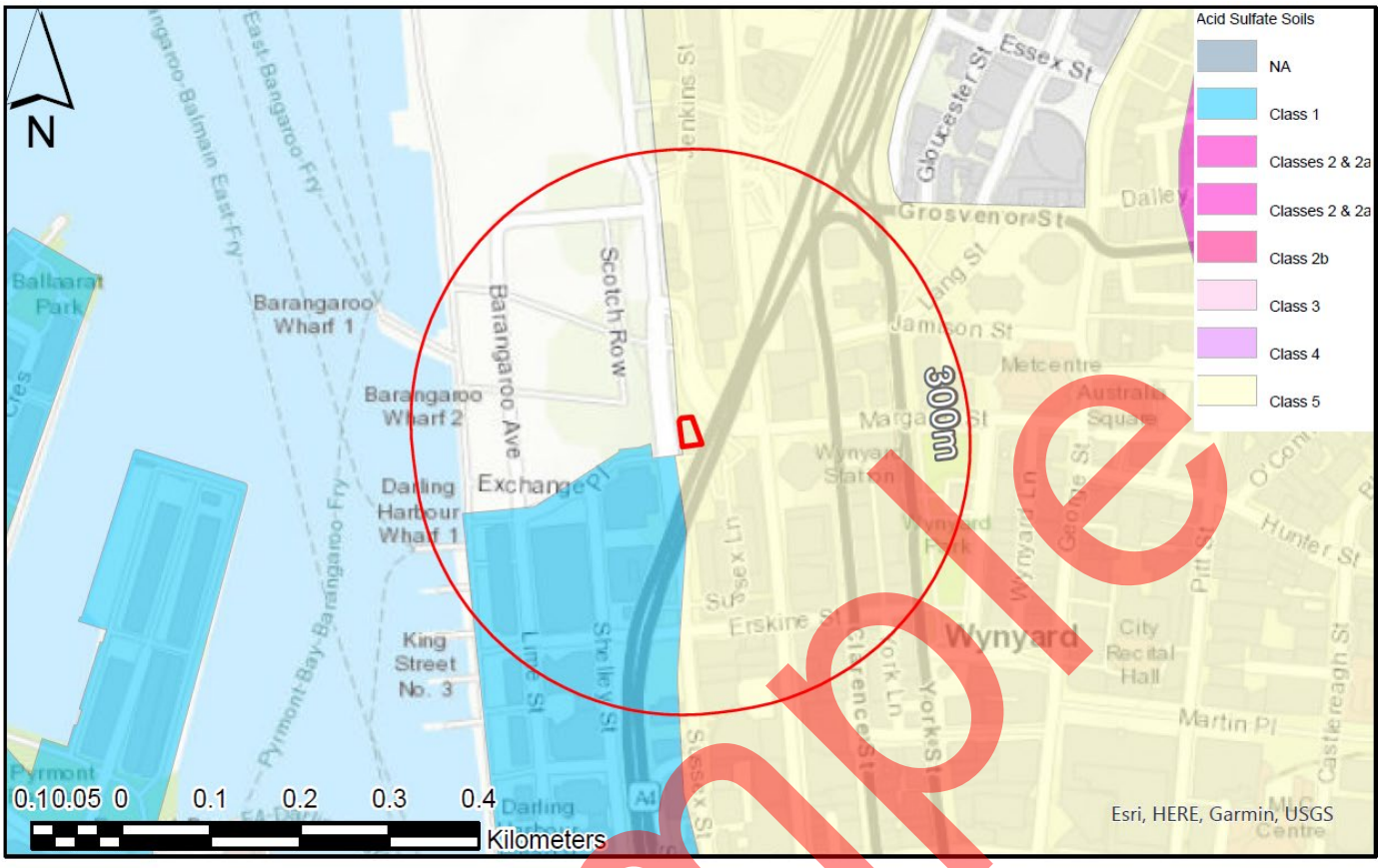
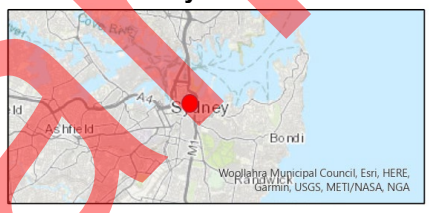


Figure 9.1: Acid Sulfate Soils and Salinity

About this map

Acid sulfate soils are natural sediments that contain iron sulfides. When disturbed or exposed to air (often by excavation or drainage) these soils can release acid, damaging built structures and harming animals and plants. Salinity is accumulation of salt in land and water to a level that damages the natural and built environment.

Key Plan



Source / Licence / Attribution

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Source:1. ASS mapping © State Government of NSW and Department of Planning and Environment 1995
Source 2: Salinity mapping © State Government of NSW and Department of Planning and Environment 2017

Guidelines for managing ASS risk

This spatial dataset identifies areas of land showing the extent of acid sulfate soils. 5 different classes are shown based on the likelihood of the acid sulfate soils being present in particular areas and at certain depths.

- Class 1: Acid sulfate soils in a class 1 area are likely to be found on and below the natural ground surface.
- Class 2: Acid sulfate soils in a class 2 area are likely to be found below the natural ground surface.
- Class 3: Acid sulfate soils in a class 3 area are likely to be found beyond 1 metre below the natural ground surface.
- Class 4: Acid sulfate soils in a class 4 area are likely to be found beyond 2 metres below the natural ground surface.
- Class 5: Acid sulfate soils are not typically found in Class 5 areas but are within 500 metres of class 1,2,3 or 4 land.

The NSW Acid Sulfate Soils Manual (ASSMAC, 1998) outlines how to assess and manage the impacts of proposed works in areas likely to contain acid sulfate soils. The EPA Waste Classification Guidelines (2014) apply to acid sulfate soils that need to be transported and treated offsite.

Guidelines for managing Salinity risk

This spatial dataset shown above identifies land where development implications exist due to the presence of salinity as designated by a NSW environmental planning instrument. Salinity is the accumulation of salt in land and water to a level that damages the natural and built environment. Salinity usually occurs with other natural resource problems such as decreasing soil and water quality, erosion and loss of native vegetation. Further guidelines and advice on how to manage and mitigate the risk of adverse effects on development can be found at this link: https://www.environment.nsw.gov.au/topics/land-and-soil/soil-degradation/salinity

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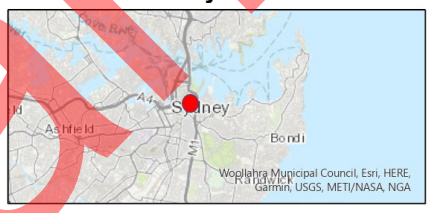
10. Existing investigations

Figure 10.1: Existing Data Map

About this map

This map shows where geo-environmental investigation locations have been identified from database searches. Investigations typically comprise boreholes drilled for site investigation purposes and the data shown also includes other types of investigation data such as test pits and cone penetration test (CPT) data.

Key Plan



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Source:1. Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.
Source 2: https://www.georeports.com.au/index.html

Investigation database - overview

The above map shows both public investigation data from various sources, and unpublished data held in the GeoReports database. Investigation datapoints typically comprise boreholes, test pits and probes (mainly Cone Penetration Tests, CPTs). Reports may be factual or interpretive and / or contain additional investigation datapoints, laboratory test data or other types of intrusive or geophysical test data. At some locations contamination investigation and test data may also exist.

The quality of third-party investigation data can vary significantly in terms of its age (and associated logging standards), positional accuracy, sampling intensity, depth, institutional environment, dataset accuracy, coherence and interperability. Conditions are likely to vary between known locations and can also vary with time due to post-investigation disturbance. The sub-surface conditions should be taken as indicative and representative only at investigation locations.

Further details on the information shown above is available through our Basic / Premium Reports or can be downloaded directly from our web map.

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11. Groundwater bores

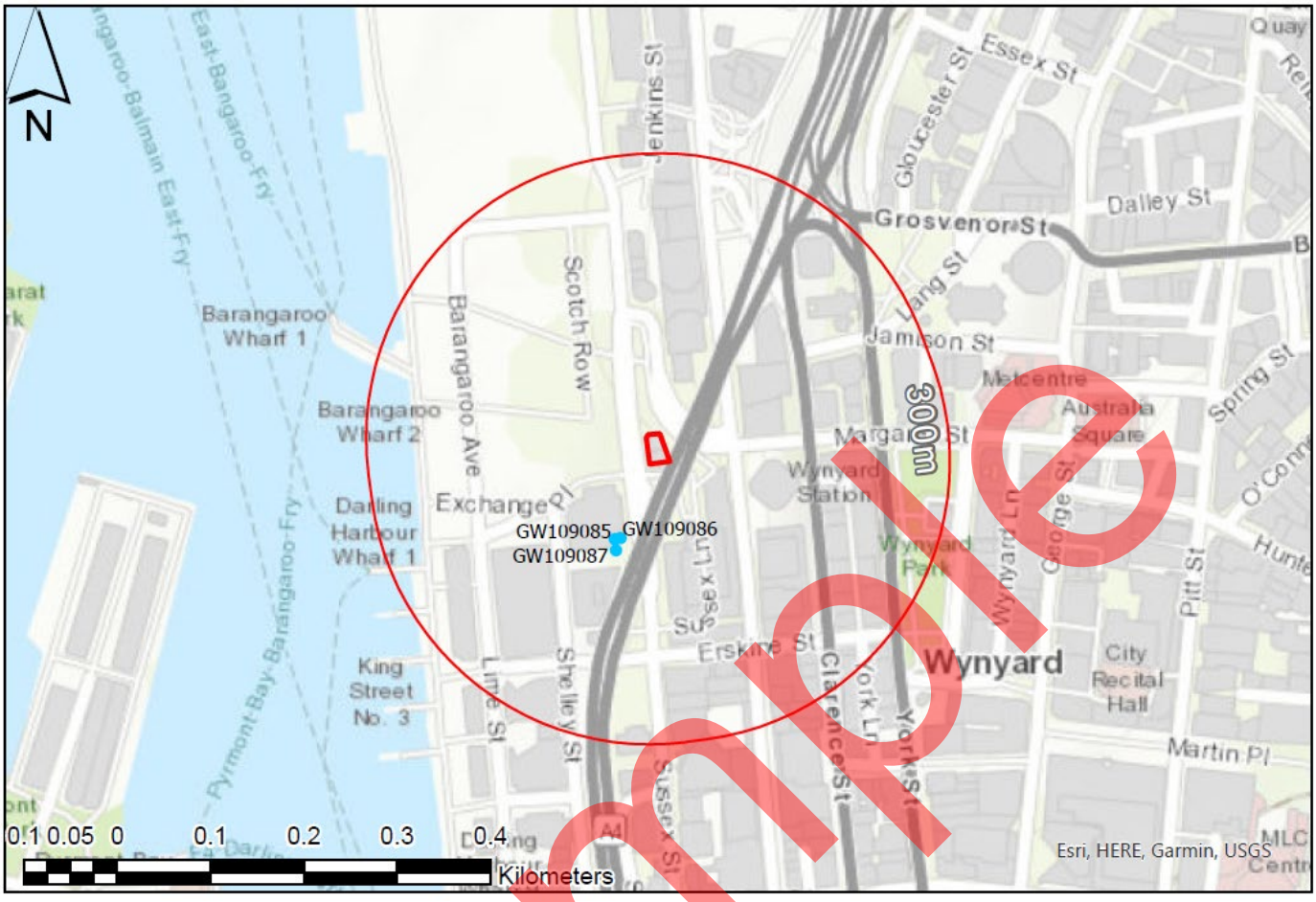
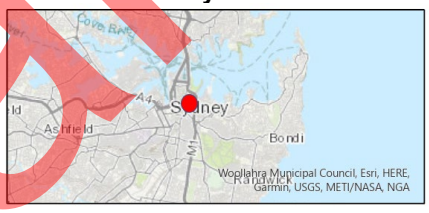


Figure 11.1: Groundwater Bores

About this map

This map shows where groundwater bores have been identified from a search of the DPI / Water NSW database covering the time period from 1900 to May 2016. Each datapoint shown on the map is associated with a bore construction record which can include ground conditions from a drillers log and basic information about groundwater levels and strikes.

Key Plan



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Groundwater bores - overview

This map shows the location of groundwater bores (also known as wells) within the search extent. Groundwater bores can be installed for a range of reasons including groundwater extraction, recharge or monitoring purposes. WaterNSW holds a database containing over 130,000 groundwater monitoring bore records which typically contain including information including drilling records, bore construction details (such well screening details), groundwater yield quantities and sometimes water quality data and descriptions of the soil and rock stratigraphy encountered during bore drilling.

Summary reports for these groundwater bores can be downloaded individually here or as an inclusion in GeoReports Premium Reports.

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Sample

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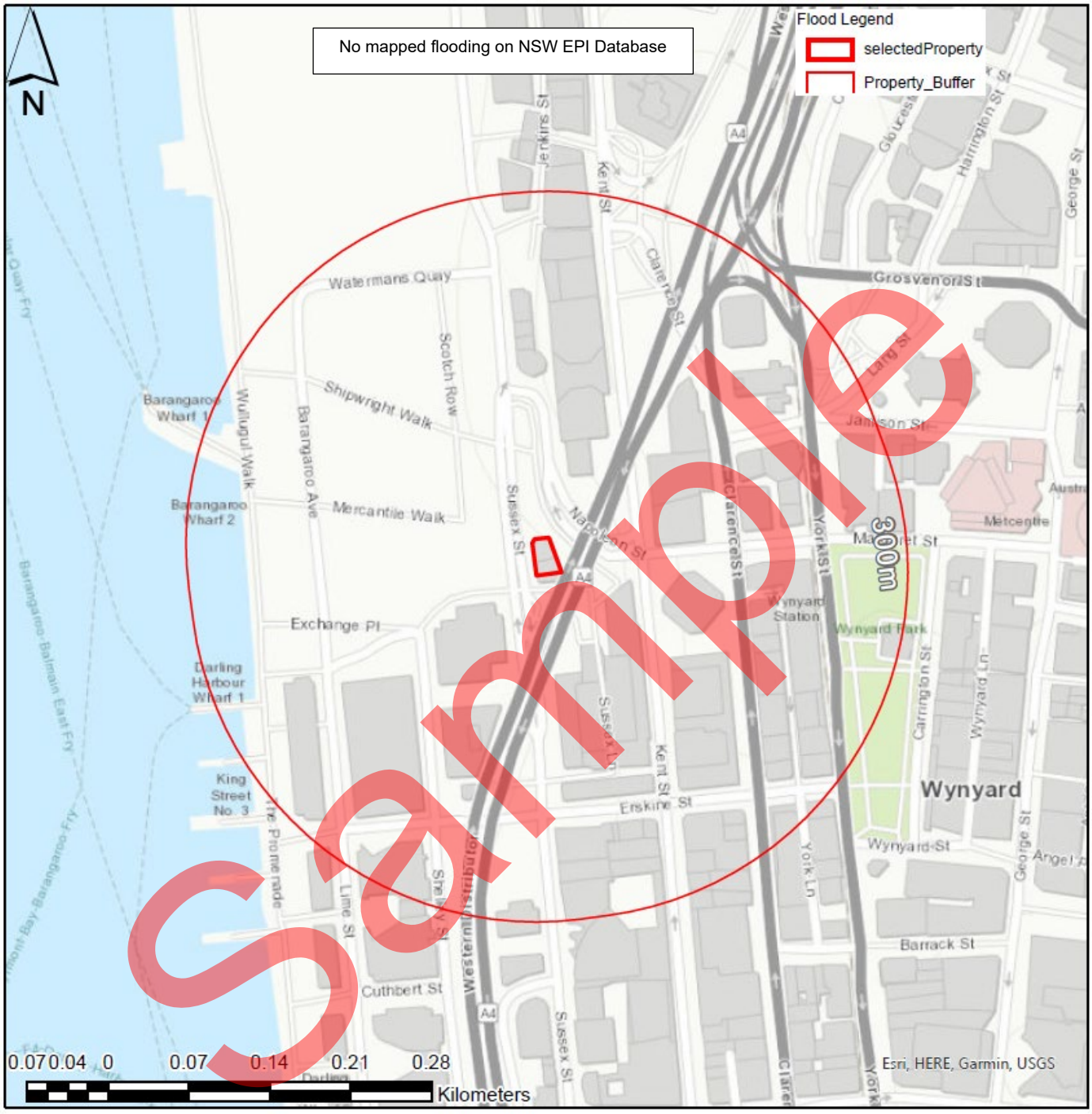
12. Flooding



Sample

Figure 12.1: Flood Map

About this map

This map identifies land where there is a risk of flooding as designated by the relevant NSW environmental planning instrument (EPI). The specific EPI is described as 0.5m above the 100 year floodplain which covers an area less than, but sometimes more than the Probable Maximum Flood (PMF).

Key Plan

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10. No geotechnical investigation can provide a full understanding of all possible subsurface details and anomalies at a site. In addition, it is recognised that the passage of time affects the information and assessment provided in this Report. The conditions described in this report are based upon information that existed at the time of the production of this Report. This Report cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.
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Sample

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Attachment A1

Optional Property Reports
(Sewer, Land Titles, Lot Plans, Nearby DAs)

Sample

GroundCheck
Site Intelligence Report

GeoSearch
Searchable Site Data

Sample