

Scotland Island

Review of Social and Environmental Factors



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PS Solutions

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1 EXECUTIVE SUMMARY

With 370 dwellings, Scotland Island is one of the largest villages in greater Sydney without a reticulated potable water supply or wastewater service. Scotland Island Residents' Association has been lobbying for improved water and wastewater services for over 30 years.

The drinking water supply consists of household rainwater tanks and an emergency pipeline, originally intended for firefighting purposes and emergency drinking water. The non-potable emergency supply is used regularly by the majority of residents.

This current arrangement carries risk to public health. The water supply is non-potable, provided to residents without monitoring and used after being stored within rainwater tanks. As a result, there is potentially low levels, to zero levels of disinfection. The filling process provides avenues for contamination of the supply, through physical contact, exposure to soil (potentially containing septic runoff) and as a result of having no compliant backflow protection.

Wastewater systems consist of on-site management systems that are generally unsuitable for the topography and geology of the Island. Scotland Island is steep-sided bedrock with shallow soils of sandy loam (highly permeable) with sandy clay loam sub-soils (highly impermeable). Evidence of overflow of septic systems was observed during the site inspection and audit conducted as part of this investigation. Septic odours and high numbers of mosquitos were also observed, supporting anecdotal reports of these issues.

Streams have been found in previous monitoring studies to have elevated nutrient, sediment and bacterial concentrations exceeding the ANZECC (1992) guidelines. Soil testing conducted as part of the site audit conducted on 21st February 2019 identified elevated nutrient and faecal coliform levels within soils, indicative of septic overflow. Exposure to septic overflow, carries public health risks, which in combination with the water supply arrangements discussed above is of particular concern.

With regards to faecal coliform levels, it should be noted that the National Water Quality Management Strategy Guidelines for Sewerage Systems – Use of Reclaimed Water (November 2000) guideline levels recommend a guideline value of less than 10 coliforms per 100mL in reclaimed water used in high contact circumstances (ie urban gardens). Soil testing for faecal coliform levels in excess of 1,500 coliforms per gram of soil in five of the six sites tested.

This review of social and environmental factors has been prepared to review previous environmental and social studies and identify knowledge gaps that would need to be investigated in the detailed development of options for provision of this infrastructure.

Studies of environmental conditions on, and around the island are dated, with the comprehensive studies last conducted in 1997. This 1997 assessment found that generally, current water and sewerage systems are insufficient and, in many instances, failing.

Northern Beaches Council has indicated that Scotland Island has difficulty with any on-site wastewater management systems on the island being fully compliant with the relevant Australian Standards or guidelines.

Typical compliance issues include:

- Few properties meet the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households buffer distances to a permeant water source;
- Few properties meet the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households buffer distance to boundaries;
- Few properties meet the AS1547 for wet weather storage;
- Few properties meet the AS1547 for reserve land application areas; and
- Scotland Island does not have much vegetation that is in accordance schedule 7 of the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households.

During the site inspection undertaken for this assessment, evidence of significant noxious weed infestation and Eucalyptus dieback was observed. It is likely that altered soil moisture and nutrient characteristics caused by poorly performing on-site wastewater management systems are contributing factors. In this regard, it should be noted that the vegetation on the Island is listed as an endangered ecological community (Pittwater Spotted Gum Forest).

In terms of topography, lot size, geological conditions, environmental sensitivity and development density, Scotland Island is similar to Dangar Island. Challenges relating to the provision of water and wastewater services are also similar. It should also be noted that Scotland Island is in closer proximity to heavily populated areas of Sydney than Dangar Island. When considered in these terms, it is a reasonable community expectation that Scotland Island be provided with the same level of water and wastewater services as Dangar Island.

In order to progress detailed development and approval of water and wastewater servicing solutions for the Island, it is recommended that the following studies be progressed.

1. Surface water quality monitoring and modelling both within Pittwater and within local stormwater system of the island.
2. Effluent discharge modelling (if a discharge option is pursued).
3. Water quality testing of stored rainwater on the island.
4. Flora and Fauna Assessment and
5. Aboriginal Archaeological survey.

2 BACKGROUND AND PURPOSE

Scotland Island covers an area of approximately 55 ha and is one of several islands in the lower Hawkesbury/Nepean estuarine system. With 370 dwellings, Scotland Island is one of the largest villages in greater Sydney without a reticulated potable water supply or wastewater service.

The emergency water supply pipeline set up for firefighting and then later as an emergency drinking water supply, is now used by the majority of residents. This supply is officially non-potable. On-site wastewater systems are of insufficient capacity to cope with the substantial use of the non-potable supply. This has contributed to water quality impacts on the Pittwater Estuary, particularly following rain events.

The Scotland Island Residents Association (SIRA) has taken an active role in lobbying for improved services to the island for over 30 years. Despite being listed on the State Government's Priority Sewerage Program, there is currently no requirement on Sydney Water to service villages on the Program.

The State Government's Stronger Communities Fund has funded a feasibility study for the provision of reticulated water and wastewater infrastructure to Scotland Island.

The purpose of this report is to review previous environmental and social studies and identify knowledge gaps that would need to be investigated in the detailed development of options for provision of this infrastructure.

Site characteristics

Pittwater catchment

Pittwater Estuary is a drowned river valley located near the mouth of the Hawkesbury-Nepean River system. The estuary is about 10 km in length and 1 km in width, with a maximum depth of 20 metres. Water quality issues in Pittwater are mostly confined to shoreline areas and are more pronounced in the southern part of the waterway. Flushing is restricted in the bay areas, with wind driven currents more dominant than tidal currents in mixing and flushing processes. Dredged areas (common in the southern embayments) also have poorer water quality as flushing is reduced in deeper water.

Water quality in the tributaries, embayments and the main estuary body of Pittwater is poor to extremely poor following rainfall, and otherwise reasonable. Poor water quality following rainfall is mostly due to runoff from developed land areas.

Pittwater is highly valued as an ecological and recreational resource. Numerous primary and secondary contact recreational activities take place, including swimming, sailing, kayaking, fishing, sailboarding, kite-surfing, water skiing and boat and shore fishing.

Scotland Island

Scotland Island is located at the southern end of the Pittwater estuary (see **Figure 1**). In the 2016 Census there were 579 people living in 359 private dwellings on the island. Only 209 of those dwellings were occupied at the time of the census. Over half the population is employed. These figures are down from 700 residents in 344 dwellings in the 2011 Census, with 252 dwellings occupied at the time of the census.

The only option for further development on Scotland Island is redevelopment of existing lots. This takes the form of knock-down-rebuilds or upgrading existing holiday house. Redevelopment has been occurring for a number of years, however the Island's population has seen a decrease since the 2011 Census suggesting development has been focussed on improvements to accommodation and not an increase in capacity. The size of housing is somewhat restricted by a requirement to maintain 80 percent of the property as landscaped area. Associated with an increase in the size and value of dwellings has been an expectation to have upgraded facilities such as dishwashers.

The island is within close proximity to urban areas, being approximately 2.5km north of Mona Vale. Lot sizes are typical of urbanised areas. **Figure 2** displays the regional context and proximity to urbanised areas which are serviced by reticulated water and wastewater systems.



TITLE : FIGURE 1: PROJECT AREA

LOCATION : SCOTLAND ISLAND

DATUM:GDA 1994

DATE : 15/02/2019

VERSION (PLAN BY): B A3 (james.hugo)

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: ENVIRONMENT

PATH: J:\118 jobs\EA\W18326 Scotland Island Servicing Feasibility Study\18326 GIS\mxd\18326 Figure 1 Project Area B A3 20190215.mxd

CLIENT: PRESSURE SYSTEM SOLUTIONS
JOB REF: 18326

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TITLE : FIGURE 2: REGIONAL CONTEXT				LOCATION : SCOTLAND ISLAND				DATUM: GDA 1994				DATE : 15/02/2019				VERSION (PLAN BY): B A3 (james.hugo)			
								PROJECTION: GDA 1994 MGA Zone 56				PURPOSE: ENVIRONMENT				PATH: C:\Users\james.hugo\AppData\Local\Temp\ArcGISPro20948\45616c5a-b5a3-4be8-b891-aa41072a183a\Untitled.aprx			
CLIENT: PRESSURE SYSTEM SOLUTIONS																			
JOB REF: 18326																			

Stakeholders

Key stakeholders include Northern Beaches Council, Scotland Island Residents Association, Sydney Water, NSW Department of Planning and Environment, NSW Office Environment and Heritage (including NSW National Parks and Wildlife Service), NSW Health, residents of Scotland Island, recreational users of the Pittwater waterway, and environmental and community groups associated with Pittwater and its environment.

Existing water and wastewater services

Water supply

There is no true centralised water supply on Scotland Island. Residents rely on rainwater tanks, supplemented by purchases of water from an emergency supply line.

Around 1977, an emergency supply pipeline was built by Warringah Council to supply water for firefighting. The pipe was damaged by boats and replaced one metre below the estuary floor in 1988, at which time Council agreed that the supply could be used as an emergency top-up supply for rainwater tanks in the event of low rainfall.

Sydney Water ownership of the system ends at the connection at Church Point. Northern Beaches Council is responsible for the 37mm ID polyethylene submarine pipeline.

When Pittwater Council attempted to disconnect the line due to safety concerns, SIRA accepted legal responsibility for the lines in 2002 and upgraded the system across the island. SIRA, acting on behalf of the residents, pays Council for the water, and then distributes it from the reservoir to residents for a fee. There are three polyethylene pipelines around the island, maintained by a trust fund derived from SIRA through a user pays arrangement. The pipeline distributes the water to standpipes, where residents can attach a hose to top-up their tanks.

A proportion of households use the emergency supply as their primary supply, as indicated by the daily demand ranging from 72 kL/d (summer 2018) to 48 kL/d (winter 2018) as identified via water bills for the period 1/10/17 to 30/9/18. There is high demand for the emergency supply during drought, when residents have to book in weeks in advance to fill their tanks.

When it was last assessed, the pipe was in poor condition and exposed in many locations, meaning it is susceptible to puncture, burning and melting and at risk of wastewater infiltration. Limited testing of water supplies on Scotland Island in a 1996 study found faecal coliforms present in private rainwater tanks (most likely due to animal droppings) with some exceeding recommended levels for potable water, and in the emergency water supply line (possibly due to backflow wastewater infiltration).

Pittwater Council Policy No. 76 notes that it is a non-potable supply that should be clearly sign-posted for that purpose, to only be used in the manner and for the specific purposes specified under the (unsigned) agreement with Sydney Water. SIRA's agreement for sale also clearly notes that the water is non-potable. While Sydney Water is required to deliver water that meets Australian Drinking Water Guidelines to the connection point, there is no similar requirement on SIRA for the water they deliver to island residents.

In 2017, NSW Health declared that the local kindergarten and community hall must no longer provide or sell food, as it was discovered they were using the non-potable emergency pipeline to top-up rainwater tank supplies.

A small number of properties on Florence Terrace have a private water supply connection to Taylor's Point on the mainland. They operate as the Scotland Island Pipeline Company (SIPCO). SIPCO investigated expanding their scheme in 2013 but abandoned the process due to the cost of submitting a development application.

The emergency water supply has insufficient pressure and flow to use for fire-fighting purposes (despite being originally provided for this). In a study in the 1990's, the Warringah Pittwater Bush Fire Service concluded that there was a high potential for loss of life and property in the event of a bushfire.

Wastewater

There is no centralised wastewater system on the island. Septic systems with soil absorption trenches account for the majority of wastewater disposal. Approximately a third of properties have aerobic wastewater treatment systems (AWTS). It is likely that a percentage of the septic systems have never been pumped out and many could be of a significant age. Most new developments on the island are now required to install an AWTS, so it might be assumed that wastewater management has improved to some degree in recent years.

Disposal areas are generally smaller than recommended in the Australian Standard. Some of the waterfront properties dispose of wastewater directly into estuarine sands, and for some, tidal sea water accesses and 'flushes' their disposal area. In these cases, little post-disposal treatment occurs before the water enters Pittwater.

If a reticulated town water supply were brought to the island without an accompanying reticulated wastewater network, it is likely that the current septic systems would become hydraulically overloaded and fail. It should be noted that this may already be occurring with those properties relying on the emergency water supply as their primary supply.

Wastewater treatment and the implications of on-site sewage disposal are high priority issues on Scotland Island. Currently, there are several perceived problems associated with existing water and wastewater management practices including:

1. Possible health risks associated with wastewater disposal;
2. Vegetation dieback associated with water logging and phosphorus toxicity;
3. Degradation of surface-water quality in streams;
4. Poor quality of stormwater runoff and surface ponds in streets during dry weather; and
5. High densities of human occupation and development.

Land capability for wastewater disposal

Scotland Island is steep-sided bedrock with shallow soils of sandy loam (highly permeable) with sandy clay loam sub-soils (highly impermeable). Both layers are highly acidic and encourage nutrients and contaminants to leach away from wastewater disposal areas. Previous mapping has indicated that up to 44 percent of the island is unsuitable for existing wastewater disposal systems due primarily to geological constraints.

The ephemeral streams in 15 water catchments on the island have been found in previous monitoring studies (*Scotland Island Wastewater Impact Study 1997*) to have elevated nutrient, sediment and bacterial concentrations exceeding the ANZECC (1992) guidelines for surface water and saltwater estuaries. More recent data is not available. Streams require rainfall of 2-5mm/hr to generate runoff, after which water flows rapidly to Pittwater. Due to the soil's low capacity to accept and treat wastewater, it is dispersed from land application areas via sub-surface flow and surface runoff.

The steep slopes of the island contribute to an extreme erosion hazard for both non-concentrated and concentrated flows. Continuing redevelopment is contributing to sources of erodible sediment, with many building sites lacking erosion control measures. The isolation of the island has meant ensuring compliance has been difficult with the limited resources available at Council. It is possible that Scotland Island contributes in excess of 14 tonnes per hectare per year of suspended sediment to Pittwater, much of which is likely to be contaminated from exposure to on-site wastewater disposal.

Native vegetation responds poorly to elevated nutrient supplies and some dieback in Eucalypt species has been observed.

When considering soils, drainage lines, slope, proximity to waterways etc, approximately 44 percent of the island is unsuitable or marginal for on-site wastewater disposal.

Other services

In 2015, the State Government made a commitment to investigate the provision of a more secure and reliable energy supply to Scotland Island. Initial investigations are underway, with community consultation completed in 2017, and work may include repairs to the submarine cables.

Coordinating the provision of water, wastewater and energy services to the island may provide cost savings and will reduce the impact to the local community. At the very least, the provision of conduits for the installation of future services should be considered.

3 PROJECT CONTEXT AND DRIVERS

Approval pathway analysis and legislative requirements

Statutory consideration	Comment
Infrastructure SEPP designation	The Infrastructure SEPP is the principal instrument which specifies the types of sewerage, stormwater management, and water supply works that may be carried out without development consent (Part 5), with development consent (Part 4) or are exempt development (e.g. routine maintenance). The Infrastructure SEPP overrides the provisions of an LEP in the event of an inconsistency. The proposed works are developments for the purpose of sewerage systems and water supply systems, as defined by the Infrastructure SEPP. In accordance with Clauses 106(3B) and 125(1) of the Infrastructure SEPP, sewer and water reticulation works are permissible without development consent when they are to be carried out by or on behalf of a public authority (dependent upon delivery and asset ownership model). In addition, 106(5)(g) defines routine maintenance as permissible without consent. Clause 5(4) defines routine maintenance works, which is consistent with the proposal. Clause 106 (5f) also permits construction works (defined in Clause 5 to include establishment of temporary site compounds and access ways, temporary structures and clearing of vegetation) as permissible without consent. Clause 125(5) also describes many permissible developments if they are in connection with the water supply system, such as construction works, environmental management works, maintenance depots etc.
Land zoning	Refer to Figure 2 (as per Pittwater LEP, 2014). The majority of Scotland Island is zoned as E3 Environmental Management. The central area of the Island consists of land zoned E2 Environmental Conservation and a small lot zoned as SP2 Infrastructure which is designated for an existing emergency water supply system. There are four areas around the Island zoned RE1 Public Recreation.
Land Tenure	Freehold tenure
Other applicable Environmental Planning Instruments (EPIs)	See below for detail of EPIs.
Other Legislative requirements: Water Management Act, 2000 WICA 2006 Contaminated Land Mngt Act, 1997 Biodiversity Conservation Act, 2016 Heritage Act, 1977 National Parks and Wildlife Act, 1974 Protection of the Environment Operations Act, 1997 Coastal Management Act, 2016	See below for additional Legislative requirements.
Is the project likely to have a significant impact on the environment?	Dependant on preferred servicing option.
Is the project likely to have a significant impact on a Matter of National Environmental Significance as defined under the Environment	Dependant on preferred servicing option, however, no Matters are located on Scotland Island.

Statutory consideration	Comment
Protection and Biodiversity Conservation Act 1999?	
Does the project involve an action on Commonwealth land that is likely to have a significant impact on the environment, or an action outside Commonwealth land that may significantly impact the environment on Commonwealth land?	Dependant on preferred servicing option, however, the project will not involve an action that is likely to have a significant impact on Commonwealth Land.
Does the project require an approval for clearing under the Local Land Services Act 2016 if applicable?	No – the project is located in an area governed by the <i>State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017</i> . Part 5A of the <i>Local Land Services Act 2013</i> does not apply to non-rural areas to which the SEPP applies.
Is the project a Scheduled Activity under the Protection of the Environment Operations Act 1997	It is unlikely that the project would be a Scheduled Activity. Scheduled activity <i>Sewage treatment</i> is not relevant as the processing of waste would not exceed 2,500 persons equivalent or 750 kilolitres per day.
Does the project require an approval, permit or licence under any environmental legislation?	Dependant on preferred servicing option. For example, if discharge is required or if there is groundwater interactions.
Is the project consistent with the principles of Ecologically Sustainable Development (ESD)?	Dependant on preferred servicing option, however, it is likely that the project would be consistent with the principles of ESD in that it: • Would minimise adverse effects on future generations by replacing a failing system; • Work would reduce the current impact on an endangered ecological community; and • Would prevent risk of failure and minimise long term financial and environmental costs.
Are there any other requirements for the project under environmental legislation? (check consultation requirements of the Infrastructure SEPP)	Clause 13 of <i>State Environmental Planning Policy (Infrastructure) 2007</i> states: <i>Consultation with councils-development with impacts on council-related infrastructure or services:</i> <i>(e) involves the installation of a temporary structure on, or the enclosing of, a public place that is under a council's management or control that is likely to cause a disruption to pedestrian or vehicular traffic that is not minor or inconsequential,</i> In accordance with this Clause, consultation would be undertaken with Northern Beaches Council regarding the proposed works and any related impacts on Council assets, including roads and reserves.



TITLE : FIGURE 3: LAND ZONING

LOCATION : SCOTLAND ISLAND

DATUM: GDA 1994

DATE : 13/02/2019

VERSION (PLAN BY): AA3 (james.hugo)

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: ENVIRONMENT

PATH: J:\18 jobs\IE&W\18326 Scotland Island Servicing Feasibility Study\18326 GIS\mxd\18326 Figure 3 Land zoning AA3 20190213.mxd

CLIENT: PRESSURE SYSTEM SOLUTIONS
JOB REF: 18326

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Local Environmental Plan

The project is located within the Northern Beaches LGA and governed by the Pittwater Local Environmental Plan 2014. The provisions of the Infrastructure SEPP mean that Local Environmental Plans (LEPs), prepared by councils for an LGA, do not apply. However, provisions within the Pittwater LEP should still be considered.

Provision	Relevance to the Proposal
Clause 2.3 – Zone objectives and Land Use Table	Under the Pittwater LEP: Scotland Island is predominantly zoned as E3 Environmental Management, however there are areas zoned E2 Environmental Conservation, RE1 Public Recreation and SP2 Infrastructure.
Clause 5.10 – Heritage conservation	The objectives of this clause are as follows: (a) to conserve the environmental heritage of Pittwater, (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views, (c) to conserve archaeological sites, (d) to conserve Aboriginal objects and Aboriginal places of heritage significance. Scotland Island does not contain any known heritage items.
Clause 7.1 – Acid sulfate soils	Under the Pittwater LEP: Scotland Island is mapped as Class 5 soils Class 5 soils do not typically contain acid sulfate soils. However, it was found in a recent contamination report of the Island undertaken by Ausgrid (refer Appendix E) that the samples taken contained acid sulfate soils.
Clause 7.2 – Earthworks	The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land. The project is permissible without development consent under the Infrastructure SEPP, however consideration of the potential impacts and mitigation measures for earthworks should be included if the proposal progresses.
Clause 7.6 – Biodiversity	The objective of this clause is to maintain terrestrial, riparian and aquatic biodiversity by: (a) protecting native fauna and flora, and (b) protecting the ecological processes necessary for their continued existence, and (c) encouraging the conservation and recovery of native fauna and flora and their habitats. Scotland Island is mapped as being a biodiversity area.
Clause 7.7 – Geotechnical hazards	The objectives of this clause are to ensure that development on land susceptible to geotechnical hazards: (a) matches the underlying geotechnical conditions of the land, and (b) is restricted on unsuitable land, and (c) does not endanger life or property. Scotland Island is mapped as an area of geotechnical hazard.

State Legislation

Environmental Planning and Assessment Act 1979

The EP&A Act and associated SEPPs provide the framework for the assessment of environmental impacts and approval of development in NSW. The EP&A Act establishes the process for the assessment and approval of development which requires consent under Part 4. If delivered by or for a public authority, this project (under the Infrastructure SEPP) would not require development consent, however an environmental assessment according to Division 5.1 of the EP&A Act may still be required. If this environmental assessment identifies the potential for the project to have a significant environmental impact, an EIS would be required and consideration of the project would follow the provisions of Division 5.2 of the Act.

Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of legislation administered by the Environment Protection Authority (EPA). It aims to protect, restore and enhance the quality of the environment in NSW, having regard to the principles of ecologically sustainable development, and rationalise and strengthen the regulatory framework for environment protection.

Part 3.2 of the POEO Act requires an Environment Protection Licence (EPL) for scheduled development work and the carrying out of scheduled activities. Scheduled activities are listed in Schedule 1 of the Act. The project does not represent a Scheduled Activity, however, if the preferred option includes discharge of treated wastewater, a licence for this discharge would be necessary. Typical conditions for discharge can include: monitoring, recording and testing of discharge; pollution compliance and limits; odour management; maintenance requirements; emergency response; discharge processes and management.

Coastal Management Act 2016

The *Coastal Management Act 2016* establishes a process for managing the coastal environment of New South Wales in a manner consistent with the principles of ecological sustainable development for the social, cultural and economic well-being of the people of the state. It includes objectives related to protecting natural coastal processes, supporting the social and cultural values of the coastal zone and ensuring co-ordination of the policies and activities of government and public authorities related to the coastal zone.

Contaminated Land Management Act 1997

The *Contaminated Land Management Act 1997* establishes a process for investigating and remediating land that the EPA considers to be contaminated significantly enough to require regulation and ensures that contaminated land is managed with regard to the principles of ecologically sustainable development. Management measures to minimise potential for contamination impacts would be required to be implemented during delivery and operation of the project.

Waste Avoidance and Recovery Act 2001

The *Waste Avoidance and Resource Recovery Act 2001* was established to assist in the achievement of the objectives of the POEO Act. The objectives of this Act are to encourage the most efficient use of resources and to reduce environmental harm; apply resource management through avoidance, resource recovery and appropriate disposal, and provide for the continual reduction in waste generation. Management measures to minimise waste generation would be required to be implemented during delivery and operation of the project.

Water Management Act 2000

The *Water Management Act 2000* (WM Act) provides for the integrated and sustainable management of water in NSW. The WM Act is based on the concept of ecologically sustainable development to protect water resources and systems for current and future generations.

The major functions of the WM Act include licence of water extraction and the development of water management plans. Currently, groundwater is not used as a water supply for the Island. As it is not anticipated that groundwater would be encountered impacted by any proposed options, approval under the WM Act would not be required.

Biosecurity Act 2015

From the 1st July 2017 the NSW Government replaced the Noxious Weeds Act 1993, and 13 other Acts, with a single Biosecurity Act 2015. Under the Noxious Weeds Act all landowners had a responsibility to control noxious weeds on their property. Under the Biosecurity Act the same responsibility applies and is known as a General Biosecurity Duty.

State Environmental Planning Policy (Infrastructure) 2007

The Infrastructure SEPP is the key environmental planning instrument which determines the permissibility of the Proposal and under which part of the EP&A Act an activity or development may be assessed.

Clause 106 (3B) of the Infrastructure SEPP states that:

'Development for the purpose of sewage reticulation systems may be carried out without consent on any land in the prescribed circumstances.'

Clause 106 (1) states development is carried out in the *prescribed circumstances* if the development:

- a. Is carried out by or on behalf of a public authority, or
- b. consists of the construction or operation of water industry infrastructure and, under the *Water Industry Competition Act 2006*, a network operator's licence is required before the development may be carried out.

Clause 106 (3C) states:

'In any other circumstances, development for the purpose of sewage reticulation systems may be carried out with consent on any land.'

Clause 125 (1) states:

Development for the purpose of water reticulation systems may be carried out by or on behalf of a public authority without consent on any land.

Consequently, depending on the delivery method, development consent would not be required for the project, which includes the provision of water and sewage reticulation systems.

State Environmental Planning Policy (State and Regional Development) 2011

The State and Regional Development SEPP identifies development that is State significant development, State significant infrastructure and critical State significant infrastructure and regionally significant infrastructure. In this case an EIS would be required and the project would be assessed via Division 4.7 of the EP&A Act. The project would be defined as State significant development if it meets any of the following criteria.

21 Water storage or water treatment facilities

- (1) Development for the purpose of water storage or water treatment facilities (not including desalination plants) that has a capital investment value of more than \$30 million.*
- (2) Development for the purpose of desalination plants that has a capital investment value of more than \$10 million.*

22 Sewerage systems

Development for the purpose of sewerage systems that:

- (a) handles more than 10,000 EP (equivalent population), or*
- (b) has a capital investment value of more than \$30 million, or*
- (c) has a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance.*

State Environmental Planning Policy (Coastal Management) 2018

The aim of this Policy is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016. The project is located in a coastal region and therefore the objectives of the SEPP require consideration.

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

The aim of this Policy is to protect the biodiversity values of trees and other vegetation in non-rural areas and preserve the amenity of non-rural areas through the preservation of trees and other vegetation. This Policy applies to many LGAs including Northern Beaches, of which the project is located and therefore the objectives of the SEPP require consideration.

SEPP 19 - Bushland in Urban Areas

SEPP 19 aims to protect and preserve bushland within urban areas due to their value to the community as part of the natural heritage, their aesthetic value and their value as recreational, educational and scientific resources. The project is located within land that this SEPP applies.

SEPP 33 – Hazardous and Offensive Development

SEPP 33 defines hazardous and offensive development and establishes the requirements for considering an application to establish hazardous or offensive industries or development.

The project does not require the use of chemicals or processes which would fall under the definition of hazardous or offensive industry. SEPP 33 does not apply.

SEPP 44 – Koala Habitat Protection

SEPP 44 aims to encourage the conservation and management of areas of natural vegetation that provide habitat for Koalas. As there are likely Eucalypt species within the project area, this SEPP is applicable.

SEPP 55 – Remediation of Land

SEPP 55 provides a state-wide planning approach for the remediation of contaminated land. Current EPA records do not contain any contaminated lands on Scotland Island, however wastewater contamination is likely. Due to the Island being partially listed as an area of coastal protection and vegetation listed as an endangered ecological community, a category 1 remediation work is applicable, which requires consent.

Biosecurity Act 2015

This Act has repealed the *Noxious Weeds Act 1993*. Biosecurity is a shared responsibility across government, community and industry, and as such the Act introduces the legally enforceable concept of a General Biosecurity Duty (GBD). The GBD means that any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity (weeds in this case) risk (as far as is reasonably practicable). Weed management on the Island is anticipated to be a crucial component of this project as noxious weeds are extensive and widespread on Scotland Island.

Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The (Commonwealth) EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the EPBC Act as 'matters of National Environmental Significance (NES)'. The EPBC Act requires the assessment of whether the Proposal is likely to significantly impact on matters of NES or Commonwealth land.

Other Legislation

<i>Biodiversity Conservation Act 2016 (BC Act) (NSW)</i>	Scotland Island's vegetation is identified as an Endangered Ecological Community (EEC) under the BC Act.
<i>National Parks and Wildlife Act 1974 (NP&W Act)</i>	Sections 86, 87 and 90 of the NP&W Act require consent from OEH for the destruction or damage of Indigenous objects. The project is not anticipated to disturb any Indigenous objects. However, if unexpected archaeological items or items of Indigenous heritage significance were to be discovered during the construction of the Proposal, all works would cease and appropriate advice would be sought.
<i>Roads Act 1993</i>	The Roads Act regulates the carrying out of various activities on public roads. Under section 138 of the Roads Act, the consent of the appropriate authority (Council, DPI or RMS) is required before a person can (in the example of this project) disturb the surface of a public road. The potential need for road upgrades would be investigated during later stages of this project.

Public health and performance of existing systems

Previously monitored surface water indicated extremely high bacterial concentrations which exceed recommended ANZECC guidelines for primary and secondary contact by several orders of magnitude. Consequently, Island surface water presents a serious health threat in situations where direct contact with exposed skin or ingestion occurs (*Scotland Island Wastewater Impact Study 1997*). **Table 1** summarises wastewater system performance and condition.

Table 1 - Wastewater system performance and condition

Risk rating	Number systems	Current Approval to Operate an On-Site Sewerage Management System	No current Approval to Operate an On-Site Sewerage Management System	Never received an Approval to Operate an On-Site Sewerage Management System	History of Failure requiring action this calendar year	Did not pass initial Approval to Operate an On-Site Sewerage Management System inspection	Local Government Act Notices since keeping of electronic records
Low	43	36	2	5			
Medium	143	126	10	7			
High	157	93	62	2			
Total	343	255	74	14	34	104	115

Source: Northern Beaches Council (email, November 2018)

Typical compliance issues include:

- Few properties meet the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households buffer distances to a permeant water source;
- Few properties meet the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households buffer distance to boundaries;
- Few properties meet the AS1547 for wet weather storage;
- Few properties meet the AS1547 for reserve land application areas; and
- Scotland Island does not have much vegetation that is in accordance schedule 7 of the NSW Environmental & Health Protection Guidelines On-site Sewage Management for Single Households.

In summary, regarding on-site sewerage management systems and waste water disposal, the topography of Scotland Island means no system should have been approved on Scotland Island due to difficulty with complying with the relevant Australian Standards or guidelines.

Poorly performing systems pose a potential health risk through:

- direct or indirect exposure to pathogens in effluent or effluent contaminated soil. Direct exposure includes contact with pooled effluent while indirect exposure includes recreation in an affected waterway; or
- exposure to pathogens by recreational users of local waterways.

They can also impact local residential amenity through increased mosquito numbers and the generation of odours.

Environment

Water and soil

There are 343 On-site Sewerage Management Systems listed on Scotland Island, all of which are listed as Domestic Systems. There are two treatment types on the Island for the systems, 118 are listed as Aerated Wastewater Treatment Systems (AWTS) and 225 are listed as septic tank systems.

Each system has an associated land application area which consist of the following:

- 234 absorption trenches
- 77 surface spray
- 25 sub-surface irrigation
- 1 drip line
- 1 mound
- 5 unknown

Under the current operation of wastewater management systems, the environmental impact of the on-site systems is thought to be substantial. The combination of shallow effective soil depths (< 40 cm), high wastewater irrigation depths (due to small dispersion areas), moderate to high soil hydraulic conductivity, steep slopes and subsequent short retention times in trenches have resulted in the continual seepage of effluent to surrounding soils (*Scotland Island Wastewater Impact Study 1997*). Therefore, the quality of surface and any shallow groundwater on and around the Island is considered to be degraded and a potential health risk when exposed (*Scotland Island Wastewater Impact Study 1997*).

Furthermore, due to the steep topography, rainfall events would result in high volumes of surface runoff and can produce high concentrations of bacteria and other contaminants in overland flow. This runoff also has the potential to accumulate in downslope trench areas initiating trench failure, overloading its capacity (*Scotland Island Wastewater Impact Study 1997*).

Beachwatch data sourced from *State of the beaches 2017-2018* for Scotland Island is provided in **Appendix B**. The North and South monitoring points for the Island are graded as Good despite the prominent issues with waste disposal across the Island.

It should also be noted that the data only relates to faecal bacteria and does not include nutrients such as nitrogen and phosphorous which could explain the large extent of noxious weeds and poor health of vegetation through excessive nutrient loads.

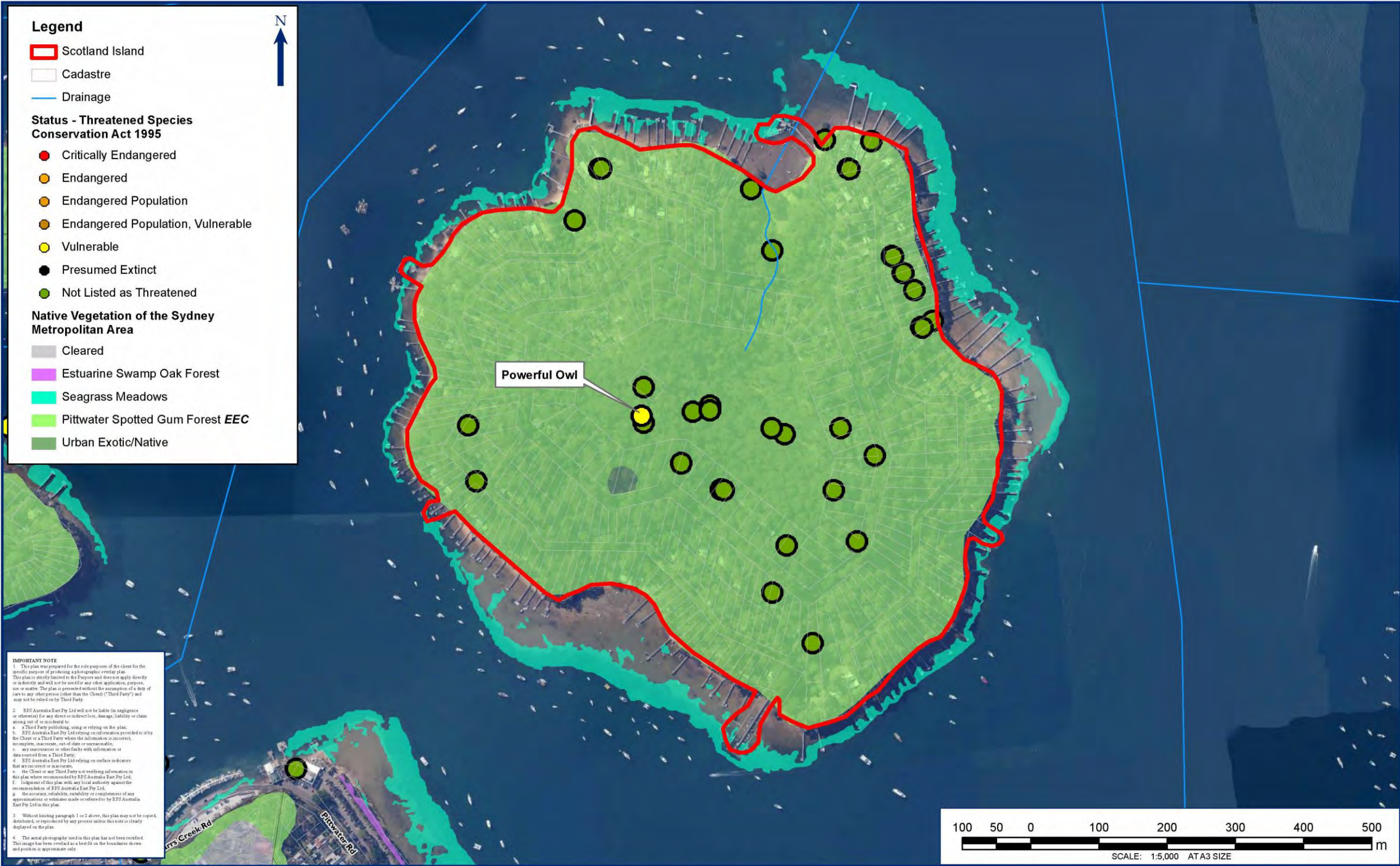
Flora and fauna

Endangered species and endangered ecological communities

Physiochemical degradation of soil due to effluent disposal is expected to be widespread and both surface and ground water resources are expected to be polluted. An implication of this is that native vegetation may be placed at risk and evidence of Eucalyptus dieback has been documented in the past (*Scotland Island Wastewater Impact Study 1997*). The vegetation of the Island is listed as an endangered ecological community (Pittwater Spotted Gum Forest, see **Figure 2**). The presence of this endangered ecological community further increases the implications of this degradation.

Noxious weeds

A site visit was conducted during the preparation of this report (see **Appendix C** for photographs). Extensive and widespread weed growth was observed during the site visit. A failing wastewater system represents a concentrated source of not only faecal matter and bacteria but also nutrients. High nutrient loads are a likely contributing factor to the widespread weed issue and degradation of native vegetation through nutrient overload and weed propagation.



TITLE : FIGURE 4: VEGETATION AND SPECIES SIGHTINGS

LOCATION : SCOTLAND ISLAND

DATUM:GDA 1994

DATE : 13/02/2019

VERSION (PLAN BY): AA3 (james.hugo)

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: ENVIRONMENT

PATH: J:\18 jobs\180213 Scotland Island Servicing Feasibility Study\180213 GIS\mxd\180213 Figure 4 Veg and threatened species AA3 20190213.mxd

CLIENT: PRESSURE SYSTEM SOLUTIONS
JOB REF: 18326

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Social, community expectations

The Scotland Island Residents' Association is a representative body of the residents of Scotland Island and has been lobbying the Government, Pittwater Council and Sydney Water on behalf of the residents for improved water and wastewater services for over 30 years. A 2015 survey of residents indicated that 96 percent of the 383 respondents wanted a wastewater connection on the condition that the only cost to households was the connection to the mains system.

SIRA has had an active history in advocating for improved infrastructure for the island:

1997 – Scotland Island Landcare Group won a grant, administered by SIRA to investigate the environmental and public health impacts of current on-site wastewater disposal on Scotland Island, and consider water and wastewater options for the island.

2001 – Scotland Island announced as one of 20 villages to receive improved wastewater infrastructure as part of Stage 2 of the Priority Sewerage Program (PSP).

Jun 2005 – SIRA held a workshop with key stakeholders to discuss future water and wastewater infrastructure for Scotland Island.

Mar 2010 – Pittwater Council raised concerns directly with Sydney Water that Scotland Island appeared to have been removed from the program for PSP.

Apr 2010 – The Hon. Rob Stokes (Member for Pittwater) raised in Parliament the question of when PSP work would begin on Scotland Island. The response was that planning would begin in 2011, subject to funding *and a resolution by residents to upgrade local water infrastructure*.

Jan 2011 – Soon to be Premier Barry O'Farrell committed to the fast-tracking of wastewater connections to a number of PSP identified villages in Wollondilly and Hornsby Shires, and said the remaining villages including Scotland Island were a priority.

Dec 2012 – NSW Government commitment in Northern Beaches Regional Action Plan (under NSW 2021) to better manage wastewater and upgrade wastewater treatment facilities to Scotland Island as a matter of priority.

Aug 2014 – SIRA submission to review of Sydney Water's Operating Licence review in support of Sydney Water retaining responsibility for delivery of the Priority Sewage Program as part of their next operating license.

Jan 2015 – PR and letter campaign by SIRA and residents to Minister Humphries, IPART and EPA in response to a concern that Sydney Water was going to be released from the PSP as part of their Operating Licence conditions.

Jun 2015 – Sydney Water's new Operating Licence has no firm commitment to deliver the PSP to Scotland Island.

Aug 2015 – SIRA met with The Hon. Rob Stokes, Member for Pittwater.

Nov 2015 – SIRA met with The Hon. Niall Blair, Minister for Lands and Water regarding installation of wastewater infrastructure plus subsequent correspondence.

Apr 2016 – SIRA met with The Hon. Rob Stokes and decentralised service providers regarding options for water and wastewater provision on Scotland Island.

2016 – Draft Pittwater Waterways Review Discussion Paper notes key issues raised in stakeholder engagement were sewage runoff from Scotland Island.

At the time of preparing this report, a Community Engagement is ongoing, having begun in April 2018. At the current time, a Project Working Group and a 'Have Your Say' webpage has been established and updated as required. A program to consult the community about proposed upgrades to water and sewer services on the Island will be conducted and involve:

- discussions with key stakeholders including statutory authorities and community organisations;
- use of the 'Have Your Say' webpage already established;
- a Project Working Group, consisting of self-nominated community representatives to pursue the interests of the community;
- preparation of FAQ items for general public awareness;
- local newsletter articles produced by SIRA; and
- community workshops should also be organised to allow community engagement and discussion regarding the project. Comments should be taken into consideration when determining appropriate delivery options. Delivery options should also be exhibited at subsequent workshops for further community feedback.

This section will be updated progressively as community and stakeholder consultation progresses.

Priority Sewerage Program

In February 1997, the NSW Government announced the Priority Sewerage Program (PSP), which nominated 16 unsewered villages with high environmental sensitivity for improved sewerage services. All schemes listed in the first stage of the scheme have been completed, including Brooklyn and Dangar Island. Scotland Island was included among another 20 villages identified in Stage 2 of the program, announced in 2001, although delivery of wastewater services has been complicated by the lack of a reticulated water supply. Sydney Water has no program to deliver a centralised water supply to unconnected villages.

Sydney Water funded previous PSP schemes through the Sewer Service Charge that is levied on all existing Sydney Water wastewater customers. Sydney Water's Operating Licences between 2005 and 2015 obligated Sydney Water to implement the PSP in a number of nominated villages.

Sydney Water successfully argued that an obligation to implement the PSP should not be included in their most recent Operating Licence for 2015-2020, as the Operating Licence was meant to ensure a minimum standard of service to existing customers (which residents of Scotland Island are not).

The Independent Pricing and Regulatory Tribunal (IPART) suggested that it might be more appropriate that the PSP be funded directly by the State Government in order to meet their community service obligations. This would also allow the use of a contestable mechanism, where the most efficient (and innovative) option could be selected from options put forward by Sydney Water and other private service providers licenced under the Water Industry Competition (Amending) Act 2014.

Sydney Water's Operating Licence for 2015-20 states that Sydney Water must:

- co-operate with, and participate in, any Government review of the Priority Sewerage Program, and
- if required by the Minister, Sydney Water must implement and comply with any outcomes (including timeframes) of a Government review of the Priority Sewerage Program.

The Government is not planning to review the Priority Sewerage Program at this time.

Sydney Water's Operating Licence is currently under review, and one of the questions being raised by IPART in the review is the future of the Priority Sewerage Program.

Brooklyn, Dangar Island

The townships of Brooklyn and Dangar Island were provided with improved sewerage services as part of the Priority Sewerage Program (PSP). Prior to this, wastewater facilities in Brooklyn and Dangar Island consisted of various on-site management systems that were identified and adversely affecting local waterways and posing potential public health risks (SMEC, 2000).

Studies undertaken by SWC and Hornsby Shire Council (SMEC, 2000) found that the operation of on-site sewage management systems in Brooklyn and Dangar Island:

- affected surface water quality; and
- had potential to affect public health through:
 - direct or indirect exposure to pathogens in effluent or effluent contaminated soil in backyards. Direct exposure includes contact with pooled effluent while indirect exposure includes recreation in an affected waterway; or
 - exposure to pathogens by recreational users of local waterways; or
 - consumption of oysters grown in nearby leases;
- had the potential to impact local residential amenity; and
- generally unsuitable for most residential properties in the two towns due to property size, climate, topography and soils.

In terms of topography, geological conditions, environmental sensitivity and development density, Scotland Island is similar to Dangar Island. Challenges relating to the provision of water and wastewater services are also similar. It should also be noted that Scotland Island is located in closer proximity to heavily populated areas of Sydney than Dangar Island.

As such, it is a reasonable community expectation that Scotland Island be provided with the same level of water and wastewater services as Dangar Island.

4 SOCIAL AND ENVIRONMENTAL FACTORS

Systems audit

An audit of existing systems was undertaken on the 21st February 2019, which included interviews with residents, observation of environmental conditions and soil testing.

Comments received from residents, relevant to social and environmental factors included:

- You do not go swimming for 3 or 4 days after rain, Pittwater is too polluted
- There is a septic smell most days
- Lots of mosquitoes, too much septic water on the ground
- It worries me allowing the kids to play outside when you see the muddy bogs caused by the septic tanks.

Relevant site observations included:

- Wet soil patches in roadways below site disposal septic systems
- Prevalent odour during most times of the day
- Most areas plagued by mosquitos
- Water supply pipeline tied to trees, exposed on ground. Non-compliant installation
- No provision of complaint backflow protection to fill points. In places hoses are connected to the supply pipe outlet with outlet submerged in rainwater tanks with no backflow prevention.

Despite the inspection being conducted during a dry period a number of waterlogged areas downstream of septic systems were identified. Indicative photos follow.

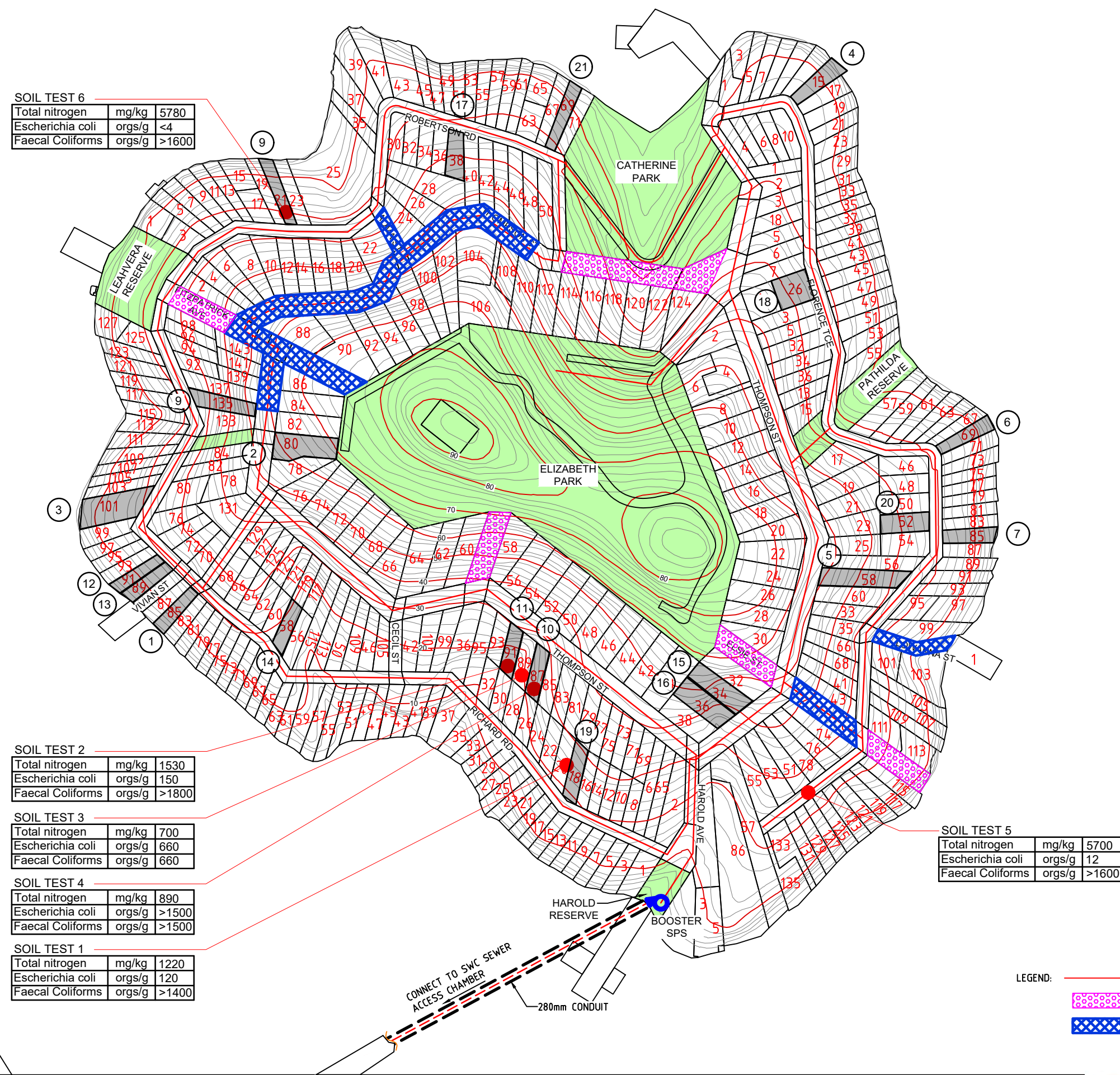
Soil sampling identified elevated levels of Faecal coliform and Total Nitrogen at various sites around the island.

With regards to faecal coliform levels, it should be noted that the National Water Quality Management Strategy Guidelines for Sewerage Systems – Use of Reclaimed Water (November 2000) guideline levels recommend a guideline value of less than 10 coliforms per 100mL in reclaimed water used in high contact circumstances (ie urban gardens). Soil testing for faecal coliform levels in excess of 1,500 coliforms per gram of soil in five of the six sites tested.

Testing locations and results are shown on Figure 5.



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Date: 12/02/2019

Drawing No: SK05

Rev: A

Scale: 1:2000 AT A1

SCOTLAND ISLAND SOIL TEST LOCATIONS AND RESULTS



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Review of social and environmental factors

A review of the key social and environmental factors relevant to the project is provided in Appendix A. This review is intended to be used during options assessment processes and can be finalised on the basis of a preferred option.

5 FURTHER STUDY RECOMMENDATIONS

On the basis on this review of existing information it is recommended that the following studies be undertaken in order to facilitate detailed development of a water and wastewater servicing option for the island.

1. Surface water quality monitoring and modelling both within Pittwater and within local stormwater system of the island.
2. Effluent discharge modelling (if a discharge option is pursued).
3. Water quality testing of water used on the island.
4. Flora and Fauna Assessment and
5. Aboriginal Archaeological survey.

6 REFERENCES

Martens & Associates Pty Ltd, 1997, *Scotland Island Wastewater Impact Study*.

Martens & Associates Pty Ltd, 1997, *Water and Sewage Options Study: Scotland Island, Sydney, NSW*.

Office of Environment and Heritage, 2018, 'North Scotland Island' and 'South Scotland Island' in *State of the beaches 2017-2018 Sydney region*.

SMEC, 2000, *Brooklyn and Dangar Island Sewerage Scheme Environmental Impact Statement*

Appendix A Environmental risk check and assessment of potential impacts

Table 1 Topography, geology and soils

Will the project require any excavation or ground disturbance or include irrigation of treated waste waters?

(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase:

Yes – extent of excavation or ground disturbance would vary depending on the service delivery method.

Operation phase:

Yes – maintenance activities may require ground disturbance.

Is the project located in an area of high erosion or landslip risk?

Construction phase assessment

Yes – the island is generally steep sloped and is subject to high erosion, particularly in heavy rains/storms.

Operation phase assessment

Yes – as above

Will the project disturb any natural cliffs /rock shelves / rock outcrops?

Construction phase assessment

Potentially - dependant on preferred option.

Operation phase assessment

No

Will the project disturb contaminated land or contaminated material?

(check NSW EPA Contaminated Lands Records – NSW EPA website)

Construction phase assessment

Possible – a search of the NSW EPA Contaminated Land Recorded returned no results for Scotland Island. Due to the poor performance of existing wastewater systems, it is likely that effluent would be encountered. An Unexpected Finds Protocol for other materials should be employed during construction works.

Operation phase assessment

No

Will the project disturb acid sulphate soils or drawdown groundwater within areas of potential acid sulphate soils?

(check ASS risk maps – NSW Office of Environment and Heritage website)

Construction phase assessment

Yes – A recent contamination study of the Island undertaken by Ausgrid found that the samples taken contained acid sulfate soils (Appendix E). Impacts are most likely to occur where works are located close to the shoreline as Pittwater waterway contains Class 1 acid sulfate soils.

Operation phase assessment

No

Will the works permanently change surface slope or topography?

Construction phase assessment

No – following completion of works, surface conditions will be returned to as close as possible original condition.

Operation phase assessment

No

Will the project potentially alter soil composition / chemistry?

Construction phase assessment

No

Operation phase assessment

Dependant on preferred option.

Table 2 Water and drainage

Will the project potentially impact a waterway (natural or constructed) or groundwater? and/or Will the project potentially impact an area administered by Water NSW (formerly Sydney Catchment Authority)?

(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase:

Dependant on preferred option. – construction would occur over the island including areas in close proximity to the shores and local drainage (creeks) on the Island.

Operation phase:

Dependant on preferred option. – operations have a potential to impact the surrounding waterway and local drainage (creeks) on the Island.

Is any part of the project within 40m of a waterbody or located in a floodplain?**Construction phase assessment**

Yes – construction would occur over the island including areas in close proximity to the shores and local drainage (creeks) on the Island.

Operation phase assessment

Yes

Is any part of the project located on the bank or bed of a natural watercourse?**Construction phase assessment**

Yes – sections of work would be near the shores of the island and local drainage (creeks) on the Island.

Operation phase assessment

Yes – as above.

Will the project require diversion of creeks or watercourses?**Construction phase assessment**

No

Operation phase assessment

No

Will the project permanently change surface drainage patterns?**Construction phase assessment**

No – surface conditions are to be returned to previous conditions following completion of works.

Operation phase assessment

No

Will the project permanently change surface slope or topography?**Construction phase assessment**

No – surface conditions are to be returned to previous conditions following completion of works.

Operation phase assessment

No

Will the project require the use or storage of fuels or other chemicals?

Construction phase assessment

Yes

Operation phase assessment

Dependant on preferred option.

Will the project potentially impact a Water Catchment Area administered by Water NSW?
(check Water NSW (SCA maps) – Water NSW website)

Construction phase assessment

If yes, contact Water NSW to determine assessment requirements

No

Operation phase assessment

If yes, contact Water NSW to determine assessment requirements

No

Will the project potentially impact the water quality of recreational or commercial fishing or aquaculture areas (including oyster leases)?

(check NSW DPI Fishing information - <https://www.dpi.nsw.gov.au/fishing>)

Construction phase assessment

No

Operation phase assessment

Dependant on preferred option.

Will the project interact with groundwater?

(check NSW groundwater and bore log data – <https://realtimedata.waternsw.com.au/water.stm>)

Construction phase assessment

If yes, can the works be classified as 'minimal impact activity' as per the *Aquifer Interference Policy*?
(http://www.water.nsw.gov.au/__data/assets/pdf_file/0004/549175/nsw_aquifer_interference_policy.pdf)

No

Operation phase assessment

If yes, can the works be classified as 'minimal impact activity' as per the *Aquifer Interference Policy*?
(http://www.water.nsw.gov.au/__data/assets/pdf_file/0004/549175/nsw_aquifer_interference_policy.pdf)

No

Table 3 Flora and fauna

Will the project potentially impact native vegetation, native fauna or habitat

(check Biodiversity Conservation Act 2016, National Parks and Wildlife Act 1974, Local Land Services Act 2013)
(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase:

Dependant on preferred option. – it is likely that the project will require clearing of native vegetation.

Operation phase:

Dependant on preferred option.

Will the project potentially impact:

- A declared Ramsar wetland? (<http://www.environment.gov.au/epbc/what-is-protected/wetlands>)
 - A wetland protected by State Environmental Planning Policy (Coastal Management) 2018?
(http://webmap.environment.nsw.gov.au/PlanningHtml5Viewer/?viewer=SEPP_CoastalManagement)
-

- A wetland of national importance? (<http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf>)

Construction phase assessment

No

Operation phase assessment

No

Will the project impact any National Park or reserves administered by the NSW Office of Environment and Heritage or land subject to a Conservation Agreement under the National Parks and Wildlife Act 1974 (NPW ACT)?

(Check NPWS data - <https://www.nationalparks.nsw.gov.au/visit-a-park>)

Construction phase assessment

No

Operation phase assessment

No

Will the works impact any threatened species / populations, ecological communities, critical habitat, Coastal Saltmarsh, or migratory species listed in:

- The NSW BioNet Atlas? (<http://www.bionet.nsw.gov.au/>)
- The EPBC Act 1999 (<http://www.environment.gov.au/epbc/protected-matters-search-tool>)
- Fisheries Management Act 1994 (<https://www.dpi.nsw.gov.au/fishing/threatened-species>)
- Biodiversity Conservation Act 2016

Construction phase assessment

Potentially – Scotland Island vegetation is mapped as being an endangered ecological community.

Operation phase assessment

Dependant on preferred option.

Does the project involve Key Threatening Processes? Check:

- Department of Environment and Energy Species Profile and Threats Database? (<http://www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl>)
- Biodiversity Conservation Act 2016 (terrestrial flora/fauna and freshwater vegetation)
- Fisheries Management Act 1994 (marine vegetation and fish)

Construction phase assessment

Potentially – clearing of native vegetation may be required during construction.

Operation phase assessment

Dependant on preferred option.

Will the works impact any other legally protected terrestrial, marine or aquatic habitats (e.g. urban bushland, riparian zones, marine parks)? Check –

- Koala habitat (SEPP 44)
- urban bushland (SEPP 19)
- State Environmental Planning Policy (Coastal Management) 2018
- LEP(s)
- aquatic reserves protected under the FM Act? Check: Marine Parks map - <https://www.dpi.nsw.gov.au/fishing/marine-protected-areas>

Construction phase assessment

Potentially – construction may affect coastal areas according to the Coastal Management SEPP 2018. Additionally, if a pipeline crossing Pittwater is adopted, there is potential for impact to fish and fish habitat.

Operation phase assessment

Dependant on preferred option.

Will the project require clearing noxious or environmental weeds?
(check LGA for list of weeds and weed control/management)

Construction phase assessment

Yes – a site visit confirmed that noxious weeds are widespread across the Island.

Operation phase assessment

No

Table 4 Air

Will the project potentially cause odour, dust or other air pollution
(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase:

Potentially – it is expected that construction works would generate dust.

Operation phase:

Dependant on preferred option.

Is the project likely to impact sensitive receivers?

Construction phase assessment

Yes – construction would occur in order to service the residents of the island; therefore, the work would be in close proximity to residential properties.

Operation phase assessment

Dependant on preferred option.

Are there any existing air pollution sources in the vicinity?

Check – National Pollution Inventory (<http://www.npi.gov.au/>)

The nearest existing air pollution source is the Warriewood Sewage Treatment Plant, located approximately 7 km south from the island.

Table 5 Waste and hazardous materials

Will the project require disturbance and/or disposal of hazardous waste or hazardous building materials (HBM) (eg lead, asbestos, PCB or other substance designated as hazardous)?

Construction phase assessment:

Possible – it is not anticipated that any hazardous materials would be encountered during works.

Operation phase assessment:

No

Will the project potentially require disturbance of asbestos containing materials?

Construction phase assessment

Potentially

Operation phase assessment

No

Table 6 Aboriginal Heritage

Are there any registered Aboriginal heritage objects or declared Aboriginal places within 200m of the project area?

Check - OEH's Aboriginal Heritage Information System

(<https://www.environment.nsw.gov.au/licences/AboriginalHeritageInformationManagementSystem.htm>)

Yes – an AHIMS search result confirms that there are two Aboriginal sites recorded in the area. Refer to **Appendix D**.

Aboriginal high-risk landscapes

Is the work in a high risk landscape containing features that indicate the likely presence of Aboriginal objects.

Areas that have high archaeological potential are:

1. within 200m of waters
2. in a sand dune system
3. on a ridge top, ridge line or headland (turn on contours)
4. within 200m below or above a cliff face
5. within 20m of or in a cave, rock shelter or cave mouth

Aboriginal culturally modified trees (scarred trees)

Are there any Aboriginal culturally modified trees within 200 metres of the project area?

Non-listed

World, National and Commonwealth Heritage Significance

Could the works affect any world heritage properties, or places on the National Heritage List or Commonwealth Heritage List?

Check:

- Department of Environment and Energy website (<http://www.environment.gov.au/epbc/what-is-protected/world-heritage>)
- Australian Heritage Database (<http://www.environment.gov.au/cgi-bin/ahdb/search.pl>)

No – there are no places listed on Scotland Island.

Table 7 Non-Aboriginal Heritage

Is the project located within an area of high archaeological potential (non-Aboriginal, as covered by the relics provision of the Heritage Act 1977)?

Areas of high archaeological potential are areas that have a high likelihood of containing significant archaeological remains in high concentrations.

Examples of areas/towns of high archaeological potential are:

- Central Sydney (CBD)
- The Rocks and Millers Point
- Ultimo/Pymont
- Parramatta CBD
- Liverpool CBD
- Richmond
- Windsor
- Castlereagh
- Pitt Town
- Wilberforce
- Blue Mountains (early townships, convict stockades and access roads/tracks, like Cox's Rd)

Check:

- Australian Heritage Database (<http://www.environment.gov.au/cgi-bin/ahdb/search.pl>)

No

State and Local Heritage significance

Scotland Island

Issue: Final

Could the project affect any locally or state listed items of State or Local Heritage significance including excavation within their curtilage? Are the works in a heritage conservation area?

Check - LEPS, SEPPs, SREPs and the State Heritage Inventory

No – there are no listed heritage items on the island.

Table 8 Noise and vibration

Will the project generate noise and/or vibration that has the potential to impact receivers?
(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase:

Potentially – construction works will generate noise and minimal vibration.

Operation phase:

Dependant on preferred option.

Will the project result in permanent changes to background noise?

No

Are the works likely to exceed noise criteria in the:

- Industrial Noise Policy (https://www.environment.nsw.gov.au/resources/noise/ind_noise.pdf) or
- Interim Construction Noise Guideline (<https://www.environment.nsw.gov.au/resources/noise/09265cng.pdf>)

Construction phase assessment

No

Operation phase assessment

No

Does noise or vibration generated by the project have the potential to impact sensitive receivers?
(such as schools/ other education institutions/, hospitals, nursing homes, places of worship, residential properties or important native fauna populations)?

Construction phase assessment

Potentially – construction works will be in the vicinity of residential properties.

Operation phase assessment

No

Table 9 Traffic and access

Will the project potentially impact traffic or access to property?
(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase assessment:

Potentially – property access may be impacted, depending on construction methods.

Operation phase assessment:

No

Will the project involve partial or complete road closures?

Construction phase assessment

Potentially – roads may need to be closed during construction.

Operation phase assessment

No

Will the project affect access to private property?

Construction phase assessment

Potentially – the purpose of the project is to connect the islands population to upgraded water and sewer facilities which will involve property connections.

Operation phase assessment

No

Will the project reduce parking availability?

Construction phase assessment

Potentially – during construction roads may need to be closed therefore reducing street parking, if available.

Operation phase assessment

No

Will the project generate additional traffic?

Construction phase assessment

Potentially – construction workers driving to and from work sites as well as construction machinery will generate additional traffic.

Operation phase assessment

No

Will the project require alterations to road networks?

Construction phase assessment

No – it is not anticipated at this stage.

Operation phase assessment

No

Table 10 Land use, social and visual

Will the project potentially change the land use or visual character of the environment?
(eg installation of above-ground structures, construction of new access roads)
(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase assessment:

Potentially – during construction the visual character of the environment would be temporarily impacted via excavations and construction works. Surface conditions are expected to be returned to pre-construction conditions following completion of works.

Operation phase assessment:

Dependant on preferred option.

Will the project affect the use of community recreation areas?

Construction phase assessment

Potentially – construction works may restrict access to recreation areas for a temporary period of time.

Operation phase assessment

Dependant on preferred option.

Will the project impact commercial use?

Construction phase assessment

Potentially – construction may impact a number of businesses where property access may be affected.

Operation phase assessment

No

Will the project disrupt existing services / utilities?

Construction phase assessment

No

Operation phase assessment

No

Is the project located within land managed or regulated by a government authority?

Construction phase assessment

No

Operation phase assessment

No

Is the project located within land owned by the Commonwealth or has the potential to impact Commonwealth land?

Construction phase assessment

No

Operation phase assessment

No

Table 11 Cumulative impacts

Will the project potentially contribute to adverse environmental impacts on receivers from other development / projects in the area?

(if no, move to next section. If yes, answer remaining questions in this section)

Construction phase assessment:

No

Operation phase assessment:

No

Appendix B State of the beaches 2017-2018 Sydney Region

NSW State of the beaches 2017–2018

North Scotland Island

Beach grade:

C



See 'How to read this report' for key to map.

The North Scotland Island swimming site is a 15 by 50 metre netted enclosure located on the north side of Scotland Island in Pittwater.

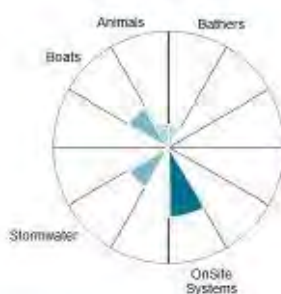
The Beach Suitability Grade of Good indicates microbial water quality is suitable for swimming most of the time but may be susceptible to pollution after rain, with several potential sources of faecal contamination including onsite systems.

Enterococci levels increased with increasing rainfall, occasionally exceeding the safe swimming limit in response to 10mm or more of rain, and regularly after 20mm or more of rainfall.

The site has been monitored since 1995.

Site type	Monitoring period	Dry weather samples suitable for swimming	Water samples	Beach grade status
Estuarine	Dec 2015 to Apr 2018	100%	100	Stable

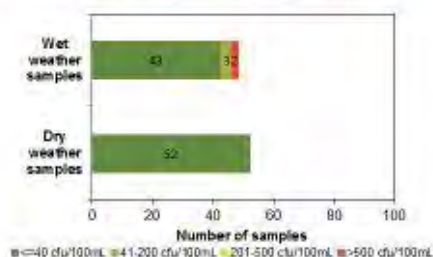
Sanitary inspection: Moderate



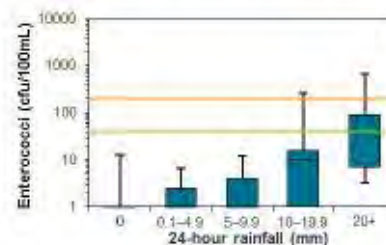
Microbial Assessment Category: A



Dry and wet weather water quality



Water quality in response to rainfall



NSW State of the beaches 2017–2018

South Scotland Island

Beach grade:

G



See 'How to read this report' for key to map.

The South Scotland Island swimming site is located at Carols Wharf on the southern side of Scotland Island. The location is not netted and is backed by a reserve.

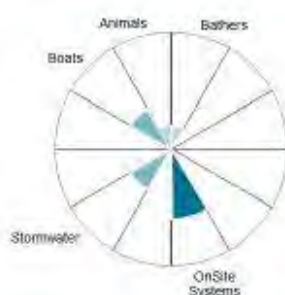
The Beach Suitability Grade of Good indicates microbial water quality is suitable for swimming most of the time but may be susceptible to pollution after rain, with several potential sources of faecal contamination including onsite systems.

Enterococci levels increased with increasing rainfall, occasionally exceeding the safe swimming limit after 10mm or more of rain, and regularly after 20mm or more of rainfall.

The site has been monitored since 1996.

Site type	Monitoring period	Dry weather samples suitable for swimming	Water samples	Beach grade status
Estuarine	Dec 2015 to Apr 2018	100%	100	Stable 

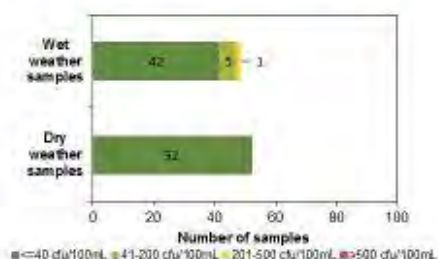
Sanitary inspection: Moderate



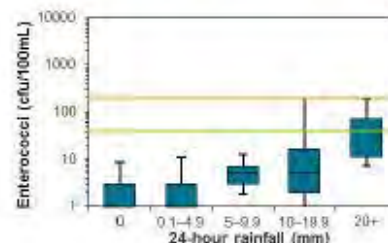
Microbial Assessment Category: A



Dry and wet weather water quality



Water quality in response to rainfall



Appendix C Site photographs



Weeds in the vicinity of Catherine Park.



Weeds in the vicinity of Kevin Avenue.



Typical roadside drainage.



Example of rainwater storage arrangements.



Example of rainwater storage arrangements.

Appendix D Lotsearch results



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Nov 2018 12:34:59

Reference: Sample EP

Address: Scotland Island, Pittwater, NSW 2105

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

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Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	Dept. Finance, Services & Innovation	28/11/2018	28/11/2018	Daily	-	-	-	-
Topographic Data	Dept. Finance, Services & Innovation	17/07/2018	17/07/2018	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	19/11/2018	19/11/2018	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	13/11/2018	13/11/2018	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	06/11/2018	06/11/2018	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	06/11/2018	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	06/11/2018	06/11/2018	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	11/01/2018	11/01/2018	As required	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	0	0	2
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	3	3	4
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	1	1	1
UBD Business to Business Directory 1991 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1991 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business to Business Directory 1986 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1986 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1978 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1978 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1975 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1975 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1965 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1965 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1961 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	1
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	0
Points of Interest	Dept. Finance, Services & Innovation	12/10/2018	12/10/2018	Quarterly	1000	20	20	104
Tanks (Areas)	Dept. Finance, Services & Innovation	15/10/2018	15/10/2018	Quarterly	1000	0	0	0
Tanks (Points)	Dept. Finance, Services & Innovation	15/10/2018	15/10/2018	Quarterly	1000	0	0	1
Major Easements	Dept. Finance, Services & Innovation	12/10/2018	12/10/2018	Quarterly	1000	1	6	7
State Forest	Dept. Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	18/01/2018	30/09/2017	Annually	1000	0	0	1
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	0	1	1
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	1	1	11
Geological Units 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	3	-	4
Geological Structures 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	2
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	3	-	6
Atlas of Australian Soils	CSIRO	19/05/2017	17/02/2011	As required	1000	0	0	2
Environmental Planning Instrument - Acid Sulfate Soils	NSW Department of Planning and Environment	23/10/2018	12/10/2018	As required	500	2	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	Dept. Finance, Services & Innovation	13/07/2017	01/07/2017	As required	1000	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	1000	0	0	0
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	1000	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	1000	1	1	1
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	1000	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	01/08/2017	28/01/2014	Annually	1000	0	0	0
EPI - Land Zoning	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	1000	4	5	76
EPI - Minimum Lot Size	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Height of Buildings	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Floor Space Ratio	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	0	-	-
EPI - Land Application	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Land Reservation Acquisition	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	0	-	-
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	18/10/2018	19/01/2018	Quarterly	1000	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Environmental Planning Instrument - Heritage	NSW Department of Planning and Environment	10/09/2018	27/07/2018	Quarterly	1000	0	0	16
Bush Fire Prone Land	NSW Rural Fire Service	27/11/2018	31/07/2018	Quarterly	1000	2	2	2
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment & Heritage	01/03/2017	16/12/2016	As required	1000	4	4	12
RAMSAR Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	4
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	26/11/2018	26/11/2018	Daily	10000	-	-	-



Contaminated Land & Waste Management Facilities

Scotland Island, Pittwater, NSW 2105

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
 © State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

Scotland Island, Pittwater, NSW 2105

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

EPA PFAS Investigation Program

Scotland Island, Pittwater, NSW 2105

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Id	Site	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

EPA Other Sites with Contamination Issues

Scotland Island, Pittwater, NSW 2105

EPA Other Sites with Contamination Issues

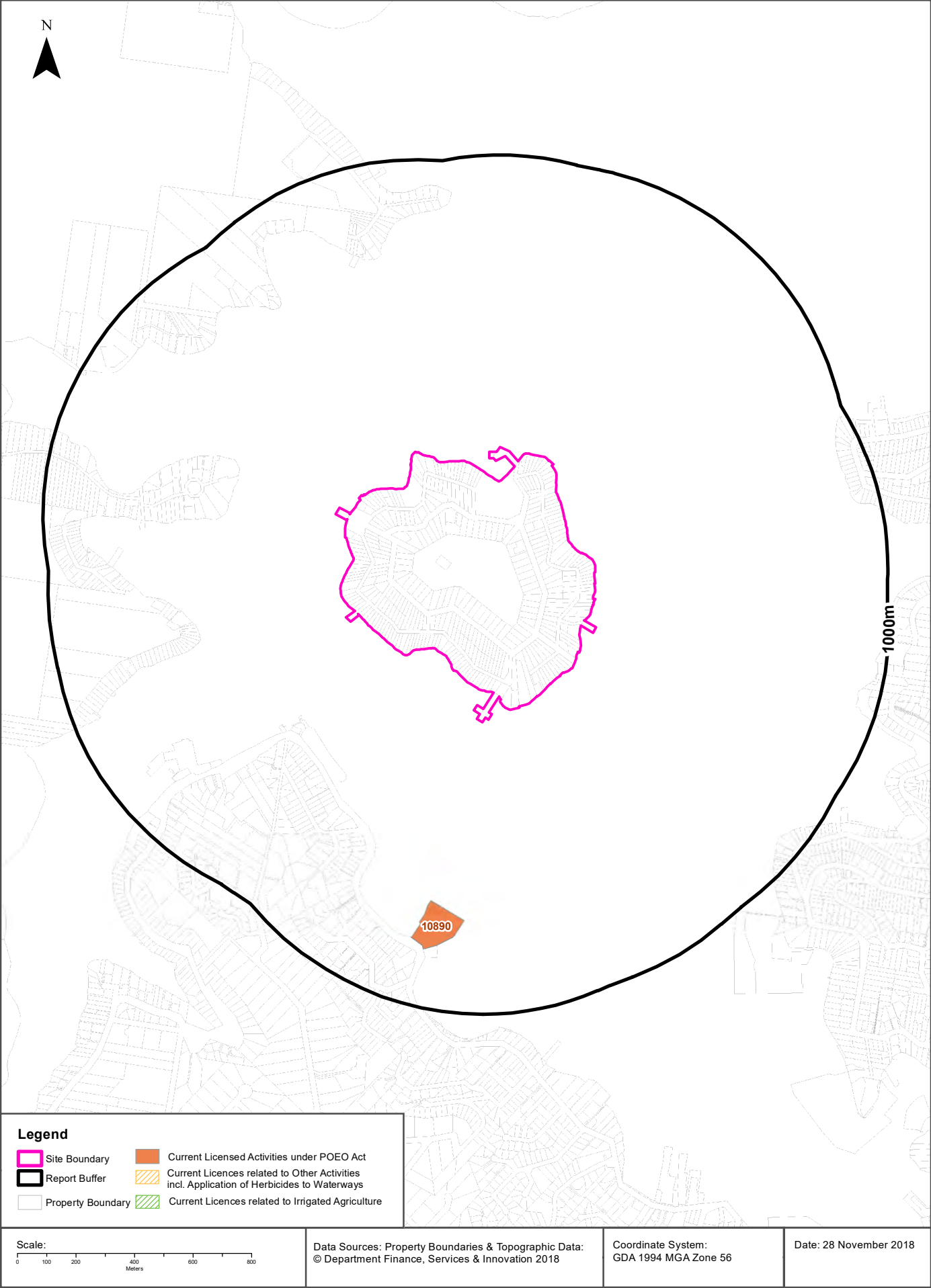
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority



EPA Activities

Scotland Island, Pittwater, NSW 2105

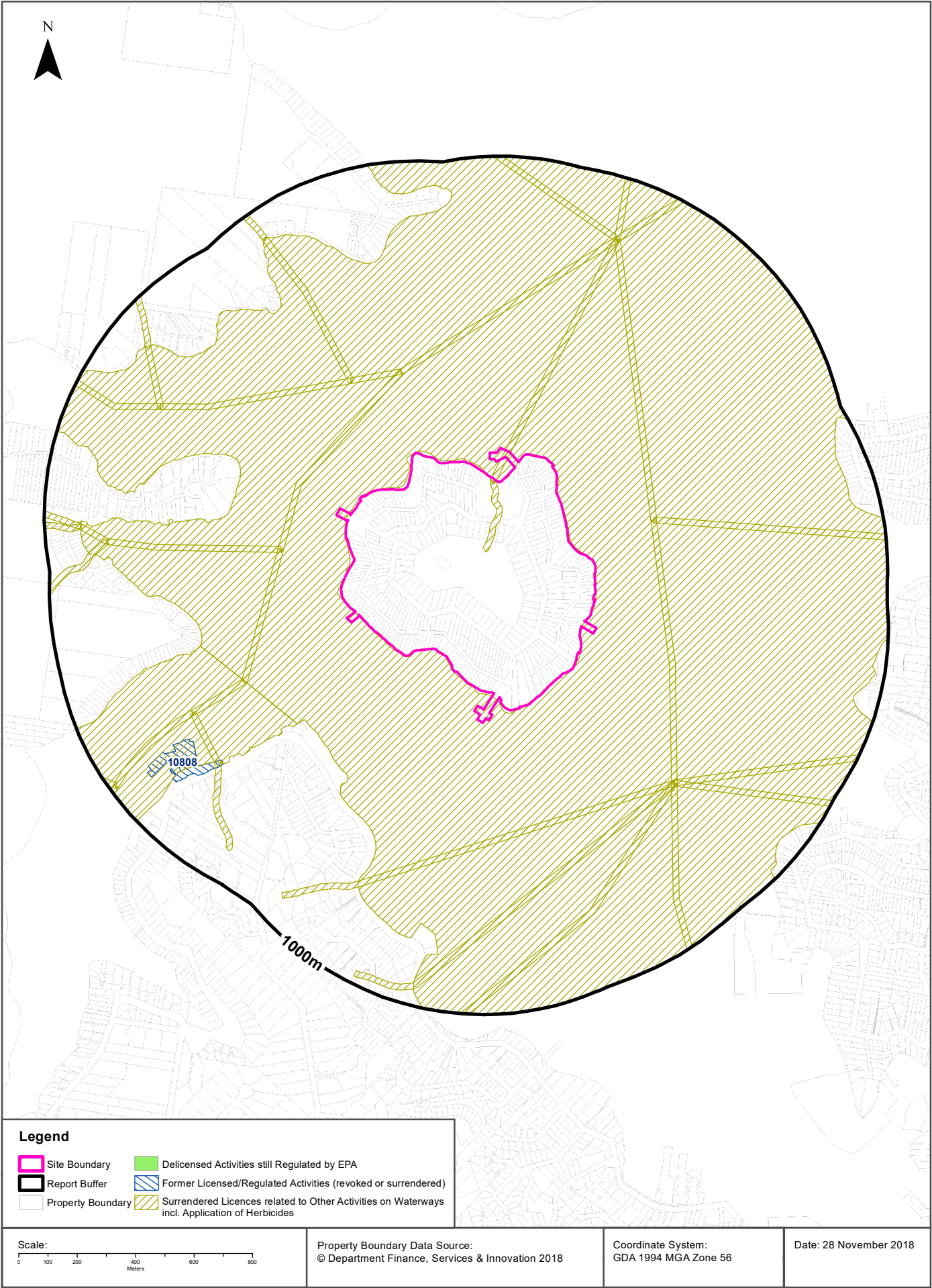
Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10890	THE QUAYS PTY LIMITED	THE QUAYS MARINA	1856 PITTWATER ROAD	CHURCH POINT	Boat construction/main tenance (general)	Premise Match	635m	South
10890	THE QUAYS PTY LIMITED	THE QUAYS MARINA	1856 PITTWATER ROAD	CHURCH POINT	Boat mooring and storage	Premise Match	635m	South

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority



EPA Activities

Scotland Island, Pittwater, NSW 2105

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
10808	MITCHELL'S BOATING CENTRE PTY LTD	2A McCARRS CREEK ROAD, CHURCH POINT, NSW 2105	Revoked	30/01/2001	Boat mooring and storage	Premise Match	647m	South West

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority



Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1991 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1991 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1991 Business to Business Directory Records Road or Area Matches

Records from the 1991 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1986 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1986 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1986 Business to Business Directory Records Road or Area Matches

Records from the 1986 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1982 Business Directory Records Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1982 Business Directory Records Road or Area Matches

Records from the 1982 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1978 Business Directory Records Premise or Road Intersection Matches

Records from the 1978 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1978 Business Directory Records Road or Area Matches

Records from the 1978 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

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Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1975 Business Directory Records Premise or Road Intersection Matches

Records from the 1975 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1975 Business Directory Records Road or Area Matches

Records from the 1975 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

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Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1970 Business Directory Records Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Records Road or Area Matches

Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1965 Business Directory Records Premise or Road Intersection Matches

Records from the 1965 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

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1965 Business Directory Records Road or Area Matches

Records from the 1965 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1961 Business Directory Records Premise or Road Intersection Matches

Records from the 1961 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

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1961 Business Directory Records Road or Area Matches

Records from the 1961 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

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Historical Business Directories

Scotland Island, Pittwater, NSW 2105

1950 Business Directory Records Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Records Road or Area Matches

Records from the 1950 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer			

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Feature Point	Direction
MOTOR SERVICE STATIONS- PETROL, Etc.	Pasadena Garage, Church Point	86271	1950	Premise Match	472m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Scotland Island, Pittwater, NSW 2105

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

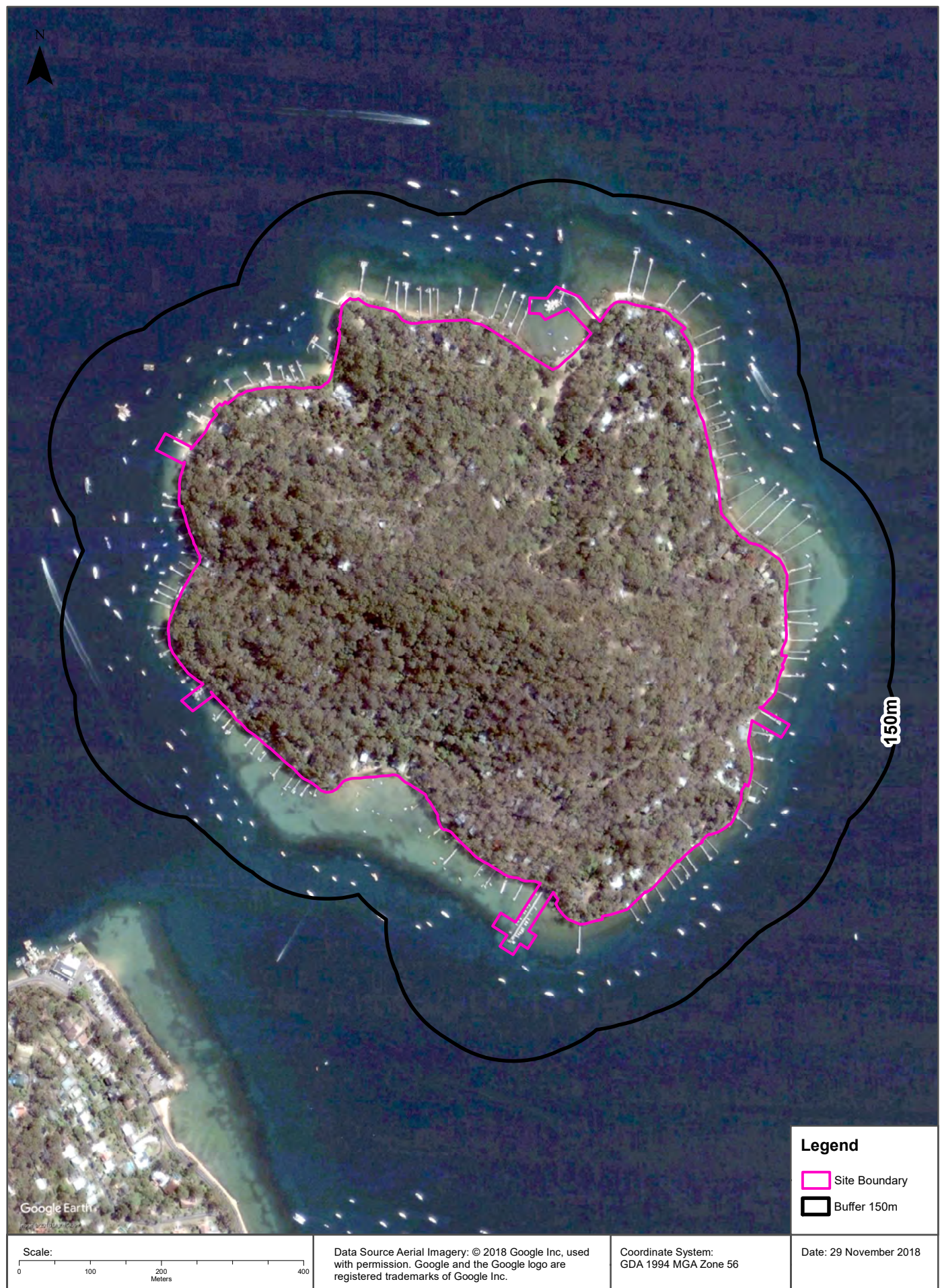
Aerial Imagery 2009

Scotland Island, Pittwater, NSW 2105



Aerial Imagery 2003

Scotland Island, Pittwater, NSW 2105



Aerial Imagery 1991

Scotland Island, Pittwater, NSW 2105



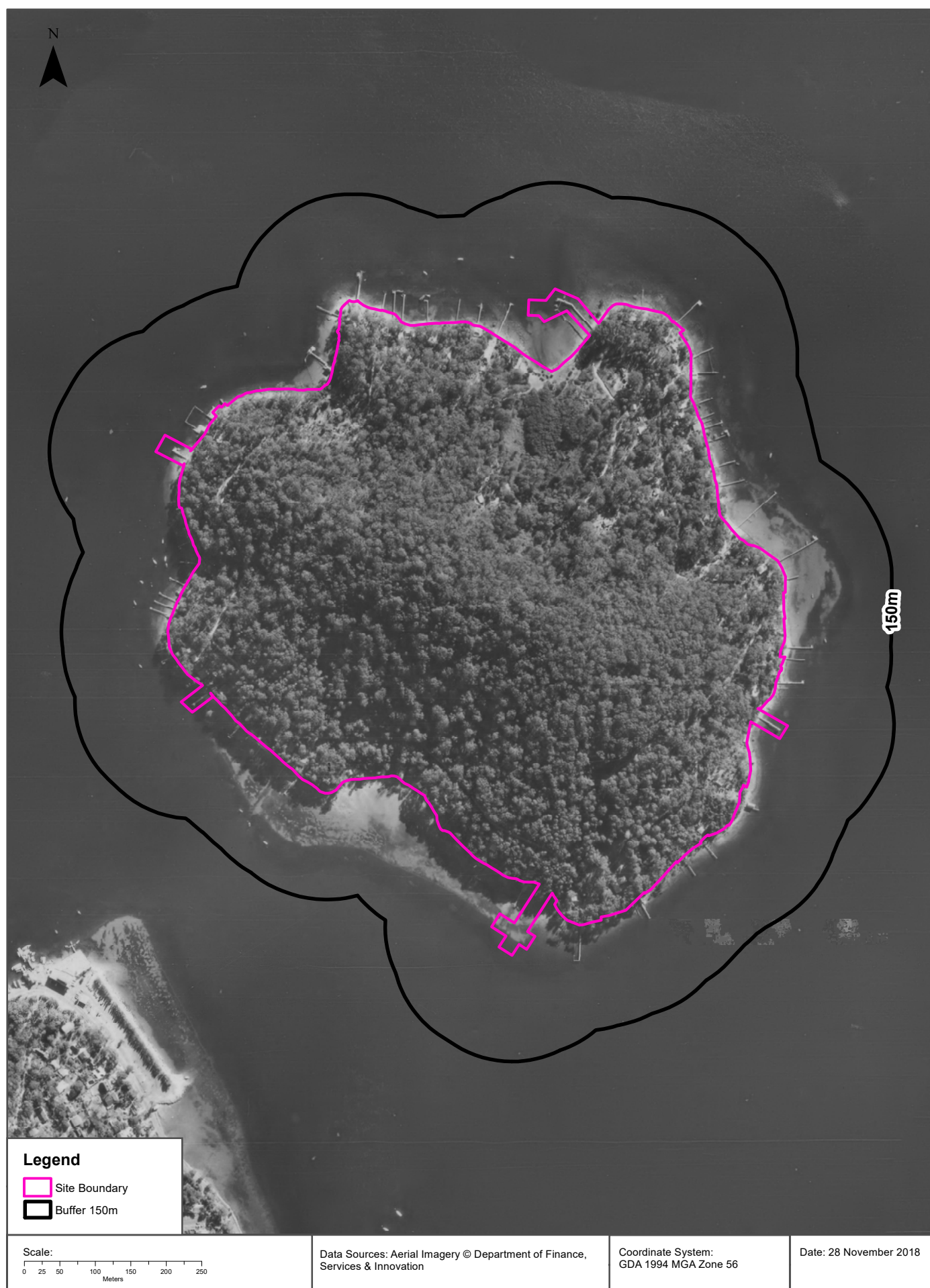
Aerial Imagery 1982

Scotland Island, Pittwater, NSW 2105



Aerial Imagery 1970

Scotland Island, Pittwater, NSW 2105



Aerial Imagery 1965

Scotland Island, Pittwater, NSW 2105

