

PL 850 Water Water Management Policy

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1 Purpose of the Policy

This Policy provides the requirements for the effective management of stormwater, rainwater, groundwater and wastewater within the Warringah local government area.

2 Principles

The Water Management Policy aims to:

- Minimise the risk to public health and safety
- Reduce the risk to life and property from flooding
- Manage and minimise stormwater overland flow, nuisance flooding and groundwater related damage to properties
- Protect and improve the ecological condition of our beaches, lagoons, waterways, wetlands and surrounding bushland
- Encourage the reuse of water and alternative water sources
- Integrate water sensitive urban design measures into the built form to maximise amenity
- Protect Council stormwater drainage assets during development works and to ensure Council's drainage rights are not compromised
- Align development controls with the objectives of the Water Sensitive Warringah Strategic Plan and Environmental Sustainability Strategy.

3 Development to Which this Policy Applies

This Policy applies to All development in the Warringah Local Government Area subject to Part 4 of the *Environmental Planning & Assessment Act 1979* including Development Applications, Exempt and Complying Development.

This Policy shall be read in conjunction with the Warringah Local Environmental Plan, Warringah Development Control Plan 2011 and other documentation as referred to within this policy.

3.1 Identifying Planning Controls Which Apply

To identify which planning controls apply to the development, applicants **must** refer to both Table 1 and Table 2.

Table 1 identifies sections that apply to particular development type, and Table 2 identifies sections which apply based on the site and development characteristics (one or more may apply).

Table 1 – Development Types

Development Types		Sections which Apply					
		Section 4.0 – Standard of Design, Construction & Installation	Section 5 – Disposal of Stormwater	Section 7.1 – Water Conservation & Reuse	Section 8.1 – Stormwater Quality	Section 8.3 – Erosion, Sediment and Pollution Controls	Section 9.1 – Onsite Stormwater Detention
Single Lot Residential Development		✓	✓	✓		✓	✓
Residential Flat Buildings or Multi-residential dwelling houses	Development with a site area less than 1000m ²	✓	✓	✓		✓	✓
	Development with a site area greater than 1000m ²	✓	✓	✓	✓	✓	✓
Commercial or Mixed Use or Industrial	Development with a site area less than 1000m ²	✓	✓	✓		✓	✓
	Development with a site area greater than 1000m ²	✓	✓	✓	✓	✓	✓
Subdivision	Subdivision resulting in the creation of: two (2) lots where the total post development impervious area of the new lots exceeds 40%.	✓	✓	✓	✓	✓	✓
	Subdivision resulting in the creation of: • three (3) lots or more.	✓	✓	✓	✓	✓	✓

Table 2 – Site/Development Characteristics (more than one requirement may apply)

Site/Development Characteristics		Sections which Apply							
		Section 6 – Building Over or Adjacent to Council Drainage Systems and Easements	Section 7.2 – Onsite Sewage Management	Section 8.1 – Stormwater Quality	Section 8.2 – Groundwater Management	Section 9 – Flood Risk Management	Section 9.1 – Onsite Stormwater Detention	Section 9.3 – Overland Flow	Section 10.3 – Removal of Private Trees Threatening Council Stormwater Pipes
Increased hard surfaces	Development where the total existing and proposed impervious areas exceeds 40% of the site area						✓		
	Development proposing an increase in impervious area of more than 50m ²			✓					
Near a Council stormwater system	All development containing or adjacent to Council stormwater infrastructure Refer to Council's Stormwater Planning Maps	✓							✓
Groundwater	All development intercepting groundwater				✓				
No Sewer	Any property not connected to the Sydney Water sewerage network or which utilises an onsite wastewater management system		✓						
Flooding or Overland flow	All development located on Flood Prone Land Refer to Section 149 Planning Certificate or Council's Flood Maps:- <ul style="list-style-type: none"> • High Flood Risk Planning Precinct • Medium Flood Risk Planning Precinct • Low Flood Risk Planning Precinct 					✓			
	All development on land affected by overland flows. Refer to Council's Stormwater Planning Maps							✓	

4 General Requirements

4.0 Standard of Design, Construction & Installation

All works are to be designed, constructed and installed in accordance with the following:

- Auspec1 Design Manual
- [Minor works specification](#)
- *Local Government Act 1993*
- *Roads Act 1993*
- Plumbing Code of Australia
- [Water by Design Technical Guidelines](#)
- Relevant Australian Standards
- Warringah Local Environmental Plan 2000
- [Environment & Health Protection Guidelines for Onsite Sewage Management for Single Households](#)
- [Interim NSW Guidelines for Management of Private Recycled Water Schemes](#)
- Warringah Local Environmental Plan 2011
- Warringah Development Control Plan 2011
- Technical Specifications where specified
- Water Sensitive Warringah Strategic Plan
- Water Sensitive Warringah Technical Paper

5 Disposal of Stormwater

5.1 General

- (a) Stormwater drainage for all properties must be by gravity means. Mechanical methods of stormwater disposal (e.g. pump-out systems) will only be permitted for draining sub-surface flows from underground areas and basement car parks in commercial or residential flat buildings.
- (b) Diverting flows from one catchment (or sub-catchment) to another catchment (or sub-catchment) will not be permitted. Properties must drain in the direction of their natural catchment.
- (c) Drainage easements obtained through downstream properties for piping flows to a drainage system, at the applicant's expense, are strongly encouraged. Refer to section 5.4 further requirements for drainage easements.
- (d) All drainage structures are to be designed to be visually unobtrusive and sympathetic with the proposed development and the surrounding environment i.e. water sensitive urban design.
- (e) Disposal of stormwater must not unreasonably impact on the downstream environment.
- (f) Piping the property drainage system across a public road is not permitted. Consideration will be given to extending Council's system across the public road to facilitate disposal of stormwater from the property at the applicant's expense.
- (g) Stormwater drainage works must be approved by Council under the provisions of the *Roads Act 1993* and *Local Government Act 1993*.
- (h) Inability to comply with the requirements of this policy may result in Development Consent not being granted.

5.2 Street & Trunk Drainage

- (a) Street and trunk drainage is to be designed and constructed so as to:
 - i. provide convenience and safety for pedestrians and traffic during storm events,
 - ii. minimise damage to private and public buildings, and
 - iii. minimise risks to life and property by overland flow during major storm events.
- (b) Street and trunk drainage must comply with the following specifications:
 - i. Auspec1 Design Manual
 - ii. [Minor works specification](#)

5.3 Discharge to Roads & Maritime Services Drainage System

Where stormwater is to be discharged to the street gutter or underground drainage system of a road that is under the control of the Roads & Maritime Services (RMS), Council will refer the Development Application to the RMS for review.

5.4 Properties Unable to Connect to a Council Stormwater Drainage System or Easement

- (a) Any property that is unable to connect to a Council stormwater drainage system, such as land falling naturally away from a Council stormwater drainage system, is required to comply with Council's [Stormwater Drainage from Low Level Properties Technical Specification](#).
- (b) Developments proposing to discharge stormwater to a watercourse or open channel must comply with the requirements of section 8.4 - Stormwater Discharge to Watercourse or Open Channel.
- (c) Where an inter-allotment drainage easement is to be created, a letter of agreement to the creation of the easement from all the affected property owners shall accompany the development application. This is to demonstrate to Council that a suitable easement/s can be obtained. The letter/s shall be accompanied with a plan of the location of the proposed easement/s also signed by all the affected property owners. The letter/s is/are not to contain any conditions that may preclude the creation of the easement.

5.5 Stormwater Entering Properties from Upstream Lots

- (a) Runoff currently entering the site from upstream properties should not be obstructed from flowing onto the site nor redirected so as to increase the quantity or concentration of surface runoff entering adjoining properties.
- (b) When a retaining wall is to be constructed across an overland flow path any intercepted flow must be contained within the property where the retaining wall is required and this flow connected to the site drainage system.
- (c) Where the overland flow rates are significant, the requirements of section 9.3 – Overland Flow will need to be satisfied.

6 Building Over or Adjacent to Council Drainage Systems and Easements

Council drainage systems may be located within private property. To determine if the property is burdened or is adjacent to a public drainage system, refer to [Council's Stormwater Planning Map](#).

- (a) All development on land containing or adjacent to or proposing to reconstruct/relocate a public drainage system, must comply with Council's [Building Over or Adjacent to Constructed Council Drainage Systems and Easements technical specifications](#).

Note:

This does not apply to land with natural (unconstructed) drainage systems and watercourses. In these instances, section 8.4 - Stormwater Discharge to Watercourse or Open Channel and 5.4 - *Properties Unable to Connect to a Council Stormwater Drainage System* and Council's [Protection of Waterways and Riparian Land Policy](#).

7 Sustainable Water Management and Onsite Sewage Management Systems

7.1 Water Conservation & Reuse

7.1.1 Water Efficiency

- (a) Buildings that are not affected by BASIX that are installing any water use fittings must demonstrate compliance with the minimum standards defined by the Water Efficiency Labelling and Standards (WELS) Scheme. Minimum WELS rated fittings include:
- i. 4 star dual-flush toilets
 - ii. 3 star showerheads
 - iii. 4 star taps (for all taps other than bath outlets and garden taps)
 - iv. 3 star urinals
 - v. 3.5 star washing machines
 - vi. 4 star dishwashers.
- (b) Cooling towers must:
- i. Connect a conductivity meter to ensure optimum circulation before discharge.
 - ii. Include a water meter connected to a building energy and water metering system to monitor water usage
 - iii. Employ alternative water sources for cooling towers where practical.

7.1.2 Rainwater Tanks

Rainwater tanks which are connected for internal use (toilet flushing & washing machine) and external reuse (garden irrigation) are encouraged for all developments.

- (a) Rainwater tanks shall comply with the following:
- i. Be fitted with a first-flush device that causes initial rainwater run-off to bypass the tank and must drain to a landscaped area. The first flush device will not be permitted to connect to the stormwater system
 - ii. Have a sign affixed to the tank stating the contents is rainwater
 - iii. Be constructed or installed in a manner that prevents mosquitoes breeding, such as the use of mesh to protect inlets and overflows
 - iv. Have its overflow connected to an existing stormwater drainage system that does not discharge to an adjoining property, or cause a nuisance to adjoining owners
 - v. Pumping equipment must be housed in a soundproof enclosure

- vi. Where the rainwater tank is interconnected to a reticulated water supply, it must be installed in accordance with Plumbing Code of Australia, particularly backflow/cross connection prevention requirements.
- (b) If OSD is required for residential development, Council may permit the volume of rainwater reuse to be credited against the calculated OSD storage volume as determined by Council's [Onsite Stormwater Detention Technical Specification](#), provided the rainwater tank is connected for internal reuse.

7.2 Onsite Sewage Management

Warringah Council is the regulatory authority for onsite sewage management systems under the *Local Government Act 1993*.

All systems must be installed and operated in order to:

- (a) Prevent the spread of disease by micro-organisms
- (b) Prevent the spread of foul odours
- (c) Prevent contamination of water
- (d) Prevent degradation of soil and vegetation
- (e) Discourage insects and vermin
- (f) Encourage the re-use of resources (including nutrients, organic matter and water)
- (g) Minimise any adverse impacts on the amenity of the land on which it is installed or constructed and other land in the vicinity of that land

The owners of the property are responsible for the correct operation and functioning of the onsite wastewater management system. Penalty Infringement Notice and Orders can be issued for systems that do not comply with the approval to operate or cause water pollution.

7.2.1 New Systems

- (a) An '[Approval to Install an Onsite Sewage Management System](#)' must be obtained prior to the installation or modification of any system as required by the *Local Government Act 1993*. The applicant must submit all information as detailed in the application form.
- (b) All systems must be designed, installed and operated in accordance with:
 - i. *Local Government Act 1993*
 - ii. [Environment & Health Protection Guidelines for Onsite Sewage Management for Single Households](#)
 - iii. [Interim NSW Guidelines for Management of Private Recycled Water Schemes](#)
 - iv. AS1547
 - v. Plumbing Code of Australia
 - vi. The manufacturer's specifications, and
 - vii. Any conditions of approval from Council.

- (c) Water use fittings must demonstrate compliance with the minimum standards defined by the Water Efficiency Labelling and Standards (WELS) Scheme. Minimum WELS rated fittings include:
 - i. 4 star dual-flush toilets
 - ii. 3 star showerheads
 - iii. 4 star taps (for all taps other than bath outlets and garden taps)
 - iv. 3 star urinals
 - v. 3.5 star washing machines
 - vi. 4 star dishwashers.
- (d) A certificate from a licenced plumber may be required by the Principal Certifying Authority prior to the release of the Occupation Certificate.
- (e) Should 'Approval to Install' be granted, the applicant must then obtain an '[Approval to Operate an Onsite Sewage Management System](#)', prior to commissioning of the system. At this time, a risk category will be assigned to the approval which will determine the period of approval.
- (f) The use of pump-out style systems is not the preferred outcome for sewage management and should be proposed only after other onsite disposal systems have been determined as unsatisfactory.

7.2.2 Existing Systems

- (a) All onsite systems must hold a current '[Approval to Operate an Onsite Sewage Management System](#)', as required by the *Local Government Act 1993*.
- (b) An Approval to Operate will be assigned a risk category which will determine the period of approval.
- (c) All Aerated Wastewater Treatment Systems (AWTS) must be inspected by an appropriately qualified servicing agent every three months or as specified by the systems NSW Health conditions of accreditation. All costs are at the householders expense. A report must be prepared for each inspection with a copy forwarded to Council. Any faults identified at this inspection must be repaired promptly.
- (d) For modifications of an existing system an '[Approval to Install an Onsite Sewage Management System](#)' must be obtained in addition to the satisfying the requirements outlined in 7.2.1.
- (e) All systems will be subject to inspection by Council on a frequency determined by risk. The inspection will identify any Environmental or Public Health issues and where necessary take action to have these matters rectified.
- (f) The destruction, removal or reuse of an onsite sewage management system shall be undertaken in accordance with the NSW Health Advisory Note 3 dated May 2006 "[Destruction, Removal or Reuse Of Septic Tanks, Collection Wells, Aerated Wastewater Treatment Systems and other Sewage Management Facility Vessels](#)".

8 Protecting Our Environment

This policy aims to protect and improve the health of Warringah’s waterways through the appropriate planning, design and operation of stormwater treatments measures for urban development. The outcomes Council seeks include:

- i. The integration of water sensitive urban design measures in new developments to address stormwater and floodplain management issues
- ii. Improve the quality of stormwater from urban development
- iii. Mimic natural stormwater flows by minimising impervious areas, reusing rainwater and stormwater and providing treatment measures that replicate the natural water cycle
- iv. Preserve, restore and enhance riparian corridors as natural systems

8.1 Stormwater Quality

Stormwater treatment measures are required to ensure the development does not impact on the receiving waters. The stormwater quality requirements are generally aligned with the catchment classifications as detailed in the Warringah Creek Management Study.

8.1.1 Stormwater Quality Requirements

To determine which stormwater requirements apply to the site use the table below to identify the land type.

Land Type	Table Which Applies
Undeveloped land ⁱ within a Group A & B Catchment ⁱⁱ	Table 3 – Stormwater Quality Objectives
Land within the riparian buffer of a Coastal Upland Swamp in the Sydney Basin Bioregion Endangered Ecological Community ⁱⁱⁱ	
All other land not identified above	Table 4 – General Stormwater Quality Requirements

Notes:

- i. Refer to the Definition section at the end of this Policy for definitions for “Undeveloped Land”.
- ii. Catchment Boundaries & Groupings are identified in the Warringah Creek Management Study
- iii. To determine if the development is within the riparian buffer of the above noted Endangered Ecological Community, refer to the following: [Section 149 Planning Certificate](#), [Protection of Waterways and Riparian Land Policy](#), [Waterways and Riparian Map](#) and [Threatened and High Conservation Habitat Map](#).

Table 3 – Stormwater Quality Objectives

Criteria	Objectives
Stormwater Quality	Stormwater quality discharging from the development shall not impact the receiving waters. Reference shall be made to local data if available, including the Warringah Creek Management Study and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC), or other widely accepted guidelines.
Sediment	Disturbance to stream and wetland sediments is to be minimised by regulated discharge of stormwater and dissipation of flows at discharge locations. Runoff from the development must be retained at natural discharge rates and sediments controlled at the source.
Hydrology	<p>Stormwater flow is to mimic natural conditions and ensure a dispersed pattern of flow, avoiding centralised or concentrated discharge points into the wetland or waterway.</p> <p>Natural flow regimes must be retained. The reduction or increase in flows, alteration in seasonality of flows, changes to the frequency, duration, magnitude, timing, predictability and variability of flow events, altering surface and subsurface water levels and changing the rate of rise or fall of water levels must be avoided.</p>

Table 4 – General Stormwater Quality Requirements

Pollutant	Performance Requirements
Total Phosphorous	65% reduction in the post development mean annual load ¹
Total Nitrogen	45% reduction in the post development mean annual load ¹
Total Suspended Solids	85% reduction in the post development mean annual load ¹
Gross Pollutants	90% reduction in the post development mean annual load ¹ (for pollutants greater than 5mm in diameter)
pH	6.5 - 8.5
Hydrology	The post-development peak discharge must not exceed the pre-development peak discharge for flows up to the 2 year ARI

Note:

¹The percentage reduction in the post development mean annual loads are relative to the loads from the proposed development without treatment applied.

8.1.2 Standards of Design

- (a) All stormwater treatment measures must be designed in accordance with the requirements of this Policy and the [Water by Design Technical Guidelines](#), and modified for local conditions as appropriate.
- (b) Stormwater treatment measures must be sited on private land. Council will not accept the ownership or maintenance responsibilities of any stormwater treatment devices.
- (c) For alterations and additions and the like, the stormwater quality requirements only apply to the new works.
- (d) Stormwater treatment measures must not be sited within riparian zones or within remnant vegetation.
- (e) Stormwater treatment measures must be kept offline and adequate erosion and sediment controls shall be implemented on site until the site has been fully stabilised. Refer to section 8.3 Erosion, Sediment and Pollution Controls for further details for erosion and sediment controls.
- (f) All stormwater treatment measures must be sited in an area which is easily and safely accessible (e.g. road side) and have wet weather access.
- (g) Stormwater treatment measures with a permanent water body must be completely fenced to the standard as required by the *Swimming Pools Act 1992* and associated Australian Standards.
- (h) A positive covenant and Restriction As to User must be registered on the title for the stormwater treatment measures to ensure regular maintenance and reliable operation.

8.1.3 Demonstrating Compliance

- (a) To demonstrate compliance with the relevant stormwater performance requirements, a model preferably through the Model for Urban Stormwater Improvement Conceptualisation (MUSIC), or an equivalent, widely accepted model or methodology must be provided.

Should MUSIC be used, modelling shall be undertaken in accordance with Northern Beaches Council WSUD Technical Guide unless alternative modelling parameters are justified on the basis of local studies. Details of the modelling of those elements, parameters and assumptions used, and all data files must be provided to the Certifying Authority as required by the conditions of consent for the development application.

- (b) The applicant is to engage the services of a qualified Civil Engineer, who has membership to the Institution of Engineers Australia, National Professional Engineers Register (NPER-3) to ensure the development complies with the relevant stormwater quality requirements outlined above.

8.1.4 Operation and Maintenance Plan

An Operation and Maintenance Plan is to be prepared to ensure proposed stormwater quality measures remain effective. For Community Title developments, the Plan is to be included in the Community Management Statement.

The Plan must contain the following:

- a) Maintenance schedule of all stormwater quality treatment devices
- b) Maintenance requirements for establishment period
- c) Routine maintenance requirements
- d) Funding arrangements for the maintenance of all stormwater quality treatment devices
- e) Identification of maintenance and management responsibilities
- f) Vegetation species list associated with each type of vegetated stormwater treatment device
- g) Inspection and maintenance record and reporting
- h) Waste management and disposal
- i) Traffic control (if required)
- j) Maintenance and emergency contact information
- k) Renewal, decommissioning and replacement timelines and activities of all stormwater quality treatment devices
- l) Work Health and Safety requirements
- m) Record keeping

8.2 Groundwater Management

- (a) The groundwater regime is to be maintained as close as possible to pre-development conditions and shall not adversely impact on receiving waters and groundwater dependant ecosystems.
- (b) Developments intercepting the water table are classified as Integrated Development and will require concurrence from the NSW Office of Water under the *Water Management Act 2000*.
- (c) Groundwater discharged to the stormwater system shall comply with the discharge requirements detailed in section 8.3 – Erosion, Sediment and Pollution Controls and any relevant legislation.
- (d) Records of all water discharges and monitoring results are to be documented and kept on site. Copies of all records shall be provided to the appropriate regulatory authority upon request.
- (e) Groundwater must be discharged to the nearest stormwater pit in accordance with Council's Auspec1 Design Manual. Discharge to the kerb and gutter will not be accepted.
- (f) Construction techniques, where possible, shall eliminate the need for dewatering i.e. a tanked construction.
- (g) Where below-ground structures are in close proximity to each other (typically less than 3 metres) there shall be no allowance provided for natural flow of groundwater through these narrow corridors, unless adequate justification from a suitably qualified engineer is provided.
- (h) Provision must be made for groundwater flows in the design of perimeter or through drainage system.

8.3 Erosion, Sediment and Pollution Controls

- (a) Erosion and sediment controls are to be designed, constructed and installed in accordance with [Landcom's Managing Urban Stormwater: Soil and Construction Manual](#) (2004) and maintained until the site is fully stabilised to prevent pollution of the receiving environment.
- (b) Council will require the submission of the following plans with the development application:
- An **Erosion and Sediment Control Plan** (ESCP) for all development which involves the disturbance of up to 2500m² of land.
 - A **Soil and Water Management Plan** (SWMP) for all development which involves the disturbance of more than 2500m² of land. A SWMP must be prepared by a suitably qualified Civil Engineer, who has membership to the Institution of Engineers Australia, National Professional Engineers Register (NPER-3).
- (c) The design storm event for the stability of erosion, sediment and pollution control structures is to be taken as the 10-year ARI time of concentration storm event, unless as specified by Council.
- (d) Water to be discharged must be tested and, if required, treated to ensure it meets the water quality criteria and that pollution of the receiving waters does not occur.

Before water can be discharged to the receiving environment, the following criteria must be met, unless subject to an Environmental Protection Licence or site specific criteria.

Parameter	Criterion	Method	Time Prior to Discharge
Oil and grease	No visible	Visual inspection	<1 hour
pH	6.5- 8.5	Probe/meter	<1 hour
Total Suspended Solids	<50mg/L	Meter/grab sample	<1 hour

- (e) Records of all water discharges and monitoring results are to be documented and kept on site. Copies of all records shall be provided to the appropriate regulatory authority upon request.
- (f) All chemicals and hazardous substances must be stored and handled in accordance with relevant State and Federal requirements. This includes providing mandatory spillage containment areas (i.e. bunding) to prevent chemicals entering the stormwater system and storage above the Flood Planning Level if located on flood prone land.

8.4 Stormwater Discharge to Watercourse or Open Channel

- (a) Direct discharge to a watercourse is to be avoided. Other alternatives should be considered as detailed in Council's [Stormwater Drainage from Low Level Properties Technical Specification](#).
- (b) The creation of a discharge point within a watercourse is a Controlled Activity under the *Water Management Act 2000* and will require approval from the NSW Office of Water unless exemptions apply (refer to Schedule 5 of the Regulations).
- (c) Only a single discharge point to the watercourse or open channel from the development will be permitted.

- (a) The outlet structure must comply with [Guidelines for Outlet Structures](#) prepared by the NSW Office of Water and Council's [Protection of Waterways and Riparian Land Policy](#) for additional requirements.

9 Flood Risk Management

Council is responsible for managing flood risk in the Warringah Local Government Area (LGA). This policy is intended to complement the roles of other Government agencies that provide technical and financial assistance in the development and implementation of flood risk and management plans as well as emergency response.

The following principles will guide Warringah Council in the management of flood risk in accordance with the process outlined in the NSW Government Floodplain Development Manual (2005).

9.1 Onsite Stormwater Detention

Onsite Stormwater Detention (OSD) collects stormwater and stores it temporarily before releasing it slowly into the drainage system in order to minimise the impacts from flooding.

(a) OSD is required for the following developments:

- i. single residential dwellings where the total existing and proposed impervious areas exceed 40% of the total site area (OSD will not be required for alterations and additions or where the total site area is 450m² or less)
- ii. new residential flat buildings/multi-residential unit dwellings
- iii. commercial developments
- iv. industrial developments
- v. subdivisions resulting in the creation of three (3) lots or more
- vi. subdivisions resulting in the creation of two (2) lots or more, OSD will be required where the post developed impervious area of the new lots exceed 40% of the site area of the new lots. This requirement also applies to newly created lots with existing dwellings to be retained
- vii. Alterations and additions to existing residential flat buildings/multi-residential unit dwellings, commercial developments and industrial developments, OSD is applicable to the extent of the new works only.

(b) Development requiring OSD must comply with Council's [Onsite Stormwater Detention Technical Specification](#).

(c) A positive covenant and Restriction As to User must be registered on the title for the OSD system to ensure regular maintenance and operation.

(d) Council will not permit the use of "Drainage Cell" type products for onsite detention storage as access for maintenance or removal of silt/debris is limited.

(e) Council will allow the volume of rainwater reuse in single residential dwellings to be credited against the calculated OSD storage volume as determined by Council's [Onsite Stormwater Detention Technical Specification](#).

9.2 Identifying Flood Risk

Council will develop and implement a flood program to identify and manage flood risk in the Warringah LGA. Prioritisation of activities within the flood program is based on the potential exposure of an area to flood risk, tying in with strategic priorities, as well as availability and quality of existing studies. Council will identify the extent of inundation and the flood behaviour of lagoons, creeks, estuaries and overland flow paths in Flood Studies.

Flood studies and associated plans will be undertaken in accordance with the NSW Government Floodplain Development Manual 2005 and will be updated as required depending on their current and ongoing suitability for use.

All Flood investigations and management plans undertaken by Council will incorporate appropriate community consultation in accordance with Council's Community Engagement Policy and Framework.

9.2.1 Climate Change

The impact of climate change on flood behaviour will be investigated in all Council flood investigations. Council will consider sea level rise projections and changes in rainfall and storm surge intensity and frequency, in accordance with latest guidelines and best available information for climate change.

9.2.2 Planning Certificates

Council issues Planning Certificates under section 149 of the *Environmental Planning and Assessment Act 1979* which specify such prescribed matters relating to the land as outlined in Schedule 4 of the Regulations, including "Flood related development controls information".

Council has a statutory responsibility to update Planning Certificates as any new or updated flood data becomes available subsequent to the approval from the Council.

The recommendation to Council to update Planning Certificates should be made in the same report as the recommendation to adopt the draft Final Flood Study.

9.2.3 Provision of Data to the Public

- a) A Flood Information Report is available from Council (refer Council's fees and charges).
- b) Council will provide the 1% AEP, FPL and PMF levels for a specific property where available.
- c) Flood level information may be subject to change in the future
- d) For large-scale developments, or developments in key flood areas, applicants may be requested to use Council's hydraulic model to assess the impacts. This would be applicable only for a development which is likely to cause a change in the flood regime or requires confirmation that it will create no impact on flooding for neighbouring properties. Hydraulic models are available from Council (refer Council's fees and charges) and recipients will be required to complete the appropriate Data Use Agreement.

9.2.4 Development on Flood Prone Land

All development on land identified as being flood prone or subject to overland flows must comply with the requirements of:

- Section 6.3 - Flood Planning of the Warringah Local Environmental Plan 2011, and
- Section E11 – Flood Prone Land of the Development Control Plan 2011

- Clause 47 of the Warringah Local Environmental Plan 2000.

9.3 Overland Flow

Overland flow differs from mainstream flooding from creeks or lagoons as they are usually generated from surface run off and overflows from kerbs and smaller pipes, to more serious overland flows involving exceedance in the capacity of major trunk drainage systems.

9.3.1 Identifying Overland Flows

To determine if the subject property is affected by overland flow, a Civil Engineer who is currently registered on the National Professional Engineers Register (NPER), should be engaged to investigate and verify whether the subject property is affected by overland flows during a 1 in 100 ARI even. [Council's Stormwater Planning Maps](#) may assist identifying Council drainage in the vicinity of the property.

9.3.2 Development on Land Subject to Overland Flows

- a) For development on properties subject to overland flow that has not been identified as being flood affected must comply with flood related development controls, in particular the Warringah Local Environment Plan 2011, Warringah Development Control Plan 2011 or Warringah Local Environmental Plan 2000, as appropriate.
- b) Overland flow paths designed to contain a 1 in 100 year ARI storm flow are to be provided over all pipelines that are not designed to cater for this flow. The design of the overland flow path must consider the velocity-depth hazard.
- c) Overland flow paths are to be kept free of obstruction and must not be landscaped with loose material that could be removed during a storm event, such as wood chip or pine bark.

9.3.3 Subdivisions on Lots Affected by Overland Flow

Proposed land subdivisions of lots affected by overland flow will not be approved unless the applicant can demonstrate that future development can comply with the requirements of the Warringah Local Environment Plan 2011, Development Control Plan 2011 or Warringah Local Environmental Plan 2000, as appropriate.

9.3.4 Piping Overland Flows

Developments proposing the collection and piping of overland flow through the subject property will generally not be permitted. Where an existing Council pipeline is to be diverted and/or upgraded, the design is to be in accordance with section 6 - Building Over or Adjacent to Council Drainage Systems and Easements.

10 Compliance

Council will apply the [Compliance and Enforcement Policy PL 120](#) for the investigation of alleged unlawful activity, and any enforcement action required in relation to unlawful activity, within the Warringah local government area for which Council is the appropriate regulatory authority.

10.1 Audit of Water Management Requirements

Council may undertake audits of developments to ensure the requirements of this Policy and the development consent are met at all times. For any non-compliances identified, Council will apply the provisions of the [Compliance and Enforcement Policy PL 120](#).

10.2 Complaints Relating to Private Property

Complaints relating to stormwater from private property are only investigated by Council:

- a) after the parties has exhausted reasonable attempts to resolve the matter with each other
- b) when there is sufficient evidence that the water has caused, or is likely to cause significant soil erosion or physical damage to a building or land.

Council will not take action, when:

- a) water flow problems are caused by natural ground seepage
- b) water flows naturally onto the property from a higher property (or properties)
- c) water flows from a defective or blocked private inter-allotment drainage easement of which the complainant is a part. Private inter-allotment easements are the responsibility of all property owners who are burdened by and/or benefited by the easement
- d) water overflows from a swimming pool due to rainfall.

10.3 Removal of Private Trees Threatening Council Stormwater Pipes

- a) To protect Council's stormwater pipes from blockage or structural damage by trees on private land, landowners may be required by Council to remove any tree adjacent to the pipes when it is apparent that the tree's root system has, or is likely to, penetrate the pipeline joints. If the owner refuses to do this after reasonable notification from Council, the owner is to bear the cost of any future maintenance work on the pipeline due to tree root damage.
- b) Removal of private trees threatening Council stormwater pipes are to be conducted according to the following principles:
 - Identification of tree roots within the pipe system, by means of CCTV or visual inspection
 - Removal of root obstruction will be conducted only by the following means:
 - i. unobtrusive removal of tree root mass with no physical interference to the pipe
 - ii. excavation of the tree root mass at pipe location with minimal site disturbance
 - iii. full excavation and replacement of pipe section in accordance with Auspec1 Design Manual.
- c) Tree removal will be at owner's expense.

11 Amendments

Nil

12 Authorisation

This Policy was adopted by Council on 15 December 2015.

It is effective from 15 December 2015.

It is due for review on 15 December 2019.

13 Who is Responsible for Implementing this Policy?

Group Manager Natural Environment

14 Document Owner

Deputy General Manager Environment

15 Related Policies

- a) Compliance & Enforcement Policy PL 120
- b) Risk Assessment Framework PL 700
- c) Protection of Waterways and Riparian Land Policy PL 740

16 Legislation and References

- a) *Conveyancing Act 1919*
- b) *Environmental Planning and Assessment Act 1979*
- c) *Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004*
- d) *Environment Protection and Biodiversity Conservation Act 1999*
- e) *Fisheries Management Act 1994*
- f) [Guidelines for Outlet Structures](#) prepared by the NSW Office of Water.
- g) *Local Government Act 1993*
- h) *MWH, 2004, Warringah Creek Management Study*
- i) *Protection of the Environment Operations Act 1997*
- j) *State Environmental Planning Policy 25 Building and Sustainability Index: BASIX 2004*
- k) *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*
- l) *State Environmental Planning Policy No. 71 - Coastal Protection*
- m) *Threatened Species Conservation Act 1995*
- n) *Water Management Act 2000*

- o) [Water by Design Technical Guidelines](#)
- p) Warringah Local Environment Plan 2000
- q) Warringah Local Environment Plan 2011
- r) Warringah Development Control Plan 2011
- s) Warringah Council, [Waterways and Riparian Map](#)
- t) Warringah Council, [Protection of Waterways and Riparian Land Policy](#)
- u) Warringah Council, [Building Over or Adjacent to Constructed Council Drainage Systems and Easements Technical Specifications](#)
- v) Warringah Council, [Stormwater Drainage from Low Level Properties Technical Specification](#)
- w) Warringah Council, [Onsite Stormwater Detention Technical Specification](#)
- x) Warringah Council [Compliance and Enforcement Policy PL 120](#)
- y) Warringah Council, Water Sensitive Warringah Strategic Plan
- z) Warringah Council, Water Sensitive Warringah Technical Paper

17 Definitions

Average Exceedance Probability (AEP) has the same meaning as defined in the Floodplain Development Manual.

Average Recurrence Interval (ARI) means the average or expected value of the period between exceedences of a given rainfall event or discharge.

Catchment means an area of land, bound by hills, mountains and the like from which all runoff water flows to the same low point. A catchment may possess more than one sub-catchment. Catchment Boundaries & Categories are identified in the Warringah Creek Management Study and on [Council's Stormwater Planning Maps](#).

Downstream catchment means the direct sub-catchment a low level property would drain to via gravity.

Development has the same meaning as defined in the *Environmental Planning and Assessment Act 1979*.

Development application has the same meaning as defined in the *Environmental Planning and Assessment Act 1979*.

Drainage has the same meaning as defined in the Plumbing Code of Australia which means any sanitary drainage, liquid trade waste drainage or stormwater drainage system.

Endangered Ecological Communities has the same meaning as defined in the *Threatened Species Conservation Act 1995*.

Exempt and Complying Development means any development undertaken under the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Existing development means any development prior to authorisation of this policy.

Flood has the same meaning as defined in the Floodplain Development Manual.

Flood Planning Level (FPL) has the same meaning as defined in the Warringah Local Environmental Plan.

Flood Risk has the same meaning as defined in the Floodplain Development Manual.

Flood Storage has the same meaning as defined in the Floodplain Development Manual.

Habitable Room has the same meaning as defined in the Floodplain Development Manual.

High Hazard has the same meaning as defined in the Floodplain Development Manual.

Impervious area refers to land covered by impervious surfaces such as buildings, paving, asphalt, tiles, and the like, which limits or prevents infiltration of water.

Infrastructure Development means any development undertaken under the State Environmental Planning Policy (Infrastructure) 2007.

Integrated Development has the same meaning as defined in the *Environmental Planning and Assessment Act 1979*.

Inter-allotment drainage easement has the same meaning as an Easement to drain water as referred to in the *Conveyancing Act 1919*. An easement usually identified on the Certificate of Title issued by the NSW Land and Property Information.

Inundation is the experience of getting wet by any source of water including but not limited to fluvial, tidal, oceanic, overland flows, stormwater.

Low Level Properties means a property that has the ground level which is lower than the roadway fronting the property.

New development means any development being designed or constructed after the authorisation of this Policy.

Onsite stormwater detention system means is a stormwater drainage device to control the amount of stormwater discharge to a specified rate. The device is to be constructed on the subject property. Refer to Council's [Onsite Stormwater Detention Technical Specification](#) and Onsite Stormwater Detention (OSD) checklist for more information.

Onsite Wastewater Management System has the same meaning as Sewage Management Facility as defined in the *Local Government (General) Regulation 2005*.

Overland Flow means inundation by excess rainfall runoff, flowing across land before it enters a principal watercourse. Includes sloping areas where overland flows develop along alternative paths once system capacity is exceeded.

Pollution has the same meaning as defined in the *Protection of the Environment Operations Act 1997*.

Probable Maximum Flood (PMF) has the same meaning as defined in the Floodplain Development Manual.

Receiving waters means a waterway/s into which water discharges from a development.

Remnant vegetation has the same meaning as defined in the Warringah Development Control Plan 2011.

Residential flat development has the same meaning as defined in the *State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development*.

Riparian land has the same meaning as defined in Council's Protection of the Waterways and Riparian Land Policy.

Riparian zone has the same meaning as defined in Council's Protection of the Waterways and Riparian Land Policy.

Sewage has the same meaning as defined in the *Local Government (General) Regulation 2005*.

Single Lot Residential Development has the same meaning as "dwelling house" as defined in the Warringah Local Environmental Plan 2011.

Site Area has the same meaning as the Warringah Local Environmental Plan 2011

Stormwater is rain water that flows over the surface of the land as run-off, rather than seeping into the soil.

Undeveloped land means land:-

- a) that has not been subject to prior development, or
- b) is in a state of nature, or
- c) with an impervious area of less than 10%.

Vulnerable Development has the same meaning as defined in the Warringah Development Control Plan 2011.

Watercourse has the same meaning as defined in Council's Protection of the Waterways and Riparian Land Policy.

Waterway has the same meaning as defined in Council's Protection of the Waterways and Riparian Land Policy.

Wastewater has the same meaning as Sewage as defined in the *Local Government Act 1993*.