STORMWATER MANAGEMENT

SUTHERLAND SHIRE ENVIRONMENTAL SPECIFICATION 2009

SUTHERLAND SHIRE COUNCIL

1. Introduction

This Environmental Specification outlines detailed requirements relating to stormwater management. Managing stormwater sustainability improves the quality of development and helps to protect the quality of the Shire's waterways. It covers areas relating to hydrological calculations, discharge, water quantity, water sensitive urban design, overland flow paths, constructed flood ways and other matters relevant to achieve effective stormwater management outcomes.

This Specification should be read in conjunction with Sutherland Shire Local Environmental Plan 2006 (SSLEP 2006) and the relevant provisions of the Sutherland Shire Development Control Plan 2006 (SSDCP 2006) specifically Chapter 8.

Under *State Environmental Planning Policy – Building Sustainability Index 2004* (BASIX) new residential developments are required to meet a number of State Government targets relating to water reduction, energy efficiency and thermal comfort. As such a number of areas relating to stormwater management, such as rainwater tanks, are covered by BASIX and should be consulted in conjunction with the following information.

2. Submission Requirements for Stormwater Management

All development applications are required to demonstrate stormwater management outcomes that minimise the volume of stormwater runoff. This is achieved through water retention, infiltration and reuse techniques in accordance with the stormwater management provisions specified in SSDCP 2006.

It must be noted that in instances where residential stormwater runoff must traverse other properties, a legally created easement will be required with an associated formal drainage system.

Information that must be included in a development application to meet stormwater management requirements includes the following:

a) A site analysis that includes details regarding stormwater management opportunities with regard to achieving Council's DCP objectives.

b) A concept Stormwater Management Plan certified by a suitably qualified and experienced Chartered Professional Engineer registered on the National Professional Engineer Register (NPER) in Civil Engineering, where required by SSDCP2006, that includes the following:

- A statement justifying that the hydraulic design satisfies the requirements of Council's Stormwater Specifications contained within Sutherland Shire Development Control Plan 2006 and this specification.
- Any infiltration or stormwater absorption system shall require a geotechnical engineers report (Soil Infiltration Field Test) confirming the suitable permeability of the site.
- As a minimum, the geotechnical report must be in accordance with the pro-forma found in Appendix A.
- Emergency spill plans must accompany development applications that involve hazardous materials.
- Drainage systems must be analysed using the most appropriate and accurate full hydrograph producing computer model such as ILSAX, DRAINS, RAFTS or similar. Rational method triangular hydrographs are not acceptable.
- The most recent and appropriate Intensity-Frequency-Duration (IFD) rainfall data for the location is to be used for all hydrologic calculations.
- The most appropriate discharge and water level calculation procedures are to be used in hydraulic analysis.
- Hydrologic models for pre and post-developed conditions shall consider surface contours, appropriate runoff coefficients and any existing or proposed drainage structures
- Calculations are to be certified by a suitably qualified and experienced Chartered Professional Engineer NPER in Civil Engineering.
- The design of OSD facilities shall account for the total allotment area.
- Information relating to rainwater tank(s) such as support structure, location, plumbing connections and intended reuse must be shown on the concept stormwater management plan.

c) Proposals for large-scale development and work for urban purposes are to be accompanied by Soil and Water Management Plans (SWMP). The Plans are to outline strategies and Best Management Practices (BMPs) that will be adopted on-site, detailing how they will integrate with Council's off-site stormwater control strategies, so as to discharge no net increase in sediment from the development site to receiving waters.

d) The management of construction sites is to be outlined on a Soil and Water Management Plan (SWMP) and approved by Council. Alternatively, this information may be incorporated into the Construction Management Plan

2.1 Calculations for Stormwater Management

a) Up to date and appropriate intensity-frequency-duration (i.e. IFD) rainfall data is to be used for all hydrological calculations in Council's area.

b) The most appropriate discharge calculation procedure is to be used in hydrological analyses. Calculations are to be certified by a suitably qualified and experienced Chartered Professional Engineer NPER in Civil Engineering

c) The most appropriate water level calculation procedures are to be used in hydraulic analyses. Calculations are to be certified by a suitably qualified and experienced Chartered Professional Engineer NPER in Civil Engineering

d) Hydrologic modelling will consider the predicted impacts of climate change on rainfall intensities and sea level in accordance with the most current recommendations of the NSW State Government Department of Environment and Climate Change and any adopted Council strategy or plan.

3. Specific Requirements for On-Site Retention

3.1 General

Guidelines with respect to design solutions for on-site retention can be sourced through:

- "Australian Runoff Quality – A guide to Water Sensitive Urban Design" by Engineers Australia
- "WSUD Basic Procedures for 'Source Control' of Stormwater – A Handbook for Australian Practice" by University of South Australia, Stormwater Industry Association & Australian Water Association
- "WSUD Engineering Procedures" by CSIRO Publishing.

3.2 Paving

a) Non-porous paving shall be designed to direct rainfall runoff onto adjacent grassed or landscaped areas or into another source control device prior to discharge off-site. Overland flow shall be managed to prevent erosion in garden beds, mulched areas and the like.

b) Where used, porous paving shall be provided to manufactures specifications and the suitability of the site in accordance with Appendix A.

3.3 Pervious Areas

a) Pervious areas, natural surfaces and landform need to be maintained to act as natural influences on overland flow paths and allow for infiltration to underlying soil.

b) Open car parking areas are to utilise pervious surface treatments where site conditions are suitable.

c) Sediment traps, vegetated filter strips or the like are to be installed upstream of porous paving to reduce sediment inputs and minimise likelihood of clogging, particularly during the construction phase.

3.4 Constructed Infiltration Systems

Where soil conditions are suitable, disposal of stormwater by infiltration is compulsory. Requirements for infiltration systems are outlined in Chapter 8 of SSDCP 2006.

3.4.1 Infiltration Test Method

Appendix A of this specification outlines a Soil Infiltration Field Test method, which is to be submitted as additional documentation where an infiltration system is proposed. This document will set out the parameters a geotechnical engineer will need to satisfy.

3.4.2 Infiltration Rates

Soils shall have an infiltration rate of at least 15 mm/h in all moisture conditions. There should be at least 1 metre between the base of the infiltration system and the seasonal water table. Conditions in which percolation is more than 15 mm/h, soil storage depth is in excess of 1 metre and residence time is of the order of 12-72 hours, is sufficient to remove "first flush" pollutants (first 0.5 mm of runoff) and prevent their accession to the water table.

3.4.3 Existing trees and vegetation

On-site infiltration systems shall be located well clear of existing trees and vegetation that are to be retained. Where this is not practical, an aborist should be consulted to report the prospects for affected trees and vegetation. Any existing trees that will be adversely affected shall be identified.

3.4.4 Erosion Controls

Controls to prevent fine sediment from entering infiltration systems shall be applied using upstream treatment measures. Contamination of infiltration systems with industrial, putrescible and petroleum derived wastes in addition to other upstream treatment measures. Site management is also to prevent compaction of the infiltration area and maintain grass cover.

3.4.5 Soil Infiltration

a) On the map marked ‘Soil Infiltration Potential’ (contained in Chapter 8 of SSDCP 2006), development sites indicated as 'High’ permeability must provide constructed infiltration systems except where a geotechnical report is provided which demonstrates that the site is unsuitable.

b) On the map marked ‘Soil Infiltration Potential’ (contained in Chapter 8 of SSDCP 2006), development sites indicated as 'Medium' permeability are encouraged to provide constructed infiltration systems except where a geotechnical report is provided which demonstrates that the site is unsuitable..

c) On the map, marked ‘Soil Infiltration Potential’ (contained in Chapter 8 of SSDCP 2006), development sites, which are not identified, or are indicated as 'Low’ permeability, on-site infiltration systems may be considered if supported by a geotechnical report.

d) Surcharge from the infiltration system must not exceed the Permissible Site Discharge rate. Surcharge shall not be concentrated across a boundary.

3.4.6 Other Controls for Constructed Infiltration Systems

a) Systems must be provided with an appropriate overflow facility which incorporates measures to control erosion.

b) Up to 100% of the volume of infiltration, storage provided (based on pore space) may be deducted from any On-Site Detention (OSD) volume requirements.

c) If ponding is noticed, (ground surface saturation), replacement of the media may be required to increase the infiltration rate. This may be needed every 5 to 20 years. Planting suitable local native vegetation may assist in the take up of water.

3.5 Rainwater Harvesting and Use

3.5.1 Installation

a) The rainwater tank may be free standing, partially or wholly below ground, incorporated into the eaves of the building or fixed to a wall.

b) The support structure or footings used for a tank must be placed on a suitable foundation in accordance with the manufacturer's details or any other structure designed by an appropriately qualified person. It must not rest (in full or part) on the footing of any building or structure or on a retaining wall.

c) It must not be installed over or immediately adjacent to stormwater drainage easement or a water or sewer main (unless the requirements of the public authority with responsibility for the main/easement have been met) or over any structure or fittings used by the public authority to maintain a water or sewer main.

d) Tank installation and all plumbing works must be carried out by a plumber licensed with the NSW Department of Fair Trading.

e) One third of the volume of a rainwater tank may be used to offset On-Site Detention (OSD) volume requirements where the rainwater tank is permanently connected to all toilet, laundry, irrigation systems and other beneficial uses.

f) Where an underground rainwater tank is proposed, the minimum soil depth above the tank is to be 300mm to enable the area to be grassed.

g) Underground rainwater tanks or infiltration systems may be located beneath driveways.

3.5.2 Plumbing Connections

a) Water collected in rainwater tanks shall be plumbed separately from the mains water supply system to ensure no possibility of cross connection.

b) All drainage connections are to be in accordance with the Drainage and Plumbing Code AS 3500

c) All rainwater storage shall be directly connected to the permanent reuse system within the building and other systems. Potable water shall only be introduced to the rainwater tank and not to any part of the reuse system directly.

3.5.3 Potable Water Back-up

a) Potable water from the back-up system shall be introduced directly to the rainwater tank(s) and not to the distribution system. Potable water is to be supplied via a dry break connection.

b) For developments where a single rainwater tank is used, this tank shall be considered as the Potable Water Make-up Tank. Should a development include more than one rainwater tank, a single rainwater tank shall be nominated as the Potable Water Make-up Tank.

c) The Potable Water Make-up Tank shall be installed such that potable water is supplied when the storage level is reduced to between 5 and 10% of installed rainwater storage capacity. At this level, an approved mechanical float device or electrical float switch is to be used to make up potable water.

3.5.4 Taps

Any outlets provided other than overflows are to be marked "Rainwater - Not for human consumption".

3.5.5 Overflow

a) Intense or prolonged rainfall will exceed the capacity of the tank so it is essential to have an overflow system that complements the overall design of the stormwater system.

b) Overflow shall not be directed into the sewer.

3.5.6 Visual appearance

a) While the rainwater tank, its associated drainage, plumbing and supporting structure must be located as dictated by hydraulic requirements, they shall be fully integrated into the design of the building and site to achieve the best aesthetic outcome.

b) Rainwater tanks in residential areas are to be located in the rear or side of a property and at least 450 mm from any boundary. They should not be located forward of the building line.

c) Materials, colours and shapes of the tanks should be compatible with the proposed building, adjoining buildings, and streetscape.

3.5.7 Health and Safety

a) Tanks must be covered or fully enclosed and any lid shall be designed to prevent someone from wilfully or accidentally entering, climbing or falling into a tank.

b) Rainwater tanks shall have suitable contaminant screens and be fitted with an appropriate first flush diverter.

c) Stored water should not be used for drinking or bathing

d) Sound proofing the pump of a water reticulation system is required

3.5.8 Mosquito Proofing

Tanks and associated openings including inlet and outlet pipes shall be made mosquito proof.

3.5.9 Pump Installation

a) Irrigation systems should be gravity fed where possible. Pump installations will be permitted where a reuse system is employed.

b) Where feasible pumps are to be solar powered. Mains or battery backup shall be provided to ensure the system is continuously operational.

c) Pressurising pump(s) locations shall be nominated on the stormwater Management Concept Plan. A sound enclosure shall be provided for each pump to limit generated noise in accordance with the NSW EPA noise control manual.

3.5.10 Maintenance

a) Gutter and roofs should be cleaned and maintained regularly.

b) Clean inlet strainers whenever necessary, or use self-cleaning strainers.

c) Rainwater tanks will require periodic cleaning to remove accumulated sediment and debris. However, the first flush diverter and containment screens will minimise this requirement.

d) Ensure the inlet strainers, mosquito proofing and lids are in good repair. Lids shall be tight fitting.

3.5.11 Australian Standards

a) Rainwater tanks and their associated fittings and fixtures must comply with the relevant Australian Standards; AS/NZS 2179-1994 'Specifications for Rainwater Goods, Accessories and Fasteners AS2180-1986 'Metal Rainwater Goods - Selection and Installation

b) A certificate of compliance from a suitably qualified person showing that the tank meets these standards shall be submitted.

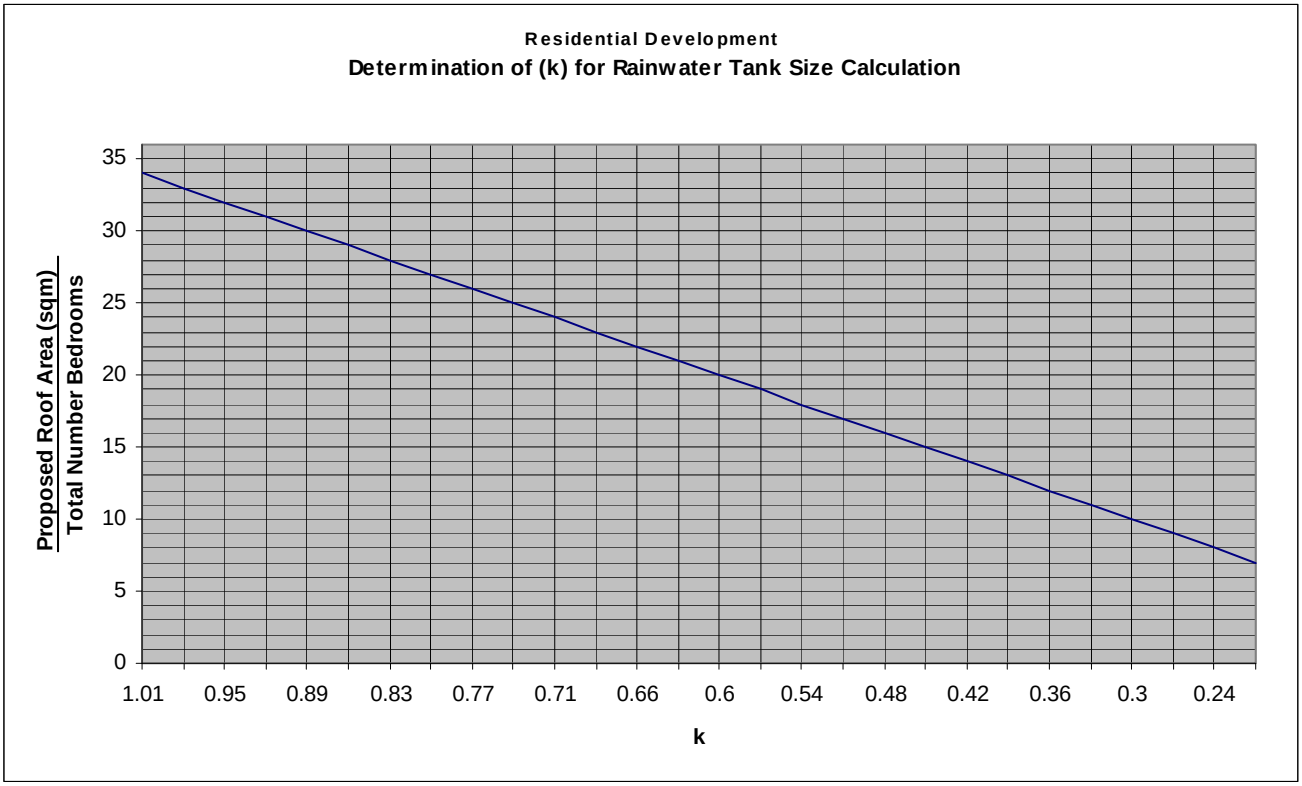
3.6 Controls for Sizing of Rainwater Tanks

3.6.1 Rainwater Tank Capacity for Residential Developments

The minimum rainwater tank capacity to be provided for a single residential dwelling (including additions) not subject to BASIX requirements shall be in accordance with this section. A single residential dwelling is deemed to comply with OSD requirements where a rainwater tank is provided in accordance with this section and permanently connected to all toilets, laundry and irrigations systems provided.

(a) Rainwater Tank Capacity (Q) for residential development not subject to BASIX is: Q=C x L x k

Where:
Q= rainwater tank(s) volume in litres
C= 100 litres per day multiplied by the no of bedrooms on new dwelling
L= the mean dry period between rain events is adopted as 14 days
k= Co-efficient derived from the proposed roof area and the total number of bedrooms. This is determined by the graph below. Regardless of the ratio of the roof area and total number of bedrooms, the maximum value of k is 1.01 and the minimum is 0.21.



Example:

Determine the required minimum rainwater tank size for a proposed 4-bedroom home having a total roof area of 120 sqm.

roof area / total bedrooms = 120 sqm / 4 = 30
from the graph, k = 0.89

C = 100 litres/day x 4 bedrooms = 400 litres/day

so, the minimum required rainwater tank(s) storage capacity is therefore:

Q = 400 litres/day x 14 days x 0.89 = 4,984 litres

Notes to the Graph:
The purpose of coefficient k is to take into account different types of developments and the resultant opportunity to capture and use rainwater. Coefficient k is designed to give a practical and reasonable apportionment based on these factors.

Generally, the higher density built forms have less ability to consume potable water, as the landscape area per person or per bedroom becomes smaller. A large 4 bedroom house erected upon a 1000 square metre property may have an equivalent roof area as a 6 unit 3 storey residential flat building, having 12 bedrooms.

3.6.2 Rainwater Tank Capacity for Other Developments

For all forms of development other than single residential dwellings and additions not subject to BASIC, the determination of rainwater tank capacity shall be based upon a site specific water balance. The analysis shall include accurate calculations of all potential demands for harvested stormwater such as toilet flushing, laundry uses, irrigation systems and any other beneficial activity. Monthly rainfall data from the nearest NSW Bureua of Meteorology (BOM) monitoring station shall be used. The water balance shall consider an appropriate dry period between rainfall events, typically not less than 21 days.

4.0 Specific Requirements for On-Site Detention

On-site detention (OSD) is required to ensure the peak discharge rate of stormwater flow from new development is no greater than that of the Permissible Site Discharge (PSD) in accordance with SSDCP2006 requirements. OSD systems temporarily detain stormwater on-site, restricting the discharge to a rate that can be accommodated by Council's existing drainage system. OSD applies to all forms of development.

4.1 Control devices and Storage Pits

a) A high-level outlet is to be provided at the discharge control pit to cater for surcharge during major storm events. Access to the discharge control pit is to be provided for inspections and maintenance of the silt trap and mesh screen. Such opening is to be a 600mm x 600mm and is to be fitted with a removable galvanised steel grate and to be placed above the outlet & silt trap. Additional access may be required for larger underground storages. The system is to be designed to maximise ease of maintenance of the OSD structure, which must be carried out on a regular basis by the owner.

b) Where an outlet is piped to the kerb, a hot dipped galvanised steel hollow section with a minimum wall thickness of 3 mm, section height of 75 mm where connected to roll kerb or 100 mm where connected to barrier kerb.

c) A stainless steel or galvanised mesh screen (maxi-mesh RH3030 or equivalent) with a minimum area of 50 times the orifice area, and fitted with a lifting handle, shall be provided between the orifice and the inlet. The screen is to be a minimum distance from the orifice equal to 1.5 times the diameter of the orifice or 200 mm, whichever is greater. The screen should be positioned so that the inflows are directed parallel to the screen.

d) Orifice plates shall be a minimum 200mm x 200mm flat stainless steel plate, 3mm thick. The orifice is to be tooled to the exact dimension as calculated, uniform circular shape with sharp (not rounded) edges.

e) All maintenance access to storages must conform to the current confined spaces regulations.

f) Venting shall be provided where there is potential for gas build up. A hydrostatic value is to be provided where necessary. Step irons are to be installed where the depth of the underground tank is 1000mm or greater.

g) Orifice diameters smaller than 75mm will not be permitted.

4.2 Storage Areas

a) Maximum depth of surface ponding shall not exceed 300mm under design conditions.

b) Storage volumes in landscaping areas shall include an allowance for an additional 20 percent to accommodate possible vegetation growth and construction inaccuracies.

c) The desirable minimum surface slopes to be 5:1 (5 horizontal : 1 vertical)

d) Where the discharge is connected to Council's piped system, subsoil drainage around the outlet is to be provided to prevent the ground becoming saturated during prolonged wet weather. Subsoil drainage shall not be provided where the discharge is connected to the kerb and gutter.

e) Where the storage is located in an area where frequent ponding could create maintenance problems or personal inconvenience to property owners, the first 10-20% of the storage should be provided in an area able to tolerate frequent inundation. For example, a paved outdoor area, a small underground tank or a rock garden can be used.

f) Retaining walls must be structurally fit for their purpose, including the hydrostatic loads caused by full storage.

4.3 Driveways and Car Parks

a) To avoid damage to vehicles, depths of ponding on driveways and car parks shall not exceed 200 mm.

b) Transverse paving slopes within storage areas should not be less than 0.7%.

4.4 Legal Requirements

Where On-Site Detention systems are required, and/or rainwater tanks are relied upon the following conditions will appear on any development consent:

a) Keep the drainage system facility clean and free from silt, rubbish and debris.

b) Maintain and repair the drainage system facility so that it functions in a safe and efficient manner.

c) Replace, repair, alter and renew the whole or parts of the drainage system facility within the time and in a manner specified in a written notice issued by the Council.

d) Not make any alteration to the drainage system facility or elements thereof without prior consent in writing of the Council.

e) Permit the Council or its authorised agent from time to time upon giving reasonable notice (but at anytime and without notice in the case of an emergency) to enter and inspect the land for compliance with the requirements of this clause.

f) Comply with the terms of any written notice issued by the Council in respect to the requirements of the Clause within the time stated in the notice.

g) On completion the works are to be certified by a suitably qualified and experienced Chartered Professional Engineer NPER in Civil Engineering or a Land Surveyor registered with the Institute of Surveyors NSW and "Works As Executed" drawings provided to Council in respect of:

- Fitness for purpose of storage structure
- The structural adequacy of the storage device
- The adequacy of the OSD system
- The works being approved in accordance with the approved design

The Works-As-Executed drawings submitted to Council are also to include all relevant levels, reduced to Australian Height Datum, dimensions and locations including:

- invert levels,
- surface and pavement levels,
- floor levels, including adjacent property,
- maximum water surface level for a 1% AEP storm event,
- floor levels and freeboard,
- the location, volume and dimensions of the basin and level and dimensions of overflow weir, distances from boundaries and buildings.

5. Specific Requirements for Drainage

5.1 Additional Controls for Piping

a) Natural surface drainage and waterways shall be retained on all sites.

b) Exposed pipe work below a foreshore building line shall be covered, vegetated and not visible from a waterway.

5.2 Drainage Easements

a) Private inter-allotment drainage lines shall be a minimum 900 mm wide and contain a minimum 150 mm diameter pipeline.

b) Drainage structures, which are or will pass into Council's care, control and ownership shall be contained within a legally created stormwater drainage easement created in favour of Council and complying with the following minimum standard:

Pipe Diameter (mm)	Minimum Easement widths
< 1200	3.0 m
> 1200 - < 1500	3.5 m

c) Council will specify easements widths for pipe diameters greater than 1500 mm or open channels.

d) Building over drainage easements is not permitted.

5.3 Overland Flow Paths

a) Are to be designed to convey the 1% AEP storm event less the capacity of the minor system, assuming all inlet pits (NOT pipes) in the total network are 50% blocked.

b) Overland flow shall be fully contained within a drainage easement.

c) Overland flow paths shall remain safe for vehicles and pedestrians (including small children) in all storms up to and including the 1% AEP event.

d) Overland flow resulting from extreme storm events, up to and including the Probable Maximum Flood (PMF), must be considered in the design of overland flow paths. Flows in excess of the 1% AEP may not be diverted away from defined overland flow paths or outside of drainage easements.

e) Design storms shall comply with the table below:

Situation	Design Flood Recurrence Interval	Overland Flow Path
Street, accessway and pathway – excluding low points which discharge through building allotments	20% AEP	1% AEP to be confined to carriageway, pathway or reserve
Relief of low point areas via drainage lines traversing building allotments	5% AEP	Boundary of 1% AEP to be fully contained within a drainage easement and shown on the plans along with cross-sections of the overland flow path and surface treatment
Major system traversing developed areas. (Major systems are defined as those having catchment areas in excess of 15 hectares or run off in excess of 3cu.m/sec whichever is the lesser)	5% AEP	Boundary of 1% AEP to be fully contained within a drainage easement and shown on the plans along with cross-sections of the overland flow path and surface treatment

Notes to Table:

(i) *Design analysis shall be by the most appropriate and accurate method.*

(ii) *Detailed calculations and catchment area plans, including areas external to the subdivision and contributing to the catchment are required in conjunction with engineering drawings.*

(iii) *The minimum pipe diameter for all Council drainage is 375 mm.*

f) Minimum freeboard of 500 mm over the 1% AEP water surface level shall be provided for habitable floor levels (or as dictated on Section 149 Certificate) and 200 mm for garage floors, car parks and pedestrian access ways.

5.4 Controls for Basement Garages and Driveways Sloping Towards the Garage

a) Two pump units are to be installed, the capacity of each being calculated based on a 1% AEP storm event and a storm duration of 6 minutes, one pump acting in reserve capacity. The two pumps are to be designed to work on an alternate basis to ensure that both pumps receive equal usage and neither pump remains continuously idle.

b) The pump out system is to be independent of any gravity drainage lines except at the property boundary where a grated surface pit is to be constructed, from which a connection will be permitted to the gravity drainage system. The invert levels of the pipes in the grated surface pit are to be such that the outlet from the pump out system is above the inlet of the gravity system.

c) The contributing catchment area to the pump out system is to be limited to the driveway area only and subsoil drainage.

d) The holding well to be provided within the basement shall be of sufficient capacity to store the water resulting from a 2% AEP storm having a 2 hour duration.

5.5 Piping or Modifying Waterways

a) If, due to exceptional circumstances, it is proposed to pipe or modify waterways, a development application must be submitted to Council and approved before any works are undertaken. The concurrence of other authorities may also be required.

b) Requests to pipe or modify waterways such as open drains, creeks or ephemeral water bodies shall be submitted to the Director, Engineering for approval prior to any works being undertaken.

c) The approval of any works shall be in accordance with the provisions of SSLEP 2006, the relevant provisions of SSDCP 2006 and the information contained within this specification.

5.6 Stormwater Management Controls for Land Affected by Flooding

Council's Flood Risk Management DCP shall apply to all land identified as being potentially affected by flooding.

a) Applications for development on land identified as being potentially subject to flooding shall include an assessment of flood risk. This assessment shall determine the area of inundation of the land under pre and post developed conditions and what actions are proposed to ensure that the level and severity of flooding is not worsened by the proposed development.

b) For hospitals, civil defence headquarters or other essential services finished floor levels shall be a minimum 500mm above the following flood levels: hospitals and civil defence headquarters - 0.2% AEP, other essential services - 0.5% AEP.

Note: *Council may apply a greater minimum freeboard requirement where flood risk warrants. Refer to the Section 149 Certificate of the property for specific flood notations and development restrictions.*

5.7 Controls for Seepage Pump Out and Charged Systems

a) Stormwater is only to be drained through gravity systems. Pump out or charged systems for disposal of stormwater are not permitted except for basement carparks.

b) Seepage water from basement car parks shall not be discharged to the kerb and gutter of a Council roadway unless it can be demonstrated that dry weather flows are not a nuisance. A formal piped connection to Council's stormwater drainage network is required.

5.8 Dehumidification

Dehumidification from basement car parks shall not be discharged to the kerb and gutter of a Council roadway unless it can be demonstrated that dry weather flows are not a nuisance. A formal piped connection to Council's stormwater drainage network is required.

5.9 Drainage of Properties that Fall Away from the Carriageway

Stormwater drainage can present particular difficulties for properties that fall away from the carriageway. Council explicitly prohibits pump-out and charged drainage systems (except for basement car parks). Stormwater must be disposed of in its natural catchment and by the most direct route.

The required method of stormwater disposal is by gravity to a recognised drain, subject to Council approval. Where this cannot be achieved, a legally created drainage easement will be required where it is necessary for drainage pipes to cross other properties.

Note that the need to pay compensation and/or legal fees associated with acquiring an easement should be expected. **Appendix B** outlines an example procedure in which to obtain a private drainage easement. If it is not possible to secure an easement AND all efforts to obtain an easement, such as those detailed in Appendix B, have been exhausted AND reasons for failing to obtain an easement have been submitted in writing to Council, then Council may consider other options for drainage as outlined below.

Where a legal drainage easement is not available, the Permissible Site Discharge (PSD) shall be limited to that of a naturally draining undeveloped site in all storms up to and including the 1% Annual Exceedance Probability (AEP) event. This can be achieved through conventional On-Site Detention (OSD), an infiltration system and/or by rainwater harvesting & reuse methods of stormwater management.

OSD

The post-developed OSD calculation shall assume that any rainwater tanks provided are no less than two thirds full. Detention may be provided as an underground tank and/or surface depression.

Infiltration

Note that most locations in the Shire are generally not suitable for infiltration. Any proposal to construct an infiltration system MUST be accompanied by the "Soil Infiltration Field Test" attached in Appendix A. Up to 100% of the volume of infiltration storage provided (based on pore space only) may be deducted from OSD volume requirements.

Harvesting & Reuse

At a minimum the rainwater tank must be permanently connected to all toilets, laundry uses, swimming pools, spas, water features, car washing bays & irrigation systems provided. One third the volume of a rainwater tank may be used to offset OSD requirements. For example, if the OSD requirement is 3,000 litres and a rainwater tank of 6,000 litres is proposed, then OSD of only 1,000

litres is needed. If it is desired to eliminate the need to provide OSD then a rainwater tank of triple the required capacity may be provided subject to there being adequate opportunities for water reuse. So, for the example above provision of a 9,000 litre rainwater tank would eliminate the need to provide OSD.

For any of the above strategies there will be storm events that result in surcharge. This must be managed in a manner that does not impact upon other properties or the environment. The discharge of any stormwater from the site shall be dispersed in a manner that would replicate that of a naturally draining and undeveloped site.

Where an applicant proposes to adopt a stormwater management strategy consistent with the methods outlined above, the submission shall be accompanied by written supporting statement from a suitably qualified and experienced Civil Engineer and/or Private Certifier that:

> *" the proposed development will not have an adverse impact on other properties or the environment and the rate of stormwater runoff will not exceed that which would be expected were the subject site in an undeveloped condition or change the natural flow regime, either surface or subsurface."*

6.0 Specific Requirements for Water Quality

The general provisions that apply to reduce stormwater pollution and the effects on the receiving environment are as follows.

6.1 Controls for Construction

a) Soils, cleared and otherwise disturbed by land development and construction activity are to be stabilised by surface water management and vegetation so as to minimise the immediate risk of erosion.

b) Surface water management is to be adopted as an integral component of a treatment train which also includes site management, soil stabilisation and sediment controls detailed on a Soil and Water Management Plan (SWMP) and approved by Council.

c) Sediment control is to be adopted as an integral component of a treatment train, which also includes site management, soil stabilisation and surface water controls specified on a SWMP and approved by Council.

d) Where dispersed clay or other suspended material is present in stored site water, appropriate flocculation techniques may be applied, prior to discharge off site.

6.2 Water Quality Control Device

a) All water quality control measures/devices shall trap the full range of typical urban stormwater pollutants and demonstrate compliance to the fullest extent with each of the stormwater treatment objectives set out in the table below.

b) Make provision for convenient and safe regular inspection/periodic cleaning.

c) Demonstrate measures to minimise the likelihood of the measure/device being tampered with or otherwise damaged through vandalism.

d) Demonstrate means of minimising the potential safety risk of the measure/device to the community.

e) Minimise long-term expenditure on maintenance and cleaning while still achieving treatment objectives.

Pollutant	Goal (Long-term)	Treatment Objective (Short-term)
Post Construction Phase		
(a) Existing Development		
Suspended solids (SS)	Suspended solids load to achieve natural dry and wet weather concentrations for the catchment	70% retention of the SS average annual load
Total Phosphorus (TP)	The load of phosphorus from the catchment meets ANZECC guidelines for aquatic ecosystems	20% retention of the TP average annual load
Total Nitrogen (TN)	The load of nitrogen from the catchment meets ANZECC guidelines for aquatic ecosystems	35% retention of the TN average annual load
Faecal coliforms	The load of faecal coliforms in catchment waterways meets with ANZECC guidelines for consumption of seafood	90% retention of the Faecal coliform average annual load
Litter	No anthropogenic litter in waterways. Organic litter occurring at natural levels of the catchment at natural levels of the catchment	Retention of litter greater than 50mm is to the maximum extent possible for storm events of up to 1 in 3 month ARI
Oil and Grease	No visible oils and grease in waterways	Retention of oil and grease are to the maximum extent possible for storm events of up to 1 in 3 month ARI
Toxicants	No toxicants entering waterways	Limit the application, generation and migration of toxic substances to the maximum extent possible
(b) New Development (or Redevelopment)		
Faecal coliforms	The load of faecal coliforms in catchment waterways meets with ANZECC guidelines for consumption of seafood	Areas with more than 50% imperviousness, a 90% retention of the faecal coliform average annual load
Construction Phase		
Suspended solids (SS)	Suspended solids load from site does not exceed natural levels	70% retention of the SS average annual load leaving site. Refer to Table 5.1a below for more details for sizing of sediment retention basins.
Coarse Sediment	No coarse sediment leaves the site in addition to natural loads	Retention of sediment larger than 0.125 mm for storm events of up to 1 in 3 month ARI at the site
Oil and Grease	No visible oils and grease enter waterways from site	Total retention of oil and grease for storm events of up to 1 in 3 month ARI
Toxicants	No export of toxicants from site	Limit the application, generation and migration of toxic substances to the maximum extent possible

7. Glossary

Australian Height Datum (AHD), Australian surface level datum approximately corresponding to mean sea level.

Annual Exceedance Probability (AEP), the chance of a flood of a given or large size occurring in any one year, expressed as a percentage. For example, there is a 1% chance of a 1 in 100 ARI storm event occurring in any given year.

Annual Recurrence Interval (ARI), the long-term average number of years between the occurrence of a flood as big as, or larger than, the select event.

Base Flow, part of groundwater flow that reappears on the surface as part of stream flow.

Best Management Practice (BMP), activities, prohibition of practices, maintenance procedures and other management practices to prevent or reduce pollution or flooding. They may involve both structural works and non-structural measures.

Catchment, source area for runoff flowing to a particular point. It always relates to an area above a specific location.

Catchment Storage, retention of water that a catchment naturally induces during a storm event.

Constructed Wetland, means of water quality enhancement through simulation of the processes of a natural wetland.

Detention, holding or detaining stormwater for short time period prior to discharge (Detention is not Retention).

Detention Basin, storage area used to temporarily store stormwater flows during a rainfall event in order to reduce the peak discharge flow. Water is not permanently stored in a Detention Basin.

Detention Storage Volume, volume of water temporarily stored in a Detention Basin during a storm event.

Discharge, rate of flow of water measured in m^3/sec.

Easement, land under/on which, stormwater infrastructure or other watercourses including overland flow paths are located. Building over drainage easements is not permitted.

Ecologically Sustainable Development (ESD), development that improves the quality of life, both now and in future in a way that maintains the ecological processes on which life depends. The basic premise of ESD is that future generations are entitled to the same expectations with regard to quality of life, availability of resources and health of the environment as people of today.

Flood, relatively high stream flow, which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam and/or local overland flooding associated with major drainage

and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunami.

Flood Liable Land, land susceptible to flooding by the Probable Maximum Flood.

Floodplain, area of land that is subject to inundation by floods, up to and including the Probable Maximum Flood.

Floodways, those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined watercourses or formal drainage systems including both pipe networks and overland flow.

Flood Storage Areas, those parts of the floodplain that are important for the temporary storage of floodwaters during passage of a flood. The loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation.

Freeboard, factor of safety used in relation to the setting of floor levels to compensate for uncertainties in the determination of flood levels, wave action, localised hydraulic behaviour, impacts that are specific event related, such as obstructions and other effects like “climate change”.

Gross Pollutant Trap (GPT), device designed to remove typical gross pollutants found in urban stormwater such as litter, cigarette butts, leaves, debris, sediment, grease, oil, etc…

Hydraulics, the study of water flow in waterways; in particular, the evaluation of flow parameters such as water level and velocity.

Hydrograph, graph showing how the discharge or stage/flood level at any particular location varies with time during a flood.

Hydrology, the study of the rainfall and runoff process; in particular, the evaluation of peak flows, flow volumes and the derivation of hydrographs for a range of floods.

Infiltration, process by which water is transferred from the surface of the ground into the soil.

Mathematical/computer Models, the mathematical representation of the physical processes involved in runoff generation and stream flow.

National Water Quality Management Strategy (NWQMS), introduced by the Commonwealth, State and Territory Governments in 1992 as a response to growing community concern about the condition of the nation's water bodies and the need to manage them in an environmentally sustainable way.

Non-Emergent Macrophyte, plant that grows in an aquatic environment such as a wetland, but remains entirely below the water surface as differentiated from an Emergent Macrophyte.

Overland Flow Paths, provided for all drainage networks to cater for flows in excess of that which can be conveyed by the minor system (regardless of its capacity) or in the event of a blockage of that system.

Peak Flow, maximum instantaneous discharge from a catchment during a storm event.

Percentage Impervious, percentage of catchment area covered by surfaces that are essentially impervious to rainfall such as buildings, roads, footpaths, carparks, etc…

Permanent Storage Volume, volume of water stored permanently in a Constructed Wetland or Water Quality Control Pond.

Permissible Site Discharge (PSD), greatest peak stormwater flow permitted from an individual allotment. The PSD shall be modelled to accurately represent the hydrology of the existing site considering topography, land usage, drainage and any other relevant characteristics.

Porous Pavement, surfaces that allow the transfer of water through to the soil below.

Post-Development Peak Flow, peak stormwater flow from a catchment after development.

Pre-Development Peak Flow, peak stormwater flow from a catchment prior to development.

Probable Maximum Flood (PMF), the largest flood that could conceivably occur at a particular location. The PMF defines the extent of flood liable land, that is, the floodplain.

Probable Maximum Precipitation (PMP), greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of year, with no allowance made for long-term climatic trends. It is the primary input to estimation of the Probable Maximum Flood.

Retention, refers to the permanent storing of runoff (or other waters) during and after storm events for reuse or other beneficial uses.

Riparian Zone, water course or body of water, usually a creek or river, whether permanent or intermittent and the area of land adjacent to it including the soil, vegetation and associated ecological community.

Rainfall Runoff, rainfall that results in overland flow.

Sediment Control Ponds or Sediment Basins, temporary basins used to control high sediment export associated with construction activities. Usually placed at the lowest point of the development. Addition of a coagulant for flocculation is sometimes required in order to meet standards appropriate for discharge.

Sediment Trap, prevents the progression of sediment downstream by trapping it for removal.

Site-Specific Stormwater Controls, measures constructed on-site to control stormwater runoff from a specific development.

Stormwater Management Plan (SMP), adopted plan for stormwater management within a specific catchment. It typically describes existing catchment conditions and values, identifies management issues and sets out an implementation strategy.

Stormwater System, comprises all components of stormwater infrastructure, both artificial and natural, whether that be above ground or below ground (e.g. pipes, overland flow paths, culverts, roadways).

Swale, shallow gently sloping grass lined channel.

Total Catchment Management (TCM), coordinated and sustainable use of land, water, vegetation and other natural resources on a catchment basis, so as to balance resource utilisation and conservation of resources for future generations. Catchment management optimises economic, environmental and social benefit to the entire community.

Trash Rack, structure designed to screen out large items of litter and debris from stormwater flows (see also Gross Pollutant Trap).

Velocity, measure of how fast water is flowing in m/sec.

Water Balance, the balance of water entering a catchment in the form of precipitation with water leaving the catchment in the form of evapo-transpiration, surface runoff and base flow.

Water Sensitive Urban Design (WSUD), management of stormwater on-site through minimisation, retention, reuse, on-site treatment and disposal. WSUD is a fundamental component of Ecologically Sustainable Development.

Water Quality Control Pond (WQCP), permanent stormwater collection pond usually with emergent and non-emergent macrophytes for uptake of nutrients, a sediment deposition area and an open area for die off of bacteria. They may additionally have a detention component for the control of peak flows.

Wet Retention Basin, simply a basin that retains water. Since macrophytes will establish themselves in areas that retain water, they become a Water Quality Control Pond and are often referred to as such.

Appendix A – Soil Infiltration Field Test Results

ATTENTION:

_____

LOCATION OF PROPERTY

_____

OWNER'S NAME

_____

ADDRESS

_____

Real Property Description: Parish: _____ County of Cumberland

LOT / PORTION NO.	DP NO.	DA NO.

The design of stormwater infiltration systems is strongly dependent upon local soil and subsoil conditions in addition to other site specific factors.

A geotechnical investigation is required to assess the suitability of the site, design of the infiltration system, if viable and potential impact of the system to existing or proposed structures, adjoining properties and the environment.

The geotechnical investigation shall include a field infiltration test as per the method below. The design of the infiltration system shall be based upon the actual infiltration rate as indicated by the field test. Laboratory tests are NOT an acceptable substitute.

Generally, infiltration systems will not permitted in areas with:
- land slip or geo technical problems associated with reactive soils; or existing, or
- seepage problems on-site or on immediate/adjacent properties, or
- where groundwater pollution is possible (eg:chemicals, pesticides, herbicides, petroleum, or
- where the site is known or suspected of being contaminated, or
- where there is potential to affect existing or proposed structures.

FIELD INFILTRATION TEST METHOD

1. Dig three (3) test holes spaced over the location of the proposed infiltration system and representative of soil in that area. The test holes shall be 300mm square and of a depth equivalent to that of the proposed infiltration system, but not less than 600mm deep. Care shall be taken to minimise disruption to the surrounding soil.

2. Add a 50mm layer of coarse sand or 6mm screenings to the bottom of each test hole.

3. Add clean water to each test hole to a depth of 300mm over the sand or gravel and maintain this depth for a minimum period of 4 hours.

   START OF SOAKING PERIOD _____ am/pm

   FINISH OF SOAKING PERIOD _____ am/pm (minimum 4 hours)

4. **Top up water** as required to **300mm** above the surface of the sand or screenings.

5. Measure the drop in water level over a **30 minute** period. **Insert nail** or similar into the wall of each test hole at the water level and record the test results in the table below.

TIME	TEST HOLE 1	TEST HOLE 2	TEST HOLE 3
START	am/pm	am/pm	am/pm
ALLOW WATER TO INFILTRATE	WAIT 30 minutes	WAIT 30 minutes	WAIT 30 minutes
FINISH	am/pm	am/pm	am/pm
MEASURE DROP IN WATER LEVEL	mm	mm	Mm

6. Average drop in water level of the three (3) test holes = _____ mm/30 minutes.

7. Average rate of infiltration = _____ mm/hour to be used in the design of the infiltration system.

CERTIFICATION

I certify that the attached infiltration tests were performed by me and that the results shown above are a true and accurate record of those tests.

NOTE: Tests are only to be undertaken by persons suitably qualified and experienced to do so.

PLEASE PRINT

Name _____

Qualification _____ Lic/Reg No._____

Address._____

Date _____

Signature _____Telephone_____

Appendix B – Example Procedure to Obtain a Private Drainage Easement

The following procedures may be undertaken to obtain a private drainage easement for all developments other than the exemptions outlined in **Section 2.2**:

- Review the layout of the adjoining lots and determine alternative routes that the pipeline may take. There is usually at least one adjoining property that provides a direct connection to the next street and at least one and possibly more alternative paths where the pipe could travel say through a neighbour's property to the side before flowing through a property to its rear.
- Undertake a site inspection from within the development site, or from the street to determine the best route within each respective property taking into account any obstructions.
- Drainage easements are to be a minimum of 900 mm wide as outlined in **Section 5.2**.
- Prepare a sketch plan for each property clearly showing the preferred easement location and all critical features such as buildings and trees. Websites such as maps.google.com may be of assistance in providing some details. Search on 'Sydney', click on 'Satellite', reposition and zoom in over the property.
- Contact Council's Customer Service Centre to obtain the owner's name and address (as the property may be rented) of each property. Note: Under Council's Privacy Procedures a signed statutory declaration must be submitted to Council with a request for obtaining owner's details.
- In obtaining the easement you need to offer the owner/s reasonable compensation. This is best achieved by having a registered valuation of the easement over each property, or if possible obtain a single rate per square metre of easement from the valuer that can be applied for all easement width and length combinations.
- Complete a copy of the standard letter below.
- Complete two copies of the response form below.
- Complete a stamped self addressed envelope.
- Forward a copy of the completed Council letter, two copies of the response form, the self addressed envelope, and sketch plan by registered mail to each property determined above. Keep copies of all information as well as the registered mail receipts.

There are four possible outcomes from this standard letter.

A Positive Response
If the downstream owner accepts the offer, enter into final negotiations and arrange for preparation of the linen plan and legal documents. This signed letter from the neighbour provides sufficient evidence to allow the lodgement of the Development Application (DA) with Council. Where the drainage easement is not able to be registered prior to issue of the DA consent, the DA will be issued with a deferred commencement condition requiring registration of the easement prior to the consent operating.

A Conditional Response
In this response the downstream owner may be interested in providing the easement, but has some questions, or concerns, possibly with the amount of compensation being offered, or the impacts of the pipeline on their properties, or for some other reason. Liaise with the owner to clarify any concerns. Where there are still unresolved issues undertake the following:

- Disputes as to the amount of compensation – at your cost pay for an independent valuer, engaged by the downstream owner, to provide an alternate valuation.
- For other unresolved issues, or continued disputes on compensation:
  - contact the Community Justice Centre or www.lawlink.nsw.gov.au/cjc

- engage with the agreement of your neighbour and at your cost an accredited mediator available from the Institute of Arbitrators and Mediators Australia or www.iama.org.au to try and resolve any issues.

Where agreement is finally reached follow through the process as for a positive response. Where agreement could not be reached by the parties obtain a written refusal by the owner and documentary evidence of the processes involved, including both valuations and any mediation process and follow through the process as for a negative response.

No Response
If no response is received within 21 days of the date of issue of the registered letter, forward by registered mail the Council's standard follow-up letter from below. If no response is received within 21 days of the date of issue of the second registered letter proceed as if a negative response, keeping copies of all correspondence.

Negative Response
Where negative responses are obtained for all alternate flow paths the applicant is to design an alternative solution as outlined in **Section 5.9**.

Example -Standard Easement Advice Letter 1 – Flow through a property to connect directly to the street or available pipe

___ / ___ / _____

_____

_____

_____

Dear_____

Request for Drainage Easement at_____

I am seeking to obtain a drainage easement through your property to allow the stormwater from my proposed development at_____
to connect to Council's drainage system. Please see the attached location plan.

A drainage easement is a legal arrangement that is registered on the title of the land that provides certain benefits to another party (your neighbour in this case). The drainage easement allows the beneficiary to direct stormwater through a property, typically with underground pipes.

The land containing the easement still belongs to you as owner, but has some restrictions. The landowner is not able to build on the easement, or restrict flow of water through it. As most easements are along the side or rear boundaries where you cannot generally build anyway, the restriction preventing building over the easement is normally not significant. Paths, driveways, lawns and gardens are all permitted over the easement, though large trees should be excluded. Notwithstanding this the owner in providing the easement is entitled to reasonable compensation.

Council views an easement as the best method of draining my development and requires me to make every effort to obtain one. Absorption trenches are sometimes considered, but these can be unreliable if poorly maintained. Council receives many complaints from downstream owners like yourself when upstream owners drainage systems fail. An easement provides the best long term solution.

If you agree to the easement and the system is viable you are entitled to compensation. By investigation of local values it is recommended that $_____ is a reasonable amount of compensation for this easement. If you are agreeable to this amount please include your solicitor's details so that the legal paperwork can be processed. I will pay all survey and registration costs. I will also pay any reasonable legal costs of your solicitor if your offer is accepted.

Every effort will be taken to protect your property from unnecessary damage during construction. Where it is impossible to avoid damaging paving or gardens it is agreed that these will be restored at my cost to at least a similar standard.

I hope that this letter has answered any concerns you may have and encourage you to accept my offer. If you have any questions I can be contacted on (h)_____ (w/m)_____. If you would like to contact Sutherland Shire Council for advice please phone 02 9710 0333.

It would be appreciated if you could complete and return the response form within two weeks.

Yours sincerely

Example Standard Easement Advice Letter 2 – Flow through an Intermediate Property

___ / ___ / _____

_____

_____

_____

Dear_____

Request for Drainage Easement at_____

I am seeking to obtain a drainage easement through your property to allow the stormwater from my proposed development at_____
to connect to Council's drainage system. Please see the attached location plan.

This request has been made to you as part of a proposed multi property scheme. This means that I have to drain through your property and an additional property to get the drainage system to work. Because of this, the easement will only have a very minor impact on your property and several advantages that I will detail later.

A drainage easement is a legal arrangement that is registered on the title of land that provides certain benefits to another party, (your neighbour in this case). The drainage easement allows the neighbour to direct stormwater through the property, typically with underground pipes.

The land containing the drainage easement still belongs to you as owner, but has some restrictions. The owner is not able to build over the easement, or restrict the flow of water through it. As most easements are along the side or rear boundaries where you cannot generally build anyway, the restriction preventing building over the easement is not significant. Paths, driveways, lawns and gardens are all permitted over the easement, though large trees should be excluded. Notwithstanding this the owner in providing the easement is entitled to reasonable compensation.

Council views an easement as the best method of draining my development and requires me to make every effort to obtain one. Absorption trenches are sometimes considered, but these can be unreliable if poorly maintained. Council receives many complaints from downstream owners like yourself when upstream owners drainage systems fail. An easement provides the best long term solution.

If you agree to the easement and the system is viable you are entitled to compensation. By investigation of local values it is recommended that $_____ is a reasonable amount of compensation for this easement. If you are agreeable to this amount please include your solicitor's details so that the legal paperwork can be processed. I will pay all survey and registration costs. I will also pay any reasonable legal costs of your solicitor if your offer is accepted.

Every effort will be taken to protect your property from unnecessary damage during construction. Where it is impossible to avoid damaging paving or gardens it is agreed that these will be restored at my cost to at least a similar standard.

There are additional benefits to you in providing the drainage easement to me. I will design the drainage system in the property downstream of you to be big enough to covey all your water as well as the water from my proposed development and provide you with an inlet pit so that your stormwater can be connected to it once completed. I will also ensure that you have a benefit in the downstream easement so that if you need to undertake extensions or build a new house in the future you won't have problems with Council in drainage your water. This could also improve the value of your property.

I hope that this letter has answered any concerns you may have and encourage you to accept my offer. If you have any questions I can be contacted on (h)_____ (w/m)_____. If you would like to contact Sutherland Shire Council for advice please phone 02 9710 0333.

It would be appreciated if you could complete and return the response form within two weeks.

Yours sincerely

_____

_____

_____

_____

_____

Example Easement Follow Up Letter

___ / ___ / _____

_____

_____

_____

Dear_____

Request for Drainage Easement at_____

I refer to my previous letter dated ___ / ___ / _____ that requested permission for a drainage easement at the above address – copy enclosed. This previous letter may have gone astray or misplaced, or perhaps you are still thinking through your options.

As this letter states I am prepared to offer an amount of $_____ in compensation to you for granting the easement as well as covering all other costs.

I would appreciate if you would give this matter your earliest consideration. If possible could you complete the attached response form and return it within two weeks.

I would encourage you to accept my offer for the easement. Once again if you have any questions I can be contacted on (h)_____ (w/m)_____.

If you would like to contact Sutherland Shire Council for advice please phone 02 9710 0333.

Yours sincerely

_____

_____

_____

_____

_____

Example RESPONSE TO DRAINGE EASEMENT REQUEST

Please tick one or more of the following boxes to indicate your position in relation to providing the easement for the benefit of the development at:
(insert address) _____
_____

Being the registered owner/s of the property at:
(insert address) _____
_____

- ☐ I / We agree to provide the easement for the compensation figure offered on the previous page and accept that you will be responsible for all other costs.
- ☐ I am / We are considering the easement, but I have some concerns regarding the location of the easement, or it's impact on my property.
- ☐ I am / We are considering the easement, but I have some concerns regarding the amount of compensation being offered.
- ☐ I / We do not agree to provide the easement.

Owners (all owners need to sign this form)

Name	Name
Date ___ / ___ / _____	Date ___ / ___ / _____
Tel (Home/Work/Mobile)	Tel (Home/Work/Mobile)
Tel (Home/Work/Mobile)	Tel (Home/Work/Mobile)
Tel (Home/Work/Mobile)	Tel (Home/Work/Mobile)
Signature	Signature

Solicitors Details

Name	
Address	
Company Name (if applicable)	
Mailing Address (if different)	
Tel (Work/Mobile)	Fax

Two copies of this response form have been forwarded to you. One copy is for your records.
Please return the completed second copy in the enclosed envelope within two weeks.
Thanks you again for your assistance.