FLOODPLAIN MANAGEMENT POLICY (INTERIM)

Policy Owner: **Director Open Space & Environment**

Category: **Strategic**

Direction: **2. Our Built Infrastructure**

1. STATEMENT OF INTENT

1.1 This Policy has been prepared in accordance with the guidelines provided in the *NSW Government Floodplain Development Manual* (2005) (FDM). The FDM guides councils in the development and implementation of local Floodplain Risk Management (FRM) Plans to produce robust and effective floodplain risk management outcomes.

1.2 In accordance with the FDM, the FRM process entails four sequential stages:

- Stage 1: Flood Study
- Stage 2: Floodplain Risk Management Study
- Stage 3: Floodplain Risk Management Plan
- Stage 4: Implementation of the Plan

1.3 North Sydney Council has produced a single FRM Plan for the entire local government area (LGA). FRM Plans consider the existing flood environment and recommend specific measures to manage the impact of flooding. In assessing the flood environment, elements such as known flood behaviour, evacuation issues, site access and the potential impact of sea level rise are taken into consideration. This information is used to create floodplain risk mapping for each catchment.

1.4 FRM Plans provide a range of measures that can be used to mitigate the impact of flooding. Invariably one of the most successful measures is the implementation of effective land use planning. This document provides the means for implementing the FRM Plans and associated mapping for the control of development on the floodplain within LGA.

1.5 The objectives of this Policy are to:

a) inform the community of this Policy with regard to the use of flood prone land;
b) establish guidelines for the development of flood prone land that are consistent with the *NSW Flood Policy* and *NSW Floodplain*

Development Manual (2005) as updated by the *Floodplain Management Guides*;

c) control development and activity within the floodplains within the LGA having regard to the characteristics and level of information available for the floodplains;
d) minimise the risk to human life and damage to property by controlling development on flood prone land;
e) apply a merit based approach to all development decisions taking into account ecological, social and environmental considerations;
f) ensure that the development or use of floodplains does not adversely impact upon the aesthetic, recreational and ecological values of the waterway corridors;
g) ensure that all land uses and essential services are appropriately sited and designed in recognition of all potential floods;
h) ensure that all development on the floodplain complies with Ecologically Sustainable Development (ESD) principles and guidelines; and
i) promote building design that considers requirements for the development of flood prone land and to ensure that the development of flood prone land does not have significant impacts upon the amenity of an area.

2. ELIGIBILITY

2.1 This policy applies to all land that is within the Flood Planning Area.

2.2 Council's *Local Environmental Plan 2013* (NSLEP 2013) requires the consent authority to be satisfied that all new development adequately protects the safety of property and life, and avoid significant adverse impacts on flood behaviour and the environment. Specified flood planning controls apply to all land which is at or below the flood planning level. The requirements set out in NSLEP 2013 must be met before development consent is granted.

2.3 This Policy is to be read in conjunction with the North Sydney Floodplain Risk Management Plan, the NSLEP 2013 and *North Sydney Development Control Plan 2013* (NSDCP 2013). North Sydney LEP 2013 applies to, but is not limited to, the development types listed below:

a) Dwelling houses, semi-detached dwellings, attached dwellings, dual occupancies, multi dwelling housing (e.g. villas and townhouses) and residential flat buildings;
b) Business, office and retail developments, including mixed use developments;
c) Industrial developments; and

d) Other development types and uses, as detailed in the North Sydney LEP 2013.

2.4 In conjunction with the development type requirements, the NSLEP 2013 and NSDCP 2013 also require:

a) sustainable water use practices;
b) the reduction of stormwater pollution on receiving waterways; and
c) that development does not exacerbate the potential for flood damage or hazard for existing development or public domain.

2.5 This Policy is written in an objectives/requirements format. Where an applicant seeks variation from the requirements, appropriate written justification indicating how the proposal meets the relevant objectives, must be provided for the consideration of Council.

3. DEFINITIONS

Definitions	
Term	**Meaning**
Annual Exceedance Probability (AEP)	The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. 1% AEP flood is approximately equal to 1 in 100 year Average Recurrent Interval (ARI) flood event (or simply 100 year flood). It has 1% chance to occur in a given year.
Australian Height Datum (AHD)	A common national system for measuring height, involving the setting of a height datum established in relation mean sea level.
Average Recurrence Interval (ARI)	The long-term average number of years between the occurrence of a flood as big as or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event may occur on average once every 20 years.
Basement Car Parking or Below-Ground Car Parking	Car parking areas generally located below ground level, where inundation of the surrounding areas may raise water levels above the entry level to the basement, resulting in inundation. Basement car parks are areas where the means of drainage of accumulated water in the car park has an outflow discharge capacity significantly less than the potential inflow capacity. Or Car parking areas where the floor of the parking and/or access surface is more than 1m below the surrounding natural ground.
Carport	A structure used to house motor vehicles, which has a minimum of two sides "open" and not less than one third of its perimeter "open".

Definitions	
Term	**Meaning**
Critical Facilities	Includes hospitals and ancillary services, communication centres, police, fire SES, major transport facilities, sewerage and electricity plants; any installations containing critical infrastructure control equipment and any operational centres for use in a flood.
Effective Warning Time	The time available after receiving advice of an impending flood and before the floodwaters prevent appropriate flood response actions being undertaken. The effective warning time is typically used to raise furniture, evacuate people and transport their possessions.
Evacuation	The transfer of people and or stock from areas where flooding is likely, either close to, or during a flood event. It is affected not only by warning time available, but also the suitability of the road network, available infrastructure, and the number of people that have to evacuate during floods.
Extreme Flood	An estimate of the probable maximum flood (PMF), which is the largest flood that could conceivably occur at a particular location, generally estimated from the probable maximum precipitation (PMP). Generally it is not physically or economically possible to provide complete protection against this event.
Flood	A relatively high stream flow that overtops the natural or artificial banks in any part of a stream, channel, river, estuary, lake or dam, and/or local overland flooding associated with major drainage as defined by the NSW Floodplain Development Manual (FDM) before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunami.
Flood Compatible Materials	Those materials used in building which are resistant to damage when inundated. A list of flood compatible materials is identified in Section 6 to this Policy.
Flood Evacuation Strategy	The proposed strategy for the evacuation of areas with effective warning time during periods of flood as specified within any policy of Council, the floodplain risk management plan (FRMP), the relevant state government disaster plan, by advice received from the State Emergency Services (SES) or as determined in the assessment of individual proposals.
Floodplain	The area of land which is subject to inundation by floods up to and including the probable maximum flood (PMF) event.
Floodplain Development Manual (FDM)	The document dated April 2005, published by the New South Wales Government and entitled 'Floodplain Development Manual: the management of flood liable land'.
Flood Planning Area (FPA)	The area of land below the FPL and thus subject to flood related development controls.

Definitions	
Term	**Meaning**
Flood Planning Level (FPL)	The combinations of flood levels and freeboards selected for floodplain risk management purposes, as determined in flood studies and floodplain risk management studies and plans.
Floodplain Risk Management Plan (FRMP)	A plan prepared for one or more floodplains in accordance with the requirements of the FDM or its predecessor.
Floodplain Risk Management Study (FRMS)	A study prepared for one or more floodplains in accordance with the requirements of the FDM or its predecessor.
Flood prone land	Is land susceptible to flooding by the Probable Maximum Flood (PMF) event.
Flood Storage	Those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood.
Floodway	Those areas, often aligned with obvious naturally defined channels, where a significant discharge of water occurs during floods. They are also areas where, if only partially blocked, will cause a significant redistribution of flood flow or significant increase in flood levels, which many impact on other properties.
Freeboard	A factor of safety expressed as the height above the design flood level. Freeboard provides a factor of safety to compensate for uncertainties in the estimation of flood levels across the floodplain, such as wave action; localised hydraulic behaviour and impacts that are specific event related, such as levee and embankment settlement; cumulative impacts of fill in floodplains and other effects such as changes in rainfall patterns as a result of climate change.
Garage	A private building or part of a building used to park or keep a motor vehicle and that is not defined as a carport.
Habitable Floor Area	• In a residential situation: a living or working area, such as a lounge room, dining room, rumpus room, kitchen, bedroom or workroom; • In an industrial or commercial situation: an area used for offices or to store valuable possessions susceptible to flood damage in the event of a flood.
Hazardous Materials	Solids, liquids, or gases that can harm people, other living organisms, property, or the environment. These may include materials that are radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, bio-hazardous, toxic, pathogenic, or allergenic. Also included are physical conditions such as compressed gases and liquids or hot materials, including all goods containing such materials or chemicals, or may have other characteristics that render them hazardous in specific circumstances.

Definitions	
Term	**Meaning**
Large Scale Development	For the purposes of this document refers to a proposal that involves the disturbance of 1000sqm or more of the site.
Local Overland Flow Path	Inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
Probable Maximum Flood (PMF)	The largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation.
Probable Maximum Precipitation (PMP)	The 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 the year, with no allowance made for long-term climatic trends (World Meteorological Organisation, 1986). It is the primary input to the estimation of the probable maximum flood.
Reliable Access During A Flood	The ability for people to safely evacuate an area subject to imminent flooding within effective warning time, having regard to the depth and velocity of flood waters, the suitability of the evacuation route, and without a need to travel through areas where flood hazard increases
Section 10.7 Planning Certificate	A certificate issued by Council containing an official statement of the relevant planning controls and other property constraints (such as contamination, flooding and bushfire) that apply to a property at a given point in time.
Shed	Includes machinery sheds, garden and storage sheds but does not include a garage or car park.
Standard Instrument Local Environmental Plan (SI LEP)	The SI LEP is a template upon which all councils in NSW are to base their Local Environmental Plans on. It contains a number of mandated and optional provisions for incorporation in a council's Local Environmental Plan.
Suitably Qualified Engineer	An engineer who is included in the National Professional Engineers Register, administered by the Institution of Engineers Australia.
Survey plan	A plan prepared by a Registered Surveyor which shows the information required for the assessment of an application in accordance with the provisions of this Policy.

4. PROVISIONS

4.1 Application Requirements

Applications must include information that addresses all relevant controls listed within this Policy and the following matters as applicable:

a) Development applications affected by this Policy shall be accompanied by a survey plan showing:
    i. the position of the existing building/s or proposed building/s;
    ii. the existing ground levels and features to Australian Height Datum around the perimeter of the site and contours of the site; and
    iii. the existing or proposed floor levels to Australian Height Datum.
b) Applications for earthworks, filling of land, infrastructure and subdivision shall be accompanied by a survey plan (with a minimum contour interval of 0.25m) showing relative levels to Australian Height Datum.
c) For large scale developments a flood assessment report prepared by a suitably qualified engineer using a hydrologic and hydraulic dynamic one or two dimensional computer model.
d) Where the controls for a particular development proposal require an assessment of structural soundness during potential floods, the following impacts must be addressed:
    i. hydrostatic pressure;
    ii. hydrodynamic pressure;
    iii. impact of debris; and
    iv. buoyancy forces.
e) Foundations need to be included in the structural analysis. Scour protection may be required at foundations.

4.2 Development Provisions

On 14 July 2021, model provisions relating to flooding were formally incorporated into the *Standard Instrument Local Environmental Plan (SI LEP) Order*. The first model provision (clause 5.21) is compulsory for inclusion in all council LEPs and effectively relates to development on land within a Flood Planning Area. The second model provision (clause 5.22) is optional and relates to development on land located between the Flood Planning Area and the Probable Maximum Flood.

The compulsory flooding clause was automatically incorporated into NSLEP 2013 (clause 5.21) on 14 July 2021, the same day that the SI LEP was amended. The optional flooding clause (clause 5.22) was not adopted by Council as it had yet to complete its flood studies and there was no certainty that it would be required. Therefore, the optional model clause was not incorporated into NSLEP 2013. From the commencement of clause 5.21 within NSLEP 2013, it remained inoperable as Council did not have an adopted policy which identified a flood planning area.

Council's *North Sydney FRM Study and Plan* which specifically identified a flood planning area for the LGA. Accordingly, the application of clause 5.22 to NSLEP 2022 came into force on the same day.

The Performance Criteria listed under Section 4.2.1 below reflects the considerations specified in NSLEP 2013.

4.2.1 **Performance Criteria**

Properties identified within the Flood Planning Area, as identified under the *North Sydney FRM Study and Plan* (2022) must comply with the relevant Prescriptive Requirements under Section 4.5 of this Policy. If a proposal does not meet the requirements of the relevant Prescriptive Provisions contained within Section 4.5 of this Policy, consent must not be granted to development unless the consent authority that the development:

a) is compatible with the established flood hazard of the land. In areas where flood hazard has not been established through previous studies or reports, the flood hazard must be established in accordance with the Floodplain Development Manual considering the following:
    i. impact of flooding and flood liability is to be managed ensuring the development does not divert floodwaters or interfere with flood storage or the natural function of the waterway;
    ii. flood behaviour (for example, flood depths reached, flood flow velocities, flood hazard, rate of rise of floodwater);
    iii. duration of flooding for a full range of events;
    iv. appropriate flood mitigation works;
    v. freeboard;
    vi. Council's duty of care - proposals to address or limit; and
    vii. depth and velocity of flood waters for relevant flood events.
b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties;
c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood;
d) incorporates appropriate measures to manage risk to life in the event of a flood, considering the followings:
    i. the proposed development should not result in any

increased risk to human life;

ii. controls for risk to life for floods up to the Flood Planning Level;

iii. controls for risk to life for floods greater than the Flood Planning Level;

iv. existing floor levels of development in relation to the Flood Planning Level and floods greater than the Flood Planning Level;

v. Council's duty of care - proposals to address and limit;

vi. what level of flooding should apply to the development e.g. 1 in 100 year, etc;

vii. effective flood access and evacuation issues

viii. flood readiness - methods to ensure relative flood information is available to current and future occupants and visitors.

e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses;

f) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding;

g) is consistent with the principles of ESD; and

h) adequately considers the impacts of climate change.

It is to be noted that with regard to climate change, appropriate benchmarks based on the best available current information have been used in producing the FRM Plans that inform this Policy.

Some prescriptive requirements such as flood planning level requirements may be relaxed, but only if Council can be satisfied that the projected life of the proposed development is for a relatively short-term and therefore does not warrant the imposition of controls that consider impacts beyond the cessation of the proposed development. This will only be considered for uses where the residual risk to the occupation of the development is considered to be low. This may include certain temporary or demountable structures but specifically excludes development for residential accommodation.

4.2.2 **Concessional Development - Minor Additions**

Council acknowledges that in some instances, relatively minor building additions will have minimal impact on the floodplain and will not present an unmanageable risk to life. Council will give consideration for the following forms of development on suitable sites:

a) Residential Accommodation: additions of up to 40sqm or 10% of

the Gross Floor Area of the existing building (whichever the lessor) of habitable floor area directly attached at or above the same level as the existing adjoining approved floor level for habitable floor area. The allowance for additions shall be made no more than once for any given development.

b) Commercial and Industrial Uses: additions of up to 100sqm or 20% of the Gross Floor Area of the existing building (whichever the lessor) at no less than the same level as the existing adjoining approved floor level. The allowance for additions shall be made no more than once for any given development.

As part of any consent issued pursuant to this section Council will require:

a) a restriction on the property title requiring compliance with the flood studies and associated FRM Plans;
b) the existing development is to be suitably upgraded to address the potential impacts of flooding.

4.2.3 **Heritage Considerations**

North Sydney Council acknowledges that certain buildings or structures require preservation due to their heritage significance. Developments on land identified as having heritage significance (i.e. identified under North Sydney LEP 2013) can be assessed on a merit based approach provided the following requirements are satisfied:

a) the application is accompanied by a Heritage Impact Statement, prepared by a suitably qualified person, which identifies the development does not compromise the significance of the identified heritage item;;
b) the highest practical level of flood protection is provided while maintaining an appropriate balance with heritage conservation;
c) the proposed development will not be subject to frequent flooding risk that may jeopardise the long term viability or heritage conservation of the development. Comprehensive assessment would be required where the development is subject to flooding in storms more frequent than the 5% AEP flood;
d) in issuing a development consent, a restriction shall be placed on the property title, identifying the flooding risk and requiring conservation of heritage values.

4.3 **General Requirements**

The following matters are to be considered in the assessment of proposed development on flood prone land. It is also to apply when considering

proposals for development that is permitted without consent or "exempt development".

Development Type/Aspect	Objective	Requirement
Fencing	• To ensure that fencing does not result in any significant obstruction to the free flow of floodwaters; and • To ensure that fencing will remain safe during floods and not become moving debris that potentially threatens the security of structures or the safety of people.	• Fencing is to be designed and constructed in such a manner that it will not modify the flow of floodwaters and cause damage to surrounding land.
Residential Properties	• To minimise the damage to residential properties from flooding; and • To minimise risk to human life from the inundation of residential properties and to minimise economic cost to the community resulting from flooding.	• The proposed residential building or dwelling must be free from flooding up to and including the 1% AEP flood and must meet the Flood Planning Level Requirements detailed in Section 4.5; and • The proposed residential building or dwelling should not increase the likelihood of flooding on other developments, properties or infrastructure.
Industrial and Commercial Properties	• To minimise the damage to industrial and commercial properties from flooding; and • To minimise risk to human life from the inundation of industrial and commercial properties and to minimise economic cost to the community resulting from flooding.	• Council may consider merits-based approaches presented by the applicant. The proposed industrial or commercial buildings must meet the Flood Planning Level Requirements detailed in Section 4.5; and • The proposed industrial or commercial development should

Development Type/Aspect	Objective	Requirement
		not increase the likelihood of flooding on other developments, properties or infrastructure.
Car Parking	• To minimise the damage to motor vehicles from flooding; • To ensure that motor vehicles do not become moving debris during floods, which threaten the integrity or blockage of structures or the safety of people, or damage other property; and • To minimise risk to human life from the inundation of basement and other car park or driveway areas.	• The proposed car park should not increase the risk of vehicle damage by flooding inundation; • The proposed garage or car park should not increase the likelihood of flooding on other developments, properties or infrastructure; • The proposed garage or car park must meet the Flood Planning Level Requirements detailed in Section 4.5; and • Open car parking - The minimum surface level of open space car parking subject to inundation should be designed giving regard to vehicle stability in terms of depths and velocity during inundation by flood waters. Where this is not possible, it shall be demonstrated how the objectives will be met.
Filling of Flood Prone Land	• To ensure that any filling of land that is permitted as part of a development consent does not have a negative impact on the floodplain.	• Unless a FRM Plan for the catchment has been adopted, which allows filling to occur, filling for any purpose, including the raising of a building platform in flood-prone areas is not permitted without Council approval. Application for any filling must be supported by a flood assessment report from a suitably qualified

Development Type/Aspect	Objective	Requirement
		engineer which certifies that the filling will not increase flood affectation elsewhere.
On-Site Sewer Management (Sewer mining)	• To prevent the spread of pollution from on-site sewer management systems during periods of flood; and • To assist in the ongoing operation of on-site sewer management systems during periods of flood.	• The treatment facility must be located above the 1% AEP flood level and must comply with Flood Planning Level requirements, or are otherwise protected and may function if below this level.
Storage of Hazardous Substances	• To prevent the potential spread of pollution from hazardous substances.	• The storage of products which, in the opinion of Council, may be hazardous or pollute floodwaters, must be placed above the 1% AEP flood level or placed within an area protected by bunds or levels such that no flood waters can enter the bunded area and must comply with the Flood Planning Level requirement for such a facility.

4.4 Floodplain Planning Levels

A Flood Planning Level refers to the permissible minimum building floor levels. For below-ground parking or other forms of below-ground development, the Flood Planning Level refers to the minimum level at each access point. Where more than one flood planning level is applicable the higher of the applicable Flood Planning Levels shall prevail.

Development		**Flood Planning Level**
Residential	Habitable rooms	Minimum of 1% AEP flood level + 0.3m
	Habitable rooms Outside FPA	Minimum of 0.3m above surrounding ground level (existing)
	Non-habitable rooms such as a laundry or garage (excluding below-ground car parks)	Minimum of 1% AEP flood level
Industrial or Commercial	Business	Merits approach presented by the applicant with a minimum of the 1% AEP flood level
	Schools and child care facilities	Merits approach presented by the applicant with a minimum of the 1% AEP flood level + 0.3m
	Residential floors within tourist establishments	Minimum of 1% AEP flood level + 0.3 m
	Housing for older people or people with disabilities	Minimum of: • 1% AEP flood level + 0.5m, OR • the PMF, whichever is the higher
	On-site sewer management (sewer mining)	Minimum of 1% AEP flood level
	Retail Floor Levels	Merits approach presented by the applicant with a minimum of the 1% AEP flood. The proposal must demonstrate a reasonable balance between flood protection and urban design outcomes for street level activation.
Below ground garage/car park	All below ground car parks in FPA	Minimum of: • 1% AEP flood level + 0.3m, OR • the PMF whichever is the lower (see Note 1)
	Below-ground car park outside FPA	Minimum of 0.3m above the surrounding ground level (existing)
Above ground car park	Enclosed car parks	Minimum of 1% AEP flood level
	Open car parks	Minimum of 5% AEP flood level
Critical Facilities	Floor level	Minimum of: • 1% AEP flood level + 0.5m, OR • the PMF (whichever is higher)
	Access to and from critical facility within development site	1% AEP flood level

Note 1: The below ground garage/car park level applies to all possible ingress points to the car park such as vehicle entrances and exits, ventilation ducts, windows, light wells, lift shaft openings, risers and stairwells.

Note 2: The flood levels for the 1%AEP and 5 %AEP storms are to be calculated using Council's Tuflow flood model, which is available free of charge.

4.5 Flood Compatible Materials

Where required, the following materials are to be applied for different components of a development. Materials not listed may be accepted by Council subject to certification of the suitability of the material of the manufacturer.

Component	Flood Compatible Material
Flooring and Sub-floor	• Concrete slab-on-ground monolith construction • Suspended reinforced concrete slab
Wall Structure	• Solid brickwork, blockwork, reinforced concrete or mass concrete
Wall and Ceiling Linings	• Fibro-cement board • Brick, face or glazed • Clay tile glazed in waterproof mortar • Concrete • Concrete block • Steel with waterproof applications • Stone, natural solid or veneer, waterproof grout • Glass blocks • Glass • Plastic sheeting or wall with waterproof adhesive
Roof Structure	• Reinforced concrete construction • Galvanised metal construction
Doors	• Solid panel with water proof adhesives • Flush door with marine ply filled with closed cell foam • Painted metal construction • Aluminium or galvanised steel frame
Insulation	• Closed cell solid insulation • Plastic/polystyrene boards
Windows	• Aluminium frame with stainless steel rollers or similar corrosion and water resistant material.
Nails, Bolts, Hinges and Fittings	• Brass, nylon or stainless steel • Removable pin hinges • Hot dipped galvanised steel wire nails or similar
Main Power Supply	• Subject to the approval of the relevant authority the incoming main commercial power service equipment, including all metering equipment, shall be located above the designated flood planning level. Means shall be available to easily disconnect the dwelling from the main power supply.
Wiring	• All wiring, power outlets, switches, etc., should be located above the designated flood planning level. All electrical wiring installed below this level should be suitable for continuous underwater immersion and should contain no fibrous components. This will not be applicable for below-

Component	Flood Compatible Material
	ground car parks where the car park complies with flood planning level requirements. • Earth leakage circuit-breakers (core balance relays) or Residual Current Devices (RCD) must be installed. • Only submersible type splices should be used below maximum flood level. • All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.
Electrical Equipment	• All equipment installed below or partially below the designated flood planning level should be capable of disconnection by a single plug and socket assembly.
Heating and Air Conditioning Systems	• Heating and air conditioning systems should be installed in areas and spaces of the house above the designated flood planning level.
Fuel storage for heating purposes	• Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off. • The heating equipment and related fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. • The tanks should be vented above the flood planning level.
Ducting for heating/cooling purposes	• All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self-draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, a closure assembly operated from above relevant flood level should protect the ductwork.

5. RESPONSIBILITY/ACCOUNTABILITY

5.1 Council's Manager Engineering Infrastructure and Manager Strategic Planning are responsible for the development and revision of this Policy.

5.2 Council's Strategic Planning Department together with the Engineering Infrastructure Department are responsible for communicating the policy and ensuring systems are in place to validate its compliance.

6. RELATED POLICIES/DOCUMENTS/LEGISLATION

The Policy should be read in conjunction with the following Council policies and documents:

- Development Control Plan
- Local Environment Plan

- North Sydney Floodplain Risk Management Study and Plan

The Policy should be read in conjunction with the following documents/legislation:

- Environment Planning and Assessment Act 1979
- Floodplain Development Manual: the management of flood liable land, New South Wales Government (2005)
- Local Government Act 1993 (Section 733)

Version	Date Approved	Approved by	Resolution No.	Review Date
1	28 November 2022	Council	386	2024/25