



Sustainability



Efficiency

Reducing emissions requires new approaches to managing growth and development and increased efficiencies in managing energy, water and waste.

Priorities

Priority 7

A low-carbon community, with high energy, water and waste efficiency

Setting the scene

In addition to the current LEPs and DCPs, *Protect. Create. Live.* aspires for 'All new buildings being net zero emissions by 2030'

- There are also various local, state, national and international climate targets to consider:
 - » The National Construction Code specifies two ratings for energy efficiency: NatHERs (for residential) and NabERS (for commercial buildings generally)
 - » Residential development is subject to the Building Sustainability Index (BASIX) which is currently under review through a draft Design and Place SEPP. Find out more about BASIX at planningportal.nsw.gov.au and the draft Design and Place SEPP at planning.nsw.gov.au.
 - » DCP controls for water efficiency for development not subject to BASIX, such as commercial or industrial development, have been consolidated under our Water Management for Development Policy.
- The Commercial Building Disclosure regulatory program requires energy efficiency information to be provided when a commercial office space of 1,000 sqm or more is offered for sale or lease.
- SEPP 65 includes an objective to minimise the consumption of energy from non-renewable resources.
- DCPs and our Waste Management Guidelines also guide waste management.
- Road design specifications for new roads incorporate waste management needs.
- See Priority 9 and Priority 20 for measures to address transport efficiency.



Priority 7

A low-carbon community, with high energy, water and waste efficiency

The Northern Beaches LGA emitted almost two million tonnes of greenhouse gas emissions in 2016-2017. In the same year, almost half of the LGA's water supply (46%), sourced by remote dams and treated to drinking water standards, was used for non-drinking uses such as toilet flushing, laundry and irrigation. Land use and the built environment contributes to carbon emissions and water use as it influences how people live, move and use resources.

Energy and water efficiency provisions

New development should be more energy efficient, make better use of resources and minimise waste. We can employ approaches such as water sensitive urban design so that buildings and public spaces make better use of water and dispose of stormwater in a more environmentally friendly manner; design buildings to keep occupants warm in winter and cool in summer (it is cheaper to build passive energy and water efficient buildings than to retrofit); and encourage recycled materials in new developments and buildings, as well as low or zero carbon materials. It costs an average of \$20,000 more to build a zero energy home, and utility bill savings will pay back the cost in 10 years (CRC Low Carbon Living, 2019).

Heat mapping shows that the more urbanised an area (e.g., Dee Why and Brookvale) the hotter it is. Building materials and design can assist to reduce this urban heat as can water sensitive urban design and vegetation.

State provisions

Currently, a BASIX Certificate is lodged with a development application to demonstrate how the development will meet certain energy and water targets. It applies for all new residential development, alterations and additions that cost \$50,000 or more and swimming pools of 40,000 litres or more. At present, all residential developments must address targets for thermal comfort and 40% water efficiency. Targets for energy efficiency range from 50% for single dwellings to 35% for medium rise (3-6 storey) developments

For other buildings, energy provisions are identified under the National Construction Code including NABERS certification for commercial building generally.

The NSW Government has committed to improve BASIX as a pathway to deliver cost-effective, low emission outcomes for residential buildings. The new approach is in the explanation of intended effect for a Design and Place SEPP and includes:

- updated sustainability targets
- more flexibility in assessment pathways to demonstrate a design meets sustainability performance requirements and to recognise emerging technologies
- the need to align sustainability performance requirements with Design and Place SEPP principles
- the need to measure and report sustainability performance requirements.

Net zero energy buildings

Energy use in buildings continues to be a significant contributor to greenhouse gas emissions in Greater Sydney. To support the transition to net zero energy, we have been collaborating with the City of Sydney to develop performance standards to be implemented through the planning system. See Table 11 and visit cityofsydney.nsw.gov.au

Sustainability certification

State-led and national provisions complement other green certification systems (e.g., Green Star Buildings, LEED, BREEAM, WELL). Green Star differs from National Construction Code requirements in that it encompasses building servicing, internal furnishings, window and floor coverings and how people arrive and leave the building (mode of transport).

LEP provisions

Although all LEPs contain aims and objectives to encourage sustainable development, existing requirements are currently contained with DCPs, for example:

- Pittwater DCP and Dee Why Town Centre DCP require sustainability certification, with Dee Why Town Centre DCP requiring new development equal to or greater than \$5 million to achieve minimum 4 Star, Green Star. Where existing tools are not used to demonstrate the level of sustainability, a sustainability report must accompany the development application.
- Manly DCP (Clause 3.5.6) goes into the most detail around sustainability requirements for new development, ranging from comprehensive energy performance reports to star ratings for new electrical appliances.

Regardless, it is difficult for councils to enforce standards over and above State provisions as part of the development application process, especially as DCP provisions do not carry any statutory weight.

Towards 2040 pushes for LEP and DCP controls to improve energy, water and waste efficiencies in new developments and recommends that developments in strategic centres, employment hubs and areas subject to urban intensification to provide an independent sustainability certificate.

Our key decisions need to be around consistent controls, existing controls and whether development should go above and beyond standard (including BASIX). This includes discussion around whether we consider the whole life cycle of the building or whether we should make certification tools mandatory.

Proposed approach



The City of Sydney Council has developed performance standards for net zero energy buildings with industry and government. The performance standards and evidence base cover new office, multi-unit residential, hotel and shopping centre developments as well as major refurbishments of existing buildings to be implemented through the planning system.

Depending on the final Design and Place SEPP, we may adopt these standards for new specified developments (see Table 11). Ideally, these standards should be referenced within the LEP to carry statutory weight. This will be subject to approval by the Department of Planning, Industry and Environment (see cityofsydney.nsw.gov.au).



For smaller scale developments not referenced in Table 11, we are investigating LEP and DCP provisions that will enforce standards over and above State provisions such as BASIX, NatHers and NabERs and/or include requirements for independent sustainability certification such as Green Star, LEED, BREEAM and WELL.



We are reviewing water efficiency controls as part of the Water Cycle Management Strategy project with the Department of Planning, Industry and Environment, which looks at increasing use of alternative water sources and improving water efficiency and conservation as part of water sensitive urban design (see Priority 1).

Waste management provisions

Proposed approach



We will look to permit a range of land uses that support the circular economy in partnership with the Environmental Protection Authority and to align with the NSW Government's 20-year Waste Strategy. This includes certain types of industry that may process dry waste for re-use and/or waste or resource management facilities (see also Priority 9).



Waste controls in current DCPs are generally consistent. The new DCP will standardise requirements and include new controls to ensure all waste within non-residential development is stored and collected onsite (to reduce the visual and amenity impacts) and ongoing waste from developments is appropriately managed.

Table 11

Summary of net zero energy performance standards and development thresholds (source: City of Sydney).

Proposed use	Development thresholds for performance standards	Performance standards	
		Applications submitted between 1 January 2023 – 31 December 2025 (Step 1)	Applications submitted from 1 January 2026 onwards (Step 2)
Office (base building)	a new office building containing a net lettable area (NLA) of 1,000sqm or more	<ul style="list-style-type: none"> maximum 45.0 kWh/yr/sqm of Gross Floor Area (GFA), or 5.5 Star NABERS Energy Commitment Agreement (CA) + 25%, or certified Green Star Buildings rating with a "credit achievement" in Credit 22: Energy Use, or equivalent 	<ul style="list-style-type: none"> maximum 45.0 kWh/yr/sqm of GFA, or 5.5 Star NABERS Energy CA + 25%, or certified Green Star Buildings rating with a "credit achievement" in Credit 22: Energy Use, or equivalent AND <ul style="list-style-type: none"> renewable energy procurement equivalent to "net zero energy" or a maximum of 45.0 kWh/yr/sqm of GFA
	a refurbishment to an existing office building that contains a NLA of 1,000sqm or more		
	an addition of 1,000sqm or more of NLA that results in 50% or more additional NLA to the existing office building		
Retail (applies to shopping centre base building only)	a new shopping centre containing a gross lettable area – retail (GLAR) of 5,000sqm or more	<ul style="list-style-type: none"> maximum 55.0 kWh/yr/sqm of GFA, or 4 star NABERS Energy CA, or certified Green Star Buildings rating achieving the "minimum expectation" in Credit 22: Energy Use, or equivalent 	<ul style="list-style-type: none"> maximum 45.0 kWh/yr/sqm of GFA, or 5 star NABERS Energy CA, or certified Green Star Buildings rating with "exceptional performance" in Credit 22: Energy Use, or equivalent AND <ul style="list-style-type: none"> renewable energy procurement equivalent to "net zero energy" or a maximum of 45.0 kWh/yr/sqm of GFA
	an addition of 5,000sqm or more of GLAR that results in 50% or more additional GLAR to the existing shopping centre		
Hotel (whole building)	a new hotel of 100 rooms or more	<ul style="list-style-type: none"> maximum 245.0 kWh/yr/sqm of GFA, or 4 star NABERS Energy CA, or certified Green Star Buildings rating achieving the "minimum expectation" in Credit 22: Energy Use, or equivalent 	<ul style="list-style-type: none"> maximum 240.0 kWh/yr/sqm of GFA, or 4 star NABERS Energy CA + 10%, or certified Green Star Buildings rating with a "credit achievement" in Credit 22: Energy Use, or equivalent AND <ul style="list-style-type: none"> renewable energy procurement equivalent to "net zero energy" or a maximum of 240.0 kWh/yr/sqm of GFA
	a refurbishment to an existing hotel that contains 100 rooms or more		
	an addition of 100 or more hotel rooms that results in 50% or more additional hotel rooms to the existing hotel		
Mixed use	where one or more of the above thresholds for each proposed use apply	<ul style="list-style-type: none"> the above performance standards apply for each proposed use 	<ul style="list-style-type: none"> the above performance standards apply for each proposed use

Refurbishment means carrying out of works to an existing building where the resultant change is to at least half the total volume of the building measured over its roof and walls. In calculating the extent of the change to the total volume of the building, the proposed works and all other building work completed or authorised within the previous three years is to be included.



Resilience

Adaptation to natural and urban hazards is becoming increasingly important as the climate changes and the population grows.

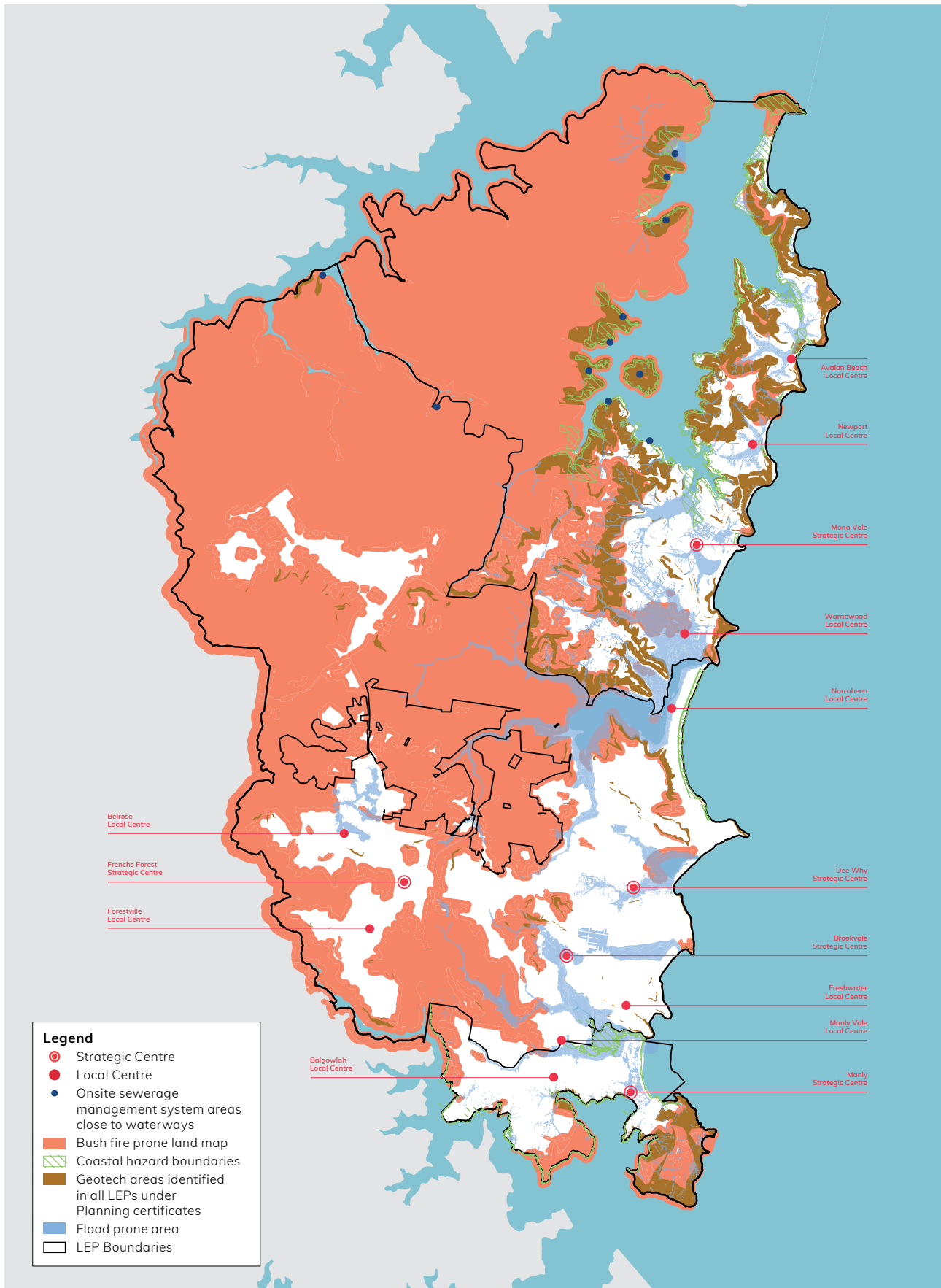
Priorities

Priority 8

Adapted to the impacts of natural and urban hazards and climate change

Setting the scene

- The EP&A Act and the *Rural Fires Act 1997* form the basis for all bush fire planning and bush fire protection measures for development in NSW.
- Development on bush fire prone land must comply with Planning for Bush fire Protection 2019, prepared by the Rural Fire Service, and Australian Standard AS3959-2018 – Construction of buildings in bushfire-prone areas.
- In terms of flooding, the Coastal Management SEPP obliges councils to:
 - » identify the risk of current and future exposure to coastal hazards
 - » assess development proposals for likely risk of coastal hazards
 - » assess proposed coastal protection works against rules of permissibility for that type of development.
- Other guidance is included in Planning Circular PS 07-003 (January 2007), which limits the application of residential flood related development controls above the 1% annual exceedance probability (AEP) flood and freeboard, Local Planning Direction 4.3 Flood Prone Land, which outlines the considerations for the making of LEPs on flood prone land, and provisions in the Codes SEPP, Seniors SEPP and Infrastructure SEPP relating to floodplain risk management.
- Pollution control is governed by the *Protection of The Environment Operations Act 1997*
- LEPs permit a range of infrastructure relating to hazard risk management and pollution control. DCPs include broad controls relating to air quality and odours, and water quality, including groundwater.
- SEPP 55 requires Council to consider whether land may be contaminated and whether the site is suitable for development before any approval can be granted.





Priority 8

Adapted to the impacts of natural and urban hazards and climate change

The Northern Beaches is vulnerable to natural hazards as a result of past planning decisions and its interface with the natural environment. These hazards include bush fire, flooding, landslip, coastal erosion and storms. Recent examples include the 1994 bush fires in Terrey Hills, Ingleside and Elanora Heights, and the 2016 east coast low and king tide that caused severe damage and coastal erosion at Collaroy - Narrabeen, power outages and the evacuation of residential properties.

We resolved to join over 900 jurisdictions worldwide, including 35 Australian councils, and declared a **state of climate emergency** that requires immediate action by all levels of government.

Natural hazards

Bush fire

The Northern Beaches is exposed to some of the highest levels of bush fire risk throughout the Sydney Basin and NSW, with 19,474 properties associated with the 2020 Bush Fire Prone Land layer; of these, 14,641 properties are in private ownership.

We need a balance between measures taken to reduce or avoid harm and loss due to bush fire, and the protection of other values such as biodiversity and the functioning of natural systems.

Development needs to be appropriately located and constructed to reduce bush fire risk to life and property, while having due regard to development potential, site characteristics and protection of the environment.

Land use planning and development controls represent the greatest opportunity, and the greatest challenge, in avoiding and minimising the impacts of bush fire. The new planning framework is an ideal opportunity to guide appropriate development in areas with high bush fire risk by avoiding placing people in harm's way.

The Northern Beaches Bush Fire Prone Land Map, required under the EP&A Act, was endorsed in 2020 and is currently in force. Development proposals within the mapped area must comply with Planning for Bush Fire Protection 2019.

In preparing our new LEP, we must (in accordance with a Ministerial direction under the EP&A Act):

- have regard to Planning for Bush fire Protection 2019
- introduce controls that avoid placing inappropriate developments in hazardous areas
- ensure that bush fire hazard reduction is not prohibited within the asset protection zone.

Pittwater DCP contains controls relating to bush fire protection and all LEPs stipulate that bush fire hazard reduction work authorised under the *Rural Fires Act 1997* can be carried out without consent in any LEP zone.

Proposed approach



The strategic bush fire assessment for the deferred lands will inform the permissible uses and appropriate zoning of land in this area under the new LEP (the land is not currently subject to standard zoning provisions). We may extend the assessment to other areas, which may lead to changes to current zoning of land based on bush fire risk.

We will also look to include the following broad aims in the new LEP:

- to minimise risks to public health and safety from urban and natural hazards and reduce risk to life and property
- to improve resilience to climate change in both natural and built assets.



We also propose applying bush fire protection controls within the new DCP across the Northern Beaches in relation to properties identified on the adopted Bush Fire Prone Land Map.

Coastal hazards

Damage from coastal hazards is evident, in particular from beach erosion, to properties along the coast of the Northern Beaches during extreme but rare storm events. Climate change has the potential to increase the risk from coastal hazards as well as the likelihood of property damage during extreme storm events due to erosion, inundation and wave action.

Explainer

The Coastal Management Act 2016 identifies seven coastal hazards:

- beach erosion
- shoreline recession
- coastal lake or watercourse entrance instability
- coastal inundation
- coastal cliff or slope instability
- tidal inundation
- erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters.

The Act aims to improve the resilience of coastal assets to the impacts of an uncertain climate future including impacts of extreme storm events. It establishes principle-based management objectives to protect public safety and human life, and to mitigate current and future risks from coastal hazards, taking into account the effects of climate change.

The Coastal Management SEPP requires that “Development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.” The SEPP applies to the coastal zone of the Northern Beaches LGA and came into effect after the current planning framework was established. Where there are inconsistencies, the SEPP prevails.

Current LEPs, DCPs and policies contain provisions on beach erosion, coastal inundation (also known as estuarine inundation) and coastal cliff or slope instability (also known as bluff instability, geotechnical or landslide risk).

With regard to beach erosion, Warringah LEP and Pittwater LEP map land to which related clauses apply. Manly LEP does not. Warringah DCP controls include appropriate setbacks and foundation treatments and require the applicant to demonstrate compliance with the Collaroy-Narrabeen Beach and Fisherman’s Beach Coastal Zone Management Plan, the Northern Beaches Coastal Erosion Policy and relevant technical design specifications. Pittwater 21 DCP includes development controls dealing with beach erosion, supported by a Coastline Risk Management Policy.

With regard to coastal inundation, the Pittwater estuary is addressed through the provisions and development controls of Pittwater 21 DCP including the Estuarine Risk Management Policy for Development in Pittwater. These provisions were informed by an estuarine planning level study. There are no specific provisions in the Manly and Warringah LEPs and DCPs to address the risk of coastal (or estuarine) inundation.

With regard to coastal cliff or slope instability, Pittwater DCP includes development controls dealing with coastal cliff or slope instability supported by a Geotechnical Risk Management Policy. Coastal cliff instability is also addressed in the Manly LEP through the Manly Landslide Risk Map. Coastal cliff instability is not addressed in the Warringah LEP or DCP.

Find out more

- Visit northernbeaches.nsw.gov.au to view the Coastal Erosion Policy and Geotechnical Risk Management Policy.
- View the [Pittwater DCP](#) for the Coastline Risk Management Policy (Appendix 6) and Estuarine Risk Management Policy for Development in Pittwater (Appendix 7).

Proposed approach



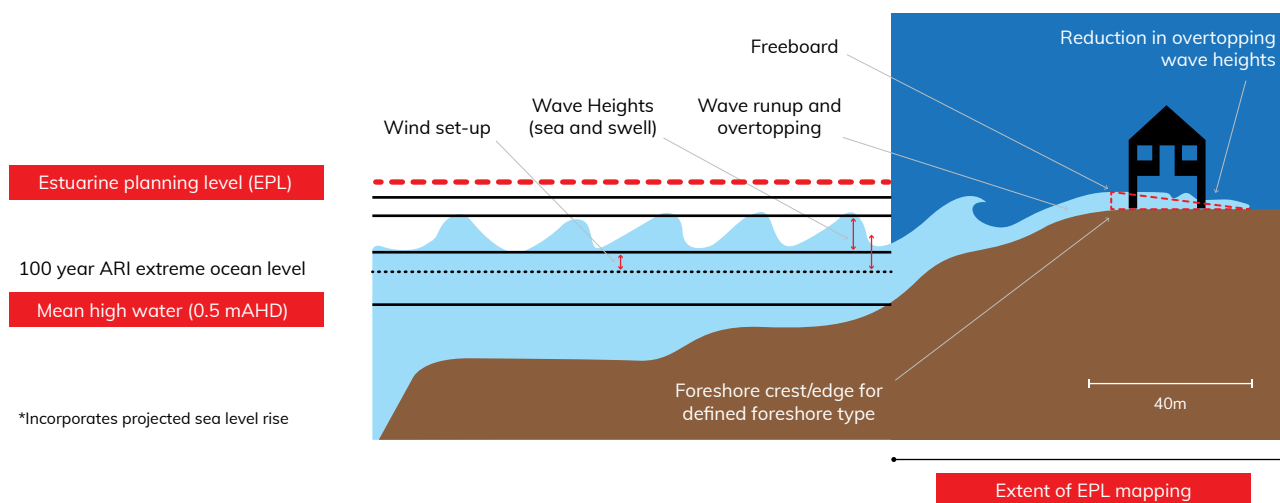
A coastal inundation (estuarine planning level) study has been undertaken including the Sydney Harbour and Cowan Creek estuaries within the Northern Beaches LGA and will soon be available for comment. It recommends standardising the existing estuarine hazard controls and using consistent mapping, development controls and possibly an estuarine risk management policy to manage the estuarine inundation risk.



We are also mapping all applicable coastal hazards identified in the Coastal Management Act 2016 and will consider appropriate planning provisions and consistent development controls for each coastal hazard affecting the Northern Beaches LGA. The consolidated coastal hazards map could be included in the new LEP and the new DCP could be supported by separate policies or technical specifications dealing with the management of risk associated with the relevant coastal hazards.

Figure 6

Coastal inundation elements and estuary planning levels derivation (source: Rhelm, 2020 adapted from Cardno, 2015 Northern Beaches Council).



Flood prone land

Parts of the Northern Beaches are highly prone to flooding and properties have been developed in flood prone areas. Climate change will worsen flooding by increasing the intensity of rainfall and through sea level rise.

The Manly, Pittwater and Warringah LEPs include a standard LEP provision related to flood prone land. Pittwater LEP has an additional floodplain risk management clause to manage the flood risk to vulnerable/critical developments.

All three DCPs have a uniform Flood Prone Land clause and Pittwater has an additional clause where there is 'intensification of development' to manage the increased flood risk from climate change.

Proposed approach



The Department of Planning, Industry and Environment have finalised a flood prone land package relating to development on flood prone land. Two LEP clauses, one mandatory (the 'flood planning' clause) and the other optional (the 'special flood considerations' clause) are proposed to be added to the Standard Instrument. We will look to adopt these clauses as appropriate for the Northern Beaches LGA.

The draft package can be viewed at planningportal.nsw.gov.au. Adopting the LEP clauses contained in package will not substantially change requirements for developing flood prone land in the Northern Beaches LGA.

Geotechnical hazards

Geotechnical hazards include landslips, excessive settlement and groundwater issues. Inadequate planning and accountability relating to geotechnical hazards increases the risk of inappropriate and potentially dangerous development.

We need processes and rules to ensure that appropriately qualified geotechnical engineers have assessed certain sites and types of developments based on their likely geotechnical risk. We have different approaches to geotechnical issues under our current planning controls:

- In Pittwater, the DCP requires declarations regarding investigations and inspections, feasibility and final construction from suitably qualified geotechnical engineers throughout development. This applies to land on the Geotechnical Hazards Map in the LEP.

- Manly DCP requires a site stability report with the development application if the land is identified on the Landslip Map, or for development of certain excavation or of different levels of risk located on land identified Geotechnical Area map in the DCP.
- Warringah LEP requires a geotechnical stability report with the development application depending on the landslip risk class (defined in LEP mapping) and the type of works required (e.g., excavation, fill, slope or proximity to natural cliffs).

Geotechnical planning should be applied across the entire LGA given that risk is dependent on development type not just the site.

Proposed approach



A consistent approach is likely to require appropriate consideration of geotechnical issues for all development applications, supported by detailed DCP controls that spell out requirements for different areas (e.g., proximity to coast or land slope and different forms of development).

Controls will be commensurate with the risk associated with geotechnical hazards. This may result in no requirement for geotechnical reporting and monitoring for low risk developments or a requirement for detailed reporting and demonstration of ongoing monitoring for highest risk developments.

A study is being prepared to inform the draft LEP and DCP.

Urban hazards

Land contamination

Proposed approach



State SEPP 55 is the required standard to assess land contamination. No additional controls are required, however a new clause is proposed within the new DCP highlighting the requirement of SEPP 55.

Onsite sewerage management

Proposed approach



We propose to retain and consolidate provisions from the Manly and Pittwater LEPs requiring onsite sewerage management in the new LEP.



We propose a DCP section relating to onsite sewage management that would be applicable to all properties not connected to the Sydney Water reticulated sewage system. DCP controls would require an onsite sewage management system to be designed, located and constructed to:

- be suitable for the site characteristics (including for example size, soil type, and proximity to natural watercourse/waterways)
- adequately cater for the maximum volume of wastewater likely to be generated from the development/number of occupants
- dispose of sewerage in a manner that minimises impacts on the natural and built environment and on public health.

The DCP or development application lodgement requirements will outline the circumstances in which a wastewater management report will be required to accompany a development application, as well as the type of information to be included within such a report.

We do not propose changing our inspection and approval processes.

Fireplaces

Proposed approach



We propose a DCP section relating to domestic oil or solid fuel heating appliances that would provide guidance around the design and location of the heater and associated flues. Requirements will also be imposed to ensure compliance with relevant Australian standards.

Where a domestic oil or solid fuel heating appliance is proposed as part of a development application, our DCP or development application lodgement requirements will outline information required to accompany a development application to determine if the proposed system and/or its location is appropriate.
