

**Submission  
No 189**

**INQUIRY INTO PLANNING SYSTEM AND THE IMPACTS  
OF CLIMATE CHANGE ON THE ENVIRONMENT AND  
COMMUNITIES**

**Organisation:** NSW Government

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# NSW Government submission to the Legislative Council inquiry into the planning system and the impacts of climate change on the environment and communities

PREPARED BY THE NSW GOVERNMENT

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# Executive Summary

New South Wales climate is changing, impacting people and the environment. These changes are projected to become more pronounced over this century, with extreme floods, droughts, dangerous fire weather and heatwaves predicted to increase in duration, magnitude and frequency.

The NSW land use planning framework has an important role to play in managing, mitigating and adapting to the effects of climate change, with the decisions made today directly affecting the economic prosperity and health and well-being of the people of NSW and our unique native plants and animals now and into the future.

In addition, NSW is in a housing crisis. As is well documented, the supply of new well-located housing has not kept pace with growing populations and changing household demographics. Fewer people can access affordable housing close to jobs, transport and communities. More diverse housing types are needed to match the ageing population, growing number of renters and single person households. The NSW land use planning framework has a key role to play in increasing housing supply and ensuring more social and affordable housing.

Planning decisions are made for multiple scales of development and at different levels of government. The NSW Department of Planning and Environment (the department), state agencies and local councils all make planning decisions in various circumstances, with local councils the key decision maker for most site-based decisions in their communities. The community also expects these decisions to be fair, transparent and equitable.

The catastrophic 2020 bushfires and 2022 floods have highlighted the need to ensure those least able to recover from natural disaster are appropriately supported. These disasters have also highlighted the opportunity for land use planning to move to a strategic, risk-based approach to ensure that decisions help reduce the impacts of climate change on people and the environment. Assessing and making decisions based on an understanding of tolerable risk is a key element in planning for climate change.

This submission presents information on the current operation of NSW land use planning framework, areas of reform, and opportunities to support the transition to a climate change ready planning system.

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# Context for response

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## Purpose

The NSW government submission (the submission) addresses the terms of reference for the Portfolio Committee 7 – Planning and Environment inquiry into how the planning system can best ensure that people and the natural and built environment of NSW are protected from climate change impact and changing landscapes (the Inquiry).

This submission provides information about how the planning system is helping prepare for, manage and mitigate the impacts of climate change on communities, infrastructure and the environment. It also identifies inter-agency coordination and collaboration on projects and programs to increase resilience to climate change.

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## Background

### The impacts of climate change in NSW

The climate of NSW is changing due to global warming. The effects of climate change on the people and environment of NSW are expected to become more pronounced as the climate continues to change over this century. Without substantial, concerted action, climate change poses a major threat to humanity and most living systems on earth. Extreme events such as floods, droughts, dangerous fire weather and heatwaves are projected to increase in duration, magnitude and frequency with greater impacts on communities and infrastructure.

In NSW the mean temperature is about 1.4°C higher than in 1910, with 2018 and 2019 being the warmest years on record. Following this period of hotter temperatures the Black Summer fires peaked in December 2019–January 2020, causing widespread destruction of landscapes, property and infrastructure and prolonged poor air quality in Sydney and Canberra.

Other observed changes include increased seasonal variability in rainfall and increases in some extreme weather events such as storms and intense low-pressure systems. In 2021 the state experienced extensive flooding that inflicted significant damage in a number of areas and in 2022 the state experienced further catastrophic flood events, with 9 people losing their lives. Events such as these have significant long-term impacts on communities and may become more frequent with climate change.

Regional climate projections over NSW suggest that by 2070 mean temperature will have risen by a further 2.1°C relative to a 1990–2009 baseline period, with much larger increases in extreme temperatures (see Figure 1 below). The intensity and frequency of heatwaves is also expected to increase and there will be more days above 40°C across most of NSW. In the summer of 2019/2020 Sydney's hottest areas reached temperatures above 50 degrees across several locations on three separate days.

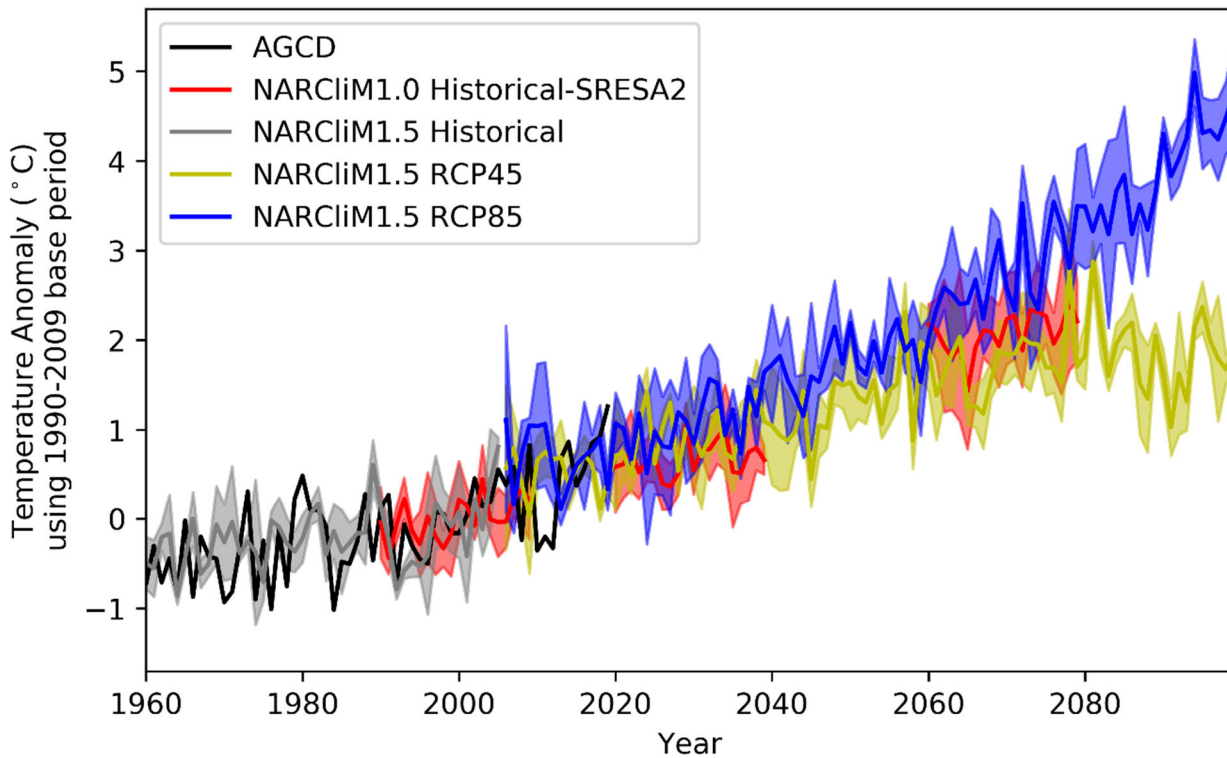


Figure 1 - Observed and projected changes in annual mean temperatures for NSW and the ACT

Source: Spotlight figure 21, SoE 2021

Since the late 20th century, sea surface temperatures (SST) in the western Tasman Sea have increased by 0.2–0.5°C per decade. For the Sydney area, SST have increased by 0.2°C per decade since 1945.

The rate of sea level rise has nearly doubled. From an average rate of 1.7 mm per year during most of the 20th century, sea levels at the Port Kembla Baseline Sea Level Monitoring Station now indicate an average 3.4 mm increase per year since 1991. Globally, sea levels are expected to rise by a half to one metre above the reference point of the year 2000 by the end of the 21st century. Rising water temperatures present an increased risk of expanding the range or suitability for establishment of aquatic pest species and disease outbreaks, with potential impacts on aquaculture industries, wild capture fisheries and the environment. This also puts communities at increasing risk from coastal erosion and inundation during storms and will see rising impacts on infrastructure.

The future effects of climate change will be extensive, and will impact communities, housing, built infrastructure, agriculture, human health, and individual wellbeing. Biodiversity, including the survival of many species and ecosystems, will also be impacted and climate change will affect the security of our natural resources, such as water availability and the productivity of some agricultural systems.

## The role of the planning system

The NSW land use planning framework plays an important role in supporting communities, industry and individuals, with the decisions made today directly affecting the economic prosperity and health and well-being of the people of NSW and our unique native plants and animals. The NSW land

use planning framework is in a unique position to help ensure the impacts of climate change and natural disaster are addressed strategically and equitably.

NSW is also in a housing crisis. As is well documented, the supply of new well-located housing has not kept pace with growing populations and changing household demographics. Fewer people can access affordable housing close to jobs, transport and communities. More diverse housing types are needed to match the ageing population, growing number of renters and single person households.

The NSW land use planning framework aims to support planning authorities in making merit-based decisions. The framework's policies and guidelines support fair and transparent decisions that are determined on their merits, having regard to potential economic, environmental and social impacts and the principles of ecologically sustainable development. The NSW planning framework has a key role to play in increasing housing supply and unlocking social and affordable housing.

The NSW planning framework also supports delivery of important infrastructure, such as hospitals, schools, roads, railways, emergency services, water supply and electricity provision. Under Part 5 of the EP&A Act agencies can access a specific set of criteria to assess the environmental impact of certain activities that they are either carrying out themselves or approving. Other infrastructure approvals can occur under the State Environmental Planning Policy (Transport and Infrastructure) 2021. These pathways help ensure the timely assessment and delivery of infrastructure.

While an emerging area for most jurisdictions, moving from an approach that considers individual natural hazards to a risk-based multi-hazard approach presents an important transition. Findings from the recent Parliamentary Inquiries into the 2020 bushfires and the 2022 floods have highlighted the role of land use planning in helping consider and manage the future risks from natural hazards by moving to a strategic, risk-based planning approach. In addition, the NSW land use planning framework is in a unique position to help ensure the incremental impacts of climate change, such as sea level rise, are managed strategically and equitably. Ensuring the consideration of tolerable risk at appropriate scales is a key next step for land use planning. It can support reduced impacts to communities, provide greater resilience to future change and help ensure that high risk communities receive equitable treatment during the transition to a climate resilient future.

## Managing natural hazards and climate change

The NSW Climate Change Policy Framework directs government to 'manage the impact of climate change on its assets and services by embedding climate change considerations into asset and risk management' and more broadly into 'government decision-making'. In addition, under this framework, agencies are responsible for identifying and managing their own climate risks. This framework helps ensure climate change is considered in managing the government's \$365 billion worth of physical assets, which includes \$180 billion in major infrastructure such as roads and railway lines. Each agency is required to consider climate risk as part of their risk management processes which ensures that climate change impacts are considered in setting and delivering policies, programs and services.

The NSW government maintains a disaster preparedness and recovery network that includes:

- the State Emergency Management Committee (SEMC) who provide leadership, direction and advice for strategic and operational emergency management in NSW. The committee is made up of representatives from emergency services and other government agencies
- the NSW Rural Fire Service (NSW RFS) who are the lead combat agency for bushfires in NSW. They work closely with other agencies to respond to a range of emergencies including structure fires, motor vehicle accidents and storms that occur within rural fire districts
- the State Emergency Service (SES) who are responsible for planning for, responding to and coordinating the initial recovery from floods, storms and tsunamis in NSW
- the NSW Environment Protection Agency (EPA), as lead Environmental Services Functional Area, provides extensive support to combat agencies, government committees, local government and regional communities during the disasters such as bushfires and flood
- Fire and Rescue NSW (FRNSW), who are a primary responder to disasters and major emergency incidents such as earthquakes. FRNSW's Disaster Assistance Response Teams also have capability to make rapid damage assessments to assist with recovery efforts and support the lead agencies (SES, RFS and EPA) during major incidents

In addition, the NSW Reconstruction Authority (the Authority) was established in December 2022 to ensure NSW is best placed to minimise or help prevent future natural disasters before they occur and recover quickly when they do. The Authority is currently preparing the State's first State Disaster Mitigation Plan, as well as helping communities impacted by the 2022 floods recover, including managing more than \$6.8 billion in State and Commonwealth grant programs offering support and practical help to those who need it most.

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## Statutory and policy context

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the overarching planning legislation for NSW. Under the EP&A Act, planning instruments such as regional and district strategic plans, State environmental planning policies (SEPPs), local environmental plans (LEPs) and development control plans are made, as well as planning guidelines and local planning directions. The planning system controls development and also regulates environmental impact assessment, public infrastructure planning and delivery, and building and subdivision certification. Figure 2 illustrates the NSW land use planning framework.



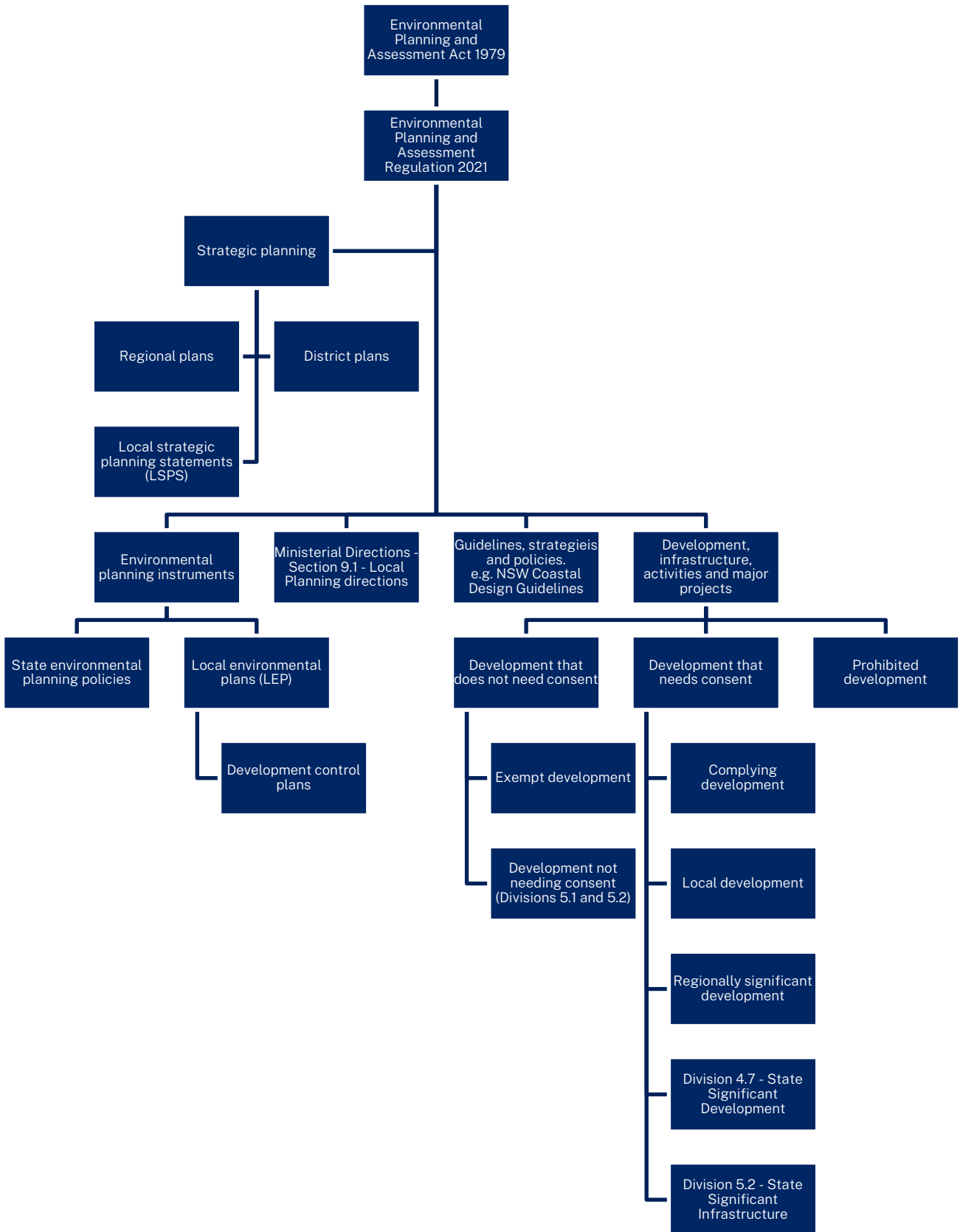


Figure 2 - NSW land use planning framework

The NSW land use planning framework guides proponents and planning authorities when considering whether, and if so, in what form, various types of land use change and development should occur. The NSW land use planning framework operates at multiple scales, from setting strategic outcomes to determining site specific outcomes. The following provides an overview of how the planning system guides land use planning decisions in relation to climate change.

## Key elements of the planning system

Planning system element	Function	Climate change aspects
EP&A Act and Environmental Planning and Assessment Regulations 2021	Overarching legislation for land use planning.	<ul style="list-style-type: none"> <li>Includes objectives aligned with ecologically sustainable development</li> <li>Facilitates assessment of climate change throughout the planning system</li> </ul>
Regional and district/city plans	20-year State-led strategic planning documents which set the direction for planning.	<ul style="list-style-type: none"> <li>Climate change is considered as part of the economic, social and environmental matters that form the basis of strategic planning</li> <li>Must be consistent with the State Disaster Mitigation Plan and any relevant Disaster Adaptation Plans</li> </ul>
Local strategic planning statements (LSPS)	<p>Prepared by local councils to set out the strategic planning ambitions for their LGA.</p> <p>Must be consistent with relevant district or regional plans and community strategic plans under the Local Government Act 1993.</p>	<ul style="list-style-type: none"> <li>If the relevant district or regional plan identifies measures relating to climate or natural hazard risk, LSPSs must be consistent with this</li> <li>Can be used to identify changes needed to local planning controls for climate resilience</li> </ul>
State environmental planning policies (SEPPs)	Provide state-level planning controls on matters of regional or State significance or for certain areas of the state, allowing for a consistent approach to state planning issues.	<ul style="list-style-type: none"> <li>Some SEPPs contain specific climate change or natural-hazard related controls</li> </ul>
Local environment plans	<p>Prepared by local councils to control development in their areas.</p> <p>Must comply with a standard form and contain certain mandatory provisions.</p>	<ul style="list-style-type: none"> <li>The mandatory flood planning provision requires the consideration of climate change</li> <li>Councils can also include their own local provisions on climate change resilience and natural hazards, including regarding coastal hazards and urban heat</li> </ul>
Development control plans (DCPs)	Prepared by local councils to set considerations for development assessment.	<ul style="list-style-type: none"> <li>Many councils include DCP provisions regarding natural hazards and climate resilience</li> </ul>
Local planning directions	Set requirements for planning proposals, for example proposals to rezone land.	<ul style="list-style-type: none"> <li>There are specific directions requiring the consideration of natural hazard and climate change risks</li> </ul>

## Supporting framework

Several key guidelines also support planning authorities and proponents when considering climate change. These include:

- Climate Risk Ready NSW Guide; this guide aims to help NSW government agencies better understand and respond to climate risks. It contains information to help agencies to understand their exposure to climate risks, address material risks and opportunities, and embed climate risk management into existing risk management frameworks
- Local Environmental Plan Making Guideline; this guideline identifies assessment criteria for determining planning proposals (and therefore amending an LEP) and includes climate change as a factor that can be assessed as part of a planning proposal
- Local Strategic Planning Statements - Guideline for Council's; this guideline identifies requirements for planning priorities in LSPS's and suggests planning priority themes such as 'environment' with sub-themes such as biodiversity, climate, resilience and risks
- EPA's Climate Change Policy and Climate Change Action Plan: 2023–26; these outline a regulatory approach and set of actions to address the causes and consequences of climate change in NSW. It includes information on understanding and considering climate change risks and adaptation in land use planning decisions and builds on the NSW Government's climate change policies and initiatives to build a greater preparedness and resilience to climate change risks.

## Related statutory frameworks

Land use planning decisions affect existing homes, infrastructure and the environment. In making a land use planning decision under the EP&A Act, a planning authority may need to consider a variety of matters, including impacts on both the built and natural environments. Other relevant State based legislative frameworks that a planning authority may need to consider include:

- Biodiversity Conservation Act 2016
- Coastal Management Act 2016
- Energy and Utilities Administration Act 1987
- Fisheries Management Act 1994
- Heritage Act 1977
- Marine Estate Management Act 2014
- National Parks and Wildlife Act 1974
- NSW Reconstruction Authority Act 2022
- Protection of the Environment Operations Act 1997
- Water Management Act 2000.

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# Response

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## Embedding climate resilience into development decisions

Planning decisions are made at multiple scales and effect people and our environment now and into the future. The department, some state agencies, and local councils are planning authorities in various circumstances. The NSW land use planning framework aims to support planning authorities in making merit-based decisions, having regard to potential economic, environmental and social impacts and the principles of ecologically sustainable development. The NSW land use planning framework guides planning authorities in considering natural hazards such as bushfires, sea level rise, coastal erosion, droughts and floods. The planning system also has an important role in addressing emerging issues such as urban heat and the important role green infrastructure plays in providing local communities amenity and enhancing resilience.

## Guiding strategic planning

### The NSW Reconstruction Authority and its role in disaster planning

The NSW Reconstruction Authority (the Authority) leads 4 key disaster functions:

- mitigation and adaptation, including for public infrastructure, homes and land use planning
- local preparedness, including education and community information
- community-centred recovery
- long-term rebuilding and reconstruction.

The *NSW Reconstruction Authority Act 2022* recognises the role of climate change in natural disasters and requires both the Authority's State Disaster Mitigation Plan (SDMP) and Disaster Adaptation Plans (DAPs) to assess and consider the impacts of climate change on natural disasters.

The development of the State's first SDMP is a key deliverable and will be in place by 17 December 2023. The purpose of the SDMP is to provide guidance about the mitigation of disasters across the State, including setting priorities for actions to be undertaken by the plan, disaster adaptation plans and strategic plans under the EP&A Act. DAPs are designed to protect communities and detail the specific risks and actions that will be taken to prevent, if possible, or minimise the impact of natural hazards and the disasters they may cause.

The SDMP and any relevant DAPs must be considered in all planning decisions under the EP&A Act and council functions under the *Local Government Act 1993* including:

- when undertaking strategic planning and decision making
- by Councils undertaking any of their local government functions
- by all relevant entities when preparing applications for and carrying out development.

The SDMP will also inform NSW government priorities, investment, and state decision-making to reduce risk. The plan will include a range of actions and responsibilities and identify how these actions will be monitored and reported.

## Strategic planning

Regional plans are state-led strategic planning documents that set the direction and objectives for delivering the vision for a liveable, productive, and sustainable NSW. District plans expand further on the vision and objectives of regional plans, setting more detailed priorities and actions for their respective area. Planning authorities use these plans to prepare their own strategic planning documents, including their Local strategic planning statements (LSPSs), which are used to inform land use planning decisions. Often these plans and strategic planning documents include high level statements and objectives that relate to climate change, climate risks, resilience, climate mitigation and adaptation.

## Tolerable risk

Historically, land use planning has focused on making decisions in relation to how a development proposal interacts with a specific hazard. However, as the severity and scale of natural disasters increases, there is an opportunity to move from a hazard-based approach to a strategic, risk-based approach. Assessing and making decisions based on an understanding of tolerable risk is a key element in planning for climate change.

Understanding tolerable risk aligns strongly with merit-based decision-making processes. Tolerable risk may require an understanding a proposal's potential risks, costs and impacts, and consideration of the effects of the proposal within the broader area in which it will be delivered. The aim is to help a planning authority determine if a proposal's risks are low enough to permit the exposure to identified hazards and to ensure appropriate mitigation are in place. Consideration of tolerable risk can play an important role in helping ensure relevant infrastructure is available, such as evacuation capacity in bushfire or flood prone areas, and that the proposal is appropriate given local conditions.

## Natural hazards package

The natural hazards package is an action under the State Infrastructure Strategy 2018 – 2038 and is supported by the 2017 State Level Risk Assessment. The natural hazards package also addresses recommendations made under the 2020 NSW Bush Fire Inquiry and the 2020 Royal Commission in Natural Disaster Arrangements.

The natural hazards package helps communities and councils prepare for, manage, and recover from extreme events. It includes the Strategic Guide to Planning for Natural Hazards in NSW (the guide) and a resources kit to help plan making authorities find information and data they need. The guide helps planning bodies create regional, district and local strategic plans, planning proposals and other strategic planning activities.

## Common Planning Assumptions

NSW Common Planning Assumptions are the agreed information assets (data sets, parameters and assumptions, models and analytical tools) used by NSW government and external stakeholders, to

prepare proposals, business plans and strategies that rely on projections. They provide a consistent evidence base for NSW government agencies to use in planning for key services and infrastructure in the state, from schools and hospitals to roads and transport. They cover a range of climate and natural resources information, such as data, maps and reports relating to climate change, biodiversity, bushfires, heatwaves, rainfall, sea level rise and air quality.

### Supporting climate change policy and environment protecting licensing

The EPA's Climate Change Policy and Climate Change Action Plan supports and builds on the NSW government's climate change policies and initiatives, including those aiming to helping NSW to build greater preparedness and resilience to climate change risks. Adaptation is a key pillar of the EPA's policy and action plan. This work is seeking to develop climate change guidance and place-based policies to support the planning approvals process, including guidance and advice for consent authorities and businesses. It will require and support proponents to adequately consider climate change in their applications and develop appropriate climate change conditions for development approvals. The EPA and DPE are currently developing Climate Change Assessment Requirements and supporting guidance for proponents of State Significant Development (SSD) applications that will require an environment protection licence from the EPA to operate.

### Delivering key infrastructure

Some public authorities are responsible for delivering key infrastructure such as hospitals, schools, roads, railways, emergency services, water supply and electricity. This infrastructure plays an important role in supporting the NSW community's health, and economic and social prosperity. Under Part 5 of the EP&A Act, some public authorities can apply the process set out under Division 5.1 of that Act to assess the environmental impact of certain activities that they are either carrying out themselves or approving. Infrastructure assessed under this pathway is to consider the likely impact of an activity on the environment, and the determining authority must review environmental factors specified in the environmental factors guidelines. Other infrastructure approvals can occur under the State Environmental Planning Policy (Transport and Infrastructure) 2021. NSW Climate Change Policy and the NSW Infrastructure Strategy provide guidance about making infrastructure more resilient to natural hazards. The NSW Flood Inquiry also included recommendations in relation to how the planning system could manage the effect of natural hazards on specific types of infrastructure.

### State Significant Infrastructure and Development

State Significant Infrastructure (SSI) and State Significant Development (SSD) is development that is important to the State. The SSI and SSD guidelines provide guidance to proponents of these projects to help them prepare environmental assessment reports that are comprehensive and proportionate to the scale and impacts of the project. The guidelines introduce standards and requirements for all environmental assessment reports, noting climate change as a factor. The Cumulative Impact Assessment Guideline (discussed further later in this submission), considers climate change further.

The assessment requirements for SSI and SSD are established by the Secretary's Environmental Assessment Requirements (SEARs). The SEARs identify what information needs to be included in an

environmental impact statement submitted with the application. SEARs cover a range of issues, including some relevant to climate risk management.

## Natural hazard specific frameworks: Flooding

The NSW Floodplain Management Program, administered by DPE Environment and Heritage Group implements the NSW Flood Prone Land Policy, providing guidance, information and data for land use planning responses to flood risk, including the impacts of climate change on flood risk. Key elements of the program directing flood related decision making are outlined below.

**NSW Flood Prone Land Policy:** The primary objective of the NSW Flood Prone Land Policy is to reduce the impacts of flooding and flood liability on communities and individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible. To achieve its primary objective, this policy provides recognition of the potential implications of climate change on flooding behaviour to both the existing and growing community.

**The Flood Risk Management Manual:** The Flood Risk Management Manual (2023) manual supports the implementation of the NSW Flood Prone Land Policy and guides councils on understanding and managing flood risk to their communities. The manual promotes a risk-based approach to understanding flood behaviour and managing the risks, which involves understanding the full range of flood risk and how this may change with climate change. The manual is supported by a toolkit of guides, which includes the Flood Risk Management Guideline FB01: Understanding and managing flood risk, which provides guidance on how to consider climate change.

**Flood prone land package:** The flood prone land package provides advice on how to address flooding in land use planning for councils, including guidance on best management practices in managing and mitigating flood events and consideration of climate change. It identifies that the consideration of flooding during strategic planning and development assessment processes occurs through the following:

- SEPP (Transport and Infrastructure) 2021 which includes considerations when assessing educational establishments and child care facilities, such as consultation with the SES and if the development poses a risk to life
- LEP clauses:
  - mandatory clause 5.21 Flood planning
  - optional clause 5.22 Special flood considerations
- Section 9.1 Ministerial Direction – 4.1 Flooding
- Planning Circular PS21-006 - Considering flooding in land use planning: guidance and statutory requirements
- Guideline – Considering Flooding in Land Use Planning.

Councils can also implement flooding related planning measures, including controls in their local strategic plans and development control plans. The Environmental Planning and Assessment Regulation 2021 requires the identification of relevant flood related planning controls on planning certificates.

**NSW State Flood Sub Plan 2021:** The NSW State Flood Subplan is a subplan established under the NSW State Emergency Management Plan (EMPLAN), and the NSW SES Act, 1989. In accordance with the Flood Risk Management Manual, the NSW State Flood Subplan states the NSW SES position in providing technical emergency management advice on land use planning and flood risk management matters.

**NSW Hawkesbury Nepean Flood Sub Plan 2021:** The NSW State Flood Subplan is a subplan established under the NSW EMPLAN, and the NSW SES Act, 1989. This plan sets out the emergency management arrangements for flooding in the Hawkesbury Nepean Valley.

**NSW local flood subplans:** NSW local flood subplans are established under the NSW EMPLAN, and the NSW SES Act, 1989. These plans set out the emergency management arrangements for each local government area. Preparation of these plans are linked to the floodplain risk management planning activities undertaken by councils as required by the Local Government Act 1991 and the Floodplain Risk Management Manual.

## Natural hazard specific frameworks: Bushfires

Consideration of bushfire during strategic planning and development assessment processes occurs through the following:

- the EP&A Act
- the Rural Fires Act 1997 (RF Act)
- Planning for Bush Fire Protection 2019 (PBP) establishes the specifications and requirements for designing and building on bushfire prone land. It is primarily focused on compliance requirements for new developments and upgrading and maintaining existing developments
- Section 9.1 Ministerial Direction – 4.3 Planning for Bushfire Protection
- council implemented bushfire related planning measures, including controls in their local strategic plans and development control plans.

Building work on bushfire prone land must comply with the requirements of the National Construction Code (NCC). It contains Performance Requirements and Deemed-to-Satisfy provisions relating to the construction of buildings in bushfire prone areas.

The NSW government has provided a pathway for a streamlined assessment to occur under the EP&A Regulation section 272 for new lots in Urban Release Areas (URAs) that are located on bushfire prone land. The process provides for the assessment of bushfire provisions at subdivision stage within URAs and may exempt the lots from reassessment of bushfire issues when landowners are ready to develop their lots.

## Natural hazard specific frameworks: Rising sea levels and coastal hazards

The NSW Coastal Management Framework (the framework) guides the management of coastal issues, including coastal hazards. Under the framework, councils prepare Coastal Management Programs (CMPs) to guide long-term coastal management which, amongst other things, identify current and projected future coastal hazards and management actions. The Coastal Management



Manual and Toolkit provide guidance on preparing CMPs including considering climate change in coastal hazard studies.

Sea level rise and coastal hazard management at the strategic and development assessment level is considered through the following:

- State Environmental Planning Policy (Resilience and Hazards) 2021 which includes mapping and development controls for coastal management areas, including a Coastal Vulnerability Area
- State Environmental Planning Policy (Biodiversity and Conservation) 2021 which requires consideration of risk to developments in the Sydney Harbour Foreshores and Waterways area from sea level rise as a result of climate change
- Section 9.1 Ministerial Direction - 4.2 Coastal management
- council implemented coastal hazard management planning measures, including:
  - controls in their LEPs and development control plans
  - plans of management.

Development applications for certain coastal protection works are considered regionally significant development and must be assessed by a Planning Panel.

## Natural hazard specific frameworks: Water management and drought resilience

The NSW Water Strategy identifies the need to address water security risks in the face of climate change and acknowledge that land use planning is an important link in protecting water quality and ecosystem health. The Water Strategy contains actions relating to land use planning, including:

- better integration of water policy with other planning frameworks, including identifying opportunities for the planning system to support water resource health and resilience with climate change
- the promotion and improvement of integrated water cycle management, including by embedding integrated water cycle management approaches in the planning system.

The department is also preparing new regional water strategies to plan and manage the water needs in each NSW region over the next 20-40 years. These strategies will bring together the best and latest climate evidence with a wide range of tools and solutions.

The NSW Groundwater Strategy identifies the risks associated with climate change to groundwater resources across the state and actions to address these risks. The Groundwater Strategy contains actions relating to land use planning, including to:

- integrate groundwater considerations into land use planning decisions
- improve the management of large development impacting groundwater including by developing new policy and assessment processes to better recognise and manage these impacts.

Going forward, planning has a role in ensuring that farmers' and rural landholders' are also able to prepare for drought, for example, through measures to safe guard access to drought lots.

## Natural hazard specific frameworks: Urban heat

The NSW government is continuing to build its understanding of urban heat risks and is working to support mitigation and adaptation by delivering cool and liveable communities. Key projects include:

- local council capacity building: the Greener Neighbourhoods Program supports Greater Sydney councils to strengthen their strategic approaches to urban greening through the provision of new canopy data, grant funding and policy support
- urban tree canopy benchmarks: the department has developed and embedded evidence-based targets for canopy to ensure sufficient shade is delivered across a range of development types
- the draft Valuing Green Infrastructure and Public Spaces Framework: the department and NSW Treasury have published a draft framework on valuation methods to determine the urban cooling benefits of green and blue infrastructure to be used when preparing cost benefit analyses and business cases
- participation in the Greater Sydney Heat Taskforce: the department is a member of the newly formed taskforce who will co-design a Heat Smart City Plan that aims to take a coordinated approach to reduce risk and build heat resilience.

## Natural hazard specific frameworks: Threatened ecological communities and habitat for threatened species

Planning authorities may receive development proposals where that development is proposed to be situated in or located near threatened ecological communities or threatened species habitat. Depending on the scale of a proposal, the impacts of that development on biodiversity may require consideration under the NSW Biodiversity Conservation Act 2016 (the BC Act) and the Marine Estate Management Act 2014 (for marine parks and aquatic reserves) and Fisheries Management Act 1994 (for threatened species).

The NSW Biodiversity Offsets Scheme, established under the BC Act requires development and clearing proposals that meet certain thresholds for significant impacts on biodiversity to assess, avoid and minimise the impact of their proposal on biodiversity. The BC Act also establishes the Biodiversity Assessment Method (BAM) as a scientifically rigorous and consistent method to identify and quantify biodiversity values. Where biodiversity offsets are required, development proponents will generally be required to retire biodiversity credits. Biodiversity credits are generated by establishing biodiversity stewardship sites, which require specific threatened ecological communities, species and their habitats to be protected in perpetuity. Biodiversity offset obligations may also be met by making a payment into the Biodiversity Conservation Fund.

The planning system also includes specific requirements around potential impacts to threatened species, including:

- State Environmental Planning Policy (Biodiversity and Conservation) 2021 which requires clearing in non-rural areas above the biodiversity offset scheme threshold to be approved by the Native Vegetation Panel, as well as a requirement for development to consider koala plans of management and development over 1ha to assess potential impacts on koala habitat
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 which does not allow certain types of complying development on ecologically or environmentally sensitive areas.

## Coastal and marine species

The impacts of development on coastal and marine species are addressed through the following planning provisions:

- State Environmental Planning Policy (Resilience and Hazards) 2021 which requires preparation and exhibition of an environmental impact statement for development in mapped coastal wetlands or littoral rainforests areas
- State Environmental Planning Policy (Biodiversity and Conservation) 2021 which requires the impacts on wetlands, terrestrial, aquatic or migratory animals or vegetation to be considered
- Local Planning Direction – 4.2 Coastal Management
- Local Planning Direction – 3.10 Water Catchment Protection.

In Sydney Harbour, additional controls apply to development in areas of outstanding biodiversity value, rocky foreshores and significant seagrass areas.

Impacts of development within or affecting marine parks and aquatic reserves are also addressed through:

- the Marine Estate Management Act
- consent requirements for activities that are prohibited by marine park management rules
- the Aquatic Reserves Notification 2020.

## Program level responses

### Heritage Council Climate Change Principles

The Heritage Council of NSW adopted a set of Climate Change Principles to outline how they will consider climate change when making determinations under the Heritage Act 1977. These principles include:

- taking a values-based approach: understanding the values of the place or object in order to work out how to respond to the climate risk
- engaging communities to provide information on climate change risks
- evidence-based decision making when managing the impacts of climate change
- assessing risks and resilience
- responsive strategies for adaptation and mitigation

- integrating management approaches for climate change risks.

It should be noted that, preservation of all heritage elements may compromise the ability to achieve full resilience. Guidance and education are required to support heritage advisors and building designers to navigate design and adaptation options.

### **NSW Land and Housing Corporation actions for social housing and community resilience**

The government is committed to adopting resilient and sustainable housing design, and retrofit programs for existing dwellings, to help adapt to future climate conditions. As climate change will disproportionately impact socioeconomically disadvantaged communities, climate adaptation and mitigation are critical for the social housing sector. The government has an important role in adapting to climate change impacts in the design, construction, and maintenance of social and aboriginal housing, as well as other commissioned housing services. Resilience to the impacts of climate change can be increased by:

- building, maintaining and upgrading housing to prevent, withstand and recover from climate change impacts
- supporting social housing residents to maintain wellbeing and prosperity by adapting and avoiding climate change impacts

### **Cumberland Plain Conservation Plan**

The Cumberland Plain Conservation Plan (CPCP) provides the biodiversity approvals under the Biodiversity Conservation Act 2016 for new housing and infrastructure in Western Sydney, while also avoiding impacts to important native vegetation and establishing a long-term conservation program that will help maintain ecosystem function for the region's threatened native plants and animals. The CPCP has informed Western Sydney's development patterns and has helped avoid impacts to important native vegetation, species habitat and corridors. The CPCPs conservation program will also protect around three times the area of land impacted by development, and includes purchasing private lands to create new reserves, establishing private land biodiversity stewardship agreements, restoration and rehabilitation works and creating corridors and connectivity across Western Sydney.

### **NSW Koala Strategy**

The NSW Koala Strategy delivers targeted investment and action for koala protection. Recognising the significant role that local councils play in protecting koala habitat and managing koalas across NSW, the strategy contains actions to support local councils in land use planning to strategically conserve koala habitat in their local area, including:

- directing and supporting councils to ensure koala habitat values are included in land use planning decisions through regional plans, LSPs and LEPs. These will be informed by best available koala habitat mapping and koala plans of management in priority local government areas

- supporting councils to deliver koala habitat maps, including assisting councils to carry out rigorous on-ground ecological assessments and appropriate community consultation to develop koala habitat maps and strategically conserve koala habitat in their local area.

## Conservation of marine biodiversity

The Department of Regional NSW, through the Department of Primary Industries (NSW DPI), is working to conserve marine biodiversity as it is a fundamental part of keeping the estuaries and oceans of NSW healthy and productive into the future. Important aspects of conserving marine biodiversity include marine pollution reduction programs, climate change responses, marine biosecurity, threatened species recovery, resource use and boating management, land-use planning and catchment management. Management for marine parks and aquatic reserves occurs under the Marine Estate Management Act 2014.

A range of improvements to the management of marine parks and aquatic reserves are planned or underway, including the preparation of new statutory marine park management plans. Management planning has highlighted the need to strengthen how marine park values are considered in strategic land use planning and development approval decisions. In addition, key actions have been identified for marine parks to help understand, mitigate and adapt to the impacts of climate change on the NSW marine estate. NSW DPI is currently progressing the 'Facilitating Climate Change Adaption in NSW marine parks' project, with an initial focus the Solitary Islands Marine Park.

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## Decision-making and uncertainty

Merit-based decision making can support well-informed site-specific planning decisions when there is uncertainty. Merit-based decisions allow planning authorities to consider the benefits of a proposal, such as the strategic merits, and or local/regional social and economic benefits, against the proposal's risks, cost and impacts in the context of ecologically sustainable development. The process should also help planning authorities consider any appropriate controls to limit impacts to an acceptable level and achieve a tolerable risk.

## Considering the cumulative impacts of the development

A cumulative impact assessment can highlight risks that may arise due to interactions between a site-specific proposal and relevant future proposals in the same area. An understanding of cumulative impacts can also improve site-specific proposal designs that mitigate impacts and inform appropriate decision making. To support well informed decisions, cumulative impacts are currently being considered through:

- Coastal Management Programs which must consider the cumulative impacts of potential coastal management actions, including protection works (e.g. seawalls) on natural environment and coastal processes
- the NSW Marine Estate Threat and Risk Assessment which recognised cumulative impacts of development on marine and estuarine systems
- the Flood Risk Management Manual and associated toolkit (specifically Flood Risk Management Guideline FB01: Understanding and managing flood risk) which guides councils

on the consideration of the cumulative impacts of development and climate change scenarios. This then informs Flood Risk Management decisions

- the Wianamatta South Creek Cumulative Impact Assessment which is to be used to inform development within the South Creek catchment given the flood risk
- the Cumulative Impact Assessment Guidelines for State Significant Projects that must be taken into consideration during the assessment of State Significant projects.

## Existing powers to amend or revoke development consents to address risk

Decision making should be based on the best available information, including where relevant the known extent of risks, costs and benefits. Section 4.15 of the EP&A Act requires consideration of any relevant legislation or plan, the likely impacts, the suitability of the site and the public interest, as relevant to the development application. However, it is recognised that while decisions are made using the best available information, where development does not occur over long periods, that information can change.

Generally, development consents and approvals can be modified or surrendered by the consent authority only at the request of the land owner or person carrying out the development.

However, the EP&A Act enables the Planning Secretary or a council to, without application and having regard to a proposed planning instrument, revoke or modify certain development consents that they consider should not be completed or require modification before carrying out the approved development. To date, these powers have not been used and it is mindful that compensation of landowners may be required.

In addition, for State Significant Infrastructure the EP&A Act enables the Minister to revoke or vary a condition of approval or impose an additional condition on the approval. SEARs for state significant projects will expire if the related EIS has not been received by the Department within two years of the issuing of the SEARs.

To help to reduce the circumstances of significant delay between development approvals and the start of a project, the department recently clarified how to recognise when work has physically commenced. This is now considered to be the trigger for a validly commenced development.

## Short, medium and long term planning reforms

### Response to inquiries and reports

A common theme across recent inquiries considering the interaction between the planning system and the impacts of natural hazards was the opportunity to move to a strategic, risk-based approach when preparing for and responding to climate change and natural hazards. Given the impacts of natural hazards on the NSW economy, community and environment, in collaboration with other agencies and local councils, the department is responding to reform recommendations through various processes, with key processes outlined below.

## NSW Bush Fire Inquiry

An independent expert inquiry led by Dave Owens APM, former Deputy Commissioner of NSW Police, and Professor Mary O’Kane AC reviewed the causes of, preparation for and response to the 2019-20 black summer bushfires.

The final report of the NSW Bush Fire Inquiry made 76 recommendations, including one planning specific recommendation. Recommendation 27 stated that the current approach generally focuses on site-based decisions, and that there is a need to move to a risk-based strategic planning approach to planning for bushfires. This includes developing a new NSW Bush Fire Policy that also facilitates the consideration of changing climatic conditions and increasing likelihood of catastrophic bushfire conditions, and the need for greater community resilience for existing and future communities. The department is working with NSW RFS and other key stakeholders to prepare a NSW Bush Fire Policy and decision making framework to better account for bush fire risk (with consideration of tolerable risk) and climate change considerations.

## Flood Inquiries

The catastrophic flood events that occurred in early 2022 resulted in the commissioning of two flood inquiries; the 2022 NSW Independent Flood Inquiry and the Parliamentary Select Committee on the Response to Major Flooding across New South Wales in 2022.

### Independent Inquiry

An independent expert inquiry (the NSW Flood Inquiry) led by Professor Mary O’Kane AC and Michael Fuller APM was undertaken into the preparation for, causes of, response to and recovery from, the significant flood events experienced in NSW in early 2022.

The NSW Flood Inquiry Report made 28 recommendations, including 10 that focused on land use planning. The report highlighted the importance of taking a more proactive, risk-based approach to flooding in planning decisions, including greater consideration of climate change. The department is working with councils, government agencies and key stakeholders to implement the NSW government’s response to the NSW Flood Inquiry. As part of this response, development in floodplains will consider tolerable risk.

### Parliamentary Inquiry

The Parliamentary Select Committee report (Parliamentary inquiry) made 21 findings and 37 recommendations. Recommendation 35 of the Parliamentary Inquiry required that the NSW government significantly increase its investment in flood mitigation and preparation, including its support of local governments to do the same, by increasing ongoing, long-term funding, access to technical guidance, and assistance for local councils and ensuring that land use planning and development takes a risk-based approach.

## Auditor-General Report 2021 – Managing climate risks to assets and services

The ‘Managing climate risks to assets and services report’ assessed how effectively the department and NSW Treasury have supported state agencies to manage climate risks to their assets and services. The report made 10 recommendations broadly intended to improve the NSW Government’s

management of climate risks to assets and services. Recommendation 4 recommended the department identify opportunities to promote climate risk management and comprehensively review its land use planning and development guidance, and the Building Sustainability Index (BASIX) requirements.

## Key reforms

### Net Zero Commission

The Climate Change (Net Zero Future) Bill 2023 will establish the Net Zero Commission, an independent authority to advise and recommend to the NSW government policies, plans, and actions that will reduce the state's greenhouse gas emissions in line with its legislated emission reduction targets and help adapt NSW so it is more resilient to a changing climate. The Commission's advice and recommendations could cover priorities such as, the development of emissions budgets, sectoral decarbonisation plans, sector-based emission reduction targets, or strategies for the acceleration of new and emerging clean industries. To ensure a whole-of-government response to climate change is efficient, fair, and coordinated, the Net Zero Commission will engage with relevant public and private stakeholders in producing its advice and recommendations. This engagement will include the authorities, entities, and stakeholders of the planning system, such as the department and the Reconstruction Authority.

### State Environmental Planning Policy (Sustainable Buildings)

The NSW government announced changes to the State Environmental Planning Policy (Sustainable Buildings) 2022, which came into effect on 1 October 2023, is the first of its kind nationally and encourages the design and delivery of more sustainable buildings across NSW. It sets sustainability standards for residential development, incorporating BASIX, and non-residential development such as retail, offices, hotels, schools, health facilities and cultural buildings. The policy contributes to climate resilience by:

- increasing BASIX thermal performance standards in most climate zones to ensure homes are designed and constructed to be naturally cooler in summer and warmer in winter, increasing resilience to heat waves and urban heat
- introducing water requirements for certain non-residential development, contributing to drought tolerance.

The policy also contributes to reduced building emissions through increased residential energy efficiency standards, new energy and net zero emissions requirements for certain non-residential development and by requiring embodied emissions reporting for all affected development.

### Blue carbon planning approval pathways

The NSW Blue Carbon Strategy 2022-2027 support projects and research to protect and conserve important coastal wetland and marine ecosystems, including mangroves, saltmarsh, seagrass and seaweeds, that can capture and store carbon. The conservation and restoration of these ecosystems can enhance the resilience of coastlines against the impacts of climate change by allowing for the landward migration of coastal wetlands, stabilising foreshores and reducing wave energy to reduce



coastal erosion and inundation risk to coastal communities. Blue carbon projects also offer an opportunity for landowners to transition from land uses that may become unviable in the future due to climate change and sea level rise. The Blue Carbon Strategy is aiming to embed blue carbon ecosystem projects and associated works into existing planning system provisions, with a view to streamlining approvals and facilitating project delivery.

## Planning for resilient infrastructure

Providing infrastructure that is resilient to climate change and natural disasters is important to support community safety and effective responses to natural disaster events.

Most forms of critical service utilities like gas, water and electricity are considered in the early stages of land-use-planning. However, this is not always the case for mobile network infrastructure. The NSW Bushfire Inquiry and NSW Flood Inquiry identified telecommunications infrastructure failures as a contributor to safety issues. The NSW government and the Commonwealth are co-chairing a Mobile Telecommunications Working Group (MTWG) which will identify opportunities for a nationally coordinated framework to efficiently deliver mobile networks to new developments and growth areas. This would include developments in areas exposed to natural disasters and climate change impacts.

Some coastal floodplain agricultural drainage and urban stormwater drainage infrastructure is and will be increasingly constrained by incremental sea level rise, reducing its functional capacity to adequately drain upstream areas and impacting land use capacity. Ensuring drainage infrastructure functionality and resilience to sea level rise is an ongoing challenge for land use planning.

## Data to support good decision making

Good land use planning decisions are informed by good data. Existing sources of climate related risk data include:

- NSW and Australian Regional Climate Modelling (NARClM) climate projections, which provides detailed climate change projections to help government, industry and community to understand and plan for climate change
- AdaptNSW, which provides data on projected future climate at a regional or 10km grid scale, and tools to assist communities, businesses, households and governments adapt to climate change
- NSW Flood Data Portal and Flood Data Access Program, which provides access to over 1,450 individual flood studies or plans within NSW. Work is progressing to make the flood data more usable, by collating spatial flood data into strategic flood data extents
- Bushfire Prone Land maps, prepared by councils in accordance with NSW RFS guidelines and certified by the NSW RFS
- Land iQ, a digital land use evaluation tool which can enable more strategic and consistent evidence-based land use planning and property decisions. It includes a comprehensive spatial data library, site search, scenario planning, and other data analytics and insights and targeted functionality for climate change and hazard identification. Land iQ is also being

enhanced to help deliver a unified data-driven method for assessing and planning for natural disasters, contributing to long-term disaster preparedness and resilience planning in NSW

- NSW Spatial Digital Twin which provides a single source for all NSW foundation spatial data, including risk and hazard data. It also includes the Emergency Services Information Library which is available for agencies involved in emergency prevention, preparedness, response, recovery.

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## Any other related matters

### The role of green infrastructure in providing amenity and resilience

There is growing recognition that integrating green infrastructure with the built environment improves community health, resilience and wellbeing. Green infrastructure is essential to delivering liveable, sustainable neighbourhoods as it increases resilience to urban heat, and improves local amenity, accessibility, walkability, mental and physical wellbeing, and urban biodiversity. Green infrastructure near homes can reduce the risk and frequency of heat-related illnesses and deaths, particularly in vulnerable populations, through reduced exposure to urban heat. Green infrastructure such as living shorelines and natural coastal floodplains also provides amenity and resilience. Government grants have been available to encourage agencies and communities to plant trees in metropolitan Sydney, with available policy and guidance applicable across regional urban areas more broadly. There is growing interest across local government and communities about the role green infrastructure can play in supporting more sustainable local development outcomes.

### Future considerations for agricultural land

Food and fibre production and the regional communities which rely on agriculture are likely to be significantly affected by climate change. Agricultural production often occurs on land which is subject to hazards, such as droughts, bushfires and flooding, and as climate change exacerbates these hazards agricultural production will likely be impacted more frequently. Agricultural uses may compete with urban land uses for hazard free land in the future. Recognising the importance of agricultural land and its agricultural production potential will be a key challenge to maintaining food security as climate change affects traditional food producing areas of the state. There is also a need to recognise the potential for current commodity growing regions in NSW to contract, expand or shift in a future climate.

NSW DPI provides advice to planning authorities and industry groups, has a program of work and undertakes research to support future policy changes, with the aim of supporting sustainable and informed growth of NSW agricultural industries in a manner that considers farmers' ability to adapt for future flood, fire and drought events and sea level rise needs to occur. NSW DPI also maintains the Vulnerability Assessment program to provide an indication of potential changes in climate suitability for forestry, horticulture and viticulture, broadacre cropping, and extensive livestock sectors across NSW, up to 2050. This work aims to help identify regional changes, adaptation needs and priorities that can guide research and development activities over the next 10 years to increase the resilience of these critical sectors to a changing climate.