

Appendix 1:

Climate Change: Climate-Resilience and Nature-Based Solutions topic - recommended amendments to proposed provisions

Definition: nature-based solutions -

Actions to protect, enhance, or restore Use and management of natural ecosystems and processes, or and the incorporation of natural elements into built environments use of engineered systems that mimic natural processes, to reduce greenhouse gas emissions, support climate change adaptation and/or strengthen the resilience and well-being of humans people, indigenous biodiversity, and the natural and physical resources environment to the effects of climate change.

Note that “nature-based solutions” is an umbrella term that encompasses concepts such as green infrastructure (including as defined in the National Planning Standards), green-blue infrastructure, and water-sensitive urban design.

Note, Examples could include:

Reducing greenhouse gas emissions (Climate change mitigation):

- planting forests to sequester carbon
- protecting maintaining managing peatland in a way that to retains its carbon stores, avoids soil loss and associated land subsidence

Increasing Strengthening resilience and providing for (climate change adaptation)

- a. providing resilience for people
 - planting street trees to provide relief from high temperatures reduce urban heat
 - restoring coastal dunelands to provide increased resilience to the damaging effects of storms surges linked to sea level rise
 - leaving space for rivers to undertake their natural movement and accommodate increased floodwaters
 - the use of water-sensitive urban design principles and methods, such as rain gardens to manage contaminants and reduce stormwater runoff in urban areas
 - retaining wetlands and planting swales on farmland to slow runoff, reduce flood peaks, retain base flows, and protect water quality
- b. providing resilience for ecosystems and species
 - restoring indigenous forest to a healthy state to increase its resilience to increased climate extremes
 - leaving space for estuarine ecosystems, such as salt marshes, to retreat inland in response to sea level rise.

Objective CC.4: *Nature-based solutions* are an integral part of *climate change mitigation* and *climate change adaptation*, improving the health, *well-being* and resilience of people *and communities*, indigenous biodiversity, and *the natural and physical resources environment*.

New definition for climate-resilience/resilient:

Climate-resilience/Climate-resilient/Resilience and Resilient (in relation to climate change or natural hazards) –

The capacity and ability of natural and physical resources, including people, communities, businesses, infrastructure, and ecosystems, to withstand the impacts and recover from the effects of climate change, including natural hazard events.

New definition for water-sensitive urban design:

water-sensitive urban design –

The integration of planning, engineering design and water management to mimic or restore natural hydrological processes in order to address the quantitative and qualitative impacts of land use and development on land, water and biodiversity, and the community’s aesthetic and recreational enjoyment of waterways and the coast. Water-sensitive urban design manages stormwater at its source as one of the tools to control runoff and water quality. The terms low impact design, low impact urban design and water-sensitive design are often used synonymously with water-sensitive urban design.

Policy CC.4: Climate-responsive resilient development urban areas – district and regional plans

District and regional plans shall include objectives, policies, rules and non-regulatory methods to provide for climate-resilient urban areas by providing for actions and initiatives described in Policy CC.14 which support delivering the characteristics and qualities of well-functioning urban environments, require development and infrastructure to be located, designed, and constructed in ways that provide for *climate change mitigation*, *climate change adaptation* and *climate-resilience*, prioritising the use of *nature-based solutions* and informed by *mātauranga Māori*. This includes by, as appropriate to the scale and context of the activity:

- (a) requiring provision of urban green space, particularly canopy trees, to reduce urban heat and reduce stormwater flowrates:
 - i. prioritising the use of appropriate indigenous species, and
 - ii. working contributing towards achieving a wider target of 10 percent tree canopy cover at a suburb-scale by 2030, and 30 percent cover by 2050,
- (b) requiring application of water-sensitive urban design principles, hydrological controls, and other methods to improve water quality, overall environmental quality, minimise flooding and maintain, to the extent practicable, natural stream flows,
- (c) requiring methods to increase water resilience, including harvesting of water at a domestic and/or community-scale for non-potable uses (for example by requiring rain tanks, rainwater re-use tanks, and setting targets for urban roof area rainwater collection),

- (d) requiring that significant adverse effects on the *climate change mitigation, climate change adaptation* and *climate-resilience* functions and values of an ecosystem shall be avoided, and other adverse effects on these functions and values shall be avoided, minimised, or remedied,
- (e) promoting efficient use of water and energy in buildings and infrastructure, and
- (f) promoting appropriate design of buildings and infrastructure so they are able to withstand the predicted future higher temperatures, intensity and duration of rainfall and wind over their anticipated life span.

Explanation

Policy CC.4 directs ~~regional and~~ district plans to include ~~relevant~~ provisions to provide for *climate-resilient* development and infrastructure to respond to the predicted effects of climate ~~urban areas~~. The policy seeks that priority be given to the use of *nature-based solutions*, recognising the multiple benefits they can provide for people and nature. It also seeks to manage any adverse effects of activities on the climate change functions and values of ecosystems.

For the purposes of this policy, climate-resilient urban areas mean urban environments that have the ability to withstand:

- Increased temperatures and urban heat island
- Increased intensity of rainfall and urban flooding and increased discharge of urban contaminants
- Droughts and urban water scarcity and security
- Increased intensity of wind, cold spells, landslides, fire, and air pollution

The policy is directly associated with Policy CC.14 which provides further direction on actions and initiatives to provide for climate resilient urban areas.

It is noted that other policies of this RPS also provide for actions and initiatives to deliver *climate-resilient* infrastructure and development ~~urban areas~~, including Policy FW.3.

Policy CC.4A: Climate-responsive ~~resilient~~ development – regional plans

Regional plans shall include objectives, policies, rules and *non-regulatory* methods to require development and infrastructure to be located, designed, and constructed in ways that provide for *climate change mitigation, climate change adaptation* and *climate-resilience*, prioritising the use of *nature-based solutions* and informed by *mātauranga Māori*. This includes ~~ing by~~, as appropriate to the scale and context of the activity:

- (a) requiring the application of *water-sensitive urban design* principles and methods to improve water quality and overall environmental quality, including by requiring stormwater contaminants to be avoided or minimised in discharges to the stormwater network or to water,
- (b) requiring stormwater flowrates and volumes to be managed to minimise flooding and to maintain, to the extent practicable, natural stream flow rates and volumes, and
- (c) requiring significant adverse effects on the *climate change mitigation, climate change adaptation* and *climate-resilience* functions and values of an ecosystem be avoided, and other adverse effects on these functions and values be avoided, minimised, or remedied.

Explanation

Policy CC.4A directs regional plans to include provisions to provide for *climate-resilient* development and infrastructure. The policy seeks that priority be given to the use of *nature-based solutions*, recognising the multiple-benefits they can provide for people and nature. It also seeks to manage any adverse effects of activities on the climate change functions and values of ecosystems.

It is noted that other policies of this RPS also provide for actions and initiatives to deliver *climate-resilient* infrastructure and development, including Policy FW.14.

Policy CC.14: Climate-~~responsive resilient~~ development urban areas – district and city council consideration

When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district ~~or regional~~ plan, ~~require seek~~ that development and infrastructure is located, designed and constructed in ways that provide for *climate change mitigation, climate change adaptation* and *climate-resilience*, ~~provide for actions and initiatives, particularly~~ prioritising the use of *nature-based solutions* and ~~informed by mātauranga Māori~~. This includes ~~ing by~~, as appropriate to the scale and context of the activity:

- (a) maintaining, enhancing, restoring, and/or creating urban green space at a range of spatial scales to provide urban cooling, including, providing urban green space, particularly canopy trees, to reduce urban heat and reduce stormwater flowrates:
 - i. prioritising the use of appropriate indigenous species, and
 - ii. contributing working towards achieving a wider target of 10 percent tree canopy cover at a suburb-scale by 2030, and 30 percent cover by 2050,
- (b) the application of *water-sensitive urban design* principles, hydrological controls, and other methods to ~~integrate natural water systems into built form and landscapes,~~to reduce flooding, improve water quality and overall environmental quality, minimise flooding and maintain, to the extent practicable, natural stream flows,
- (c) methods to increase water resilience, including by requiring harvesting of water at a domestic and/or capturing, storing, and recycling water at a community-scale for non-potable uses (for example by requiring rain tanks, rainwater re-use tanks, and setting targets for urban roof area rainwater collection),
- (d) protecting, enhancing, or restoring natural ecosystems to strengthen the resilience of communities to the impacts of natural hazards and the effects of climate change, avoiding significant adverse effects on the *climate change mitigation, climate change adaptation* and *climate-resilience* functions and values of an ecosystem, and avoiding, minimising, or remedying other adverse effects on these functions and values,
- (e) providing for promoting efficient use of water and energy in buildings and infrastructure, and
- (f) promoting appropriate design of buildings and infrastructure ~~that so they~~ are able to withstand the predicted future higher temperatures, intensity and duration of rainfall and wind over their anticipated life span.

Explanation

Climate change, combined with population growth and housing intensification, is increasingly challenging the resilience and well-being of urban communities and natural ecosystems, with increasing exposure to natural hazards, and increasing pressure on water supply, wastewater and stormwater infrastructure, and the health of natural ecosystems.

This policy identifies the key attributes required to ensure that development and infrastructure provides for develop climate-resilience in urban areas and requires district and regional councils to take all opportunities to provide for actions and initiatives, particularly nature-based solutions, that will prepare our urban communities for the changes to come.

Policy CC.14A: Climate-responsive development – regional council consideration

When considering an application for a resource consent, or a change, variation, or review of a regional plan, require seek that development and infrastructure is located, designed, and constructed in ways that provide for climate change mitigation, climate change adaptation and climate-resilience, prioritising the use of nature-based solutions and informed by mātauranga Māori. This includes by, as appropriate to the scale and context of the activity:

- (a) the application of water-sensitive urban design principles and methods to improve water quality and overall environmental quality, including by avoiding or minimising stormwater contaminants in discharges to the stormwater network or to water,
- (b) managing stormwater flowrates and volumes to minimise flooding and to maintain, to the extent practicable, natural stream flows, and
- (c) avoiding significant adverse effects on the climate change mitigation, climate change adaptation and climate-resilience functions and values of an ecosystem and avoiding, minimising, or remedying other adverse effects on these functions and values.

Explanation

Climate change, combined with population growth and housing intensification, is increasingly challenging the resilience and well-being of urban communities and natural ecosystems, with increasing exposure to natural hazards, and increasing pressure on water supply, wastewater and stormwater infrastructure, and the health of natural ecosystems.

This policy identifies the key attributes required to ensure that development and infrastructure provides for climate-resilience and requires the regional council to take all opportunities to provide for actions and initiatives, particularly nature-based solutions, that will prepare our communities for the changes to come.

It is noted that other policies of this RPS also provide regulatory requirements to deliver climate-resilient infrastructure and development, including Policies 14 and 42.

Policy CC.7: Protecting, restoring, and enhancing and sustainably managing ecosystems and habitats that provide nature-based solutions to climate change – district and regional plans non-regulatory

~~District and regional plans shall include objectives, policies, rules and/or methods that provide for nature-based solutions to climate change to be part of development and infrastructure planning and design.~~

~~Work with and support landowners, mana whenua/tangata whenua, and other key stakeholders to protect, restore, ~~or~~ enhance or sustainably manage ecosystems that provide nature-based solutions to climate change.~~

Explanation

~~Policy CC.7 recognises the value that natural ecosystems can provide as nature-based solutions for climate change. This policy recognises the critical importance of working with and supporting landowners and other key stakeholders to improve the health and functioning of ecosystems that provide benefits for nature and the wider community. Methods CC.6 and CC.9 will support the implementation of this policy.~~

~~Development and infrastructure planning and design should include nature-based solutions as standard practice, including green infrastructure, green spaces, and environmentally friendly design elements, to manage issues such as improving water quality and natural hazard protection. Nature-based solutions can perform the roles of traditional infrastructure, while also building resilience to the impacts of climate change and providing benefits for indigenous biodiversity and community well-being.~~

~~**Policy CC.12: Protect, enhance and restore ecosystems that provide nature-based solutions to climate change — consideration**~~

~~When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, a determination shall be made as to whether an activity may adversely affect a nature-based solution to climate change and particular regard shall be given to avoiding adverse effects on the climate change mitigation or adaptation functions.~~

~~Explanation: Nature-based solutions are critical components of the region's climate change response. This policy seeks to protect the functions that they provide to support climate change mitigation and/or mitigation.~~

Method CC.6: Identifying nature-based solutions for climate change

By 30 June 2024, the Wellington Regional Council will, in partnership with mana whenua/tangata whenua and other stakeholders as appropriate, identify ecosystems in the Wellington Region that should be prioritised for protection, enhancement, and restoration for their contribution as a nature-based solution to climate change, including those that:

- (a) sequester and/or store carbon (e.g., forest, peatland),

- (b) provide resilience to people from the impacts of climate change, including from natural hazards (e.g., coastal dunelands, street trees, and wetlands), and
- (c) provide resilience for indigenous biodiversity from the impacts of climate change, enabling ecosystems and species to persist or adapt (e.g., improving the health of a forest to allow it to better tolerate climate extremes).

Implementation: Wellington Regional Council

Method CC.9: Support and funding for protecting, enhancing, and restoring indigenous ecosystems and nature-based solutions

Provide support, and seek new sources of funding, ~~for~~ to incentivise or implement programmes, including mana whenua/tangata whenua led programmes, that protect, enhance or restore the priority ecosystems identified by Methods IE.23 and CC.76 for their indigenous biodiversity values and/or their contribution as nature-based solutions to climate change.

Implementation: Wellington Regional Council

Objective CC.5: By 2030, there is an increase in the area and health of permanent forest, preferably indigenous forest, in the Wellington Region, maximising benefits for carbon sequestration, indigenous biodiversity, land stability, water quality, and social, cultural and economic well-being.

Definition - Permanent Forest

~~For the purpose of the RPS permanent forest is a forest established for long term forest cover and is not intended to be harvested.—Forest actively managed to maintain continuous canopy cover.~~

Definition - Plantation Forest

A forest deliberately established for commercial ~~harvest~~ purposes, being:

- (a) at least 1 ha of continuous forest cover of forest species that has been planted and has or will be harvested or replanted; and
- (b) includes all associated forestry infrastructure; but
- (c) does not include—
 - (i) a shelter belt of forest species, where the tree crown cover has, or is likely to have, an average width of less than 30 m; or
 - (ii) forest species in urban areas; or
 - (iii) nurseries and seed orchards; or
 - (iv) trees grown for fruit or nuts; or
 - (v) long-term ecological restoration planting of forest species; or
 - (vi) willows and poplars space planted for soil conservation purposes.

Definition - Highly erodible land -

Means ~~Land~~ at risk of severe **mass-movement** erosion (landslide, earthflow, and gully) if it does not have a protective cover of deep-rooted woody vegetation. **Land classified as very high (red) according to the erosion susceptibility classification in the National Environmental Standards for Plantation Forestry 2017.**

Policy CC.6: Increasing regional forest cover and avoiding plantation forestry on highly erodible land – regional plans

Regional plans shall include objectives, policies, rules and/or **non-regulatory** methods that support an increase in the area **and health** of permanent forest in the region, **maximising the benefits for carbon sequestration, indigenous biodiversity, land stability, water quality, and social, cultural and economic well-being, to contribute to achieving net-zero greenhouse gas emissions by 2050**, while:

- a. promoting and incentivising the planting or regeneration of permanent indigenous forest representative of the natural type expected in the area over exotic species, particularly on highly erodible land and in catchments where water quality targets for sediment are not reached, ~~and~~
- b. avoiding plantation forestry on highly erodible land, particularly in catchments where water quality targets for sediment are not reached, ~~and~~
- c. promoting and supporting the control of browsing pest animals in priority areas.

Explanation

This policy recognises that, while there is a need for increased forest extent across the Wellington Region to help achieve net zero emissions by 2050, offsetting through carbon sequestration is only a short-term solution and that there are significant risks associated with unfettered afforestation across the region. The policy directs regional plans to develop provisions that will support “right tree-right place”, seeking to ensure that an increase in forest extent for its sequestration benefits will be implemented in a way that maximises the co-benefits for indigenous biodiversity and aquatic ecosystem health, and provide for social and economic wellbeing as directed by Objective CC.5.

Clause (a) recognises the significant values of indigenous forest, along with the need for incentives to support their planting and natural regeneration.

Clause (b) responds to the high risk of harvesting forest in areas that are highly erodible and in catchments where waterways already have high sediment loads. The National Environmental Standards for Plantation Forestry enables regional plans to regulate plantation forestry for the purpose of protecting freshwater quality. Clause (c) recognises the importance of controlling browsing pest animals to ensure that forests are healthy and can therefore provide maximum benefits.

Policy CC.18: Increasing regional forest cover to support climate change mitigation: “right tree-right place” – non-regulatory

Promote and support the planting and natural regeneration of *permanent forest* to maximise the benefits for carbon sequestration, indigenous biodiversity, erosion control, freshwater and coastal ecosystems, and the social, *cultural*, and economic well-being of local communities, *including by:*

- (a) ~~Priority should be given identifying where to promoteing and incentiviseing the planting and regeneration of permanent indigenous forest representative of the natural type expected in the area in preference to exotic species, and~~
- (b) ~~prioritising planting and regeneration of permanent indigenous forest and associated browsing pest animal control particularly on highly erodible land and in catchments where water quality targets for sediment are not reached and in areas where it will support significant indigenous biodiversity values.~~

Explanation

Policy CC.18 promotes the planting of trees to contribute to achieving net zero emissions by 2050 while seeking an increase in forest extent that maximises the co-benefits for indigenous biodiversity, land stability, aquatic ecosystem health, and social and economic well-being, as directed by Objective CC.5

Method CC.4: Prepare a regional forest spatial plan

By December 2024, prepare a regional forest spatial plan, ~~U~~using a partnership approach with mana whenua/tangata whenua and other key stakeholders, as appropriate, to identify where to promote and support planting and natural regeneration of permanent forest and associated browsing pest animal control, including how to give effect to Objective CC.5 and address contribute to achieving water quality targets for sediment, to inform the requirements of Policy CC.6.

This plan to include:

- (a) a target for an increase in permanent forest extent in the Wellington Region to support achieving Objective CC.5,
- (b) evaluation of the potential impacts of increased afforestation on rural production and social well-being, and development of an approach that will maximise the environmental, social, and economic benefits,
- (c) ways to implement and support capability for increasing the area of indigenous forest, including the provision of incentives.
- (d) identification of the types of indigenous forest to prioritise for re-afforestation, including links to the strategic indigenous biodiversity targets and priorities identified through Policy IE.3 and Method IE.3, and
- (e) use of high-resolution spatial data to support identification of areas appropriate for permanent or plantation forestry, site-appropriate indigenous forests and other planting types,

(e)(f) a process to monitor and report on changes in the extent and health of permanent forest.

Implementation: Wellington Regional Council*, city and district councils at their discretion

Policy FW.8: Land use adaptation – non regulatory

Promote and support water resilience and climate change adaptation in land use practices and land use change including:

- (a) Preparing and disseminating information about climate-resilient practices,
- (b) promoting water resilience in Freshwater Farm Plans,
- (c) supporting primary sector groups and landowners in researching and promoting climate-resilient and lower emission land uses and pathways to move to new land uses, and
- (d) prototyping, researching, and promoting nature-based solutions that support water resilience, such as swales and bunds.

Explanation

Policy FW.8 promotes and supports water resilience and climate change adaptation in land use practices and change.