BEFORE THE INDEPENDENT HEARING PANEL APPOINTED TO HEAR AND MAKE DECISIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON THE INTENSIFICATION PLANNING INSTRUMENT

IN THE MATTER	of the Resource Management Act 1991 (the Act)
	AND
IN THE MATTER	of Hearing of Submissions and Further Submissions on the Upper Hutt City Council Proposed Intensification Planning Instrument under Schedule 1 of the Act

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STATEMENT OF EVIDENCE OF PAMELA ANNE GUEST

ON BEHALF OF WELLINGTON REGIONAL COUNCIL

19 April 2023

Executive Summary

1 Climate change presents a formidable challenge to the safety and well-being of our communities and natural environment.

2 The increase in housing density and development enabled by the amendments proposed by the Intensification Planning Instrument (IPI) to the Operative Upper Hutt City Council District Plan will increase the exposure of the district's communities to the adverse effects of climate change if development is not carried out in appropriate places and ways.

3 Nature-based solutions provide significant opportunities to increase the resilience of our communities and natural environment to the effects of climate change, while safeguarding biodiversity and improving human well-being.

4 Greater Wellington seeks amendments to embed nature-based solutions into the IPI to support Upper Hutt City to transition to a low-emission and climate-resilient city.

Qualifications and experience

5 My full name is Pamela Anne Guest. I am a senior policy advisor in the Environmental Policy team at the Wellington Regional Council (Greater Wellington).

6 I hold a Bachelor of Science with 1st class Honours in geography and environmental sciences from the University of Otago, with post-graduate papers in environmental planning and law, and planning theory from the University of Waikato, and papers in landscape architecture from Lincoln University.

7 I have over 25 years of experience in resource management planning, working at both central and local government levels, with a focus on water and soil management, indigenous biodiversity, and climate change.

8 I have worked at Greater Wellington for 7 years, initially as topic lead for the Natural Resources Plan hearings for wetlands and biodiversity, beds of lakes and rivers, and significant sites. I led the development of provisions in Proposed Change 1 to the Regional Policy Statement for the Wellington Region (Proposed RPS Change 1) for climate change and indigenous ecosystems.

9 I am a member of the Climate Group of Te Uru Kahika – Regional and Unitary Councils Aotearoa, which provides strategic co-ordination and support to increase the effectiveness and efficiency of the regional sector's response to climate change.

Code of conduct

10 I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023 (Part 9). I have complied with the Code of Conduct in preparing this evidence. My experience and qualifications are set out above. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

Scope of evidence

11 My evidence addresses Greater Wellington's submission points that seek amendments to the IPI to ensure that nature-based solutions for climate change are an integral part of new and intensified subdivision, use and development, to reduce greenhouse gases and increase the resilience of the communities and natural ecosystems of Upper Hutt City to existing and future climate impacts. I also address amendments requested to address the impacts of stormwater from new development, including the use of water sensitive urban design which is a form of nature-based solution.

12 Provisions from Proposed RPS Change 1 that are relevant to my evidence are set out in Appendix 1 and provisions from the Operative Regional Policy Statement for the Wellington Region are included in Appendix 2. While I did not prepare the Greater Wellington submission on the IPI, I led the team that drafted the climate change, including the nature-based solution, provisions in Proposed RPS Change 1.

Background – Climate change and urban intensification

13 Proposed RPS Change 1 identifies four significant and urgent resource management issues for the region:

a. impacts of climate change

b. loss and degradation of indigenous biodiversity

c. degradation of freshwater

d. lack of urban development capacity.

14 Proposed RPS Change 1 includes a suite of new objectives, policies, and methods to respond to national direction to address the impacts of climate change in managing freshwater, indigenous biodiversity and urban development as set out in the:

a. Climate Change Response Act 2002

b. National Policy Statement on Urban Development 2020

c. Te Mana o te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020

d. National Policy Statement for Freshwater Management 2020

e. Aotearoa New Zealand's first Emissions Reduction Plan 2022

f. Aotearoa New Zealand's first National Adaptation Plan 2022.

The relevant higher order direction is set out in Appendix 2.

15 Amongst other matters, proposed RPS Change 1 provides new direction to district plans to ensure that urban intensification is not at the expense of indigenous biodiversity, freshwater, coastal environments, the region's transition to being low-emission and climate resilient, and the ability of Māori to express their cultural and traditional norms.

16 Cyclone Gabrielle and the string of increasingly frequent and damaging weather events in New Zealand and across the world bring into sharp focus the need for a step-change in the adoption of climate change mitigation and adaption measures by all sectors.

17 In 2022 the Intergovernmental Panel on Climate Change IPCC AR6 summary report for policymakers[1] warned that any further delay in systemic and transformative change, particularly in the way in which we use and develop our natural and physical resources, will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all. The report also highlighted the global trend of increasing urban growth and intensification as providing a critical opportunity in the near-term to advance climate resilient development ("high confidence").

18 The IPCC AR6 report concludes that "Integrated, inclusive planning and investment in everyday decision-making about urban infrastructure, including social, ecological and grey/physical infrastructures, can significantly increase the adaptive capacity of urban and rural settlements."

[1] Intergovernmental Panel on Climate Change (2022): AR6 Summary for Policy makers https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

19 The recent report from the Parliamentary Commissioner for the Environment "Are we building harder, hotter cities?"[2] highlights the vital importance of retaining existing, and promoting new, urban green space. The report highlights the limited direction provided by the MDRS landscaped area standards to improve the quality of private green space and recommends the inclusion of more explicit provisions for urban green space in statutory planning documents, recognising that these provide 'a core service'. The report suggests that landscaped area standards should seek good outcomes, such as minimum tree provision, which aligns with the relief sought by Greater Wellington to give effect to Proposed RPS Change 1, Policy CC.14 which promotes targets for tree canopy cover for urban cooling.

20 The Upper Hutt City Council Sustainability Strategy 2020 includes as a core goal "Our community will be resilient, adaptable and inclusive" with Action 4.3 being to Work towards new developments being more resilient.

21 As Upper Hutt City is approaching a period of significant urban growth and housing intensification, the IPI provides a critical opportunity to give regulatory weight to this goal, ensuring that appropriate locational constraints and design features are embedded into new subdivision, use and development decisions to both reduce greenhouse gas emissions and strengthen climate-resilience. This includes:

a. avoiding further development in areas or in ways that will result in a significant natural hazard risk,

b. integrating natural features into the built environment at a variety of scales, including by requiring good structure planning for greenfield development and as matters of assessment when enabling infill/brownfield development,

c. avoiding damage to and, preferably, protecting, enhancing, or restoring natural ecosystems that can provide significant mitigation and/or adaptation benefits.

Amendments sought by Greater Wellington

22 Greater Wellington has requested amendments to the IPI to ensure that nature-based solutions are an integral part of new subdivision, use and development to support climate

[2] are-we-building-harder-hotter-cities-the-vital-importance-of-urban-green-spaces.pdf

change adaptation and mitigation and improve the health and resilience of people, biodiversity, and the natural environment.

23 The higher order direction relevant to managing climate change mitigation and adaptation includes clear direction to prioritise the use of nature-based solutions within our planning and regulatory systems to address the climate and biodiversity crises together providing, where possible, for both carbon removals and climate change adaptation (see Appendix 2). This direction aligns with similar policy internationally. For example, the United Nations has adopted a multilaterally agreed definition for nature-based solutions and policies that recognise the important role they play in the global response to climate change and its social, economic, and environmental effects[3].

24 Nature-based solutions are actions to protect, enhance, or restore natural ecosystems, and/or that incorporate natural elements into built environments, to reduce greenhouse gas emissions and/or strengthen the resilience of humans to the effects of climate change, while having co-benefits for indigenous biodiversity and the natural environment. Examples relevant to the development enabled by the IPI include the use of porous surfaces, rain gardens and green rooves to support stormwater and flood management, and the planting and retaining of canopy trees to help to reduce heat in urban areas.

25 The technical evidence of Mr Stuart Farrant on behalf of Greater Wellington (dated 19 April 2023) discusses the risks of continuing with a "business as usual" approach to development planning and design, especially when combined with the increase in density and development enabled by the IPI. Mr Farrant describes, and provides examples of, good practice climate-resilient design which integrates nature-based solutions into development at a range of scales.

26 Greater Wellington seeks a number of amendments to the IPI to require nature-based solutions and improve the management of stormwater and water quality, including:

a. Insert and/or amend policies and rules, including triggers for consent and mattes of control or discretion, to protect and enhance the health and well-being of water bodies and freshwater ecosystems, including requirements for the application of water sensitive urban design principles and sustainable stormwater design (having regard to Proposed RPS Change 1 Policy FW.3). [OS41.5 clauses (f)(g)(h)(j)(k)(l)]

[3] https://www.naturebasedsolutionsinitiative.org/news/united-nations-environment-assembly-nature-based-solutions-definition/

b. Include a policy and amend relevant rules to require hydrological controls for use, development and subdivision of land and insert the definition of hydrological controls from the RPS (to address the effects of increased stormwater runoff from urban intensification on urban streams) [OS41.6]

c. Include policies which seek to improve climate resilience of urban areas through measures identified in Policy CC.14 of Proposed RPS Change 1. Include policies and rules for new development areas that require the development to include actions and initiatives that improve climate resilience. Include matter of control or discretion in relevant rules that considers the extent to which the development within the design will improve climate resilience. [OS41.10]

d. Amend the IPI as necessary to have regard to Proposed RPS Change 1 Policy CC.7 and Policy CC.12:
   (a) Include policy that seeks nature- based solutions when providing for new infrastructure and in new developments, such as the use of green infrastructure.
   (b) Permit the development of green infrastructure in appropriate locations and subject to necessary controls, i.e., planting works undertaken by regional council.
   (c) As a matter of control or discretion for subdivision include the extent to which the design protects, enhances, restores, or creates nature-based solutions to manage the effects of climate change, or similar.
   (d) Include provisions for recognising the functions of the ecosystems providing nature-based solutions to climate change and avoid adverse effects of subdivision, use and development on their functions, including before they are mapped. Policies should:
      i direct the protection of areas that already perform a function as a nature -based solution, including the many wider benefits these can have and
      ii encourage the restoration of nature-based solutions.
   (e) Amendments may be necessary across the Energy, Infrastructure and Transport, Natural Hazards, and Subdivision provisions. [OS41.12]

e. Amend UFD-O1 (well-functioning urban environment) and other relevant policies in the IPI to include environmental components of wellbeing and have regard to the articulation of the qualities and characteristics of well-functioning urban environments set out in Objective 22 of Proposed RPS Change 1. Ensure all Zone provisions have regard to the qualities and characteristics of well- functioning urban environments as articulated in Objective 22 of Proposed RPS Change 1, by including necessary objectives, policies, permitted standards and rules that provide for these qualities and characteristics. [OS41.18]

S42A Officer's Response

27 The officer's section 42A report has rejected all Greater Wellington's submission points set out in paragraph 27 for the following reasons:

a. There is no requirement for the IPI to give effect to proposed RPS Change 1 as it is only part way through the RMA Schedule 1 process, with its provisions subject to many submissions, including from Upper Hutt City Council.

b. It is not appropriate for Greater Wellington to seek changes to give effect to provisions in Proposed RPS Change 1 that Upper Hutt City Council opposes or seeks amendments to.

28 As clarified in the evidence of Mr Shield, submissions from Greater Wellington seek that Upper Hutt City Council give effect to the *operative* RPS and the NPS-FM and have regard to Proposed RPS Change 1, as required by the Resource Management Act.

29 Counsel for Greater Wellington addresses the issues of scope of what can be achieved through an IPI and the weight to be given to Proposed RPS Change 1 in legal submissions.

30 While there are many submissions on the proposed RPS Change 1 climate change (including nature-based solutions) and freshwater provisions, they are supported by very strong higher-level direction as set out in Appendix 2. While the drafting may be refined as proposed RPS Change 1 progresses through the Schedule 1 process, in my opinion their intent is clear, as is the importance of embedding them into the planning framework of the IPI now, rather than delaying this to a future plan change or variation. The IPCC AR6 report stresses the significant risks and costs of any further delay in climate response; of particular relevance to the IPI, highlighting the costs of locking-in infrastructure that is not

fit-for-purpose and the reduced feasibility and effectiveness of ecosystem-based adaptation/nature-based solutions as global warming increases.

31 I also note that while the use of "nature-based solutions" in development planning is a relatively novel approach for district plans, a number of territorial authorities already require the use of nature-based solutions, such as water sensitive urban design, in some circumstances or pursue these initiatives outside of their District Plan. Recent examples in the Wellington Region include the constructed wetland built to treat stormwater prior to discharge into Te Awarua-o-Porirua and the rain gardens and street trees installed in Cuba St, Wellington City to provide stormwater treatment and shade. Mr Farrant's evidence provides further examples.

32 Greater Wellington has identified a number of provisions across the IPI where amendments to better provide for climate change adaptation and mitigation, with preference for nature-based solutions for development at a range of scales, and a focus on improved stormwater management to reduce the risk of flooding and water quality degradation, would contribute to the relief being sought. These amendments are set out in Appendix 3.

33 Amendments sought include adding new and amending proposed definitions, objectives, policies and rules in the Urban Form and Development, Subdivision and General and High Density Residential Zone chapters, including measures described and explained in the technical evidence of Mr Farrant.

34 Greater Wellington would be happy to work with the Hearings Panel and council officers to develop these provisions in further detail.

Conclusion

35 The challenges facing our communities and natural environment in the face of a changing climate are immense. In 2021, He Pou a Rangi the Climate Change Commission issued a call to all New Zealanders to "take climate action today, not the day after tomorrow", concluding that New Zealand needs to be proactive and courageous as it tackles the challenges our country will face in the years ahead and that bold climate action is possible when we work together[4].

[4] New Zealand Climate Change Commission, 2021: Ināia tonu nei: a low emissions future for Aotearoa

36 Both the Climate Change Commission and central government are clear that local government and the planning system have important roles to play in climate change mitigation and adaptation to complement national policy direction and initiatives.

37 Due to its statutory weight, the district plan provides a powerful tool to ensure that where and how development takes place, especially in relation to the intensification of housing, will support the Upper Hutt City to transition to become a low-emission and climate-resilient city. The IPI provides an important opportunity to ensure that the planning framework is fit for this purpose.

38 Not acting now will result in a generation of new housing that locks in the risks associated with "business as usual" development (as discussed in Mr Farrant's evidence), missing a critical opportunity to increase the resilience of Upper Hutt City communities to the current and future effects of climate change. "Kicking the can" further down the road will significantly increase the challenges of adaptation and the associated social, environmental, and economic costs.

39 The United Nations Secretary General called the IPCC 2023 report "a clarion call to massively fast-track climate efforts by every country and every sector and on every timeframe. Our world needs climate action on all fronts: everything, everywhere, all at once.[5]"

Pam Guest

19 April 2023

[5] United Nations Secretary-General António Guterres' speech to launch the IPCC Synthesis Report 2023 https://press.un.org/en/2023/sgsm21730.doc.htm

Appendix 1: Proposed RPS Change 1 provisions relevant to the evidence of Pamela Guest, GWRC

Objectives	Policy	Method
Objective CC.1: By 2050, the Wellington Region is a low-emission and climate-resilient region, where climate change mitigation and adaptation are an integral part of: (a) sustainable air, land, freshwater, and coastal management, (b) well-functioning urban environments and rural areas, and (c) well-planned infrastructure. **Objective CC.4:** *Nature-based solutions* are an integral part of climate change mitigation and climate change adaptation, improving the health and resilience of people, biodiversity, and the natural environment **Definition – Nature-based solutions** Actions to protect, enhance, or restore natural ecosystems, and the incorporation of natural elements into built environments, to reduce greenhouse gas emissions and/or strengthen the resilience of humans, indigenous biodiversity and the natural environment to the effects of climate change. Examples include: Reducing greenhouse gas emissions (climate change mitigation): • planting forests to sequester carbon • protecting peatland to retain carbon stores Increasing resilience (climate change adaptation): (a) providing resilience for people • planting street trees to provide relief from high temperatures • restoring coastal dunelands to provide increased resilience to the damaging effects of storms 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, such as rain gardens to reduce stormwater runoff in urban areas (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.6** Resource management and adaptation planning increase the resilience of communities and the natural environment to the short, medium, and long-term effects of climate change. **Objective 22:** Urban development, including housing and infrastructure, is enabled where it demonstrates the characteristics and qualities of well-functioning urban environments, which: (a) Are compact and well designed; and (b) Provide for sufficient development capacity to meet the needs of current and future generations; and	**Policy CC.4: Climate resilient urban areas – district and regional plans** District and regional plans shall include policies, rules and/or 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. Explanation Policy CC.4 directs regional and district plans include relevant provisions to provide for climate resilient urban areas. 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 • 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 urban areas, including Policy FW.3. **Policy CC.7: Protecting, restoring, and enhancing ecosystems and habitats that provide nature-based solutions to climate change – district and regional plan** 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. Explanation 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, in determining whether the proposed activity is appropriate, particular regard shall be given to the impact on those climate change characteristics and 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. **Policy CC.14: Climate-resilient urban areas – consideration** When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, provide for actions and initiatives, particularly the use of *nature-based solutions*, that contribute to climate-resilient urban areas, including: (a) maintaining, enhancing, restoring, and/or creating urban greening at a range of spatial scales to provide urban cooling, including working towards a 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 to integrate natural water systems into built form and landscapes, to reduce flooding, improve water quality and overall environmental quality,	**Method UD.1: Development manuals and design guides** Prepare the following development manuals and design guidance: (a) Urban design guidance to provide for best practice urban design and amenity outcomes in accordance with Policy 67(a); (b) Papakāinga design guidance that are underpinned by Kaupapa which is Māori in partnership with Mana Whenua in accordance with Policy 67(f); and (c) Urban design guidance and development manuals to assist developers in meeting Policy CC.14 and Policy FW.3. *Implementation: Wellington Regional Council and city and district councils (via the Wellington Regional Leadership Committee)* **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, 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 (e.g., coastal dunelands, street trees, and wetlands), (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 programmes that protect, enhance or restore the priority ecosystems identified by Methods IE.2 and CC.7 for their biodiversity values and/or their contribution as nature-based solutions to climate change. *Implementation: Wellington Regional Council*

(c) Improve the overall health, well-being and quality of life of the people of the region; and (d) Prioritise the protection and enhancement of the quality and quantity of freshwater; and (e) Achieve the objectives in this RPS relating to the management of air, land, freshwater, coast, and indigenous biodiversity; and (f) Support the transition to a low-emission and climate-resilient region; and (g) Provide for a variety of homes that meet the needs, in terms of type, price, and location, of different households; and (h) Enable Māori to express their cultural and traditional norms by providing for mana whenua / tangata whenua and their relationship with their culture, land, water, sites, wāhi tapu and other taonga; and (i) Support the competitive operation of land and development markets in ways that improve housing affordability, including enabling intensification; and (j) Provide for commercial and industrial development in appropriate locations, including employment close to where people live; and (k) Are well connected through multi-modal (private vehicles, public transport, walking, micro-mobility and cycling) transport networks that provide for good accessibility for all people between housing, jobs, community services, natural spaces, and open space. Objective 12: Natural and physical resources of the region are managed in a way that prioritises: (a) first, the health and well-being of water bodies and freshwater ecosystems (b) second, the health needs of people (such as drinking water) (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future; and Te Mana o te Wai encompasses six principles relating to the roles of tangata whenua and other New Zealanders in the management of freshwater, and these principles inform this RPS and its implementation. The six principles are: (a) Mana whakahaere: the power, authority, and obligations of tangata whenua to make decisions that maintain, protect, and sustain the health and well-being of, and their relationship with, freshwater (b) Kaitiakitanga: the obligation of tangata whenua to preserve, restore, enhance, and sustainably use freshwater for the benefit of present and future generations (c) Manaakitanga: the process by which tangata whenua show respect, generosity, and care for freshwater and for others (d) Governance: the responsibility of those with authority for making decisions about freshwater to do so in a way that prioritises the health and well-being of freshwater now and into the future (e) Stewardship: the obligation of all New Zealanders to manage freshwater in a way that ensures it sustains present and future generations, and (f) Care and respect: the responsibility of all New Zealanders to care for freshwater in providing for the health of the nation. And the Statements of Kahungunu ki Wairarapa and Rangitāne o Wairarapa	(c) capturing, storing, and recycling water at a community-scale (for example, by requiring rain 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, (e) providing for efficient use of water and energy in buildings and infrastructure, and (f) buildings and infrastructure that are able to withstand the predicted future temperatures, intensity and duration of rainfall and wind <u>Explanation</u> 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 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 FW.3: Urban development effects on freshwater and the coastal marine area – district plans** District plans shall include objectives, policies, and methods including rules, that give effect to Te Mana o te Wai and section 3.5(4) of the NPS-FM, and in doing so must: (a) Partner with mana whenua / tangata whenua in the preparation of district plans; (b) Protect and enhance Māori freshwater values, including mahinga kai; (c) Provide for mana whenua / tangata whenua and their relationship with their culture, land, water, wāhi tapu and other taonga; (d) Incorporate the use of mātauranga Māori to ensure the effects of urban development are considered appropriately; (e) Adopt an integrated approach, ki uta ki tai, that recognises the interconnectedness of the whole environment to determine the location and form of urban development; (f) Integrate planning and design of stormwater management to achieve multiple improved outcomes – amenity values, recreational, cultural, ecological, climate, vegetation retention; (g) Consider the effects on freshwater and the coastal marine area of subdivision, use and development of land; (h) Consider the use and development of land in relation to target attribute states and any limits set in a regional plan; (i) Require that Water Sensitive Urban Design principles and methods are applied during consideration of subdivision, the extent of impervious surfaces and in the control of stormwater infrastructure; (j) Require that urban development is located and designed to minimise the extent and volume of earthworks and to follow, to the extent practicable, existing land contours; (k) Require that urban development is located and designed to protect and enhance gully heads, rivers, lakes, wetlands, springs, riparian margins and estuaries; (l) Require riparian buffers for all waterbodies and avoid piping of rivers; (m) Require hydrological controls to avoid adverse effects of runoff quantity (flows and volumes) and maintain, to the extent practicable, natural stream flows; (n) Require efficient use of water; (o) Manage land use and development in a way that will minimise the generation of contaminants, including building materials, and the extent of impervious surfaces; (p) Consider daylighting of streams, where practicable; and (q) Consider the effects of land use and development on drinking water sources. <u>Explanation</u> Policy FW.3 requires district plans to manage the effects of urban development on freshwater and the coastal marine area.	

Appendix 2: Higher Order Direction

Resource Management Act 1991

s5 Purpose

s6 Matters of national importance

(h) the management of significant risks from natural hazards

s7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(i) The effects of climate change

s31 Functions of territorial authorities under this Act

s74 Matters to be considered by territorial authority

(2) In addition to the requirements of section 75(3) and (4), when preparing or changing a district plan, a territorial authority shall have regard to—
(a) any—

(i) proposed regional policy statement;

Climate Change Response Act 2002

3(1) The purpose of this Act is to—
(aa) provide a framework by which New Zealand can develop and implement clear and stable climate change policies that—

(i) contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels; and

(ii) allow New Zealand to prepare for, and adapt to, the effects of climate change:

National Policy Statement on Urban Development 2020

Objective 1: New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future.

A well-functioning urban environment is defined in Policy 1

Objective 8: New Zealand's urban environments: support reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change.

Policy 1: Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum: …

(e) support reductions in greenhouse gas emissions; and

(f) are resilient to the likely current and future effects of climate change.

Policy 6: When making planning decisions that affect urban environments, decision-makers have particular regard to the following matters: …

(e) the likely current and future effects of climate change

Te Mana o te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020

Objective 13: Biodiversity provides nature-based solutions to climate change and is resilient to its effects.

Outcome 5 includes: Thriving biodiversity plays a central role in our approach to mitigating climate change.

2025 Goals include: 13.2.1 The potential for indigenous nature-based solutions is understood and being incorporated into planning

National Policy Statement for Freshwater Management 2020

Policy 4: Freshwater is managed as part of New Zealand's integrated response to climate change

3.5 Integrated Management

(1) Adopting an integrated approach, ki uta ki tai, as required by Te Mana o te Wai, requires that local authorities must:

(a) recognise the interconnectedness of the whole environment, from the mountains and lakes, down the rivers to hāpua (lagoons), wahapū (estuaries) and to the sea; and

(b) recognise interactions between freshwater, land, water bodies, ecosystems, and receiving environments; and

(c) manage freshwater, and land use and development, in catchments in an integrated and sustainable way to avoid, remedy, or mitigate adverse effects, including cumulative effects, on the health and well-being of water bodies, freshwater ecosystems, and receiving environments; and

(d) encourage the co-ordination and sequencing of regional or urban growth….

(3) In order to give effect to this National Policy Statement, local authorities that share jurisdiction over a catchment must co-operate in the integrated management of the effects of land use and development on freshwater.

(4) Every territorial authority must include objectives, policies, and methods in its district plan to promote positive effects, and avoid, remedy, or mitigate adverse effects (including cumulative effects), of urban development on the health and well-being of water bodies, freshwater ecosystems, and receiving environments.

Aotearoa New Zealand's first emissions reduction plan 2022

<u>Chapter 4: Working with Nature</u>

Action 4.1: Prioritise nature-based solutions

To address the climate and biodiversity crises together, the Government will:

- prioritise the use of nature-based solutions within our planning and regulatory systems, where possible, for both carbon removals and climate change adaptation
- investigate how to best ensure that a biodiversity lens is applied to climate change policy development and planning in order to prioritise nature-based solutions.

The planning system and infrastructure investment can also support the use of nature-based solutions or blue/green infrastructure – such as water-sensitive urban design, rain gardens and urban trees – which may support carbon removals and improve climate resilience.

Examples of nature-based solutions that remove carbon and support biodiversity include:

► restoring wetlands and coastal ecosystems (eg, peatlands, saltmarshes and mangrove swamps) to sequester carbon and provide natural defences against flooding, drought and sea-level rise, while supporting abundant biodiversity

► restoring and planting native forests in upper catchments to sequester carbon, reduce flooding and sediment flow into downstream rivers and estuaries and improve habitats.

Some nature-based solutions can also reduce emissions indirectly, for example:

► using water-sensitive urban design, which mimics natural processes and uses soil and vegetation to manage stormwater and reduce the need for carbon intensive concrete pipes

► integrating green spaces and natural features into urban areas to help with temperature and flood control, improve air quality and create wildlife corridors. This can also make active transport more appealing, provide recreational opportunities and improve health and wellbeing.

Chapter 7: Planning and infrastructure

<u>How we plan and provide infrastructure can reduce emissions and increase resilience</u>

How we provide infrastructure also affects our emissions. Higher-density, mixed-use developments can have lower operational emissions per dwelling and allow infrastructure to be used more efficiently, avoiding or delaying the need for more infrastructure and associated emissions. Non-built solutions to our infrastructure needs – including nature-based solutions – can also reduce the need for built infrastructure made of materials that carry embodied emissions. They can also help to sequester carbon, improve indigenous biodiversity and create more liveable environments that encourage people to walk or cycle, reducing emissions from transport.

Decisions about investment in infrastructure need to take account of the whole-of-life costs and benefits of that investment, including the cost of emissions associated with that infrastructure. The planning and infrastructure systems can also help to prevent development in areas vulnerable to the impacts of climate change, such as flooding. Avoiding development in these areas will help us reduce the need for additional infrastructure to protect vulnerable land and assets – saving on emissions from building new infrastructure – and avoid the need to replace or relocate existing infrastructure and buildings.

Aotearoa New Zealand's first national adaptation plan 2022

Objective NE3: Support working with nature to build resilience

Action 5.9

- Prioritise nature-based solutions in our planning and regulatory systems to address the climate and biodiversity crises together.

Action 5.16

- Identify options to increase the integration of nature-based solutions into urban form, which will increase biodiversity and natural areas in urban spaces.

Action 8.7

- Embed nature-based solutions as part of the response to reducing transport emissions and improving climate adaptation and biodiversity outcomes.

MFE Guidance to local government to give effect to the National Adaptation Plan and the National Emissions Reduction Plan[6]

How local government can support the five principles in RMA plan development - includes:

- When developing RMA-related plans, local government should consider climate change issues and the role that RMA plans have in reducing greenhouse-gas emissions.
- Prioritise and encourage nature-based solutions that reduce emissions and have multiple co-benefits. Examples include where a coastal environment affected by rising sea levels and severe weather events, restoring coastal wetlands or dunes rather than using a hard engineering solution, such as a seawall; and in an urban environment blue green infrastructure such as urban trees or water sensitive design.
- RMA-related plans should complement other initiatives in the emissions reduction plan, such as emissions pricing; funding and financing; planning and investment; research, science, innovation and technology; and circular economy and bio economy.

Operative Regional Policy Statement for the Wellington Region 2013

Objective 12: The quantity and quality of fresh water:

(a) meet the range of uses and values for which water is required;

(b) safeguard the life supporting capacity of water bodies; and

(c) meet the reasonably foreseeable needs of future generations.

Objective 13: The region's rivers, lakes and wetlands support healthy functioning ecosystems

Objective 19: The risks and consequences to people, communities, their businesses, property and infrastructure from natural hazards and climate change effects are reduced.

Objective 21: Communities are more resilient to natural hazards, including the impacts of climate change, and people are better prepared for the consequences of natural hazard events.

[6] https://environment.govt.nz/assets/publications/national-adaptation-plan-and-emissions-reduction-plan-guidance-note.pdf

Policy 43: Protecting aquatic ecological function of water bodies – consideration
When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, particular regard shall be given to:
(a) maintaining or enhancing the functioning of ecosystems in the water body;
(b) maintaining or enhancing the ecological functions of riparian margins;
(c) minimising the effect of the proposal on groundwater recharge areas that are connected to surface water bodies;
(d) maintaining or enhancing the amenity and recreational values of rivers and lakes, including those with significant values listed in Table 15 of Appendix 1;
(e) protecting the significant indigenous ecosystems and habitats with significant indigenous biodiversity values of rivers and lakes, including those listed in Table 16 of Appendix 1;
(f) maintaining natural flow regimes required to support aquatic ecosystem health;
(g) maintaining fish passage;
(h) protecting and reinstating riparian habitat, in particular riparian habitat that is important for fish spawning;
(i) discouraging stock access to rivers, lakes and wetlands; and
(j) discouraging the removal or destruction of indigenous wetland plants in wetlands

Appendix 3: Proposed amendments to the IPI for the Upper Hutt City District Plan

Key:

UHCC proposed inserts in blue, deletions in red

GWRC proposed inserts and deletions in purple

Scope for proposed amendments from GWRC submission points shown as footnotes

3.1 Definitions

Amend Definition for: Hydraulic neutrality means managing stormwater runoff from all new subdivision and development through temporary storage and controlled release ~~either on-site disposal or storage~~, so that stormwater is released from the site at a rate that does not exceed the predevelopment peak stormwater runoff for the 10% and 1% rainfall Annual Exceedance Probability event[7]

Add the Definition for **Well-functioning urban environment** as set out in the NPS-UD[8]

PART 2 - DISTRICT-WIDE MATTERS STRATEGIC DIRECTION

UFD - Urban Form and Development

Add New Objective: Urban land use, subdivision and development design integrates features, in particular nature-based solutions, that support reductions in greenhouse gas emissions and the risk of natural hazards and that increase the climate resilience of the communities and natural environments of Upper Hutt City. [9]

Amend New Policy UFD-P1 Provide for and encourage medium and high density residential development that is consistent with the Council's Medium and High Density Design Guide in Appendix 1, giving priority to design elements that support reductions in greenhouse gas emissions and that increase the climate resilience of the communities and natural environments of Upper Hutt City.[10]

SUBDIVISION SUB-GEN – General Subdivision Provisions that Apply in All Zone

Add New Objective: Future subdivision and development is resilient to the effects of climate change and protects the health and well-being of all receiving environments and communities.[11]

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[7] Matter of clarification
[8] OS41.18
[9] OS41.18
[10] OS41.18
[11] OS41.18

Add New Objective: Subdivision and development design integrates features, in particular nature-based solutions, that support reductions in greenhouse gas emissions and that increase the climate resilience of the communities and natural environments of Upper Hutt City.[12]

Add New Policy to require hydrological controls in all zones: SUB-GEN-xx: The adverse effects of stormwater quantity on natural stream flows and aquatic ecosystem health shall be avoided as far as practicable by requiring hydrological controls and water quality management for new development and subdivision in the following zones: (i) General Residential Zone. (ii) High Density Residential Zone. (iii) City Centre Zone. (iv) Town Centre Zone. (v) Neighbourhood Centre Zone. (vi) Local Centre Zone. (vii) Mixed Use Zone.[13]

Add New Definition for hydrological controls[14]

Hydrological controls means:

For greenfield development:

(a) the modelled mean annual runoff volume generated by the fully developed area must not exceed the mean annual runoff volume modelled from the site in an undeveloped (pastoral) state

(b) the modelled mean annual exceedance frequency of the 2-year Average Recurrence Interval (ARI) so-called 'channel forming' (or 'bankfull') flow for the point where the fully developed area discharges must not exceed the mean annual exceedance frequency modelled for the same site and flow event arising from the area in an undeveloped (pastoral) state.

For brownfield and infill development:

(a) the modelled mean annual runoff volume generated by the fully developed area must be reduced, as far as practicable, towards the mean annual runoff volume modelled for the site in an undeveloped state

(b) the modelled mean annual exceedance frequency of the 2-year ARI so-called 'channel forming' (or 'bankfull') flow for the point where the fully developed area discharges to a stream, or stormwater network, shall be reduced as far as practicable towards the mean annual exceedance frequency modelled for the same site and flow event in an undeveloped state.

Amend New Controlled Activity Rule: SUB-GEN-R2A [15]

Subdivision and development must be designed to ensure that the stormwater runoff from all new impermeable surfaces will be disposed of, re-used, or stored on-site and released at a rate that does not exceed the peak stormwater runoff when compared to the pre-development situation for the 10% and 1% rainfall Annual Exceedance Probability event and provides hydrological controls for more frequent events.

Council will limit its control to and may impose conditions over the following matters:

[12] OS41.12
[13] OS41.6
[14] OS41.6
[15] OS41.6

1. Any potential effects on any downstream flooding hazard;

2. The size and scale of the development and the ~~additional~~ stormwater that the proposal will generate ~~compared to the existing situation~~;

3. The capacity of the local stormwater network; and

4. Whether there are any site-specific constraints or opportunities within the local area that mean that hydraulic neutrality or hydrological controls are ~~is~~ not required; and

5. Whether there are site specific ecological or cultural values downstream of development that justify bespoke stormwater solutions to avoid adverse impacts.

Add New Controlled Activity Rule to address the effects of stormwater on water quality: [16]

SUB-GEN-Rxx: Subdivision and development must be designed to ensure that the adverse effects of stormwater runoff on water quality and stormwater volumes will be minimised by implementing water sensitive urban design.

Council will limit its control to and may impose conditions over the following matters:

1. Any potential effects of urban contaminants; and
2. Any potential effects of modified stormwater volumes.

GRZ – General Residential Zone

Add New Objective GRZ-Ox: Building and development is resilient to the effects of climate change and protects the health and well-being of communities and all receiving environments including those connected via reticulated stormwater network.[17].

Add New Objective GRZ-Ox: Stormwater is managed to protect water quality and receiving environments [18]

Add New Policy GRZ-Pxx: New buildings and development will be designed to provide hydrological controls and water quality management[19]

Add New Policy GRZ-Pxx: New buildings and development will be designed to protect the health of the natural environment and contribute to the climate resilience of the site and surrounding area, including through the use of nature-based solutions. [20]

GRZ – General Residential Zone Standards

[16] OS41.5(g)
[17] OS41.18
[18] OS41.5(g)]
[19] OS41.6
[20] OS41.12

Add New Standard GRZ-Sx: Permeable surface: A minimum of 40% of the net site must be permeable surface. [21] [22]

Add Definition for Permeable surface: Means a surface which allows for the soakage of water into the ground, including:

1. areas grassed or planted in trees or shrubs, gardens and other vegetated areas;
2. porous or permeable paving;
3. green roofs; and
4. decks which allow water to drain through to a permeable surface.

Add New Standard GRZ-Sx: Hydrological controls[23] [24]

New buildings and development must demonstrate that they achieve hydrological controls as per the definition (requiring the installation of an appropriate rainwater reuse tank).

GRZ – General Residential Zone Add Standard

Amend GRZ-S16 Landscaped area[25]

(1) A residential unit at ground floor level must have a landscaped area of a minimum of 20% of a developed site with grass or plants, and can include the canopy of trees regardless of the ground treatment below them, with a preference for indigenous species.

(2) The landscaped area may be located on any part of the development site, and does not need to be associated with each residential unit.

Amend GRZ-R11 Policies UDF-P1, UDF-P2, [26]

Buildings ~~accessory to a permitted or controlled activity~~ which do not comply with permitted ~~and controlled~~ activity standards Council will restrict its discretion to, and may impose conditions on: RDIS

GRZ-P1A, GRZ-P1B, GRZ-P1C, GRZ-P1D, GRZ-P1E, GRZ-P1, GRZ-P2, GRZ-P3, GRZ-P4, GRZ-P5 GRZ-P8, GRZ-P9, GRZ-P10.

(1) Height and sunlight access.

(2) Setbacks and coverage.

(3) Landscaping and screening, particularly the use of canopy trees.

(4) Provision of and effects on utilities and/or services.

(5) Standard, construction and layout of vehicular access, manoeuvring and traffic safety.

(6) Streetscape effects.

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[21] OS41.5(g)]
[22] Relies on NPS-FM as a qualifying matter
[23] OS41.6
[24] Relies on NPS-FM as a qualifying matter
[25] OS41.12
[26] OS41.10; OS41.5(g)

(7) Effects on ~~neighbourhood character and~~ amenity.

(x) The effects on the stormwater system and the health and well-being of receiving environments.

(8) Financial contributions.

(9) The matters contained in the Medium and High Density Design Guide in Appendix 1, in particular those that contribute to reductions in greenhouse gas emissions and increase climate resilience.

(10) measures to avoid, remedy or mitigate adverse effects.

(11) Cumulative effects.

This rule does not apply to residential units.

GRZ – General Residential Zone Add rule

Add Additional Standard to GRZ-R12 The construction and use of 1, 2 or 3 residential units that do not comply with one or more of the following permitted standards:

(i) GRZ-S3 – Building coverage.
(ii) GRZ-S4 – Setbacks.
(iii) GRZ-S5 Outdoor living space.
(iv) GRZ-S7 – Building height.
(v) GRS-S8 – Height in relation to boundary.
(vi) GRZ-S9 – Hydraulic neutrality.
(vii) GRZ-S14 – Outlook space (per unit).
(viii) GRZ-S15 – Windows to street.
(ix) GRZ-S16 – Landscaped area.
(x) GRZ-S17- Hydrological controls.[27]

Amend Matters of Discretion: Council will restrict its discretion to, and may impose conditions on:[28]

(1) The matters contained in the Medium and High Density Design Guide in Appendix 1, in particular those that contribute to reductions in greenhouse gas emissions and increase climate resilience.

(x) The effects on the stormwater system and the health and well-being of receiving environments, including those connected via reticulated stormwater network.

(2) Site layout and design.

(3) Consideration of the effects of the standard not met.

(4) Cumulative effects.

(5) The matters contained in the Code of Practice for Civil Engineering Works.

(6) The imposition of financial contributions.

[27] OS41.6
[28] OS41.18

Restriction on notification: Public notification of an application is precluded under this rule.

Add Additional Standard to GRZ – General Residential Zone Add rule [29]

GRZ-R12A The construction and use of 4 or more residential units that comply with the following permitted standards:

(i) GRZ-S3 – Building coverage.

(ii) GRZ-S4 – Setbacks.

(iii) GRZ-S5 Outdoor living space.

(iv) GRZ-S7 – Building height.

(v) GRS-S8 – Height in relation to boundary.

(vi) GRZ-S9 – Hydraulic neutrality.

(vii) GRZ-S14 – Outlook space (per unit).

(viii) GRZ-S15 – Windows to street.

(ix) GRZ-S16 – Landscaped area.

(xi) GRZ-S17- Hydrological controls.

Amend GRZ-R12B The construction and use of a residential unit(s) that is not a permitted activity, and do not fall under rules GRZ-R12 or GRZ-R12A. [30]

Council will restrict its discretion to, and may impose conditions on:

(1) The matters contained in the Medium and High Density Design Guide in Appendix 1,

(2) Site layout and design.

(3) The matters contained in the Code of Practice for Civil Engineering Works.

(4) Consideration of the effects of the standard not met.

(5) Transport effects.

(6) Methods to avoid, remedy, or mitigate adverse effects.

(7) Cumulative effects.

(x) Contributions to reductions in greenhouse gas emissions and climate resilience.

(x) The effects on the stormwater system and the health and well-being of receiving environments, including those connected via reticulated stormwater network.

[29] OS41.6
[30] OS41.18

GRZ – General Residential Zone Amend Matters for Consideration

Amend Matters for Consideration[31]

Matters that may be relevant in the consideration of any resource consent, other than for a restricted discretionary activity, may include the following:

GRZ-MC1 Site layout, area and Building coverage

(1) The arrangement of buildings, car parking and vehicle movements on site.

(2) The extent of landscaping and screening.

(3) Whether the topography of the site has been taken into account.

(4) Whether a better standard of development can be achieved by varying the design standards.

(5) The ability to provide adequate outdoor living areas.

(6) The extent to which ~~decreases in site size or~~ increased building coverage ~~would have an adverse effect on the amenity of the area~~ is compatible in form and scale with the neighbourhood's planned built character.

(x) Contributions to reductions in greenhouse gas emissions and climate resilience.

(x) The effects on the stormwater system and the health and well-being of receiving environments.

HRZ – High Density Residential Zone

Add New Objective HRZ-Ox: Building and development is resilient to the effects of climate change and protects the health and well-being of communities and all receiving environments, including those connected via reticulated stormwater network.[32]

Add New Objective HRZ-Ox: Stormwater is managed to protect water quality and receiving environments [33]

Add New Policy HRZ-Pxx: New buildings and development will be designed to provide hydrological controls and water quality management[34]

Add New Policy HRZ-Pxx: New buildings and development will be designed to protect the quality of the natural environment and contribute to the climate resilience of the site and surrounding area, including through the use of nature-based solutions. [35]

[31] OS41.18
[32] OS41.18
[33] OS41.5(g)
[34] OS41.6
[35] OS41.12

Amend Policy HRZ-P6 Provide for and encourage medium and high density residential development that is consistent with the Council's Medium and High Density Design Guide in Appendix 1, giving priority to design elements that support reductions in greenhouse gas emissions and/or that increase the climate resilience of the communities and natural environments of Upper Hutt City.[36]

[36] OS41.18

Section 32AA Assessment of proposed GW drafting

UHCC IPI	GW relief sought
Proposed provisions that manage the effects of development intensification to contribute to a well-functioning urban environment	Amendments requested to better provide for a well-functioning urban environment as described in NPS-UD Policy 1 clauses (e) and (f) [Resulting in a higher level of stormwater management, increased natural areas in urban areas, improved aquatic habitat and climate resilience]
Benefits Environmental: Benefits for greenhouse gas emissions if housing intensification is appropriately linked to public transport. Economic: Moderate to high economic benefits associated with more development and intensification in Hutt City, bringing new residents and businesses. Social: Moderate social benefits associated with the greater provision of housing to meet population growth needs. Cultural: Low cultural value	**Benefits** Environmental: Moderate-High. Nature-based solutions lead to increased protection/restoration/and expansion of natural and modified ecosystems in urban environments, with benefits for climate change mitigation and/or adaptation, as well as benefits for indigenous biodiversity, ecosystem resilience and ecosystem services. Higher standards required for stormwater management will better protect the health of freshwater ecosystems. Economic: Moderate-high economic benefits from protecting/improving aquatic ecosystems and providing resilience to people and nature from current and future effects of climate change. For example, appropriate stormwater management will reduce the risk of flooding and associated costs. Social: Moderate-High. Nature-based solutions by definition provide benefits for both people and nature. Integration of nature into built environments has significant benefits for human well-being. The integration of nature-based solutions in development will increase the resilience of communities (for example, an increase in canopy trees will provide relief from extreme heat) and the natural environment to the effects of climate change. Cultural: High cultural benefits associated with the protection and enhancement of environmental quality in urban environments, including

	improving the health of aquatic ecosystems and increasing indigenous biodiversity.
Costs Environmental: Moderate to high. Despite mitigations, new development will continue to have adverse effects on aquatic ecosystems, result in a loss of urban green space and indigenous biodiversity (for more detail refer to the evidence of Mr Farrant, e.g. para 27). Economic: Moderate to high. Continuation of existing development practices, combined with high intensity development, without requiring appropriate mitigation measures to address impacts wider than peak flows, will worsen current ecological, human health and cultural outcomes and result in considerable direct and indirect costs to rectify and or remedy in the future. For example, the lack of appropriate stormwater controls results in substantial ongoing financial costs borne by councils to protect assets such as roading and utilities. Social: Moderate to high social costs associated with reduced environmental quality and limited resilience to the current and future effects of climate change. Cultural: Moderate to high cultural costs associated with ongoing loss of indigenous and taonga species and degradation of the mauri of waterways.	**Costs** Environmental: No obvious environmental costs. Economic: Small increase in cost to developers. For example, the evidence of Mr Farrant is that the solutions required to manage stormwater appropriately are affordable and cost-effective. Social: No obvious social costs Cultural: No obvious cultural costs.