Submission on Proposed Plan Change 1 – Natural hazards

From: **Northland Regional Council**

To: **District Plan**
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1) Northland Regional Council (NRC) welcomes the opportunity to submit on the Plan change. This feedback is made in the interests of sustainable management of natural and physical resources within the Whangarei District and the Northland region. The submission has been drafted and lodged by staff under delegated authority.

2) Plan Change 1 has been reviewed against the following overriding principles:
   - The need for district plans to assist district councils to carry out their functions to achieve the purpose of the Resource Management Act 1991 (RMA), and
   - The need for district plans to 'give effect to' national and regional policy statements and to not be inconsistent with regional plans, and
   - NRC's statutory obligations, roles and functions under the RMA as well as other Acts, including the Local Government Act 2002.

Our Submission

General

1. The intent of Plan Change 1 and the incorporation of the flood and coastal hazard mapping as relevant to the Whangarei district is supported. Including these hazard maps provides certainty for plan users and the public generally on areas potentially at risk from these natural hazards – it is also consistent with direction in Method 7.1.7 of the Regional Policy Statement.
2. NRC has invested in the development of a range of natural hazards assessments over time. This information is in a continual process of improvement as the science and available data improves, and NRC gradually updates the assessments in a systematic way. In recent years hazard assessment updates have included:
   - Comprehensive regional LiDAR digital topography
   - Updated and new coastal erosion assessments for a total of 41 sites across the region
   - Updated coastal inundation mapping across the entire coastline, including bathtub modelling of the entire open coast and three hydrodynamic models for harbours

- A range of updates and improvements in hydraulic flood models for Priority Rivers catchment
- A region-wide 'rain-on-grid' flood model across catchments not adequately covered by Priority Rivers models (to replace the previous 'flood susceptible areas' mapping).

Hazard maps and background information have been made publicly available on the NRC.

3. It should be noted that the mapping undertaken by NRC is not designed to act as a detailed property specific flood or coastal hazard risk assessment. The maps are instead designed to identify potential risks that act as a trigger for site specific assessment of the flood or coastal hazard risk by qualified experts to ensure development proposals adequately identify and manage risks.
4. Our submission is focused on the coastal and river flood hazards.

Relief sought:

- Support Plan Change 1 and the adoption of a risk-based approach to managing natural hazards
- Support the inclusion of coastal and flood hazard maps and associated district plan provisions subject to more detailed relief sought below.

Detailed submission points:

Mapping:

5. Including coastal and river hazard maps in the district plan is supported as this provides a greater degree of certainty for plan users and landowners on the areas potentially at risk from these hazards. Including maps is considered an efficient and effective resource management approach given:
    - It provides certainty as to where risk identification and assessment at the property scale is required to support subdivision, use and development.
    - It avoids the need for all consent applicants to provide a risk assessment with every application to identify flood or coastal hazard risk and associated costs.
    - It is consistent with the requirement in Method 7.1.7 of the Regionally Policy Statement (RPS) which requires district councils to incorporate flood and coastal hazard maps in district plans – noting the appropriateness of the RPS provisions have been tested through the Schedule 1 RMA process.

Relief sought:

- Retain the coastal and flood hazard maps as notified, or
- Only consider amendment to the notified coastal and flood hazard maps where robust evidence is provided by qualified professionals that justifies a change to the maps for district plan purposes. We note changes to the maps in the district plan will create discrepancies between the district plan and NRC flood and coastal hazard mapping – this could cause issues when this information is added to property / land information memoranda.

Objectives

6. The objectives are generally sound and align with both the RPS and NZCPS. They are supported subject to the amendments recommended below:

6.1. Objective NH-O3 states "In existing developed areas, build resilience to potential impacts from natural hazards and avoid locating vulnerable activities in areas of high hazard risk". This is supported in part, but amendments are recommended so that it seeks to reduce risk as well as building resilience. This is because land use change in existing developed areas provides an opportunity to ensure re-development / land use becomes less vulnerable to risk. Also, building resilience could be seen to place emphasis on hard protection / defences as opposed to reducing risk through land use change or other mitigations. This would be more consistent with Policy 7.1.4 of the RPS which refers to reducing risk and providing for lor low or no risk activities. It would also align better with policies NH-P4 (risk reduction) and NH-P10 which seeks to reduce vulnerability.

6.2. NH-O3 also seems somewhat at odds with direction in policies NH-P10 and NH-P14. NH-P10(3) includes: "*…by avoiding intensification of existing vulnerable activities on sites subject to flooding in a 100 year flood event* [emphasis added]; *and encouraging the re-location of vulnerable activities to locations outside of areas subject to flooding in 10 and 100 year flood events."* A similar direction is included in NH-P14(2) "*Managing the intensification of existing development, in particular residential and other vulnerable activities, within areas at risk from coastal hazards*" [emphasis added]. Both policies seem to direct vulnerable activities away from hazard areas, not just areas of 'high hazard risk'.

6.3. The preamble to the new natural hazards chapter identifies 'High-risk natural hazards' as CEHZ0, CEHZ1, CFHZ0, CFHZ1 and 10-year flood areas – whereas objectives and policies refer to high hazard risk. We note neither term is defined – given the emphasis in Plan Change on manging vulnerable activity in 'high risk' areas it is recommended either the term be defined and used consistently or the relevant objectives, policies and rules refer specifically to the areas deemed 'high risk'.

6.4. The definition of vulnerable activity does not include childcare centres (although this may be included in care centres) or schools which seems to be a gap.

Relief sought:

i. Amend NH-O3 as set out below (or words to similar effect):

In existing developed areas, reduce vulnerability and build resilience to potential impacts from natural hazards and avoid locating vulnerable activities in high-risk natural hazard areas ~~of high hazard risk~~ or intensifying existing vulnerable activities in areas subject to hazard risk.

ii. Add a definition of 'High-risk natural hazard areas' into the definitions chapter as outlined in the preamble to the natural hazards chapter or include specific reference to the relevant high-risk areas in the relevant objectives and policies as per below:

Coastal Erosion Hazard Areas 0 and 1 (CEHZ0 and CEHZ1)
Coastal Flood Hazard Areas 0 and 1 (CFHZ0 and CFHZ1)
High-risk Flood Hazard (1 in 10-year flood areas)
Mining Subsidence Hazard Area 1

iii. Amend the definition of Vulnerable Activity to include schools and (if not already covered) childcare centres.

Policies

7. The policies of the Plan Change appear sound and aligned with direction in the RPS and NZCPS. The policies are supported subject to specific recommendations below:

7.1. Policy NH-P3 states '*A higher level of scrutiny and site assessment by a suitably qualified and experienced person is required where activities and development are proposed to be located on land subject to high risk natural hazards*.' [emphasis added]. As noted above this lacks clarity as no definition of 'high risk natural hazards' is included.

7.2. NH-P4 – Risk Reduction: as above, either define high risk natural hazards or refer specifically to the hazard layers of concern in Clause 1 of this policy.

7.3. Recommend including reference to at least 100 year timeframe in Policy NH-P5 – Climate Change.

7.4. Policy NH-P8 (Adaptive planning) could be expanded so that it includes scope to ensure development and consent decisions do not unduly constrain future adaptation options.

7.5. Flood policy NH-P9 – New Subdivision, Land Use and Development should include reference to assessment of flood risk to vehicle access.

7.6. Policy NH-P13 New Subdivision, Land Use and Development should include a requirement to assess greenfield new greenfield subdivision, land use and development against latest government guidance and sea level rise scenarios. For example, the Ministry for the Environment Interim guidance on the use of new sea-level rise projections released in August 2022[1] which includes recommendations on 'stress testing' greenfield subdivision and development out to 2130 using 1.7m rise from mean sea level and allowing for vertical land movement. It is also unclear why the finished floor level requirements are not included in this policy (but are set out in policy NH-P14).

Relief sought: (or words to similar effect)

i. Either add a definition of 'high-risk natural hazard areas' or amend Policy NH-P3 and NH-P4 so they include reference to specific hazard areas deemed high risk.

ii. Amend Policy NH-P8 (Adaptive planning) as set out below: *To support an adaptive planning approach to managing the risks from natural hazards, by ensuring that capability for climate change adaptation is considered at the resource consenting stage and development does not restrict future adaptation options.*

iii. Amend Policy NH-P5 – Climate Change: *To ensure that the potential effects, including long-term effects of climate change over at least 100 years, including sea level rise, river flooding, drought and others, are considered when assessing natural hazard risks.*

iv. Amend Policy NH-P9 – New Subdivision, Land Use and Development to add another clause:
5. Ensuring adequate vehicular access is available to serve development.

v. Amend Policy NH-P13 – New Subdivision, Land Use and Development to add:
To ensure that the location and design of new greenfield subdivision, land use and development within coastal hazard areas does not increase the risk of adverse effects from coastal hazards on people, property and the environment, and takes into account the potential long term effects of climate change on greenfield subdivision and land use change in areas potentially affected by a high projection scenario by

1) Requiring subdivision plans to identify and locate building platforms, access and services outside of coastal hazard areas.

2) *Limiting new uses and development within CEHA0, CEHA1, CFHA0 and CFHA1.*

3) Requiring appropriate finished floor levels.

[1] Ministry for the Environment. 2022. Interim guidance on the use of new sea-level rise projections. Wellington: Ministry for the Environment. https://environment.govt.nz/assets/publications/Files/Interim-guidance-on-the-use-of-new-sea-level-rise-projections-August-2022.pdf

4) *Assessing new development against the latest government guidance on sea level rise projections.*

vi. Retain policies NH-P16 NHP19 relating to natural defences and hard protection structures.

Flood hazard Rules

8. The flood hazard rules seem generally well aligned with objectives and policies and the direction in the RPS and are supported subject to specific recommendations below.

8.1. RPS Policy 7.1.2(a) requires that hazardous substances should not be inundated during a 100year flood event. It is understood that hazardous substances have been addressed through Plan Change 91. Pending the outcome of PC91, it is recommended that WDC review the need for rules to manage hazardous substances in Plan Change 1, taking into account the effectiveness of other mechanisms to manage hazard risks (such as HAZNO and Health and Safety legislation).

8.2. The matters of discretion for Rule NH-R11 should include earthworks associated with the activity on the basis that earthworks can exacerbate hazards or divert flood flows onto other sites.

8.3. Rule NH-R6 would allow a change in use to accommodate vulnerable activity in 100year flood areas as a permitted activity. This seems at odds with policy direction in NH-P10 which seeks to avoid intensification of existing vulnerable activities on sites subject to flooding in a 100year flood event and to and encourage the re-location of vulnerable activities to locations outside of areas subject to flooding in 10 and 100 year flood events. It could also be seen to be allowing an increase in exposure to risk rather than minimising risk / reducing vulnerability as sought in RPS Policy 7.1.1(b) and Policy 7.1.4(b).

8.4. The information requirements in NH-REQ1 could be improved. Below are some observations and recommendations to note.

i. There is inconsistency between the flood hazard information requirements and the coastal hazard requirements.

ii. No mention is made of climate change impacts including sea level rise where the receiving environment is tidal, or increased rainfall intensity.

iii. There is no clear distinction between an assessment of flooding pre- or post-development.

iv. There is no direct requirement to assess the sensitivity of development to flood hazards, an important consideration in determining risk.

v. The arrangement of the information requirements does not always follow a logical order.

vi. We recommend that the information requirements include a requirement to assess risk over a 100 year period, and in alignment with relevant government guidance (especially where sea level rise plays a factor in increasing risk over time)

vii. We recommend updating the information requirements to be more consistent with the coastal hazards requirements, to include an assessment of pre- and post- development flooding, to include an assessment of the sensitivity of development to hazards. An example of a revised information requirement is provided.

Relief sought: (or words to similar effect)

i. Pending the outcome of PC91, it is recommended that WDC review the need for rules to manage hazardous substances in Plan Change 1, taking into account the effectiveness of other mechanisms to manage hazard risks (such as HAZNO and Health and Safety legislation).

ii. Amend rule NH-R6(1)(a) so it refers to 100-year flood areas and does not permit a change in use to a vulnerable activity within 100year flood areas. Alternatively, require buildings in 100year flood areas that will accommodate vulnerable activity to achieve a 500mm minimum freeboard above the 100year flood event and provision for safe access (as applied in NH-R10(1)) as a condition of the permitted activity rule.

iii. Amend NH-REQ1 Information requirement – flood hazard as set out in **Attachment 1.**

Subdivision

9. The subdivision provisions appear sound and well aligned with RPS direction. They are supported subject to specific comments below.

9.1. The requirement that building platforms are located outside CEHA0, CEHA1, CEHA2, CFHA0, CFHA1 or CFHA2 for controlled activity subdivision in Rule SUB-R2D(2) is supported. Rule SUB-R2D appears to apply non-complying activity status where building platforms are within high-risk coastal hazard areas – if so this is supported on the basis this is an appropriate risk management response that aligns with RPS direction in Policy 7.1.3. It is however unclear what activity status applies when the conditions for discretionary activity status are not met.

9.2. The finished floor level requirements in SUB-R2D discretionary rule are also supported despite these being different to those set in RPS Method 7.1.7(5) – this method sets <u>minimum</u> floor levels relative to One Tree Point datum. It is understood that the finished floor level requirements for habitable buildings (500mm above the maximum water level in a 1% AEP flood event plus 1.2m sea level rise) would exceed those set in the RPS and are therefore more stringent.

9.3. Rule SUB-R2F seems to provide for subdivision and building platforms with High-risk Flood Hazard areas (1 in 10-year flood areas) as a restricted discretionary activity. While the requirement to ensure building platforms will not be inundated in a 100year flood event is aligned with the RPS direction, it is recommended that subdivision resulting in building platforms within a 10year flood areas should be a non-complying activity. This would be consistent with the approach in Rule SUB-R2D which applies non-complying activity status where building platforms are located within CFHA0, CFHA1, CEHA0 or CHHA1 (high-risk areas). While RPS policy direction does not explicitly require this, allowing building platforms to be created within 10year flood hazard areas as a restricted discretionary activity (even if it can be demonstrated that building platforms will not be inundated in a 100 year event) is not aligned with risk reduction intent of Plan Change 1 or the RPS (noting that these building platforms may accommodate vulnerable activities in the future).

<u>Relief sought</u>: (or words to similar effect)

i. Support Rule SUB-R2D but clarify the activity status where the conditions of the discretionary rule are not met (i.e. a non-complying activity).

ii. Consider amending Rule SUB-R2F so it applies a more stringent activity status for subdivisions that create building platforms in 10year flood areas / high-risk natural hazard areas

iii. Amend SUB-R2F(1)(a) so it is clearer: *All proposed sites are capable of containing a complying 100m² building platform that will not be inundated <u>or subject to material damage</u> in a 100-year flood event ~~or subject to material damage~~;*

Coastal hazard Rules

10. The risk based approach in coastal hazard rules are supported subject to specific recommendations below.

10.1. NRC has not undertaken a comparison between the coastal environment overlay in the district plan and the extent of coastal hazard mapping, but it is understood that some areas of coastal inundation extend beyond the coastal environment overlay in the district plan (e.g. CFHA2). It is therefore recommended that Whangarei District Council ensure that land use rules related to coastal hazards also apply beyond the coastal environment to ensure hazards are appropriately managed.

10.2. The rationale for not including rules for the CEHA3 and CFHA3 areas is understood, given they identify inundation and erosion risks in a 1-in-100-year storm event, with a sea-level rise scenario of 1.5m by 2130 (representing rapid sea level rise under a high-emissions scenario where more rapid rates of sea level rise occur due to dynamic ice sheet instabilities).

10.3. The finished floor level requirements in Coastal Hazard rules are supported – this on the basis that the finished floor level requirements in Plan change 1 are understood to be more stringent than the floor levels set in the RPS (the RPS levels are based on One Tree Point Chart datum and were set prior to LiDAR and coastal flood hazard mapping).

10.4. The default to non-complying activity status in CH-R7 and CH-R8 is supported. Rule CH-R15 is also supported as new built development in CEHA0 should be subject to the most stringent stress tests given the obvious risk and non-complying activity is the most appropriate activity status in these cases.

10.5. Information requirements in CH-REQ1 could be improved. Some observations are made below.

i. There should be more consistency between CH-REQ1 and NH-REQ1.

ii. There is no direct requirement to assess the sensitivity of development to flood hazards, an important consideration in determining risk.

iii. We recommend that the information requirements include a requirement to assess risk over a 100 year period, and in alignment with relevant government guidance including relative sea level rise and vertical land movement. CH-REQ1 does not require an assessment of vertical land movement – nor was it factored into the coastal hazard mapping by NRC. Recognition of vertical land movement is recommended in the August 2022 guidance from the Ministry for the Environment and may be quite material in some cases.

iv. We recommend including a requirement to assess risk of hazardous substances being inundated.

v. Application of CH-REQ1 should not be limited to coastal hazard land use rules and should also be applied to subdivision – an alternative could be to use the same language as NH-REQ1 – i.e *For all sites subject to, or potentially subject to coastal hazard(s), the applicant shall…*

Relief sought: (or words to similar effect)

i. Ensure coastal hazard land use rules apply to all land within mapped coastal hazard areas (except CHEA3 and CHFA3), not just land in the coastal environment overlay.

ii. Retain the finished floor levels as set out in coastal hazard land use rules.

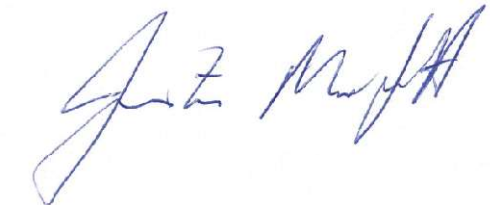
iii. Amend CH-REQ1 as set out in **Appendix 2**.

NRC wish to be heard in support of this submission.

If others make a similar submission, NRC will consider presenting a joint case with them at a Hearing.

NRC could not gain an advantage in trade competition through this submission.

Signed:



Justin Murfitt - Acting Planning & Policy Manager

Dated: 27 July 2023

Appendix 1 – recommended text for NH-REQ1

1. For all sites subject to, or potentially subject to flood hazard(s), the applicant shall provide a site suitability report prepared by a suitably qualified and experienced person.
2. All reports required under NH-REQ1.1 shall have been be prepared within the last 12 months and include a level of information that is proportionate to the hazard risk and the nature of the hazard. Methodologies used should also be appropriate to the scale, nature and location of the development and reflective of the scale of the activity proposed.
3. Reports shall include (but are not limited to):
    a. Review of flood hazard data available, e.g. from Council(s), survey data including at a minimum: most recent relevant flood hazard model results including flood extents, depths and velocities; recent site survey or LiDAR data.
    b. Identification and assessment of flood hazards associated with both the proposed development and neighbouring properties/wider area including:
        i. Determination of pre- and post-development flood extent and level in a 1% Annual Exceedance Probability (AEP) event
        ii. Use of an appropriate flood modelling methodology (for example hydraulic modelling software for larger developments), and
        iii. Consideration of climate change impacts including:
            1. increased rainfall intensity over a 100yr timeframe (using e.g. HIRDS4 data for RCP8.5H+)
            2. where receiving waters are tidally influenced relative sea level rise including vertical land movement over a 100yr timeframe (e.g. using NZSeaRise data)
    c. Assessment of the post-development flood hazard associated with both the proposed development and neighbouring properties/wider area, considering (where applicable):
        i. Upstream and downstream flooding,
        ii. Peak flow and velocities, Flood extents, depths and elevations,
        iii. the proportion of floodplain volume that is displaced, the direct impact on flood hazard in the vicinity, and the potential for cumulative reduction in floodplain volume
        iv. Identification of overland flow paths, how the proposed development will alter or divert surface stormwater flows, and any increase in risk associated with changes in overland flowpaths
        v. Assessment of the impacts of flooding on accessibility/escape during inundation
    d. Assessment of the effects and potential impacts of post-development flood hazard considering:
        i. frequency and scale of the hazard
        ii. the activity being undertaken and its sensitivity to flood hazard events
        iii. the potential consequences of a hazard event on the development (e.g. material damage) and wider public safety
        iv. the potential for hazardous substances to be impacted by flooding
        v. whether the proposal exacerbates existing flood hazards
    e. Assessment of the effects and potential impacts flooding (described in 3.d above) will have on the development, such as risk to life and property

f. Description and assessment of any proposed mitigation measures taken, including how buildings and structures are designed to mitigate the effects of the hazards, e.g. minimum floor levels.
g. Assessment of the effects and potential impacts flooding (described in 3.d above) will have on neighbouring properties and the wider area, such as risk to life and property, and details of mitigating measures taken to minimise/eliminate effect.
h. Assessment of residual risks and effects

Appendix 2 - recommended text for CH-REQ1

1. For all sites subject to, or potentially subject to coastal hazard(s), the applicant shall provide a site suitability report prepared by a suitably qualified and experienced person.
2. All reports required under CH-REQ1.1 shall have been be prepared within the last 12 months and include a level of information that is proportionate to the hazard risk and the nature of the hazard. Methodologies used should also be appropriate to the scale, nature and location of the development and reflective of the scale of the activity proposed.
3. Reports shall include (but are not limited to):
    a. Review of coastal hazard data available, e.g. from Council(s), survey data including at a minimum: most recent relevant coastal hazard model results including inundation extents and depths; geotechnical reports; recent site survey, shoreline profile or LiDAR data.
    b. Identification and assessment of projected coastal hazards over a 100 year timeframe, considering the effects of climate change and sea level rise over at least a 100-year timeframe, including the long term effects under a high projection sea level rise and vertical land movement, including:
        i. Coastal inundation and storm surge (including wave run-up)
        ii. Coastal erosion
        iii. Tsunami hazards
    c. Assessment of the effects and potential impacts of relevant hazards considering:
        i. the type, frequency/probability and scale of the hazard, and whether impacts on the proposal will be temporary or permanent
        ii. the activity being undertaken and its sensitivity to coastal hazard events
        iii. the potential consequences of a hazard event on the development (e.g. material damage) and wider public safety
        iv. the potential for hazardous substances to be impacted by flooding
        v. whether the proposal exacerbates existing hazards
    d. Description and assessment of any proposed mitigation measures
        i. how buildings and structures are designed to mitigate the effects of the hazards
        ii. the ability for structures or buildings to be relocated in the case of rapid coastal erosion or inundation
        iii. whether soft, nature-based or non-structural solutions can mitigate the effect of the hazard, rather than hard engineering solutions
    e. Assessment of residual risks and effects