Further Submissions on Plan Change 8 (Natural Hazards)

ROTORUA LAKES COUNCIL
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24 October 2025

Rotorua Lakes Council
Private Bag 3029
Rotorua 3046

Email: info@rotorualc.nz

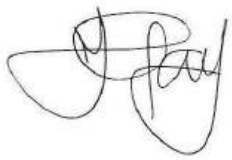
Dear Sir/Madam

Waikato Regional Council Further Submission to Proposed Plan Change 8 – Natural Hazards to the Rotorua District Plan

Thank you for the opportunity to make a further submission on the Proposed Plan Change 8 – Natural Hazards to the Rotorua District Plan. Please find attached the Waikato Regional Council's further submission regarding this plan change. This submission was formally endorsed under delegated authority on 24 October 2025. We look forward to being involved in further discussion on this subject**.**

Should you have any queries regarding the content of this document please contact Dawn Pritchard, Senior Policy Advisor, Policy Implementation directly on (07) 949 5153 or by email Dawn.Pritchard@waikatoregion.govt.nz.

Regards,



Tracey May
Director Science, Policy and Information

Further Submission from Waikato Regional Council on Proposed Plan Change 8 – Natural Hazards to the Rotorua District Plan

24 October 2025

Introduction

1. Waikato Regional Council (WRC) appreciates the opportunity to make a further submission to Proposed Plan Change 8 – Natural Hazards. WRC's primary interest is in relation to the Waikato Regional Policy Statement (WRPS). District Plans, including plan changes such as this one, are required to give effect to the RPS (RMA s75(3)(c)).

2. WRC lodged a submission on PC8 (submission 15) on 26 August 2025. This further submission responds to matters raised by other submitters to uphold important aspects of the WRPS.

3. We respond to specific submission points and submitters by topic in the table below.

Submitter details

Waikato Regional Council
Contact person: Dawn Pritchard (Policy Implementation)
[redacted]

Post: Private Bag 3038
Waikato Mail Centre
Hamilton 3240

I could not gain an advantage in trade competition through this submission.
I am not directly affected by an effect of the subject matter of the submission that:
(a) does not adversely affect the environment; and
(b) does not relate to trade competition or the effects of trade competition.

4. Table of further submission points on Proposed Plan Change 8 – Natural Hazards

Submission point	Provision	Submitter	Support/Oppose	Reasons	Decision requested
11	d) Strategic Direction SDNH-P1	Natural Hazards Commission (NHC)	Support in part	We support the NHC's submission in part and recommend strengthening policy wording that explicitly supports short, medium and long-term adaptation planning and requires assessment of climate change impacts. This would better align with national direction and reflect best practice in climate risk management.	Allow submission in part for: SDNH-P1 be broadened to support short, medium-and long-term adaptation planning.
4	d) Strategic Direction Definition acceptable risk	Newvid Holdings Trust	Support in part	We recommend refining the definition of *"acceptable risk"* to improve clarity and practical application. Replacing *"low"* with <u>"minor"</u> better communicates the nature of risk and aligns with planning language focused on consequence rather than probability.	Allow submission in part to: Amend definition for acceptable risk to *"risk that is ~~low~~ <u>minor</u>, and the costs of further reducing risk are largely disproportionate to the benefits gained"*
2	e) Flooding Development in Flood Prone Areas Section 32	Ngāti Tahu-Ngāti Whaoa Runanga Trust	Oppose	We recognise the concern regarding flood risk in rural areas, however, we maintain that PC8 is not the appropriate mechanism to resolve regional scale modelling gaps. Broader hazard assessments or future policy updates would provide a more appropriate avenue.	Disallow the need to evaluate the risk of fault rupture south of the Rotorua city.
11	e) Flooding Development in Floodprone Areas NH-PA	Kāinga Ora Homes	Support in part	We support Kāinga Ora's intent to clarify risk parameters. However, we prefer a consistent, risk-informed approach that avoids threshold-based distinctions. Requiring risk assessments for all developments regardless of flood depth ensures decision reflects actual risk and supports alignment with the WRPS and the anticipated National Policy Statement for Natural Hazards.	Allow in part to: Amend NH-PA to require risk assessments for all new developments, regardless of flood depth.

6, 20, 27	e) Flooding Definition overland flowpaths, Policies NH-PB, NH-R5, EW-S1(1).	Natural Hazards Commission	Support	We support the NHC's submission points regarding overland flowpaths. Their emphasis on clear definition, legal protection and restricted development aligns with our position that overland flowpaths pose significant risk due to flood depth and velocity. Maintaining their function is critical to reducing risk and must be retained.	Retain the definition of overland flowpaths and retain policies NH-PB, NH-R5 and EW-S1(1)g
5	g) Fault Rupture Definition Fault Rupture Hazard Area	Bay of Plenty Regional Council	Support in part	We agree with the submitter that the definition for *Fault Rupture Hazard Area* be amended to include the Fault Avoidance Zone (and potentially Fault Awareness Areas) as per the New Zealand Active Faults Database for the purpose of clarity.	Amend the definition of Fault Rupture Hazard Area as requested.
1	g) Fault Rupture Definition Fault Rupture Hazard Area, NH-PAA, NH-R1 to NH-R3, fault mapping	Simon and Megumi Ward	Oppose	We oppose the submitter's request to withdraw fault rupture provisions. WRC considers these necessary to give effect to the WRPS which requires identification and management of natural hazards including fault rupture risk. Waiting for further regional or national directions risks delaying necessary protections for communities exposed to fault rupture hazards.	Retain the inclusion of fault rupture hazard provisions and definitions.
20	j) Other Matters of discretion and control	Bay of Plenty Regional Council (BOPRC)	Support	WRC's submission also sought clearer terminology and alignment with regional and national policy frameworks. We therefore agree with the submitter to amend the matters of discretion to include the option to mitigate.	Insert *"or mitigated"* in NH-R1(2)(a), NH-R3(1)(a) and NH-R6(2)(a) as requested.
20	j) Other Matters of discretion and control	Bay of Plenty Regional Council	Support	We support BOPRC's submission and share concerns regarding the omission of "mitigate" from the matters of discretion. Including "mitigated" ensures alignment with the full risk management hierarchy under the Resource Management Act.	Amend the matters of discretion to state 'risks are avoided, remedied or <u>mitigated</u> and…'.

32	j) Other Matters of discretion and control	Bay of Plenty Regional Council	Support	We support BOPRC's submission and share their concerns regarding the limited scope of NH-R4. Removing flood risk assessment requirements risks overlooking key site design factors such as land modification, access and infrastructure. We also support a consistent and comprehensive approach across all zones. This aligns with WRPS and anticipated national direction and strengthens natural hazard management.	Amend PC8 to require flood risk assessments for all new developments, not just buildings and across all relevant zones.

5.0 FURTHER INFORMATION AND HEARINGS

5.1 WRC still **wishes to be heard** at the hearings for Proposed Plan Change 8 – Natural Hazards in support of this submission and is prepared to consider a joint submission with others making a similar submission.

5.2 WRC **could not** gain an advantage in trade competition through this submission.

To the Planning Team, Rotorua Lakes Council

Name of submitter: Sarah-Jayne McCurrach

Organisation: Natural Hazards Commission Toka Tū Ake

Email: resilience@naturalhazards.govt.nz

Date: 31 October 2025

Thank you for the opportunity to submit further on Plan Change 8 – Natural Hazards (PC8).

The Natural Hazards Commission Toka Tū Ake (NHC) is a Crown Entity responsible for providing residential property owners, with a current contract of fire insurance for their residential property, with insurance against damage from natural hazards covered by the Natural Hazards Insurance Act 2023 (NHI Act).

Our focus is on ensuring long-term resilience by encouraging building in areas that will remain safe and sustainable for future generations. Developing in high-risk natural hazard zones can expose future owners to complex and potentially hazardous situations. It can also compromise the longevity, resilience and safety of these developments.

NHC encourages territorial authorities to use risk-based frameworks in district plans to reduce risk and increase resilience to natural hazards. In alignment with our original submission, we support some submissions on PC8 in this regard, and we have identified some submissions that we oppose.

We endorse submissions that support a risk-based approach to land use planning. However, we are seeking that submissions are disallowed where they are requesting changes to active fault provisions, on the basis of uncertainty. Natural hazard data will always have uncertainties; however, these can be managed using the best available information, and by applying the precautionary principle, particularly where confidence in the active fault information is high.

The precautionary principle states that a lack of full scientific certainty should not be used as a reason to delay measures aimed at reducing risk. Further, the proposed National Policy Statement for Natural Hazards (NPS-NH) includes two policies that support this approach – Policy 5, that local authorities must use best available information; and Policy 6, that local authorities must continue with risk assessment processes where information is uncertain or incomplete. While the NPS-NH is yet to be finalised, it signals a clear policy intent that uncertainty should be managed, rather than not using information because of it.

Active fault mapping conducted in 2025 by GNS Science (now Earth Sciences New Zealand – ESNZ) has informed the provisions in PC8. Their report states that it is suitable to be used at the property level and for planners, policymakers, and landowners to make decisions. ESNZ is a reputable research and science agency and their active fault mapping for Rotorua went through their standard internal peer review process. In our opinion, the assurance within the ESNZ report and their reputation provide a high level of confidence in the information. We are also satisfied that uncertainties are being managed in policies, rules, and guidance by using the best available information and the precautionary principle. We therefore continue to support the inclusion of the active fault provisions.

Our specific comments on these submissions can be found in the attached ‘Further Submission Table’.

We welcome the opportunity to discuss our further submission with council officers if this would be helpful. Please feel free to contact us at any time.

Yours sincerely,

Sarah-Jayne McCurrach

Head of Risk Reduction, NHC

Form 6, Clause 8 of Schedule 1, Resource Management Act 1991

Natural Hazards Commission Toka Tū Ake Further Submission on Plan Change 8 – Natural Hazards

To:	Rotorua Lakes Council
	Via Council submission email: policy.planning@rotorualc.nz
Submitter:	Natural Hazards Commission Toka Tū Ake (NHC)

1. **This is a further submission on the following:**

   The Plan Change 8 – Natural Hazards notified on 25/07/2025.

2. **NHC is an organisation who has an interest in the proposal that is greater than the interest the general public has.**

   As NHC is a 'first loss' insurer for residential damage resulting from natural hazards listed in the NHI Act. this means NHC carries financial risk on behalf of the Crown. Therefore, NHC has a strong interest in reducing risk from, and building resilience to, natural hazards across New Zealand

3. **NHC supports, is neutral, or opposes the submissions of original submitters to the extent outlined in this submission.**

4. **NHC does not wish to be heard in support of this further submission.**

Date:	31/10/2025
Address for service:	Natural Hazards Commission Toka Tū Ake PO Box 790, Wellington 6140
Contact person:	Sarah-Jayne McCurrach, Head of Risk Reduction
Email:	resilience@naturalhazards.govt.nz

Further Submissions Table

Original Submitter	Submission Number	Description	Support/ Oppose	Reasoning	Requested Action
Waikato Regional Council (WRC)	15.2	WRC supports removing hazard mapping from the District Plan as this enables regular updates when new information becomes available. To improve transparency and certainty, the District Plan should clearly state that any primary hazard zones identified through updated mapping will be included or explicitly referenced.	**Oppose**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	We seek that this submission be disallowed.
Waikato Regional Council	15.3	WRC commends the inclusion of new definitions and objectives that reflect a more risk-informed and adaptive planning framework. It supports a move towards a threshold-based approach to hazard risk, consistent with the WRPS. WRC recommends replacing the term 'low' with 'minor' [in the definition for acceptable risk] as 'minor risk' better reflects the narrative describing the	**Support**	Effective provisions to reduce risk must have clear terms and definitions to support the consistent application of rules and policies. This submission offers a change that may be useful for supporting the clear interpretation and application of ‘acceptable risk’.	We seek that this submission be allowed.

		consequence of an environmental effect. In contrast 'low risk' could be associated with probability of an occurrence.			
Waikato Regional Council	15.4	WRC supports the proposed definition of Fault Rupture Hazard Areas.	**Support**	The definition for Fault Rupture Hazard Areas will support clear and consistent application of rules and policy. The definition provided is also consistent with guidelines from the Ministry for the Environment (MfE)[1]. [1]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	We seek that this submission be allowed.
Waikato Regional Council	15.5	WRC supports the proposed definition of overland flowpath.	**Support**	The definition for overland flowpath will support clear and consistent application of rules and policies. Overland flowpaths represent areas of higher flood velocity and depths. A clear definition can support rules and policies targeted towards overland flowpaths, which can support risk reduction.	We seek that this submission be allowed.
Waikato Regional Council	15.6	WRC supports the proposed definition of wildfire.	**Support**	The definition for wildfire will support clear and consistent application of rules and policies. Including a definition for wildfire is important for ensuring that all natural hazards, including emerging hazards, can have provisions to support risk reduction.	We seek that this submission be allowed.
Waikato Regional Council	15.7	WRC supports the amended objective SDNH-O1, stating it aligns with the objective HAZ-O1 in the Waikato Regional Policy Statement.	**Support**	We support including SDNH-O1 in the district plan as it clearly outlines the Council's intention for ensuring risks are acceptable. Indicating when a risk is acceptable can support the consistent application of rules and policies and support risk reduction.	We seek that this submission be allowed.

Waikato Regional Council	15.8	WRC supports the emphasis on resilience in SDNH-O2 but recommend that the objective also reference an adaptive approach, which enables flexible and responsive planning to address evolving climate conditions and emerging risks. This approach is aligned with local government authorities' requirement to 'have regard' to the National Adaptation Plan when preparing plans under the RMA.	**Support**	Expanding SDNH-O2 to include a reference to adaptive approaches is a useful way to manage many changes associated with climate change and emerging risks. Adaptive approaches are also useful for managing uncertainties in natural hazard data and information (including future climate change scenarios). It is also important that objectives are consistent with other planning and policy instruments including the National Adaptation Plan.	We seek that this submission be allowed.
Waikato Regional Council	15.9	WRC supports the intent of SDNH-P1 to promote risk informed planning using the best available information. However, the revised policy omits any reference to adapting to changing risk. WRC recommends reinstating and strengthening references to adaptation planning, particularly in relation to changing climate risk. To achieve this, we [WRC] suggest: a) adding a clause that supports short-, medium- and long-term adaptation planning approaches for managing changing climate risk; b) clarifying the scope of "national and regional guidance" to confirm whether it includes non-statutory sources, such as the forthcoming WRC Climate Change Adaptation Guidelines; and c) strengthening Clause 3 by replacing "take into account" with a requirement to assess climate change impacts ensuring a more robust and accountable planning process.	**Support**	The proposed changes from Waikato Regional Council will strengthen SDNH-P1 to ensure that climate change is being considered in a way that can lead to positive actions that can reduce impacts to people and property.	We seek that this submission be allowed.

		WRC considers these changes would better align with the National Adaptation Plan and WRPS policy HAZ-M3, while reflecting best practice in climate risk management. They would also treat adaptation as a proactive and structured process, rather than a passive consideration.			
Waikato Regional Council	15.10	WRC recommends amending NH-PA to require risk assessments for all new developments regardless of flood depth, to ensure alignment with the WRPS. An amendment will also enable consistency with emerging national direction. While not yet adopted, the National Policy Statement for Natural Hazards (NPS-NH) signals requirement for risk assessments for all consents.	**Support**	Requiring risk assessment for all new developments is an effective way to ensure that only areas with an acceptable level of risk can be developed. The current method of only completing a risk assessment when flood depths reach a certain threshold could oversimplify flood hazard. Flood velocity is an important parameter that can influence impacts to people and property[1]. Therefore, conducting a risk assessment regardless of flood depth is an approach that can support reducing impacts to people and property. We also support ensuring that all provisions are in alignment with other planning and policy documents including the proposed National Policy Statement for Natural Hazards (NPS-NH) and Waikato Regional Policy Statement. [1]Australian Institute for Disaster Resilience, 2014. Australian Disaster Resilience Guideline 7-3: Technical flood risk management guideline: Flood hazard.	We seek that the submission be allowed.
Waikato Regional Council	15.12	WRC recommends amending Rule NH-R5 and relevant strategic policies to incorporate both flood depth and velocity in the classification of high flood hazard zones. Using only depth-based thresholds oversimplifies flood risk and underestimates danger in areas with fast-moving	**Support**	Flood depth and velocity are the key factors that influence flood vulnerability and subsequent impacts to people and property[1]. Therefore, it is important that both factors are considered as part of NH-R5 to contribute to reducing impacts to people and property.	We seek that this submission be allowed.

		water. Velocity is a critical factor influencing risk to life, property and infrastructure.		[1]Australian Institute for Disaster Resilience, 2014. Australian Disaster Resilience Guideline 7-3: Technical flood risk management guideline: Flood hazard.	
Red Stage Investments	20.1	Red Stag Investments support the proposed strategic direction of PC8, which seeks to embed a risk-based approach to the management of natural hazards. The proposed objective SDNH-O1, "The risks from natural hazards to people, property and the environment associated with land use, subdivision and development are acceptable," moves the plan towards a framework that aligns with national guidance. This approach correctly focuses on the level of risk rather than merely the presence of a hazard.	**Support**	We support a risk-based approach that requires risks to be at an acceptable level. An acceptable level of risk can support reducing the impacts to people and property in future natural hazard events.	We seek that this submission be allowed.
Red Stag Investments	20.2	Red Stag Investments supports the principle of using the "best available information," as promoted in the proposed policy SDNH-P1. This principle is fundamental to sound resource management.	**Support**	Using the principle of 'best available information' is a useful way to manage uncertainties associated with natural hazard data and information. Uncertainties within natural hazard data are common but should not be used to prevent or delay decision-making. A provision to use 'best available information' encourages decision-making and action to reduce impacts to people and property even when there may be limits to the information available. Further, the use of 'best available information' also aligns to the proposed NPS-NH.	We seek that this submission be allowed.
Red Stag Investments	20.3	Red Stag Investments supports the Council's [RLDC] proposal to remove outdated and static fault maps from the District Plan's planning maps and instead refer to an external, live database—the New Zealand Active Faults Database (NZAFD). [Red Stag Investments believe] this is a	**Oppose in part**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be	We seek that this submission be disallowed, or clear processes and provisions are developed to

		pragmatic and efficient mechanism that prevents the District Plan from becoming quickly obsolete as scientific knowledge, data resolution, and mapping techniques evolve. The GNS Science report itself, which supersedes the previous 2010 mapping, is a clear example of how rapidly this information can change. This approach allows for greater flexibility and ensures that decision-making is based on the most current scientific understanding. However, this reliance on an external database makes it critically important that the provisions of the District Plan are sufficiently nuanced to handle instances where the data within that database is acknowledged to be of low confidence or high uncertainty. The plan must contain mechanisms to address such situations fairly and efficiently, a matter which is at the core of this submission.		heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used. We agree that if natural hazard maps are removed from the District Plan there must be robust processes and provisions in place to ensure the hazard maps can still restrict development when required (using a risk-based approach).	facilitate the effective use of hazard maps, if they are to be removed.
Red Stag Investments	20.4	Red Stag Investments opposes the application of the proposed 'Fault Rupture Hazard Areas' to its property at the entrance of the Waipa Valley on the following grounds: • This fault trace affecting the land is officially classified by GNS as having "uncertain" location [in the NZ Active Faults Database] and the methodology used to identify it a desktop assessment using LiDAR—is acknowledged by GNS itself to have significant limitations in environments like the Submitter's site, which is a former	**Oppose**	We oppose changes to Fault Rupture Hazard Areas. The Fault Rupture Hazard Areas have been developed in 2025 by GNS Science[1] in line with guidelines from MfE[2]. We have a high level of confidence in the report as it was completed by a reputable research institute and has been internally peer reviewed. While we acknowledge that there is uncertainty associated with mapping active faults, this should not be used as a reason to change the provisions for Fault Rupture Hazard Areas. The report[1] also specifically states that the	We seek that this submission be disallowed.

		wetland with deep, unconsolidated deposits that conceal any geological features. There is no surface evidence of a fault on the property. ... • The plan proposes to apply a set of certain rules, processes, and costs to mitigate a risk that is based on uncertain information. This approach fails to adequately address the RMA's requirement for a careful evaluation of the appropriateness of provisions where there is uncertain or insufficient information. ...		mapping is appropriate for a range of uses including *"cadastral scales relevant for planners, policymakers and landowners to make decisions about land use..."* (p.6). Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[2]), which would destroy buildings and infrastructure. The provisions for Fault Rupture Hazard Areas in PC8 effectively manage uncertainties in the data and will contribute to reducing impacts to people and property. [1]Morgenstern, R. & Villamor, P., 2025. Active fault mapping and Fault Avoidance Zones for Rotorua Lakes District: An update. GNS Science. [2]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	
Lake Ōkāreka Community Association	21.1	The submitter supports a risk-based approach focused on acceptable risk and resilience.	**Support**	We support a risk-based approach that requires risks to be at an acceptable level. An acceptable level of risk can support reducing the impacts to people and property in future natural hazard events.	We seek that this submission be allowed.
Lake Ōkāreka Community Association (LOCA)	21.3	LOCA strongly supports the principle of removing static hazard maps from the District Plan to allow for the use of best and most up-to-date information, but considers that the proposal for Fault Rupture contradicts this by relying on uncertain data while ignoring more relevant and	**Oppose**	We oppose changes to fault rupture provisions. The Fault Rupture Hazard Areas have been developed in 2025 by GNS Science[1] in line with guidelines from MfE[2]. We have a high level of confidence in the report as it was completed by a reputable research institute	We seek that this submission be disallowed.

		current information. It explains PC8 is proposing to define a "Fault Rupture Hazard Areas" based on the 2025 GNS Science update of the NZ Active Faults Database. A more detailed, site-specific assessment (the Berryman Report) highlights a profound level of uncertainty concluding it is not possible to refine the FAZ at this locality due to historic landscape modification from residential development.		and has been internally peer reviewed. While we acknowledge that there is uncertainty associated with mapping active faults, this should not be used as a reason to change the definition or provisions for Fault Rupture Hazard Areas. Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[2]), which would destroy buildings and infrastructure. The definition and provisions for Fault Rupture Hazard Areas in PC8 effectively manage uncertainties in the data and will contribute to reducing impacts to people and property. We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and	

				developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used. [1]Morgenstern, R. & Villamor, P., 2025. Active fault mapping and Fault Avoidance Zones for Rotorua Lakes District: An update. GNS Science. [2]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	
Lake Ōkāreka Community Association (LOCA)	21.4	LOCA considers it inequitable to impose definitive rules based on uncertain evidence. It does not dispute the location of a fault [with respect to the fault identified over Acacia and Pryce Roads] but states that the fault location and recurrence interval are not confidently established. Landowners are penalised due to a lack of definitive data, not because of a proven, quantified high risk. It considers that the onus is on Council to provide definitive evidence, not the community. LOCA submit that the Fault Rupture Hazard Areas and Rules NH-R1 to NH-R3 are not applied to the newly identified fault at Lake Ōkāreka at this time; and that the area is identified instead as an "Area of Geological Investigation" to allow for a Council-led investigation before any rules are applied. and that the Fault Rupture Hazard Area only be applied if warranted by conclusive scientific findings.	**Oppose**	We oppose changes to fault rupture provisions. The Fault Rupture Hazard Areas have been developed in 2025 by GNS Science[1] in line with guidelines from MfE[2]. We have a high level of confidence in the report as it was completed by a reputable research institute and has been internally peer reviewed. While we acknowledge that there is uncertainty associated with mapping active faults, this should not be used as a reason to change the definition or provisions for Fault Rupture Hazard Areas. Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[2]), which would destroy buildings and infrastructure. The definition and provisions for Fault Rupture Hazard Areas in PC8 effectively manage uncertainties in the	We seek that this submission be disallowed.

				data and will contribute to reducing impacts to people and property. [1]Morgenstern, R. & Villamor, P., 2025. Active fault mapping and Fault Avoidance Zones for Rotorua Lakes District: An update. GNS Science. [2]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	
Lake Ōkāreka Community Association (LOCA)	21.5	LOCA opposes the adoption of flood levels for Lake Ōkāreka from the 2022 BOPRC Rotorua Lakes Design Levels Technical Report as it considers the methodology is technically invalid. It uses a Gumbel statistical analysis based on historical data from before the 2021 outlet upgrade and ignores the new infrastructure's physical capacity. It also fails to incorporate climate change effects, such as increased rainfall intensity. LOCA also notes that any flooding assessment should not be artificially constrained by a discharge of 500L/s because this would fail to account for the reality of how a system would be operated during an extreme flood event - the pipeline has an emergency capacity to pass flows of up to 800L/s and it would be artificial to assume that operators would be constrained by the 500L/s limit. LOCA considers freeboard should only be applied to a robustly calculated flood level and applying it to a flawed level is a meaningless exercise.	**Oppose**	We oppose changes to flood provisions. The flood modelling used to inform flood provisions within PC8 (outlined in the section 32 report) is considered the best available information. Much of the flood modelling has been recently completed by Bay of Plenty Regional Council, accounts for potential changes due to climate change, and considers 1% AEP events, which is becoming standard practice across the country. In our opinion the Rotorua Lakes Design Levels Technical Report 2022[1] is a high-quality report as it has been completed by Bay of Plenty Regional Council and follows established scientific methods[2]. The submitters oppose using data prior to 2021, however, using historical records is a standard method for calculating AEP[2]. The report explicitly states that climate change modelling has been commissioned as part of separate work, and it is clear from the section 32 report that considerations for climate change have been made.	We seek that this submission be disallowed.

				While there are still uncertainties associated with the information (including recent upgrades to the lake outlet systems), the information used can still be classified as 'best available information'. The use of 'best available information' aligns to SDNH-P1 in PC8 and encourages decision-making and action to reduce impacts to people and property even when there may be limits to the information available. Further, the use of 'best available information' aligns to the proposed NPS-NH. [1]Bay of Plenty Regional Council, 2022. Rotorua Lakes Design Levels Technical Report. [2]Australian Institute for Disaster Resilience, 2017. Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia	
Lake Ōkāreka Community Association (LOCA)	21.6	LOCA generally supports the direction of the proposed wildfire provision but seeks clarification that requirements for onsite water storage for firefighting are practical, cost-effective and avoid adverse effects on the lakeshore environment.	**Oppose**	The section 32 report for PC8 outlines the requirements for firefighting and the consequences if the policies are not implemented. These requirements highlight the need for wildfire provisions to be included in the District Plan. Having water for firefighting available onsite can reduce damage to people and property and avoid severe damage to vegetation in event of a wildfire.	We seek that this submission be disallowed.
Lake Ōkāreka Community Association (LOCA)	21.7	LOCA supports the land stability provisions. It supports the removal of static maps and a consistent approach to site specific assessment, aligning with the principle of using best available information.	**Oppose in part**	We support the land stability provisions and aligning to the principle of best available information. However, we oppose removing natural hazard mapping from the District Plan due to	We seek that the part of this submission supporting the removal of static

				concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	maps be disallowed.
Summerset Holdings Group Limited	26.1	The National Policy Statement for Natural Hazards (NPS-NH) is expected to introduce a nationally consistent framework for assessing and managing natural hazard risks, including flooding. Proceeding with PC8 ahead of the NPS-NH risks introducing provisions that may soon be inconsistent with national direction, creating uncertainty for future resource consents and requiring a further plan change to align with the NPS-NH. PC8 be put on hold pending the adoption of the National Policy Statement for Natural Hazards.	**Oppose**	While the proposed NPS-NH creates uncertainty for local authorities, its status should not be used as a reason to delay the plan change. The section 32 report outlines that the policy direction for the NPS-NH is well-aligned to the strategic objectives and policies for PC8. Further, plan changes associated with natural hazards are excluded from the existing ban on plan changes, which recognises the importance of implementing rules and policies that can reduce the impacts from natural hazards to people and property.	We seek that this submission be disallowed.

Summerset Holdings Group Limited	26.2	Summerset supports the intent of NATC-R3 to manage natural hazards and risks. However, they are concerned that the current wording may not adequately account for site-specific constraints and the practical limitations of full avoidance. We [Summerset Holdings Group Limited] request that the rule be amended to allow for a balanced assessment of mitigation measures, recognizing that some residual risk may remain despite best-practice design and engineering. We are also concerned about the proposed inclusion of a new matter of discretion under rule NATC-R3, which relates to "the extent to which natural hazard risks are avoided or remedied, and the worsening of any hazard." Given the site constraints, it may not be possible to fully avoid or mitigate natural hazards, and retaining this matter of discretion could present challenges in obtaining future consents.	**Oppose**	It is important that residual risk is assessed for whether it is acceptable, including any proposed management options. Residual risk is the risk that remains after risk treatment options have been applied. In many cases, despite best practice mitigation measures, the level of residual risk can remain at an unacceptable level. In these cases, development should be avoided to reduce the impact to people and property. Further, the extent to which natural hazard risks are avoided or remedied is an important consideration. This can support ensuring that natural hazard risk is at an acceptable level and reduces impacts to people and property.	We seek that this submission be disallowed.
Rotorua Lakes Council (RLC)	29.1, 29.2, 29.3, 29.4	RLC notes that changes to the Building Act and a new National Environmental Standard have been proposed to enable minor residential units to be constructed without building consent or resource consent, but that the detail of these changes has yet to be confirmed. It considers that there may still be issues to address through the District Plan to ensure that management of natural hazards can continue and is integrated notwithstanding these changes.	**Support**	We support that the rules in PC8 are updated to ensure that they can deliver the best possible outcomes for reducing natural hazard risk to people and property. This is especially the case for a dynamic policy environment where there are new policies that will make additional residential units easier to build.	We seek that this submission be allowed.
Rotorua Lakes Council	29.5	In anticipation of these changes, PC8 proposes a restricted discretionary activity status for new residential units and building additions in geothermal systems where no building consent is sought. This recognised that current	**Support**	We support a restricted discretionary activity status for new residential units and building in geothermal systems. Geothermal activity has the potential to cause negative impacts to people and property. The Natural Hazards	We seek that this submission be allowed.

		management of geothermal hazards in the Rotorua District relies primarily on the building consent process and the performance standard to submit an assessment of geothermal hazards at the time of application for building consent. However, geothermal hazards are not defined as a 'natural hazard' under the Building Act so these processes to manage this natural hazard through the building consent process may no longer be available. With increased certainty about the upcoming changes, there may be opportunities to improve efficiency and more closely align the approach to minor residential units that do not require building consent with the approach to other buildings.		Portal[1] shows several settled EQCover claims (~20) for hydrothermal activity (a type of geothermal activity). Therefore, managing new residential units through land use planning can be an effective way to contribute to reducing the impacts to people and property, especially in the context of new legislation (e.g. small standalone dwellings/granny flats). [1] Natural Hazards Commission. Natural Hazards Portal. Accessed 28 Oct 2025	
Lake Tarawera Ratepayers Association	30.2	The association requests that the Tarawera Catchment is included in any further research proposals regarding fault lines to narrow and refine proposed restrictions but also noted that there had been some refinement already.	**Support**	Natural hazard data and information will always have an element of uncertainty. It is important that all areas in the Rotorua Lakes District are investigated for active faults and provisions are updated as new information is available.	We seek that this submission be allowed.
Lake Tarawera Ratepayers Association	30.3	The association requests that RLC engage directly with BoPRC to update Hydrology Assumptions which appear to be based around historic (higher) lake levels and do not account for the long term decline in lake levels [at Lake Tarawera]. They think this will reduce some barriers for proposed Papakainga housing.	**Support in part**	We support further flood modelling to understand how the lowering of lake levels over time[1] could impact future flood hazard (and reduce existing uncertainties in the 2022 report). However, we oppose any further investigations being used to justify removing flood provisions from PC8. The flood modelling used to inform flood provisions within PC8 (outlined in the section 32 report) is considered best available information. The Rotorua Lakes Design Levels Technical Report 2022[1] acknowledges the lowering of lake levels	We seek that this submission be allowed, provided the current modelling is not removed from PC8.

				at Lake Tarawera but provides no explanation. We acknowledge that this can create uncertainties, however, the information should still be used to set flood provisions within PC8 to reduce the impacts to people and property. This use of best available information is in line with the proposed NPS-NH. [1]Bay of Plenty Regional Council, 2022. Rotorua Lakes Design Levels Technical Report.	
Rotorua Planning Consultants Group	39.2	The submitters oppose the removal of natural hazard maps for the following reasons: • It will not provide for clear and consistent implementation and lacks certainty for homeowners, insurance companies and developers • Process - the maps form part of a plan rule and the maps should go through a robust process and made available to the general public for submissions • They state that no research was completed justifying the removal of the planning maps and how efficient and effective the plan will be or that external material referenced by the plan is the best material for its purpose. • They state that they undertook a brief review of other plans within NZ and did not identify this approach being used by other authorities. • They consider requirements relating to incorporation by reference have not been followed (cl34(2)(c) - public notice of the availability of externally referenced material before notification.	**Support**	We support Natural Hazard Overlays remaining within the District Plan. The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. We agree that the removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies and creates uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	We seek that this submission be allowed.

Rotorua Planning Consultants Group	39.3	The submitters consider that wildfire is not relevant to Rotorua at the district level and if it is deemed to be an issue it is more appropriately addressed at a regional scale. The proposed rule framework does not specifically address the hazard of 'wildfire' but rather focuses on improving access to water for the purposes of structural firefighting. The submitters also question whether the requirement for servicing in RURZ-S5A implies that Council infrastructure is no longer sufficient. They question the meaning of 'densely populated areas' in the context of SUB-P16 and ask whether urban areas are now required to install water tanks. They consider that rules are being introduced for a hazard that has not previously posed a significant issue and may not be relevant.	**Oppose**	While we acknowledge that there have been no previous wildfire events in Rotorua Lakes District, it doesn't mean that it won't become an issue in the future. Climate change is exacerbating and changing a range of natural hazards including wildfire. The proposed provisions for managing wildfire will support reducing the impacts to people and property in the future, as wildfire risk increases for Rotorua Lakes District.	We seek that this submission be disallowed.
Rotorua Planning Consultants Group	39.4	The submitters state there are significant concerns with the Lake Okareka flood modelling intended to support PC8 – the modelling uses historical lake level data and does not reflect substantial improvements to the outlet system. They state 'a specific concern relates to the flood prone contour adopted of 355.90m (Moturiki Datum), which is considerably higher than the 1%AEP (100-year ARI) peak lake level of 354.45m. They state that if adopted in its current form it could affect the ability to obtain building consents and have long-term implications for insurance and property values. The submitters also state that once embedded into an operative plan there is very limited ability to update or correct the model or associated	**Support in part**	We support further flood modelling to reflect improvements to the outlet system (and reduce existing uncertainties in the 2022 report). However, we oppose any further investigations being used to justify removing flood provisions from PC8. The flood modelling used to inform flood provisions within PC8 (outlined in the section 32 report) is considered the best available information. Much of the flood modelling has been recently completed by Bay of Plenty Regional Council, accounts for potential changes due to climate change, and considers 1% AEP events, which is becoming standard practice across the country.	We seek that this submission be allowed, provided existing flood provisions are not removed from PC8.

		maps without initiating a formal plan change process.		The Rotorua Lakes Design Levels Technical Report 2022[1] is also a high-quality report as it has been completed by Bay of Plenty Regional Council and follows established scientific methods[2]. The submitters oppose using data prior to 2021, however, using historical records is a standard method for calculating AEP[2]. While there are still uncertainties associated with the information (including recent upgrades to the lake outlet systems), the information used can still be classified as 'best available information'. The use of 'best available information' aligns to SDNH-P1 in PC8 and encourages decision-making and action to reduce impacts to people and property even when there may be limits to the information available. Further, the use of 'best available information' aligns to the proposed NPS-NH. [1]Bay of Plenty Regional Council, 2022. Rotorua Lakes Design Levels Technical Report. [2]Australian Institute for Disaster Resilience, 2017. Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia	
Rotorua Planning Consultants Group	39.5	The submitters consider that a performance standard should be 'black and white' and that NH-R5 is open to interpretation. They also question its application to more intensely developed zones, stating that given that the commercial and city centre are connected to the public stormwater reticulated system, there may	**Oppose**	Overland flowpaths are areas where flood waters will preferentially flow in flood events when existing stormwater provisions are overwhelmed. They often have higher velocities and depths, making them higher risk areas. Stormwater systems are important for managing flood hazard, however, there	We seek that this submission be disallowed.

		not be a high risk associated with overland flowpath in these areas. They also ask if site coverage provisions have been altered to reflect this hazard. They disagree with the section 32 report that overland flowpaths can be determined by topography.		remains residual risk if the stormwater system were overwhelmed or broken during a flood event. Further, as climate change is likely to increase the frequency and intensity of rainfall events[1], residual risk from stormwater systems is likely to increase. The provisions in NH-R5 are important to reduce the impacts to people and property in flood events. [1]Bay of Plenty Regional Council (n.d.). Our future climate.	
Rotorua Planning Consultants Group	39.10	The submitters support the removal of hazard mapping from the district plan, which they describe as often out of date or inaccurate, alongside removal of the land use rules.	**Oppose**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	We seek that this submission be disallowed.

Rotorua Planning Consultants Group	39.11	Fault hazard management is amended to refer to the subdivision process only and not buildings otherwise permitted. Simple assessment criteria are included in the Plan to reinforce the need to consider fault risks/effects.	**Oppose**	We oppose changes to fault rupture provisions. Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[1]), which would destroy buildings and infrastructure. Therefore, provisions for fault rupture should not just be included for subdivision, but a range of different buildings. [1]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	We seek that this submission be disallowed.
Newvid Holdings Trust (NHT)	40.1	NHT supports flood mapping sitting outside the District Plan but would seek more clarity and articulation on how as new information that comes into Council's hands is shared to the public.	**Oppose in part**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any	We seek that this submission be disallowed, or clear processes and provisions are developed to facilitate risk-based planning if hazard maps are removed.

				updates will require a consultation process, which supports robust information being used. We agree that if natural hazard maps are removed from the District Plan there must be robust processes and provisions in place to ensure planning can still restrict development when required (using a risk-based approach).	
Newvid Holdings Trust (NHT)	40.2	NHT opposes the use of the flood modelling information produced by BOPRC in which Council is using to determine the minimum floor levels for a 1%AEP flood event with an allowance for climate change in respect to Lake Ōkāreka because the modelling was based on information prior to the 2021 upgrades of the Lake pumpstation which has significant impacts on managing lake levels during extreme weather events.	**Oppose**	We oppose flood hazard modeling being removed from PC8. The flood modelling used to inform flood provisions within PC8 (outlined in the section 32 report) is considered the best available information. Much of the flood modelling has been recently completed by Bay of Plenty Regional Council, accounts for potential changes due to climate change, and considers 1% AEP events, which is becoming standard practice across the country. The Rotorua Lakes Design Levels Technical Report 2022[1] is also a high-quality report as it has been completed by Bay of Plenty Regional Council and follows established scientific methods[2]. The submitters oppose using data prior to 2021, however, using historical records is a standard method for calculating AEP[2]. While there are still uncertainties associated with the information (including recent upgrades to the lake outlet systems), the information used can still be classified as 'best available information'. The use of 'best available information' aligns to SDNH-P1 in PC8 and encourages decision-making and action to reduce impacts to people and property even when there may be limits to the information available. Further, the use of 'best	We seek that this submission be disallowed.

				available information' aligns to the proposed NPS-NH. [1]Bay of Plenty Regional Council, 2022. Rotorua Lakes Design Levels Technical Report. [2]Australian Institute for Disaster Resilience, 2017. Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia	
Newvid Holdings Trust	40.3	The reference to 'declining consent' if flood risks are shown not to be acceptable is problematic as 'acceptable risk' is vague and subjective.	**Oppose**	As part of PC8 Rotorua Lakes District has provided a clear definition for acceptable risk, which provides clarity for what circumstances could result in a consent being declined. Declining consents where risk is not acceptable will support reducing impacts to people and property.	We seek that this submission be disallowed.
Newvid Holdings Trust (NHT)	40.4	NHT opposes the definition of acceptable risk because it is unclear and not quantifiable.	**Oppose**	Including a definition for 'acceptable risk' provides consistency for the application of rules and policies. It also supports a risk-based approach that can reduce the impacts to people and property.	We seek that this submission be disallowed.
Newvid Holdings Trust (NHT)	40.5	NHT supports fault lines and fault avoidance zones mapping sitting out the District Plan but opposes the use of GNS data and information on fault lines and fault avoidance zones that run through urban areas until further investigation has been completed to accurately determine the fault lines transgression. It notes that LiDAR has been used to map the faults and that this has limitations due to interference from buildings and infrastructure, which obscure ground features and create	**Oppose**	We oppose changes to fault rupture provisions. The Fault Rupture Hazard Areas have been developed in 2025 by GNS Science[1] in line with guidelines from MfE[2]. We have a high level of confidence in the report as it was completed by a reputable research institute and has been internally peer reviewed. While we acknowledge that there is uncertainty associated with mapping active faults, this should not be used as a reason to change the definition or provisions for Fault Rupture Hazard Areas. The report[1] also specifically	We seek that this submission be disallowed.

		shadow zones. The technology cannot penetrate the ground, restricting fault detection to surface expressions only. Anthropogenic features can also mimic or mask fault-related geomorphology, increasing the risk of misinterpretation. Therefore, GNS fault mapping within urban areas should not be used to guide planning provisions and further investigation and testing should be done to map an accurate fault line.		states that the mapping is appropriate for a range of uses including "cadastral scales relevant for planners, policymakers and landowners to make decisions about land use..." (p.6). Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[2]), which would destroy buildings and infrastructure. The mapping and subsequent provisions for Fault Rupture Hazard Areas in PC8 effectively manage uncertainties in the data and will contribute to reducing impacts to people and property. We also oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard	

				information within the plan means that any updates will require a consultation process, which supports robust information being used. [1]Morgenstern, R. & Villamor, P., 2025. Active fault mapping and Fault Avoidance Zones for Rotorua Lakes District: An update. GNS Science. [2]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	
Kāinga Ora Homes and Communities (Kāinga Ora)	42.1	Incorporate the risk hierarchy approach and definitions from the consultation version of the National Policy Statement for Natural Hazards Decision Making (NPS-NHD). This includes adoption of definitions of high, moderate and low risk from this document (and consequential amendment required to give effect to the changes sought and this submission).	**Support in part**	We acknowledge that a risk hierarchy approach is a useful way to manage and reduce natural hazard risk. However, the approach that has been adopted by Rotorua Lakes Council will also support natural hazard risk reduction and reducing the impacts to people and property. Therefore, we support changing to a risk hierarchy approach as long as the corresponding provisions still apply a risk-based approach and support reducing impacts to people and property.	We seek that this submission be allowed, provided the provisions in PC8 still support natural hazard risk reduction.
Kāinga Ora	42.2	Kāinga Ora supports the removal of all hazards maps from the District Plan and displaying the hazard mapping as a nonstatutory layer on the Council's Geyserview maps. The interactive maps, as a non-statutory layer, that sits outside of the District Plan, provides for better management of land use in relation to hazards, as hazards are dynamic and change over time. This is reflected in the potential for the spatial extent of hazards to change from (a) mitigation of hazards, such as large-scale infrastructure	**Oppose**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the	We seek that this submission be disallowed.

		improvements, (b) climate change and natural hazard events, which can change the location, extent and effects of hazards on land, and (c) the quality of information available at any given time.		maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	
Kāinga Ora	42.3	Kāinga Ora considers that the definition [for acceptable risk] includes the requirement of an assessment and is subjective. Further, Kāinga Ora seeks that the definition is deleted and replaced with definitions for low, medium and high risk which includes links to 'tolerable', 'moderate' and 'intolerable' associated to those risks. Kāinga Ora generally support the inclusion of a term and definition that indicate whether a hazard is deemed high risk. Kāinga Ora supports the use of a term that indicates risks that would require an urgent response or have development avoided entirely.	**Support**	We support clear provisions that can reduce natural hazard risk. Providing clear terms and definitions and corresponding provisions for high, medium, and low risk can be a useful way to ensure the clear application of rules and policies and support risk reduction.	We seek that this submission be allowed.
Kāinga Ora	42.7	Kāinga Ora supports the proposed amendments to SDNH-O1 insofar as updating the test to acknowledge and respond to the proposed National Policy Statement. Kāinga Ora considers that the term 'acceptable' is open to interpretation and prefers a tiered management approach relevant to the degree of risk.	**Oppose**	Rotorua Lakes District Council has provided a definition for 'acceptable risk' that can be used to provide clarity and consistency when applying rules and policies. Defining acceptable risk supports a risk-based approach and can reduce the impacts to people and property.	We seek that this submission be disallowed.

Kāinga Ora	42.10	Kāinga Ora supports the proposed amendments to Policy SDNH-P2 pertaining to 'Strengthen, maintain and protect natural systems and features to recognise the requirements of the proposed [National Policy Statement for Natural Hazards].	**Support**	We support strengthening natural systems as they can be used for minimising the impacts from natural hazards (such as flooding) and protect people and property.	We seek that this submission be allowed.
Fonterra Limited	43.1	Retain Flooding Maps and Overland Flowpath Maps within the District Plan to ensure that the maps (and any future updates) are required to go through a Schedule 1 RMA process. Alternatively introduce a clear, flexible, user friendly pathway where property owners can apply to RLC to request a review of Flooding or Overland Flowpath hazard data for a specific property (to consider site specific features or characteristics that may not be captured, provided for or considered in the respective modelling).	**Support**	We support Natural Hazard Overlays remaining within the District Plan. The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used. We agree that if natural hazard maps are removed from the District Plan there must be robust processes and provisions in place to ensure planning can still restrict development when required (using a risk-based approach).	We seek that this submission be allowed.

Bay of Plenty Regional Council	45.3	BOPRC supports the removal of the specified hazard mapping from the Rotorua District Plan to enable the best information to be used to support decision making as and when it becomes available. This approach is consistent with Regional Policy Statement Method 23A (review hazard and risk information), which requires Councils to review and update hazard and risk information held by local authorities whenever relevant research is released and, in any case, at the time of plan review or relevant plan change.	**Oppose**	We oppose removing natural hazard mapping from the District Plan due to concerns over the ability for people to contest the information (i.e. natural justice). The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	We seek that this submission be disallowed.
Bay of Plenty Regional Council	45.4	While BOPRC supports defining acceptable risk it seeks that it is amended to more clearly give effect to Bay of Plenty Regional Policy Statement Policy NH 4B by referring to no increase in risk offsite. It further states that the words 'the costs of further reducing risks are largely disproportionate to the benefits gained' introduces a cost benefit approach that could be difficult to implement without guidance. Therefore, it seeks that this part is removed from the definition. However, if pursued, it seeks that guidance or references within rules are developed to give clarity for implementation.	**Support**	We support defining 'acceptable risk' to support a risk-based approach and the reduction of impacts to people and property. This submission provides some useful suggestions for improving the way that acceptable risk is used by Rotorua Lakes District Council and will support the consistent application of rules and policies between Rotorua Lakes District and Bay of Plenty.	We seek that this submission be allowed.

		BOPRC also notes that acceptable risk is only used in the interpretation section but that similar terms are used elsewhere: 'acceptable' and 'acceptable level of risk'. BOPRC refers to the national planning standards and states that if a term is defined it should be used and not replaced by synonyms or similar terms.			
Bay of Plenty Regional Council	45.5	To avoid confusion for plan users, the definition of Fault Rupture Hazard should include clarification that it is the same area as the Fault Avoidance Zones (and potentially Fault Awareness Areas) when referring to the New Zealand Active Faults Database. BOPRC also notes that the section 32 report proposed wording similar to their proposed changes but that this part of the definition was not carried over to the annotated text consistent with the section 32 report.	**Support**	The consistent application of rules and policies requires clear terms and definitions. This submission provides useful advice that can improve how Fault Rupture Hazard is defined and explained, which can support the consistent application of rules and policies.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.6	BOPRC supports defining 'overland flowpath' in both the main part of the District Plan and Lakes A Zone definitions, particularly in the absence of mapping. The definition includes new wording limiting overland flowpaths in rules and performance standards to 4,000m2 or more, however does not define 'major overland flowpaths'. This term is used throughout the District Plan and therefore should either be defined or removed to avoid confusion. BOPRC also states that, when referring to catchment, it is clearer to state 'contributing' catchment to reduce confusion. This aligns with	**Support**	The consistent application of rules and policies requires clear terms and definitions. This submission provides useful advice that can improve how overland flowpaths are defined and explained.	We seek that this submission be allowed.

		Tauranga City Council's recently operative Plan Change 27 (Flooding from Intense Rainfall).			
Bay of Plenty Regional Council	45.7	BOPRC support the proposed definition of wildfire and states that the definition gives effect to RPS Policy IR 2B, which requires Councils to have regard to the likely effects of climate change.	**Support**	The definition for wildfire will support clear and consistent application of rules and policy. Including a definition for wildfire is important for ensuring that all natural hazards, including emerging hazards, in Rotorua can have provisions to support risk reduction.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.8	BOPRC supports the intent of SNDH-O1 but states it is unclear whether this objective only relates to new land use and development or whether it is also intended to capture both existing and new land use and development, such as building extensions. For consistency, it is recommended that the wording be changed from 'land use, subdivision and development' to 'subdivision, land use and/or development'.	**Support**	Clear and consistent objectives are required for the consistently application of rules and policies to support risk reduction. This submission provides useful suggestions to improve clarity for the application of SNDH-O1.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.13	The submitter considers it unclear whether this policy is also intended to relate to existing development, such as building extensions and/or other sensitive activities, including Low Impact Buildings, which are subsequently converted to residential use, and which may not be captured by the term 'new buildings'. Further, Rule NH-R2 suggests that building extensions (that are not replacement buildings) are relevant to this policy and therefore NH-PAA should be amended to include building extensions (that are not replacement buildings), as well as Low Impact Buildings, which are subsequently converted to residential use, for example.	**Support**	We support amendments to NH-PAA that can improve clarity and consistency. To reduce the impacts to people and property it is important to ensure that all residential properties have rules and provisions that can reduce impacts to people and property. We also support the addition of building extensions to NH-R2 as extensions to buildings can increase the overall level of exposure to natural hazards.	We seek that this submission be allowed.

Bay of Plenty Regional Council	45.14	BOPRC supports the strengthening of this policy as proposed in NH-PA clause 2 but considers that the policy could be further strengthened by stating that consent can be declined if the flood risks are not shown to be acceptable both onsite and offsite. It considers this approach is consistent with RPS Policy NH 4B (managing natural hazard risk on land subject to urban development) and the definition of 'acceptable risk' it proposes.	**Support**	We support additional strengthening of NH-PA. Requiring risk to be acceptable onsite and offsite is a useful way to reduce the impacts to people and property.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.17	BOPRC understands the intention of broadening this policy and supports its application to areas beyond Ōhinemutu and Whakarewarewa. However, the existing policy also seems to clearly distinguish between existing development and new development, although the proposed new policy only refers to new development, leaving a gap regarding policy intent for existing development.	**Support**	Policies should refer to new and existing developments to reduce impacts to people and property. One of the key challenges for reducing natural hazard risk in New Zealand is managing legacy planning issues. Policies that encompass existing development as well as new development can, therefore, start to address any potential legacy planning issues and reduce impacts to people and property.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.19	BOPRC supports the policy regarding wildfire. The policy is consistent with the Civil Defence and Emergency Management Act 2002, which identifies wildfire as a risk and has objectives relating to cost effective reduction of risk.	**Support**	Wildfire has the potential to be an emerging hazard and risk for Rotorua. New provisions to manage wildfires can contribute to reducing the impact to people and property. We also support consistency between PC8 and any existing policy such as the Civil Defence and Emergency Management Act 2002.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.21	BOPRC considers that the rule that permits buildings in floodprone areas that meet minimum floor levels (NH-R4(2)) needs a performance standard worded consistently with NH-R5 (relating to overland flowpaths). This will improve clarity that standards relating to overland	**Support**	We support consistency between rules and policies for floodprone areas and overland flow paths. Overland flowpaths represent low points in terrain where water will preferentially flow during floods, therefore, rules and provisions must be applied to reduce the	We seek that this submission be allowed.

		flowpaths also need to be met for a building to be a permitted activity.		impacts to people and property in flood events.	
Bay of Plenty Regional Council	45.22	BOPRC note that NH-R4, being the permitted activity rule linked to new Rule NH-R5, does not capture conversions of existing buildings from non-habitable to habitable spaces, and therefore will not be subject to new Rule NH-R5. On this basis, BOPRC considers that the heading for NH-R4 should be amended to capture these situations or similar relief.	**Support**	We support amendments to ensure that conversions to habitable buildings are represented in rules and policies. Habitable buildings can have higher levels of risk as they are a place where people spend significant amounts of time. Therefore, to reduce the impacts to people and property PC8 should ensure the rules and policies capture conversions into habitable buildings.	We seek that this submission be allowed.
Bay of Plenty Regional Council	45.34	BOPRC supports the reliance on the Natural Hazards Chapter, which refers to the 1%AEP lake flood level, and the removal of references to the 2%AEP lake flood level.	**Support**	We support referring to a 1% AEP lake flood level. 1% AEP flood levels represent larger events than 2% AEP and so planning to this level represents a precautionary approach and can further reduce the impacts to people and property. Planning to a 1% AEP is also becoming standard across the country with many other councils (such as Wellington City Council, Auckland Council, and Whangarei District Council) adopting minimum floor levels for a 1% AEP flood event.	We seek that this submission be allowed.
R & B Property Group	54.1	The newly mapped fault rupture hazard be removed from Acacia Road unless robust, peer-reviewed scientific evidence is provided to justify its inclusion. Alternatively, that the Acacia Road section be reassessed using the same alternative methodologies, such as geomorphic analysis and lidar interpretation, applied to Spencer Road. Clarification of the rationale for assigning Acacia Road the most restrictive classification by default. A clearly defined process by which fault lines may be reviewed, reassessed, or removed	**Oppose**	We oppose changes to fault rupture provisions. The Fault Rupture Hazard Areas have been developed in 2025 by GNS Science[1] in line with guidelines from MfE[2]. We have a high level of confidence in the report as it was completed by a reputable research institute and has been internally peer reviewed. While we acknowledge that there is uncertainty associated with mapping active faults, this should not be used as a reason to change the definition or provisions for Fault Rupture Hazard Areas. The report[1] also specifically	We seek that this submission be disallowed.

		in the future. Assurance that Acacia Road residents will be treated equitably and afforded the same opportunities for review and reclassification as those in other affected areas, including Spencer Road.		states that the mapping is appropriate for a range of uses including "cadastral scales relevant for planners, policymakers and landowners to make decisions about land use…" (p.6). Active faults have the potential to greatly impact people and property. The effects from fault rupture include significant ground movement (often >5m of horizontal movement[2]), which would destroy buildings and infrastructure. The mapping and subsequent provisions for Fault Rupture Hazard Areas in PC8 effectively manage uncertainties in the data and will contribute to reducing impacts to people and property. [1]Morgenstern, R. & Villamor, P., 2025. Active fault mapping and Fault Avoidance Zones for Rotorua Lakes District: An update. GNS Science. [2]MfE, 2003. Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand.	
R & B Property Group	54.2	PC8 seeks to remove a number of existing natural hazard maps, including fault avoidance zones, from the district plan, instead proposing to enforce the hazard rule framework through external models and online mapping resources. While the submitters acknowledge the intent to incorporate the most up-to-date information, they consider this approach lacks transparency and undermines the clarity and consistency	**Support**	We support Natural Hazard Overlays remaining within the District Plan. The first fundamental principle of natural justice is that affected parties should be given the opportunity to be heard. Having natural hazard maps outside the District Plan, with planning provisions attached, raises concerns that if there is not a process established that enables those potentially affected to have an opinion, the maps could be changed without notifying	We seek that this submission be allowed.

		required for effective implementation of the district plan. They consider a 'material incorporated by reference' provision must be subject to the same level of scrutiny and notified in conjunction with the plan change itself. The submitters state that any map or model used to enforce district plan provisions must be robust, reliable, and exhibit a low margin of error. Reliance on external and potentially dynamic sources introduces ambiguity and fails to provide certainty for affected stakeholders, including homeowners, insurers, and developers. This uncertainty compromises the ability of these parties to understand whether their property is subject to hazard-related constraints.		or consulting with residents as required for a District Plan change. Removal of hazard maps from the District Plan can also cause issues for the clear and consistent application of rules and policies, by creating uncertainties for homeowners and developers. Further, providing hazard information within the plan means that any updates will require a consultation process, which supports robust information being used.	

Table 1: *Further Submitter Details*

Name of Submitter:	*Te Maiora Rurehe for Tūhourangi Tribal Authority*	
Contact (if relevant):	[redacted]	
Address for service (email preferred)	[redacted]	
Phone number:	[redacted]	
Hearing attendance:	I do not wish to be heard in support of my submission at the public hearing of submissions	
Willingness to present joint case at hearing:	If others make a similar submission, I will consider presenting a joint case with them at a hearing.	
Status to make a further submission:	*[Indicate which one of these criteria you meet to make a further submission and why:]*	
	Y/N	I am a person representing a relevant aspect of the public interest because: *[Explain why]*
	Y	I am a person who has an interest in the proposal that is greater than the interest the general public has *Tūhourangi Tribal Authority have mana whenua across many areas of the Rotorua District Council. The changes to plan change 8 could have significant impacts across ahu whenua trusts, entities and others affiliated to Tūhourangi. Having a voice in these circumstances is therefore important to ensure that Tūhourangi views are reflected in feedback and outcome processes.*
Signature:		
Date of Submission:	*[Enter date submission lodged]*	

Table 2: *Original submissions supported or opposed*
[Add additional rows to respond to submission points, as needed]

Submission Number *State the submission ID# for the original submission that you are commenting on (you can find this in the summary of submissions).*	**Submitter's Name** *State who made the submission that you are commenting on.*	**Section Reference (Submission Point)** *Clearly indicate which parts of the original submission you are commenting on – preferably use the submission point number in the summary of submissions.* *Use a separate row for each point you support/oppose.*	**Support/ Oppose** *State your position on the point made in the original submission, for example, whether you support, oppose or support in part, etc.*	**Reasons** *Explain the reasons for your support / opposition.*
21	Mitch Collins for Lake Ōkāreka Community Association (LŌCA)	Table 1: Summary of LOCA's position	Support	There are significant flaws that are proposed in the plan change that need to be addressed to ensure certainty of application and implication. A clear *fault* in the proposed plan change is the unreliable data which relies on data generated before the inclusion of new infrastructure which will drastically change data relating to the flood levels of Ōkareka.
26	Summerset Group Holdings Limited	**... be placed on hold pending the adoption of the proposed National Policy Statement for Natural Hazards…**	Support / Amend	Regional Councils undergoing plan changes have been directed to pause any updates in anticipation of changing laws and national policy statements. While some local councils continue, there is danger of committing to these positions for them to be overturned. Tūhourangi are however supportive of using these opportunities to consider community views, including how any new national policy statement could be implemented and subjected to the views provided.
28	**Te Tumu Paeroa**	**Para [4] + [4}(a) + [4](b) + [7] + [15]**	**Support**	Tūhourangi Tribal Authority ("TTA") have representative interests on behalf of many Māori land and Māori freehold owners. Of significant implication is the identification of a new fault line in Peka landblock which could increase the geotechnical requirements for resource consents and the overall cost burden imposed upon them. Moreover, TTA support the view that Mātauranga Māori

				should explicitly be referenced. Of particular relevance on this point is *Whakarewarewa Village* which has been a papakāinga for many generations. While there have been changes in the whenua, with their occurrence being monitored through western science, it is the Mātauranga Māori that supports relocation and adaption to the new circumstances presented by a changing landscape.
29	**Rotorua Lakes Council**	**…***decision sought:* *That further amendments… be made to ensure the efficient and effective management of natural hazards affecting minor residential units considering the expected legislative changes….*	**Support**	There needs to be consistency between law and local policy that ensure better safety and security to people and property.
20	**Red Stag investments Ltd**	**'Fault Rupture Hazard Area'**	**Support**	The identification of a new fault rupture with an 'uncertain' location has significant implications for redstag and *Peka* landblock, the property directly across from the lots owned by Red Stag. Like red stag, they impose certain, significant, and recurring economic costs (in engineering, design, and consenting), which is concerning considering the strategic direction of Peka to become the new industrial-park of Rotorua. With some tenants already secured, their consents could see an increase in cost and a potential diversion of future potential clients.
58	**Te Rūnanga o Ngāti Kearoa Ngāti Tuara**	*(including future settlements)*	**Support**	TTA support the proposed amendment to contemplate future Māori settlements as part of the plan change. There has been complex overlay of regulation and statutory implications that have prevented Tūhourangi affiliated and associated Māori land blocks from being able to develop papakāinga, either on historical or contemporary sites. Being a people affiliated with geothermal activity, living across different fault lines, there is a possibility that there are papakāinga developed on fault lines. This must be taken into consideration in the proposed plan change.

Table 1: *Further Submitter Details*

Name of Submitter:	*Sharon Porter and Fleur Walker for Wāhiāo Māori Committee*	
Contact (if relevant):	[redacted]	
Address for service (email preferred)	[redacted]	
Phone number:	[redacted]	
Hearing attendance:	We do not wish to be heard in support of my submission at the public hearing of submissions	
Willingness to present joint case at hearing:	If others make a similar submission, we will consider presenting a joint case with them at a hearing.	
Status to make a further submission:	*[Indicate which one of these criteria you meet to make a further submission and why:]*	
	Yes	I am a person representing a relevant aspect of the public interest because: *We are representatives of the hau kainga/residents of the Whakarewarewa Village, mandated by the Maori Community Development Act 1962. Our Village and Papakainga is directly impacted by the Plan Change 8 PC8 Natural Hazards.*
	Y/N	I am a person who has an interest in the proposal that is greater than the interest the general public has *[Explain why, for example "I own a property which is affected by potential fault rupture"]*
Signature:	*[A signature is not required if you send this submission electronically]*	
Date of Submission:	31/10/2025	

Table 2: *Original submissions supported or opposed*
[Add additional rows to respond to submission points, as needed]

Submission Number *State the submission ID# for the original submission that you are commenting on (you can find this in the summary of submissions).*	**Submitter's Name** *State who made the submission that you are commenting on.*	**Section Reference (Submission Point)** *Clearly indicate which parts of the original submission you are commenting on – preferably use the submission point number in the summary of submissions.* *Use a separate row for each point you support/oppose.*	**Support/ Oppose** *State your position on the point made in the original submission, for example, whether you support, oppose or support in part, etc.*	**Reasons** *Explain the reasons for your support / opposition.*
26	Summerset Group Holdings Limited	... be placed on hold pending the adoption of the proposed National Policy Statement for Natural Hazards…	Support / Amend	Regional Councils undergoing plan changes have been directed to pause any updates in anticipation of changing laws and national policy statements. While some local councils continue, there is danger of committing to these positions for them to be overturned. Further adding complexity in the development of iwi/hapu environmental management plans; needing to be adaptable and flexible enough to navigate the multiple and various potential outcomes the reforms pose. The Wāhiāo Māori Committee ("WMC") are however supportive of using these opportunities to consider community views, including how any new national policy statement could be implemented and subjected to the views provided.
28	Te Tumu Paeroa	Para [4] + [4}(a) + [4](b) + [7] + [15]	Support	The Wāhiāo Māori Committee ("WMC") have representative interests on behalf of many Māori land and Māori freehold owners. Of significant implication is the identification of a new fault line in Peka land-block which could increase the geotechnical requirements for resource consents and the overall cost burden imposed upon them. Moreover, WMC support the view that Mātauranga Māori should explicitly be referenced. Of particular relevance on this point is Whakarewarewa Village which has been a

				papakāinga for many generations. While there have been changes in the whenua, with their occurrences being monitored through western science, it is the Mātauranga Māori that supports relocation and adaption to the new circumstances presented by a changing landscape.
29	Rotorua Lakes Council	…decision sought: That further amendments… be made to ensure the efficient and effective management of natural hazards affecting minor residential units considering the expected legislative changes….	Support	There needs to be consistency between law and local policy that ensure better safety and security to people and property.
20	Red Stag investments Ltd	'Fault Rupture Hazard Area'	Support	The identification of a new fault rupture with an 'uncertain' location has significant implications for Red Stag and Peka land-blocks, the property directly across from the lots owned by Red Stag. Like Red Stag, they impose certain, significant, and recurring economic costs (in engineering, design, and consenting), which is concerning considering the strategic direction of Peka to become the new industrial-park of Rotorua. With some tenants already secured, their consents could see an increase in cost and a potential diversion of future potential clients.
58	Te Rūnanga o Ngāti Kearoa Ngāti Tuara	(including future settlements)	Support	WMC support the proposed amendment to contemplate future Māori settlements as part of the plan change. There has been complex overlay of regulation and statutory implications that have prevented Tūhourangi and Wāhiāo affiliated and associated Māori land blocks from being able to develop papakāinga, either on historical or contemporary sites. Being a people affiliated with geothermal activity, living across different fault lines, there is a possibility that there are papakāinga developed on fault lines. This must be taken into consideration in the proposed plan change.

57	Ngāti Mākino and members of Te Urunga a Kea (Te Arawa Climate Change working Group)	Geothermal Hazards	Amend or Support in Part	Context NH-P3 safeguards existing geothermal occupation but is silent on new papakāinga and customary resource use. * Both matters of which are significant for the hau kāinga of the Whakarewarewa village.
58	Te Rūnanga o Ngāti Kearoa Ngāti Tuara (TRoNKNT)	f) Wildfire, Firefighting & water supply	Support	WMC support the key proposals for mitigating the risk of wildfire in the proposed plan change which focus on strengthening firefighting water supply and encouraging safer subdivision design. * The village has very limited water supply and is not equipped to deal with wildfire. With limited vehicle access, it is not ideal for large fire vehicles to access, along with bordering the Whakarewarewa and Redwood forests.
58	Te Rūnanga o Ngāti Kearoa Ngāti Tuara (TRoNKNT)	f) Wildfire, Other firefighting provisions	Support	As wildfire mitigation and protection in the district plan evolves in the future, WMC seek that: *Protection of marae, papakāinga, wāhi tapu and sites of significance are prioritised; *WMC are engaged to support Rotorua Lakes Council (RLC) in developing mitigation strategies in our village, rohe; and * WMC are engaged to support RLC in ensuring cultural values are embedded in how wildfire risk areas are mapped and responded to in our rohe.
58	Te Rūnanga o Ngāti Kearoa Ngāti Tuara (TRoNKNT)	i) Geothermal Hazards	Amend or Support in Part	WMC supports the intent of the key proposed changes to geothermal hazard rules. Ngāti Wāhiāo uri have a significant and unbroken connection to their puna, ngāwhā and other geothermal features within their rohe. They state that they have learnt through the generations how to mitigate the risks of living near ngāwhā, including how to care for them and utilise the taonga to improve their wellbeing. NH-P3 is supported in part but with an amendment. WMC support the intent of the plan change and the improved provisions for considering mana whenua perspectives and cultural values – Matauranga Māori. This is a positive improvement which the WMC would

				like to see strengthened further through this submission and engagement with RLC to support implementation. *
57	Ngāti Mākino and members of Te Urunga a Kea (Te Arawa Climate Change working Group)	e) Flooding	Support	The submitters note that PC8 excludes stormwater controls but failing to manage runoff at source shifts flood risk downstream and undermines communities in lower catchments, which are generally our most vulnerable communities. * These communities include and affect all three of the villages in Rotorua, but in particular for Ngāti Wāhiāo, the Whakarewarewa village being inundated by the Puarenga river and surrounding geothermal lakelets.

Table 1: *Further Submitter Details*

Name of Submitter:	*Lake Ōkāreka Community Association (LOCA)*	
Contact (if relevant):	*Mitch Collins, Past Chair and Neil Oppatt, Chair.*	
Address for service (email preferred)	[redacted]	
Phone number:	*[Enter phone number]*	
Hearing attendance:	I do wish to be heard in support of my submission at the public hearing of submissions	
Willingness to present joint case at hearing:	If others make a similar submission, will not consider presenting a joint case with them at a hearing.	
Status to make a further submission:		
	Y	I am a person representing a relevant aspect of the public interest because: LOCA is an incorporated society representing the public and community interests of all residents and landowners at Lake Ōkāreka.
	Y	I am a person who has an interest in the proposal that is greater than the interest the general public has: LOCA's members are the specific landowners and residents directly and significantly affected by the proposed Fault Rupture and Flooding provisions at Lake Ōkāreka.
Signature:	*[A signature is not required if you send this submission electronically]*	
Date of Submission:	31 October 2025	

Table 2: *Original submissions supported or opposed*

Submission Number *State the submission ID# for the original submission that you are commenting on (you can find this in the summary of submissions).*	**Submitter's Name** *State who made the submission that you are commenting on.*	**Section Reference (Submission Point)** *Clearly indicate which parts of the original submission you are commenting on – preferably use the submission point number in the summary of submissions.* *Use a separate row for each point you support/oppose.*	**Support/ Oppose** *State your position on the point made in the original submission, for example, whether you support, oppose or support in part, etc.*	**Reasons** *Explain the reasons for your support / opposition.*
22	Natural Hazards Commission (NHC)	22.5, 22.13, 22.17, 22.18 (Fault Rupture Provisions)	**Oppose**	LOCA opposes the NHC's support for these provisions as they rely on the 2025 GNS Science data, which is admittedly "uncertain" and "incomplete" for the Lake Ōkāreka fault trace (as detailed in the subsequent Berryman Report). It is inequitable to apply definitive rules (NH-R1 to NH-R3) based on data that has not been ground-truthed and is not the "best available information." The NHC's position fails to recognise the local context and the significant, unresolved scientific uncertainty. We seek that our original relief (Submission 21.4) be granted. We appreciate collaborative efforts with RLC who have engaged Kelvin Berryman and Ian Nairn on the 20th October 2025 to further investigate the Acacia site and seek further information on fault lines in more detailed investigation.
22	Natural Hazards	22.14 (Flooding Policy)	**Oppose**	LOCA opposes the NHC's submission as it endorses a definition of "acceptable risk" derived from the BOPRC 2022 Technical Report. This report is **technically invalid** for Lake

	Commission (NHC)			Ōkāreka as it uses pre-2021 data and ignores the full physical and emergency capacity of the upgraded lake outlet. This is *not* the "best available information." We seek that our original relief (Submission 21.5), which calls for a new, physically-based water balance model, be granted. In the interim, a model based on the PDP/West review of outlet capacity is considered a good starting point as BOPRC are not resourced for a review starting till 2027.
45	Bay of Plenty Regional Council (BOPRC)	45.34 (Support for 1% AEP flood level from 2022 report)	**Oppose**	LOCA strongly opposes BOPRC's support for using the 2022 report's 1% AEP flood level. BOPRC is aware, through direct engagement with LOCA (Fiona McTavish & Mark Townsend), that this report has "shortcomings" and is not fit for purpose, as it does not model the 2021 outlet upgrade. We request that in the interim, a mixed model using the PDP/West information to assess outlet capacity be used as a starting basis. BOPRC's submission that this constitutes the "best information" is factually incorrect. We refer to the evidence in our original submission (21.5) and seek that this submission point be disallowed and our original relief be granted.
45	Bay of Plenty Regional Council (BOPRC)	45.21 & 45.22 (Supporting rules NH-R4 & NH-R5)	**Oppose**	LOCA opposes these submission points as they seek to implement rules (NH-R4, NH-R5) based on the "Floodprone Areas" overlay, which for Lake Ōkāreka is derived from the technically invalid 2022 BOPRC report. Any rules or provisions based on this flawed model cannot be supported. We seek that our original relief (Submission 21.5) be granted.
45	Bay of Plenty Regional	45.3 (Support for removal of static maps)	**Support**	LOCA supports this submission point as it aligns with our core argument. We agree maps should be removed to allow the *best and most current* information to be used. This

	Council (BOPRC)			principle *supports* our opposition to the current proposals, which rely on data (the 2022 flood model) that is demonstrably *not* the best or most current information available.

Further Submission on Rotorua Lakes Council Plan Change 8 - Natural Hazards

Submitter Details

Submission by: Summerset Group Holdings Limited

Summerset is one of New Zealand's leading and fastest growing retirement village operators, with more than 8,000 residents living in our village communities. We offer a range of independent living options and care, meaning that as our residents' needs change, we have support and options within the village. Summerset has 42 villages which are either completed or in development, spanning from Whangārei to Dunedin. We employ over 2,800 staff members across our various sites.

Address for Service for Submission

C/- Rose Bayes-Powell, Development Manager

Email: Rose.[redacted]

Phone: Mobile: [redacted]

Submitter Location and Background

Summerset holds existing resource consents for a retirement village development on Fairy Springs Road in Rotorua. The site is located near the Waiowhiro Stream and Lake Rotorua, and has been consented for development to accommodate retirement living and care facilities. The development is protected under Section 10 of the Resource Management Act (RMA), but future amendments or new consents may be subject to the provisions of Plan Change 8.

Summerset is committed to ensuring the safety and wellbeing of its residents. Flood hazard management is a critical consideration in our development planning and operations. Our existing consents incorporate robust flood assessment and mitigation strategies, and we continue to engage with technical experts and local authorities to ensure best practice approaches are adopted.

Further submission

This further submission relates to Plan Change 8 (Natural Hazards) to the Rotorua District Plan, specifically the provisions and mapping changes concerning flooding hazards. We support a balanced approach that manages risk without unnecessarily restricting development.

Summerset has an interest in Plan Change 8 that is greater than the interest the general public has, being an original submitter (#26) on the plan change with respect to its interest as a land owner and developer within the affected area.

Position on Key Submitters

Kāinga Ora

We support Kāinga Ora's intent to enable housing supply and urban development, provided that hazard management remains proportionate and evidence-based. Controls should not impose excessive restrictions that undermine feasible development in low-risk areas.

Bay of Plenty Regional Council (BOPRC)

We agree with BOPRC's emphasis on technical accuracy and consistency but oppose any interpretation that results in blanket prohibitions or overly conservative setbacks. Flood risk management should be calibrated to actual risk, not worst-case scenarios.

Natural Hazards Commission (Toka Tū Ake)

While we acknowledge the importance of resilience, we do not support recommendations that would significantly tighten controls beyond what is necessary for public safety. Planning should allow for mitigation measures and adaptive design rather than default avoidance.

Natural Justice

We strongly oppose Rotorua Lakes Council having discretion to change flood hazard mapping without public notification or consultation. This removes transparency and certainty for landowners and developers, contravenes principles of natural justice and public participation under the Resource Management Act, and risks introducing more onerous controls without scrutiny.

We seek explicit provisions requiring public notification and consultation for all future flood mapping changes.

Relief Sought

• Ensure flooding provisions remain proportionate and evidence-based, avoiding unnecessary restrictions.

• Support Kāinga Ora's position where it promotes enabling development, provided risk is managed appropriately.

• Require public notification for any mapping changes to prevent unconsulted tightening of controls.

• Confirm that technical updates to flood maps are treated as plan changes, not administrative updates.

Other

Summerset Group Holdings Limited will not gain an advantage in trade competition through this further submission.

Summerset Group Holdings Limited is directly affected by an effect of the subject matter of the further submission that adversely affects the environment; and does not relate to trade competition or the effects of trade competition.

Summerset Group Holdings Limited wishes to be heard in support of its submission and further submission.

If others make a similar submission, the submitter will consider presenting a joint case with them at any hearing.

Oliver Boyd

Level 27, Majestic Centre, 100 Willis St, Wellington
PO Box 5187, Wellington 6140
Phone: 04 894 7320
Website: www.summerset.co.nz

GM Acquisitions and Development NZ
Summerset Group Holdings Limited

Date: 31 October 2025

Level 27, Majestic Centre, 100 Willis St, Wellington
PO Box 5187, Wellington 6140
Phone: 04 894 7320
Website: www.summerset.co.nz

Further Submissions on the Rotorua Lakes Council Plan Change 8 by Kāinga Ora – Homes and Communities

Clause 8 of Schedule 1 to the Resource Management Act 1991

To: Rotorua Lakes Council

Submission by email via: policy.planning@rotorualc.nz

Name of Further Submitter: Kāinga Ora – Homes and Communities

1. **Kāinga Ora – Homes and Communities** ("**Kāinga Ora**") makes this further submission on the **Rotorua Lakes Council Plan Change 8 ("PC8")** in support of/in opposition to the original submissions to **PC8**.

2. Kāinga Ora has an interest in PC8 that is greater than the interest the general public has, being an original submitter on PC8 with respect to its interests as Crown entity responsible for the provision of public housing, and its housing portfolio in Rotorua.

3. Kāinga Ora makes this further submission in respect of submissions by third parties to PC8.

Reasons for further submission

4. The submissions that Kāinga Ora supports or opposes are set out in the table attached as **Appendix A** to this further submission.

5. The reasons for this further submission are:

   (a) The reasons set out in the Kāinga Ora primary submission on PC8.

   (b) In the case of the Primary Submissions that are opposed:

(i) The Primary Submissions do not promote the sustainable management of natural and physical resources and are otherwise inconsistent with the purpose and principles of the Resource Management Act 1991 ("**RMA**");

(ii) The relief sought in the Primary Submissions is not the most appropriate in terms of section 32 of the RMA;

(iii) Rejecting the relief sought in the Primary Submissions opposed would more fully serve the statutory purpose of the RMA than would implementing that relief; and

(iv) The Primary Submissions are inconsistent with the intent of the Kāinga Ora primary submission.

(c) In the case of Primary Submissions that are supported:

(i) The Primary Submissions promote the sustainable management of natural and physical resources and are consistent with the purpose and principles of the RMA and with section 32 of the RMA;

(ii) The reasons set out in the Primary Submissions; and

(iii) Allowing the relief sought in the Primary Submissions supported would more fully serve the statutory purpose than would disallowing that relief.

6. Without limiting the generality of the above, the specific relief in respect of each Primary Submission that is supported or opposed is set out in **Appendix A**.

7. Kāinga Ora wishes to be heard in support of its further submission.

8. If others make a similar submission, Kāinga Ora will consider presenting a joint case with them at a hearing.

DATED 30 October 2025

Kāinga Ora – Homes and Communities

Brendon Liggett

Manager – Development Planning

ADDRESS FOR SERVICE:

Kāinga Ora – Homes and Communities
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Greenlane, Auckland
Attention: Brendon Liggett
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	A	B	C	F	G	H	I	J	K	L	M	N
1			Appendix A – Further Submission Table							Kāinga Ora Homes and Communities		
2	**Sub Point #**	**Sub ID #**	**Submitter Name**	**Topic**	**Sub-Topic**	**Plan Reference**	**Position**	**Summary of Submission Point**	**Relief Sought by Submitter**	**Kāinga Ora Response**	**Kāinga Ora Reasons**	**Decision(s) sought (allow or disallow)**
3	2	1	Kierin Oppatt	e) Flooding	Hazard mapping / information	Flood policies	Oppose	The next scheduled flood-model revision [for Lake Ōkāreka] is 2030 - ten years after the 2020 baseline. The stale data will govern consenting, insurance and valuations for years beyond the actual risk profile.*	Incorporate a policy commitment to review and update flood models at least every five years or after any major drainage/infrastructure upgrade.	Oppose in part	The intention of having the hazard maps sit outside of the District Plan is to enable better management of land use in relation to hazards, which includes updating the flood maps whenever new data is available without the need of a plan change. Introducing this policy will defeat this purpose. Flood data is also likely to change within a five year cycle. Kainga Ora would support a method that encourages Council to regularly review flood models and provide the public with the most up to date information in a timely manner.	Disallow in part
4	3	1	Kierin Oppatt	e) Flooding	Hazard mapping / information	N/A - Geyserview	Oppose	Modelling [for Lake Ōkāreka] is outdated: * the current flood model for Geyserview uses 2020 climate data under RCP8.5 (worst case emissions) and a 1%AEP event. *Scientific consensus now considers RCP8.5 scenarios increasingly unlikely, using that data risks overstating flood extents. The potential impacts on property owners are: * Consent delays or refusals for buildings and land-use changes * Higher quoted insurance premiums or refusal of cover * Depressed property values due to inflated flood-risk overlay * Increased professional costs for homeowners needing bespoke hydrological assessments. * In 2021, BOPRC increased outlet capacity . These works materially reduce flood risk but are not reflected in the 2020 model provided in Geyserview.*	Delay application of the 2020 flood overlay [for Lake Ōkāreka] in Geyserview until updated modelling reflecting the 2021 outlet works is complete. Commission an interim flood risk analysis for Geyserview using post 2021 hydrology data and a more current climate scenario e.g. RCP 4.5	Oppose in part	While Kāinga Ora understand the intention of the relief sought, given that the flood maps will sit outside of the District Plan and can therefore be updated at any time. There is therefore no reason to delay flood mapping. Once the 2021 outlet works is complete, this data can be incoporated into the flooding maps without the need of another plan change.	Disallow
5	5	21	Lake Ōkāreka Community Association (LOCA)	e) Flooding	Hazard mapping / information	NH-PA, NH-R4	Oppose	LOCA opposes the adoption of flood levels for Lake Ōkāreka from the 2022 BOPRC Rotorua Lakes Design Levels Technical Report as it considers the methodology is technically invalid. It uses a Gumbel statistical analysis based on historical data from before the 2021 outlet upgrade and ignores the new infrastructure's physical capacity. It also fails to incorporate climate change effects, such as increased rainfall intensity. LOCA also notes that any flooding assessment should not be artificially constrained by a discharge of 500L/s because this would fail to account for the reality of how a system would be operated during an extreme flood event - the pipeline has an emergency capacity to pass flows of up to 800L/s and it would be artificial to assume that operators would be constrained by the 500L/s limit. LOCA considers freeboard should only be applied to a robustly calculated flood level and applying it to a flawed level is a meaningless exercise.*	That flood levels from the 2022 technical report are not adopted. That new flood levels are determined by a comprehensive, physically-based water balance model that accounts for the outlet's full capacity and climate change. Any determination of regulatory freeboard levels is deferred until a credible Base Flood Elevation has been established. That the 1%AEP flood hazard map for Lake Ōkāreka is removed from Council's public online mapping service (GeyserView) and any other platform. A review of resource consent RM19-0347 by BOPRC if the current discharge limit of 500L/s is a primary cause of flood risk.	Oppose in Part	Kāinga Ora support providing the most up to date flooding data, however given that PC8 proposes to have the hazard maps sit outside of the District Plan, the data can be updated at any time once PC8 is operative.	Disallow
6	2	22	Natural Hazards Commission (NHC)	b) General Approach to Hazard Mapping		Maps	Oppose	NHC supports the use of regulatory hazard mapping, in the form of overlays, to spatially identify areas of the district that are prone to natural hazards. It opposes the removing of hazard overlays from the District Plan and using information stored in a GIS viewer due to concerns over the ability for people to contest the information (i.e. natural justice - lack of opportunity to be heard). Maps can be changed without notifying or consulting the residents as required for a District Plan change. While access to the most current data is essential to informed decision-making, it is equally important that consultation processes are embedded within policy frameworks.*	That hazard mapping remain as regulatory maps within the District Plan.	Oppose	Kainga Ora considers that having the hazard maps sit outside of the District Plan provides for better management of land uses in relation to hazards, as hazards are dynamic and change over time. Kāinga Ora does not consider that the approach presents a natural justice issue as natural hazards are defined in the District Plan, the process for determining definitions, policies and rules are subject to RMA schedule 1 processes. Changes to information in the GIS viewer can still be consulted on by the Council in accordance with s82 of then Local Government Act 2002.	Disallow
7	8	22	Natural Hazards Commission (NHC)	d) Strategic Direction		SDNH-I1	Support	NHC supports outlining the issues that pertain to natural hazard risk management. Specifically, it supports the recognition of climate change, residual risk, and the recognition that there may community expectations for continued development in high-risk areas. Identifying these complexities and challenges is useful for developing rules and policies to reduce the impacts to people and property in natural hazard events.*	Retain SDNH-I1	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
8	22	22	Natural Hazards Commission (NHC)	e) Flooding	Development adjacent to waterways	NATC-R3	Support	NHC supports adding a consideration of natural hazard risk into the matters of discretion. This can contribute to reducing the impacts to people and property in future natural hazard events.*	Retain Rule NATC-R3	Support in Part	Kāinga Ora supports this submission subject to more information on, and its review of, the suggested wording of the assessment criteria.	Allow in part
9	25	22	Natural Hazards Commission (NHC)	h) Land Stability	Other land stability provisions	SUB-S8	Amend or Support in Part	NHC supports consent application information being required to demonstrate that the site is suitable for development. Landslides, liquefaction, and compressible soils can cause significant damage to residential properties. Identifying and avoiding land stability hazards can reduce the impacts to people and property in future hazard events. However, NHC recommends strengthening this performance standard to refer to relevant guidance for planning in landslide prone and liquefaction prone areas. NHC refers to two relevant guidance documents: (1) GNS Science (2024). Landslide planning guidance: Reducing landslide risk through land use planning. (2) MBIE & MfE (2017). Planning and engineering guidance for potentially liquefaction-prone land Resource Management Act and Building Act aspects.*	That SUB-S8 is amended as follows: *3a As part of a subdivision consent application information will be required to establish whether the site is or is likely to be subject to damage through land stability hazards (including landslides, liquefaction and soft, compressible soils). It shall be demonstrated that the site is suitable for subdivision and for the intended future use, and that it will not worsen the effects on other property of any land stability hazard. Site suitability will also be determined using:* *i. GNS Science (2024). Landslide planning guidance: Reducing landslide risk through land use planning,* *ii. MBIE & MfE (2017). Planning and engineering guidance for potentially liquefaction-prone land Resource Management Act and Building Act aspects.*	Allow in part	Kāinga Ora supports guidance documents acting as a guide only and therefore seeks that reference to these guidance documents are added as an advice note under the standard so that it does not become a requisite for the standard.	Allow in part
10	27	22	Natural Hazards Commission (NHC)	e) Flooding	Overland flowpaths	EW-S1(1)	Support	NHC supports ensuring that earthworks will not impact Overland Flowpath entry or exit points or catchment size. Overland Flowpaths represent low areas in terrain where flood waters preferentially flow during floods. Often, they can result in high levels of risk as the depth and velocity of water can be increased. Maintaining Overland Flowpaths by protecting their entry and exit points is effective to reduce the impact to people and property in flood events.*	Retain EW-S1(1)g	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
11	29	22	Natural Hazards Commission (NHC)	j) Other	Matters of discretion and control	Matters of control and discretion in zone chapters	Support	NHC supports a general matter of control and matter of discretion being the extent to which natural hazards are avoided or mitigated. Assessing natural hazard risk management as part of matters of control and/or matters of discretion is a useful way to support the reduction of impacts from natural hazards.*	Retain the proposed matters of control and discretion in the zone chapters relating to natural hazards.	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
12	30	22	Natural Hazards Commission (NHC)	j) Other	Matters of discretion and control	Assessment criteria in zone chapters	Support	NHC supports a general assessment criteria being the extent to which natural hazards are avoided or mitigated. Assessing natural hazard risk management as part of potential conditions is a useful way to support the reduction of impacts from natural hazards. We also support assessing the likelihood and consequence of an event as natural hazard risk is defined as the potential likelihood and consequence of an event. Identifying these components can support a risk-based approach to natural hazard risk management and reduce the impacts to people and property in future events.*	Retain the general assessment criteria relating to natural hazards in the zone chapters.	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
13	8	45	Bay of Plenty Regional Council (BOPRC)	d) Strategic Direction		SDNH-O1	Amend or Support in Part	BOPRC supports the intent of SNDH-O1, but states it is unclear whether this objective only relates to new land use and development or whether it is also intended to capture both existing and new land use and development, such as building extensions. For consistency, it is recommended that the wording be changed from 'land use, subdivision and development' to 'subdivision, land use and/or development'.*	Clarify whether SDNH-O1 will capture both new and existing land use and development by amending as follows: *…associated with ~~land use, subdivision and development~~ subdivision, land use and/or development are acceptable.*	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
14	9	45	Bay of Plenty Regional Council (BOPRC)	d) Strategic Direction		SDNH-O2	Amend or Support in Part	BOPRC supports the proposed objective on resilience to climate change, stating it is consistent with RPS Policy IR 2B, which requires regard to be had to the likely effects of climate change. As for SDNH-O1, for consistency, it is recommended that the wording be changed from 'land use, subdivision and development' to 'subdivision, land use and/or development'.*	Amend SDNH-O2 as follows: *…associated with ~~land use, subdivision and development~~ subdivision, land use and/or development are acceptable.*	Support	Kāinga Ora supports this submission subject to its own submission.	Allow
15	12	45	Bay of Plenty Regional Council (BOPRC)	d) Strategic Direction		SDNH-AER1	Amend or Support in Part	For consistency, it is recommended that the wording be changed from 'land use activities and subdivision' to 'subdivision, land use and/or development activities'. The sentence also appears to be incomplete and therefore it is also recommended to add 'achieve an acceptable level of risk. *It is also unclear whether SDNH-AER1 is seeking to achieve 'acceptable risk' as defined in the proposed definition or an 'acceptable level of risk' as it relates to NH-MD1.2.	Amend SDNH-AER1 for clarity and consistency as follows: *The design and management of ~~land use activities and~~ subdivision, land use and/or development ~~activities~~ to achieve an acceptable level of risk.* Clarify whether the anticipated environmental result is 'acceptable risk' as per the proposed definition or acceptable levels of risk as it relates to NH-MD1.2	Support	Kāinga Ora supports this submission subject to its own submission.	Allow

	A	B	C	F	G	H	I	J	K	L	M	N
2	**Sub Point #**	**Sub ID #**	**Submitter Name**	**Topic**	**Sub-Topic**	**Plan Reference**	**Position**	**Summary of Submission Point**	**Relief Sought by Submitter**	**Käinga Ora Response**	**Käinga Ora Reasons**	**Decision(s) sought (allow or disallow)**
16	15	45	Bay of Plenty Regional Council (BOPRC)	e) Flooding	Overland flowpaths	NH-PB	Amend or Support in Part	BOPRC supports the intent of Policy NH-PB but recommends a minor drafting change to improve readability.*	Amend NH-PB as follows: ... *3. Restricting activities that may obstruct an overland flowpath; ~~and~~* *4. Assessing the impact of any changes to the entry of exit points of overland flowpaths on a site that impact on other sites and infrastructure; and* ...	Support	Käinga Ora supports this submission subject to its own submission.	Allow
17	18	45	Bay of Plenty Regional Council (BOPRC)	i) Geothermal Hazards	Management of geothermal hazards	NH-P4	Amend or Support in Part	This existing policy does not reflect the 'new' scenario for buildings that do not require building consent (see comments against NH-R8(4) below)). NH-P4(3) needs to be clarified so it is the risks associated with the building and development of the site that need to be mitigated, to be more consistent with the wording in NH-R8(2).*	Amend policy NH-P4(3) to ensure it covers all scenarios: 3. Requiring site-specific geothermal assessments to be submitted at the time of application for building consent or project information memorandum (PIM) to identify the hazards and how risks are being mitigated for the development of the site; and...	Oppose	Käinga Ora questions the addition of a PIM within this policy. The purpose of a PIM is for Council to advise an applicant of information that would affect their building work	Disallow
18	20	45	Bay of Plenty Regional Council (BOPRC)	j) Other	Matters of discretion and control	Matters of discretion and control	Amend or Support in Part	BOPRC questions the amendments to the wording of the matters of discretion specifically in NH-R1(2)(a), NH-R3(1)(a) and NH-R6(2)(a). While it supports consistent terminology throughout the District Plan, BOPRC states it is unclear why the wording 'avoided or remedied' has been used without the option to mitigate - it seeks an amendment to include the option to 'mitigate'. Furthermore, it questions the change from '....the worsening of any hazard identified on the planning maps are managed' to '...the worsening of any hazard identified'. BOPRC states that it is unclear why there is any need to identify the worsening of any hazard when the natural hazard risk has already been avoided, remedied or mitigated and considers this should be clarified. In relation to similar matters of control and discretion proposed to be added across all relevant zones, the Earthworks Chapter and the Lakes A Zone, BOPRC states it supports the intent of including natural hazards given it is a matter of national importance. However, it considers that the reference to 'and the worsening of any hazard' needs clarification and appears to be inconsistent with other similar wording in PC8, which requires the worsening of any hazard to be 'identified'.*	Amend the matters of discretion to state *'risks are avoided, remedied or mitigated and...'* In relation to NH-R6, BOPRC also suggest an alternative of more directly referring to acceptable risk . Clarify why there is a need to identify the worsening of any hazard if the natural risks are required to be avoided, remedied or mitigated and the differences between wording, which requires the worsening of any hazard to be identified.	Support	Käinga Ora supports this submission subject to its own submission.	Allow
19	21	45	Bay of Plenty Regional Council (BOPRC)	e) Flooding	Overland flowpaths	NH-R4	Amend or Support in Part	BOPRC considers that the rule that permits buildings in floodprone areas that meet minimum floor levels (NH-R4(2)) needs a performance standard worded consistently with NH-R5 (relating to overland flowpaths) so that it is clear that standards relating to overland flowpaths also need to be met for a building to be a permitted activity.*	Amend NH-R4(2) as follows: *c. The building and structures do not result in a change to the entry or exit point of an overland flowpath on a site, pipes or it reduces the capacity of the overland flowpath.*	Support in Part	Käinga Ora support the intention of the relief sought by BOPRC, however consider that this relief would be best located under NH-R5 to enable users to find all rules relating to overland flowpaths in one section.	Allow
20	22	45	Bay of Plenty Regional Council (BOPRC)	e) Flooding	Development in Floodprone Areas	NH-R4, NH-R5	Amend or Support in Part	BOPRC note that NH-R4, being the permitted activity rule linked to new Rule NH-R5, does not capture conversions of existing buildings from non-habitable to habitable spaces, and therefore will not be subject to new Rule NH-R5. On this basis, BOPRC considers that the heading for NH-R4 should be amended to capture these situations or similar relief.*	Amend the heading of NH-R4 as follows: *New buildings, ~~and~~ additions to existing buildings and conversions of existing buildings from non-habitable to habitable buildings in areas susceptible to flooding*	Support	Käinga Ora supports this submission subject to its own submission.	Allow
21	23	45	Bay of Plenty Regional Council (BOPRC)	e) Flooding	Overland flowpaths	NH-R5	Amend or Support in Part	BOPRC supports the intent of NH-R5 but considers that there will likely be implementation issues relating to what consents are relevant. It notes that thresholds for regional consents are different and small scale developments may trigger resource consent under the District Plan but not require a stormwater discharge consent (and/or earthworks consent) from the Regional Council, resulting in further confusion. BOPRC considers that the current approach may result in RLC relying on Regional Council to authorise activities, however due to overland flowpaths not being the primary trigger for regional council stormwater discharge permits (e.g. discharge to land soakage), NH-R5 as currently proposed may result in unintended flood risks on neighbouring properties. On this basis, Regional Council seeks to remove specific reference to stormwater discharge permits and replace with reference to a consent that specifically authorises the modification of an overland flowpath. BOPRC also seek that Rural Zones should be included in NH-R5 spatial layers. It notes that, while these are less intensely developed, Rural zones contain many overland flow paths and therefore changing the entry and exit points of overland flowpaths in the Rural zone, including lifestyle zones, which are becoming increasingly dense, could still pose a natural hazard risk to people and their property.*	Amend NH-R5(1)(b) to state: ... *b. The activity is not authorised by ~~a stormwater discharge permit, consent or permit~~ granted by the regional council that specifically authorises the modification of an overland flowpath.* Amend NH-R5 to also be applicable to Rural Zones	Support	Käinga Ora supports this submission subject to its own submission.	Allow
22	32	45	Bay of Plenty Regional Council (BOPRC)	j) Other	Matters of discretion and control	Matters of discretion and control	Amend or Support in Part	BOPRC states that it appears that the intention of removing the references to flood risk assessments in matters of control and discretion is due to duplication issues given that PC9 (Housing for Everyone) introduced NH-R4, which requires flood risk assessments where anticipated flood depths are higher. However, Regional Council is concerned that there may be unintended consequences associated with the removal of these matters of control and discretion given that NH-R4 only pertains to buildings in floodable areas and not other relevant site design factors including land modification, utilities and access. It is also unclear why the flood risk assessment requirement has been retained for the Rural zone (RURZ-MC4), which is also subject to NH-R4, and therefore both these matters should be clarified for consistency of approach across the relevant zones. This approach is consistent with RPS NH 4B.*	Clarify whether or not there are any unintended consequences associated with removing the reference to flood risk assessment in the matters of control and discretion across all relevant zones (that are not covered by NH-R4, which pertains to new buildings) and why the requirement for a flood risk assessment has been retained for the Rural zone (RURZ-MC4) but not other zones, which are also subject to NH-R4.	Support	Käinga Ora supports this submission subject to its own submission.	Allow
23	34	45	Bay of Plenty Regional Council (BOPRC)	e) Flooding	Development in Floodprone Areas	Lakes A Zone 6.0 Building Platforms, clause A6.1.1.2. B6.1.1.1 and RD6.1.1	Support	BOPRC supports the reliance on the Natural Hazards Chapter, which refers to the 1%AEP lake flood level, and the removal of references to the 2%AEP lake flood level.*	Retain the changes to Lakes A Zone 6.0 Building Platforms, clause A6.1.1.2. B6.1.1.1 and RD6.1.1 as notified.	Support	Käinga Ora supports the proposed changes to the Lakes A Zone chapter to enable consistency through the District Plan.	Allow

Fonterra Limited Further Submission Rotorua Lakes Council Plan Change 8 (Natural Hazards)

31 October 2025

To:	Rotorua Lakes Council Email: policy.planning@rotorualc.nz
From:	Fonterra Limited
Contact:	Suzanne O'Rourke National Environmental Policy Manager
Address for Service:	Fonterra Limited Mitchell Daysh Ltd PO Box 1307 Hamilton 3240 Attention: Graeme Mathieson

[redacted]

Fonterra Limited (**"Fonterra"**) made a submission on Proposed Plan Change 8 (Natural Hazards) (**"PC8"**) to the Rotorua District Plan (**"District Plan"**) and is listed as Submitter 43. Fonterra has an interest in PC8 that is greater than the interest the general public has.

Fonterra has significant assets and operational interests within the Rotorua Lakes District that may be affected by PC8, including:

- The Reporoa Dairy Manufacturing Site (and associated irrigation farms) at 3542 State Highway 5, Reporoa;
- Farm Source at 40 Marguerita Street, Rotorua; and
- Fonterra Brands NZ at Wahanga-A-Rangi Crescent, Owhata, Rotorua 3074.

Attachment A sets out Fonterra's further submissions in respect of points made by other parties.

I confirm that I am authorised on behalf of Fonterra to make this further submission.

Fonterra wishes to be heard in support of this submission. If others are making a similar submission, Fonterra will consider presenting a joint case with them at the hearing.

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

I can confirm that copies of this further submission have been served on the person making the original submission.

Dated: 31 October 2025

Suzanne O'Rourke

National Environmental Policy Manager, Water & Environment

FONTERRA LIMITED

ATTACHMENT A – FURTHER SUBMISSIONS

SUBMITTER	SUB NO.	CHAPTER / APPENDIX	SUB-SECTION	SUPPORT OR OPPOSE	REASON FOR SUPPORT OR OPPOSITION	DECISION SOUGHT
Natural Hazards Commission ("**NHC**")	22.2	General approach to hazard mapping	General approach to hazard mapping	Support	NHC supports the use of regulatory hazard mapping, in the form of overlays, to spatially identify areas of the district that are prone to natural hazards. NHC seeks that hazard mapping remain as regulatory maps within the District Plan. This outcome is supported by Fonterra.	Allow the submission
Waikato Regional Council ("**WRC**")	15.10	Flooding, Development in Floodprone Areas	NH-PA	Oppose	WRC recommends amending Policy NH-PA to require risk assessment for all new developments regardless of flood depth. Fonterra opposes this amendment as it is inconsistent with Rule NH-R4, which permits new buildings and additions to existing buildings within a floodplain where flood depth, overland flow or lake inundation is 300mm or less (subject to the building having an appropriate minimum floor level). Fonterra notes that WRC has not sought any changes to Rule NH-R4 in this regard.	Disallow the submission
	15.11	Flooding, Development in Floodprone Areas	NH-R4	Support	WRC questions the rationale for permitting development within a floodplain where flood depth is less than 300mm without requiring a consent, specifically requesting justification for the 300mm criterion. Fonterra supports the submission in this regard.	Allow the submission
Bay of Plenty Regional Council ("**BOPRC**")	45.21	Flooding, Overland flowpaths	NH-R4	Oppose	BOPRC seeks an amendment to the permitted activity requirements of Rule NH-R4(2) (that permits buildings in flood prone areas that meet minimum floor levels) which introduces a performance standard consistent with Rule NH-R5 (relating to overland flowpaths). Fonterra opposes this submission and considers that there is no need to include the overland flowpath permitted performance standards in Rule NH-R5 in Rule NH-R4 as they are separate rules.	Disallow the submission

SUBMITTER	SUB NO.	CHAPTER / APPENDIX	SUB-SECTION	SUPPORT OR OPPOSE	REASON FOR SUPPORT OR OPPOSITION	DECISION SOUGHT
	45.23	Flooding, Overland flowpaths	NH-R5	Support in part	BOPRC seeks to amend Rule NH-R5 (Buildings & Structures in an Overland Flowpath) so that it does not reference exempting stormwater discharge permits granted by a Regional Council but instead more generically references exempting a consent or permit granted by a Regional Council that specifically authorises the modification of an overland flowpath. BOPRC also seeks that the rule is extended to Rural Zones - noting that these include many overland flowpaths and include lifestyle zones, which are becoming increasingly dense. Fonterra opposes the submission in this regard. Fonterra is concerned that this is an overly restrictive approach in relation to the Rural 1 Zone, potentially resulting in unnecessary bureaucracy, costs and delays for industry, farmers and other rural stakeholders (noting that overland flowpaths have not yet been identified).	Disallow the submission in part, specifically the part seeking to include Rural 1 Zones in rule NH-R5
	45.31	Flooding, Overland flowpaths	EW-S1(1), EW-S1(2)	Support in part	BOPRC seeks amendments to the phrasing in EW-S1(1)(g) so it is consistent with NH-R5 and requires that earthworks do not *"reduce the capacity"* of an overland flowpath (instead of *"resulting in a change to the catchment size"* of the overland flowpath). BOPRC also seeks that the standards are extended to Rural Zones - noting that these include many overland flowpaths and include lifestyle zones, which are becoming increasingly dense. Fonterra opposes the submission in this regard for the reasons outlined above.	Disallow the submission in part, specifically the part seeking to include Rural 1 Zones in standards EW-S1(1), EW-S1(2)
Rotorua Planning Consultants Group	39.8	Land Stability, Earthworks	EW-S1(1)	Support	Fonterra supports the outcomes of the submission and shares the same concern as the submitter that the more restrictive changes to standards for cut and fill in rural zones are significant. Fonterra agrees that the proposed changes do not enable general	Allow the submission

SUBMITTER	SUB NO.	CHAPTER / APPENDIX	SUB-SECTION	SUPPORT OR OPPOSE	REASON FOR SUPPORT OR OPPOSITION	DECISION SOUGHT
					rural/farming and development activities expected within the Rural 1 Zone environment.	

Table 1: *Further Submitter Details*

Name of Submitter:	Iarau Ltd, on behalf of Tapuika Iwi Authority (Tapuika)	
Contact (if relevant):	Te Rua Wallace	
Address for service (email preferred)	[redacted]	
Phone number:	[redacted]	
Hearing attendance:	I do wish to be heard in support of my submission at the public hearing of submissions	
Willingness to present joint case at hearing:	If others make a similar submission, I will consider presenting a joint case with them at a hearing.	
Status to make a further submission:	*[Indicate which one of these criteria you meet to make a further submission and why:]*	
	Y/N	I am a person representing a relevant aspect of the public interest because: *[Explain why]*
	Yes	I am a person who has an interest in the proposal that is greater than the interest the general public has We hold mana whenua rights in the Te Puke, Pāpāmoa and Maketū area.
Signature:	*[A signature is not required if you send this submission electronically]*	
Date of Submission:	31/10/2025	

Table 2: *Original submissions supported or opposed*

Submission Number *State the submission ID# for the original submission that you are commenting on (you can find this in the summary of submissions).*	**Submitter's Name** *State who made the submission that you are commenting on.*	**Section Reference (Submission Point)** *Clearly indicate which parts of the original submission you are commenting on – preferably use the submission point number in the summary of submissions.* *Use a separate row for each point you support/oppose.*	**Support/ Oppose** *State your position on the point made in the original submission, for example, whether you support, oppose or support in part, etc.*	**Reasons** *Explain the reasons for your support / opposition.*
Submitter 57	Ngāti Mākino and members of Te Urunga a Kea (Te Arawa Climate Change working Group)	57.1	**Support**	Tapuika supports amendments for integrated stormwater management. Strengthening upstream controls aligns with Tapuika values. The Kaituna River Document (KRD) vision requires councils to protect river health and mauri through integrated land and water management.
		57.6	**Support**	Supports enabling culturally safe development pathways for whenua Māori. The KRD emphasises sustainable land use and kaitiakitanga consistent with this policy.
			Support	Recognition of iwi management plans gives effect to Te Tiriti o Waitangi principles of partnership and participation and provides a consistent framework for including cultural evidence in planning decisions. Mandatory CIAs for hazard-related consents will ensure mātauranga Māori informs both risk assessment and mitigation. The KRD directs councils to incorporate mātauranga Māori and iwi plans into decision making.
Submitter 58	Te Rūnanga o Ngāti Kearoa Ngāti Tuara	58.5, 58.6	**Support**	Tapuika shares similar environmental conditions where native forests, regenerating bush, and rural landscapes are significant. Wildfire risk threatens cultural and ecological values. Managing it aligns with the KRD's objective to protect ecological integrity and community resilience.
		58.7	**Support**	Fault rupture mapping and associated controls can have significant implications for whenua Māori, which is often already fragmented and limited in areas due to historical confiscations and land alienation.

				Support is needed for collaborative mapping, combining mātauranga Māori with geotechnical science. The KRD encourages such partnership approaches.
		58.8, 58.9	**Support**	The plan needs to support a culturally responsive, risk-based approach to slope stability. The KRD promotes resilience and kaitiakitanga across the Kaituna catchment.

Summary:

This further submission supports the submissions of Ngāti Mākino and Ngāti Kearoa Ngāti Tuara and aligns with the statutory vision of Te Maru o Kaituna as expressed in the Kaituna River Document (Kaituna, he taonga tuku iho). Strengthening hazard management provisions that integrate mātauranga Māori, enable equitable development of whenua Māori, and promote catchment-wide resilience gives effect to the Kaituna vision that the river and its catchment are healthy, protected, and restored for future generations.

***Table 1:** Further Submitter Details*

Name of Submitter:	*Rotorua Lakes Council – Water Services*
Contact (if relevant):	*Eric Cawte*
Address for service (email preferred)	[redacted]
Phone number:	[redacted]
Hearing attendance:	I do wish to be heard in support of my submission at the public hearing of submissions.
Willingness to present joint case at hearing:	If others make a similar submission, I will consider presenting a joint case with them at a hearing.
Status to make a further submission:	I am a person who has an interest in the proposal that is greater than the interest the general public has *I represent the water services department of Rotorua Lakes Council, which manages stormwater networks and, therefore, has a stronger operational and financial interest in rules about overland flowpaths, earthworks and related consenting implications for stormwater activities than the general public.*
Signature:	*Sent electronically – no signature required.*
Date of Submission:	*31 October 2025*

Table 2: *Original submissions supported or opposed*

Submission Number	Submitter's Name	Section Reference (Submission Point)	Support/ Oppose	Reasons
45	Bay of Plenty Regional Council (BOPRC)	2	Support	PC8 states that stormwater management is out of scope and standards for subdivision and development are excluded from PC8 pending policy development alongside each catchment management plan required under Rotorua Lakes Council's comprehensive stormwater consent. The submission by BOPRC acknowledges that it may be preliminary to incorporate such standards into the District Plan via PC8 at this time and encourages Rotorua Lakes Council to develop these stormwater management provisions as soon as the catchment management plans are finalized. The submission seeks that an explanation be included in the introduction to the Natural Hazards chapter of the District Plan advising plan users that stormwater management provisions will be incorporated into the District Plan once catchment management plans have been finalized. The Rotorua Lakes Council's Water Services department supports the development of stormwater management standards for subdivision and development once the catchment management plans are finalized and agrees that it would be appropriate to include an explanation in the introduction to the Natural Hazards chapter of the District Plan in the interim.
45	BOPRC	6	Support	PC8 includes new rules relating to overland flowpaths. The term "overland flowpath" is defined in the District Plan. The submission by BOPRC supports defining "overland flowpath" but notes that the words "major overland flowpath" are also used in the District Plan and are not defined. The submission seeks that the words "major overland flowpath" either be defined or removed. The Rotorua Lakes Council's Water Services department supports retaining a definition of "overland flowpath" and supports either defining or removing references to "major overland flowpath".
45	BOPRC	23 & 31	Oppose	PC8 proposes new rules/performance standards for buildings, structures and earthworks that seek to avoid flood impacts on neighbouring properties caused by changes to overland flowpaths in urban zones and settlement areas in the Lakes A Zone (NH-R5, EW-S1(g) and Lakes A Zone Rule 5.0 Earthworks – clauses A5.1.1, and C5.1.1). Plan Change

				8 also proposed exceptions from these requirements for buildings and structures / earthworks that are authorised by a stormwater discharge permit granted by the regional council. The submission by BOPRC seeks that the exceptions to these rules be amended as follows: • NH-R5(1)(b) *The activity is not authorised by a ~~stormwater discharge permit~~ consent or permit granted by the regional council that specifically authorises the modification of an overland flowpath.* • EW-S1(1)(g) *...except where the earthworks ~~are for an activity authorised by a stormwater discharge permit granted by the regional council~~ are granted consent or permit by the regional council that specifically authorises the modification of an overland flowpath* . • Clauses A5.1.1.7 and C5.1.1.8 of Rule 5.0 of the Lakes A Zone: *...the earthworks shall not result in a change to the entry or exit point on a site of an overland flowpath, or ~~the catchment size~~ reduce the capacity of an overland flowpath, except where the earthworks ~~are for an activity authorised by a stormwater discharge permit granted by the regional council~~ are granted consent by the regional council that specifically authorises the modification of an overland flowpath.* The submission by BOPRC is concerned that the flooding impacts of changes to overland flowpaths may not have been adequately considered through the regional consent process – they state the overland flowpaths may not be the primary trigger for stormwater discharge permits and have given an example of discharge to land soakage. RLC opposes the BOPRC submission and seeks the removal of the proviso to the rule about specific authorisation of the modification of an overland flowpath. The proposed amended clauses are shown below: • NH-R5(1)(b) *The activity is not authorised by a ~~stormwater discharge permit~~ consent or permit granted by the regional council ~~that specifically authorises the modification of an overland flowpath~~.* • EW-S1(1)(g) *...except where the earthworks ~~are for an activity authorised by a stormwater discharge permit granted by the regional council~~ are granted consent or permit by the regional council ~~that specifically authorises the modification of an overland flowpath~~ .* • Clauses A5.1.1.7 and C5.1.1.8 of Rule 5.0 of the Lakes A Zone: *...the earthworks shall not result in a change to the entry or exit point on a site of an overland flowpath, or ~~the catchment size~~ reduce the capacity of an overland flowpath, except where the earthworks ~~are for an activity authorised by a stormwater discharge permit granted by the regional council~~ are granted consent by the regional council ~~that specifically authorises the modification of an overland flowpath~~.*

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				In addition the Rotorua Lakes Council Water Services department considers that limiting the exception only to those applications where the modification of the overland flowpath is *specifically authorised* in a discharge consent or permit may lead to unnecessarily requiring additional resource consents for stormwater projects that, although not specified in a consent, are already subject to stringent design standards to protect against flooding impacts under the Comprehensive Stormwater Consent for Rotorua city (RM17-0635-AP). The Comprehensive Stormwater Consent grants consent under a number of rules of the Regional Resource Management Plan to Rotorua Lakes Council in relation to its stormwater activities in urban sub-catchments. The conditions relating to the discharge permit require: • Stormwater infrastructure to be designed and managed in general accordance with standards and guidelines (clause 7.1) • That any overland flowpaths constructed allow the passage of a 1%AEP (Q100) storm event and that any infrastructure constructed must not increase upstream or downstream flood hazards to people and property (clause 9.1) • Where it is not possible for upgrades to existing stormwater infrastructure to meet clause 9.1, that appropriate mitigations are developed elsewhere within the catchment to avoid any increase in upstream or downstream flood hazards. (clause 9.2). The Comprehensive Stormwater Consent also requires that catchment management plans be prepared and submitted to the BOPRC for certification within 6 years after commencement of the consent. These plans are required to, amongst other things, identify stormwater management issues and mitigation options (including any new infrastructure to be constructed). This certification process provides additional safeguards against changes to overland flowpaths causing adverse flooding effects. Given the requirements and safeguards already in place for urban stormwater activities, Rotorua Lakes Council's Water Services department considers that requiring additional resource consents for these activities would be inefficient and unnecessary and would result in increased cost and delay in carrying out stormwater works that are designed to manage risks from flood hazards within the Rotorua urban area. Therefore Rotorua Lakes Council's Water Services department seeks that A permitted activity status is added to Rule NH-R5. Activity Status: Permitted Where: a. *works on the Rotorua Lakes Council urban stormwater network are authorised by resource consent or permit granted by the Regional Council*

				Alternatively, Rotorua Lakes Council's Water Services department seeks that the exception be amended to clearly authorize Rotorua Lakes Council's urban stormwater works, such as by allowing earthworks/activities "*granted consent or permit by the regional council that specifically authorises the modification of an overland flowpath, or are for the maintenance, renewal or upgrade of Rotorua Lake Council's urban stormwater network where the discharge is authorised by a consent by the regional council*".

31 October 2025

BAY OF PLENTY REGIONAL COUNCIL TOI MOANA

Andrew Moraes
Chief Executive
Rotorua Lakes Council
Private Bag 3029
Rotorua 3046

Tēnā koe Andrew

Bay of Plenty Regional Council further submission to proposed Plan Change 8 to the Rotorua District Plan

Please find enclosed Bay of Plenty Regional Council's further submission to proposed Plan Change 8 to the Rotorua District Plan.

Bay of Plenty Regional Council appreciated the opportunity to work with Rotorua Lakes Council on the development of proposed plan change 8 prior to notification.

A copy will be sent to the people or organisations who made the original submissions to which our further submission relates.

Bay of Plenty Regional Council wishes to be heard in support of its further submission.

For matters relating to this submission please contact Sharlene Pardy, Team Leader, Environmental Planning ([redacted]

Nāku noa, nā,

Namouta Poutasi
General Manager, Strategy and Science

Table 1: *Further Submitter Details*

Name of Submitter:	*Bay of Plenty Regional Council*	
Contact (if relevant):	*Sharlene Pardy*	
Address for service (email preferred)	*PO Box 364* *Whakatane 3158*	
Phone number:	*0800 884 880*	
Hearing attendance:	I do wish to be heard in support of my submission at the public hearing of submissions	
Willingness to present joint case at hearing:	If others make a similar submission, I will consider presenting a joint case with them at a hearing.	
Status to make a further submission:	*[Indicate which one of these criteria you meet to make a further submission and why:]*	
	Y	I am a person representing a relevant aspect of the public interest because: The submitter is a Regional Council with statutory functions that include matters covered by the plan change.
	N	I am a person who has an interest in the proposal that is greater than the interest the general public has *[Explain why, for example "I own a property which is affected by potential fault rupture"]*
Signature:	*[A signature is not required if you send this submission electronically]*	
Date of Submission:	31 October 2025	

Table 2: *Original submissions supported or opposed*

Submission Number *State the submission ID# for the original submission that you are commenting on (you can find this in the summary of submissions).*	**Submitter's Name** *State who made the submission that you are commenting on.*	**Section Reference (Submission Point)** *Clearly indicate which parts of the original submission you are commenting on – preferably use the submission point number in the summary of submissions.* *Use a separate row for each point you support/oppose.*	**Support/ Oppose** *State your position on the point made in the original submission, for example, whether you support, oppose or support in part, etc.*	**Reasons** *Explain the reasons for your support / opposition.*
7	Fire and Emergency New Zealand (FENZ)	11 – Rule NH-R8 (i. geothermal hazards – management of geothermal hazards)	Support in part	Regional Council supports the gap that PC8 is seeking to address as outlined in this submission point, which will be created by the *'new National Environmental Standards for Granny Flats (minor residential units) Regulations'*. However, Regional Council is not yet satisfied that the NH-R8 provisions (NH-R8 (1-4)) as notified in PC8 are the most appropriate way to address this gap for the reasons outlined in Regional Council's original submission points on these provisions, including a restricted discretionary activity status under NH-R8(4). Therefore, Regional Council considers the relief sought in its original submission will better address this gap, which builds on the approach created under RLC's recently operative Plan Change 9: *Housing for Everyone*.
43	Fonterra	4 – EW-S1(2) (h. land stability – earthworks)	Oppose in part	While Regional Council acknowledges the intent of this proposed exception, it considers further analysis is required to avoid potential unintended adverse environmental consequences, such as floodplain displacement. As currently worded, the exception could be subject to broad interpretation. Therefore, Regional Council recommends the wording of exceptions ensures the activity meets EW-S1(2) and will not displace floodplain storage.

21	Lake Ōkāreka Community Association (LOCA)	8 – NH-P4, NH-R6 & NH-R8 (i. geothermal hazards – management of geothermal hazards)	Neutral	Lake Ōkareka, including the Settlement Management Area, is not located within a known geothermal system. Regional Council understands the PC8 provisions as notified only apply within the mapped Geothermal Systems shown on RLC's online mapping service: *GeyserView – G6* or District Plan Map 212 (*Geothermal Systems of the Rotorua District*). Regional Council notes that other submitters, in addition to Lake Ōkareka Community Association, made similar comments in this regard, and therefore it appears that there may be some confusion about where these rules apply across the Rotorua District. Regional Council considers that the confusion may be a result of the *'Applicable Spatial Layers: All Zones'* column and to resolve this issue, Regional Council seeks that RLC, either: A) specify the relevant zones that the rules apply to in the 'Applicable Spatial Layers' column (rather than a 'catch all' applicable spatial layer), or alternatively; B) refer to District Plan Map 212 in all relevant provisions, including NH-P4, NH-R6 & NH-R8 (not just NH-R8) to reduce ambiguity where these rules apply to across the District.
21	LOCA	5 - NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Regional Council wishes to comment on the points made in this submission as they related to material generated either by or on behalf of BOPRC, and it is considered some comment may assist for decisions on Plan Change 8. The Regional Council considers the 2022 flood level analysis to be the best available information to determine flood hazard at Lake Ōkareka for the purpose of implementing the flood management provisions, while acknowledging its limitations of not including the impact of the pipeline and not including specific analysis of the impacts of climate change. This position is stated in a memorandum from Regional Council to RLC titled *'Lake Ōkareka Design Levels'* dated 1 September 2025 (see attached). Further reasoning is provided below explaining why other BOPRC lake level analysis (listed below) is not considered suitable for setting flood level

				recommendations for the purpose of setting building floor levels and is not considered the best available information for District Plan purposes. A) *Lake Ōkareka; Design of Pipeline Capacity; impacts on Lake Level Management, 17 November 2017 (as referenced in the PDP report, dated December 2017, and titled Lake Ōkareka Outlet Pipeline Upgrade – Options Assessment); and* B) *Lake Ōkareka; Modelling of Lake Level Management Guideline Options, 27 July 2018.* The two reports describe water-balance modelling of Lake Ōkāreka that includes: • Specific probability-based synthetic design-rainstorms determined from statistical analysis of historic rainfall at Lake Ōkāreka; • Climate-change impacts on the design rainstorms; • A calibrated relationship between lake inflows and rainfall determined from historic rainfall and lake level data along with records of pipeline discharge estimates at the time. The purpose of the 2017 modelling was to assess the relative performance of a range of pipeline discharge capacities in terms of reducing extreme lake levels. The purpose of the 2018 modelling was to investigate the relative influence of draft Lake Management Guidelines on the system – both in terms of high lake levels, and in terms of low lake levels, and low ecological stream flows. These guidelines are used to guide the pipeline management responses to lake levels and seasonal conditions and are sometimes referred to as the Pipeline Operation Protocol. The 2018 memo specifically states: *"Please note: these numbers are not provided for the purposes of setting building floor levels"*. The 2017 memo does not include such a statement, however neither does it mention building floor levels in its content but rather states that its purpose is to assess relative pipeline performance.

				To extend the purpose of the modelling to include determination of flood levels for buildings, additional items would need to be considered, included, and/or allowed for, such as listed here: • Specific design of methodology for that purpose; • Specific treatment of the likelihood for high lake level at the start of the design scenarios; • Inclusion of the agreed final Lake Management Guidelines; • Allowance for potential delays and errors in monitoring and human responses in pipeline management actions; • Allowance for partial debris blockages at the pipeline; • Inclusion of updated climate guidance; • Comprehensive peer review. Please note that this statement is an expression of our current understandings without any specific investigation. It should not be used as the sole basis of design of investigation methodology for any further analysis of flood levels at Lake Ōkareka.
5	Grant Olliff	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
13	Ann Hood	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
18	Brad Insull	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
23	Bruce and Lenna Wallace	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.

16	Carol Rolando and Brian Richardson	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
46	Christine Caughey	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
48	Dani Holt-Lyman	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
35	Craig Cunningham	4 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
44	Darren Huston	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
12	Euan and Joanne Campbell	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
31	Jack Smith	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
33	James Blakely	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
32	Jules Averill	4 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
9	K Huston	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
24	Kara Dorset	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.

1	Keirin Oppatt	1, 2 & 3 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
19	Martin Caughey	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
6	Neil Oppatt	6 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
40	Newvid Holdings Trust	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
36	Peter and Wendy Lewis	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
52	Ross Wilmoth	1 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
50	Simon and Megumi Ward	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
8	Tim Winstone	2 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
39	Rotorua Planning Consultants Group	4 – NH-PA, NH-R4 (e. flooding – hazard mapping / information)	Neutral	Refer to reasoning above in further submission point LOCA – 21.5.
56	Luke Nelson	3 – EW-S1(2) (h. land stability – earthworks	Oppose in part	Regional Council notes that earthworks are not always considered at the subdivision stage. Therefore, if RLC adopts the relief sought in this submission point, Regional Council seeks that the wording specifically states an approved subdivision where earthworks have been assessed at the subdivision stage or similar wording to this effect.

22	Natural Hazards Commission (NHC)	2 – Maps (b. general approach to hazard mapping)	Oppose	Locating natural hazard maps outside the District Plan is considered best practice for most hazards by Regional Council. This approach has recently been approved as best practice within the region for flooding through the Tauranga City Council Plan Change 27: *flooding from intense rainfall*. As part of implementing best practice, Regional Council recommends RLC develop a process to enable regular review and updates that consider community feedback where relevant. Regional Council has focused its further submission on this original submission point by the Natural Hazards Commission (22.2), which we consider representative of the similar concerns raised.
39	Rotorua Planning Consultants Group	2 – Maps (b. general approach to hazard mapping)	Oppose	Refer to reasoning above in further submission point NHC – 22.2.
22	Natural Hazards Commission	13 – NH-PAA (g. fault rupture – management of fault rupture hazard)	Support	Regional Council supports reference to the best available guidelines for natural hazard risk management as outlined in this submission point.
22	Natural Hazards Commission	19 – NH-R3 (g. fault rupture – management of fault rupture hazard)	Support in part	Regional Council supports reference to the best available guidelines for natural hazard risk management. However, Regional Council prefers a general reference to best practice guidance instead of a specific reference to a MfE document or terms that may be updated or superseded. Regional Council suggests using similar general wording to that proposed by the Natural Hazard Commission (22.13) - '*in line with the best available national guidelines for land use planning near active faults*.'
22	Natural Hazards Commission	25 – SUB-S8 (h. land stability – other land stability provisions)	Support in part	Regional Council supports reference to the best available guidelines for natural hazard risk management. However, Regional Council prefers a general reference to best practice guidance instead of a specific reference to a MBIE or GNS Science document that may be updated or superseded.

				Regional Council suggests using similar general wording to that proposed by the Natural Hazard Commission (22.13) - '*in line with the best available national guidelines for land use planning for landslides and liquefaction.'*
22	Natural Hazards Commission	21 – NH-R8 (i. geothermal hazards – management of geothermal hazards)	Support in part	Regional Council supports the intent of this submission point, however considers that the NH-R8 provisions as currently proposed could result in a perverse outcome as outlined in Regional Council's original submission on these provisions (refer to example scenario under plan reference or subject NH-R8(1)).
57	Ngāti Mākino and members of Te Urunga a Kea (Te Arawa Climate Change working Group)	6 – NH-P3 (i. geothermal hazards – co-existence with geothermal)	Support in part	Regional Council supports this submission point as it relates to seeking clarification of the policy intent in regard to existing and proposed development. Regional Council seeks to clarify that in relation to the relief sought in this submission point, geothermal bores are regulated through the Rotorua Geothermal Regional Plan (RGRP) as it relates to their drilling, modification or use.
41	Ngāti Tahu-Ngāti Whaoa Runanga Trust	5 – N/A – section 32 report – i. geothermal hazards – other)	Oppose in part	Regional Council considers that rather than separating the geothermal policies and rules into two sections as proposed in the relief sought for this submission point, RLC clarify where these policies and rules apply to as specified in Regional Council's further submission point above (refer to section reference: *21 – LOCA - 8 – NH-P4, NH-R6 & NH-R8 (i. geothermal hazards – management of geothermal hazards*)).
20	Red Stag Investments	3 and 4 – Definition Fault Rupture Hazard Area, NH-PAA, NH-R1 to NH-R3, fault mapping (g. fault rupture – management of fault rupture hazard	Neutral	Regional Council understands the difficulty of applying a rule framework where some of the underlying active fault mapping is uncertain. Regional Council is willing to attend further workshops led by RLC to resolve this issue.
21	LOCA	3 and 4 – Definition Fault Rupture Hazard Area, NH-PAA, NH-R1 to NH-R3, fault mapping (g. fault rupture –	Neutral	Refer to reasoning above in further submission point Red Stag Investments– 20.3 and 20.4.

		management of fault rupture hazard		
29	Rotorua Lakes Council (RLC)	4 – NH-R6 (i. geothermal hazards – management of geothermal hazards)	Support	Regional Council supports the intent of the relief sought in relation to this submission point and is willing to be involved in any discussions, including drafting of provisions (e.g. NH-R6) as it relates to responding to these changes.
29	RLC	5 – NH-R8 (i. geothermal hazards – management of geothermal hazards)	Support	Regional Council supports the intent of the relief sought in relation to this submission point and is willing to be involved in any discussions, including drafting of provisions (e.g. NH-R8) as it relates to responding to these changes. As outlined in Regional Council's original submission under plan reference or subject NH-R8(4), one potential pathway to address this issue is through integrating the Project Information Memorandum (PIM) process into the rule as proposed in the relief sought.
39	Rotorua Planning Consultants Group	6 – NH-R8 (i. geothermal hazards – management of geothermal hazards)	Oppose in part	Geothermal system boundaries are always only ever indicative, as the systems are alive and can change over time. While not created for the purposes of a hazard map, they are the most appropriate proxy given that geothermal hazards are most likely to occur within geothermal systems. The statement that there is *"a large part of the Rotorua field which does not have bores, surface features, hot ground or geothermal gas"* is at odds with our knowledge of the system and previous risk assessments undertaken, and while Regional Council is supportive of improved mapping over time, attempting to map the system at the level proposed is difficult due to the dynamic nature of the resource. However, there are of course naturally areas within the system/s with higher risk, which is why NH-R8 provides for site-specific assessments as a permitted activity, so that there is no consenting requirement, but the necessary checks to ensure the safety of people and property can be done at the appropriate time and scale. The supporting Geothermal Development Guidelines also provide a simple pathway where the site is low risk to further ensure that the process is as straightforward as possible.

				It is unclear where PC8 implies that development will be managed to reflect cultural values rather than risk, as NH-R8 does not include reference to cultural values. NH-P3 provides a cultural lens for development in traditional Māori settlements, where there is a functional need to be located close to geothermal in order to be able to undertake customary practices (which is provided for under the RGRP and RMA s14(3)(c)).
39	Rotorua Planning Consultants Group	7 – NH-R8 – i. geothermal hazards – management of geothermal hazards)	Support	Regional Council agrees with this submission point as it relates to resource consent not being required under NH-R8(4) but rather assessed under NH-R8(2), which requires a site-specific assessment that can be assessed through the PIM process. Refer to Regional Council's original submission under plan reference or subject NH-R8(4) as to how the PIM process could be integrated into the proposed provisions. This builds on the approach created under RLC's recent Plan Change 9: *Housing for Everyone*.

MEMORANDUM

BAY OF PLENTY REGIONAL COUNCIL TOI MOANA

To:

Kim Smith

Senior Policy Advisor, Rotorua Lakes Council

From:

Ingrid Pak

Hydrological Engineering Team Leader

Date: 1 September 2025

Subject: Lake Okareka Design Levels

Overview

The 1% AEP (Annual Exceedance Probability) design level used by Rotorua Lakes Council (RLC), and provided by Regional Council is **355.328m RL (Moturiki Datum)** incl. 0.7m freeboard for estimate imprecision, wind and waves, and tectonics; it does not include any allowance for climate change. Climate change affects for the smaller Rotorua lakes are expected to be less than 0.5 metres.

This 1%AEP design level was derived from statistical analysis of extreme lake levels for the period 1971 to 2020. The pipeline upgrade was completed in 2022. Regional Council recognises that the level is therefore conservative, but it is the best we currently have.

The next review of design lake levels is planned for 2030 (10 year review period). It is recognised that the statistical analysis of extreme lake levels is no longer suitable for Lake Okareka, and that an alternative method (water balance model) will be needed. Based on water balance modelling undertaken by BOPRC during the pipeline design, the positive impact of the pipeline is likely to be offset by the negative impact of climate change over the long term.

Therefore, in the short term (until further analysis and mapping is complete in 2030) Council consider the extreme lake level analysis (2022) to be the best available information to implement the flood risk management provisions in the DP.

Any need for further modelling will be discussed between Regional Council and RLC.

Details

<u>Assessments:</u>

- BOPRC has assessed high lake levels at Okareka by two different methods:

Objective ID:

  - 1) Modelling the lake's response to statistically derived extreme rainfall (West 2017, 2018)
  - 2) Statistical analysis of extreme lake levels (Rotorua Lakes Design Level Technical Report, Pak 2022).

- The two methods give very similar results where they overlap.
- Method 1 can assess the impact of engineered changes (such as the pipeline upgrade) and climate changes, whereas Method 2 cannot be readily used for this.
- While Method 1 was used to determine relative benefits of pipeline upgrade options, it has not been used to determine design flood levels at Lake Okareka.
- It is not appropriate to mix the methods.
- The estimated impact of climate change is similar to the estimated benefit from the pipeline upgrade.

Design level:

- Rotorua Lakes Design Level Technical Report 2022: 1%AEP for Lake Okareka is 1%AEP 355.328m RL (Moturiki Datum) incl. 0.7m freeboard for estimate imprecision, wind and waves, tectonics; no climate change (climate change affect expected to be less than 0.5m). This is what RLC currently use for setting floor levels.
- The Plan proposal is for the district plan to set the event probability and climate horizon to be used for building approvals (1%AEP 2130) - not to actually set the level. So as new and or better information/analysis comes to hand it can be applied.
- A planned review of design levels in about 2030 (every 10 years), using the same statistical analysis of extreme lake levels, will still not address community concerns.

Ingrid Pak

Hydrological Engineering Team Leader

MEMORANDUM

Bay of Plenty REGIONAL COUNCIL

To: Andy Bruere
Manager

From: Peter West **Date:** 17 November 2017
Contract Engineer

File Ref:

Copy To: Peter Blackwood

Subject: **Lake Okareka; Design of Pipeline Capacity; impacts on Lake Level management**

Andy,

Executive Summary

This memo reports on an assessment of the lake level management performance to be expected from a range of potential pipeline capacities.

BOPRC's water balance model for Lake Okareka from 2013[i,ii] has been re-run with 2017 rainfall data and finds close agreement with the observed lake levels, pipeline discharge estimates and pumping records.

A statistical assessment of Okareka (daily read) rainfall data since 1966 has been carried out to estimate the probability of long-duration high rainfall events in the future – probabilistic design rainfall. The likely effects of climate change have also been applied to these design rainfalls in the manner recommended by the Ministry for the Environment.

The design rainfall has been applied to the water balance model to determine the likely lake levels that would result from the design rainfall events; and against a range of potential pipeline capacities.

Tables of peak lake level, and lake recovery times, have been produced for 20, 50, 100 and 200 year ARI rainfall event probabilities; for pipeline capacities from 250 L/s to 600 L/s (in 50 L/s increments); and considering climate change to both 2040 and 2090 at MfE's guidance mid-range and high-range scenarios.

Background

Lake Okareka has no natural overland outflow. Natural under-ground seepages were augmented in 1965 by a gravity pipeline. In 2015 part of the 1965 pipeline was replaced and upgraded, increasing the system's discharge capacity. During the winter and spring of 2017 high rainfall has lead to very high lake levels. At the time of writing, temporary pumping is being used to supplement the gravity pipeline discharges.

To inform decisions about further pipeline upgrades, this assessment was carried out to find the relative benefits of a range of potential options. The detailed practicalities and costs of a selection of pipeline options are being investigated by others; it is intended that this (my) assessment –

which simply tests the likely range of pipeline capacities – will be used to provide performance-based context for those options.

For further detailed background on the Lake Okareka pipeline, water balance modelling, and lake level management recommendations refer to the memoranda listed in the end notes (i, ii, iii)

Part One

The assessment is in three parts.

BOPRC's water balance model for Lake Okareka was run with rainfall data from 1 January to 31 October 2017. The model was derived from historical observations and was most recently updated in 2013. It relates daily rainfall depth (mm) to total lake inflow (L/s) and includes a seasonal variation factor. 2017 has clearly been an exceptional year, and the purpose of re-running the model was to see how well it reproduces the observed lake levels, to check whether the relationships remain valid for the high-rainfall conditions experienced.

Table 1 below shows the times of pipeline management actions and the estimated rate of discharge resulting from those changes. The valve setting actions refer to a screw-actuated sliding-gate control valve that has been installed at a point mid-way along the pipeline. The settings are described by BOPRC staff in terms of full turns of the valve handle from the closed (fully seated) position.

These estimates of discharge are based on close inspection of the water level and gauging record on Waitangi Stream at the Spencer Road Culvert – a location downstream of the pipeline outlet. The stream is spring-fed and, in addition to the pipeline changes, its discharge responds to local rain as well as a seasonal variation in spring flow. Flows at the stream have been gauged 23 times since March 2015 (the period corresponding to the upgraded pipeline and valve). Automatic water level recordings at the culvert since 31 July 2017 are available. A rating curve is in use – although its reliability is limited due to the noise in the gauging data and suspected variability in hydraulic control. Pumping began on 8 August at an apparent rate of about 140 L/s. Full-shut-down actions of the pump and pipeline have occurred twice during this time – allowing indicative observations of stream base flows (which vary considerably). To capture the stop-start nature of the early pumping actions, starting on the 8th of August, the model discharge values have been taken directly from the rated flow records at Spencer Road Culvert with 60 L/s subtracted for spring flow.

Table 1: Pipeline valve settings by date with estimated discharge for the time following each change

Date	Action (valve setting)	Discharge (L/s from this date)
20/02/2017	Change to 2 turns	80
14/03/2017	Change to 4 turns	100
17/03/2017	Change to 8.5 turns	230
23/06/2017	Change to 10 turns	260
30/06/2017	Change to 12 turns	305
5/07/2017	Change to 13 turns	310
6/07/2017	Change to 16 turns	330
8/08/2017	Start of pumping	460 (average)

Figure 1 on the next page shows the results from the water balance model (blue line) alongside the lake level recordings (black line). The times of lake management actions are shown by the vertical red lines (labelled). Also showing is the rainfall record (daily rain depth in mm) from the raingauge in the village (named: Okareka at Blakely).

The results indicate that the model is reasonably reproducing what occurred over the ten month period. Levels are estimated with an average absolute discrepancy of 28.2mm over the period. The peak level is estimated within 13mm (~1% of the lake level range over the period). From a visual inspection of the graph the trends and other visual features are qualitatively similar.

Following inspection of the model results, it is considered that the water balance model can reasonably be used to predict lake level responses to periods of high rainfall such as in a design sense. Part of these fit-for-purpose considerations is the likely slight mis-representation of catchment-wide event rainfall from the single raingauge, and the measurement accuracies in the stream gauging and rating methods. It is acknowledged that the results of any such design work could be considered accurate to about 10% of the model range – say plus-or-minus 100mm when considering absolute levels. However relative levels are not subject to this margin so various pipeline options and probabilities can be compared (against each other) to a close degree of accuracy.

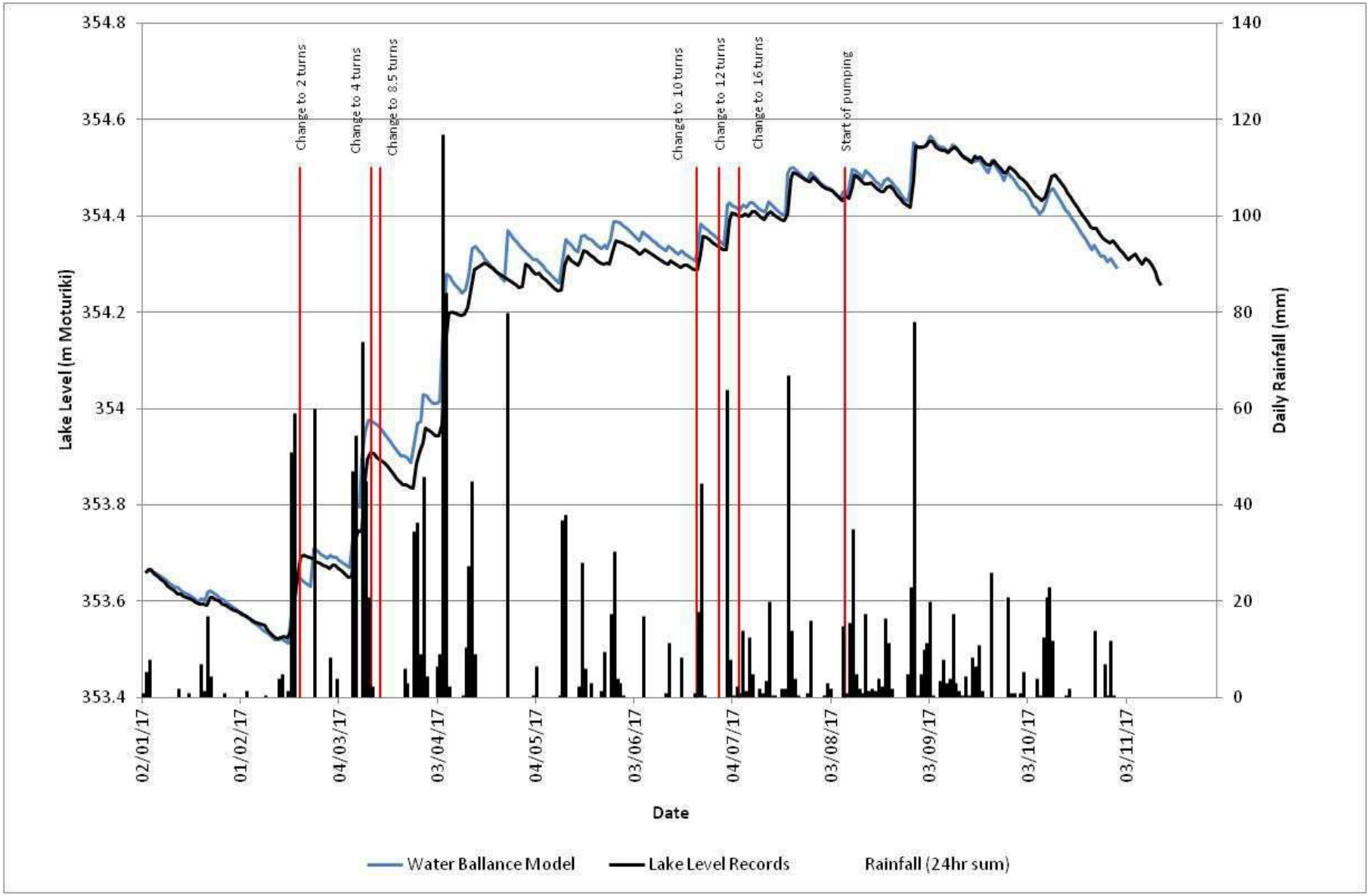

Figure 1: Water balance model results (blue) for January to October 2017 inclusive alongside recorded lake levels (black). Also showing daily rainfall (black bars) and times of lake management actions (vertical red lines).

Part Two

The second part was a statistical assessment of the long term rainfall record to determine appropriate rainfall depths for use in design. With some gaps, rainfall has been read daily at Lake Okareka since before 1966. Annual maxima for rain depth were extracted from the record for 17 different durations from 24 hours to 500 days. The calendar year for each maxima was based on the start date of the event (e.g. the largest accumulation of rain in any 500 day period that starts in that calendar year). These samples were fitted to an EV1 type distribution using the method of L-moments (Figure 2 below).

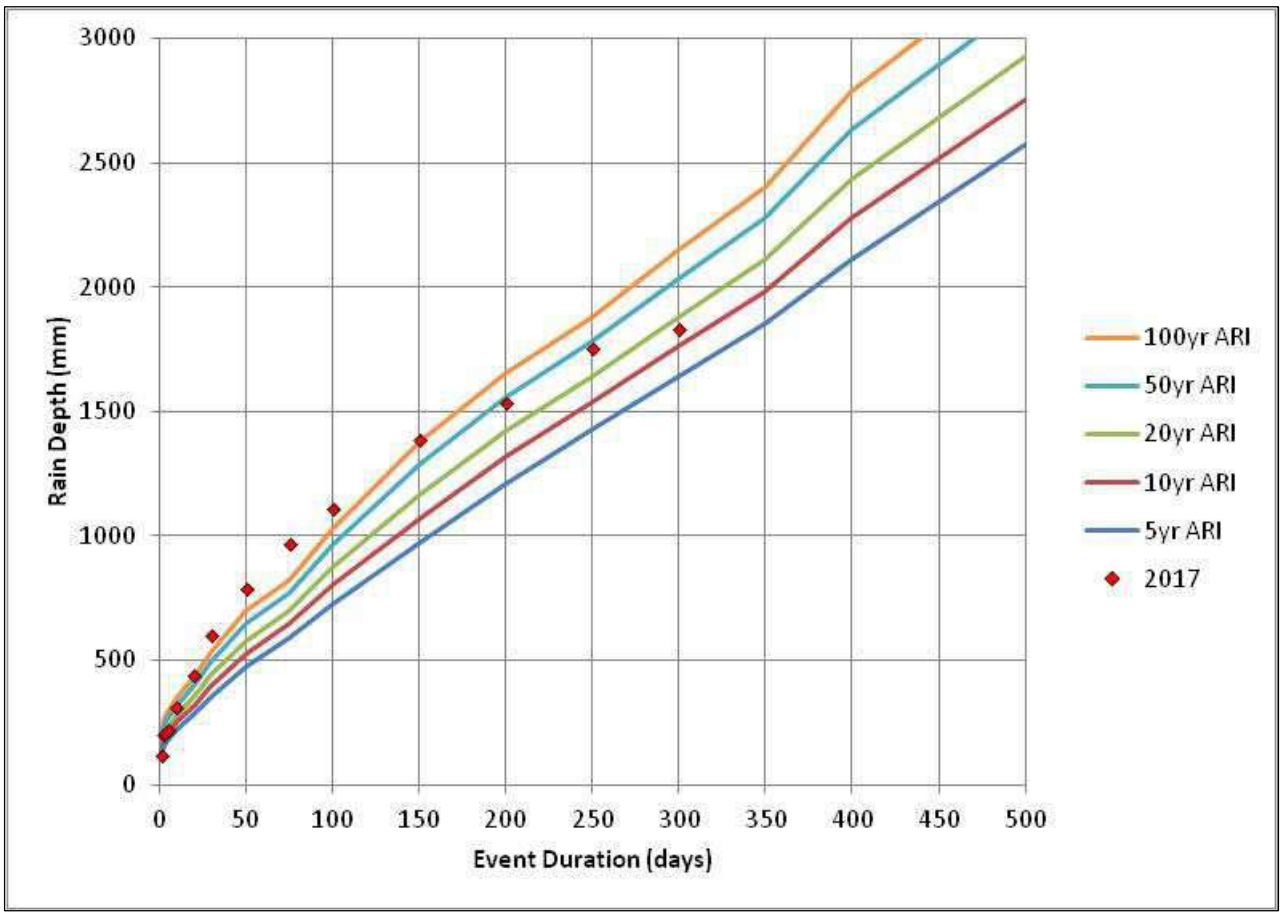

Figure 2: Extreme Value Type 1 statistical distribution fitted to historical rain depth data at Lake Okareka (1966 to 2017 inclusive; with several missing years). Showing a range of rain event durations from 24 hours to 500 days; at probabilities from 5 year to 100 year ARI. Also showing the observed maximum rainfall depths from 2017 for each duration (to the end of October).

Initially the analysis was carried out using the Generalised Extreme Value (GEV) distribution. The two distributions produce design rainfall results in close agreement, however the application of the GEV distribution over such a wide range of event durations was problematic. Typically the shorter storms fitted best to GEV Type 2 (upward curving when plotted on Gumbel paper), gradually changing to Type 3 as durations extended beyond about 200 days. This created difficulties when constructing combined hyetographs for design at extreme probabilities (for Part 3 below). It is considered, noting the close agreement between the two distributions for this raingauge, that the EV1 distribution is appropriate for this application. The full set of statistical calculations is appended to this report.

Table 2 on page 9 shows the resulting rainfall depths for Lake Okareka that were adopted for the design assessment.

By way of checking, the design rainfall values for Okareka were compared against a similar analysis carried out for Whakarewarewa (7.8km distant). Whakarewarewa gauge has been read since 1901 and has a higher standard of record (less gaps). Event durations of 24 hours, 10 days and 100 days were analysed. Close agreement was found: Whakarewarewa values were about 5% higher at the 24 hour duration; less than 1% lower at the 10 day duration; and about 2% lower at the 100 day duration (fairly consistently across probability values).

The maxima for 2017 were also used in the analysis even though the year is not completed and will not be technically complete until 500 days of data exists after the end of the year. This decision was based on its obvious significance as the largest depths on record for all durations between 30 days and 250 days.

Table 2: Design Rainfalls for Raingauge: Okareka at Blakely based on 43 to 50 years (depending on duration) of data from 1966 to 2017 (inclusive) fitted to EV1 distribution by the method of L-Moments.

T	24hr	2day	3day	5day	10day	20day	30day	50day	75day
2.33yr ARI	85.3	112.8	126.7	143.3	182.7	239.8	301.8	408.2	518.5
5yr ARI	106.8	140.7	159.4	177.2	221.0	284.7	355.3	474.5	588.7
10yr ARI	124.4	163.5	186.0	204.8	252.3	321.3	398.9	528.6	645.8
20yr ARI	141.2	185.4	211.6	231.3	282.3	356.4	440.7	580.5	700.6
50yr ARI	163.0	213.7	244.7	265.5	321.1	401.9	494.8	647.6	771.6
100yr ARI	179.4	234.9	269.5	291.2	350.2	435.9	535.3	697.9	824.7
200yr ARI	195.6	256.1	294.2	316.8	379.2	469.8	575.7	748.0	877.7

T	100day	150day	200day	250day	300day	350day	400day	500day
2.33yr ARI	639.5	849.5	1076.9	1289.3	1493.3	1688.6	1913.4	2354.2
5yr ARI	728.7	970.0	1209.2	1425.2	1643.1	1852.0	2113.5	2576.3
10yr ARI	801.3	1068.2	1317.0	1535.8	1765.1	1985.2	2276.4	2757.2
20yr ARI	870.9	1162.3	1420.4	1641.9	1882.1	2112.9	2432.7	2930.8
50yr ARI	961.0	1284.2	1554.3	1779.2	2033.6	2278.2	2635.0	3155.4
100yr ARI	1028.6	1375.5	1654.5	1882.1	2147.1	2402.1	2786.6	3323.7
200yr ARI	1095.9	1466.4	1754.5	1984.7	2260.2	2525.6	2937.7	3491.4

Interdecadal Pacific Oscillation (IPO)

The effects of the IPO on the statistical analysis were not explicitly adjusted for. It was not considered that the effect is readily observable in the Okareka raingauge record (for example the 100 day duration annual maxima series in Figure 3 below) but is perhaps discernible at Whakarewarewa (Figure 4 below) where the negative phase appears to be associated with higher than average rainfall. It is noted that the record at Okareka (since 1966) includes 29 years in the negative phase and 21 years in the positive phase – therefore perhaps indicating a slightly conservative bias to these results.

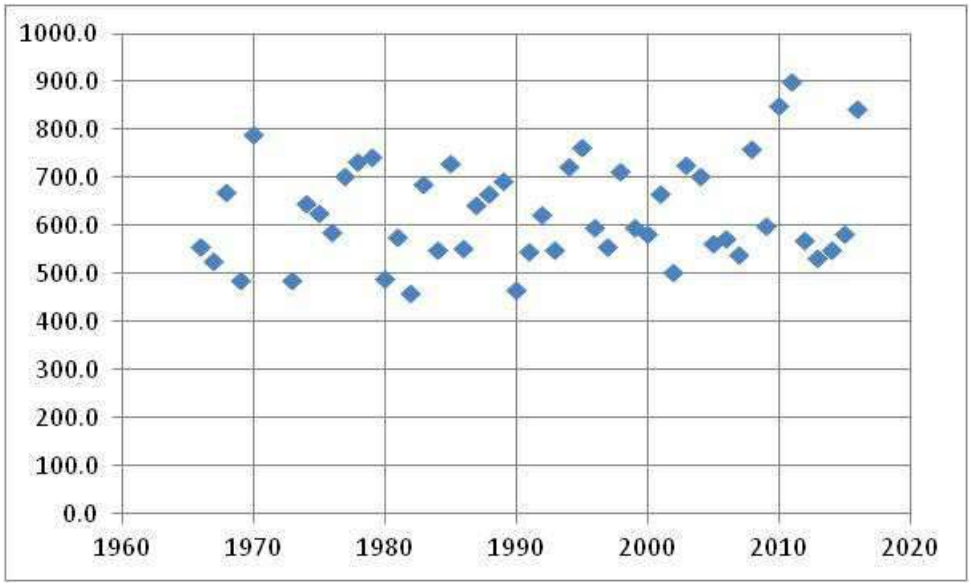

Figure 3: Annual maxima of 100 day duration rainfall for Okareka raingauge. Negative phases of the IPO are thought to cover 1946 to 1977 and then again from 1999 to present day.

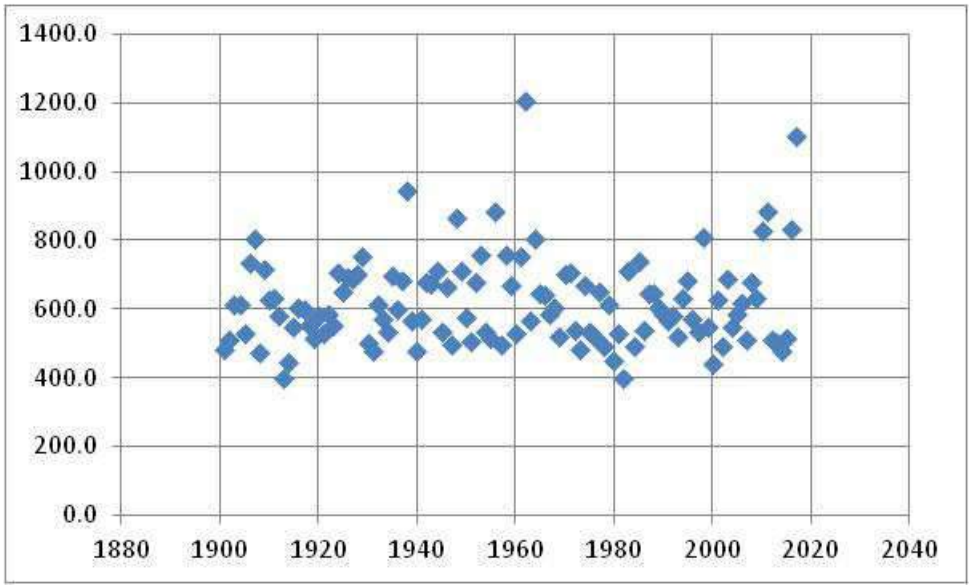

Figure 4: Annual maxima of 100 day duration rainfall at Whakarewarewa.

Climate Change

The effects of climate change have not been applied to the statistical analysis of raingauge data. i.e. the samples have been treated as if coming from a static population. Guidance from NZ Ministry for the Environment (MfE) in 2008 and 2010 indicate that we should be experiencing the start of a trend towards increased likelihood of high rainfall. The impact on

this study of not explicitly adjusting for this trend (which would be very difficult to observe in the data) is likely a slight conservative bias.

Climate change effects were included in the design scenarios (in Part 3). For the climate change scenarios the design rainfall depths determined above were increased by the factors recommended by the Ministry for the Environment[iv]. Table 3 below shows the percentage increases that were applied. Both mid range and high range values were tested. Mid range values are the average predictions from all of the climate studies analysed by MfE. High range values are the highest values of all of the studies.

It has not been common practice at BOPRC to apply climate change effects to present-day design scenarios. I understand that climate change impacts on New Zealand temperature, rainfall or river flow records have not yet been confirmed – due to the high degree of natural variability that could be masking such a trend. It is noted that MfE advice to NZ local government provides guideline values for 1990 and 2040, and that 2017 is approximately mid-way between these dates. An interpolated value of 0.4 degrees of atmospheric warming has been applied to this study for use in the 2017 design scenarios.

Table 3: Climate change scenarios and the design rainfall increases applied

Climate Change Scenario (year, high/med)	Projected Increase in mean atmospheric temperature (degC)	Percentage increase of rainfall depth
1990	0	0%
2017	0.4	3.2%
2040 (mid range)	0.9	7.2%
2040 (high range)	2.4	19.2%
2090 (mid range)	2.1	16.8%
2090 (high range)	5.5	44%

Part Three

BOPRC's Lake Okareka water balance model was run as a design tool. A matrix of scenarios were tested that included a range of 8 pipeline capacities; the range of 4 event probabilities; and the 6 climate change scenarios. Output is reported in graphical and tabular form. Selected tables and graphs have been included in the body of the report – the full set is appended.

The rainfall depths determined in Part 2 were assembled into fully-nested design hyetographs. Each hyetograph is a time-series of daily rainfall depths set on a date/time axis. The daily rainfall depths are determined to ensure that each hyetograph tests precisely the required rainfall depth at each of the (15) design event durations. Figure 5 below shows a single hyetograph as an example, drawn as accumulating rainfall. Table 4 shows the values. The full set of hyetographs is tabulated in an appendix.

The nesting method allows for skewing of the "focus point" of the rainfall. This factor was found to have very little impact on model results at Okareka. A focus factor of 0.5 was applied (50% of the rainfall falls before the focus date).

Due to the seasonal variability of the effect of rainfall at Lake Okareka, model results are sensitive to the timing of the application of the design rainfall. The seasonal factor has a 200 L/s difference in effective lake inflows. It is modelled to peak on the 237th day of the year (24th of August). Rainfall has its greatest impact on this date (in the model). For this assessment the nested design rainfall hyetograph was focussed on this date to find the highest lake levels that would result.

This selected timing of the design rainfall introduces a degree of conservatism to the results. i.e. it would be (roughly) equally probable that a rainfall event of 100 year ARI magnitude would fall in mid winter as in mid summer. The reduction in likelihood of the design scenario due to this selected timing has not been comprehensively evaluated. The degree of conservatism could be determined by way of a detailed bi-variate analysis, but this was considered beyond the scope of this study, but for context, the several scenarios tested found differences of around 150mm if the rain was focussed in mid summer instead of mid winter.

The starting lake level for the model has been taken from our 2013 review of the pipeline operating guidelines[ii] (i.e. full discharge at Level > 353.6mRL for March to August inclusive). Note that this is different from BOPRC's current pipeline operating guidelines that don't advise full discharge until lake level exceeds 353.75mRL.

An example of the design model output is shown in Figure 6 on page 15. The graph shows the lake levels resulting from the 100 year design rainfall adjusted for 0.4 degrees of atmospheric warming (2017 mid-range climate scenario). Results are shown for nine pipeline capacity values from 250 L/s to 600 L/s at 50 L/s increments. The full range of output graphs are appended to this memo.

Table 6 through Table 10 on pages 17 and 18 show the peak lake levels resulting from the full range of design scenarios tested.

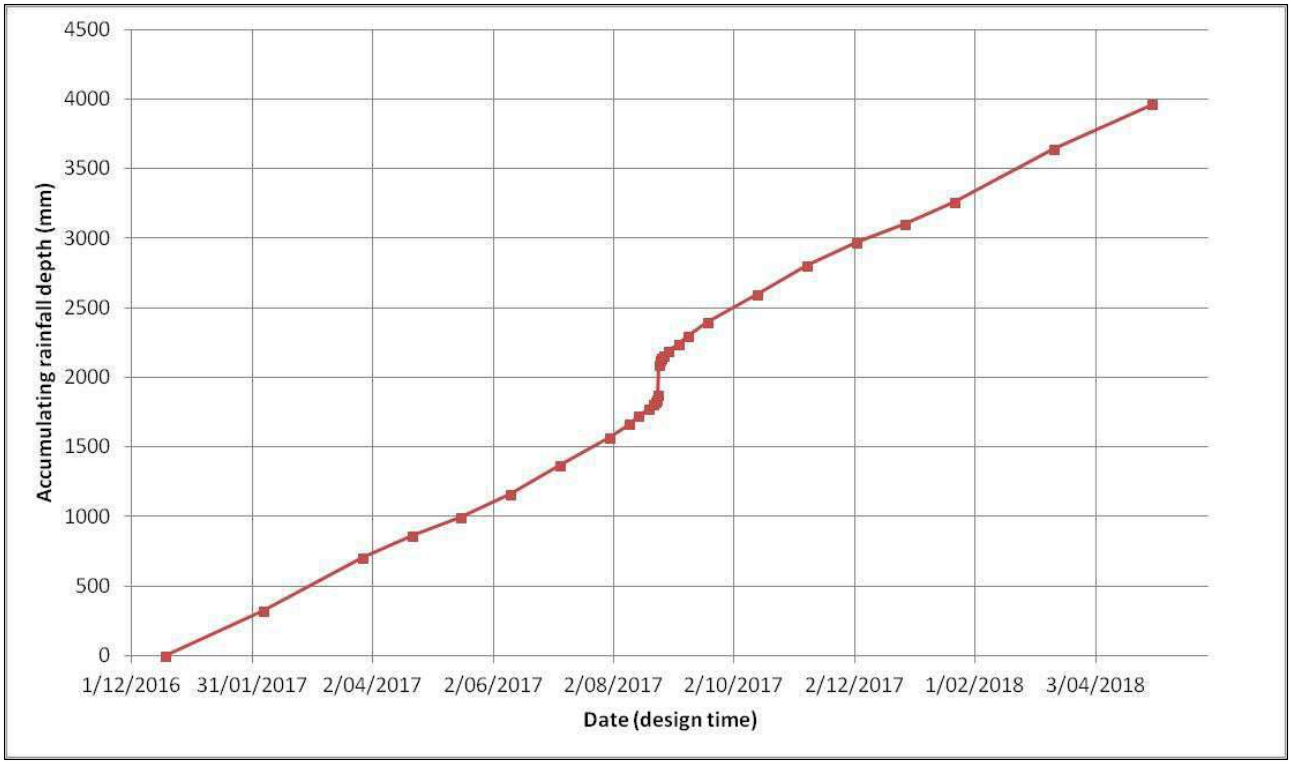

Figure 5: Design hyetograph (cumulating rainfall) for 100 year ARI 2040 high-range scenario

Table 4: Design hyetograph (cumulating rainfall) for 100 year ARI 2040 high-range scenario

Date Time	Depth (mm)
17/12/2016 12:00	0.0
5/02/2017 12:00	320.1
27/03/2017 12:00	701.3
21/04/2017 12:00	859.2
16/05/2017 12:00	994.8
10/06/2017 12:00	1161.1
5/07/2017 12:00	1367.9
30/07/2017 12:00	1565.0
9/08/2017 12:00	1661.9
14/08/2017 12:00	1721.1
19/08/2017 12:00	1772.2
22/08/2017 0:00	1807.4
23/08/2017 0:00	1820.3
23/08/2017 12:00	1840.9
24/08/2017 0:00	1874.0

Date Time	Depth (mm)
25/08/2017 0:00	2087.8
25/08/2017 12:00	2120.9
26/08/2017 0:00	2141.5
27/08/2017 0:00	2154.5
29/08/2017 12:00	2189.7
3/09/2017 12:00	2240.7
8/09/2017 12:00	2300.0
18/09/2017 12:00	2396.9
13/10/2017 12:00	2594.0
7/11/2017 12:00	2800.7
2/12/2017 12:00	2967.0
27/12/2017 12:00	3102.7
21/01/2018 12:00	3260.6
12/03/2018 12:00	3641.8
1/05/2018 12:00	3961.9

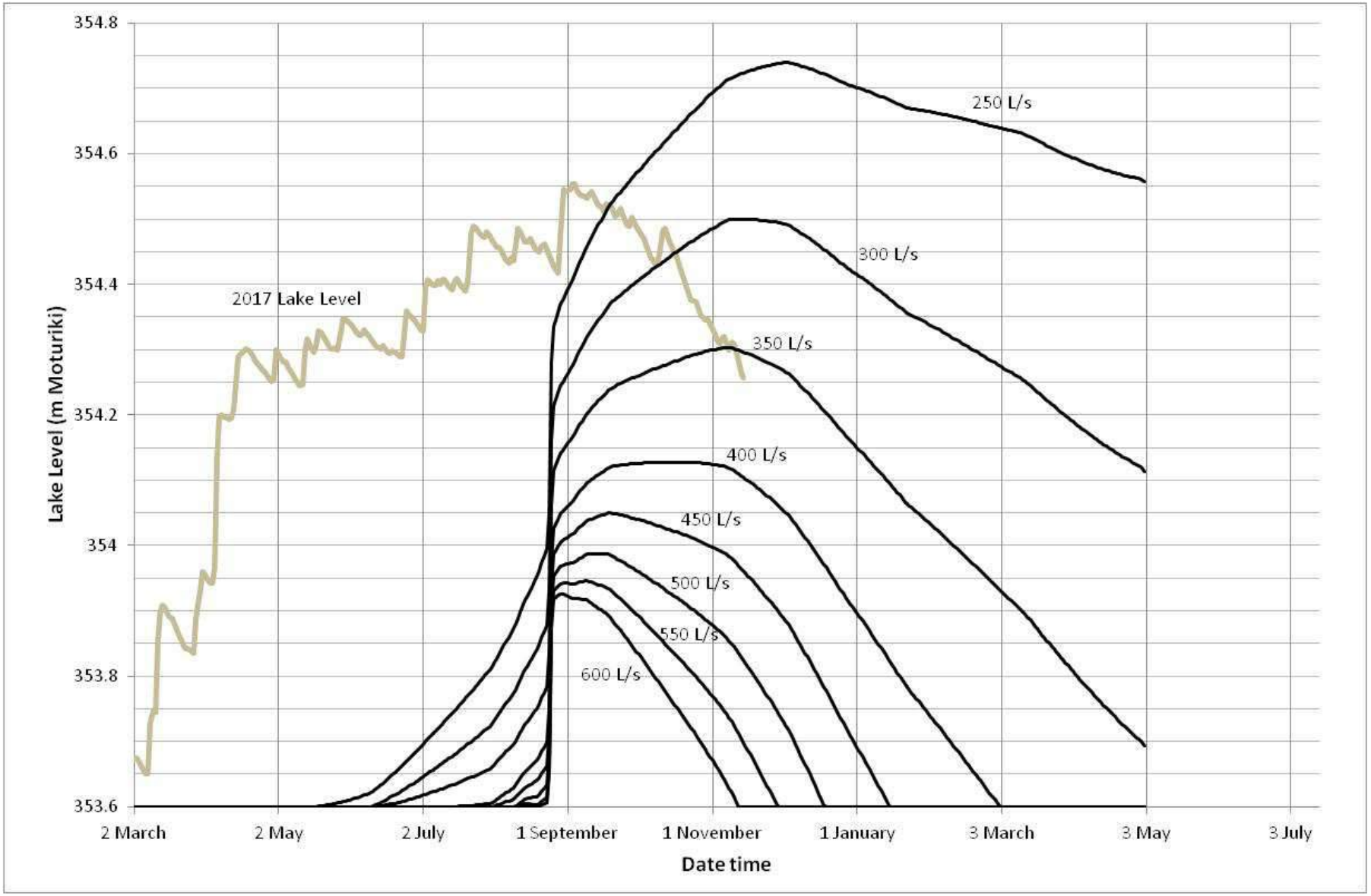

Figure 6: Example of model output: 100 year ARI design rainfall; 0.4 degrees of warming (2017 mid-range climate scenario); pipeline capacities from 250 L/s to 600 L/s. Also showing lake levels from 2017 for context

Table 5: Peak Design Lake Level – 1990 scenario (not adjusted for climate change)

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	354.48	354.53	354.67	354.81
300	354.27	354.31	354.44	354.57
350	354.09	354.12	354.25	354.37
400	353.99	354.02	354.09	354.19
450	353.93	353.95	354.02	354.09
500	353.89	353.91	353.96	354.03
550	353.87	353.88	353.93	353.98
600	353.86	353.87	353.91	353.95

Table 6: Peak Design Lake Level – 2017 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	354.55	354.59	354.74	354.88
300	354.32	354.37	354.50	354.64
350	354.13	354.17	354.30	354.43
400	354.02	354.04	354.13	354.24
450	353.95	353.98	354.05	354.12
500	353.91	353.93	353.99	354.06
550	353.88	353.90	353.95	354.01
600	353.87	353.88	353.93	353.97

Table 7: Peak Design Lake Level – 2040 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	354.63	354.68	354.83	354.98
300	354.39	354.43	354.58	354.72
350	354.19	354.24	354.38	354.51
400	354.05	354.08	354.19	354.32
450	353.99	354.01	354.09	354.16
500	353.93	353.95	354.02	354.10
550	353.90	353.91	353.97	354.04
600	353.89	353.90	353.94	354.00

Table 8: Peak Design Lake Level – 2040 high range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	354.86	354.92	355.10	355.36
300	354.61	354.66	354.83	355.00
350	354.39	354.44	354.59	354.75
400	354.20	354.24	354.40	354.55
450	354.08	354.11	354.21	354.36
500	354.02	354.05	354.13	354.21
550	353.97	353.99	354.07	354.15
600	353.93	353.95	354.02	354.09

Table 9: Peak Design Lake Level – 2090 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	354.82	354.87	355.04	355.26
300	354.56	354.61	354.78	354.94
350	354.35	354.40	354.55	354.70
400	354.17	354.21	354.35	354.50
450	354.06	354.09	354.18	354.31
500	354.00	354.03	354.11	354.19
550	353.95	353.97	354.04	354.13
600	353.92	353.94	354.00	354.07

Table 10: Peak Design Lake Level – 2090 high range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	355.72	355.84	356.18	356.51
300	355.10	355.19	355.53	355.87
350	354.84	354.91	355.11	355.31
400	354.60	354.66	354.85	355.05
450	354.40	354.46	354.65	354.83
500	354.23	354.28	354.45	354.64
550	354.15	354.19	354.29	354.44
600	354.09	354.12	354.22	354.33

Table 11 through Table 16 below and on page 20 show lake level recovery times in days. This is the time modelled in the design scenarios for the lake level to return to 353.9m (the consented upper guideline level). For those scenarios that did not recover within the modelled time sequence, the tables show ">Limit" for those scenarios that did not exceed the upper guideline level the tables show "<WL Max".

Table 11: Recovery time – 1990 scenario (not adjusted for climate change)

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	283 days	300 days	>Limit	>Limit
350	179 days	194 days	246 days	291 days
400	112 days	121 days	143 days	195 days
450	56 days	73 days	108 days	130 days
500	<WL Max	36 days	63 days	98 days
550	<WL Max	<WL Max	41 days	60 days
600	<WL Max	<WL Max	18 days	35 days

Table 12: Recovery time – 2017 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	311 days	>Limit	>Limit	>Limit
350	199 days	216 days	271 days	319 days
400	124 days	131 days	165 days	219 days
450	77 days	90 days	120 days	139 days
500	38 days	47 days	76 days	110 days
550	<WL Max	<WL Max	49 days	71 days
600	<WL Max	<WL Max	26 days	42 days

Table 13: Recovery time – 2040 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	>Limit	>Limit	>Limit	>Limit
350	229 days	248 days	299 days	>Limit
400	137 days	149 days	200 days	254 days
450	97 days	107 days	131 days	150 days
500	50 days	59 days	99 days	123 days
550	<WL Max	37 days	60 days	87 days
600	<WL Max	10 days	33 days	60 days

Table 14: Recovery time – 2040 high range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	>Limit	>Limit	>Limit	>Limit
350	>Limit	>Limit	>Limit	>Limit
400	211 days	232 days	290 days	>Limit
450	135 days	144 days	186 days	251 days
500	102 days	111 days	134 days	154 days
550	60 days	69 days	105 days	128 days
600	33 days	47 days	70 days	95 days

Table 15: Recovery time – 2090 mid range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	>Limit	>Limit	>Limit	>Limit
350	302 days	>Limit	>Limit	>Limit
400	195 days	213 days	275 days	>Limit
450	129 days	136 days	167 days	231 days
500	91 days	104 days	129 days	146 days
550	53 days	62 days	93 days	121 days
600	28 days	35 days	64 days	90 days

Table 16: Recovery time – 2090 high range climate change scenario

Pipeline Capacity	Rain Event ARI			
(L/s)	20yr	50yr	100yr	200yr
250	>Limit	>Limit	>Limit	>Limit
300	>Limit	>Limit	>Limit	>Limit
350	>Limit	>Limit	>Limit	>Limit
400	>Limit	>Limit	>Limit	>Limit
450	288 days	311 days	>Limit	>Limit
500	184 days	207 days	280 days	>Limit
550	137 days	144 days	170 days	251 days
600	108 days	118 days	140 days	162 days

[i] West P, January 2012, *Lake Ōkāreka Outlet Pipeline; Water Balance Modelling for Pipeline Design*, BOPRC Memorandum to Colin Meadowcroft BOPRC Engineering Manager

[ii] West P, March 2013, *Lake Okareka Outlet Pipeline; Review of Operating Guidelines*, BOPRC Memorandum to Clive Tozer Acting Engineering Manager

[iii] West P, December 2008, *Lake Ōkāreka Outlet Structures; High Lake Levels; Pipeline Capacity*, BOPRC Memorandum to Mangala Wickramanayake BOPRC Engineering Manager.

[iv] New Zealand Ministry for the Environment, *Preparing for Climate Change, a Guideline for Local Government*, MfE pub, no. 891

MEMORANDUM

Bay of Plenty REGIONAL COUNCIL

To: Andy Bruere
Lake Operations Manager

From: Peter West **Date:** 27 July 2018
Contract Engineer

File Ref:

Copy To: Peter Blackwood

Subject: **Lake Okareka; Modelling of Lake Level Management Guideline Options**

Executive Summary

Water balance modelling has been carried out to evaluate the performance of two potential lake level management guidelines for Lake Ōkāreka.

The model was run against two time-history scenarios: a long-term recorded rainfall series from June 1991 to May 2018; and a specific series covering the recent period from February 2017 to May 2018.

The model was also run against a range of synthetically determined design rainfall series relating to the 1% AEP (100 year) rainfall event under various climate change scenarios.

Results for the various scenarios are produced as: time/lake-level graphs; level/duration curves for Lake Ōkāreka; flow/duration curves for Waitangi Stream; tables of maximum and minimum lake levels; and tables of longest periods for minimum flow conditions.

Background

Lake Ōkāreka has no natural surface-flow outlet. Natural drainage is via under-ground seepage. Following high lake levels in the 1960's a pipeline was constructed by the then Rotorua County Council to augment lake outflows. In 2001 BOPRC gained resource consent to operate the pipeline. Conditions of this consent required the use of an operation guideline for managing the pipeline's discharge.

In 2015 part of the 1965 pipeline was replaced and upgraded, increasing the system's discharge capacity. During the winter and spring of 2017 high rainfall lead to very high lake levels requiring additional pumping to avoid damage to houses etc at the lake.

In order to optimise the performance of the lake management systems (the pipleline and pumping), BOPRC is currently reviewing the operation guideline. This report describes water balance modelling undertaken to inform that review.

Method

The BOPRC water balance model for Lake Ōkāreka was run against a range of scenarios:

- A long term time-history scenario with rainfall data from 1 June 1991 to 30 May 2018.
- A specific time-history scenario with rainfall data from 1 February 2017 to 30 May 2018.
- Several climate change scenarios where rainfall was applied from synthetically generated "design storms" at the 1% AEP magnitude[1]. These storms are "nested" in duration out to 500 days. The climate change scenarios were: present day; 2040; and 2090 horizons. The 2040 and 2090 scenarios were run at both mid-range and high-range scenarios in accordance with guidance from MfE (method details on how these storms were generated can be found in West 2017). The lake level starting condition for these scenarios was 353.78mRL: the median lake level in the long-term historical record (1991 to 2018).

Model relationship between rainfall and lake inflows

The water balance model was developed for BOPRC in 2011 and revised in 2013 (see references). One key item of the model is a relationship between rainfall and lake net-inflows. Following the review in 2013 the relationship is:

Lake Inflow (L/s) = 54 x Rainfall rate (mm/day) – 100 x Cosine((Julian day – 55)x 2π /365) – 20

For practical purposes, in the model calculations the rainfall rate is "smoothed" over ten days by a rolling-mean method.

Raingauge Location – inference from historical data

The rainfall rate in the above relationship is the rate recorded at the "Blakely" raingauge at 9 Acacia Road. This is important because rainfall can vary significantly between sites within the catchment. It appears that the previous raingauge location on Wattle Grove received enough additional rainfall that some long-term lake (net) inflows inferred by the model in the period prior to 1991, when the gauge was moved, are more than the pipeline's estimated capacity at that time (i.e. the model "predicts" incorrectly that the lake would have risen uncontrollably through the 1970's and 80's).

I've interpreted this to mean that the Wattle Grove raingauge location received significantly more rainfall than the Acacia Road site and so the model (which is calibrated to the Acacia Road raingauge) is much less helpful for interpreting the rainfall record at Ōkāreka prior to 1991.

However an alternative interpretation is that the pre-1990 period was slightly wetter, but that underground seepages were higher and therefore lake levels were maintained. It is likely that both ideas are at play. The rate of natural seepage has clearly declined since pre 1960 when no pipeline was necessary – it may be an ongoing decline. Either way the model would not be reliable for interpreting rainfall for that period.

The significance of a possible ongoing decline in the natural under-ground seepage flow from the lake should be considered when designing for the long term. The calibrated model relationship suggests that effective seepage is currently about 20 L/s. This works out to be the equivalent of approximately an additional 70mm on maximum lake levels in the high-range 2090 1% AEP climate change scenario. However it must be stressed that there are a number of reasons why the model could not reliably be used in this way. The results in this report do not include the (additional) consideration of a potential future reduction in sub-surface seepage from the lake.

Stream Flows and Spring Flows

[1] 1% Annual Exceedance Probability (AEP) equates to a storm magnitude that is only exceeded over the subject catchment once in 100 years on average.

Waitangi Stream stage has been recorded automatically only since July 31 2017 and the site is rated for flow estimation. However an estimate is presented here for longer term stream flow into Lake Tarawera for the purposes of assessing potential impacts on ecology and recreational values there - without much useful data, this estimate of historic conditions is therefore fairly crude:

This estimate has been based on comparison of the stream flow to pipeline flow especially during pipeline shut-down operations. For the scenarios modelled here, spring flow contribution to the Waitangi Stream has been approximated by a sinusoidal function with minimum (zero flow) on the 55th day of the year (in keeping with the fitted model seasonal factor) and a maximum of 60 litres per second on the 237th day. This is a rather crude method, limited by the available data and will not replicate the stream's response to rainfall, however it should provide reasonable long-term average results for assessing the ecological impacts of the management guidelines.

Operation Guidelines Tested

The existing operation guideline is expressed in the following table. The guideline indicates what the pipeline discharge should be, depending on lake level and season. For this guideline "Summer" is October through March inclusive; "Winter" is April through September.
Note that the maximum discharge in this table is 239 L/s. Our current estimate of actual pipeline capacity that existed at the time of consenting in 2001 is 270 L/s , which would have been the actual fully-open pipeline discharge up until the upgrade works in 2015 (when capacity increased and staff became required to actively limit discharge to the consent limits). I believe capacity was wrongly estimated in 2001 at 239 L/s – and this became the consent maximum discharge condition. The modelling reported here has been carried out with a value of 239 L/s to assess the result of operating strictly to the existing (consented) guideline.

Table 1: Existing Lake Level Operation Guideline

Lake Level (up to)		Pipeline Discharge
Summer	Winter	L/s
353	353	0
353.65	353.55	0
353.75	353.65	50
353.8	353.75	150
354.5	354.5	239
400	400	239

The two tables below express two potential operation guidelines currently being considered by BOPRC.

Table 2: Proposed Lake Level Operation Guideline (Proposed 1)

Lake Level (up to) All year	Pipeline Discharge L/s
353.5	0
353.55	100
353.65	170
353.75	240
353.85	300
353.95	380
354.05	460
400	500

Table 3: Alternative Lake Level Operation Guideline (Proposed 2)

Lake Level (up to) All year	Pipeline Discharge L/s
353.5	0
353.65	100
353.75	170
353.85	290
353.95	380
354.05	460
400	500

Results

Table 4 below shows the maximum and minimum lake levels from the two different time history scenarios, and from the three operation guidelines. It also shows the observed lake level conditions. In addition the table shows the percentage of days outside of the target lake level range. This data is also presented in several graphs in the appendix to this memo.

Table 4: Time-history scenarios – maximum and minimum lake levels; and percentage of time outside of the target range

Period Feb 2017 to May 2018	Min lake level	% below target	Max lake level	% above target
Observed Lake Level	353.52	0	354.56	82
Existing guideline	353.56	0	355.03	91
Proposed Guideline 1	353.51	0	354.11	29
Proposed Guideline 2	353.52	0	354.13	32
Period June 1991 to May 2018	min lake level	% below target	Max lake level	% above target
Observed Lake Level	353.28	6	354.56	22
Existing guideline	353.60	0	355.09	54
Proposed Guideline 1	353.36	9	354.10	5
Proposed Guideline 2	353.39	4	354.13	7

Table ***5*** below shows the percentage of time below 100 L/s and percentage of time above 400 L/s for Waitangi Stream flow results for the two time-history periods. The "Observed/inferred stream flow" values are inferred from the lake level and rainfall data along with a seasonal spring-flow contribution as described above. It is important to realise that these are not recorded values and the inference is best considered indicative only.

Table 5: Time-history scenarios – stream flow percentage of time

Period Feb 2017 to May 2018	% below 100 L/s	% above 400 L/s
Observed/inferred stream flow	7.4	30.5
Existing guideline	7.2	0.0
Proposed Guideline 1	0.0	37.5
Proposed Guideline 2	0.0	40.4

Period June 1991 to May 2018	% below 100 L/s	% above 400 L/s
Inferred stream flow	18.2	12.9
Existing guideline	8.8	0.0
Proposed Guideline 1	9.6	9.8
Proposed Guideline 2	4.1	14.5

Table 6 and Table 7 below show the longest periods (and when) in the time history scenarios for low-flow conditions in the stream and the pipeline. Only the longer period is shown (from 1991 to present). The shorter more recent period was a high rainfall period not suitable for inspecting low flow conditions.

Table 6: Time-history scenarios – Longest period with stream flow less than 100 L/s

Period June 1991 to May 2018	Number of days	Date of last day
Inferred stream flow	68	15/04/2013
Existing guideline	106	21/04/2008
Proposed Guideline 1	93	22/04/2013
Proposed Guideline 2	72	22/04/2013

Table 7:Time-history scenarios – Longest period with pipeline flow at zero L/s

Period June 1991 to May 2018	Number of days	Date of last day
Inferred pipeline flow	20	5/02/1998
Existing guideline	21	3/04/2000
Proposed Guideline 1	93	22/04/2013
Proposed Guideline 2	72	22/04/2013

Table 8 below shows the maximum lake levels resulting for each of the climate change scenarios at 1% AEP magnitude. The cells have been coloured to show orange if the lake level exceeds the building freeboard level (354.5 mRL); and red if the lake level exceeds this and the lowest existing dwelling's floor level (354.94 mRL at 67 Acacia Road). Please note: these numbers are not provided for the purposes of setting building floor levels. Graphs of these model outputs over time are shown in the appendix.

The level shown here for "building freeboard level" is BOPRC's previously advised building floor level minus the required freeboard to account for waves, estimate imprecision, and building tolerances.

Table 8: Design Scenarios – Maximum 1% AEP Lake Level

	Present day	2040 mid-range	2040 high-range	2090 mid-range	2090 high-range
Existing guideline	**354.98**	**355.06**	**355.42**	**355.34**	**356.51**
Proposed Guideline 1	**354.34**	**354.38**	**354.50**	**354.48**	**354.83**
Proposed Guideline 2	**354.33**	**354.37**	**354.51**	**354.47**	**354.84**

References:

West P, December 2008, *Lake Ōkāreka Outlet Structures; High Lake Levels; Pipeline Capacity*, BOPRC Memorandum to Mangala Wickramanayake BOPRC Engineering Manager.

West P, January 2012, *Lake Ōkāreka Outlet Pipeline; Water Balance Modelling for Pipeline Design*, BOPRC Memorandum to Colin Meadowcroft BOPRC Engineering Manager

West P, March 2013, *Lake Okareka Outlet Pipeline; Review of Operating Guidelines*, BOPRC Memorandum to Clive Tozer Acting Engineering Manager

West P, November 2017, *Lake Okareka; Design of Pipeline Capacity; impacts on Lake Level management,* BOPRC Memorandum to Andy Bruere

New Zealand Ministry for the Environment, *Preparing for Climate Change, a Guideline for Local Government*, MfE pub, no. 891

To: Rotorua Lakes Council
Email: Policy.Planning@rotorualc.nz,
To: Lake Okareka Community Association (LOCA) Contact Mitch Collins
[redacted]
To: Natural Hazards Commission Toka Tū Ake
Email: resilience@naturalhazards.govt.nz

Further Submission in Opposition to Submissions on Plan Change 8 of the Rotorua Lakes Council District Plan.

From Simon and Megumi Ward
[redacted]

1. This is a further submission in opposition to submissions on Plan Change 8 by:

    a. the Lake Okareka Community Association (LOCA), and;
    b. Natural Hazards Commission Toka Tū Ake (NHC)

2. This further submission is in relation to mapping policy and rules of Fault Rupture Hazard Area as proposed in Plan Change 8 for Acacia and Pryce Roads, at Lake Okareka.

Submission by LOCA

3. We oppose in part, the submission of Lake Okareka Community Association (LOCA).

4. LOCA does not have a mandate to represent all property owners on Pryce and Acacia Road.

5. The particular part of the submission that is opposed is the relief sought:

    "to designate the affected area as an "Area of Geological Investigation" for a defined period (eg 24 months), as in Table 1 and section 2.3 of the submission.

6. Reason for the opposition is that:

- the Council has not provided adequate scientific evidence as to the location or the return period of the potential fault line. The Council seeks to apply over-reaching policy and rules to land it has identified as being affected. The proposed rules are disproportionate and inconsistent with a proper s32 analysis.
- This is an unjustified infringement of property rights.
- Designation of an Area of Geological Investigation is inappropriate and unnecessary to mitigate any potential adverse effects, and continues infringement of property rights.
- Our submission is that the correct course is for council to remove the Fault Avoidance Zone on Acacia and Pryce Road from the maps and all reference to any relevant policy or rules.

- There are other tools available to Council that more appropriately provide for public and private health and safety including education (LIMS/BRAANZ/Learning Hubs etc) and through the application of The Building Act that can be applied on a site by site basis following geotechnical assessment.

Submission by Natural Hazards Commission Toka Tū Ake (NHC)

7. We oppose the submission of NHC.

8. We request that the submission that supports the proposed Rules applying to Acacia and Pryce Road, on the basis that a "precautionary approach" should be taken, be disallowed.

9. In the circumstances, we submit that imposing the proposed Rules based on a "precautionary approach" is not necessary, or justified:

    - **Rules should be used in district plans as a last resort.** Imposing restrictive rules on building on Pryce Road and Acacia Road should only be done if proven necessary and as a last resort. The imposition of rules undermines statutory property rights. The Building Act 2004 allows Council to retain control of building on Acacia and Pryce Road. Such that it is not possible to obtain building consent without a geotechnical investigation.

    - The FAZ and proposed rules in the Plan Change empower RLC to decline resource consent for construction of residential dwellings in the FAZ. The commercial damage this will cause is unreasonable and disproportionate to the potential risk. There are other more appropriate methods to manage and mitigate the potential risk:

        i) the building consent process under the Building Act 2004 already requires geotechnical reports before building is permitted, and these can be utilized to assess the proximity of and fault line and potential risk;
        ii) The mapping of faults was recently reviewed by GNS Science and updated mapping is now included in the New Zealand Active Faults database. This mapping identifies the location of fault traces as well as the basis for the FAZs). As such, the potential fault on Acacia and Pryce Road is already visible, requires geotechnical reports and building consent, and does not require additional regulation through the District Plan;
        iii) Given that there is much uncertainty about the location, date and recurrence level of the potential fault in Acacia Road, it is inappropriate to lock restrictive rules into the District Plan, which is normally only amended every 10 years. Leaving the details of the potential fault in the GNS maps, and dealt with through the building consent process is more appropriate as it allows flexibility and amendment as new information becomes known.

iv) Any risk can be adequately mitigated by the more appropriate method of education, such as reference to faults in the GNS mapping, BRANZ literature, and through council duty planners.

v) The GNS maps and potential existence of a fault can, where appropriate be noted in property files/ LIMs for the affected properties.

vi) **The Council's proposed rules for faults at Lake Okareka fail to meet the requirements of Section 32 of the RMA.**

We repeat the relief requested in our primary submission.

We wish to be heard in support of the further submission and would consider presenting a joint case.

Simon and Megumi Ward

31 October 2025

To Rotorua Lakes Council E: Policy.Planning@rotorualc.nz,
To Lake Okareka Community Association (LOCA) Contact Mitch Collins
[redacted]

Further Submission in Opposition to Submission on Plan Change 8 of the Lakes Council District Plan.

From Christine Caughey, Trustee on behalf of the Christine Caughey Trust
[redacted]

1. This is a further submission in opposition to a submission on Plan Change 8 by the Lake Okareka Community Association (LOCA). Submission Number 21

2. The Christine Caughey Trust is a landowner of properties at Pryce Road Lake Okareka.

3. I oppose in part, the submission of Lake Okareka Community Association (LOCA)

4. This further submission is in relation to mapping policy and rules of Fault Rupture Hazard Area as proposed in Plan Change 8 for Acacia and Pryce Roads at Lake Okareka.

5. I do not consider that there has been adequate consultation by LOCA to ensure the plan change is understood by those whose properties are affected, and to ascertain the opinions of residents and property owners.

6. The particular part of the submission that is opposed is the relief sought: "to designate the affected area as an "Area of Geological Investigation" for a defined period (eg 24 months), as in Table 1 and section 2.3 of the submission.

7.Reason for the opposition is that:

- the Council has not provided adequate scientific evidence as to the location or the return period of the apparent fault line. The Council has however applied stringent policy and rules to land it has identified as being affected.
- This is an infringement of property rights
- Designation an Area of Geological Investigation continues the uncertainty and infringement of property rights
- The relief sought should be that the council remove the fault lines from the maps and all reference to any relevant policy or rules.

- There are other tools to provide for public and private health and safety including education and leadership by the council. The first emergency hub for Rotorua was opened earlier in October at Lake Okareka.
- Other tools include the application of The Building Act and regulation that can be applied on a site by site basis according to Geotech and other scientific evidence that can inform engineering design.

I seek that the part of the submission that relates to designating an “Area of Geological Investigation” as the relief sought, be disallowed.

I wish to be heard in support of the further submission.
I would consider presenting a joint case.

Christine Caughey

31 October 2025

I