

Hydro Inundation (HI)

Introduction

There are eight hydro electricity stations within the District that are part of the Waitaki Power Scheme, spread between Takapō / Lake Tekapo and Lake Waitaki. ~~These hydro-electricity stations~~ The Waitaki Power Scheme's infrastructure contains and infrastructure that¹ conveys water to support hydro electricity generation that meets local, regional and national needs. While the infrastructure is managed under best practice dam safety assurance programmes, there remains a risk that failure can occur, for example as a consequence of an extreme earthquake. While the likelihood of a structural failure is very low, the consequences can be serious for people and property.

Potential areas of inundation that could occur following infrastructure failure are mapped in the District Plan in the Hydro Inundation Hazard Overlay. The objective, policy and rules included in this chapter aim to provide for the safety of people and property and to minimise the potential for reverse sensitivity effects on the hydro electricity schemes.

The provisions in this chapter apply in addition to the provisions of the other chapters in the District Plan.

Objectives and Policies

Objectives	
HI-O1	Hydro Inundation Hazard
Development in the Hydro Inundation Hazard Overlay minimises risks to human health and property from hydro inundation, and avoids reverse sensitivity effects on hydro electricity generation activities.	
Policies	
HI-P1	Development in Hydro Inundation Hazard Areas
Avoid, as far as practicable, changes to existing land use activities in the Hydro Inundation Hazard Overlay that may increase the likelihood or scale of harm to people or property from hydro inundation, or the potential for reverse sensitivity effects. Where it has been demonstrated that avoidance is not practicable, minimise the potential for harm.	

Note for plan users: Landowners should be aware of risk from potential hydro electricity canal or dam breach within the Hydro Inundation Hazard Overlay, and that a Community Response Plan is in place and available for viewing on Council's website.

Rules

HI-R1	New Occupied Buildings	
GRUZ within the Hydro Inundation Hazard Overlay	Activity Status: PER	Activity status when compliance is not achieved with R1.1- <u>or</u> R1.52: DIS
	Where: 1. It is demonstrated that the building, will not raise the	

¹ Meridian (39.16)

	<p>Potential Impact Classification (Low, Medium, High) under the Building Act 2004 in a manner that would lead to a requirement to cease to operate, upgrade, modify, or replace the hydro-electricity related structures or to significantly alter the operation of an affected portion of a hydroelectricity scheme; and</p> <p>2. The building is located at least 150m from the toe of the embankment of any canal, dam or associated structure; and</p> <p>3. The building is sited within an area of low hazard where "Low Hazard Area" means those areas that result from any dam breach which are subject to inundation where the water depth (metres) x velocity (metres per second) is less than or equal to 1, or where depths are less than 0.5 metres; and</p> <p>4. The building is designed so that any habitable floor area of any residential building is a minimum of 300mm above the maximum inundation level that would result from any dam breach; or</p> <p>1. <u>A Hydro Inundation Hazard Assessment is issued in accordance with HI-S1 and is provided to Council; or²</u></p> <p>5- <u>2.</u> The building is a temporary structure that is required by the owner/operator of the hydro-electricity generation scheme to undertake maintenance of any dam, canal or any associated structures, and the building is in place for not longer than 12 months.</p>	
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² Genesis (46.24)

<u>HI-R1A</u>	<u>Camping Grounds and Community Facilities</u> ³	
<u>GRUZ within the Hydro Inundation Hazard Overlay</u>	<u>Activity Status: PER</u> <u>Where:</u> 1. <u>A Hydro Inundation Hazard Assessment is issued in accordance with HI-S1 and is provided to Council.</u>	<u>Activity status when compliance is not achieved with R1A.1: DIS</u>
HI-R2	Residential Units	
RLZ within the Hydro Inundation Hazard Overlay	Activity Status: PER Where: 1. There is no more than one residential unit per site.	Activity status when compliance is not achieved with R2.1: DIS
HI-R3	Residential Visitor Accommodation	
GRUZ within the Hydro Inundation Hazard Overlay	Activity Status: DIS	
RLZ within the Hydro Inundation Hazard Overlay	Activity Status: NC	
AIRPZ within the Hydro Inundation Hazard Overlay	Activity Status: NC	
<u>HI-R4⁴</u>	<u>Staff Accommodation</u>	
<u>AIRPZ within the Hydro Inundation Hazard Overlay</u>	<u>Activity Status: PER</u> <u>Where:</u> 1. <u>AIRPZ-R4 is complied with.</u>	<u>Activity status when compliance is not achieved with R4.1: NC</u>
<u>HI-R5⁵</u>	<u>Aviation Related Visitor Accommodation</u>	
<u>AIRPZ within the Hydro Inundation Hazard Overlay</u>	<u>Activity Status: PER</u> <u>Where:</u> 1. <u>AIRPZ-R5 is complied with.</u>	<u>Activity status when compliance is not achieved with R5.1: NC</u>

³ Genesis (46.25)

⁴ Meridian (10.13)

⁵ Meridian (10.13)

Standards⁶

<u>HI-S1</u>	<u>Hydro Inundation Hazard Assessment</u>	<u>Activity Status where compliance not achieved:</u>
<u>GRUZ within the Hydro Inundation Hazard Overlay</u>	<p>1. A Hydro Inundation Hazard Assessment has been issued by the relevant hydro electricity generation asset owner that confirms:</p> <ul style="list-style-type: none"> a. <u>The Hydro Inundation Hazard Assessment is valid for five years from the date of issue; and</u> b. <u>The building and/or activity is located on land that is within a Low Hydro Inundation Hazard Area where “Low Hydro Inundation Hazard Area” means those areas that result from any dam breach that are subject to inundation where the water depth (metres) x velocity (metres per second) is less than or equal to 1, or where depths are less than 0.5 metres; and</u> c. <u>The building and/or activity is located at least 150m from the toe of the embankment of any canal, dam or associated structure; and</u> d. <u>For any residential unit, the finished floor level of any habitable room is at least 300mm above the maximum inundation level that would result from any dam breach; and</u> e. <u>The building and/or activity will not raise the Potential Impact Classification (Low, Medium, High) of the hydro-electricity generation scheme (or part thereof) under the Building Act 2004 in a manner that would lead to a requirement to upgrade, modify, or replace the hydro-electricity related structures (or parts thereof), or to significantly alter the operation of an affected</u> 	<u>DIS</u>

⁶ Genesis (46.24)

	<p><u>portion of a hydroelectricity scheme; and</u></p> <p><u>f. Where the Potential Impact Classification is already Medium or High the New Zealand Dam Safety Guidelines design criteria would not require the hydro-electricity generation scheme (or part thereof) to be upgraded, modified, or replaced, or significantly alter the operation of an affected portion of a hydroelectricity scheme.</u></p> <p><u>Note: Contact details for the relevant hydro electricity generation asset owner can be obtained from the Mackenzie District Council.</u></p> <p><u>Note: A Hydro Inundation Hazard Assessment can either be issued on an individual project basis or on a site-wide basis (as determined by the author of the assessment).</u></p>	
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