

Auckland Unitary Plan

Standard Conditions Manual

Damming of Water

Disclaimer

The information in this Standard Conditions Manual is, according to Auckland Council's best efforts, accurate at the time of publication. Auckland Council makes every reasonable effort to keep it current and accurate. However, users of the Conditions Manual are advised that:

- *Although the conditions are “standardised”, in the sense that they should be applied consistently where they are required, this does not mean that they should all be applied in every instance. Applicants need to consider the nature of the activity, and the characteristics of the site and its surroundings in considering whether to apply each and every condition.*
- *The standard conditions should be used with caution as a starting point from which appropriate conditions for the individual consent should be drafted to align with the requirements of ss108, 108AA and 220 of the Resource Management Act 1991.*
- *Further guidance as to whether to apply the conditions are included in the guidance notes that accompanies each condition.*
- *Users should take specific advice from qualified professional people before undertaking any action as a result of information obtained in this Standard Conditions Manual.*
- *Auckland Council does not accept any responsibility for, or liability whatsoever whether in contract, tort, equity or otherwise (including negligence) arising from the use of, or reliance on, this Standard Conditions Manual. This includes, without limitation, any liability arising from any error, or inadequacy, deficiency, flaw in or omission from the information provided.*

Overview

Which conditions should be used?

These dam conditions are for in-stream dams. They are primarily written for earth filled dam replacement consents but can be used as a starting point for new earth filled dams. The conditions are not intended for stormwater dams and large dams that require a building consent. Large dams requiring a building consent (in addition to a resource consent) include those at least four or more meters high and which hold 20,000 or more cubic meters volume of water or other fluid. If the dam is not a large dam, a building consent is not required but it will still need to comply with the Building Code.

The Coastal and Water Allocation Team will monitor stand-alone Dam consents. All integrated consents will be monitored by the Compliance Monitoring Team. An internal agreement between the Monitoring and the council Specialist teams will ensure that all information necessary to the consent is appropriately assessed while the customer maintains a single point of contact with the council. Where a stand-alone consent is granted the single point of contact for the conditions can be changed to Team Leader Coastal and Water Allocation.

The conditions are generally set out in chronological order (i.e. construction and maintenance, monitoring, reporting and review).

Conditions

Condition 1: Works

The dam must be constructed and maintained in accordance with the following dimensions and standards:

- A XX metre high enter construction material e.g. earth fill dam, crest length XX metres, and crest width XX metres.
- A maximum impoundment surface area of XX square metres and approximate impoundment volume of XX cubic metres.
- Freeboard of 300mm to the lowest point of the dam crest in a 1% Annual Exceedance Probability (AEP) flood event.
- Service and flood spillway dimensions of enter dimensions.
- A flood spillway capable of safely passing a 1% Annual Exceedance Probability (AEP) flood with minimal damage to the flood spillway.
- Fish passage in accordance with [insert consented drawings/plans/reports which reference the fish passage]
- Low flow bypass in accordance with [insert consented drawings/plans/reports which reference the low flow bypass]
- (specific any other works that are required and refer to any reports which outline them e.g. any remedial works required as part of the consent)

Guidance Note:

This condition should go on all consents. It describes the approved design parameters for the dam. In terms of spillways, sometimes there is a single spillway and sometimes there are separate flood and service spillways. This condition should be modified accordingly. Include any remedial works here which have been approved to specific design parameters e.g. engineering works that stabilise the existing dam etc and refer to the engineering plans which set out how the work will be done.

Condition 2: Remedial works

Within enter time period or date of the commencement of this permit the following works must be carried out to fulfil the recommendations set out in add the report title, author, reference number and date of the recommendations

- list the works to be done.

Within 20 working days of completion of the above works confirmation/certification from a suitably qualified and experienced engineering

professional must be supplied to Council confirming/certifying that the engineer has supervised the works, that the works have been satisfactorily completed and that the design intent of the works have been met.

Guidance Note:

Remedial works are works undertaken to stabilise or rebuild part of a dam, they might include earthworks, planting or construction works. Applications for replacement dam permits will often contain remedial elements to ensure the ongoing performance of the dam. Council wants to ensure that these works are carried out so that the dam is safe. Therefore a time period is imposed on these specific works if the consent is commenced.

This condition should go on all replacement dam consents if the supporting application information recommends remedial work be done. Please describe the works that need to be done and reference any reports etc that outline that work. If the works are straight forward, then the works should be listed and may not require certification from a suitably qualified engineer. If the works do not require engineering certification, then the consent holder should still confirm the work has been done.

Condition 3: Damage repair

In the event of any damage to the dam, spillways or low flow bypass that results in a significant risk to safety or functioning of the dam, then works to repair that damage must be completed as soon as possible.

Within 20 working days of completion of the repair works a certificate from a suitably qualified and experienced engineering professional must be supplied to Council certifying that the engineer has supervised the repair works, that the works have been satisfactorily completed and that the design intent of the repair works have been met.

Advice Note:

Other consents such as streamworks consents may be required before any repair works can be undertaken. In addition, there may be other Unitary Plan provisions that may apply. It is the Consent Holders responsibility to determine what other consents are required and to obtain these before undertaking any works.

Guidance Note:

This condition should go on all consents and enables the council to keep its records updated and ensure that works are carried out and supervised by suitable qualified persons.

Condition 4: Dam safety and maintenance

The dam, spillway, fish passages, low flow bypass and associated structures must be operated and maintained to ensure that, at all times, they are structurally sound, pose no undue risk to human life, property, or the natural environment, and are able to perform satisfactorily to their approved design standard.

Advice Note:

Maintenance of the dam includes tasks necessary to minimise damage (including wave lap, vegetation and stock management), scour, and erosion along with any structural maintenance of the dam and associated facilities. It is the Consent Holders responsibility to determine what other consents (if any) are required and to obtain these before undertaking any works. Trees or large vegetation can weaken the structural stability of the dam, create seepage pathways and impede visual inspection and hence should not be allowed to grow on the dam. If the crest of the dam is to be used as a stock race, then the dam will need protecting with suitable measures such as covering the crest of the dam with gravel, fencing the sides of the crest, and diverting stormwater away from the upstream and downstream dam faces.

Guidance Note:

This condition should go on all consents. It requires the dam to be operated and maintained to protect the integrity of the dam and to minimise risk to human health and safety.

Condition 5: Dam inspection

The dam, spillway, fish passages, low flow bypass and associated structures must be inspected on **XX specify period - usually monthly or quarterly** and during and after extreme weather events.

Advice Note:

A sample inspection sheet is attached in Appendix 1 of this consent to provide guidance to the Consent Holder as to the type of matters that should be addressed when an inspection is carried out. Inspections by a suitably qualified and experienced engineering professional should be undertaken if there are any significant changes to the dam, spillways, low flow bypass or associated structures.

Guidance Note:

This condition should go on all consents to ensure dams are regularly inspected and function correctly. The sample inspection sheet is adapted from a guidance document produced by the New Zealand Society on Large Dams. The inspection is reported to the council through the Reporting condition below. Please include a copy of the sample inspection sheet when sending out the decision.

Condition 6: Professional dam inspection

The dam, spillway, fish passages, low flow bypass and associated structures must be inspected by a suitably qualified and experienced engineering professional before 30 September in XXXX, XXXX and XXXX enter each year (usually 5 years apart) to check the structural integrity and functioning of the dam and associated structures, and to advise on any upgrade or maintenance works that are required. A copy of the inspection report is to be provided to Council within 30 days of the inspection.

Guidance Note:

This condition should go on large or high risk dams to ensure that a professional check is made on the structural integrity of the dam and associated structures.

Condition 7: Low flow bypass

A low flow bypass must be installed and maintained to ensure the following flow rates immediately downstream of the dam are achieved:

- a. 1 May to 31 January. Not less than XX litres per second.
- b. 1 February to 30 April. Not less than XX litres per second.

The flow rates specified above may be reduced if agreed to in writing by Council.

Advice Note:

The low flow bypass can be achieved by *describe the typical relevant bypass design*. Inspecting and maintaining the low flow bypass is critical to protect the ecological functioning of the stream.

Guidance Note:

This condition should go on all in-stream dams to protect flows in the stream. The low flow bypass rate requires a minimum flow rate to be maintained downstream of the dam. Note that a winter and a summer flow rate are not always required. A single all year flow rate may suffice. Where an existing bypass is already in place, this condition will ensure it is maintained to the appropriate flow rate. Where no bypass exists, the consent should have discussed its installation and it should be built as per the approved drawings in Standard Condition 1: Activity in accordance with plans.

Condition 8: Fish passage

Access for native fish species to pass the dam *at all times/within XX months* must be provided by creating and maintaining fish passage.

Advice Note:

The creation and maintenance of fish passages should be undertaken in accordance with Auckland Council's fish passage guidelines (Technical Publication 131, June 2000 or any subsequent addition).

Guidance Note:

This condition should go on all consents. Dams create an impediment to fish passage up and down stream and as such will adversely affect the habitat and life cycle of fish. Fish passages enable fish to migrate past the dam structure. The fish passage design should have been decided through the consent process and the fish passage should be built in accordance with the plans as per Standard Condition 1: Activity in accordance with plans and specifically in Dam Condition 1: Works.

Maintenance of the fish passage is ensured by this condition and the works and inspection conditions above. Ask a Council specialist whether fish should be able to move up and down stream at all times or only during certain months of the year and amend the condition wording accordingly.

Condition 9: Riparian planting and management plan

A riparian planting and management plan must be prepared and submitted to Council for certification prior to exercising this permit or enter a date if the dam has been constructed. The riparian planting plan must contain:

- a. A description of any pre-existing riparian vegetation and existing infrastructure limitations on the area available for planting.
- b. Details of the proposed plant species, plant sourcing, plant sizes at time of planting, plan of the planted area within the planting area required, density of planting, and timing of planting.
- c. A programme of establishment and post establishment protection and maintenance (fertilising, weed removal/spraying, replacement of dead/poorly performing plants, watering to maintain soil moisture, length of maintenance programme).
- d. Stock proof fencing to protect the planting.

The Plan must generally be in accordance with “Auckland Regional Council Riparian Zone Management Strategy for the Auckland Region” Technical Publication 148 June 2001 (or any subsequent addition).

Guidance Note:

Where the application included riparian planting as a measure of mitigation or remedying, this condition should be imposed. The amount of planting and location etc will have been addressed in the consent (and is required in the implementation condition below) as the planting directly mitigates the consented activity. water temperature and raise dissolved oxygen in the specified length of stream, to reduce contaminants from land before entering the stream. For replacement permits the riparian planting may already be in place and this condition will not be required.

Condition 10: Implementation of the riparian planting and management plan

Within 1 year following certification of the Riparian Planting and Management Plan, the planting (comprising not less than XX metres of planting on one/both sides of the stream with a planting width of not less than XX metres) and stockproof fencing must be fully implemented in accordance with the certified Riparian Planting and Management Plan and must be maintained for the duration of this permit.

Guidance Note:

This condition should go on all consents where riparian planting is required. The amount and depth of planting should be discussed within the consent as it directly relates to mitigation for the approved activity. The timeframe for completing the planting is usually one year but may be longer providing there is good reason for such.

Condition 11: Reporting condition

An annual report must be submitted Council by 30 June each year. The report must contain: [Select reporting required](#).

- e. [Inspection records of the dam, the fish passage, low flow bypass and other associated structures as required in the conditions above.](#)
- f. [Any maintenance works carried out during that year and plans for any future works.](#)

Guidance Note:

Annual reporting is required for large or high risk dams to ensure that the council gets copies of the inspection reports. This condition will need to be modified as required.

Advice Notes

Advice Note 1: Contact details

All information requirements of this permit can be emailed to Auckland Council at monitoring@aucklandcouncil.govt.nz

Please include the permit number in the email title.

Guidance Note:

This advice note should go on all consents.

Advice Note 2: NZ Society on Large Dams

The NZ Society of Large Dams (NZSOLD) publishes guidance on the construction, operation, maintenance and inspection of dams. The consent holder is advised that they should be familiar with the society's guidance publications.

Guidance Note:

This advice note should go on all consents.

Appendix 1: Example Routine Visual Inspection Checklist for an Embankment Dam

Item No.	Description	Observation/Comment
E1	Record reservoir level (e.g. metres above mean sea level)	
E2	Is there reservoir shoreline instability or erosion?	
E3	Is the upstream face showing any erosion, instability, depression or cracking?	
E4	Is the dam crest showing any deformation, misalignment, depressions or cracking?	
E5	Is the left abutment showing any instability or seepage, including where the dam embankment contacts with the abutment?	
E6	Is the right abutment showing any instability or seepage, including where the dam embankment contacts with the abutment?	
E7	Is the downstream face showing any instability, deformation, depression, cracking or seepage?	
E8	Is the dam toe showing any erosion or seepage?	
E9	Measure the total dam seepage (e.g. time to fill 1 litre container, or mm head over a 90 degree v-notch weir)	
E10	Is the service or flood spillway entrance obstructed? Is the spillway, including the outlet, damaged or eroded?	
Other Comments and Observations (e.g. unusual events since last inspection, vegetation issues, operating issues etc).		