

5.7 Making resource consent applications and providing information

5.7.1 Form of application

Application for a resource consent or other authorisation contemplated within the the Proposed NRRP should be made in accordance with the procedures and forms established by the RMA and guidelines established by Environment Canterbury with respect to specific authorisations.

Applications for resource consent should be in accordance with section 88 and the Fourth Schedule of the RMA. Section 88 specifies the information that must be provided with a consent application. In particular, an assessment of any effects the activity may have on the environment is required. The Fourth Schedule describes the matters that should be included and considered in such an assessment of effects.

The information provided shall be in such detail as to correspond with the scale and significance of the actual and potential effects that the activity may have on the environment. In other words, if the environmental effects are likely to be minor, less detail will be required than if the effects could be significant or their extent is not known.

Environment Canterbury has prepared application forms and information booklets to assist applicants when preparing a consent application. **Resource Consent Information Series Booklet 1 – Applying for a Resource Consent** – describes how the application will be processed by Environment Canterbury. Other information booklets provide more specific guidance regarding information required for specific types of consent applications, for example taking of surface water and bores and groundwater.

The application forms, information booklets and fee schedules are available from your nearest Environment Canterbury office or from our customer services section by phoning **0800 EC INFO** (0800 324 636). A list of consultants who may be able to help you prepare an assessment of the effects of the activity is also available.

5.7.2 Information to be provided for all resource consent applications

- (a) full name, postal address, home and business telephone numbers of the person or organisation to whom the consent is to be issued.
- (b) name, address and telephone number of the person or consultant who is fully conversant with all aspects of the consent application.
- (c) name and address for service of documents (if different from above).
- (d) a description of the activity, its nature, purpose and duration.
- (e) the location of the activity together with a site plan, legal description, and map references (topographical map 260 1:50,000).
- (f) a description of possible alternative locations or methods and the reasons for making the proposed choice.
- (g) the scale of the activity, including the size of the area required for the activity in hectares or square metres.
- (h) an assessment of any actual or potential effects of the activity on the environment.
- (i) a description of the measures to be undertaken to avoid, remedy or mitigate any effects on the environment.
- (j) a list of names and addresses of property owners or occupiers likely to be adversely affected by the activity.
- (k) an identification of those people adversely affected by the activity, any consultation undertaken, and any response to the views of those consulted. The extent of the

consultation will depend on the type of activity proposed, its scale or location. These people might include:

- (i) Māori;
 - (ii) papatipu rūnanga;
 - (iii) Te Rūnanga o Ngāi Tahu;
 - (iv) Department of Conservation;
 - (v) territorial authorities;
 - (vi) Fish and Game councils;
 - (vii) commercial user groups;
 - (viii) New Zealand Historic Places Trust;
 - (ix) recreation user groups;
 - (x) the community in general; and
- (l) a statement of all other resource consents or approvals that the applicant may require from Environment Canterbury or any other consent or approval authority to undertake this and every other activity associated with the proposal, and whether or not the applicant has applied for, or obtained, such consents or approval. Note that where other resource consents will be required in respect of the proposal to which the application relates, Environment Canterbury or any other consent or approval authority may require that these are all proceeded with at the same time.

5.7.3 Specific information requirements

In addition to the general information requirements described in the above documents, the following particular information is required as indicated below, in order to audit the resource consent application or request for approval.

5.7.3.1 *The taking, using, damming or diverting of surface water*

In addition to the general information outlined above, applications for the taking, use, damming or diversion of surface water must include the following information, where appropriate:

- (a) a site map showing the location of the proposed point or points of abstraction (to an accuracy of 10 metres), damming or diversion, location of neighbouring (upstream and downstream) abstraction points, and location of the water body for which the activity is proposed in relation to springs, drains, tributaries, streams and rivers. If the water abstracted is to be used for irrigation, then the location of the area to be irrigated must also be shown;
- (b) a description of the proposed pumping schedule, including the following detail relating to each abstraction point: instantaneous maximum pump rate; the hours of pumping; proposed maximum weekly volume; and proposed maximum seasonal volume;
- (c) if water is to be dammed, details of the maximum safe volume of water to be dammed. A site map should be provided showing the location of the dam and dammed water. In addition, the following information must also be included in the assessment of environmental effects provided with the application:
 - (i) the design of the dam, including the dam dimensions, detail of the material the dam will be constructed out of, and the spillway capacity;
 - (ii) an analysis of the geology of the area and whether there are any geological features that could affect the dam and result in it failing. A dam-break analysis, undertaken by a suitably qualified professional, which includes detail of who would be affected by a dam-break and to what extent, what on-going maintenance programme is proposed to be implemented during first filling and then on-going;

- (iii) details of the maximum safe quantity of water to be dammed and maximum rate/volume diverted. Details of the storage capacity sought, of the proposed flow regime and augmentation flows following damming;
- (d) if water is to be diverted, a description of whether the diversion is continuous or intermittent. If the diversion occurs on an intermittent basis, a description of the diversion schedule should be provided, including, the instantaneous rate of diversion, the hours per day the diversion will occur, and the number of days the diversion will occur;
- (e) a description of the use to which the water is to be put, including a demonstration of the reasonable use of the water:
 - (i) for irrigation use, this will need to consider the intended land-use activity, irrigation system used and on-site physical factors such as soil water-holding capacity and evapotranspiration. It will need to include details of other existing resource consents and permitted activities, to use surface and/or groundwater for irrigating land on the same property, and show that cumulatively, the exercise of all resource consents will be an efficient use of water;
 - (ii) for community and/or stockwater supply purposes, it will need to consider the proposed quantity of water per head of population and per hectare or stock unit supplied, potential growth in demand, method of conveyance and evidence that it is efficient (i.e. that excessive quantities are not leaked from the system), as well as detail of water shortage strategies;
 - (iii) for industrial uses, this will need to consider the product output per unit of water used, and include a water audit of the whole business. For guidance on this, obtain a copy from Environment Canterbury of guidelines that have been developed for auditing industrial water use;
- (f) an assessment of the effect of the take, use, diversion and damming of surface water on other surface water resource users and owners of land upstream on a river or on the edge of the lake near an intake for a community drinking water supply. The techniques used to assess effects may include some or all of the following:
 - (i) knowledge of the effects of existing surface water abstractions and hydraulically connected groundwater abstractions in the area;
 - (ii) a list of all surface water users or land owners, who may be adversely affected by the proposal. Describe any consultation with these people and any measures proposed to avoid remedy or mitigate adverse effects, including written approvals if these have been obtained. Environment Canterbury can provide copies of standard forms for recording of written approvals, if required, and can also provide a list of resource consent holders within the catchment. The effects of the proposal on permitted users should also be considered;
 - (iii) in the case of damming of surface water, specifically, consideration must be given to the effects of changing the way the river flows on recreational users such as fishers, canoeists and jet boaters, etc. Consideration must also be specifically given to the effect of the damming on downstream users (including permitted activities) – on whether they will have the same, better or less reliability of supply.
- (g) An assessment of the effect of the take, use, diversion and damming on surface water flows and surface water quality, including:
 - (i) a description of the water body from which water will be taken, used, diverted or dammed, including: low, average and maximum flow rates; variability of flow; seasonal fluctuations; proposed lake levels; flora and fauna values, recreational values and Tāngata whenua values; other users of the resource; and water quality;

- (ii) a description of the minimum flows and the allocation block that the applicant considers any take, damming or diversion will be limited by, or that may be affected by any damming;
- (iii) details, specifically, of how damming may impact on aquatic species as a result of any change to river flow, including residual flows being released from the dam and passage of fish; impacts on the geomorphology and hydrology of the river system; impacts on bed loading and coastal erosion;
- (iv) details to show how storage lake water quality will be maintained above required levels by avoiding and remedying problems such as:
 - (1) nutrient and carbon enrichment from lake-bed soils and vegetation;
 - (2) nutrient enrichment from changing surrounding land uses;
 - (3) changes in thermal regimes in lakes;
 - (4) thermal stratification (layering);
 - (5) low oxygen concentrations and chemical changes in bottom layers;
 - (6) changes upon lake remixing;
 - (7) lake drawdown effects; and
 - (8) sedimentation, e.g. re-suspension of lake shore sediments.
- (v) details specifically of how the taking and use of surface water, when used for augmentation, may impact on groundwater. In particular, consideration must be given to the potential for incidental recharge to cause land drainage problems because of elevated groundwater levels, and the impact this may have for other land users, for example, land-based sewerage discharge systems;
- (vi) details of how the take, dam or diversion will be monitored and how the effects of these will be monitored and by whom;
- (vii) an assessment of any actual and potential effects that the activity may have on the environment, including any effects on:
 - (1) aquatic ecosystems values;
 - (2) cultural and spiritual values;
 - (3) human use values, including recreational use values and food gathering;
 - (4) natural character, amenity and aesthetic values; and
 - (5) water quality.

5.7.3.2 The taking and use of groundwater

In addition to the general information outlined above, applications for the taking or use of groundwater must include the following information, where appropriate:

- (a) a description of the location of the bore or bores from which the proposed abstraction is to occur, as well as specific detail for each individual bore from which it is proposed to abstract, including bore depth, screen depths and lengths, bore diameter, geological log, and water level information, also detail of the depth, length, width, orientation, and construction design of any associated gallery. Also provide a report prepared by an appropriately qualified person to demonstrate compliance with conditions in rules WQL36 and WQL38. A site map showing location of proposed abstraction bores (to an accuracy of plus or minus 10 metres); the location of all other neighbouring bores; and the location of any surface water bodies such as springs, drains, streams, and rivers. If the water abstracted is to be used for irrigation, then the location of the area to be irrigated should also be shown;

- (b) a description of the proposed pumping schedule including the following detail relating to EACH bore it is proposed to abstract from – instantaneous maximum pump rate, proposed maximum weekly volume and proposed maximum seasonal volume;
- (c) a description of the use to which the water is to be put, including a demonstration of the reasonable use of water:
 - (i) for irrigation use, it will need to consider the intended land-use activity, irrigation system used and on-site physical factors such as soil water holding capacity and evapotranspiration. It will need to include details of other existing resource consents (including permitted activities) to use surface and/or groundwater for irrigating land on the same property, and show that, cumulatively, the exercise of all resource consents will be an efficient use of water;
 - (ii) for public and/or stockwater supply purposes, it will need to consider the proposed quantity of water per head of population and/or per hectare or stock unit supplied, potential growth in demand, method of conveyance and evidence that excessive quantities are not leaked from the system, as well as detail of water shortage strategies;
 - (iii) for industrial uses, it will need to consider the product output per unit of water used, and include a water audit of the whole business. For guidance on this, obtain a copy from Environment Canterbury of guidelines that have been developed for auditing industrial water use;
- (d) a description of the allocation block (see Policy WQN14) from which the applicant wishes to abstract water and what the applicant considers the abstraction will be limited by;
- (e) an assessment of the effect of the take and use of groundwater on the groundwater resource. The techniques used to assess effects may include some or all of the following:
 - (i) use of water balance estimates based on estimated recharge and through flow to show the proposal will not result in unacceptable stress to the groundwater resource;
 - (ii) use of quantitative tools such as numerical modelling to show the proposal will not result in unacceptable stress to the groundwater resource;
- (f) an assessment of the effect of the take and use of water on other groundwater resource users. The techniques used assess effects may include some or all of the following:
 - (i) knowledge of the effects of existing groundwater abstractions in the area, including the existing cumulative impacts on neighbouring well yields;
 - (ii) use of quantitative tools such as analytical equations or numerical modelling for estimating well interference impacts on neighbouring wells. It will need to be demonstrated that appropriate hydrogeological data is used (see Table 3 for the appropriate aquifer test information to use in analytical equations or numerical modelling). For guidance on using these techniques, obtain a copy from Environment Canterbury of guidelines that have been developed for auditing well interference effects;
 - (iii) a list of all the neighbouring well owners, with details of their wells, who may be potentially adversely affected by the proposal. Describe any consultation with these people, including written approvals if these have been obtained. Environment Canterbury can provide copies of standard forms for recording of written approvals, if required, and can also provide a list of the wells currently listed in the WELLS database operated by the council;
- (g) an assessment of the effect of the take and use of groundwater for group or community drinking water supply on other groundwater resource users, including neighbouring land

owners; and a risk assessment of the potential for contamination of the water supply. The assessment should include:

- (i) the number of dwelling houses or other buildings, and the number of people to be served by the supply scheme to determine whether the use is for group or community drinking water supply; and
- (ii) where the use is for community drinking water supply, the extent of and establishment of a community water supply protection zone for the protection of the quality of the water to be supplied from the take;
- (iii) where the use is for community drinking water supply, a risk assessment of the potential for groundwater contamination to occur, and measures that will be taken to ensure the risk is minor;
- (iv) consideration of the effects of establishing such a community water supply protection zone on neighbouring land owners and/or occupiers and any measures proposed to avoid remedy or mitigate adverse effects;
- (v) in addition to (ii) and (iii) above, the following information is to be provided and used to determine the dimensions of any Community Water Supply Protection Zone:
 - (1) hydrogeology of the aquifer;
 - (2) assessment of the vulnerability of the groundwater to contamination;
 - (3) pumping rate of the well;
 - (4) population served by water supply;
 - (5) identification of existing potential sources of contaminants, their volume, concentration and pathways into groundwater;
 - (6) time of travel of identified contaminants to the well;
 - (7) mitigation methods, such as water treatment; and
 - (8) determination of risk, including modeling of credible worst-case risk scenarios;
- (h) an assessment of the effect of the take and use of groundwater on surface water flows. The techniques used for assessing effects may include some or all of the following:
 - (i) a general description of the source water body from which water will be taken, including: low, average and maximum flow rates, variability of flow, seasonal fluctuations, flora and fauna values, recreational values, other users of the resource, water quality and Tāngata Whenua values;
 - (ii) resource availability, including a description of the minimum levels or flows and the surface water allocation block (see Policy WQN14) which the hydraulically linked groundwater will be limited by;
 - (iii) use of quantitative tools such as analytical equations or numerical modelling for estimating stream depletion effects. It will need to be demonstrated that the appropriate hydrogeological data is used (see table below for the appropriate collection of field measurements to use in analytical equations or numerical modelling). For guidance on using these analytical equations and numerical modelling obtain a copy from Environment Canterbury of guidelines that have been developed for estimating stream depletion effects;
- (i) an assessment of the effect of the take and use of groundwater on saltwater intrusion – where the take is within 2000 metres of the coast. The techniques used to assess effects may include some or all of the following:
 - (i) use of quantitative tools such as analytical equations or numerical modelling for estimating a change in the saltwater/freshwater interface at the coast. It will need

to be demonstrated that appropriate hydrogeological data is used (see table below for the appropriate collection of filed measurements to use in analytical equations or numerical modelling). For guidance on using these analytical equations and numerical modelling, obtain a copy from Environment Canterbury of guidelines that have been developed for auditing for saltwater intrusion effects;

- (ii) if a replacement take is sought, then information to show there have been no such adverse effects occurring in the past;
- (iii) details, specifically, of how the taking and use of groundwater, when used for augmentation, may impact on groundwater in another area. In particular, consideration must be given to the potential for incidental recharge to cause land drainage problems because of elevated groundwater levels and the impact this may have for other land users, for example, land-based sewerage discharge systems.

Many of the techniques that should be used to assess the different potential adverse effects will need to use hydrogeological data collected, based on field measurements carried out in the vicinity of the proposed activity. Outlined below in Table WQN3 is a list of the types of field measurements that may need to be undertaken to provide the appropriate data. As can be seen from the table, many field measurements will provide hydrogeological data that can be used to assess a number of different potential adverse effects.

Table WQN3: Field measurements available to provide appropriate hydrogeological data in the form of aquifer parameters to assist in carrying out assessments of environmental effects

Field Measurements	Description	Parameters Obtained
Single well pumping tests		
Specific capacity test	Specific capacity	Potential well yield Rough estimate of interference effects
Step test	Well performance parameters B (combination of linear well and aquifer losses) C (non-linear well loss co-efficient) Transmissivity	Potential well yield Interference effects (including stream depletion and saltwater intrusion)
Constant rate test	Transmissivity	Interference effects (including stream depletion and saltwater intrusion)
Recovery (usually done in combination with one of the above tests)	Transmissivity	Interference effects (including stream depletion and saltwater intrusion)
Slug test (suitable for very low transmissivity sites)	Hydraulic conductivity Transmissivity (where aquifer thickness is known)	Interference effects (including stream depletion and saltwater intrusion)
Test pumping with observation wells		
Constant rate test	Transmissivity Storativity Leakage parameters (in semi-confined aquifers)	Interference effects (including stream depletion and saltwater intrusion)
Variable discharge tests	If rate changes are recorded then: Transmissivity	Interference effects (including stream depletion and saltwater intrusion)

Field Measurements	Description	Parameters Obtained
	Storativity Leakage parameters (in semi-confined aquifers)	
Recovery test (usually done in combination with one of the above tests)	Transmissivity	Interference effects (including stream depletion and saltwater intrusion)
Tests related to stream depletion (in general order of increasing reliability)		
Infiltration tests	Streambed vertical hydraulic conductivity Streambed conductance where stream width is known	Stream depletion taking account of streambed clogging layer
Seepage surveys	Streambed vertical hydraulic conductivity Streambed conductance where stream width is known	Stream depletion taking account of streambed clogging layer
Pumping test with observation wells adjacent to stream	Transmissivity Storativity Streambed Conductance	Interference effects (including stream depletion taking account of streambed clogging layer)
Combined gauging and piezometric surveys	Streambed conductance	Stream depletion, taking account of streambed clogging layer, if transmissivity and storativity are already known

A guideline on how to carry out pumping tests is also available from Environment Canterbury.

5.7.3.3 *The planting of forestry in flow-sensitive catchments*

In addition to the general information outlined in 5.7.2, the following specific information is to be provided with any application for a land use consent to plant new areas of forestry in flow-sensitive catchments listed in Schedules WQN15.1-WQN15.4:

- (a) a description of the proposed forest planting, including the species to be planted, the timing and management of plantings, site preparation and the management of the area (including weed and ground cover management);
- (b) a detailed site plan outlining:
 - (i) the location of the forest and the sites to be planted;
 - (ii) a description and map of the existing vegetation cover in the area to be planted;
 - (iii) a map showing details of any rivers or other water bodies including springs and wetlands within the catchment to be planted; and
 - (iv) management of the riparian margins of any water bodies, including location and width of any unplanted margins, and the proposed management of these margins;
- (c) a description of any existing uses or values for the water within the catchment to be planted;
- (d) an assessment of any actual or potential effects of the forest, at maturity, on:
 - (i) water flows and levels for the water bodies, including any change to the frequency and duration of occurrences of flows below the set minimum flow or 7DMALF, as measured at the monitoring site identified for the catchment in Appendix WQN4; and

- (ii) any values or existing uses of the water bodies; and
- (e) details of any measures taken, or options, to avoid, remedy or mitigate:
 - (i) any reductions in flows or levels for the water bodies; or
 - (ii) any adverse effects on values and uses of the water bodies.