Practice Note:
New Surface Water and Connected Groundwater Take and Use Applications

Otago Regional Council

This practice note outlines what to consider when you are applying for a new surface water permit or groundwater permit that will be allocated as surface water.

A new surface water permit or groundwater take that is allocated (in full or part) as surface water is processed under the **Chapter 12** rules in the **Water Plan**.

Note: This practice note does not apply if you are seeking to replace a surface water permit or groundwater permit or if you are seeking a new groundwater permit. Refer to the following practice notes:

- Replacement surface water and connected groundwater take and use applications
- Replacement groundwater take and use applications
- New groundwater take and use applications

What rules apply to the activity?

Permitted activities

The taking and use of small rates and volumes of water are permitted under the Water Plan or under Section 14(3) of the RMA without the need for a consent. For more information about Section 14(3) refer to: Taking and using water: how to guide and Stacking of Water Takes Practice Note. The permitted activity rules can be found in Chapter 12.1.2 of the Water Plan. If all of the conditions of these rules can be met, then the activity does not require consent.

Prohibited activities

There are some surface water take and use activities that are prohibited in Otago. This means that they cannot be applied for and undertaken. These include:

- Seeking a new consent for taking primary allocation water in a fully or over-allocated catchment[1] or an application that would cause the catchment to become fully or over-allocated (12.0.1.1 and 12.0.1.2).
- Taking and use of water from the Lindis River in certain circumstances (12.0.1.5)
- Taking and use of water from Lake Tuakitoto in certain circumstances (12.1.1.1)
- Taking and use of surface water for nuclear power generation or nuclear weapon manufacturing (12.1.1.2).

Schedule 2A catchments

The Water Plan sets primary (and supplementary) allocation limits for some catchments in the region. The catchments that have set allocation limits and minimum flows can be found in Schedule 2A (primary allocation) and Schedule 2B (supplementary allocation) of the Water Plan. The following rules apply to take and use activities from these catchments:

1 You can find out whether the take is in a fully or over-allocated catchment by contacting Consent Enquiries at consent.enquiries@orc.govt.nz

- **Prohibited** activities are those seeking a new consent for taking primary allocation water in a fully or over-allocated catchment[2] or an application that would cause the catchment to become fully or over-allocated (12.0.1.1 and 12.0.1.2).

- **Restricted discretionary** activities are those applications seeking to take and use water where there is allocation available within the catchment based on the limits set in Schedule 2A and/or 2B (12.1.4.2, 12.1.4.3)[3]

Non-Schedule 2A and 2B catchments

For catchments not listed in Schedule 2A and 2B there is a default allocation limit that is applied to determine primary and supplementary allocation. The exceptions to this are detailed below (e.g. big lake takes). These catchments are shown in the Consents in Otago map under Water Allocation. The rules that apply to these take and use applications are:

- **Prohibited** activity if the take is in a fully or over-allocated catchment for primary allocation or would cause the primary allocation of the catchment to exceed the limits in the Water Plan (12.0.1.1, 12.0.1.2)
- **Restricted discretionary** activity for those applications where there is primary allocation available within the catchment or a new take for supplementary allocation in accordance with Policy 6.4.9 (a) (12.1.4.6, 12.1.4.7)[3].
- **Discretionary** activity for supplementary allocation in accordance with Policy 6.4.9(b) or 6.4.10 (12.1.5.1)[3].

Clutha River/Mata-Au, Kawarau River and Lakes Hawea, Wānaka, Whakatipu, Dunstan and Roxburgh

Take and use activities from the main stem of the big rivers and from the big lakes are not subject to primary and supplementary allocation (or minimum flows) under the Water Plan. There is a permitted rate and volume of water that can be taken from these waterbodies. This is significantly larger than for any other watercourse in the region (12.1.2.2). Where the permitted activity rule cannot be complied with, the take and use activities are full **Discretionary activities** under Rule 12.1.5.1.

Waitaki Catchment

Water take and use activities in the Waitaki catchment are subject to specific rules and policies. Allocation of water from the main stem of the Waitaki River is the responsibility of the Canterbury Regional Council (Environment Canterbury), while allocation from **tributaries on the south side of the main stem**, such as Welcome Creek, are the responsibility of Otago Regional Council (ORC).

There are specific rules (and policies) in the Water Plan that apply to takes and uses in the Waitaki catchment. These include:

- **Non-complying** activities where the take and use will cause the allocations to specific activities to be exceeded in Table 12.1.4.2 (12.1.1A.2, 12.1.1A.3). These applications must show the effect of granting the consent on the entitlements to other allocations.

[2] You can find out whether the take is in a fully or over-allocated catchment by contacting Consent Enquiries at consent.enquiries@orc.govt.nz
[3] See the Waitaki catchment heading below for specific rules in the Waitaki catchment

- **Restricted discretionary** activities where the take and use will not cause the allocations to specific activities to be exceeded in Table 12.1.4.2 (12.1.4.2, 12.1.4.3, 12.1.4.6, 12.1.4.7)

Environment Canterbury maintain the database with current allocations. You can contact consent.enquiries@orc.govt.nz to confirm if the take and use is within the Waitaki catchment and whether there is allocation available for the specific activity you are proposing to undertake. Note: The volumes in Table 12.1.4.2 apply to the whole catchment, including groundwater takes in the catchment boundary.

Table 12.1.4.2
Annual allocation to activities
Note: units = millions of m^3 per year

Location	Town & community water supply	Industrial & commercial (outside town supply)	Tourism & recreation	Agricultural & horticultural	Any other activities*	Hydroelectricity generation*
Downstream of Waitaki Dam but downstream of Black Point	19	8.5	4.3	1100	144	All other flows except those required to remain in rivers under environmental flow and level regimes

*Water taken or diverted and returned to the same water body in the vicinity of the take or diversion point, in the same condition and quality as taken, for fisheries and wildlife or micro hydro-electricity generation, does not need to be accounted for in the annual allocation to activities in Table 12.1.4.2.

Regionally Significant Wetland takes

The taking and use of surface water from Regionally Significant Wetlands are **Non-complying** activities. More information on wetlands including Regionally Significant Wetlands and their locations can be found here: Regionally Significant Wetlands

Non-consumptive takes

A take is non-consumptive when:

a) The same amount of water is returned to the same water body at or near the location from which it was taken; and
b) There is no significant delay between the taking and the returning of the water.

Same amount of water returned to the same water body

When considering whether the same amount of water is returned to the same water body at or near the location from which it was taken, Council will consider:

- Is the water being taken from and returned to the same water body?
- Is there potential for any losses of water between the take and the return of the water (i.e. is the water piped to the discharge point, is it via a race, is the pond lined, is there potential for evaporative losses, leaching losses, overflow losses, etc.)?
- What is the measured distance between the take and return of the water? Is this location considered to be near the point of take?

No significant delay

When considering whether there is no significant delay between the taking and the returning of the water, consider:

- Can the time between the taking and return of water be quantified (is this minutes, hours, days or weeks)?
- Is the delay significant?

Determining whether a take is non-consumptive

A take needs to meet the above definition to be non-consumptive. A take is not non-consumptive because of the particular use of the of the water (e.g. not all hydro-electric takes are non-consumptive). Any application for a non-consumptive take needs to provide evidence and justification for meeting the non-consumptive definition. The Council will make the final determination on whether a take is non-consumptive or not.

Non-consumptive takes are not considered as part of primary or supplementary allocation and minimum flows do not apply. Residual flows may be imposed. New non-consumptive takes are **Discretionary** activities under Rule 12.1.5.1.

Augmented takes

Augmented takes are where stored water is released and taken downstream of the storage facility (i.e. water is released from a dam for subsequent taking) or where water taken is delivered to a river which forms part of the conveyance network and is then re-abstracted from the river at a downstream location. It is the second take that is the augmented take.

Augmented takes are a common feature in Central Otago and are a result of water transfers across the region. The Council does not anticipate receiving new applications for augmented takes where the river is used as a conveyance network[4]. Refer to practice note: Replacement surface water and connected groundwater take and use applications for rules that apply to replacement augmented takes.

Community water supply takes

Specific community water supply takes are identified in Schedule 1B of the Water Plan. As these community water supplies will have existing consents, any applications to replace them will be considered under the Chapter 10A rules in the Water Plan (and not controlled activity rule 12.1.3.1). Refer to: Replacement surface water and connected groundwater take and use applications. New community water supply takes will be considered based on the rules detailed above (i.e. it will depend on the water body that the take will be from).

Takes from springs

Water takes from springs are considered to be surface water takes under the Water Plan. The rules that apply depend on the catchment that the take is from and how much water is being taken (i.e. whether it is permitted or not). Refer to the advice above.

[4] New augmented takes are **restricted discretionary** activities under Rule 12.1.4.1.

Change in purpose of use of a water permit

Existing water permits that take and use surface water or are allocated as surface water are typically replaced under the Chapter 10A rules. One of the exceptions to this is where there is a change in purpose of use (e.g. change in use from irrigation to water bottling). The Chapter 10A rules do not apply, and these applications have to be considered under the Chapter 12 rules.

The location (within or outside of Schedule 2A) and nature of the take will impact what rules apply. You can refer to the above for advice on relevant rules.

For applications that are seeking to replace an existing water take in a **fully or over-allocated** catchment with a change in the purpose of use, Rules 12.1.4.2, 12.1.4.4, 12.1.4.5 may apply. These are **Restricted Discretionary** activities. A historic use assessment will be required for these applications. It is recommended that these are undertaken in accordance with Schedule 10A.4[5].

Other activities that may require consent

Applications for water permits are assessed against the rules in the Water Plan. Ancillary activities associated with a water permit to take and use water may trigger the need for additional consents such as:

- retakes of water from water races and reservoirs
- water permits for diversion and/or damming of water
- land use consents for dams and structures
- discharge permits and/or
- consents under the NES-FW for activities near natural inland wetlands, fish passage etc.

Retakes from Water Races, Reservoirs and Dams

The taking of water, whether from a water body or a race or reservoir, requires resource consent under the RMA unless permitted by a regional rule[6]. If your take is conveyed or stored in open races or reservoirs and there are takes from these, the application should identify these retake locations.

To ensure that your activity has all the consents required, we will include any retakes of water on your primary water permit. We will consider the retakes under the primary water take rule (i.e. the take from the river).

We need to know the location of the retakes from water races and reservoirs to include them on the consent. For schemes and where there are multiple takes, we accept a current race plan that we can append to the consent.

More details on retakes and what is required with an application can be found in the Guide for retakes, offline damming, and diversions.

[5] More details on Schedule 10A.4 historic use assessment can be found in the following practice note: *Replacement surface water and connected groundwater take and use applications*

[6] The term "water" is very broadly defined in the RMA. While water in a pipe, tank or cistern is excluded, this exclusion will not apply to water in water races and other un-piped artificial watercourses including dam reservoirs.

Damming and Storage of Water

A water permit is required where the damming of water does not comply with permitted activity Rule 12.3.2.1 of the Water Plan. This applies to the damming of water both in a natural water body and outside of a natural water body (i.e. on land).

Damming includes holding water in storage/detention ponds and reservoirs and other structures - both within and outside water bodies and races. Damming on land is only where there is water held back by a structure[7]. You will need to consider new damming activities and any existing damming activities.

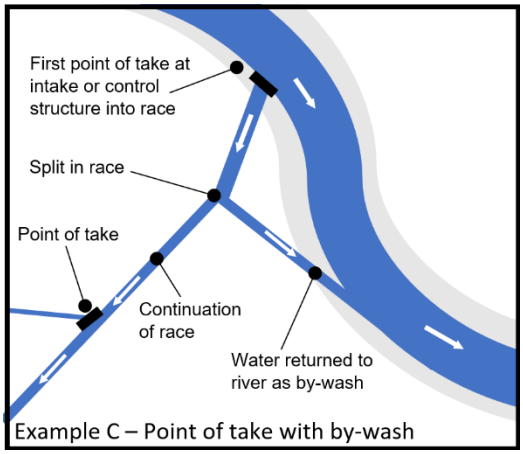
There are many different resource consents that may be required for damming. Helpful guidance can be found in Form 2.

The expected level of detail required to support your damming and diversion activity will vary depending on the scale of the activity, age, consent duration sought and other factors. More information on what needs to be lodged with these applications can be in the Guide for retakes, offline damming, and diversions.

All resource consent applications associated with the damming of water and the establishment of any dam structures that relate to the take and use of the water will need to be applied for with your application. Form 2 can be used to make this application.

By-Wash and Discharges

By-wash is excess water that is taken at the point of take, normally to enable the point of take and conveyance infrastructure (such as a race) to operate. By-wash is typically discharged back into a water body downstream of the point of take. This may or may not be the same water body that water was taken from. By-wash may also be discharged to other water bodies to manage high flows/relieve pressure on the race system and prevent race blowout. Refer to Example C below.



Example C – Point of take with by-wash

It is expected that applications for new takes will NOT have a by-wash component. It is encouraged that the water intake system is designed to prevent the need for water taken to be by-washed.

[7] More details on this can be found in Figures 1 and 2 of: in the Guide for retakes, offline damming, and diversions.

Land use consents

A surface water take may require consents to establish the intake structure in the riverbed or for other works to be undertaken in the riverbed to enable the take (e.g. the establishment of weirs and dams, disturbance of the bed). There are permitted activity rules in Chapter 13 of the Water Plan that may provide for these activities. Rule 13.2.1.4 relates to intake structures. Further advice on land use consents required to enable your proposed water take can be found here Practice note - Structures or by contacting consent.enquiries@orc.govt.nz.

NES-FW Consents

The National Environmental Standards for Freshwater 2020 (NES-FW) has rules that relate to specific activities. Some of these may be associated with your proposed water take and use activity. If your proposal includes activities related to the following, then the NES-FW 2020 Regulations should be reviewed. Additional consents may be required and/or information required to be submitted to Council:

- Taking and using water in or close to natural inland wetlands (Regulations 37-56)
- Reclamation of rivers (Regulations 56A-57)
- Placement, use, alteration, extension or reconstruction of culverts, weirs and passive flap gates (Regulations 62-65 and 69-74)
- Dams (Information requirements only – Regulations 62, 67 and 69)

Additional information on structures and the NES-FW 2020 can be found here: Practice note - Structures

Description of the Activity

We need to understand the activity including the location and nature of the activity to process and application. Make sure to include details on the following in the application:

- Details about the water body that the take will be from including known watercourse values (natural and human use values) and flow data.
- The location and details of existing surface water takes (permitted and consented takes)
- Rates and volumes proposed to be taken
- Means and timing of the take, including seasonality
- Description of the infrastructure for taking, storing, distributing and using the water
- Details on the use of the water including the location of use
- Identification of any wetlands or Regionally Significant Wetlands in the locality
- Identification of whether the take is in a Water Conservation Order watercourse
- Climate and soils
- Details about the groundwater resource and whether it is connected to the water body
- For discretionary/non-complying activities only:
    - Identification of all water users for the water body,
    - identification of cultural values
    - a description of the existing water quality of the surface water body and groundwater below the area where water is to be used

Environmental Effects Assessment

The below headings outline key considerations for an environmental effects assessment for a new surface water take. The table below summarises the key effects and when these need to be considered.

Environment effects assessment for new surface water take and use activity for different activity statuses

	Restricted Discretionary activity	Discretionary activity	Non-complying activity
Allocation	Y	Y	Y
Minimum flows	Y	Y	Y
Residual flows	Y	Y	Y
Instream values	Y – with some limitations	Y	Y
Natural inland wetlands	N – only if located within 100 m	Y	Y
Regionally Significant wetlands	Y	Y	Y
Other water users	Y – only existing water takers	Y – all water users	Y – all water users
Water quality effects – from taking and use	Y -only effects on groundwater quality	Y	Y
Groundwater effects	Y – not for Rule 12.1.4.1	Y	Y
Efficiency of use	Y	Y	Y
Cultural effects	N	Y	Y
Cumulative effects	N	Y	Y
Historic use assessment	Y – only for replacement consents seeking a change in purpose	N	N

Allocation

Primary allocation

Primary allocation is the first amount of water in the water body that can be allocated for taking and use by resource consents (in litres per second). For new takes, the relevant rules depend on whether the take is in a Schedule 2A catchment area or not and whether there is primary allocation available. Policy 6.4.2 and the associated explanation in the Water Plan describe primary allocation and how it is calculated.

Supplementary allocation

Supplementary allocation enables water to be taken when flows are higher. Policies 6.4.9 and 6.4.10 in the Water Plan describe supplementary allocation. Method 15.8.1A.1 explains how supplementary allocation is determined. More information on supplementary allocation can be found here: Supplementary allocation practice note.

No allocation

As detailed in the rules section above, non-consumptive takes and takes from the big rivers and lakes are not subject to allocation.

Minimum flows

Minimum flows are the flows in the main stem of the catchment below which the taking of water by resource consent holders must cease.

Guidance on minimum flows and when they should be applied is contained in Policies 6.4.3 (Schedule 2A), 6.4.4 (outside Schedule 2A), 6.4.5, 6.4.6 (all), 6.4.9 (supplementary), 6.4.10 (supplementary mean flow) of the Water Plan.

Schedule 2A Catchments

Schedule 2A details the minimum flow that applies to consents in those catchments and these minimum flows are applied to all new consent in these catchments.

Non-Schedule 2A Catchments

For **new takes** from non-Schedule 2A catchments, Policy 6.4.4 states that:

> "...until the minimum flow has been set by a plan change, the minimum flow conditions of any primary allocation consents will provide for the maintenance of aquatic ecosystems and the natural character of the source water body."

For new primary takes from non-Schedule 2A catchments, a minimum flow will be applied on a case-by-case basis. This will recognise the water use needs of the community while providing for the aquatic ecosystem and natural character of the water body.

All water permits to take and use water are limited to a maximum consent term of 6 years. It is anticipated that when these new consents are replaced, the activity will be considered under environmental limits set by a new plan. On that basis, minimum flows outside of Schedule 2A are unlikely to be established for short-term consents unless there is an identified need to manage the effects of the take. You will be advised if a minimum flow is required and provided with an opportunity to provide technical advice to

support your application. The Council will also seek advice from relevant technical experts when we are processing these applications on what an appropriate minimum flow is, if one is required.

Supplementary minimum flows

Supplementary minimum flows are always higher than primary minimum flows. Supplementary minimum flows can be:

- set for those catchments in Schedule 2B
- is the assessed take + supplementary allocation in accordance with Policy 6.4.9(a) outside of Schedule 2B
- can be less than this in accordance with Policy 6.4.9(b)
- can be the mean flow in accordance with Policy 6.4.10

More details on supplementary minimum flows can be found here: Supplementary allocation practice note

Residual flows

Residual flows are the flows left in a water body below the point of take to maintain the natural character and ecosystem values of the water body. Residual flows are typically applied to takes on a tributary of a maim stem in a catchment. The instream values, flow hydrology and natural character of the water body are taken into consideration when determining whether a residual flow is necessary and the quantum of the residual flow.

How to Decide on a Residual Flow

A residual flow is determined based on the nature of the activity (rates and volumes of take) and the sensitivity of the water body. The Council uses matrix approaches (example below) to determine the risk of adverse effects caused by water takes. An application for a new surface water permit will need to consider whether a residual flow is required and provide reasons for the residual flow that is proposed, including details on how the residual flow is proposed to be monitored.

Council's technical experts will provide advice on the appropriateness of a residual flow proposed based on the degree of hydrological alteration and significance of instream values.

Example of a matrix approach for residual flows[8]

Degree of hydrological alteration	Significance of instream values		
	Low	**Moderate**	**High**
Low	Maintain connectivity	Maintain connectivity	60-80% of MALF
	Minimum water depth*	Minimum water depth*	
Moderate	Maintain connectivity	60-80% of MALF	70-90% of MALF
	Minimum water depth*		
High	60-80% of MALF	70-90% of MALF	70-90% of MALF

Monitoring of a Residual Flow

Specific measuring conditions imposed will be dependent on the size of the residual flow recommended and the ability for the residual flow to be monitored.

- For smaller residual flows, typically where a residual flow would be less than 20 L/s, a continuous connected residual flow may be required to be maintained from the point of take to a defined point downstream. It is noted that such residual flows are not supported by mana whenua and the appropriateness of this is considered on a case-by-case basis ensuring that the health and well-being of the waterbodies are provided for.
- For residual flows that that require a specific flow in litres per second to be maintained in the watercourse below the point of take but do not require regular reporting via a temperature logger, the installation and maintenance of a flow gauge is likely to be appropriate.
- For larger residual flows that require a specific flow in litres per second to be maintained in the watercourse below the point of take, the installation and maintenance of a temperature logger at a critical riffle location may be recommended with data provided to Council on a regular basis.

In some specific cases, a residual flow may also be able to be monitored by measuring the relationship with a flow recorder downstream or outside the catchment and using a flow level on that recorder to trigger the suspension. A telemetered flow recorder may also be used where a larger water user group is established.

Effects on Instream Values

The following need to be considered when assessing effects on instream values from a proposed water take and use application:

- The need for a residual flow at the point of take (see above)
- The rate, timing and frequency of water taken and impacts on instream values
- The proposed method of take
- The need to prevent fish entering the intake and to locate new points of take avoid adverse effects on fish spawning site

[8] MALF is seven day mean annual low flow

- Any effect on any Regionally Significant Wetland or any regionally significant wetland values (see below)

Regionally Significant Wetlands and natural inland wetlands

Natural inland wetlands within 100 metres

The location of natural inland wetlands and their relationship to the take and use activity is relevant for all surface water takes to determine whether any additional consents are required. If a restricted discretionary surface water take is located within 100 metres of a natural inland wetland, then additional consents may be required under the NES-FW 2020 and the activity status of the overall activity may change. More details on the NES-FW can be found in the Essential Freshwater Natural inland wetlands factsheet on environment.govt.nz.

When not to consider adverse effects on wetlands

Effects on wetlands, including natural inland wetlands that are **not located within 100 metres** of the point of take or use, are **not** able to be considered for applications made under **restricted discretionary rule 12.1.4.1**.

When to consider adverse effects on Regionally Significant Wetlands only

For restricted discretionary surface water takes[9], effects on wetlands are limited to considering effects on **Regionally Significant Wetlands and regionally significant wetland values**. Your application will need to identify if there are any Regionally Significant Wetlands or wetlands with regionally significant wetland values in the locality of the proposed take and then assess whether the take will have any effects on these.

More details on Regionally Significant Wetlands and wetlands can be found here: Regionally Significant Wetlands.

When to consider adverse effects on any wetlands

For all **discretionary and non-complying take and use applications**, adverse effects on any Regionally Significant Wetlands, regionally significant wetland values, natural inland wetlands and/or wetlands will need to be considered and assessed. Further details about the definition of wetlands and the location/values of some of the wetlands in the Otago region can be found here: Wetlands in Otago

Determining the point of take

Water takes can have complex intake set-ups. These may include the source waterbody (the river the water is taken from) being diverted or channelled within or outside of the natural bed and/or weir and/or dam structures located within or outside the bed.

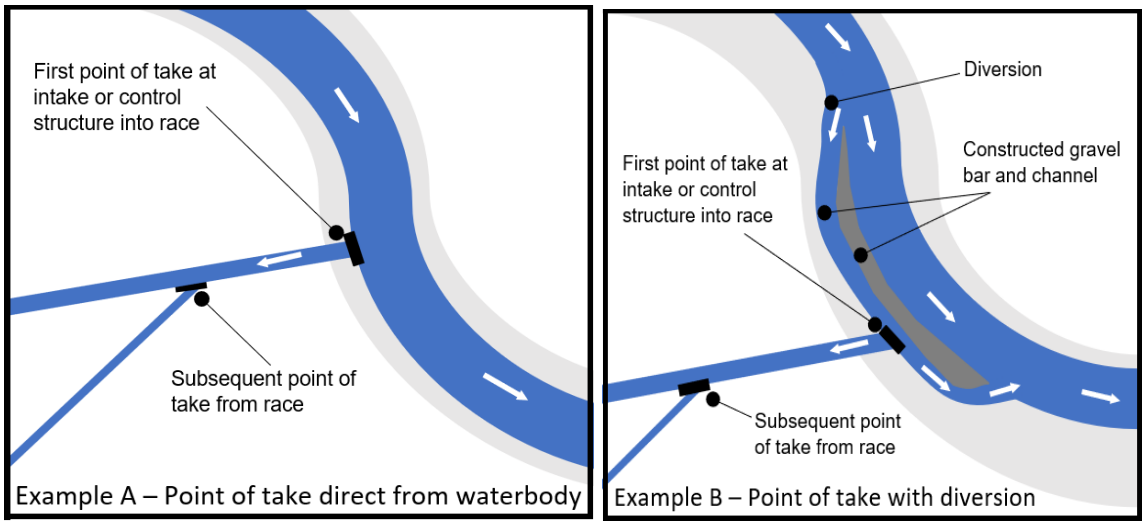
The ability to control the water into a channel is used to determine where the point of take is.

The point of take is where water is taken out of the source waterbody by a control mechanism such as a gate, control structure or pump.

[9] Except rule 12.1.4.1

Where there is no control structure at the point where water is taken from the source waterbody, you will need to review the diversion rules in Section 12.3 of the Water Plan. Consent may be required for a permanent or temporary diversion of water. The take point would then be from the diversion channel where control of the take is held.

The diagram below will assist in determining the point of take:



The Resource Management (Measuring and Reporting of Water Takes) Regulations 2010 and Amendment Regulations 2020 require measuring devices to be located at the point of take[10]. If your water measuring device will not be at the point of take, you will need to apply for a Water Metering Exemption ("**WEX**").

More information about applying for a WEX is available here: orc.govt.nz/consents/water-metering-and-measuring

Other water users

All Applications

The Water Plan requires the effects on other lawful water takes to be considered. These existing takers may be located upstream or downstream of the proposed take, they could be on the same waterbody or further downstream in the catchment (e.g. on the main stem). The existing taker may be consented water takers (i.e. hold a resource consent) or they could be operating under the permitted activity provisions of the Water Plan or Section 14(3) of the RMA.

The application will need to:

- identify the existing water users
- the nature of these existing takes
- the location of the existing takes in relation to the proposed take
- assess potential effects on them

[10] ORC considers that the measuring device needs to be within 100 metres of the point of take to be located at the point of take.

- outline any arrangement for cooperation with other takers or users

Consents in Otago can be used to identify the location of current water permits on the same waterbody and within the same catchment. The Council does not have records of permitted activity surface takes and a realistic assessment should be made of where these could be located and how many takers could be affected. This will require local knowledge, ground truthing (where practicable) and consideration of the land use downstream. The Council maps do show the location of all known bores in the region.

When a take is located within the main stem of a catchment there should be limited effects on other water users at the allocation limits and minimum flows will typically manage these effects. If the proposed take is located on a tributary, careful consideration will need to be given to downstream existing water users. The location of the take may need to be considered to avoid adverse effects or mitigation proposed such as leaving a residual flow that provides for both instream values and existing permitted activity takers.

Discretionary and Non-complying Applications only

Restricted discretionary activities are limited to considering effects on existing lawful takers only. For the other activities, effects on a broader range of water users can be considered. This may include recreational users such as kayakers, fishers, picknickers, swimmers. An application should identify these other users and outline effects that the take will have on them including effects on natural character and amenity values. There is guidance in the Water Plan on what can be considered for these effects:

Policy 5.4.8 *To have particular regard to the following features of lakes and rivers, and their margins, when considering adverse effects on their natural character:*
(a) The topography, including the setting and bed form of the lake or river;
(b) The natural flow characteristics of the river;
(c) The natural water level of the lake and its fluctuation;
(d) The natural water colour and clarity in the lake or river;
(e) The ecology of the lake or river and its margins; and
(f) The extent of use or development within the catchment, including the extent to which that use and development has influenced matters (a) to (e) above.

Policy 5.4.9 *To have particular regard to the following qualities or characteristics of lakes and rivers, and their margins, when considering adverse effects on amenity values:*
(a) Aesthetic values associated with the lake or river; and
(b) Recreational opportunities provided by the lake or river, or its margins.

Water Quality

Restricted discretionary activities

Water quality effects considerations are limited for restricted discretionary activities to any actual or potential effects on any groundwater body.

Discretionary and non-complying activities

For discretionary and non-complying activities, water quality effects (generally) from the use of the water are a relevant consideration.

Assessment of water quality effects

This will be most relevant where the water is proposed to be used for irrigation. Use of water for this purpose can increase contaminant loads within a catchment via drainage or overland flow, particularly when the use results in more intensive land use.

The application should

- outline the existing known water quality of groundwater (and surface water for discretionary and non-complying activities). The Council collects information on key water quality parameters for waterbodies in the region which can be found on the ORC Environmental Data Portal. Land, Air, Water Aotearoa (LAWA) also has information on water quality
- identify sources of diffuse discharges and assess how these discharges affect groundwater quality (and surface water for discretionary and non-complying activities). This could include some form of nutrient modelling.
- outline measures to mitigate water quality effects from the use of water. This may include:
    - the installation of efficient application systems (which will limit overland flow and leaching),
    - the installation and use of targeted or precision irrigation that is timed with soil moisture conditions, weather forecasts and plant requirements
    - irrigation scheduling
    - limits on stocking intensity and nutrient inputs.

Groundwater

Surface water that is hydraulically connected to groundwater (aquifers) may have an impact on groundwater availability and sustainability. Actual or potential effects on groundwater as a result of a surface water take can be considered for any surface water application except Restricted Discretionary Rule 12.1.4.1 (see above for relevant rules and activity status).

Assessing effects on groundwater

For 6-year duration water permit applications, the Council expects that the best available information is used to assess effects from a surface water take on groundwater. This includes identifying adjacent aquifers, neighbouring bores and considering scientific information about the connection between the surface water body and the aquifer. This should then be used, in conjunction with the details of the take (rates and volumes), to assess potential effects on the aquifer.

If it is likely that the new surface water take will have the potential to adversely impact groundwater in a more than minor manner and/or there are bores in very close proximity to the surface water take that could be affected, further specific detailed investigations are likely to be required with an application. We strongly suggest seeking pre-application advice in those scenarios.

Cumulative effects

Cumulative effects only need to be considered for **discretionary and non-complying** surface water takes as it is not a matter of control or discretion for the restricted discretionary activities in the Water Plan.

The definition of 'effect' in the RMA 1991 includes cumulative effects:

> (d) Any cumulative effect which arises over time or in combination with other effects

Cumulative effects include the effects that may arise over time if the take is approved and in combination with other takes or activities (e.g. discharges). E.g. when there are multiple takes that result in the abstraction of water from the same source water body the adverse effects of each individual take may be manageable but when all takes are considered together these effects could be significant.

For surface water, cumulative effects are typically managed by the allocation limit and minimum flows that have been set for the catchment. The bespoke or default allocation limit is intended to ensure there is adequate flows in the catchment for natural and human use values. Take and use activities from these catchments are typically considered restricted discretionary activities are cumulative effects do not need to be considered.

Assessing cumulative effects

The following factors can be considered when assessing cumulative effects for a new surface water take that is discretionary or non-complying:

- Is the take on or adjacent to the main stem of the river?
- Is the take located or adjacent to a tributary of the main stem?
- How many other surface water/groundwater takes allocated as surface water are taking from the tributary/wetland within the receiving environment[11] (this includes permitted activities and consents that have not yet been exercised but are granted)? The Council's mapping system shows the location of all consented surface water takes.
- Will the take have any actual or potential adverse effects on the waterbody (this may be limited for some non-consumptive takes/takes from big lakes and rivers)?
- What is the timing of the take activities and do these overlap and/or are at a time of low flows/low water levels in the wetland?
- What effects will the combined takes have on the variability of flows?
- What is the likely nature and degree of additional cumulative effect caused by the new proposed take, the reliability of the evidence to such effects and significance of effects?
- Are there conditions that can be imposed to sufficiently avoid, remedy or mitigate the adverse cumulative effects (e.g. conditions that relate to the location or timing of the take)?

[11] More information on the receiving environment can be found from the Practice Note: Permitted Baseline And Existing Environment

Efficiency of water use

The Water Plan directs that the quantity of water granted to take is no more than that required for the purpose of use. Rates and volumes that are efficient will be recommended to be imposed on the consent. You can undertake this assessment yourself or ask Council to undertake this when we process your application. Below is advice on how to assess efficiency for different uses of water:

Irrigation

The Council uses guidelines prepared by Aqualinc to assess efficiency for different crops. This takes into consideration the local climate and soils within the irrigation area. A copy of the guidelines can be found here: Aqualinc guidelines

Aqualinc provides recommended seasonal volumes based on an average year; a one and two-year drought (80th percentile); a one in ten-year drought (90th percentile); and a maximum situation. For Otago it is considered that a one in ten-year drought or 90th percentile is the most appropriate when considering efficient water use. This aligns with the approach used by other regional councils.

There are four main inputs to determine what is efficient volumes of water for irrigation purposes:

1. Geographical zone (Central and Lakes District, Maniototo, North Otago, Coastal & South Otago)
2. Mean annual rainfall (MAR)
3. Plant available water (PAW)
4. Crop type category (Pasture, Viticulture, Cherries and Apricots, Vegetables)

How do I find the geographical zone and MAR for my land?

The MAR is the mean annual rainfall class for your land. You can find this on Consent Locations using the layer: *Aqualinc Mean Annual Rainfall Class*. When you click on this layer at the property it will also show you which geographical zone you are located in.

How do I find the PAW for my land?

- Log into S-Map online: Maps | S-Map Online | Manaaki Whenua - Landcare Research. You may need to set up an account.
- Find the property using the search function. Make sure the Soils Box is checked on the left under Layers and also the NZSC Soil Order.
- Click on the area where water is to be used for irrigation. A feature report box will appear on the right-hand side. Click the link to the soil description report and download the factsheet. Find the profile available water figures under the Soil Physical Properties. An example is below:

Profile available water		
(0–30 cm or root barrier)	(0–60 cm or root barrier)	(0–100 cm or root barrier)
Moderate (31 mm)	Low (47 mm)	Moderate to low (62 mm)

- Find the relevant PAW for your crop type: Plants can only abstract water where their roots grow, and different types of plants have different rooting depths:
    - Pasture: 60 cm
    - Viticulture: 90 cm
    - Horticulture: 100 cm
    - Vegetables: 50 cm

  In the example above for pasture the PAW would be *Low (47 mm)*

- Find the Aqualinc PAW class: Use Appendix C of the Aqualinc report to find the PAW class. For the example above, Table C.1 shows that for a PAW range of 20-50 mm a PAW class of 40 mm is used.

How do I use the table in Aqualinc to find the volumes?

- Go to Chapter 6 of the Aqualinc report and select the relevant table based on the crop type
- Find the relevant Zone, MAR and PAW category and record the maximum monthly demand (mm/month) and 90% annual demand (mm/year). Add a zero to each of these numbers to convert them from mm/month to cubic metres per month/year.
- Multiply these numbers by the land area in hectares to be irrigated to calculate the efficient monthly and annual irrigation requirements.

What if I have site specific soil information?

If you have site specific soil information (i.e. from soil samples on the property), this is considered to be the best available information for soils at the site. You will need provide evidence that the samples represent the irrigation area that is being applied for. The PAW value of the soils will then need to be considered based on the crop type and rooting depth and Appendix C of Aqualinc consulted to determine the PAW class in Aqualinc.

What if the crop type is not in Aqualinc?

Aqualinc does not consider all crop types. You will need to consider the rooting depth of the crop and similarities with the key crop types modelled in Aqualinc. We recommend that the closest available crop type is used. Alternatively, research data regarding crop water usage could be used to support an application.

What if I have different crop types and/or PAW on my site

You will need to undertake this assessment for each area of different crop type and/or soils on the site. We suggest you create a table/use a spreadsheet to show the workings.

Frost Fighting

The Council does not have published recommendations for water requirements for frost protection in the Otago region. The Council uses the recommendations by Environment Bay of Plenty (EBOP) of 2.5 to 3.0 mm of water per hour per hectare (usually applied for up to 10 hours), up to a maximum of 30 days per year.

A condition will typically be imposed that requires the consent holder to record the duration and volume of water used during each frost event. This is to obtain a better understanding of frost fighting requirements at that specific location. This data will be helpful for a future replacement application.

How do I calculate the total water volumes and consent conditions?

Irrigation is usually not occurring during periods when frost events are occurring. The irrigation and frost fighting volumes will be separated out on the consent so that the frost fighting water can only be used for that purpose.

Example: 10 frosts a year, over 10 hectares, 5-hour duration each frost, 3 mm/ha application, equals 1,500 m^3 per event, and if there are 10 events this equates to 15,000 m^3 required in total. This means that the frost fighting requirements are:

1,500 m^3 needed a day

15,000 m^3 needed in a month (all ten events could happen in a month)

15,000 m^3 a season.

Domestic Supply

The following is recommended for domestic water supply per household:

- 1,000 L/day for winter and later autumn/early spring
- 3,000 L/day for summer and the growing season. This provides for minor curtilage irrigation (gardens etc.) around a house. It does not provide for irrigation of paddocks or orchards on a lifestyle block. Specific irrigation water needs to be sought for this.
- Equals an average of 2,000 L/day throughout the year.

Some local authorities may require through their subdivision consents a requirement to have access to greater daily rates than this. Council's position has been that if extra water is required to meet local authority subdivision consents this will need to be obtained from other sources (e.g. rainwater tanks).

Stock Water Supply and Dairy Shed Supply

The rates per animal in the application forms (e.g. Form 4E) are what ORC consider to be reasonable for the stated animals.

Sheep	5 litres per day per head
Beef cattle	45 litres per day per head
Dairy cows	70 litres per day per head
Deer	15 litres per day per head
Dairy cow and Dairy shed use	95-140 litres per day per head

If you are seeking to take more water than this, you will need to provide evidence and explanations as to why this is necessary for the site and animals.

Do I need a water permit for conveying stock water?

In some cases, additional water may be required to transport water to the stock drinking end point (i.e. water to enable conveyance). This should not form part of a new stock water supply scheme.

If water is being taken for conveyance this is a separate 'use' of the water and Council will need to consider what happens to this additional water at the end of the conveyance system. If it is being used for irrigation or other consumptive purposes, then this needs to be factored into the efficient quantities for those purposes. If it is discharged into the same or a different water body, then discharge permit requirements will need to be considered as well as overall efficiency of this use of the water.

As efficiency can only be considered for new surface water takes and replacement groundwater takes under the current rules this scenario is less likely. A future planning framework may have direction on this.

If stock are drinking direct from a river is a permit required for taking and using stock water?

As there is no control of the take, no defined point of take and no ability to measure the take, stock drinking directly from a river do not require a consent. The s14(3) requirements of the RMA may be relevant in this instance.

If water is taken out of a water body at a defined point or points and into distribution infrastructure for stock water supply then water is being taken and use for stock drinking and s14(3) of the RMA, the permitted activity rules in the Water Plan and consent requirements in the Water Plan need to be considered.

Will stock drinking water be included on the consent if it is a permitted activity or if I can meet s14(3) of the RMA?

In most cases, if stock drinking water is being taken at the same point of take as water being taken for other consumptive purposes that require consent, then the stock drinking (and any domestic water) is considered and included on the consent. This ensures that measuring records are not complicated i.e. if the meter captured all water taken and the stock water supply was not part of the consent rates and

volumes the consent holder may end up with potential breaches of their consent and it would be challenging to prove/disentangle the stock and domestic portion from the consented portion.

Other Drinking Water Supplies

The Wastewater Guidelines (AS/NZS 1547:2012) provide an indication of wastewater volumes for a variety of drinking water supplies. These guidelines can be referred to for different sources. It may be appropriate in some situations to provide a small additional allowance for volumes that will not enter the wastewater system.

If you have actual use data, this should be provided and summarised with the application along with details on any relevant projected population growth, which will need to be considered in the volumes sought.

Source	Volume allowance (L/person/day)
Motels/Hotels	
Guests, resident staff	220
Reception rooms	30
Bar trade (per customer)	20
Restaurant (per diner)	30
Restaurant/Bar/Cafe	
Per dinner patron	30
Per lunch patron	25
Per bar patron	20
Lunch Bar	
Without restroom facilities	15
With restroom facilities	25
Community Halls	
Banqueting	30
Meetings	15
Marae	
Day only visitors	40
Day plus overnight visitors	150
Schools	
Pupils plus staff	50
Public toilets	
Including hand washing	20
Camping Grounds	
Fully serviced	130
Recreation areas	65
Care Facilities	
Rest homes	250
Hospitals	450
Retirement Home	

	Per resident	220
	Per day staff	50
Day staff		
	High water use e.g. factories	60
	Standard facilities	40
	Facilities with full water fixtures Reduction	30

Other Uses

You will need to consider and reference any relevant industry standards, research or other information to support the efficiency of the volumes of water requested for these uses of the water. Other uses will be considered on a case-by-case basis.

Cultural Values

Restricted discretionary activities

Effects on cultural values is not a matter of control or discretion for activities processed under the restricted discretionary rules and does not need to be assessed.

Discretionary and non-complying activities

The application will need to identify cultural values that could be affected by the surface water take and assess the effects on them

In the Otago region there are two iwi organisations that liaise with runaka: Aukaha and Te Ao Marama Incorporated (TAMI).

Copies of iwi management plans (to determine relevant cultural values) and information on lodging an application for review with these iwi organisations can be found on their websites:

- Mana Taiao - Aukaha – Kia kaha, aukaha
- Services — Te Ao Marama
- Resources — Te Ao Marama

For activities in the Waitaki catchment, there is the Waitaki-iwi-management-plan to consider.

Notification

The standard notification considerations under s95 of the RMA will apply to all applications for consent. More details on s95 can be found here: The Notification Process. When assessing the adverse effects on the environment for s95 of the RMA, the Council will take into consideration the duration applied for as this will impact the extent of any adverse effects.

Restricted Discretionary Applications

For restricted discretionary activity applications, there is a preclusion on public notification for take and use activities that are not from a river (e.g. from a lake). Where the take and use is from a river the preclusion on public notification applies when:

- the river has a minimum flow set; or
- a residual flow condition or other condition to provide for native fish (excluding fish screening) does not need to be considered when making a decision.

Other Considerations

Water Conservation Orders and Preservation Acts

Water conservation Orders

A water conservation order (WCO) recognises and protects the outstanding values of a waterbody by imposing restrictions or prohibition on activities that would affect these values. Water permits granted must be consistent with any relevant water conservation order. There are two water conservation orders that relate to waterbodies in the Otago region:

- Water Conservation (Kawarau) Order 1997 (this water conservation order relates to parts of the: Dart River catchment, Route Burn catchment, Rees River catchment, Greenstone River catchment, Caples River catchment, Lochnagar and Lake Creek, Nevis Wetland, Kawarau River catchment, Nevis River catchment, Shotover River catchment, Diamond Lake, Dimond Creek and Reid Lake, Lake Wakatipu, Lochy River and Von River – the specific locations and restrictions are detailed in the water conservation order).
- Water Conservation (Mataura River) Order 1997 (a small part of Mataura River headwaters are located in the Otago region).

The water conservation orders need to be taken into consideration when proposing an activity (Policy 5.4.5 and 5.4.5A of the Water Plan). The prohibitions and restrictions (and exemptions to these) are detailed in the water conservation orders.

Note: *In the Water Conservation (Kawarau) Order 1997 existing resource consents may be replaced provided they are on substantially the same terms and conditions as the existing or expiring consent.*

Local water conservation notices for Lake Tuakitoto, the Pomahaka River and the Lower Clutha River/Mata-Au are directly incorporated into the Water Plan. This means that adherence to the Water Plan ensures these notices are complied with.

Lake Wanaka Preservation Act 1973

The Lake Wānaka Preservation Act in 1973 was enacted after public concern about the potential of hydro-electric development to alter the natural level and outflow of Lake Wānaka.

The Act makes provision for the protection of the natural state of the lake, and for the appointment of the **Guardians of Lake Wānaka** to advise the Minister of Conservation over:

- Preventing the lake from being impounded, controlled or obstructed (except in an emergency)
- Preventing the natural rate of flow from the lake from being varied or controlled (except in an emergency)
- Preserving the lake level and shoreline in their natural states
- Maintaining and improving (where possible) the quality of water in the lake.

The Guardians of Lake Wānaka have a direct responsibility to advise the Minister over issues affecting the purposes of the Act, or the recreational use of the lake and to liaise with the Council over matters which may affect the lake. The Council is required to have regard to the purposes of the Act when considering resource consent applications that may affect the lake.

If your application to take water may affect the purposes of the Act you will need to address the Lake Wanaka Preservation Act 1973 in the application and you may wish to consult with the Guardians of Lake Wanaka before the application is lodged.

Effects on operation of Clyde and Roxburgh dams

Contact Energy Limited (Contact) operate and maintain the hydroelectric dams at Clyde and Roxburgh. Contact holds a number of consents for the operation of the maintenance of the dams. These consents include conditions that require minimum flows to be maintained downstream of dams.

The taking of surface water from the catchment above these dams could prevent Contact from complying with their conditions of consent at certain times. The following condition has historically been imposed on consents to take and use water from any surface waterbodies in the catchments above Roxburgh dam and groundwater takes allocated as surface water from these water bodies in the following circumstances:

- It is a new take
- The take is for more than 100 litres per second (permitted activity baseline)
- The take is for more than 1,000 cubic metres per day (permitted activity baseline)

It is noted that the condition below is limited to irrigation uses only so if other uses form part of the application (e.g. stock water, frost fighting) these could continue. [2] is an 'and' condition which means that both criteria need to be met. This would require both a dry catchment and the stored water in Lake Hāwea being unavailable.

1. *No water must be taken for the purpose of irrigation between 1 May and 31 August in any calendar year; and*
2. *At all other times water for irrigation must not be taken when:*
    a. *the combined flow levels in the following rivers are below 250 cubic metres per second:*
        i. *Clutha/Mata-Au River at Cardrona (NIWA Hydrological Recording Site No. 75282) plus ten cubic metres per second, less the mean Hawea River flow as measured at the Camp Hill site (NIWA Hydrological Recording Site No.75287); and*
        ii. *Kawarau River at Chards Road (NIWA Hydrological Recording Site No. 75262);*
        iii. *Nevis River at Wentworth (Site No. 75265); and*
        iv. *Manuherekia River at Ophir (NIWA Hydrological Recording Site No. 75253);*

    And

    b. *The level of Lake Hawea is at or below 338.2 metres above datum (based on a 3-hour rolling average) as measured at Hawea Dam site (NIWA Hydrological Recording Site no 75288).*

If you meet the criteria above, the application should consider including the above condition to mitigate effects on hydroelectricity supply.

Measuring of the Take

The Water Measuring and Reporting Regulations 2010 and amendments 2020 prescribe the minimum requirements for measuring consumptive takes of 5 L/s and above.

The Council requires all consented takes to have a **water meter**, a **datalogger** to record the information and for the data to be sent daily to Council via **telemetry**. Standard measuring conditions that are aligned with the Regulations are imposed on water permits.

The only exception to this can be open channel surface water takes that are consented for less than 5 L/s. A modified measuring arrangement may be agreed to for these applications. We suggest you speak with your water measuring provider and the Council's Water Metering team if this applies (watermetering@orc.govt.nz). This will enable the application to propose an appropriate measuring method.

Location exemptions (WEX)

A location exemption is required when the water measuring device is located greater than 100 metres from your consented point of take. If this applies to you, you will need to complete Form 24 for each WEX that you require and lodge this with your application for your replacement application. This is required for existing WEXs and new WEXs. The appropriateness of the WEX will be considered for both replacement and new WEXs.

We will aim to process the WEX at the same time as your water permit replacement so that both can be issued at the same time, although this may not always be possible.

Telemetry exemptions (WEX)

Telemetry exemptions can be applied for when it is not possible to get cell service at the point of take. These exemptions are issued on an annual basis. They must be applied for between July and December each year for the following water year.

Types of measuring devices

Council is currently phasing out the use of mechanical or clamp on water meters as they are less reliable and prone to measuring errors.

More information on measuring requirements

More information about water measuring and water measuring exemptions can be found here: Water metering and measuring

Statutory Assessment

The application forms have details of the relevant objectives and policies in the national instruments and regional plans that may apply to new surface water takes. You will need to consider the relevant provisions in each document and provide a summary statement for each document.

In addition to the above, the application should provide an assessment on:

- Alternative water sources – what are these and why they are not suitable
- Water management groups/rationing regimes – do any of these exist in the catchment and will the consent be operated in accordance with them
- Positive effects of the activity

Consent Term

All water take and use applications in the Otago Region are limited to a **maximum 6 year consent term**. This is in accordance with s127B of the Resource Management Act. This 6-year term typically applies from the issue date.

Ready to Apply?

Further guidance on what is required for a new water permit application can found within application Form 4B.

Details on application forms, fees and changes and how to lodge an application can be found here: Apply for a Consent – Resource Consent Applications & Support

What if I have other questions?

If you would like clarification on the above or have any additional questions, please get in touch with us via consent.enquiries@orc.govt.nz