

ARROW CATCHMENT AND WAKATIPU BASIN AQUIFERS



Purpose of this meeting

To present a 'preferred option' to deliver on your values and aspirations following technical work

Community values and aspirations identified over 2017-2019

- We have previously sought community feedback on a range of management options
- We are not taking further feedback at this stage
- Feedback on freshwater visions through official consultation on the Regional Policy Statement in June 2021.
 - Feedback on preferred options through the official Land and Water Regional Plan consultation in 2023.

New Otago Land and Water Regional Plan

- ORC have agreed to ‘notify’ a regional land and water plan (LWRP) by December 2023
- Under the National Policy Statement for Freshwater Management (NPS-FM)
- Relates to both water quality and quantity
- Requires us to identify:
 - Freshwater Management Units (FMU)
 - ‘Long-term visions’ to be included in a ‘regional policy statement’ (RPS)
- Has both compulsory (need to do) and optional (need to consider) ‘environmental outcomes’ (compulsory and optional values)
- Requires consultation with communities and tangata whenua

Alignment between the RPS and LWRP

Regional Policy Statement



- Notified June 2021. Set freshwater visions for each FMU.



Land and Water Regional Plan



- Notified end of 2023.
- Specific values and outcomes for each FMU.
- Attributes.
- Flows and Levels.
- Rules etc.

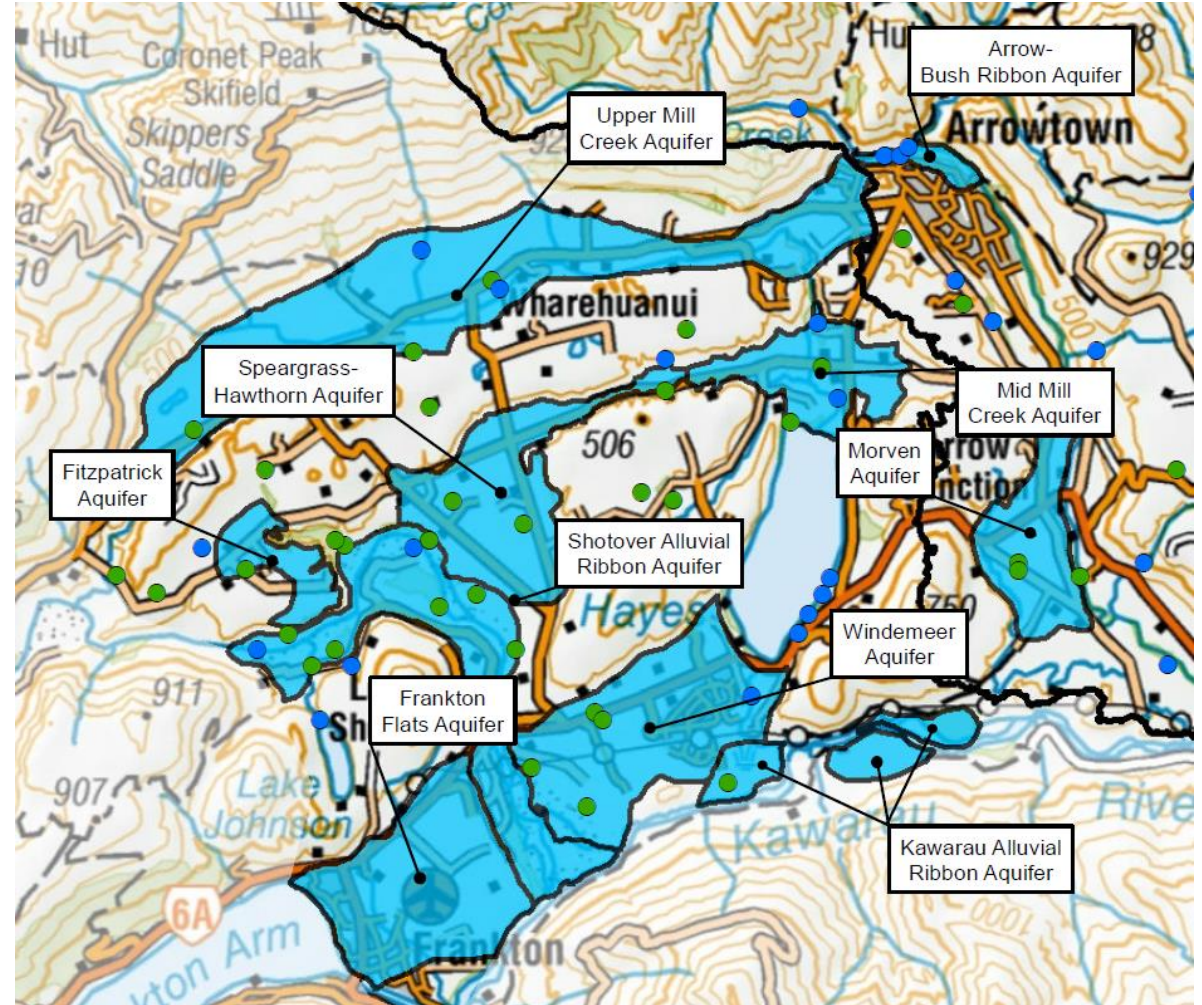
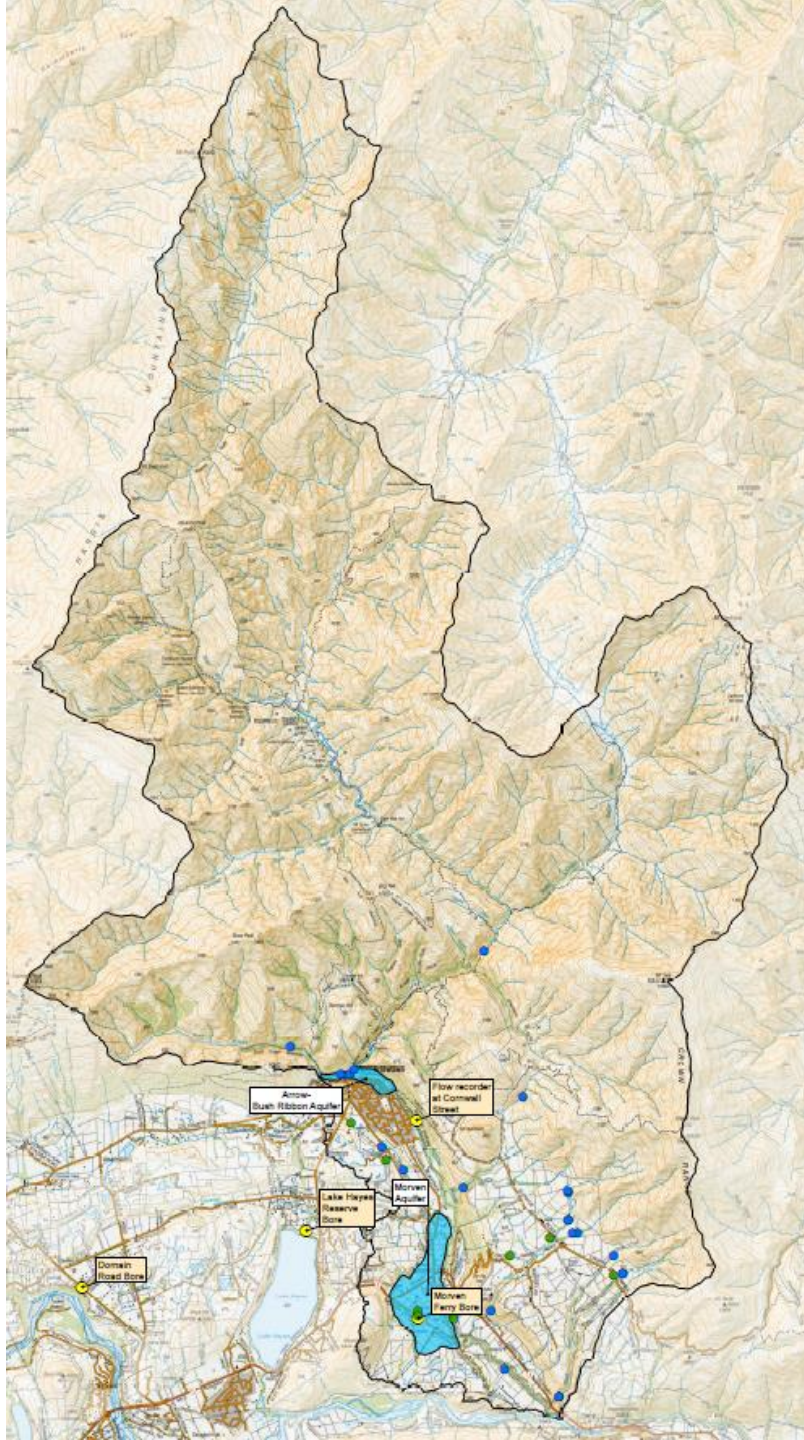
Te Mana o te Wai

Te Mana o te Wai is central to the Essential Freshwater package

It refers to the vital importance of water and the need to ensure that freshwater is managed in a way that prioritises (in this order):

1. the health and well-being of water
2. the health needs of people
3. the ability of people and communities to provide for their social, economic and cultural well-being.

Arrow catchment and Wakatipu Basin aquifers



The Arrow catchment – current state

Flow statistics:

- River does not dry naturally.
- We now estimate natural 7-day Mean Annual Low Flow (MALF) 1,900 litres per second (l/s) at Kawarau confluence (with about a 15% error margin)
- Natural MALF at Cornwall St flow site estimated as 1,700 l/s (~15% error margin)



Community values

- **Most common:**

- Ecological, physical and visual character to be retained
- Recreation use (including fishing, swimming, walking, cycling)
- Water supply for community use and economic (irrigation)



2017 picture

- **Other points**

- Look after lower reaches, enough flow for ecology, recreation, tourism, if conditions get warmer or drier
- Use precautionary approach when setting environmental bottom lines for surface and groundwater; retain springs

National Policy: NPS-FM 2020

- Fundamental concept – Te Mana o te Wai
- Integrated management – ki uta ki tai (mountains to sea)
- Objective: to ensure that natural and physical resources are managed:
 - (1) Firstly, for the health and well-being of water bodies and freshwater ecosystems themselves
 - (2) Secondly, for the health needs of people (such as drinking water...)
 - (3) Thirdly, for the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

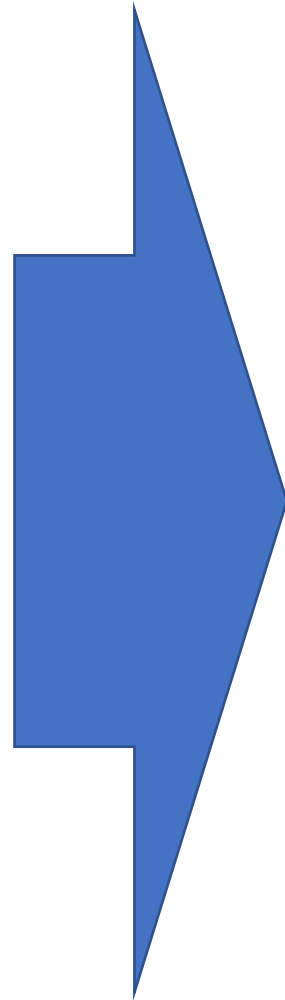
**Community values, concerns
and aspirations**

**Hydrological and ecological
analysis**

Cultural values

Economic assessment

National Direction – NPSFM



**Freshwater
Objectives**

The essential freshwater Objectives for the Arrow River and Wakatipu Basin groundwater

- a. *Protect the high degree of naturalness of the Arrow River in the upper catchment* • Priority 1
- b. *Minimise the risk of algae proliferation, especially for the values of the lower Arrow River catchment* • Priority 1
- c. *The life-supporting capacity of the Arrow River main stem is maintained* • Priority 1
- d. *All parts of the Arrow catchment that are valued by the community for recreation are suitable for contact recreation* • Priority 2
- e. *Taking can be sustainably provided for from sufficient available water, (ie, once Priority 1 is met).* • Priority 3

Preferred Water Quantity Management Regime – Arrow catchment - Flows

- A flow of 1,000 litres per second, or more, needs to pass Arrowtown, as read at the ORC's Cornwall Street flow recorder. This will:
 - Sustain all instream values, including avoiding the risk of nuisance periphyton growth in dry, warm years.
 - Ensure sufficient flows right down to the Kawarau confluence, irrespective of what is typically taken for irrigation and other uses downstream of Arrowtown and on Crown Terrace.

The flow must provide for cultural values.

Preferred Water Quantity Management Regime – Arrow catchment – limit to allocation

- An amount of 700 litres per second will be available to be used (called an allocation limit)
- This limit will provide for the health of the river, but also matches actual historic use.

Outcomes for takers, of preferred Arrow flows

If taking stopped at 1,000 l/s, this would have meant, during the 1976-2019 NIWA natural flow recording period, the takers would have faced:

- No more than six consecutive days when no water was available, and
- Twenty-six days in those 43 years when the flow dropped below 1,000 l/s.

Rationing to achieve preferred Arrow flows

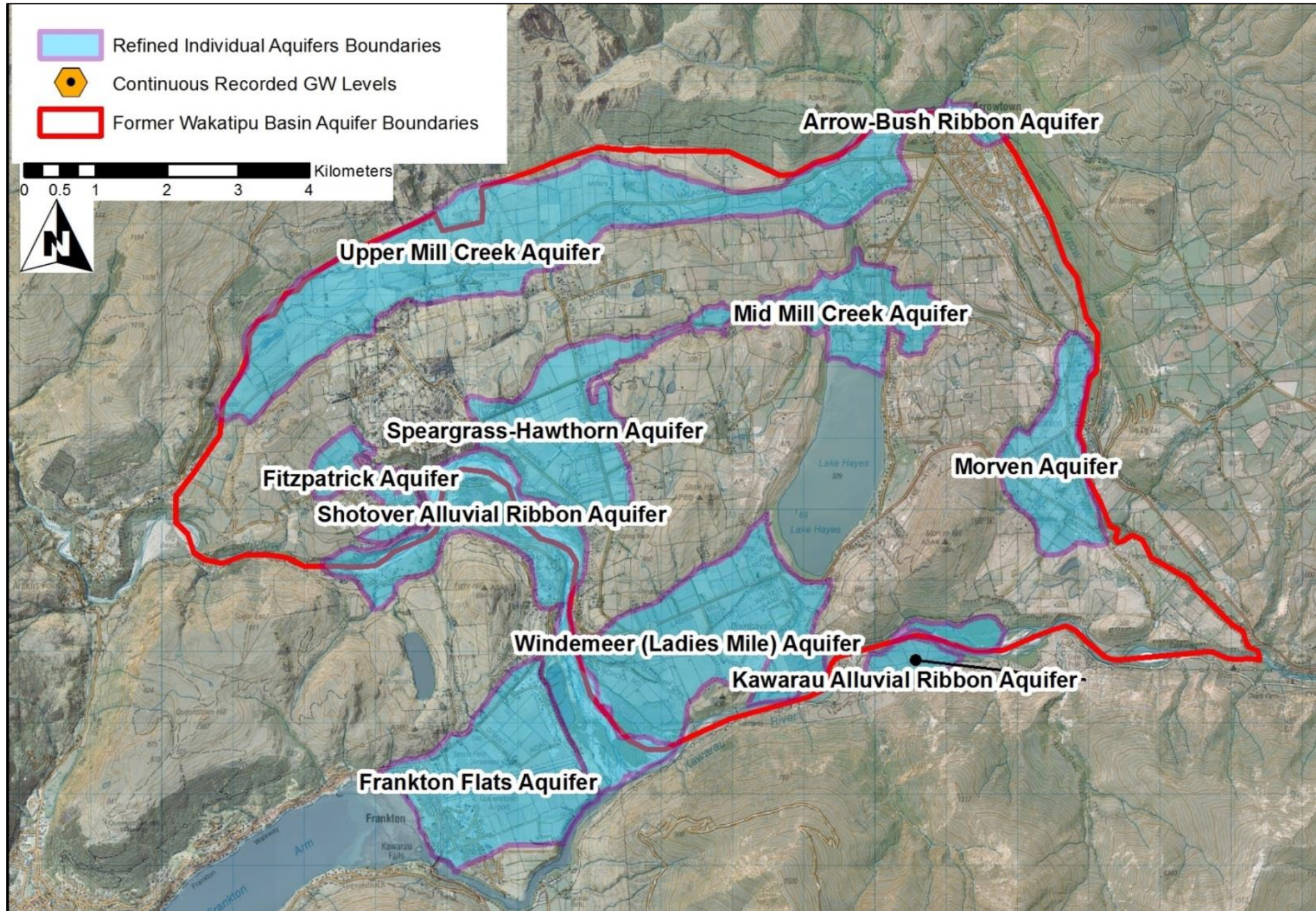
- We would expect all water taking needs to be progressively reduced, however, so that, when flows get low, the river flow does not go below 1,000 l/s because of that taking.
- Rationing of all takes in the catchment is a recommended approach.
- The rationing of takes that occur downstream of the minimum flow site, is intended to look after values in tributaries and the lower Arrow main stem, to the Kawarau confluence. This includes takes from Crown Terrace tributaries, and the QLDC community water supply.
- If rationing doesn't ensure values are sustained, a maximum instantaneous take limit could be considered on new resource consents to take water.

Possible future regulation

- The stopping of taking by “minimum flows”,
- the limiting of allocation to take water, and
- rationing or maximum instantaneous take limits,

if they continue to be considered useful, could become requirements of the forthcoming LWRP.

Wakatipu Basin Aquifers



Wakatipu Basin ribbon aquifers – Surface water

- Arrow-Bush Ribbon aquifer – connected to Arrow
 - Shotover Alluvial Ribbon aquifer – connected to Shotover
 - Kawarau Alluvial Ribbon aquifer – connected to Kawarau
- *Include with catchment water quantity management.*
- *Areas must be mapped in future equivalent of Schedule 2C*

Other Wakatipu Basin Aquifers

- Upper Mill Creek
- Mid-Mill Creek
- Morven
- Ladies Mile
- Frankton Flats
- Speargrass – Hawthorn
- Fitzpatrick

These individual, non-ribbon aquifers are true groundwater:

- The Morven lies within the Arrow catchment
- Allocation is currently based on 50% of mean annual recharge (excludes the recharge from irrigation)
- Continue managing with the best current scientific knowledge

Next steps

- Community and stakeholder consultation on the full plan review in 2023 which is intended to give rise to the Land and Water Regional Plan
- Manage applications for surface and groundwater taking, based on most recent science (under existing Water Plan default provisions and/or Proposed Plan Change 7 (Water Permits))

