

# Shaping our Future Whakatipu Water Report 2020/21



Image Credit: [paddlequeenstown.co.nz](http://paddlequeenstown.co.nz)



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## EXECUTIVE SUMMARY

In April 2018 Shaping our Future held public forums in Queenstown and Wanaka on the topic of freshwater in the Queenstown Lakes District. Over 220 responses were gathered through public forum and online submission across the district. Just under half directly related to the Whakatipu Basin. In addition, over 800 primary and secondary school pupils shared their views on the challenges, priorities, and ideal future of freshwater. The workshop results are contained in Appendix A.

Shaping our Future formed a Queenstown Freshwater Volunteer Taskforce with representatives from local community interest groups and residents who are interested in a sustainable and healthy future for freshwater. The taskforce benefitted from the input of experts in different areas to help understand the issues and current situation to prepare the following report.

Freshwater plays a vital role in the economic, environmental and social well-being of the District. There is an urgent need for the development of an active, community inclusive water management process, supported by appropriate levels of research to better understand the catchments and aquatic ecosystems in the Whakatipu Basin.

This report acknowledges the challenges associated with freshwater management, growing community concern and the time it takes for actions to show results.

This report provides several recommendations for further action. The critical recommendation is for the formation of a new group comprised of key stakeholders that is tasked with developing a Whakatipu Freshwater Management Plan.

## WHAKATIPU FRESHWATER VISION

The Whakatipu communities' vision for the future is below as is the community's summary from the initial consultation. They identified the needs of our freshwater as a priority and it is encompassed into two parts:

### Whakatipu Freshwater Vision

| All water:                                                                                                                                                 | The community:                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• supports and sustains life and wellbeing</li><li>• is resilient</li><li>• can exist in its natural state</li></ul> | <ul style="list-style-type: none"><li>• are consciously and actively engaged with, responsible for and proud of our water</li><li>• benefits from it – well being, access, recreation, health and scenic beauty, economic</li><li>• conserves, protects, respects the water</li><li>• review, reflect and respond to what the water needs</li></ul> |

The vision is further clarified with “resilient” referencing the infrastructure that conveys it and its “natural state” representing its flow and journey through the water cycle.

## RECOMMENDATIONS

The recommendations within this report have been developed as steps towards achieving the communities' vision for the Whakatipu.

Freshwater is complex, each body of water has its own special features that require a mix of scientific and expert knowledge with community input for it to be looked after.

This report makes the following key recommendation:

### KEY RECOMMENDATION

***Establish funding and a group of Kai Tahu, key experts, local, regional, and central government, key stakeholders and community members to follow through the recommendations contained in this report and prepare a plan of direct community and stakeholder actions to protect our freshwater for generations to come.***

A local example of this is Wai Wanaka

### DETAILED RECOMMENDATIONS – THE WATER

The following are a list of recommendations that the taskforce has identified need undertaking to achieve the vision

1. Natural physical and chemical state and trends of water in the Whakatipu is understood by statutory bodies (Regional and District Councils, Department of Conservation and other governmental agencies including the Southern District Health Board).
2. Define what a “healthy” freshwater system is, within the Whakatipu Basin.
3. Establishment of a robust, expanded, nationally comparable research and monitoring process for the lakes and rivers of the Whakatipu Basin to provide an understanding of:
  - Current lake / river water quality today and over time.
  - Water flows in all seasonal / climate condition.
  - Identify freshwater systems within the area i.e., what is going in / where is it going / is it leaving?
  - Modelling to understand and manage inputs / outputs / contaminants and the impact they may have in the future.
  - Understanding of agriculture impact / land use.
  - Understanding urban and rural lifestyle impact / land use.
  - Providing an overall picture of the Whakatipu Basin’s “state of play” – coordinate open-source accessible information on quality / quantity / eco-system balance and develop a “freshwater system health score / value” or similar measure that would measure and provide instant information on the freshwater systems’ health.
  - With the creation of the monitoring system develop mitigation / intervention / management or other action plans to maintain freshwater health.
4. All sources of contamination and the full range of contaminants identified, monitored, and managed. All water bodies meet effective freshwater health limits.

5. Coordinate and conduct an extensive suite of regular water quality and flow testing and protect / control land use in catchment areas containing drinking water sources.
6. Co-ordinated monitoring of water abstraction, lake levels and river flows. Setting of optimum (not minimum) flows and levels to ensure health of water bodies.
7. Develop and implement a programme to return degraded rivers and wetlands to a healthy natural state including:
  - Establishment of a 'buffer zone' along all waterways with riparian planting and where possible exclusion of stock.
  - Allowance for flood plains, natural changes in course and sediment build up
  - Urban stormwater and runoff treatment and incorporation of low impact design guidelines are implemented.
  - Engage and create education programs for the community and legislators and users.
8. Fish ladders / passage for native fish are installed at dams and man-made obstructions to reinstate natural breeding / spawning patterns. Preventing pest and introduced fish species from accessing the same waterways would aid in protection of the native species.

## DETAILED RECOMMENDATIONS – THE COMMUNITY

1. Establish a formal process for ORC, QLDC and Department of Conservation and any other legislative authority or local industry (that is intrinsically reliant on the Whakatipu Basin) to work closely with the community and its formal representatives to effectively manage and monitor freshwater quality including run-off systems and managing land development with ongoing monitoring of potential affects / impacts. An effective, efficient process with clear accountability and management actions will result in legislation and regulation that is research based with clear standards and accountability for all stakeholders.
2. Establish a working group to consider how to develop and implement changes and develop a Whakatipu Freshwater Management Plan, that supports the values, needs and wellbeing of communities and our environment.
3. Establish and implement a Whakatipu Freshwater Management Plan based on the outcomes of the above research and investigations that provides the guidance to deliver the communities expected outcomes for a healthy freshwater system. Examples of outcomes are suggested below:
  - Wetland regeneration, protection, and expansion.
  - Continuation of appropriate riparian planting.
  - Reduced contamination from urban and rural activities.
  - Establishment of a habitat renewal and re-stocking programme for native aquatic species (eels, bully, galaxiids).
  - Development of education programmes for all parties in the Whakatipu Basin with delivery of this to the local schools as part of EOC curriculums and community education forums.

4. Establishment of a robust, expanded, nationally comparable research and monitoring process for the lakes and rivers of the Whakatipu Basin to provide an understanding of:
  - Current lake / river water quality today and over time.
  - Water flows in all seasonal / climate conditions.
  - Identify freshwater systems within the area i.e., what is going in / where is it going / is it leaving?
  - Modelling to understand and manage inputs / outputs / contaminants and the impact they may have in the future.
  - Understanding of agriculture impact / land use.
  - Providing an overall picture of the Whakatipu – co-ordinated accessible information on quality / quantity / eco-system health.
  - Develop a healthy freshwater system score / value and based on the healthy freshwater definition develop milestones / targets / programmes / legislation for restoring the areas of concern to healthy systems.
5. Water based tourism activities and commercial activities on the shores / banks of the waterways are included and engaged in freshwater management and have minimal to positive impact whilst providing the opportunity for the community to interact, connect and value the freshwater.
6. Wastewater (sewage, urban, agricultural and industrial) discharges are managed through consents and required to be treated to an extent which enables the receiving water bodies and / or land to be unaffected in regard to natural quality. Cumulative effects of discharges from an area and not just a singular discharge point must be considered as part of this as well as the capacity and health of the receiving environment.
7. Mahinga Kai are restored. Rivers and lakes support a balanced diversity of native and game fish with pest species eliminated.
8. The use of water must support the wellbeing of our communities and our environment, including the water itself. Therefore, the ORC and the QLDC should develop rules and policies to ensure water is allocated and managed in a way that recognises the social, environmental, cultural, and economic effects of the way it is valued and used.
9. Co-ordinated Education and Awareness Plan for freshwater - driven by national government directives and regional and local authorities, supported by the community to ensure localised relevance to inform residents, businesses and visitors.

Key short-medium term areas for education and awareness include:

- The impact of water use
  - Contaminants entering freshwater systems e.g. stormwater contamination, fertiliser, development run-offs, urban wastewater discharges, etc.
  - Opportunities, education, and engagement on ways to positively impact on the local freshwater systems.
  - Transparency in information, understanding of information that exists and what research is needed to inform management decisions.
  - Opportunities and education for community to connect, interact, appreciate and value freshwater and its biodiversity in its natural healthy state.
10. Transparency of water information and easy access for all parties (including the public).

- Via open-source information portals specific to the regions' freshwater.

11. Water sensitive Urban Design Policy developed and implemented by QLDC / ORC e.g. Wellington.<sup>1</sup>

Infrastructure and development changes take time to implement and having a design policy encourages and ensures the protection of the waterways including:

- Achieving 100% treatment of wastewater / stormwater with no contamination entering waterways.
- Implementation of widespread water recycling systems – both residential and commercial e.g. rainwater capture systems, recycling, greywater systems.
- Leadership from agencies, individuals and organisation to utilise global best practice and learning from recent local applications e.g. Camp Glenorchy, Kirimoko.
- Assist in preparing for climate change e.g. heavy rainfall events.

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<sup>1</sup> <https://wellington.govt.nz/~media/services/environment-and-waste/environment/files/wsud-guide.pdf>

## THE WHAKATIPU REGION

- The Queenstown report covers the catchment of Lake Whakatipu, Arrow River and Lake Hayes and the Kawarau River down to the QLDC / CODC territorial boundary.
- This area is approximately 550,490 hectares
- This report should be read in conjunction with the neighbouring Upper Clutha Freshwater Report. The waterways, and communities are connected and together make up the Queenstown Lakes District.
- The region encompasses high country farms, agricultural farms of all types and breadths, recreational activities, urban and rural development and housing and townships.
- The area is known for its iconic landscapes and tourism and property development / construction industries.
- The area has undergone significant growing pains over the last decade and these continue and are likely to continue for some time.



# LEGISLATION AND REGULATION

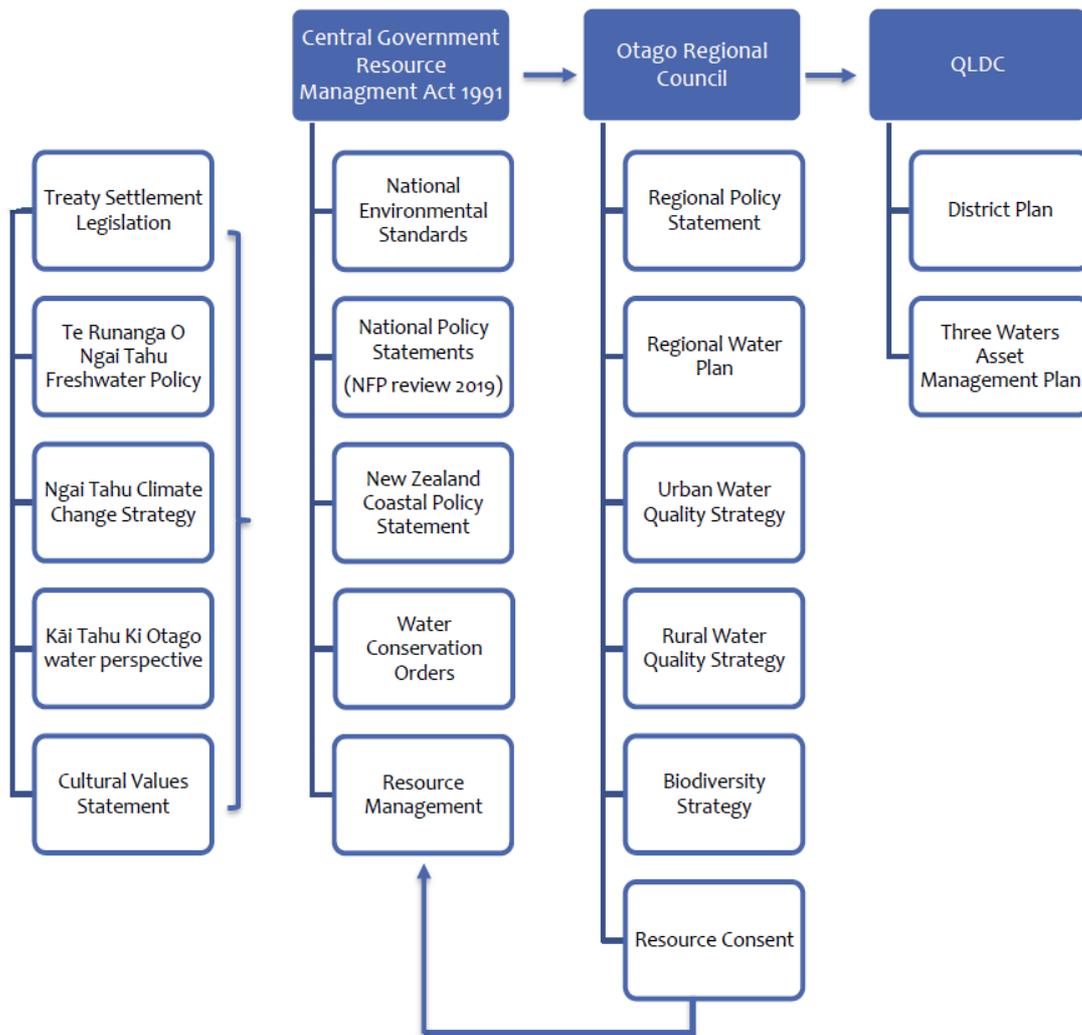
Legislation and regulation around freshwater is complex. Central Government set the direction through standards and policies e.g. the national environmental standards, National Policy Statement for Freshwater Management and the Resource Management Act (RMA).

The regional Council is responsible for regional plans, research and monitoring. The local Council is responsible for local infrastructure and both are responsible for activities affecting water that take place on the land.

The taskforce reviewed the Kāi Tahu Ki Otago water perspective, Te Runanga O Ngai Tahu Freshwater Policy and Ngai Tahu Climate Change Strategy and support the values and actions contained within those documents.

The Summary of Legislation / Regulation in New Zealand (note this is a summary list and not exhaustive) was also reviewed.

The RMA and regional and district plans are subject to amendments and change and prove a moving target with a state of uncertainty as to the future requirements. Current legislative responsibilities are contained below.



# WHAKATIPU BASIN FRESHWATER VISION 2040

## WHAT OUR WATER NEEDS

For freshwater in the Whakatipu Basin to ***exist in its natural state, support and sustain life and wellbeing and demonstrate resilience*** it is necessary to look at what is impacting on our waterways today and what actions can be taken to achieve the vision.



During the public forum the community undertook a range of exercises to identify the current challenges, priorities, values and potential solutions for freshwater. The results have been used to guide this report. The community forum summary document is attached at the end of this document.

Four key themes were identified and generally agreed as of priority:

- water quality (including eco-system health) and quantity,
- strategic management,
- community culture and
- research and monitoring.

These themes also related to the 'values' identified.

The community were asked to identify the greatest challenges in groups and then undertook an individual prioritisation exercise. Also identified but not included below were climate change, legacy effects, user pays and the 'myth' that our freshwater is pristine.

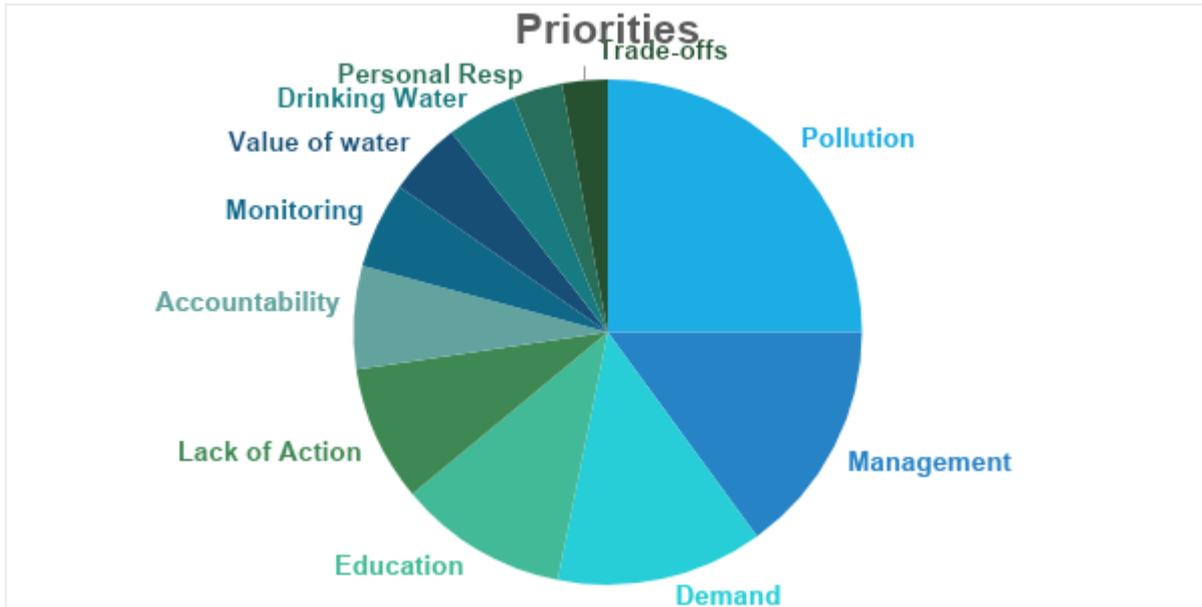
The following info graphs summarised the communities' responses.

### Greatest Challenge



### Ideal Future





The Whakatipu community vision for the future puts the needs of our freshwater as the priority and is separated into two parts as per the below vision. The following tables identify the ideal state to be achieved and the challenges currently faced.

| The Vision                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>All water:</p> <ul style="list-style-type: none"> <li>● supports and sustains life and wellbeing</li> <li>● is resilient</li> <li>● can exist in its natural state.</li> </ul> | <p>The community:</p> <ul style="list-style-type: none"> <li>● are consciously and actively engaged with, responsible for and proud of our water</li> <li>● benefits from it – well being, access, recreation, health and scenic beauty, economic</li> <li>● conserves, protects, respects the water</li> <li>● review, reflect and respond to what the water needs.</li> </ul> |

## ALL WATER BY 2040

| Our ideal state:                                                                                                                                                                                                                                                                                                                                                                                          | Our current challenges:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>NATURAL FLOWS</b></p> <ul style="list-style-type: none"> <li>- Water flows at a rate that protects natural habitats, organisms, native species, trout and salmon and plant life.</li> <li>- Natural flows are reinstated and protected including natural floodplains, wetlands and riparian planting.</li> <li>- Buffer zones of natural vegetation exist around all freshwater sources.</li> </ul> | <p><b>CONTAMINATION / POLLUTION</b></p> <ul style="list-style-type: none"> <li>- Primary Industry (agricultural and industrial) – run off, stock in waterways, discharges. The headwaters of Lake Whakatipu national park flowing through high country stations.</li> <li>- There are currently historical mining rights in existence along the Dart and Glenorchy areas and Arrow Rivers although no large scale mining is currently in operation.</li> <li>- Urban Environment – earthworks/construction run off, stormwater contamination, wastewater, septic tank, ageing infrastructure, development, transport (both water and vehicle).</li> <li>- Stormwater within the Whakatipu Basin is often subject to overflow directly into the waterways.</li> <li>- Runoff from roads, roofs, lawns, earthworks and building projects. It may contain heavy metals, car engine oil, e-coli, paint residue and loose sediment, especially during heavy rain events (which are predicted to increase).</li> <li>- Large areas have been cleared around our waterways, wetlands drained and natural flows and groundwater levels disrupted.</li> </ul> |
| <p><b>DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>- Any development around waterways improves biodiversity, minimizes impact and proactively contributes to better overall water quality.</li> </ul>                                                                                                                                                                                       | <p><b>URBAN DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>- Development of rural areas - resulting in run off, loss of rural areas / wetlands / contamination of waterways.</li> <li>- Areas that were previously rural farmland within the surrounds of Queenstown have been developed, some large scale projects e.g. Five Mile, Remarkables Park, Queenstown Central, Shotover Country and Queenstown Country Club all resulted in disturbance of the landscape. Golf clubs and urban development around Mill Creek and Lake Hayes have also changed the local environment in recent years.</li> <li>- Queenstown Lakes District Council manages wastewater in urban areas, however there are large areas being developed (and historical) that are reliant on septic tanks or personal wastewater treatment. Ownership changes, aging and lack of monitoring increase the risk of contamination from wastewater.</li> </ul>                                                                                                                                                                                                         |

| <b>Our ideal state:</b>                                                                                                                                                                                                                                                                               | <b>Our current challenges:</b>                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>NATIVE SPECIES</b></p> <ul style="list-style-type: none"> <li>- Waterways support a healthy stock of native species (fish, invertebrates, plants) and their habitats and spawning grounds as a priority.</li> <li>- Re-establish and protect the Mahinga kai of the Whakatipu Basin.</li> </ul> | <p><b>NATIVE SPECIES</b></p> <ul style="list-style-type: none"> <li>- Fish &amp; Game monitor fish levels in the area. brown trout, salmon, rainbow trout and Longfin Eel are present. The Eel are endangered and impacted by hydro dams blocking their path to the sea.</li> </ul>                                                                                                                                |
| <p><b>WATER EXTRACTION</b></p> <ul style="list-style-type: none"> <li>- Water extraction from lakes, rivers and aquifers is controlled to ensure that the natural ecology thrives and biodiversity is not affected.</li> <li>- Water is used efficiently and not contaminated during use.</li> </ul>  | <p><b>WATER EXTRACTION</b></p> <ul style="list-style-type: none"> <li>- There are numerous commercial uses of water taken – potable water (for visitor accommodation and hospitality), irrigation, snow making etc. There are also a number of private bores / water schemes operating. Information at the time of writing was not available on the total amount of water being abstracted or diverted.</li> </ul> |
| <p><b>INVASIVE ORGANISMS</b></p> <ul style="list-style-type: none"> <li>- Invasive organisms e.g. Didymo, Lindavia (Lake snow), Lagarosiphon are managed or eradicated with no new species introduced.</li> </ul>                                                                                     | <p><b>INVASIVE ORGANISMS</b></p> <ul style="list-style-type: none"> <li>- Didymo, Lindavia, cyanobacteria are present in the area with pockets of Lagarosiphon that are considered at high risk of spreading.</li> </ul>                                                                                                                                                                                           |

The following recommendations are provided by the community to support reaching the ideal state of freshwater in the Whakatipu Basin.

1. Natural physical and chemical state and trends of water in the Whakatipu is understood by statutory bodies (regional and district council, Department of Conservation).
2. Establishment of a robust, expanded, nationally comparable research and monitoring process for the lakes and rivers of the Whakatipu Basin to provide an understanding of:
  - Current lake / river water quality today and over time.
  - Water flows in all seasonal / climate condition.
  - Identify freshwater systems within the area ie what is going in / where is it going / is it leaving?
  - Modelling to understand and manage inputs / outputs / contaminants and the impact they may have in the future.
  - Understanding of agriculture impact / land use.
  - Providing an overall picture of the Whakatipu – co-ordinated accessible information on quality / quantity / eco-system health
3. All sources of contamination and the full range of contaminants identified, monitored and managed. All water bodies meet effective plan limits that allow identified values to be met.

4. Conduct an extensive suite of testing and protect catchment areas containing drinking water sources.
5. Co-ordinated monitoring of water abstraction, lake levels and river flows. Setting of optimum (not minimum) flows and levels to ensure health of water bodies.
6. Develop and implement a programme to return rivers and wetlands to their natural state including:
  - Establishment of a 'buffer zone' along all waterways with riparian planting and where possible exclusion of stock.
  - Allowance for flood plains, natural changes in course and sediment build up
  - Fish ladders are installed at dams to reinstate natural breeding /spawning patterns

## THE COMMUNITY BY 2040

| <b>Our ideal state:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Our current challenges:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>NATURAL FLOWS</b></p> <ul style="list-style-type: none"> <li>- Water bodies are valued and not seen as unproductive or an impediment to production.</li> <li>- Our waterways are accessible for recreation, enjoyment and economic benefit (eg tourism) when that access has no impact on the natural state of the waterways.</li> </ul>                                                                                                                                                                                                                                                                                                               | <p><b>NATURAL FLOWS</b></p> <ul style="list-style-type: none"> <li>- Wetland destruction, development, water takes and increased urban growth have all impacted on natural flows.</li> <li>- Lack of information and scientific data related to optimal flows / impact of community on waterways.</li> </ul>                                                                                                                                                                                                                                                        |
| <p><b>COMMUNITY CULTURE</b></p> <ul style="list-style-type: none"> <li>- Our connection with water is maintained and continues to be strengthened between generations.</li> <li>- Water is valued by the community in its natural state 'where its voice can be heard'</li> <li>- People can enjoy the physical and spiritually enriching qualities of being with the water body.</li> <li>- Use of water is conscious, planned and aims to have as little impact as possible.</li> <li>- The community have actively supported, participated in and demanded remediation, protection and enhancement of the quality of freshwater in the region.</li> </ul> | <p><b>COMMUNITY CULTURE</b></p> <ul style="list-style-type: none"> <li>- Water is perceived by some as a resource for commercial exploitation, not valued in its natural state.</li> <li>- The community are becoming increasingly detached from the value, biodiversity and importance of our freshwater and our effects on it.</li> <li>- General lack of public knowledge and awareness on water issues.</li> </ul>                                                                                                                                              |
| <p><b>INFRASTRUCTURE</b></p> <ul style="list-style-type: none"> <li>- Drinking water is safe, available and where possible treated minimally or with innovative treatment options.</li> <li>- Adequate water is available for daily human needs for drinking and hygiene.</li> <li>- The infrastructure needed by the community is fit for purpose, well planned and protects waterways from contamination.</li> </ul>                                                                                                                                                                                                                                       | <p><b>INFRASTRUCTURE</b></p> <ul style="list-style-type: none"> <li>- All water used by households and businesses in urban areas is treated – including in many cases for irrigation. Very few rainwater collection / greywater recycling systems exist (exception GY camp).</li> <li>- Water metering for monitoring is minimal or non-existent.</li> <li>- Many private water takes and bores exist throughout the region.</li> <li>- Council infrastructure is not fit for purpose with leaks of potable water (inefficient) and sewage contamination</li> </ul> |

| <b>Our ideal state:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Our current challenges:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>CONFIDENCE IN OUR WATER</b></p> <ul style="list-style-type: none"> <li>- We can trust in the quality of our freshwater to swim, drink or undertake recreation without fear or risk of illness or adverse effects.</li> <li>- Our waterways are accessible for recreation, enjoyment and economic benefit (eg tourism) when that access has no impact on the natural state of the waterways.</li> </ul>                                                                                                                                               | <p><b>CONFIDENCE IN OUR WATER</b></p> <ul style="list-style-type: none"> <li>- High e-coli readings, sediment and poisonous algae at popular swimming spots affecting recreation Lake Hayes and Lake Whakatipu over the summers of 2018/19 have impacted on residents' enjoyment of / and trust in the quality of their freshwater.</li> <li>- Urban water is treated, but rural schemes, private bores and private water takes exist throughout the district.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>DEVELOPMENT / WATER USE</b></p> <ul style="list-style-type: none"> <li>- Water bodies are valued and not seen as unproductive or an impediment to production.</li> <li>- Primary industry values water and waterbodies and strives for efficient low impact use.</li> <li>- Urban growth / development / change of land use is closely managed to ensure no impact on the natural state of the water.</li> <li>- The purposes for which water is used support our social, cultural, and environmental wellbeing and do not degrade water.</li> </ul> | <p><b>CONTAMINATION / POLLUTION</b></p> <ul style="list-style-type: none"> <li>- Urban growth, increased paving and runoff, destruction of wetlands / rural areas and a high reliance on private vehicles / tourism vehicles have increased the contamination from human use in the area.</li> <li>- Increase in commercial and industrial water use and subsequent run-off and contamination into natural water system.</li> <li>- Some on-water tourism activities on the rivers and lakes contribute to contamination, damage and reduced enjoyment of the waterways in areas of congestion (eg Queenstown Bay).</li> <li>- Pockets of low-quality water systems due to human interference in natural systems exist eg Lake Hayes</li> <li>- Under the Regional Water Plan, water is allocated on a first in first served basis subject to availability and 'efficient' use. It does not consider the outcomes from particular uses of water.</li> </ul> |

| <b>Our ideal state:</b>                                                                                                                                                                                      | <b>Our current challenges:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>LEGISLATION</b></p> <ul style="list-style-type: none"> <li>- Local, regional and central policies and plans address all of the community's needs with the needs of the water as a priority.</li> </ul> | <p><b>LEGISLATION</b></p> <ul style="list-style-type: none"> <li>- The monitoring of water quality is currently minimal or non-existent.</li> <li>- Poor data archive cohesion systems and knowledge of information library is poor.</li> <li>- Cumulative effects of water use, volumes taken, and treatment are not being addressed or understood.</li> <li>- Poor level of water testing and monitoring for water “state of play” to measure improvement, degradation.</li> <li>- Lack of cohesive, co-ordinated approach to the specific unique water systems that exist within the area.</li> <li>- A belief amongst politicians and officers that water can only be allocated on a first in first served basis, when in fact the RMA allows for water to be allocated amongst competing activities</li> </ul> |

## THE COMMUNITY - RECOMMENDATION / ACTIONS

The community section applies to what the community needs, but is based on making sure the needs of water are a priority. There is an obvious overlap between the recommended action for the water, and the recommended actions for the community. In the upper Clutha Freshwater report the needs of the community cross over into the Whakatipu Basin and a district wide collaboration and integration approach is needed.

The following community recommendations are proposed

1. Establish a cohesive formal process for legislators and stakeholders to work closely with the community to effectively manage freshwater quality including managing the impact of development, run-off systems and monitoring. An effective, efficient process with clear accountability and management actions will result in legislation and regulation that is research based with clear accountability for all stakeholders.
2. Establish a working group to consider how to develop and implement changes to the Regional Water Plan that would allow scarce water to be allocated in the way that supports the values, needs and wellbeing of communities and our environment
3. Establish and implement a Whakatipu Freshwater Management Plan that includes:
  - Wetland re-generation, protection and expansion.
  - Continuation of appropriate riparian planting.
  - Reduced contamination from urban and rural activities.
  - Establishment of a habitat renewal and re-stocking programme for native aquatic species (eels, bully, galaxiids).
4. Establishment of a robust, expanded, nationally comparable research and monitoring process for the lakes and rivers of the Whakatipu Basin to provide an understanding of:
  - Current lake / river water quality today and over time.
  - Water flows in all seasonal / climate conditions.
  - Identify freshwater systems within the area i.e., what is going in/where is it going/is it leaving?
  - Modelling to understand and manage inputs/outputs/contaminants and the impact they may have in the future.
  - Understanding of agriculture impact / land use.
  - Providing an overall picture of the Whakatipu – co-ordinated accessible information on quality/quantity/eco-system health.
5. Water based tourism activities and commercial activity on the shores/banks of the waterways have minimal impact whilst providing the opportunity for the community to interact, connect and value the freshwater.
6. Wastewater (sewage, agricultural and industrial) discharges are managed through consents and required to be treated to an extent which enables the receiving water bodies and / or land to be unaffected with regards to natural quality.
7. Mahinga Kai are restored. Rivers and Lakes support a healthy stock of native species with game species managed and controlled.

8. Co-ordinated *Education and Awareness Plan* for freshwater - driven by national government directives and Regional and Local Authorities, supported by the community to ensure localised relevance - to inform residents, businesses, and visitors.

Key short-medium term areas for education and awareness include:

- The impact of water use.
  - Contaminants entering freshwater systems e.g. stormwater contamination, fertilizer, topdressing, development runoff.
  - Opportunities, education, and engagement on ways to positively impact on the local freshwater systems.
  - Transparency in information, understanding of information that exists and what research is needed to inform management decisions.
  - Opportunities and education for community to connect, interact, appreciate, and value freshwater and its biodiversity in its natural state.
9. Transparency of water information and easy access for all parties (including the public).
  10. Water sensitive Urban Design Policy developed and implemented by QLDC/ORC and other regulators e.g. Wellington water sensitive urban design policy<sup>2</sup>

Infrastructure and development changes take time to implement and having a design policy encourages and ensures the protection of the waterways including:

- Achieving 100% treatment of wastewater / stormwater with no contamination entering waterways.
- Implementation of widespread water recycling systems – both residential and commercial eg rainwater capture systems, recycling, greywater systems.
- Leadership from agencies, individuals and organisation to utilise global best practice and learning from recent local applications e.g., Camp Glenorchy, Kirimoko.
- Assist in preparing for climate change e.g. heavy rainfall events.

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<sup>2</sup> <https://wellington.govt.nz/~media/services/environment-and-waste/environment/files/wsud-guide.pdf>

# COMMUNITY VIEWS ON FRESHWATER

## OVERALL BASELINE ANALYSIS (CURRENT SITUATION)

In developing this report, the Whakatipu Fresh Water Taskforce had access to a range of information provided by local / regional and national government; LAWA, Fish & Game, Kāi Tahu and other interested parties and the community consultation.

The issue of freshwater was topical and emotional through 2018/20 – both locally and nationally. Legislation is complex and research and/or monitoring information is often in different places, examination of this information was out of necessity at a high level.

The quality of water in much of the Queenstown Lakes is perceived to be among the highest in New Zealand, however, there is fundamental lack of monitoring and measuring to provide any justification to this perception.

Limited water quality monitoring has shown that the rivers draining the higher altitude lesser developed areas and the outlets of the large lakes in Central Otago generally appear to have good water quality. Water quality as reported by ORC and LAWA shows variable water quality however<sup>3</sup>.

Persistent poor water quality in Lake Hayes and Mill Creek which have ongoing quality issues arising from a number of historical and current day activities and land uses. In addition, its geological setting influencing the water quality create a complex mix of inputs. Small lakes such as Lake Johnson also have poor water quality currently. The lack of intensive monitoring of the water in the area is a significant reason accurate assessment cannot be made at this point of time.

Lagarosiphon is present in the Kawarau River, lake snow is also present in the Whakatipu – the long-term impact and how to manage/eradicate the two invasive species is unknown. QLDC asset management having issues maintaining the water intakes and council infrastructure from the lake due to Lake Snow.

The headwaters of Lake Whakatipu (Rees, Dart and Greenstone rivers) are fed from the mountains / National Park and pass-through majority high-country farming of merino / cattle or part of the national park system before reaching our lakes and rivers. There are pockets of more intensive farming along the flood plains with limited information available on amounts / sources of contamination. Large scale irrigation does not currently occur on the high-country stations.

Current monitoring work is carried out by ORC which adopted an extended monitoring programme in their 10-year plan (pg78) in 2018. Annual monitoring for swimmability occurs during the summer, with five-year monitoring of groundwater, weeds, periphyton, macroinvertebrates, fish and wetland extent/hydrology and vegetation.

Work is also underway for urban stormwater management, the updating of mining rights (due 2021) and the introduction of freshwater management units (FMU) to meet National Freshwater Policy requirements. The Whakatipu basin is included in the Clutha/Mata-Au FMU. In the Whakatipu basin rain events lead to generally untreated stormwater discharging straight into the lakes and rivers.

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<sup>3</sup> <https://www.goodwaterinotago.orc.govt.nz> and [lawa.org.nz](http://lawa.org.nz)

In 2019 ORC and QLDC agreed to work more closely together to monitor and manage development and its impacts on our waterways following a number of events across the district impacting freshwater from development.

In 2021 ORC is currently engaging with the community on regional water plans and their long-term plan revisions.

In 2019 the Ministry for the Environment and Statistics NZ released Environment Aotearoa.<sup>4</sup> It provides a good summary of the impacts of how we live on our environment. In 2020 the same bodies released Our Freshwater 2020 which identified 4 priority areas:

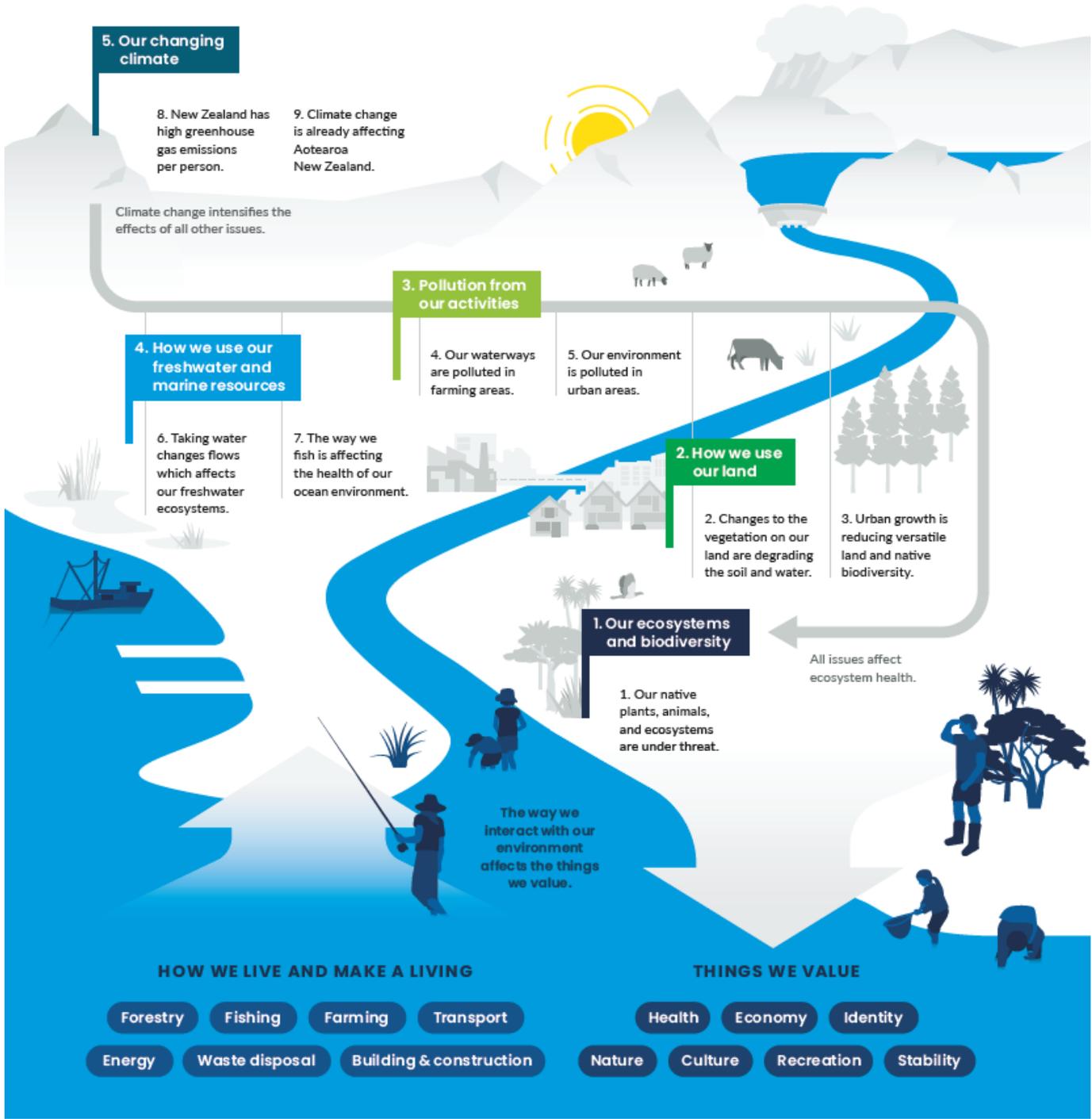
- Our native freshwater species and ecosystems are under threat
- Water is polluted in urban, farming, and forestry areas
- Changing water flows affect our freshwater
- Climate change is affecting freshwater in Aotearoa New Zealand.

Of these 4 identifiers there is a similar finding for the Whakatipu region and therefore an immediate need to address the current baseline.

The below visualises the identifiers and the link to the community.

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<sup>4</sup> Ministry for the Environment & Stats NZ (2019). New Zealand's Environmental Reporting Series: Environment Aotearoa 2019 Summary. Available from [www.mfe.govt.nz](http://www.mfe.govt.nz)



## APPENDIX A

### Whakatipu Community Forum Workshop Summary



## Queenstown Water Forum

55 attendees and 47 online responses<sup>1</sup>

- Monday 9<sup>th</sup> April 2018 6pm – 9pm

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### Introduction

The aim of this report is to capture the outcomes of the Queenstown Water forum in a way that can help the Taskforce shape its recommendations. It records the community's long-term aspirations and values, their views about current challenges, priority issues and identifies steps that can be taken for the future of freshwater in the Queenstown Lakes District.

Shaping our Future also held the same forum in Wanaka on 10<sup>th</sup> April 2018. A separate taskforce was established in the Upper Clutha with the two groups working closely together to share information and resources. The outcome of both reports will provide a high-level district wide view for freshwater.

### Summary

There were five main themes identified and generally agreed by all respondents on what was important for the future and as key themes for change:

#### Water Quality (and Ecology) and Water Quantity

- The desire for accessible, affordable, clean, safe, drinkable and swimmable waterways
- Management of water quality and quantities in waterways and catchments
- 3 waters – drinking water, stormwater and wastewater quality and infrastructure
- Reduction and remediation of pollution e.g. run off

#### Strategic Management

- The need for strong, collaborative, visionary leadership in management of all freshwater
- Collaboration and clarification of policies and procedures, accountability and enforcement of freshwater standards at local, regional and national level.

#### Community Culture – Education and Awareness

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<sup>1</sup> 28 district wide online responses and 26 Wakatipu

- Residents, visitors, commercial and industrial understanding, value and respect for our freshwater
- Education around pollution, stormwater, consumption and impacts of our actions on our waterways e.g. cleaning boats, no plastics,

### Research and Monitoring

- Need for consistent, robust monitoring of our waterways
- Increased communication of results and establishment of accurate baseline information
- Monitoring followed by evidence-based action

### The Future of Freshwater

Attendees were individually asked to give one word that best described their ideal future. The results were put into the wordle below:



Attendees were asked “What’s the headline for Freshwater in the Wakatipu in 2040”

- 100% Pure NZ Water – actually!
- Frankton Beach E-Coli free
- School Swim Carnival held at Lake Hayes!
- Swimmable, drinkable, habitable, liveable water!
- School swim carnival held at Lake Hayes
- Friends of Lake Hayes no longer needed
- Water treatment plant redundant
- Wakatipu wins smallest water footprint award
- Community celebrate chlorine free water
- Otago wins international award for pristine waters – gained through excellent management and monitoring
- World class legislation protects Otago waterways – other countries follow their lead

Prior to the forums over 800 school children shared their views on freshwater in our district. There views are expressed in wordles below.





Attendees workshopped the priority issues for today and into the future. An individual rating system was used to show the highest priority (higher number shows higher priority for respondents).

**Big Issues – top priorities**

| Theme:                     | Issue:                                                                                                 | Priority rating | Notes                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water Quality and Quantity | <ul style="list-style-type: none"> <li>• Pollution</li> </ul>                                          | 95              | <ul style="list-style-type: none"> <li>- Run off - Agricultural e.g. dairy farming and recreation e.g. golf courses</li> <li>- Increased housing intensification and development – infrastructure for stormwater and wastewater</li> <li>- Freedom camping and increased use of waterways from commercial and recreation uses (boat users etc)</li> </ul> |
|                            | <ul style="list-style-type: none"> <li>• Increasing demand on the water resource-</li> </ul>           | 50              | <ul style="list-style-type: none"> <li>- Increasing residential and tourism populations</li> <li>- Agricultural, industrial and commercial demands</li> <li>- Impact of the increased demand on freshwater on the quality, availability and quantity of water.</li> </ul>                                                                                 |
|                            | <ul style="list-style-type: none"> <li>• Climate Change impacts</li> </ul>                             | 6               | -                                                                                                                                                                                                                                                                                                                                                         |
|                            | <ul style="list-style-type: none"> <li>• Legacy effects pollution – previous poor decisions</li> </ul> |                 | <ul style="list-style-type: none"> <li>- Decisions made in the past e.g. fertilisers, clearing of trees, farming intensification that are still impacting on our waterways today.</li> </ul>                                                                                                                                                              |

|                                             |                                                                                                                                                                     |    |                                                                                                                                                                                                                                                                  |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategic Management and Governance         | <ul style="list-style-type: none"> <li>• Strategic Management</li> </ul>                                                                                            | 57 | <ul style="list-style-type: none"> <li>- The need for an integrated vision, leadership and collaboration between local and regional council, national legislation, community and stakeholders.</li> </ul>                                                        |
|                                             | <ul style="list-style-type: none"> <li>• Lack of enforcement and accountability</li> </ul>                                                                          | 25 | <ul style="list-style-type: none"> <li>- Need for clear lines of accountability and enforcement.</li> <li>- Understanding of responsibilities and repercussions.</li> <li>- Collaboration and cohesion between policies and procedures at all levels.</li> </ul> |
|                                             | <ul style="list-style-type: none"> <li>• Commercial influence on local government on decision making e.g. lobbying, industrial groups, developers etc</li> </ul>    | 11 | <ul style="list-style-type: none"> <li>- Need for overall freshwater availability, quality and quality to be at the forefront of decision making rather than the desires of individual interest groups.</li> </ul>                                               |
|                                             | <ul style="list-style-type: none"> <li>• Poor Drinking Water infrastructure –</li> </ul>                                                                            | 17 | <ul style="list-style-type: none"> <li>- Need for quality, well maintained drinking water infrastructure.</li> </ul>                                                                                                                                             |
|                                             | <ul style="list-style-type: none"> <li>• Lack of funding from ratepayers and users not paying for what they are using, equity issues in lack of funding,</li> </ul> | 3  | <ul style="list-style-type: none"> <li>- Inequality of funding and lack of funding from ratepayers and users to ensure the quality of freshwater is improved and infrastructure is in place and fit for purpose.</li> </ul>                                      |
| Community Culture – Education and Awareness | <ul style="list-style-type: none"> <li>• Education</li> </ul>                                                                                                       | 41 | <ul style="list-style-type: none"> <li>- Education and Awareness of our freshwater – by residents, tourists and businesses.</li> </ul>                                                                                                                           |
|                                             | <ul style="list-style-type: none"> <li>• Water is not valued in its own right intrinsic</li> </ul>                                                                  | 18 | <ul style="list-style-type: none"> <li>- Understanding the value of freshwater and how our actions can have an impact on the accessibility and quality of water.</li> </ul>                                                                                      |

|                         |                                                                                                                                                                                      |    |                                                                                                                                                                                                                                                                                                                       |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"> <li>• Personal responsibility for 3 waters</li> </ul>                                                                                             | 12 | <ul style="list-style-type: none"> <li>- Understanding the value of water e.g. using sprinkler systems, stormwater run-off, grey water reuse.</li> </ul>                                                                                                                                                              |
|                         | <ul style="list-style-type: none"> <li>• Myth that we are a pristine environment – incorrect labelling- it isn't a pristine environment and shouldn't be treated as such.</li> </ul> | 1  | <ul style="list-style-type: none"> <li>- Awareness that our waterways are not as 'pristine' as many believe – research and monitoring to provide up to date, accurate information for the public and agencies.</li> </ul>                                                                                             |
| Research and Monitoring | <ul style="list-style-type: none"> <li>• A lack of action around monitoring – e.g. nothing happening with results, regulatory, community.</li> </ul>                                 | 33 | <ul style="list-style-type: none"> <li>- The need to establish comprehensive baseline information on our waterways, catchments, urban and rural systems.</li> <li>- Follow through of information – e.g. identifying the source of contamination, communication and steps to stop occurring in the future.</li> </ul> |
|                         | <ul style="list-style-type: none"> <li>• Lack of robust monitoring and evidence-based responses to monitoring</li> </ul>                                                             | 21 | <ul style="list-style-type: none"> <li>- Working together with scientific information to provide best possible prevention and remediation work for freshwater.</li> </ul>                                                                                                                                             |



Workshop

## Information

Attendees then workshopped the top priorities in small groups, identifying critical driving influences, ideal future outcomes and potential next steps/solutions.

### Theme: Water Quality/Quantity

#### Key Issue: Pollution – run off, development

| Critical Driving Influences                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>What:</p> <ol style="list-style-type: none"> <li>1. Unsustainable Growth</li> <li>2. No constraints on growth</li> <li>3. Consenting/planning perspective: lack of focus on cumulative effects</li> <li>4. Inadequate standards</li> <li>5. Lack of monitoring</li> <li>6. Lack of understanding of consenting planners of potential environmental effects</li> <li>7. Lack of conditions on earthworks consents (inadequate to mitigate storm events)</li> </ol> | <ol style="list-style-type: none"> <li>1. Developers with a different mindset – that see the benefit of sustainable practices and do better than the minimum.</li> <li>2. More monitoring &amp; strong enforcement of consent conditions e.g. earthworks</li> <li>3. Consider cumulative effects of earthworks in a catchment when consenting.</li> <li>4. Creative solutions to minimise agriculture and recreation (e.g. Golf Club) runoff and contaminants.</li> <li>5. An Actual clean green environment and well managed systems to maintain it.</li> </ol> | <p>What: Stricter rules</p> <ul style="list-style-type: none"> <li>- Earthworks</li> <li>- Riparian planting</li> <li>- Stormwater</li> </ul> <p>Look at ways to reuse stormwater/wastewater. Encourage new buildings to include clean water grey water systems.</p> <ol style="list-style-type: none"> <li>1. Long term plan to minimise the impact of agriculture – dairy etc on our waterways – fencing, riparian planning, irrigation, account for long term costs/benefits when measuring success not only short-term dollars.</li> </ol> |

|                                                      |                                                                                                                                                                           |                                                                                                           |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 8. High use of pesticides, agricultural contaminants |                                                                                                                                                                           | 2. Long term planning to manage growth – proactive rather than reactive.                                  |
| Who: Government and commercial interests             | How do we measure success?<br>Monitoring upstream/downstream of development, focusing on storm events.<br>Consistently clear, safe, drinkable, swimmable lakes and rivers | Who: Planners – different mindset and approach to pre-application discussion.<br>Softer development ethos |
|                                                      |                                                                                                                                                                           | How: Education                                                                                            |

### Key Issue: Increasing Demand

| Critical Driving Influences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. More water in stormwater – increase in rainfall events <ul style="list-style-type: none"> <li>- Less places for it to go in a more urban environment</li> </ul> </li> <li>2. Wastewater – grey and black water</li> <li>3. More people: population increase and tourism increase</li> <li>4. Increased agricultural: <ul style="list-style-type: none"> <li>- Demand for water</li> <li>- Run off eutrophication</li> </ul> </li> <li>5. More intensive agriculture</li> <li>6. Water footprint of produce e.g. 160l water per 1 litre of milk</li> <li>7. Infrastructure - 3 waters, fit for purpose and keeping up with/ ahead of demand</li> </ol> | <ol style="list-style-type: none"> <li>1. Sustainable water use (Bruntland 1987)</li> <li>2. What you put back into the environment is pristine – close to pristine</li> <li>3. There is a place for treatment of waste – in waste – out clean water</li> <li>4. Zero harmful waste going into waterways <ul style="list-style-type: none"> <li>- Can drink it</li> <li>- No eutrophication</li> </ul> </li> <li>5. Infrastructure in place e.g. toilets to deal with demand</li> </ol> | <ol style="list-style-type: none"> <li>1. Charge for water – user pays</li> <li>2. Managed by council (district)</li> <li>3. Council pays (through rates) for people to have e.g. <ul style="list-style-type: none"> <li>- 0/3 l toilets</li> <li>- Water tanks</li> <li>- Roofwater storage</li> </ul> </li> <li>4. Culture Change through education</li> <li>5. Monitoring and enforcement</li> <li>6. Toilets and facilities at lakes/waterways to decrease pollution</li> <li>7. Incentives for businesses &amp; farmers too so they are not feeling victimised.</li> <li>8. Look at the way we are farming – ways to eliminate nutrient additions to the ecosystem. Riparian planning, fencing waterways, decreased irrigation</li> </ol> |

|  |  |                                                                                     |
|--|--|-------------------------------------------------------------------------------------|
|  |  | 9. Put in place infrastructure prior to people coming – i.e. proactive not reactive |
|  |  |                                                                                     |
|  |  |                                                                                     |

### Theme: Strategic Management

#### Key Issue: Strategic Management – vision, leadership and collaboration

| Critical Driving Influences                                                       | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                                                 | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| What: capability in the community<br>- Collaboration<br>- QLDC/ORC/ SoF community | <ol style="list-style-type: none"> <li>1. Clean Water (and its definition)</li> <li>2. Access to clean water</li> <li>3. Life sustaining capacity</li> <li>4. Swimmable/Drinkable</li> <li>5. Qualified leadership</li> <li>6. Community Engagement</li> <li>7. Organisations, people talking and collaborating to make progress.</li> </ol> | <ol style="list-style-type: none"> <li>1. Define ‘clean’</li> <li>2. Educate or eliminate leaders</li> <li>3. Employ experts</li> <li>4. Long term planning for 3 waters -</li> <li>5. Environmentally friendly processing of sewage</li> <li>6. Greywater and Stormwater reuse and recycling.</li> <li>7. Long term plan to minimise the impact of agriculture – dairy etc on our waterways</li> <li>8. Source protection of drinking water supplied</li> <li>9. Put our freshwater first – proactively dealing with pollutants and minimising, remove the impact they have on our waterways.</li> </ol> |
| Who: Management team<br>- Experts                                                 | Measures:<br><ol style="list-style-type: none"> <li>1. Fewer ‘lake closed’ days</li> </ol>                                                                                                                                                                                                                                                   | QLDC/ORC/SoF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                            |  |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"> <li>- Community</li> <li>- Central government</li> </ul> | <ol style="list-style-type: none"> <li>2. Waterways are swimmable and drinkable</li> <li>3. Existence of a functional water management plan</li> <li>4. Scientific analysis fauna/flora/water</li> <li>5. No need for groups like 'Friends of Lake Hayes'</li> <li>6. Clear consistent rules, regulations and controls in place that are monitored.</li> <li>7. No algae blooms</li> </ol> |  |
| <p>How: Funding</p> <ul style="list-style-type: none"> <li>- Priorities</li> </ul>          |                                                                                                                                                                                                                                                                                                                                                                                            |  |

**Key Issue: Poor Drinking Water Infrastructure**

| Critical Driving Influences                                                                                                                                                                 | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                   | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>What:</p> <ol style="list-style-type: none"> <li>1. Havelock North Incident and Inquiry</li> <li>2. Increasing demand</li> </ol>                                                         | <ol style="list-style-type: none"> <li>1. All drinking supplies in the district are chemical free</li> <li>2. All infrastructure to be kept in good working order to allow non-chemical alternatives to be feasible.</li> <li>3. Reduced consumption of water through education and cultural change</li> </ol> | <p>What:</p> <ol style="list-style-type: none"> <li>1. Infrastructure up to par (compliance with drinking water standards)</li> <li>2. Funding to research viable alternative approaches to chlorine etc</li> <li>3. Creating a 'clean water' technical group researching other methods of purifying water that does not use chemicals.</li> </ol> |
| <p>Who:</p> <ol style="list-style-type: none"> <li>1. Government</li> <li>2. Public Health</li> <li>3. Industry</li> <li>4. Councils</li> <li>5. Developers</li> <li>6. Tourists</li> </ol> | <p>Measures:</p> <ol style="list-style-type: none"> <li>1. No coliforms or E. coli found in the water</li> <li>2. No outbreak of water borne disease</li> </ol>                                                                                                                                                | <p>Who: QLDC</p> <ol style="list-style-type: none"> <li>1. Specialists employed to research alternatives</li> <li>2. Community to support council to achieve outcomes</li> </ol>                                                                                                                                                                   |

|                                                                                                                                                                                             |  |                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>How:</p> <ol style="list-style-type: none"> <li>1. Scale tactics</li> <li>2. Misinformation – by assertion of consequences in terms of responsibility – council and community</li> </ol> |  | <p>How:</p> <ol style="list-style-type: none"> <li>1. Bring forward funding to enable action more quickly</li> <li>2. Meter use of water to identify leakage and reduce consumption</li> <li>3. Engage regularly with community</li> </ol> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Theme: Education and Awareness**

**Key Issue: Education – businesses. Residents and visitors are not aware or engaged with the consequences of their actions.**

| Critical Driving Influences                                                                                                                                                                                                            | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                    | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>What:</p> <ol style="list-style-type: none"> <li>1. Lack of awareness of how actions directly affect/cause consequences</li> <li>2. Time/convenience</li> <li>3. Society attitudes in community</li> <li>4. Shock Factor</li> </ol> | <ol style="list-style-type: none"> <li>1. Its standard cultural procedure to understand the outcomes/consequences on water</li> <li>2. Regulation isn't required for primary guidance/control and is secondary</li> <li>3. Social conversation/community led groups where people educate each other.</li> </ol> | <ol style="list-style-type: none"> <li>1. Large companies offering/discounting environmental products</li> <li>2. Labelling more clearly 'water friendly'</li> <li>3. Awareness via – forums, community action, events</li> <li>4. Incentivising behaviour</li> <li>5. Educate people about how our interactions can be positive, not negative</li> <li>6. Education on the transmission and how to deal with Didymo, Lake Snot, algae through recreation</li> <li>7. Education and research into how best to deal with invasive species.</li> </ol> |

**Issue: Water is not valued in its own right**

| Critical Driving Influences  | 2060 – Ideal future outcomes                                               | Solutions/ Next Steps                                                   |
|------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <p>Vested Interests \$\$</p> | <p>Te mana o te wai – water comes first, use and activity comes second</p> | <p>Wanganui River – “legal personality” = more people understand it</p> |

|                                                      |                                                                                                                           |                                                                                                                                        |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Activity status – water is managed by its extraction | Water conservation orders enforced                                                                                        | Education – change the culture                                                                                                         |
| “She’ll be right attitude”                           | Sinking lid – if you don’t need your fill entitlements then release it back to the river (taking personal responsibility) | Ownership for true impacts                                                                                                             |
| Water rights ignore waters rights                    | National standards amended to recognise value of water = not competing with economy                                       | Redistribution of “wealth” of water                                                                                                    |
| No one understands what is happening under the water | Integrated planning – RMA, Conservation Act, Wildlife Act                                                                 | Accountability <ul style="list-style-type: none"> <li>- Regional Council</li> <li>- District Council</li> <li>- Land Owners</li> </ul> |
| Lack of science backing up regulation                | Planning should be for 50 years not 10 years (Long term view)                                                             | Bill for Rights for Water                                                                                                              |
| Cultural Shift required – traditional values         |                                                                                                                           | Get away from managing the environment based on effects & activity & existing use rights                                               |

### Theme: Research and Monitoring

#### Key Issue: Monitoring, Accountability, Enforcement

| Critical Driving Influences                                                                                                                                                   | 2060 – Ideal future outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                 | Solutions/ Next Steps                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Regional Council</li> <li>2. Community / residents</li> <li>3. Resourcing (lack of)</li> <li>4. Political will (lack of)</li> </ol> | <ol style="list-style-type: none"> <li>1. Well designed, scientific based nationally consistent monitoring – regularly and spatially appropriate</li> <li>2. Scientific robust trigger that requires response/action</li> <li>3. Community connection to our water</li> <li>4. Community understands, expects and requires all community members to treat water with respect</li> <li>5. Community gives ORC social licence/political will to act</li> </ol> | <p>What:</p> <ol style="list-style-type: none"> <li>1. Pay more rates to ORC (i.e. fix resourcing)</li> <li>2. Tourist tax to fund infrastructure, monitoring</li> <li>3. Need to establish a strong baseline</li> <li>4. Review monitoring as a whole <ul style="list-style-type: none"> <li>- Consents</li> <li>- Council</li> </ul> </li> <li>= redesign based on science</li> <li>5. Set triggers</li> </ol> |

|  |  |                                                                                                                                                                                                                                                                                                                                                                              |
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|  |  | <p>6. Set responses – early trigger – investigate cause. What do we do when find the cause?</p> <p>7. ACT</p> <ul style="list-style-type: none"><li>- Work with polluter</li><li>- Communicate</li><li>- Educate</li><li>- 2<sup>nd</sup> prosecute and punish by planting</li></ul> <p>Collaboration with science, government, industry and community to find solutions</p> |
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