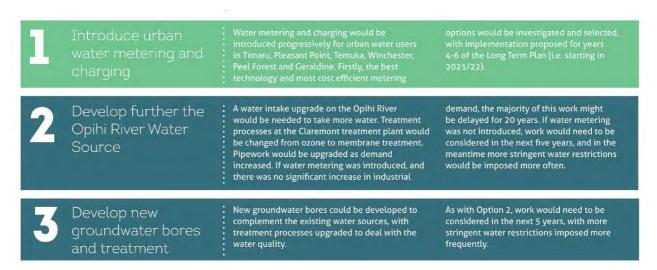
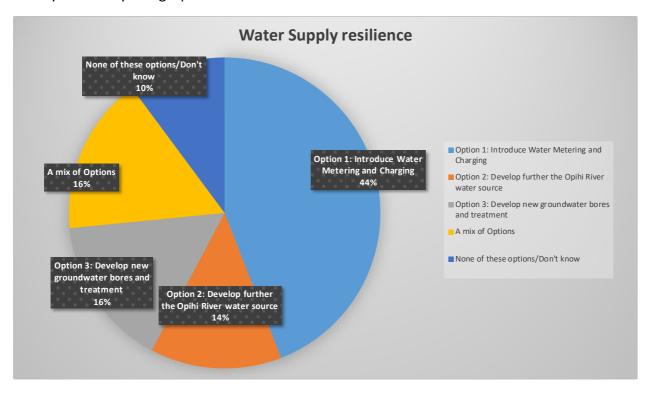
# Long Term Plan 2018-28 Submissions Overview – Water Supply Resilience

## Issue 1 – Our Water...What Price? A Resilient future water supply – How should we achieve this?

The Consultation Document proposed the following three options, with Council indicating a preference for Option 1 – Introducing urban water metering and charging.



544 submitters responded to this question – with those indicating preferences via the survey shown by the graph below:



#### **Overview**

- Submitters expressed a range of views on Water Supply Resilience. While a large proportion favoured the concept of water meters, this was matched by those who favoured future proofing and increasing the supply of water available through various other sources ranging from investment in Hunter Downs to developing bores.
- 2 For those who supported the concept of water metering, it was often on the proviso that enough water was still available for the Timaru District (via various sources) into the future.
- 3 The value of sufficient water availability came through strongly, as did a view for improving people's water use behaviour and introducing other water conservation measures.
- Additional water sources suggested ranged from the other options suggested by Council (Opihi River and new bores) to investing in the Hunter Downs water scheme and the potential of Alpine water sources. There was no one additional or existing source of water that stood out as favoured.
- 5 Typical comments for those who favoured water metering were:
- 6 "A Councillor told me we could not afford 3 bin rubbish collection we couldn't afford not to. Similarly if water metering reduces consumption by 15-30% we can't afford not to."
- "Bring in water metering as soon as possible. To make users aware of water usage, ie not running water down the gutter when washing cars etc. Make it mandatory that all new homes must be built enabling rainwater to be recovered for use washing vehicles, watering garden, flushing toilet etc. I am sure that over time, if brought in, usage of town water would reduce. TDC may be able to help present homes to install holding tanks (rain water)"
- 8 "By metering people know their usage and are more aware. Most people don't know what they are allowed or should be using a day."
- "Water metering is the most effective and transparent solution. N.B. It must be guaranteed against privatisation for ever. In places where metered water has been introduced and then privatised the price has been made prohibitive. Alongside metering, could the council promote home water collection with information, education and good deals?"
- "Still need to look to 'future proofing' water supply so water metering alone while cutting waste will not protect us forever."
- "Urban metering will provide an incentive for sustainable use of our precious water resource and will provide greater fairness for the different situations we have in Timaru, i.e. single occupants vs. a family and their respective water use."



- 12 Many of these comments favoured some additional methods to either save water (e.g. education, rainwater tanks) or to ensure enough water was available in the future (e.g. through investing in other water sources).
- 13 Those who supported upgrading the Opihi River water source favoured it as the most prudent option to meet Timaru's future water needs, opposed the impact of water metering on particular groups of people or favoured spending money targeted for water metering on increased water availability.
- 14 "Don't kill the goose"
- "Water metering is unfair to poor big families, upgrade the supply from Opihi and pay for it through rates based on capital values of properties"
- "With future population growth it is essential we develop an increased water supply. The \$15M plus ongoing costs of metering would be better spent immediately on option 2. Why spend \$15M plus when we are fully aware all we are doing is delaying the inevitable"
- "Option two that of upgrading the Opihi River water source is the most prudent option. Although both the Pareora and Opihi Rivers respectively count for roughly half the Timaru water supply, since the Opihi is the only river that can potentially supply extra capacity in times of water restriction it would be short sighted not to ensure that a capacity backup treatment system is in place."
- Similar sentiments were expressed by those favouring new groundwater bores, as well as not wanting to extract any further water from the Opihi River source. Comments included:
- "Do not agree with water meters but a mix of options 2 and 3 Hunter Downs may be an option"
- 20 "Groundwater would be free of contaminants such as toxic Phormidium Algae which cannot be totally removed from Opihi water. Over a period of years ongoing cost of meters could far exceed developing new sources"
- 21 "The Opihi has been in a rapid state of decline since 2010, no further water should be taken from this source"
- 22 "Like the idea of groundwater bores, every litre from them would be a litre less from our under stress Pareora & Opihi rivers."
- "Option 1 is short sighted. Water is vital and of high priority. Only metering the towns when rural folk have had unlimited water for personal profit is just wrong, and not addressing the real needs. A more strategic long-term solution is my choice."
- Those who favoured a mix of options generally discussed the need for futureproofing the Timaru's supply, ensuring we were able to keep up with



- growth, remain attractive to business while also ensuring water was saved where possible.
- "Water is most precious. Summers will get longer rain events, will get more intense and over time we will have a distinct wet and dry season. We need to start educating households and businesses by using a user pay system but we also need to bolster the over ground drinkable stock by using bores, the river and reservoirs. Finally no one solution will fix the end game but a little now will go a long way."
- "Introduce water metering but ensure plans are in place for the eventual use of the Opihi Water source as eventually the city (as it will be by then) will need a second secure source irrespective of mechanism of charging...."
- Finally, those who supported none of the options generally supported other potential sources of water, such as alpine sources or the proposed Hunter Downs scheme (Note, these sources were also mentioned by a number of people who supported some of the other options).
- "Water should not be limited. The failure to support unlimited Alpine water for our city over hill feed sources, is a grave mistake. Water is free other than the infrastructure required to deliver. People should not be afraid to turn there taps on, as industry should not be concerned for capacity for future expansion."
- 29 "I think that the Opihi is stretched now and unless water is bought through Burkes Pass from Tekapo will not be enough for future supply. Meters are a very short term and expensive fix and we need to get a better supply if we want expansion in the region in the future. Meters will not save much as when it's dry there are restrictions anyway."
- "Alpine water opportunities. The water is currently let out the spillways which in turn goes out to sea. It was talked about 40 years + ago about putting a pipe from Lake Tekapo over because it was foreseen that Timaru would run low in water. Currently the water is let out for white water rafting. I think farmers should have their own bores for irrigating instead of taking it out of rivers."
- 31 "Hunter Downs Irrigation Scheme Reliable, high quality water, Less cost than any other option, Would also ensure the HD scheme does get developed"
- "Tap into the Hunter Irrigation Scheme. The \$15M for water meters could go towards this. There would be enough water for the long term for Timaru. Metering won't achieve this."

## Schools Feedback - Summary

The table indicates the option selected by the majority of students:



| School                   | Option 1:<br>Introduce Water<br>Metering &<br>Charging | Option 2:<br>Develop further<br>the Opihi River<br>water source | Option 3: Develop new groundwater bores and treatment |
|--------------------------|--|---|---|
| Geraldine High School    | ✓  |   |   |
| Timaru Boys High School  | ✓  |   |   |
| Opihi College            | ✓  |   |   |
| Craighead                | ✓  |   |   |
| Mountainview High School |  |   | ✓   |
| Timaru Girls High School | ✓  |   |   |
| Roncalli College         | ✓  |   |   |

#### **Key points:**

- Water meters would make people think more about how they use water
- Water meters are an environmentally friendly tool/ a smart thing to do
- Council should run a water conservation campaign provide information on kits that people can buy to collect rainwater, educate people about ways to conserve water.
- If people can't afford a rain collection kit council could buy it and put it on peoples rates bills to pay back over time
- Education is important natural resources are not unlimited
- Fresh, clean water is a 'signature" part of South Canterbury
- Don't take from rivers if don't have too
- It would benefit those who save/use less water
- Meters would impact on people with pools
- What's the impact on industry?
- Metering is putting off the inevitable if we want the district to grow we need more water – better to find more now

## **Topics/Sub-topics for Officer Comment** (from Submitter Comments)

## 1) Planning for Future Water Supply

- Futureproof/Plan for future water needs
- Alpine Water opportunities
- Groundwater/Bore options
- Desalination options
- Hunter Downs Water Scheme
- Pareora River Dam
- Collaboration for future water
- No further water supply from rivers



- Futureproofing the Timaru urban water supply is critical for the ongoing wellbeing of the district, it is essential for our health and for our economy. And that is the central component to this issue, which is to futureproof the urban water supply by the most effective and efficient method.
- The current peak day demand is around 29 megalitres per day (ML/d) of which up to 50% is used by industries. Council holds resource consents to take up to 53 ML/d from the two current sources of water (the Pareora River and the Opihi River). This provides a significant capacity for growth. However, the takes from the sources can be constrained at times of low river flows, and the current predicted total low flow take is around 41 ML/d. This still provides significant capacity for growth, as the residential component of the water use due to population and household growth is expected to increase by less than 2 ML/d over the next 30 years.
- 35 Council has previously provided guidance on part of the future proofing of the water supply, in that the 'aspirational' demand that new or replacement infrastructure should allow for is at least 35ML/d.
- The infrastructure that is currently in place to take, treat and deliver water is generally able to meet the existing demands, although there are times when there are very low river flows that subsequently lead to water use restrictions, and other times when low river flows are followed by heavy rain which limits the amount of water that can be taken for treatment.
- 37 The options available to Council are to increase the capacity of the infrastructure for the existing sources, to install additional infrastructure for new sources, or to delay the need to upgrade the infrastructure by decreasing the demand.
- It must be noted that in order to meet an aspirational demand of 35 ML/d, an upgrade of infrastructure will be necessary at some time. Of the options for taking additional source water, using the existing infrastructure is the most cost effective. The Hunter Downs scheme would provide a reliable source, however it's raw water quality and location would result in very high capital and operating costs, with reliance on pumping to supply the entire scheme. Groundwater in the vicinity of Timaru could be an option that is investigated further, if a reliable source of suitable quality and quantity was available. There are currently no firm proposals to bring other water into the area from Alpine sources. Desalination is generally a very expensive option, in terms of both capital and operating costs because the treatment processes are complex and significantly new pipework would be required within the water distribution network. Council's preference is to make best use of existing infrastructure while not limiting possibilities for additional water in the long term.
- 39 It should be noted that the demand for urban water has only a marginal effect on the existing water takes of other water take users from those sources, such as



- farm irrigation. Any significant reduction in take for urban demand would have a subsequent significant impact on the urban consumers, but would have only a very limited effect for other users.
- Increasing the capacity of the existing infrastructure is estimated to cost up to \$45 million, staged over time, and including resilience improvements such as pipeline duplication. It must be noted that pipeline duplication is a medium to long term option under the Infrastructure Strategy but which is only one of a number of options that could be available in the future for securing the water supply and providing the necessary resilience.
- 41 Although industrial demand is expected to increase, the rate of increase is likely to be relatively steady, as modern technologies are very aware of water use and even the 'wet' industrial processes look to limit water use. A sudden stepped increase in industrial demand is unlikely but should still be considered. The rate of increasing demand due to population and household increases is relatively small and steady.
- Therefore, by decreasing the demand, there would then be sufficient capacity to meet the increasing population demand without upgrading the infrastructure. The need to upgrade infrastructure could be deferred for several years, until the increasing total demand requires this.
- Industrial water usage has been metered and charged for more than 40 years. There has been a focus by industry to be more water efficient, which may have also been associated with the introduction of volumetric tradewaste charges, and which has resulted in a decrease in industrial usage in recent years.
- International and New Zealand studies show that universal residential water metering would provide between 15 and 30 % of water savings. However, there are a number of details that must be resolved before implementation, such as tariffs and charging, rebates, and programming. It is proposed that this preliminary work is carried out over the next three years, with recommendations made to Council before acceptance and implementation.

## 2) Additional Water Storage capacity – Timaru

Increased storage capacity for Timaru

#### Officer comment:

45 Council is currently investigating providing additional water storage to provide further security and service future increase in demand in the industrial area of Washdyke. New storage can also require additional supporting infrastructure such as water treatment, pumping and pipeline upgrades. The feasibility of recommissioning the old Landsborough Road reservoirs is also being considered. These reservoirs would require structural (seismic) strengthening and remediation works to be undertaken. The Timaru water supply is well placed in terms of existing storage for future growth with an average of 11 days of



storage. Although Council has focused on options that provide more source water or that target reducing demand, the provision of additional storage at Claremont is also an option to be investigated further.

## 3) Water Metering Rationale - Support/Oppose

- Fairness
- Meters a waste of money
- Impact of water meters on other behaviour (e.g. Waste Minimisation)
- Security of Water supply with metering
- User pays encourages better use/awareness
- Water Metering Viability
- Water Meters disadvantages
- Water quality

- The introduction of water metering in the urban water supplies will result in a fairer charging regime for residential consumers based on volumetric consumption. Higher water users will pay more than low water users. There are several options that would be considered for volumetric charging. For example a stepped charge rate where the charge rate per cubic meter increases once usage reaches certain thresholds. Alternatively a water use charge may only be applied once a certain amount is taken based on a proportion of average usage. Council will need to investigate these charging regimes in more detail to ensure demand management targets are achievable whilst also keeping the costs of implementing, managing and operating a water metering regime as affordable.
- 47 Water metering has been shown to effect positive behavioural change and increased awareness of consumers in terms of water use, with people moving towards adopting water conservation practices to reduce wastage and water consumption. Typically, the combined effect of water metering is a 15% to 30% reduction in the overall volume of water consumed by domestic water users. An example in New Zealand is the Kapiti Coast where over a three year period a 26% reduction in water use was recorded across the district after water metering was implemented. Reducing and managing the demand for water would in turn place less pressure on our river and ground water sources, and we would hope to see a reduction in the need for water restrictions during summer months.
- The revenue obtained from water metering will be used by Council to cover the costs of operating and managing the water supply infrastructure from source to tap. Council would continue to maintain the infrastructure to ensure a resilient and compliant water supply is provided to urban consumers. Demand management activities such as leakage monitoring and renewal of aged (leaking) pipes will also continue to be undertaken to ensure that demand reduction targets are met.

## 4) Water Conservation Options - other

- Onsite Household water storage/tanks
- Leak service provided by Council
- Other water conservation options
- Water Conservation education

#### Officer comment:

- 49 Council encourages water consumers to be water-wise and act to conserve water. It is the responsibility of household owners to fix and repair any leaks on water laterals within the property boundary. Water saving initiatives (of which some examples are listed below) have been suggested in response to the LTP consultation document. Council may consider these as part of supporting community water conservation activities. However this would be subject to further investigation by Council, and will be dependent on the economic viability of such strategies:
  - a leak repair service for laterals within property boundaries
  - subsidising onsite household water storage / tanks
  - subsidising grey / rain water systems
- Council already requires that all industrial consumers have a water meter. In addition a number of 'extraordinary' users or users who consume more than the normal domestic usage within the District are also metered. Council will continue to implement this water metering as part of the overall demand management strategy for the District. Council encourages water conservation measures to be undertaken by the public to help reduce demand, such as the use of rainwater collection tanks for watering of gardens and the use of more efficient technologies, such as household appliances with low water use ratings. Further water conservation tips are available on the Council's website on https://www.timaru.govt.nz/services/environment/water/water-saving-tips. The requirement for installing rainwater tanks is something that should be considered as part of the District Plan review.
- Education around water conservation forms part of Council's current demand management approach to managing and reducing water consumption. Water conservation is a vital part of ensuring the District's water supplies can provide for current consumers as well as future generations, and Council will continue to publicise, educate and promote water conservation measures to help drive behavioural changes.

## 5) Water Supply – Current system Issues/Approach

- Approach to water losses from existing water supplies
- Galvanised steel pipes approach
- Water use monitoring
- Pareora River water source upgrade
- Tengawai



• Water Supply Resilience

- Council undertakes a proactive approach to monitoring and managing water losses from existing water supplies. Water use in all the water supplies is recorded 24 hours a day through telemetry. This information is regularly reviewed and any increase in leakage identified for further investigation. Leakage detection is programmed annually to ensure medium to high leakages are identified and repaired. Council is also exploring further opportunities to carry out pressure management which will help reduce leakage and extend the life of the water supply pipes. Pressure management and leakage detection measures implemented by the Council have been successful with a reduction in leakage being recorded.
- Aged pipes (in particular galvanised steel, asbestos cement and concrete pipes), are being replaced through a targeted pipe renewals programme, with information from pipe sampling, CCTV inspection and hydraulic modelling being used to help prioritise renewals.
- Council will be developing a Demand Management Strategy that will provide a clear action plan for ensuring that demand continues to be managed efficiently and effectively in each of the district's water supplies. Included in this strategy will be on-going leak detection / reduction, pressure management and education of consumers around efficient water use.
- 55 The Timaru water supply currently utilises two sources through consented takes from the Opihi River and the Pareora River at the Pareora Dam. The preferred source is the Pareora River as this water can be supplied to Timaru by gravity, as opposed to the Opihi River source which requires pumping and is more expensive to operate. During times of high rainfall in the Pareora Dam catchment the water obtained from the Pareora River can be of poor water quality (highly turbid) and cannot be sufficiently treated to a safe level for human consumption. Therefore use of the Pareora River source during these periods is often limited.
- The resource consents that cover the takes from the Pareora River and Opihi River allow Council to take water for the purpose of supplying Timaru. At the same time Council must comply with the conditions in the consents that ensure downstream flows in the rivers are maintained. Council monitors the take from the Pareora River and Opihi River by telemetry to ensure that these conditions are complied with.
- 57 Council are currently undertaking a number of projects to upgrade the Downlands water supply with the aim of meeting future drinking water standards, whilst also providing security of supply for the growth that is forecasted in the scheme. The scale of the upgrades required include a new water treatment plant, upgrade of 23 km of the Te Ana a Wai pipeline, as well as upgrades to the distribution network. Providing an additional supply to Timaru

- from the Downlands water supply would increase these costs significantly, therefore Council do not consider this an economic option.
- As part of identifying the need for upgrades and renewals to the District's drinking water supplies, Council ensures that resilience of the water supplies and any new assets is considered as part of an overarching Asset Upgrading / Development Strategy. Risks around security of supply and resilience are managed by understanding failure mechanisms of the water supply assets, ensuring early detection and recovery is in place and undertaking 'looking ahead' planning to be able to respond to both expected and unexpected changes.

## 6) Water Metering - Impact on different sectors/groups

- Water meters- Impact on vulnerable users
- Impact on businesses, café owners, landlords
- Industrial water usage and metering
- Use by farmers/water exporters
- Water metering for urban users

- Consideration must be given to vulnerable households that for valid reasons are likely to have a greater than average water consumption. There are mechanisms for protecting particular consumers, such as water rebates, extraordinary allocations or tariffs. These issues have been addressed by others previously when establishing water charging programmes, and therefore research will be carried out to identify best practice before any charging scheme is implemented.
- Council has been implementing water metering strategies for extraordinary water users, and all industrial, commercial and institutional consumers are metered and charged on a volumetric water use basis. This is likely to remain unchanged. Council cannot dictate what charges are included or not in rents, lease or body corporate agreements. However there would be a reduction in rates with the removal of the uniform annual charge, but there would in turn be a subsequent new volumetric charge. Council sees the move to implement water metering of domestic households in the urban water supplies as a move towards a fairer 'user pays' basis for all consumer types, as well as targeting reduced consumption and behavioural changes around water use.
- In the rural water supplies where water is supplied primarily for stockwater purposes water use is charged per unit of water (allocated volume), per tank connection or an area charge. Some new households in the rural water supplies have utilised rain water or have a private bore to supplement supply from the public water supply. In terms of future use of water for agricultural purposes and changing land use, Council is monitoring this on an on-going basis through District Plan activities and through the Orari-Temuka-Opihi-Pareora zone rules as part of the Canterbury Land and Water Regional Plan. The Canterbury Water Management Strategy which commenced in 2010 is also implemented through

water zone committees, and is aimed at achieving effective water management solutions in the District.

## 7) Water Metering - Regulation

- Lobby Ecan for stronger landuse controls
- New properties/connections need meters
- Regulation

#### Officer comment:

- Council is working closely with the Regional Council to better manage the implementation of controls in the Community Drinking Water Supply Protection Zones. These zones identify the areas of greatest risk of having detrimental impacts on the quality of the water supplies, and have been established in order to minimise those risks by controlling the land use activities in those areas. Council is also represented on the OTOP Zone Committee which is recommending the implementation of various land use controls.
- 63 It is proposed that all properties would be metered, installing meters on just new properties would only provide water consumption information for those individual properties.
- There are limitations on what currently may be imposed on water consumers, such as installing low flow shower-heads, however Council encourages consumers to be water-wise and act to conserve water. Water saving initiatives such as onsite household rainwater storage could be further encouraged by Council and will be considered as part of the District Plan review.

## 8) Water Metering - Logistics

- Approach to ongoing meter maintenance
- Implications of non-performance for Water provision
- Modern technology for Water metering
- Water Metering progressive implementation

- As part of future detailed investigations Council will identify the costs of installing, maintaining and renewing water meters to ensure the 'whole of life' cost is fully understood if water metering is implemented.
- Monitoring and reporting of leakage and demand is a non-financial mandatory performance measure required by the Local Government Act 2002. Council will continue to report on leakage and water use regardless of whether water metering is implemented. Each water supply in the district is monitored against level of service targets set by Council, and bench marking against other council's and industry performance is also carried out. Our key level of services in this



- respect are "to maintain excellent water supply network services" and to "provide management of the efficient use of water as a resource".
- 67 Restrictions are a useful way of managing demand in the event of a supply interruption. Council's standard and emergency operating procedures and asset renewals programme are examples of how the risk of a supply interruption is managed and mitigated. Whilst Council expect water metering to be successful in reducing demand in urban water supplies, there will be times when continuity of supply may be affected whether by planned or unplanned events. If restrictions are required, this is usually as a last resort step to ensure that consumers continue to receive a supply of water.
- The current technology available for water metering is wide-ranging from automatic meter reading systems through to Smart Meters and remote meter reading systems. A decision on the type of meter that would be installed is yet to be made and would be subject to further detailed investigations aimed at identifying a 'best fit' in terms of the district's urban water supplies and Council's systems and operational practices.
- Installation of residential water meters has already been undertaken by various councils around New Zealand in recent years. Examples include Nelson City Council, Tauranga District Council, Kapiti Coast District Council, Waipa District Council and Christchurch City Council. Selwyn District Council is continuing to roll out household water metering for a number of their water supplies. Various approaches have been adopted on how the water meter installation programme has been implemented. It is likely that a staged approach would be undertaken by Timaru District Council. The prioritisation of urban water supplies would need to be developed further to ensure a cost-effective roll out of the meter installation is undertaken. Council will engage and communicate with the public as investigations progress and more information becomes available

## 9) Water Metering - Charging Regime

- Water Meters charging regime
- Charging approach for different communities
- CBD excluded from water metering
- Water meters charge impact on rates
- No additional wastewater metered charge
- Rural Water Metering

#### Officer comment:

The charging regime is yet to be finalised, and would be the subject of a major investigation and consultation within the next three years. Industry, commercial and institutional consumers currently pay a flat rate for all water supplied, and this charging regime is likely to remain unchanged. Residential urban properties currently pay a single uniform annual charge for the supply of water, however it is proposed that this charge is replaced.



- 71 The budgets for all of the urban water supply areas in the district have been amalgamated into one budget in order to spread the relatively high cost of small schemes over a greater rating base. It is not proposed that this would change and volumetric charging may be introduced for all urban water supply schemes. Council has no plans to charge for wastewater discharge based on water volumes used.
- There are several options for volumetric charging regimes, each with their own advantages and disadvantages, such as having a stepped charge rate where the charge per cubic meter increases once usage reaches certain thresholds, or where water use is only charged after a certain amount is taken based on a proportion of average usage. Different charging regimes will likely result in different behaviour patterns by consumers and therefore the charging regime must be evaluated and decided upon very carefully, to ensure the desired outcomes in relation to water use and conservation are achieved. The frequency of meter reading and billing is also an important issue to be resolved.
- Council cannot dictate what charges are included or not in rents, lease or body corporate agreements. However there would be a reduction in rates with the removal of the uniform annual charge, but there would in turn be a subsequent new volumetric charge.
- As noted previously, consideration could be given to vulnerable households that for valid reasons are likely to have a greater than average water consumption
- 75 It should be noted that the charge is not for water per se, but a charge for the cost of providing, operating, maintaining and upgrading the infrastructure to take, treat and deliver water to consumers. Management of the water takes for rural land irrigation is primarily a function of the Regional Council.

## 10) Other

- Development Contributions Policy
- Chlorination
- Fluoridation
- Funding of Council projects generally
- Impact of bores on rural landowners
- Water privatisation unsupported

- Council does not charge Development Contributions. Financial Contributions are charged at the time of subdivision. This will change before 2022 when Financial Contributions are to be phased out. The Financial Contributions cover the costs of servicing new growth with the necessary infrastructure, including water.
- 77 Council currently has no plans to introduce fluoride to water supplies. Last year a Bill was introduced to Parliament that would clarify decision making responsibilities with respect to fluoridation, and make District Health Boards



- responsible for such decisions. We understand that this Bill has not yet received further consideration in the current Parliament.
- Providing safe drinking water supplies is a core responsibility of Local Authorities, with there being no provision for the privatisation of existing schemes, regardless of whether they are metered or not.