



**3 WATERS
SERVICES**

GORE & MATAURA WASTEWATER DISCHARGE CONSENT RENEWALS



www.goredc.govt.nz

GO RURAL
DISTRICT COUNCIL
RE CITY
LIVING

A FRESH MOVE TO THE FUTURE

Community expectations and national regulations have significantly changed in recent years, which means we need to take a fresh look at how we treat wastewater in Gore and Mataura over the next 35 years.

Since our treatment plants were built, there have also been huge changes in wastewater treatment technology.

While our existing systems are designed to treat and discharge our wastewater to the conditions set in our resource consents, we have to do better.

Changes to the laws and standards, and people's views about the environment, means our current treatment methods for Gore isn't an option for the future.

Upgrading the Gore wastewater treatment plant is a long term project, spread over the next 30 years, and one of the most significant facing our communities. Financially it's not one we can do without considerable funding assistance, and we will be exploring government, external and industry funding partnerships as the project progresses.

We are looking to have more detailed conversations with residents and ratepayers for our 2024 – 2034 10-Year-Plan. The costings for our upgrade of the plant are high level and are likely to change as the lifecycle of this project evolves and we get more detailed estimates.

The Gore District Council is currently working on lodging applications with Environment Southland to renew our discharge resource consents for the Gore and Mataura wastewater treatment plants.

As we prepare those applications, we want to talk to you about our proposed plans for the long term future of wastewater management.

WHAT IS WASTEWATER?

Every time you flush the toilet or do the washing – in fact everything that goes down the drain inside your house or business – is wastewater.

Ninety-nine per cent of what comes into our wastewater plant is water. The remaining one per cent is made up of food scraps, oil and fat, faeces, urine and toilet paper and the soap or detergent from your sink, shower, washing machine or dishwasher. It also contains things that shouldn't be going down your drain – like condoms, tampons and wet wipes. The only things that should ever go down your toilet are the three Ps – pee, poo and (toilet) paper.

In parts of Gore and Mataura we also have stormwater – the water that goes down the drain outside your home or on the street – entering our wastewater network. This is a relic of practices from years ago that today sees many properties in Gore and Mataura having combined drainage for wastewater and stormwater.

As we upgrade our wastewater treatment plants, we will also undertake significant wastewater and stormwater separation work.

This work will reduce the volume of wastewater we need to treat, which will reduce costs associated with upgrading and operating our wastewater treatment plants. It will also reduce spills of untreated and/or partially treated wastewater to the environment.

OUR EXISTING TREATMENT PLANTS

The Gore and Mataura plants were built in the 1970s and 1980s respectively.

Our resource consents allow us to discharge treated wastewater to the Mataura River via pipes in the riverbank. We have completed a number of improvements to both treatment plants since they were first constructed.

The most significant improvements have been:

- 2008: The installation of an Actiflo treatment system at the Gore plant to reduce suspended solids and phosphorus in the treated water.
- 2009: The construction of a six-cell wetland at the Mataura plant to provide tertiary treatment prior to the wastewater going into the river.
- 2018: Mataura Valley Milk's (MVM) investment in an industrial hub to process the company's trade waste. The hub has a biological nutrient removal system that treats the wastewater to a high standard.

As well as treating waste from MVM, our Gore plant also treats industrial waste from Silver Fern Farms and smaller industries in the town.

An assessment of the environmental impact on the Mataura River of treated wastewater from the plants found *'the effects of wastewater discharges to the Mataura River may be more than minor for some variables, but overall they do not appear to be contributing to consistent reductions in water quality or river ecological health.'*

The true meaning of life is to plant trees, under whose shade you do not expect to sit.

Nelson Henderson

JOIN THE CONVERSATION

We are keen to hear what you think about our proposed plan for future wastewater treatment at Gore and Mataura.

For detailed reports, images and to chat with our project team go

to Let's Talk Kōrero Mai
www.lets.talk.goredc.govt.nz

We have already started talking with local iwi, including the Hokonui Runanga. These talks will continue to ensure we understand the cultural impact of any proposals.

We are also talking with other major stakeholders, such as Fish and Game, DOC, and the Wyndham Angling Club.

Everyone's input will help inform our resource consent applications to Environment Southland.



THE OPTIONS

We need to strike a balance between:

- providing for current residential, commercial and industrial wastewater needs,
- future proofing our infrastructure for community growth,
- and minimising our impact on the environment.

Over the last two years we looked at 18 options to upgrade the two plants. An assessment of each considered a range of factors such as cultural, environmental, social and economic. This enabled us to bring the options down to three for each treatment plant.

From the three shortlisted options, we have come up with a best practicable option (BPO) for the Gore and Mataura plants.



WHAT IS MEANT BY BEST PRACTICABLE OPTION (BPO)?

The term is defined in the Resource Management Act as the best method for preventing or minimising the adverse effects on the environment with regard to:

- The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects
- The financial implications, and the effects on the environment of that option when compared with other options
- The current state of technical knowledge and the likelihood that the option can be successfully applied.

For the purpose of this project, BPO is further defined in the conditions of the existing resource consent for the discharge of wastewater into the Mataura River.

These conditions require the BPO to prevent or minimise any adverse discharge effects on the life-supporting capacity of the river.

In addition to this, the BPO needs to consider the cultural expectations of local iwi.

GORE WASTEWATER TREATMENT PLANT BPO

Gore Wastewater Treatment Plant BPO

Construct a new Biological Nutrient Removal (BNR) Treatment Plant to treat wastewater to a high quality before discharging it to the Mataura River.

The key advantages of this option are:

- The treatment process includes the removal of nitrogen, which encompasses nitrate and ammonia.
- It will allow the repurposing of the oxidation ponds to provide enhancement of the treated wastewater prior to its discharge.
- There is sufficient space to construct the new plant on the existing site.
- It can be implemented in a staged approach.

The estimated cost of this option is between \$46 million and \$61 million. We know it is beyond the capacity of our ratepayers to fund such a costly project and we will require funding partners.

At this point, we are proposing implementation in three stages over the next 30 years.

Stage 1 - Implementation by 2030

This stage is estimated to cost between \$10 and \$12 million. It involves:

- Construction of a BNR treatment plant to treat trade waste. We will be looking for funding partners from the relevant trade waste producers to assist with this stage. Partnerships could be similar to the Council's existing arrangement with MVM.
- Desludging of the existing oxidation ponds.
- Optimizing the existing Actiflo treatment system.

- Introducing a phase where the treated wastewater comes into contact with the land, eg wetlands.

Stage 2 - completion by 2040

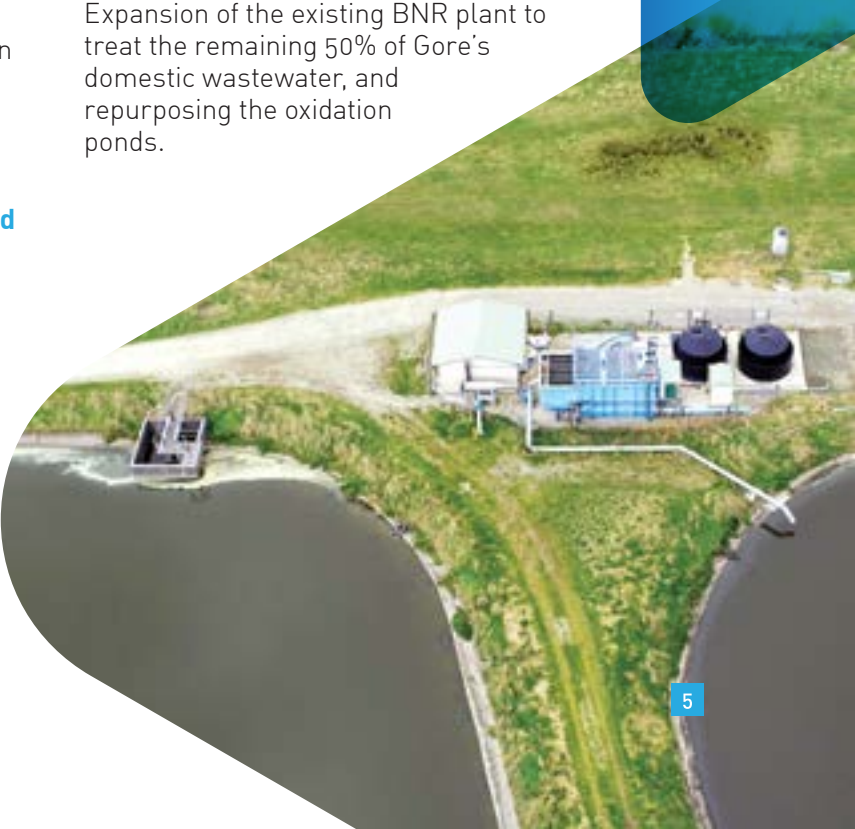
This stage is estimated to cost between \$27 million and \$37 million. It involves:

Construction of a second BNR treatment plant to treat 50% of Gore's domestic wastewater and trade water from minor industries. The remaining 50% of Gore domestic wastewater will continue to be treated through the existing ponds.

Stage 3 - completion by 2050

This stage is estimated to cost between \$9 and \$12 million. It involves:

Expansion of the existing BNR plant to treat the remaining 50% of Gore's domestic wastewater, and repurposing the oxidation ponds.





Impact

There will be a decrease in discharge levels over the 30 year lifespan of this project.

Below are the current and predicted loadings in 2050 of:

- **Total Suspended Solids:** 204kg/day (2020) down to 44kg/day (2050)
- **Total Nitrogen:** 133kg/day down to 75kg/day
- **Ammonia:** 94kg/day down to 35kg/day
- **E-coli:** 1450MPN/100ml to 50MPN/100ml (MPN - most probable number)

Mataura Wastewater Treatment Plant BPO

Completion by 2027. Estimated cost between \$1.6 million and \$2.1 million.

Expansion of the existing wetlands system and other improvements to optimise the existing treatment plant. Key factors are:

- The existing Mataura WWTP is operating well. Investment at the Gore WWTP will deliver significantly greater improvements to river water quality.
- When considering the small population of Mataura, the cost of upgrading to a full mechanical treatment plant or disposal to land is very high and would provide limited environmental benefit.

Existing loadings at Mataura are much less than in Gore.

At Mataura we currently discharge an average of (Gore WWTP figure in brackets):

- **Total Suspended Solids:** 7.3kg/day (133kg/day)
- **Total Nitrogen:** 7.7kg/day (157kg/day)
- **Ammonia:** 6.2kg/day (94kg/day)
- **E-coli:** 520 MPN/day (1450MPN/day)

When we take into consideration predicted population increases, these loadings will slightly increase by 2050.



ALTERNATIVE SHORTLISTED OPTIONS

GORE WASTEWATER TREATMENT PLANT

Tertiary Treatment Plant Upgrade

Estimated cost between \$19 million and \$26 million.

This would involve constructing a membrane treatment plant downstream of the existing oxidation ponds to further improve wastewater quality before discharging it to the river.

This option was discounted for the following reasons:

- It would not increase nitrogen, nitrate and ammonia removal.
- It would require ongoing use of the existing oxidation ponds.
- There's less capital costs, but it is anticipated further upgrades would be required in the medium to long term.

Additional Actiflo Plant and UV treatment with disposal to land during summer

Estimated cost between \$44 million and \$68 million.

This option would not improve the quality of wastewater being discharged from the treatment plant. During summer, when river flows are low, the treated wastewater would need to be discharged to land.

This option was discounted for the following reasons:

- A high estimated cost combined with a high degree of uncertainty and risk associated with the technical feasibility of this option.
- It would require ongoing use of the existing oxidation ponds.

- There would be no improvement in the quality of wastewater being discharged to the Mataura River during winter.
- We would need to buy approximately 401ha of suitable land.

MATAURA WASTEWATER TREATMENT PLANT

A combined BNR plant for Gore and Mataura

Estimated cost between \$22 million and \$30 million.

This option would involve pumping raw wastewater from Mataura to the proposed BNR treatment plant, at Gore.

This would cost an estimated \$30,000 to \$41,000 per property in Mataura, making it cost prohibitive.

Disposal of treated wastewater to land during summer

Estimated cost between \$16 million and \$22 million.

This option would involve purchasing approximately 27ha of land to allow treated wastewater from the existing treatment plant.

This would cost an estimated \$22,000 to \$31,000 per property in Mataura, also making it cost prohibitive.

WHAT IS DOMESTIC WASTEWATER?



1.7%
BATH



1.7%
DISHWASHER



3.2%
LEAKS



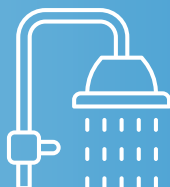
14.6%
TAP



20.4%
TOILET



26.1%
WASHING
MACHINE



32.3%
SHOWER

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