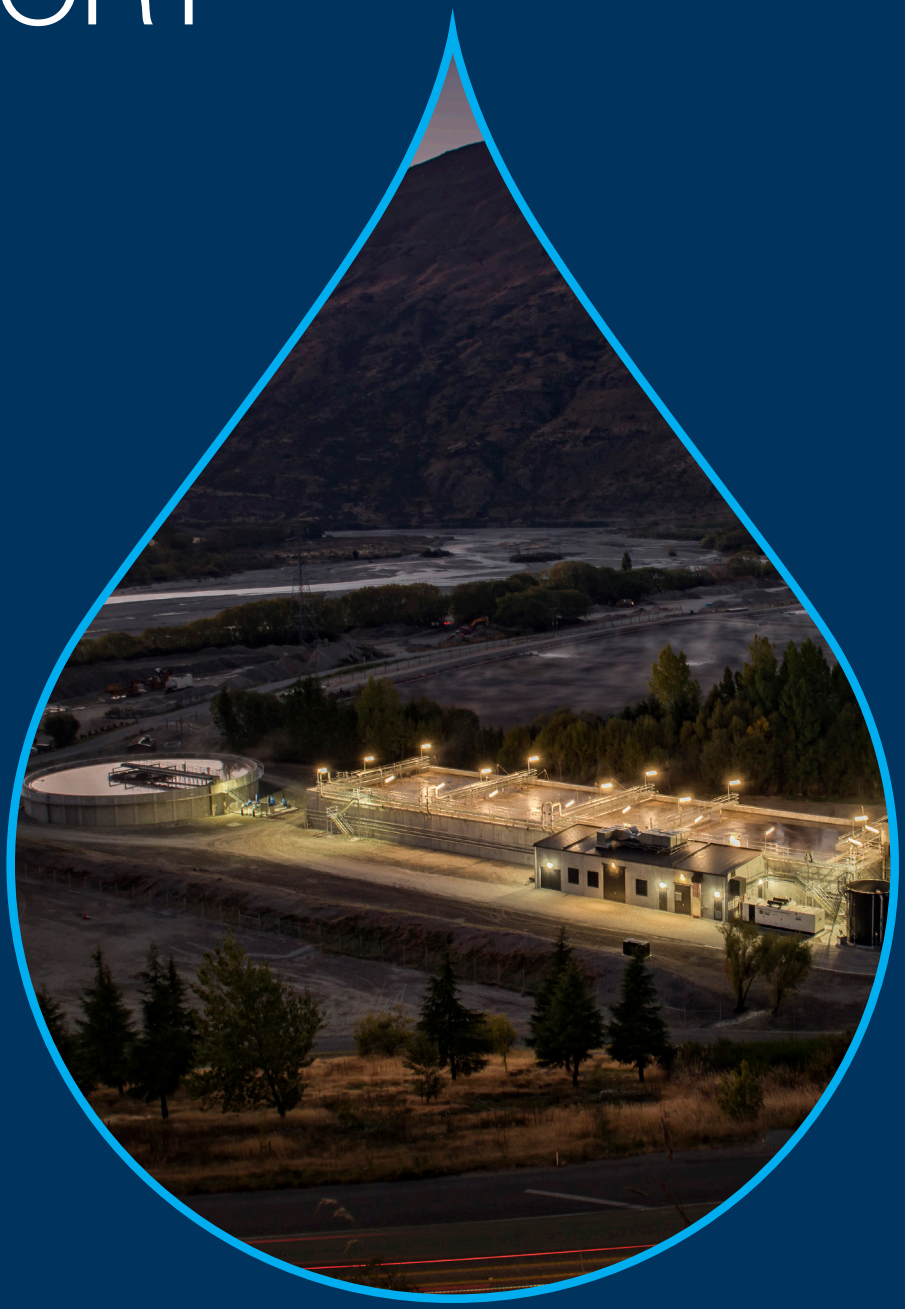
WASTEWATER BYLAW

NEW BYLAW DETERMINATION REPORT



QUEENSTOWN LAKES DISTRICT COUNCIL

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1. SUMMARY OF KEY FINDINGS

Wastewater is generally composed of toilet waste, household grey water (i.e. from kitchens, bathrooms and laundries) and liquid wastes produced by commercial and industrial businesses, the later known as trade waste as it is discharged from trade premises.

There are a number of contaminants, i.e. rags and building materials that are discharged into the wastewater network that are not listed in the current Trade Waste Bylaw, 2014. These contaminants are known to have caused sewer overflows and need to be prohibited from entering the sewer network.

The wastewater network enables the protection of public health and the receiving environment by conveying wastewater from its source to a treatment plant where it is treated to an acceptable standard before being discharged safely to the receiving environment or reused for beneficial purposes.

Uncontrolled overflows can impact local communities through offensive odours, discharge of contaminants to the receiving environment causing elevated public health and safety risks and adverse water quality and ecological impacts.

A bylaw is considered the most appropriate way of managing problems associated with the expansion and maintenance of the wastewater network and placing controls on substances/contaminants prohibited to be discharged into the network.

This investigation determines that the most appropriate option to regulate activities and inputs into the wastewater network is by way of education and a bylaw. It is proposed that such a bylaw control those activities that have an adverse impact on the operation of the wastewater network and the discharges from it. Doing so, will protect health and safety as well as improve the council's ability to comply with requirements under the Resource Management Act 1991.

It is also recommended that educational activities are delivered in a manner that will manage specific issues in a way complimentary to bylaw compliance monitoring and infrastructure development initiatives.

The form of the bylaw proposed is to have wastewater included as part of an *Integrated Three Waters Bylaw* that incorporates the three waters, namely water supply, trade waste and stormwater. It is also proposed that such a bylaw would be supported by an *Administrative Manual* as an efficient on-going management approach.

2. INTRODUCTION

2.1 Purpose of the Report

The purpose of this report is to determine whether the Queenstown Lakes District Council include provisions for the management of wastewater in a bylaw.

It is proposed that any new wastewater bylaw will be part of a new *Integrated Three Waters Bylaw* that also includes water supply, trade waste and stormwater.

Under section 155 of the Local Government Act 2002 (LGA), the council must, before commencing the process for making a bylaw, determine whether a bylaw is the most appropriate way of addressing the perceived issues. Accordingly, this report is titled a "Determination Report".

The bylaw would be made under the authority of the LGA for the purpose of ensuring that the wastewater network is managed in such a manner that it promotes a sustainable urban drainage system approach that:

- Safeguards public health, property, and the environment in order to minimise the impact of environmental pollution.
- Manages and protects the council's wastewater network from misuse or damage.
- Prevents the unauthorised discharge of wastewater to any receiving environment.
- Gives effect to Queenstown Lakes District Council's obligations under the National Policy Statement for Freshwater Management (NPS-FM), the National Environmental Standards and Regional Plan rules and aligns freshwater outcomes with the Otago Water Quality Strategy and the Urban Water Quality Principles (see Appendix B and C in the Cover Report).
- Ensures the Queenstown Lakes District Council meets its obligations under the Resource Management Act 1991.

Under section 155 of the LGA, council must, before commencing the process for making a wastewater bylaw, determine whether a bylaw is the most appropriate way of addressing issues relating to:

- Protecting the wastewater network and associated infrastructure, including ensuring adequate access to the network for maintenance and operations, and managing infiltration and inflow from poor connections.
- Stipulating and monitoring the quality of wastewater discharges, managing the impacts on the wastewater treatment plant, and consequent compliance with regional consents in relation to current and future discharges to land or water.
- Managing connections to the wastewater network, including identification of the point of discharges and wastewater servicing areas, and managing disputes over responsibility for maintenance and repair.

The bylaw is required to be in a form that is unlikely to give rise to any implications under the New Zealand Bill of Rights Act 1990.

2.2 Background

Many of the district's towns are located alongside lakes and rivers. Historically council's wastewater networks were designed to gravity feed wastewater to the low points, being the lake edges. At these low points pump stations move the wastewater through a series of pressure and gravity mains to other pump stations and eventually to our wastewater treatment plants.

Over time, as the population has increased, the capacity of these mains and pump stations have increased to align with growth. As a result, significant volumes of wastewater pass alongside our lakes and waterways. Council needs to manage these existing, expensive capital works in a way that responds to the broad range of cultural, social, economic and environmental values as required under the LGA.

The wastewater network enables the protection of public health and safety of the wider community and environment.

Wastewater is generally composed of toilet waste, household grey water (i.e. from kitchens, bathrooms and laundries) and liquid wastes produced by commercial and industrial businesses known as trade waste.

Rainwater is able to penetrate the wastewater network through manholes, inappropriately constructed drains and illegal connections which could cause the network to become hydraulically overloaded during heavy rain fall events and for overflows to occur.

2.2.1. Council's Wastewater Infrastructure

Queenstown Lakes District Council provides a reticulated wastewater service to approximately 21 660 residential and approximately 2893 non-residential properties in the district.

An average volume of 14 521 m^3 of wastewater is produced in the district daily. The wastewater travels through the wastewater network via approximately 551 km's of wastewater pipe and requires 65 pump stations to move the wastewater to 5 wastewater treatment plants.

Once at the treatment plant the wastewater is treated using biological treatment processes. The treatment process requires the wastewater to be treated to a standard that complies with council discharge consent limits as set out by Otago Regional Council. Project Shotover in Queenstown and Project Pure in Wanaka are significant wastewater treatment facilities in the district.

Appendix D of the cover report provides a more detailed description of key parts of the wastewater network.

3. RELEVANT LEGISLATION AND POLICY

The 1974 and 2002 Local Government Acts provide the council with general powers for the management of council assets, including the wastewater network.

Under the Resource Management Act 1991 (**RMA**), regional councils are primarily responsible for discharges of contaminants to water, land and air and for the effects of discharges on the environment.

The council is required to hold discharge consents (issued by the Otago Regional Council) for the discharge of contaminants from the wastewater network, i.e. wastewater overflows and controlled discharge of treated wastewater to the receiving environment.

To meet its compliance requirements, the council is required to have adequate management practices in place to ensure rules and procedures are formalised for those connected to the network.

There are a number of other relevant laws and policies relating to the management of wastewater. The most relevant ones that have been assessed as part of this investigation are summarised in Appendix C of the Cover Report.

4. METHODS

To determine whether implementing an integrated bylaw is the most appropriate way of dealing with wastewater problems, staff considered the following:

- Issues raised relative to wastewater pollution through the service request system as well as e-mail complaints received directly from the public.
- Through consultation with stakeholders, including local businesses when reviewing the Trade Waste Bylaw 2014[1]
- Review of other council approaches, most notably the Palmerston North Integrated Three Waters Plan 2018 and Wastewater Bylaw 2019.
- Input from council's legal advisors, Meredith Connell, and Stantec, the council's technical review consultants.

4.1 Wastewater Management Objectives

The following core objectives have been identified to ensure for the provision of an effective and efficient public wastewater network. These objectives have been developed to align the outcomes of this investigation with its business strategy and key legislative requirements.

1. To protect the wastewater network from damage, misuse and interference.
2. To enable the council to meet relevant objectives, policies, standards and resource consents for discharges from the wastewater network.
3. To protect the land, structures and infrastructure of the wastewater network.
4. To protect public health and safety.
5. To prohibit a range of specified substances/contaminants being discharged to the wastewater network, consistent with the schedule of prohibited trade wastes.

5. THE PERCEIVED PROBLEMS WITH WASTEWATER MANAGEMENT

5.1 Development and Maintenance of the Wastewater Network

Under the RMA, regional councils are responsible for controlling discharge of contaminants to land, air and water and for the effects of discharges on the environment. They do this by requiring the council to obtain resource consent to discharge. For the council to cost effectively meet its resource consent conditions it needs a wastewater network that is functioning well and a management approach that keeps it functioning well over time.

During the land development process, the council works with private developers to expand the wastewater network to meet new development needs. It does this through the vesting of private assets into public ownership through development approvals.

Having requirements that are responsive to new technology and other design innovation without being overly rigid helps the council to ensure the assets it vests in public ownership will enhance network performance and reduce the risk of blockages.

[1] Issues were raised that related to management of the wastewater network

The council has a range of existing powers, including the power to require private connections to be approved under S.467 of the Local Government Act 1974. The council uses the Queenstown Lakes District Council Land Development and Subdivision Code of Practice (2018) based on New Zealand Standard NZS 4404:2004, with additional guidance for local conditions as the standard for developers.

The status quo is effective within the scope of the existing regulatory tools, however there is an opportunity to broaden and improve regulatory functions and bring the district into line with others who regulate this function under a bylaw. Doing so would provide the council with enhanced powers of enforcement where it suspects a breach of the bylaw has occurred.

For some works and dangerous activities in close proximity to the wastewater network that are not part of land development activities, there may not be any controls in place currently. For example, setting restrictions of excessive loads over public infrastructure in a bylaw is one way to reduce risks of blockages and other forms of infrastructure failure.

5.2 Protecting the Wastewater Network from Harmful Discharges

To ensure the efficient operation of the wastewater network, in alignment with the council's obligations under the LGA and reduce the risk of discharges entering the receiving environment the council must control what is discharged into the network.

To determine if implementing a bylaw to manage wastewater is the most appropriate way of dealing with the problems, analysis was undertaken of wastewater overflows that have occurred between 2015 and 2018 – including their associated causes.

Network obstructions are generally caused by:

- Fats, Oil, and Grease (FOG): FOGs solidify within drains, either in isolation or in combination with other foreign objects or tree roots.
- Foreign objects (personal items): Sanitary items and wet wipes are common examples of personal items that could cause blockages in pump stations when pump impellers block. Impellers are the rotating part of a centrifugal pump designed to move a fluid by rotation. Impellers are not able to chop up foreign objects and instead they block the pump.
- Foreign objects (building materials): By-products generated by residential and commercial construction activity, such as timber, asphalt and concrete can enter the network through exposed drains and manholes. These by-products can be too large to fit through the pipes or too heavy to flow under gravity and obstruct the pipes.
- Tree and plant roots: Roots can penetrate pipework through joints, restricting flow and trapping FOGs and foreign objects.
- Dipped or broken pipes: Broken or dipped pipes trap foreign objects that create blockages.

Figure 3 below illustrates a number of these matters.

Obstructions in the network will restrict the flow of wastewater, resulting in a build-up of pressure which is eventually released via an uncontrolled overflow. Overflows due to blockages typically exit the network from manholes, gully traps and pump station sites upstream of the blockage.

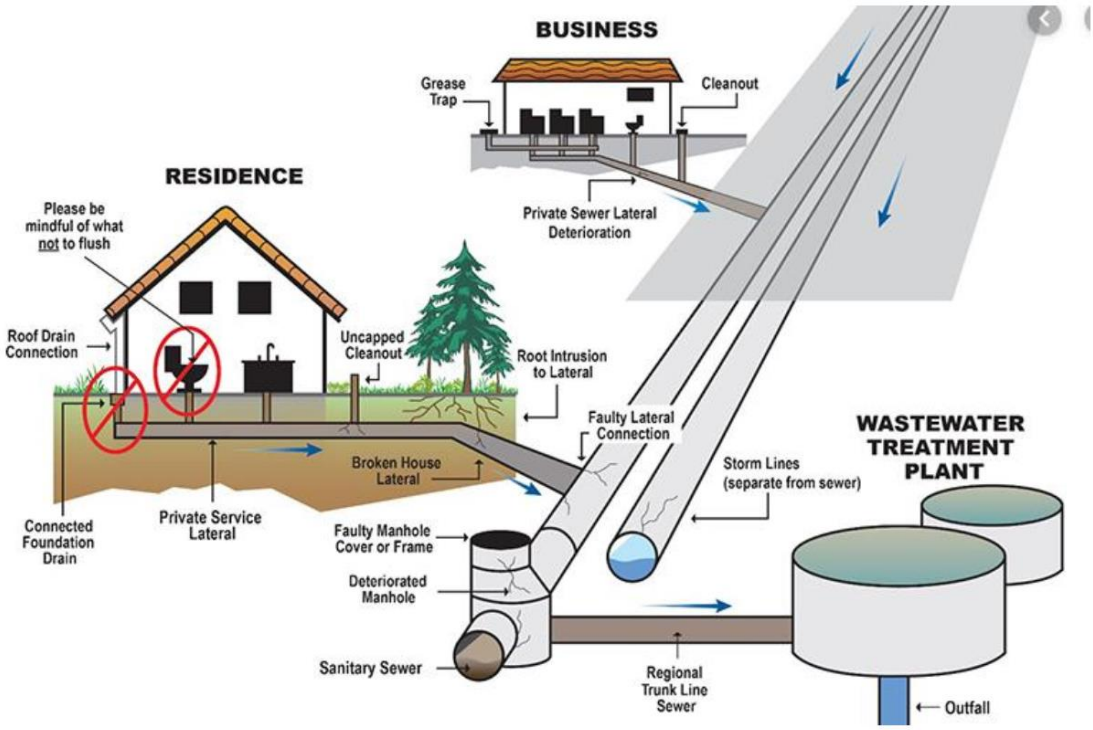

Figure 3: An illustration of how various components of the wastewater network relate to each other and how obstructions can enter the network.

To reduce the amount of wastewater overflows the following key steps need to be taken:

- Prevent foreign objects and excess kitchen fats entering the wastewater.
- Restrict the type of trees that are planted within close proximity to the wastewater pipework.
- Ensure the network is appropriately designed, adequately sized, well-constructed, and appropriately operated.
- Prevent works or dangerous activities (such as the placement of excessive loads) over or in close proximity to the network.

The impacts of wastewater entering the receiving environment has been summarised in Figure 4 from the Ministry for the Environment's Sustainable Wastewater Management Handbook 2003.

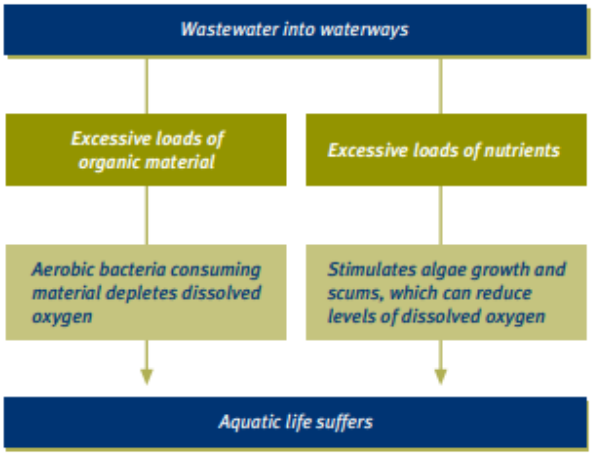

Figure 4: The effects of organic material and nutrients released into waterways

Currently the council uses education and targeted initiatives to manage what is discharged to the wastewater network. These targeted initiatives include face to face meetings (if the source of contamination is known), social media platforms, and the Scuttlebutt.

WE ALL HAVE A PART TO PLAY

Wastewater flows easily through the pipes when only human waste and toilet paper is flushed, and when only soapy water is put down the drain. You can take steps to help reduce wastewater overflows in our district.

SO WHAT HAPPENS WHEN OUR WASTEWATER DOESN'T FLOW EASILY?

When blockages and breaks occur, the flow of wastewater is restricted. This can result in a build-up of pressure in our pipes and can cause wastewater to back up. Sometimes this wastewater back up results in an overflow into our environment, typically out of manholes or at our pump stations.

If these overflows can't happen at a pump station or from a manhole there is a risk that wastewater will release back up through our toilets, showers and sinks. This exposure to wastewater could affect our health and wellbeing.

WHAT'S SAFE TO PUT DOWN THE SINK, OR TOILET?

Flushing anything other than pee, poo and paper can cause pipe blockages, so does putting fats and oils down the sink. If you're not sure, here's a simple checklist of what's safe to put down the sink or toilet:

- Water
- Human waste
- Toilet paper
- Soaps
- Food
- Fats
- Sanitary items
- Wet wipes
- Building materials
- Hazardous liquids (including garden chemicals)
- Unused medication

WHAT ELSE CONTRIBUTES TO BLOCKAGES AND BREAKS?

Blockages can also be caused when cafes and restaurants pour fats down the sink. We're working with businesses on ways to better manage the way that fat and other trade wastes are disposed of to reduce the likelihood of blockages occurring.

Breaks in our wastewater pipes are also caused by tree roots. Before planting large tree varieties, you can ask us for information about the location of pipes to help to avoid this.

WHAT ABOUT STORMWATER DRAINS?

We've all heard stories of people who wash out their paintbrushes or construction waste into a stormwater drain. Cigarette butts and hazardous liquids like motor oil and radiator fluid are a big no no.

The only thing that should go down stormwater drains is rainwater.

INTEGRATED THREE WATER BYLAW

High growth in our district means more water is being used, more sewerage needs catered for and more education is required to ensure businesses, residents and visitors know how to do the right thing to protect our environment.

Currently we have an existing Water Supply Bylaw 2015 (due to be reviewed in 2020) and a Trade Waste Bylaw 2014 (due to be reviewed this year). We've also recently identified the need to introduce a stormwater and wastewater bylaw to cater for increased demand on infrastructure.

Integrating these bylaws would allow us to take a more holistic approach to providing safe drinking water, keeping our lakes, rivers and environment clean and looking after our infrastructure.

Over the past month we asked for your ideas to feed into a proposed integrated Three Waters Bylaw. We're working through this feedback now and will share more about next steps in the December Scuttlebutt.

To read more head to **letstalk.qldc.govt.nz/proposed-3-waters-bylaw**

Figure 5: Educational material used to manage what is discharged to the wastewater network[2]

[2] Scuttlebutt October/November 2019

OPTIONS FOR ACHIEVING OBJECTIVES

There are a number of available mechanisms for achieving the council's objectives. Amongst other things, these include: rates, regulation, grants, services, information, education and consultation, financing and contracting, as well as political reforms[3]. The council has identified the following three options to deliver improved wastewater management outcomes in alignment with the objectives earlier outlined, these include:

A: Status quo
Compliance monitoring under existing legislative powers and regulations, such as the LGA, the Building Code 2004, the district plan and other bylaws (but with no wastewater bylaw).

B: Education
Increasing awareness to change behaviour using a programme of educational outreach, industry guidelines and targeted programmes to improve outcomes.

C: Managing wastewater through a bylaw which may be achieved as part of the *Integrated Three Waters Bylaw* and *Administration Manual*- regulating through rules, codes or practice, licensing and permitting.

Options such as capital investment in infrastructure or new services that improve treatment and storage to avoid, remedy or mitigate harms are not included in the assessment. These investment decisions are managed through the annual and long-term plan and the 30 year infrastructure plan.

These options are each evaluated in the following table.

6. RESULTS

The following table outlines the results of an assessment of the perceived and actual problems facing wastewater management. An analysis of the strategic context, including outcomes sought and relevant legislative and policy directives is also included where it supports the determination of which approach is the most appropriate.

The overall recommendation is to adopt Options B and C. The cover report outlining the approach of an *Integrated Three Waters Bylaw*, supported by an *Administrative Manual* further sets out the rationale for this proposal.

[3] Watercare Services Limited. (2012). *Trade Waste Bylaw 2012 - Determination Report.* Auckland.

Perceived Problem	*Outcomes Sought*	*Legislative and Policy Alignment*	*Options analysis*	*Recomm-ended option/s*	*Reason*	**Considerations about the form a bylaw should take**
1. How can the council develop and maintain an effective wastewater network?	- Sustainable growth and enhancement of the wastewater network - Protect services from damage	**- LGA** – cost effective delivery of council services and infrastructure development	- Option A relies on continued use of regulatory tools with limited scope, for example the Building Act's focus on building work or the RMA's focus on discharges from the network. - Option B is desirable in order to promote public behaviour that protects services from damage. - Option C allows the Council to develop bylaws that address the full of relevant matters.	Option C	- Efficiencies can be gained with enhanced compliance monitoring and issue resolution using the prescribed methods outlined in the LGA - A bylaw can consider activities outside of the development process (e.g. permitted activities or activities exempt from the need for building consent)	- Under an Integrated Three Waters Bylaw, maintenance of the relevant chapters in the code of practice will require a decision pursuant to the bylaw. This can be delegated to a council manager as the code of practice is reviewed by the council to minimise administration overhead.

2. How can the council effectively protect the wastewater network from harmful discharges?	- Protect wastewater systems from obstructions and debris - Reduce the impacts of heavy rainfall events causing untreated wastewater to be discharged to the receiving environment - Reduce the incidence of unauthorised discharges into the wastewater network	**- LGA – protecting infrastructure from damage, misuse, or loss** **- RMA/NPS-FM** - receiving environment and Sustainable management **- The Otago Urban Water Quality Strategy** – deliver activities that will achieve the desired water quality outcomes **- Otago Regional Water Plan** – Plan change 6A – stormwater discharge management to protect streams and water bodies **- Urban Water Principles** -designed to mitigate the adverse effects of urban areas on water ecosystems and resources **- Environmental Management Plans -** protect environmental values from land development activities	- Option A relies on continued use of regulatory tools with limited scope, for example the Building Act's focus on building work or the RMA's focus on discharges from the network. - Option B is desirable in order to promote public behaviour that protects the wastewater network from harmful discharges. - Option C allows the Council to develop bylaws that address the full of relevant matters.	Options B and Option C	- Although infringement powers under the RMA provide a stronger deterrent, the evidence-base requirements for enforcement action under the RMA are outweighed by the benefits of faster investigations and cost recovery under the LGA - A bylaw provides a well-recognised mechanism for monitoring and investigating activities and behaviours that can result in harm to the wastewater network - Action pursuant to a bylaw can complement other actions, including education campaigns (which deal with social norms), district plan and resource consent monitoring (which deal with	- To ensure compliance with the New Zealand Bill of Rights Act 1990, a risk-based approach should be adopted with the ability to add controls as issues arise in specific areas through enabling clauses in the bylaw. - The bylaw, any associated Administration Manual or code of practice can provide the processes and guidance that the public need to ensure a fair and reasonable approach is adopted by the council in its compliance monitoring. This should be clearly laid out in the statement of proposal so that the public can be certain about what enforcement to expect to achieve the outcomes sought.

					effects) and the Building Act which deals with drainage standards - Education and guidance is recommended to prevent inappropriate activities and behaviours	

6.1 New Zealand Bill of Rights 1990

No bylaw may be made which is inconsistent with the New Zealand Bill of Rights Act 1990. In broad terms there is nothing about having a wastewater bylaw that raises concerns in this regard. However an evaluation of consistency can only be made properly once the specific provisions of the bylaw are proposed.

7. RECOMMENDATIONS

This investigation recommends that a wastewater bylaw is the most appropriate tool to support the provision of an effective and efficient wastewater network.

The following wastewater bylaw objectives have been developed to align the council with its business strategy and key legislative requirements, i.e. to meet its functional objective, which is to facilitate the provision of an effective, efficient and safe wastewater network:

1. To protect the wastewater network from damage, misuse and interference.
2. To enable the council to meet relevant objectives, policies, standards and resource consents for discharges from the wastewater network.
3. To protect the land, structures and infrastructure of the wastewater network.
4. To protect public health and safety.
5. To prohibit a range of specified substances/contaminants being discharged to the wastewater network, consistent with the schedule of prohibited trade wastes.

The form of the bylaw will be developed further in the next phase, with general controls to apply across the district, with a risk-based approach to specific activities and behaviours.

It is recommended to have wastewater included as part of an *Integrated Three Waters Bylaw* that also incorporates the three waters, namely water supply, trade waste and stormwater. It is also proposed that such a bylaw would be supported by an *Administrative Manual* as an efficient on-going management approach.

The bylaw (being Option C above) should be complimented with an education programme (being option B above) that raises awareness of the contaminants in the trade waste schedule and other matters pertaining to the efficient and effective operation of the wastewater network.