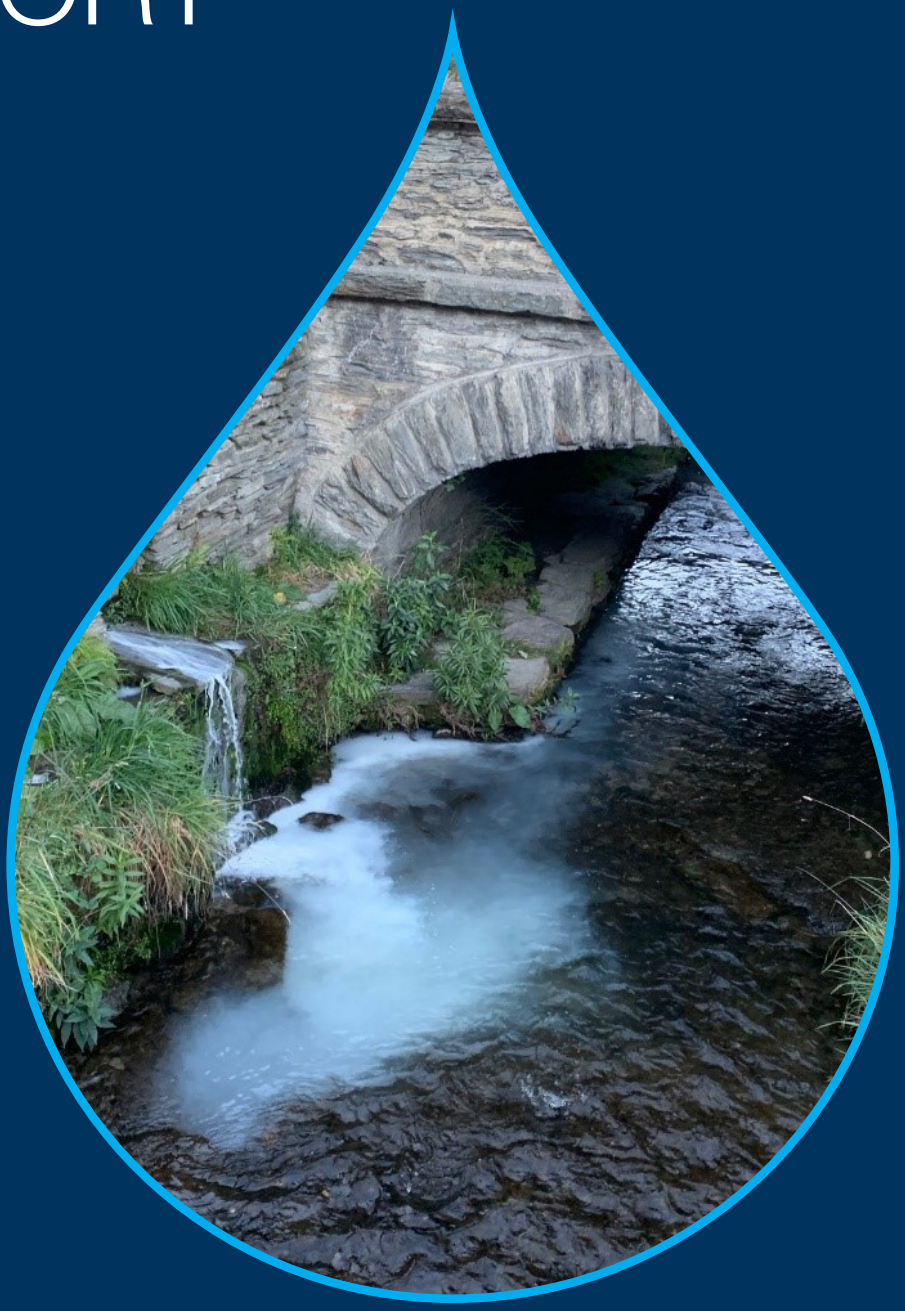
STORMWATER BYLAW

NEW BYLAW DETERMINATION REPORT



QUEENSTOWN LAKES DISTRICT COUNCIL

QUEENSTOWN LAKES DISTRICT COUNCIL

CONTENTS

1. SUMMARY OF KEY FINDINGS

The Queenstown Lakes District Council stormwater systems are made up of built infrastructure and the natural environment on public land.

These systems are under pressure from:

- Low levels of awareness about the cumulative impacts of harm to the system (including the natural receiving environment) caused by inappropriate and illegal activities.
- Increased population growth, associated contaminant loads, a reduction in permeable land surfaces to support ground-water recharge and unstable weather patterns increasing the risk of inundation.
- Industrial activities in outdoor areas elevate the risk of harm from contaminants entering the stormwater system.
- Private stormwater systems that are illegal, not performing to the standards required by the Building Act 2004 due to a lack of maintenance or inappropriate activities occurring in close proximity to private and public infrastructure.
- The need for tailored responses in particular catchments where there is a particular threat, as indicated through the relevant catchment management plan.
- Overflows from the wastewater network entering the stormwater system.

Pursuant to section 155(1) of the Local Government Act 2002 (**LGA**), a bylaw is the most appropriate way to:

- Manage the development and maintenance of the stormwater and land drainage network, and the land, structures, and infrastructure associated with that network.
- Protect the stormwater and land drainage network, and the land, structures, and infrastructure associated with that network, from damage, misuse or loss.
- Manage the use of stormwater systems, and the land, structures, and infrastructure associated with those systems, and provide the conditions on which connections to public stormwater systems may be made.
- Prevent interference with stormwater systems, and the land, structures, and infrastructure associated with those systems.
- Manage stormwater systems, and the land, structures, and infrastructure associated with that system, so as to protect the public from nuisance and promote and maintain public health and safety.
- Provide measures to support the management and enhancement of the natural part of the stormwater network.
- Ensure the maintenance and operation of private stormwater systems, the removal of redundant stormwater systems on private land and the management of hazardous materials to prevent damage to stormwater systems.
- Ensure compliance with future Otago Regional Council discharge consents.

The form of the bylaw proposed is to have stormwater included as part of an *Integrated Three Waters Bylaw* that incorporates the three waters, namely water supply, wastewater (including 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 council should include provisions for the management of stormwater in a bylaw.

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

Under section 155 of the 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.

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

- Manages and protects the council's stormwater system from misuse or damage and protects the public from nuisance.
- Safeguards public health, property, and the receiving environment in order to minimise the impact of flooding, erosion and environmental pollution.
- Prevents the unauthorised discharge of stormwater and the discharge of contaminants into the stormwater systems.
- Does not compromise the council's ability to comply with any applicable network discharge consents in the future.
- Ensures compliance with the council's land development and sub-division code of practice and catchment management plans.
- Gives effect to the National Policy Statement for Freshwater Management (NPS-FM), through policy set by the regional council and align freshwater outcomes with the Otago Urban Water Quality Principles (see Appendix B of the Cover Report).

2.2. Background

Stormwater runoff from built environments remains a significant challenge of modern water pollution control. This source of contamination is a major contributor to water quality impairment of waterbodies throughout the world. Chemical and microbial contaminants are captured within the stormwater as it runs over roads, rooftops, and compacted land. Stormwater discharges also pose a physical hazard to aquatic habitats and stream function, owing to the increase in water velocity and volume.

Given the shift of the world's population to urban settings, this trend is likely to alter the natural landscape to accommodate population increases, and therefore the magnitude of the stormwater problem is only expected to grow.

The legislation and relevant policy for stormwater management is complex and there are many overlapping and conflicting issues across the legislation from as far back as the Land Drainage Act 1908 to the general provisions in the Local Government Act 2002 and the government's current proposed reform of three waters management through the National Policy Statement on Freshwater Management. See Appendix C of the Cover Report for a more detailed analysis.

2.3. Council's Stormwater Systems

The council maintains seven public reticulated stormwater systems throughout the District – Queenstown, Wanaka, Arrowtown, Hawea, Glenorchy, Albert Town and Arthur's Point.

Other small settlements in the district, such as Kingston, Luggate and Makarora, have limited stormwater systems and generally rely on ground soakage and natural watercourses, swales and gullies for their disposal of stormwater.

In the above systems, the council provides a 368 km reticulated stormwater network to an estimated 23,630 residential and 2,056 non-residential properties in the district. The stormwater collects and travels through the stormwater system eventually discharging (presently untreated) into the receiving environment, i.e. water or land. Together the built infrastructure and natural environment make up the stormwater systems that the council manages.

Effective stormwater infrastructure management is important to ensure that contaminants don't get carried into our public waterways. Left unchecked, stormwater could have an increasingly adverse negative impact on the receiving environment, and could also lead to flooding and land instability.

The council is preparing catchment management plans for a number of rainfall catchment areas throughout the district. These plans will help determine the size and location of future stormwater infrastructure.

3. METHODS

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

- Issues raised relative to stormwater pollution through the service request system as well as e-mail complaints received directly from complainants.
- Through consultation with local businesses, in reviewing the Trade Waste Bylaw 2014[1] and other stakeholders.
- Using non-bylaw methods, i.e. social media platforms and other marketing channels to educate the wider community.
- Review of other council approaches, most notably the Palmerston North Integrated Three Waters Plan 2018 and Stormwater Drainage Bylaw 2015 and the Auckland Council Stormwater Bylaw 2015.
- Input from legal experts, Meredith Connell, and Stantec, the council's technical review consultants.

3.1. Stormwater Management Objectives

The following core objectives have been identified for the effective and efficient management and operation of the stormwater systems. These objectives have been developed to align the outcomes of this investigation with its business strategy and key legislative requirements.

1. To control the discharge of contaminants into the stormwater systems, to:
    - Enable the council to meet relevant objectives, policies, standards and future resource consent conditions for discharges from the stormwater systems to the receiving environment.
    - Protect the land, structures and infrastructure of the stormwater systems.
    - Prevent the unauthorised discharge of stormwater into the stormwater systems.
2. Define the obligations of the council, installers, owners and the public in matters related to the discharge of stormwater and management of the stormwater systems.

4. THE PERCEIVED PROBLEMS WITH STORMWATER MANAGEMENT

In the past, stormwater run-off was only considered to be a concern because it could cause flooding and erosion and lead to land instability. Now, stormwater is acknowledged as a major source of pollution (contamination) in the world's waterways.

The following outlines the perceived problems that have been identified by the council

4.1. Development and Maintenance of Effective Stormwater Systems

Stormwater runoff is water from rain that does not immediately infiltrate into the ground and flows

[1] Issues were raised that related to management of the stormwater systems

over or through natural or man-made storage or conveyance systems. When undeveloped land is converted to land uses with impervious surfaces such as roofs and sealed roads and yards, the natural hydrology of the land is altered and can result in increased surface runoff rates, volumes and contaminant loads. The council controls land use using its district plan.

Under the Resource Management Act 1991 (RMA), regional councils are responsible for controlling discharges of contaminants to water and for the effects of discharges on the environment. They do this by requiring the council to obtain resource consent to discharge. To meet future resource consent conditions and other requirements as laid out above, the council needs a stormwater management system that functions well, i.e. includes erosion control, avoids property damage, protects public health and safety and the receiving environment. At this stage the council has no commitment to any stormwater discharge consents, however this could change in the near future due to impending plan changes.

During the land development process, the council works with private developers to expand the stormwater systems 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 system performance.

The council has a range of existing powers, including the power to require private connections to obtain approval 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 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 other councils 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 and capture activities outside of the land development process (e.g. permitted activities or activities exempt from the need for building consent).

4.2. Protection of the Natural and Built Stormwater Systems

Development over or near stormwater systems can result in excessive loads or damage that can cause infrastructure to fail. The council relies on the land development code of practice to provide guidance to developers managing works in and around the stormwater systems.

Even every day activities, both business and residential, can cause harm to the stormwater systems (refer to Figure 1). These discharges are also likely to have an impact on ecologically important habitats that the local economy and society benefit from.

There are low levels of awareness about the cumulative impacts of harm caused by any inappropriate and illegal activities and there can also be neglectful behaviours. Stormwater may be contaminated by:

- Construction sites
- Motor vehicles, through oil and metals such as lead, copper, zinc washing off roadways
- Roof discharges containing dissolved metals (zinc, copper) or bitumen membrane products
- Soil, makes waterways cloudy, can silt them up and suffocate fish by clogging their gills

- Litter, such as plastic bags, bottles, cigarette butts and other street litter
- Herbicides, garden fertilisers, rotting garden clippings
- Detergent from car washing
- Domestic animal faeces
- Illegal and accidental spills or dumping into stormwater drains.

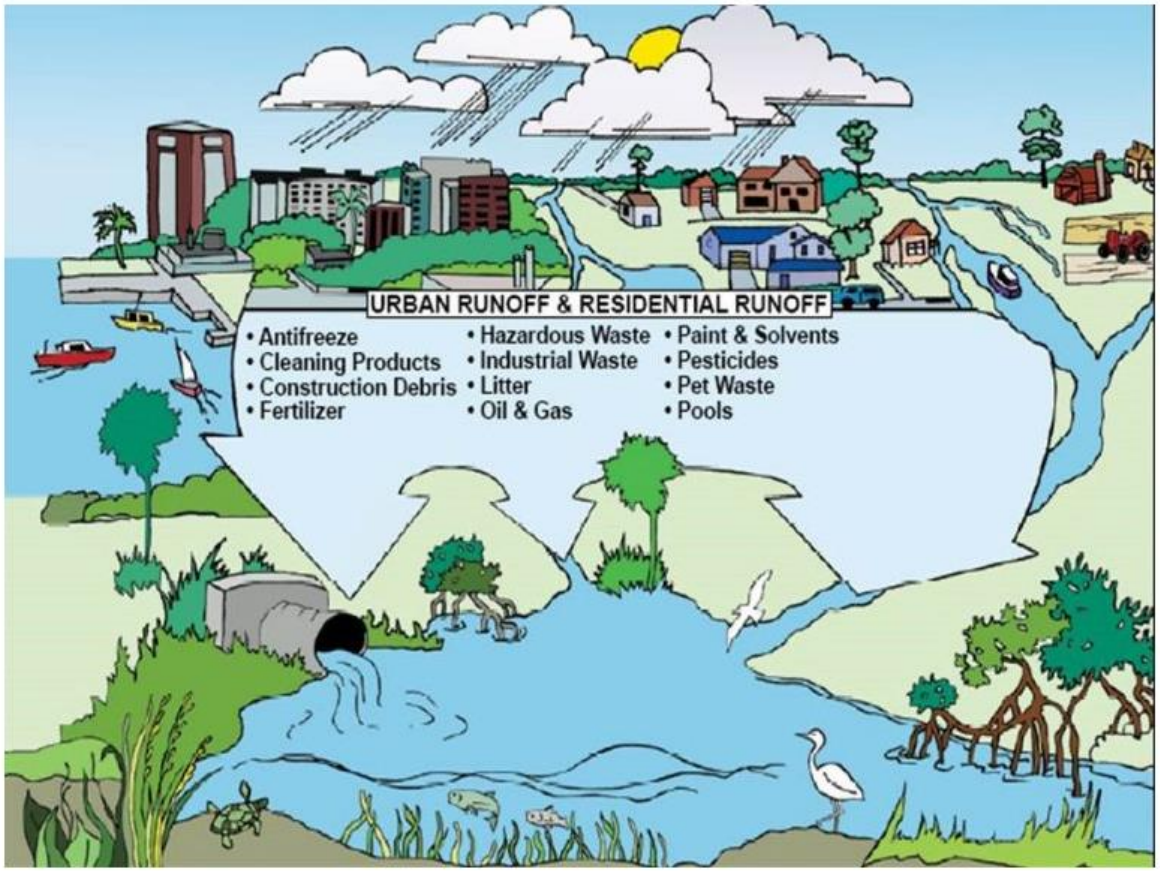


***Figure 1: Depicts an urban runoff stormwater situation**. Sourced from: sarasotabay.org/sarasota-bay/goals/water-quality-enhancement/*

Some 36 stormwater pollution related issues and complaints have been raised through the council's "Request for Service Portal" since the stormwater pollution / education required category was initiated in July 2018. Several complaints were also lodged directly to Trade Waste Officer via e-mail. Issues and complaints included some of the following discharges entering the stormwater system:

- Recycled restaurant cooking oil – commercial operator
- Grease trap overflow – commercial operator
- Paint wash water – unknown operator
- Vehicle washing - commercial operator
- Radiator fluid – commercial operators and the general public
- Building waste run-off from a skip - commercial operator
- Hydrocarbons from a gas station – commercial operator
- Used car oil - general public

- Mobile food trucks discharging wastewater directly to the stormwater system – commercial operators.

The stormwater related issues and complaints sent through to the council with regards to stormwater pollution events indicate some business activities being a significant risk to the stormwater system and the environments to which the stormwater is discharged.

Figure 2: Used motor oil poured into the stormwater system

Figure 3: Evidence of paint disposed down the stormwater system

Runoff from areas where industrial activities occur can contain toxic contaminants (e.g. heavy metals and organic chemicals) and other contaminants, i.e. debris, sediment, oil and grease. This contaminant load can impair waterbodies, degrade biological habitats and pollute ground water and drinking water sources.

Industrial facilities that usually perform their activities in outdoor areas are exposed to the elements, i.e. material storage and handling, vehicle fuelling and maintenance and the shipping and receiving of goods can result in contaminants being exposed to precipitation. In addition, accidental spills and leaks, improper waste disposal, and illegitimate connections to stormwater systems can cause exposure of contaminants to stormwater.

The types of industrial / commercial facilities that have the potential to be major sources of contaminants in stormwater are:

- Loading and unloading operations – These can include pumping of liquids from tankers to storage facilities. The movement of boxes, bags, drums and other containers by forklift or other material handling equipment. Material spills or losses in these areas can accumulate and be washed away during a rain event
- Outdoor storage – These activities include storage of fuels, raw materials, by-products and process residuals. Outdoor storage areas exposed to rainfall and/or runoff can contribute to contaminants entering the stormwater system
- Outdoor process activities – can result in liquid spillage and losses of material solids, which make associated contaminants available for discharge in runoff
- Dust or particulate generating processes – include industrial activities, i.e. aggregate handling that generates significant levels of dust that can be mobilised in stormwater runoff
- Cross connections and non-stormwater discharges – are process wastes or other contaminants that discharge to stormwater collection systems, instead of to wastewater/sanitary sewers. These discharges can be a significant source of stormwater pollution. Non-stormwater discharges include any discharges from the facility that is not generated by rainfall runoff, e.g. wash water from industrial/commercial processes
- Waste management practices include everything from landfills to waste piles to rubbish containment. The majority of trade premises conduct some form of waste management at their site, much of it outdoors which must be controlled to prevent contaminant discharges in stormwater.
- Wash-down facilities, especially where sediment is discharged and sediment traps/filters and other devices are not installed or appropriately maintained.

Unmanaged stormwater discharges may cause a range of adverse effects to the natural environment, for example increased or decreased stream flows, reduced groundwater recharge, and the discharge of contaminants into waterways and the receiving environment. Figure 2 and 3 encapsulates such matters in an urban situation.

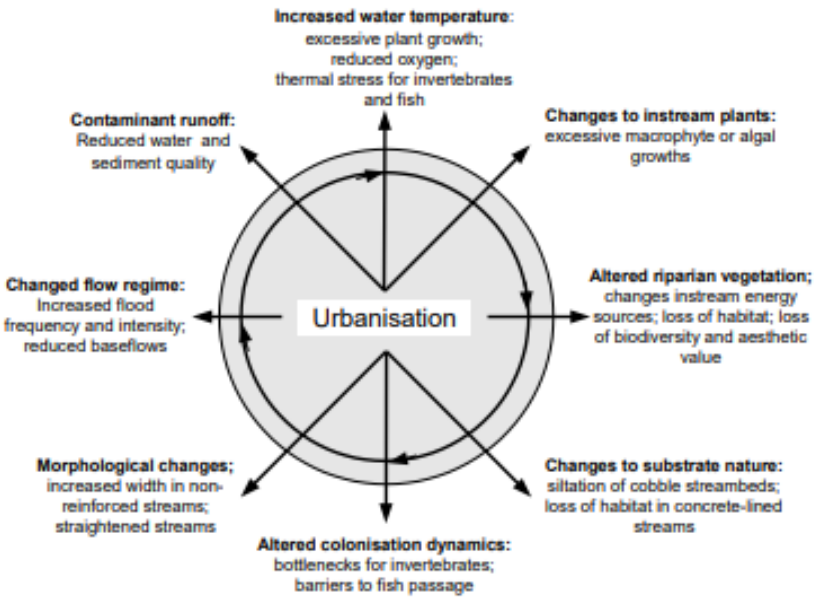


Figure 4: The effects of urbanisation on the freshwater environment[2]

The council uses its district plan to manage the above types of activities that can occur in the district, and its code of practice on subdivision development to ensure that the right devices are installed and where appropriate vested to council for on-going maintenance.

The council can also undertake education and targeted engagement with the community to increase environmental stewardship. This can be through its work with schools, businesses, developers or community groups.

4.3. Monitoring and Enforcement of Stormwater Issues on Private Property

When private stormwater devices, such as sediment traps and pipes are not maintained or not installed according to the council's requirements, they do not perform to the standards required. This can put increased cost and risk on the council to manage the problem, missing an opportunity to protect stormwater systems and manage discharges.

The Building Act 2004 requires maintenance or the replacement of non-performing devices. However,

[2] Freshwaters of New Zealand. Eds. J. Harding, P. Mosley, C. Pearson, & B. Sorrell. Chapter 35. NZ Hydrological Society & NZ Limnological Society. Caxton Press, Christchurch, N.

due to the nature and scale of the issues, the council cannot inspect all devices under that act. The inspection powers and ability to recover costs for addressing bylaw breaches under the Local Government Act 2002 provide an opportunity for the council to monitor private infrastructure where the risk of harm is likely to be high.

5. 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 options to deliver improved stormwater management outcomes in alignment with the objectives as earlier outlined, these include:

A: Status quo
Compliance monitoring under existing legislative powers and regulations, such as the LGA, the Building Code 2004, the Litter Act, the district plan and other bylaws.

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 catchment management plans, the annual and long-term plan and the 30 year infrastructure plan.

6. RESULTS

The following table outlines the results of an assessment of the perceived and actual problems facing stormwater 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 effective stormwater systems?	- Sustainable growth and enhancement of stormwater systems	**- LGA** – cost effective delivery of council services and infrastructure development - Queenstown Lakes District Council Infrastructure Strategy 2015-2045	- Option A relies on continued use of regulatory tools with limited scope, for example the standard powers in the LGA 1974 and LGA 2002, or subdivision standards. - Option B is not particularly applicable. - Option C allows the Council to develop bylaws that address the full of relevant activities and issues.	Option C	- Efficiencies can be gained with enhanced compliance monitoring and issue resolution using the prescribed methods outlined in the LGA	- 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 overheads

2. How can the council protect natural and built stormwater systems from harm?	- Protect stormwater systems from obstructions and debris that exacerbate the impacts of heavy rainfall events - Protect buried services from damage - Reduce the incidence of unauthorised discharges into the receiving environment	**- 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.	- 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 natural and built stormwater systems from harm. - Option C allows the Council to develop bylaws that address the full of relevant activities and issues	Option B and Option C	- Although infringement powers under the RMA provide a strong deterrent, these powers are primarily a responsibility held by the Regional council and not a power territorial authorities can use to control contaminants discharging to water. - A bylaw provides a well-recognised mechanism for monitoring and investigating activities and behaviours that can result in harm to stormwater systems - 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 effects) and the Building Act which deals with drainage standards.	- 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, subject to appropriate levels of public consultation. - The bylaw should only enforce activities that can be reasonably and fairly monitored. The council will need to consider its own obligations as a public open space manager and roading authority when considering the rules it sets in the next phase of the project.

		- **QLDC (EMPs) -** protect environmental values from land development activities			- A bylaw can also consider activities outside of the development process, i.e. the requirement to comply with a permitted activity standard that usually would not require a consent. - For low-risk activities, education and guidance is recommended so that enforcement activity under the bylaw can focus on higher-risk activities	

3. How can the council effectively monitor and enforce stormwater issues on private property	- Define the obligations of the council, installers, owners and the public in matters related to the discharge of stormwater and management of stormwater systems. - Producers take responsibility for managing environmental contaminants by managing them at source	**- RMA/NPS-FM** – Receiving environment and Sustainable management **- Building Act and Building Code**: The Building Act regulates plumbing and drainage	- Option A relies on the use of monitoring, investigative and enforcement powers associated with regulatory tools with particular focuses that may limit their usefulness, - Option B is desirable in order to promote public awareness of monitoring and enforcement and thus improved compliance. - Option C allows the Council to utilise the LGA 2002's monitoring, investigative and enforcement powers to assist in achieving compliance with the full range of matters relevant to stormwater management.	Option B and Option C	- The LGA provides effective compliance monitoring and enforcement powers and can complement existing powers under the RMA and Building Act to provide a complete solution to the majority of issues facing field staff seeking to implement the most practicable option.	- Care is needed to ensure that any bylaw does not conflict with any rule in the district or regional plan or a condition in any resource consent. This can be addressed by using explanatory notes and being clear that compliance with the bylaw can include a previous approval under the RMA or Building Act. - Any controls will need to be proportionate to the problem and where there is not strong evidence of a problem, some controls may be better introduced by enabling clauses in the bylaw once evidence is available.

6.1. New Zealand Bill of Rights Act 1990

No bylaw may be made which is inconsistent with the New Zealand Bill of Right Act 1990. In broad terms there is nothing about having a stormwater 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

In summary, this report determines that stormwater discharges are best managed through the use of a bylaw to protect the development and maintenance of stormwater systems and to control stormwater discharges on private and public lands in a manner which delivers on the council's commitments and aligns with council strategies and legislation.

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 five core functional objectives that have been identified to facilitate the provision of effective and efficient stormwater discharge in the region are to:

1. Control the discharge of contaminants into the public stormwater network.
2. Enable the council to meet relevant objectives, policies and standards for discharges from public stormwater systems.
3. Protect the land, structures and natural features that make up the public stormwater systems.
4. Prevent the unauthorised discharge of stormwater into public stormwater systems and ensure that private stormwater systems are not causing a nuisance or harm to the public system.
5. Define the obligations of the council, installers, owners and the public in matters related to the discharge of stormwater and management of stormwater systems.