

Trade Waste Bylaw Review – Gap Analysis Report

Introduction

Purpose of Gap Analysis

This report presents findings on the operation of the Napier City Council's (**the Council**) Trade Waste Bylaw 2014 (**Bylaw**).

The Bylaw was adopted on 16 December 2015 and came into force on 23 December 2015. The Bylaw will be automatically revoked in December 2022 in accordance with s 160A of the Local Government Act 2002 (**LGA**), therefore the Council is now required to replace the Bylaw with a new bylaw addressing trade waste issues in the City.

Given that trade waste is discharged into the wastewater system, the Council has also considered the advantages of incorporating the Wastewater Bylaw (which is also due to be replaced) and this Bylaw into one comprehensive document will allow council to take an integrated and consistent approach to the management of its network.

Scope of the Gap Analysis

The gap analysis covers the Bylaw but not the Wastewater Bylaw. A separate report covers the gap analysis for the Wastewater Bylaw. Problems with the current Bylaw have been identified and options are discussed at the end of the report.

Background

Wastewater is the liquid waste that has water as the largest component, along with various types of impurities like human waste and used water from premises including houses, offices, factories, schools, hospitals, and industrial sites. The discharges from industrial sites that contain used water, solids (except that from toilets or bathrooms) and chemicals are called trade waste.

Trade waste is any liquid that is discharged from a business process or trade premises to the wastewater network.

Trade waste comprises a significant part of the wastewater that is conveyed, treated and discharged into Hawke Bay by the Council, both in terms of volume and loads of contaminants, which are detrimental to the environment and can damage infrastructure. Industries contributing significantly to trade waste in Napier include meatworks, tanneries, rendering plants, wool industries, juice/beer/wine manufacturing, meat and fish processing, galvanizing, fat processing, swimming pools and car washes.

Trade waste is regulated differently to domestic wastewater. This is because compared to domestic wastewater, trade waste may contain higher concentrations of substances which could harm people's health or the environment, corrode and/or block wastewater pipes and other wastewater facilities, create odours or place extra demands on the City's wastewater treatment plant and result in non-compliance with the Council's own discharge consent. Some

trade waste is separated from the domestic streams and undergoes less treatment at the Council facility, so must be pre-treated if it contains high levels of contaminants.

Although approximately 20% of the flow through the Council's Wastewater Treatment Plant (WWTP) comes from industries, the loading of contaminants attributable to trade waste relative to domestic waste is at a much higher proportion.

The current bylaw includes a consenting regime for premises discharging trade waste to the Council network. Parts 3 and 4 of the current Bylaw outline how the council will consider applications for consent and the conditions that may be imposed on the consent holder, especially for "conditional" trade waste discharges. It is proposed that the new Bylaw should also incorporate a consenting regime, but that this should be improved to incorporate a wider range of businesses / industries and to include a charging system that fairly recovers costs from industries for use of the network.

The Bylaw

The purpose of the current Bylaw is to:

- Protect the water quality in Hawke's Bay.
- Give effect to the Council's obligations under National Environmental Standards and Regional Plan rules, and achieve compliance with the Council's resource consents to discharge wastewater into the environment.
- Protect the health, safety and wellbeing of people within the Napier district.
- Ensure that the Council can meet its obligations under the Resource Management Act 1991 (RMA) and the LGA.
- Protect the wastewater network (including the treatment plant) from substances that have a detrimental effect on its operation and asset life.
- Optimise the capacity of the Council's wastewater infrastructure and treatment assets.
- Ensure compliance with the Council's resource consent conditions.
- Provide a basis for monitoring discharges from industrial and trade premises.
- Encourage waste minimisation, cleaner production and water conservation.
- Allow for fair cost recovery from industries for use of the network.
- Achieve a holistic and efficient approach to regulating the wastewater network.

These purposes are consistent with the objectives in the New Zealand Model General Bylaws NZS9201: Part 23:2004 (referred to below).

Protecting the Wastewater Infrastructure

The Bylaw helps to protect the pipes, pumps, and all other assets which are crucial for removing, conveying and treating wastewater. This assists in avoiding blockages, overflows and failures which could cause pollution of the Ahuriri Estuary and is a priority for the community. Managing this system better may also result in a significant reduction in maintenance costs (e.g. a reduction in the time drainage staff spend flushing CBD sewers, which they currently do every weekend, and clearing blockages of industrial screens at the WWTP – often at weekends).

The WWTP is designed for a certain loading, and problems are caused when the different components are overloaded with certain contaminants.

Trade waste contaminants can have a detrimental effect on the microbial population of the plants resulting in effluent discharge from the treatment plant that does not comply with resource consent conditions, designed to protect the receiving environment. Once these microbes have been affected by toxic contaminants they may take several weeks to regain organic strength, i.e. Biological Oxygen Demand (BOD) and be able to treat wastewater to an acceptable level again.

Trade waste discharges that exceed the limits for BOD and fats oil and grease (FOG) may also have the following effect on the wastewater network:

- block wastewater pipes
- damage pumps
- cause odours and accelerated corrosion of the wastewater network
- overload treatment plants
- block milliscreens
- more costly to treat than domestic wastewater.

The table below presents more information about businesses which are not currently consented under the Bylaw, the risks that they can pose to the wastewater network and the pre-treatment options available to minimise their impact.

Type of business activity	Risk to the waste water network	Pre-treatment required
Food premises	<ul style="list-style-type: none"> • FOG can clog the sewer network • Risk to the Wastewater treatment plant – toxic waste and waste with a high nutrient load is more difficult to treat and requires additional aeration • Emerging contaminants in cleaning chemicals pose a risk to the receiving environment and biosolids 	<ul style="list-style-type: none"> • Grease trap • Sink screens
Dentists	<ul style="list-style-type: none"> • Amalgam from fillings contaminate the biosolids and should be recycled 	<ul style="list-style-type: none"> • Amalgam trap
Hairdressers	<ul style="list-style-type: none"> • Hair can tangle around pumps in the pump station and assist in causing sewer blockages that can lead to sewer overflows 	<ul style="list-style-type: none"> • Sink screens
Medical Facilities	<ul style="list-style-type: none"> • Risk to the Wastewater treatment plant – toxic waste is more difficult to treat and requires additional aeration • Emerging contaminants in cleaning chemicals pose a risk to the receiving environment and biosolids 	<ul style="list-style-type: none"> • Sink screens and plaster arrestors

Car/truck washes	<ul style="list-style-type: none"> Hydrocarbons/grit High water users can cause capacity issues in the Public Wastewater System, particularly during wet weather Emerging contaminants in cleaning chemical pose a risk to the receiving environment and contaminate the biosolids Solvents and used oil pose a risk to the Public Wastewater System if not stored correctly and requires to be collected for recycling purposes 	<ul style="list-style-type: none"> Oil/grit Interceptor
Automotive/mechanical	<ul style="list-style-type: none"> Hydrocarbons, oil and other solvents Solvents and used oil pose a risk to the Public Wastewater System if not stored correctly and requires to be collected for recycling purposes 	<ul style="list-style-type: none"> Oil / water interceptors
Laundries	<ul style="list-style-type: none"> High water users can cause capacity issues in the Public Wastewater System, particularly during wet weather Emerging contaminants, i.e. surfactants in washing powder and microfibres from fabrics pose a risk to the receiving environment and contaminate the biosolids 	<ul style="list-style-type: none"> Lint screens
Septic tank waste	<ul style="list-style-type: none"> Toxic waste can have a detrimental impact on the microbes that break down the waste in the wastewater treatment plant. 	<ul style="list-style-type: none"> Management of septic tanks
Funeral Homes	<ul style="list-style-type: none"> Wastewater from embalming process can be tapu and must be disposed of in alignment with cultural values of local Iwi 	<ul style="list-style-type: none"> Rakahore channel Education Cleaner Production Initiatives
Laboratories	<ul style="list-style-type: none"> Risk to the wastewater treatment plant – toxic waste is more difficult to treat and requires additional aeration Emerging contaminants in chemicals pose a risk to the receiving environment and biosolids 	<ul style="list-style-type: none"> Disposal of toxic substances by other means (not into the Public Wastewater System) Proper management of mixing of substances when disposing
Hotels	<ul style="list-style-type: none"> High instances of inappropriate substances being flushed into toilets. High loading on system which must be accounted for. High loading from swimming pools, restaurants and on-site laundry services must be managed according to the Bylaw and this Admin manual 	<ul style="list-style-type: none"> Management of guests and wastewater system Flow control for Discharges from swimming pool backwashes Grease traps (for restaurants) Lint screens (for laundries)
Swimming pools	<ul style="list-style-type: none"> High water users can cause capacity issues in the Public Wastewater System, particularly during wet weather Diatomaceous Earth 	<ul style="list-style-type: none"> Flow control for Discharges from swimming pool backwashes Settling tank

Legislative Framework

Section 146(a) (iii) of the LGA gives the Council the power to make bylaws for the regulation of trade waste. Section 148 sets out the requirements for making bylaws relating to trade waste.

The RMA and associated regulations, including the National Policy Statement for Freshwater Management 2020 point to increasingly stringent water quality standards.

The National Policy Statement for Freshwater Management (NPSFM) introduces the concept of Te Mana o te Wai. This refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. The NPSFM 2020 directs the Hawke's Bay Regional Council to establish objectives which describes how the management of freshwater in the region will give effect to Te Mana o te Wai.

The Hawke's Bay Regional Council's Regional Resources Management Plan (RMP) promotes the disposal of wastewater in a manner that avoids remedies or mitigates the adverse effects of contaminants entering surface waterbodies or coastal water, and includes standards and limits for the water quality of surface water bodies receiving contaminants, to prevent further degradation to water quality and promote improvements.

Napier City Council conveys, treats and discharges wastewater from the city into the Ocean, which is managed with a consent held with Hawke's Bay Regional Council. The *Coastal Permit to discharge domestic sewage and industrial waste water into Hawke Bay at Awatoto via a marine outfall (AUTH-118503-02)* contains various conditions which Council must comply with, including limits on contaminants and monitoring requirements at the outfall and in the wastewater treatment plans. The consent was initially granted in 2011 and granted by the Environment Court in 2012. It was reviewed in 2019 when QRMA conditions were added. It is due for renewal in 2036, but this may be brought forward if changes are made to the outfall pipe and pumping station.

The NZS 9201.23:2004 Model general bylaw - Trade waste provides a model for local authorities to use as the basis of a bylaw to regulate trade waste.

Problems with current trade waste management

In recent years, during monitoring and enforcement undertaken by Council officers, a number of problems with the current Bylaw have been identified:

- Limits are generic and only expressed in concentrations – this means that water conservation is currently penalised if it results in trade waste becoming more concentrated. It also means that there could be over-allocation of loading that the treatment plans can accept and that each discharge consent allows for. The lack of control over load allocations also makes it difficult for the Council to plan for peak loading times, seasonal variations and potential future upgrades.

- The bylaw currently provides no ability for the Council to have oversight of industries that, despite being lower risk may still adversely affect the network (i.e. those listed in the Table above). These may include industries whose contaminants are not measured or regulated yet, but may contain emerging contaminants (see section below).
- The main regulatory tool available to the Council is enforcement action, which has not been used to date, therefore confidence in the process is low. The fining provision has never been used and there are frequent breaches of trade waste consents with little consequences. The Council has preferred to take an educative approach rather than these heavy-handed options. Reasonable time periods have been granted to industries that need to improve pre-treatment, and the Covid-19 pandemic has also caused delays.
- Trade waste charges are low relative to the rest of New Zealand and the justification for these charges is unknown. It is very cheap to dump contaminants down the drain as trade waste and there are no real incentives to invest in better pre-treatment. It is likely that the Council is not accurately recovering the cost to convey and treat trade waste from businesses and therefore the ratepayers may be subsidising this. Businesses (that are not currently consent holders) in the same areas pay very similar or the same rates for wastewater, regardless of how much they discharge into the network, and how much Pre-treatment they do. Separate Bylaws control trade waste and wastewater, despite these waste streams both being managed by the same network and regulated by the same regional resource consent (CD090514Wa). The Wastewater Bylaw mostly duplicates information which is also covered in the Code of Practice. It is not considered to be an effective tool for regulating domestic wastewater and so is under-utilised.
- During heavy rainfall, the wastewater network can become inundated with rain water due to high levels of infiltration and inflow. In the short term, all flows into the wastewater network must be reduced as much as possible. Most industries reduce flows and even temporarily stop production when asked, but this needs to be mandated to help prevent serious flooding and damage to properties, both commercial and residential.

Additionally, a number of emergent issues have arisen that the Bylaw in its current form is ineffective at addressing, such as:

Emerging Organic Contaminants

While water quality investigations usually focus on nutrients, bacteria, heavy metals and priority contaminants (compounds with known health effects), recent research has identified the occurrence of many organic contaminants in wastewater that have impacted urban surface waters. These organic compounds are collectively referred to as Emerging Organic Contaminants (EOC's) and include compound classes, i.e. human and veterinary pharmaceuticals, hormones, antibiotics, surfactants, endocrine disruptors, x-ray contrast media, pesticides and metabolites, disinfectant byproducts and taste-and-odour compounds.

EOCs originate from products that are used in relatively small amounts. However, as they are used by many different individuals/businesses on multiple occasions, the cumulative amount released into the environment becomes significant.

EOCs are present in recently developed industrial compounds that have been newly introduced to the environment and other compounds that are commonly used, but their harmful eco-toxicological effects have only recently been determined. The toxic significance of these EOC's are difficult to assess and their accepted concentrations in drinking water and discharge limits for wastewater effluent have not yet been determined .

A recent paper by the Department of Internal Affairs has proposed that the current national water policy review set policy for EOC and related contaminants.

Besides discharges from chemical industries, the main source of EOCs released to the environment is from wastewater treatment plant effluents. A wide variety of EOCs are collected in the wastewater steam but not fully degraded and /or removed from the waste steam by traditional primary and secondary wastewater treatment systems. Biosolids and effluent from municipal wastewater treatment plants have been identified as the major source.

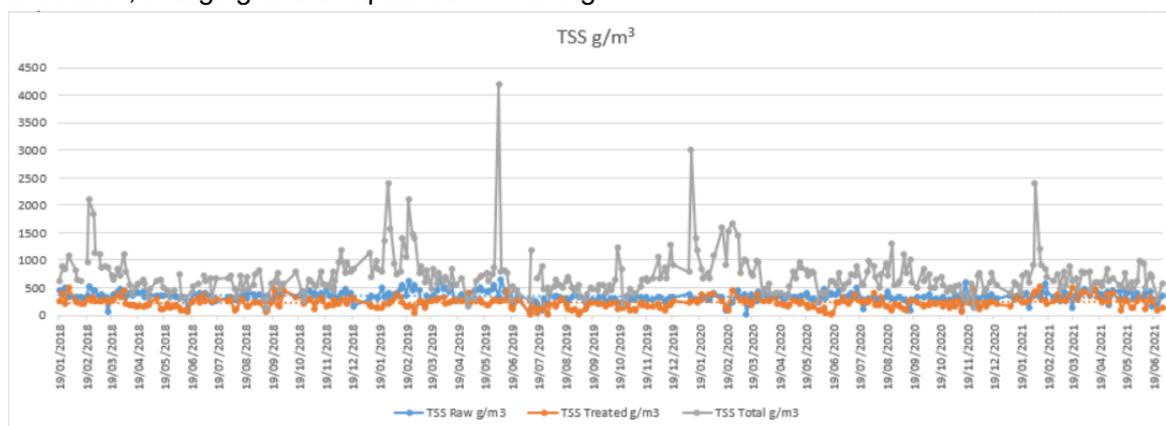
The Bylaw must allow for better regulation of EOCs to align with developments in the field.

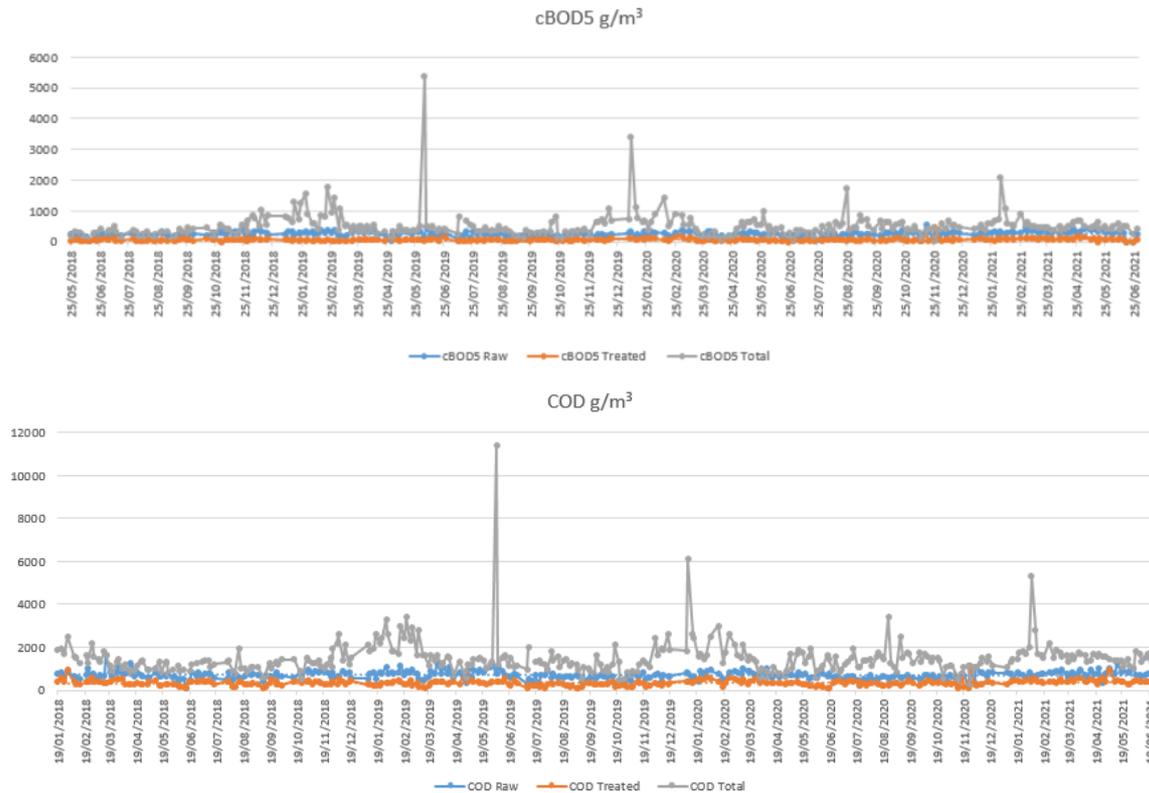
Consent Compliance

The Council holds a consent to discharge treated waste water into Hawke Bay from the Hawke's Bay Regional Council.

Shown below are graphs of Total Suspended Solids, carbonaceous Biochemical Oxygen Demand, and Chemical Oxygen Demand taken from the Napier City Council Waste Water Treatment Plant. 'Raw' denotes samples taken from the incoming effluent on the domestic line, 'Treated' denotes samples taken after the domestic stream has been treated by millicreen and Biological Trickling Filter, and 'Total' denotes the total combined stream of treated domestic plus industrial flows (currently only Awatoto industrial).

The difference between the Total line (grey) and the Treated line (orange) shows the contribution from Awatoto industries. It is clear that the peaks are coming from industrial flows. The Bylaw does not allow for sufficient management of this as no load limits are applied and provisions are not made for seasonal or daily peaks. A model being developed by consultants BPO would assist this, and the Bylaw must be simplified and allow for its use in allocation, charging and compliance monitoring.





SLR Consulting NZ Ltd have recently completed an independent performance review of the WWTP and noted the following key issues:

- The volume of wastewater being discharged is within consented limits, however the annual average amount of organic material (expressed as cBOD5) in what arrives at the Biological Trickling Filters, which treat the waste water by removing nutrients therefore reducing the cBOD5, exceeds consented limits.
- Industrial flows from the Awatoto Industrial Zone are contributing to this while the Pandora Trade Waste Pipe remains offline.
- Levels of ammonia and zinc in the wastewater are above consented limits.
- It is difficult to understand the exact source of these chemicals without testing every wastewater connection. However, the elevated ammonia and zinc likely comes from industrial sites in Pandora.
- The levels of suspended solids have consistently exceeded consented limits.
- The amount of FOG in the discharged wastewater occasionally exceeded consented limits.

More control over the quality of trade waste arriving at the WWTP will help to reduce these levels, but also allow the Council to assess whether any upgrades or expansion at the WWTP is required to meet consent conditions.

Pandora Industrial Pipeline

Trade waste from sites connected to the Pandora Industrial Pipeline is currently being diverted into the domestic stream as the pipe is blocked. Work is underway to unblock and recommission this pipeline, which will result in reduced treatment of this trade waste and may increase concentrations of the Total (grey line) levels on the graphs.

Various reports about the Pandora Industrial Pipeline by consultants Stantec in 2017 and then Beca in 2020 identify the need to improve the quality of trade waste being discharged into it. Control over trade waste quality and allocation of plant loading must be significantly improved before this pipeline is recommissioned to enable the Council to comply with its resource consent conditions.

Media Interest

Since July 2020, there has been considerable media interest in Trade Waste compliance, initially in Napier then on the wider national situation. The [first article](#) identified companies in Napier that had breached consent limits in the 12 months prior to the journalist's request. The [second article](#) focused on the whole of New Zealand, with data provided by 11 Councils initially, and more material was published after additional Councils released information due to involvement from the Ombudsman. The second RNZ article poses the question: "*How many have been slapped with fines? This reply follows: None. A legal loophole means Councils have no power to issue them, so are instead forced to take an "educative" approach with errant firms*". The issue with trade waste management is highlighted by spokespeople for the New Zealand Trade and Industrial Waters Forum, who claim that Bylaws and the legislation they sit under are not strong enough to properly enforce rules.

Liquid Waste (Tanker) Operators

A number of liquid waste (tanker) operators truck waste water and trade waste in Napier. Currently there is a paper docket tracking system at the WWTP but no information is taken or recorded about the contents of the loads being dumped. The septic tank disposal area discharges into the domestic stream and over the BTFs. There is risk that a tanker could dump a load that is toxic for the organisms in the BTFs and cause failure in the plant. There is also the risk that some operators are dumping illegally into areas of the network around the City. Service Requests have been received by the Council officers from members of the public observing suspicious behaviour of trucks. In other areas of the country, Liquid Waste Operators are issued their own trade waste consents and held responsible for the loads they convey and dump. There is also a national tracking system WasteTRACK, which ensures all tankers are code compliant and tracks their operations, introducing a level of automation for Council's monitoring. This allows better regulation and control, and helps to prevent illegal dumping which could cause issues in the waste water network or pollution events if dumped into stormwater.

Grease Traps

Industries and commercial properties that discharge high levels of fat, oil and grease (FOG) to the waste water network present significant risk of blockages and overflows. Currently, the CBD is flushed every weekend by the City Services Team to prevent build-up of fat bergs and potential overflows due to the fast build-up of high levels of FOG on a weekly basis. This presents significant cost to Council and significant risk to infrastructure and the environment. Premises discharging FOG should be classed in a trade waste category as pre-treatment is required, usually in the form of a grease trap. This would allow the Council more oversight and regulatory control, as well as the ability to recover costs incurred which does not currently happen. Grease traps must be correctly sized and maintained in order to work well, so

regulations, guidelines and monitoring is needed to prevent the Public Wastewater System being overloaded with these contaminants.

Early Consultation Completed

Industry – Current Consent Holders

Three workshops have been held in October 2021 with current consent holders to initiate conversations about prospective changes, including detail about the charging model that consultants BPO have been engaged to create. 18 attendees representing 16 sites holding current trade waste consents attended the workshops, with general agreement and support for the proposed changes. Some industries have previously voiced concerns about issues such as lack of incentives and rewards for good practise, lack of ability to allow for water conservation if trade waste is consequently concentrated, and inability to have large capital projects for pre-treatment upgrades approved due to the low trade waste charges.

Councillors

An introductory workshop was held with the Council Councillors on 5 October 2021. The topic of trade waste and high level issues with the current Bylaw were discussed. A paper was submitted to Nga Manukanuka o te Iwi (Māori Committee) on 30 September 2021, and presented on 25 February 2022.

A detailed workshop will be held with Councillors on the 17 March prior to the Sustainable Napier Committee meeting on 24 March 2022.

Mana whenua

The process of engagement with Māori groups began on 15th July 2021, when Te Waka Rangapu (the Council Māori Directorate) were briefed on the project and asked for assistance with consultation with all appropriate Iwi and mana whenua groups. Another meeting was held on 6 October 2021, after the workshop with the Napier City Councillors to discuss potential attendance at a board meeting of Mana Ahuriri. A representative from Mana Ahuriri attended a meeting on 5 November 2021 and was briefed on the trade waste bylaw, trade waste management issues and potential changes. Members of Mana Ahuriri have been invited to the Awatoto Waste Water Treatment Plant with the date to be confirmed. Tapu waste water generated at funeral homes was discussed as a particular point of interest.

In March 2022 Te Waka Rangapu assisted with providing background information about the significance of water to Māori and how modern Wastewater management does not align with this. Through the Bylaw, Council can advocate for increased education around the cultural values of all water, and continuous improvement of Wastewater management to work towards better outcomes which incorporate ‘te mana me te mauri o te wai’.

Funeral Homes

All four funeral homes in the City have been visited by the Council officers in an initial meeting to inform them that the Bylaw review was taking place, and collect some information about current practices at each site. Two out of three have Rakahore Channels installed and operational, containing blessed rocks which are intended to restore mauri (life force) back into the waste water as it passes over them. The third site indicated they would accept any new

regulations and do what was required to comply. One funeral home voiced concerns about the logistics of pumping trade waste into tanks to irrigate over ground. They argue this creates other cultural, logistical and financial problems.

The fourth funeral home, and the only one that is Māori owned and operated, does not currently embalm at their Napier site, but is looking to do so in future.

Council Communications

A member of the Council Communications Team has developed a Consultation Plan and assisted with all consultation. Documentation such as a one-pager and explanatory notes for the Council's Wastewater consent held with HBRC has been developed and circulated with relevant stakeholders.

Hawkes Bay Regional Council

Hawkes Bay Regional Council have had some minor involvement in trade waste management due to occasional high levels of contaminants at the WWTP, including cBOD, OAG, ammonia and Zinc. They have indicated that more control over trade waste quality is a requirement for the Council's ongoing compliance with their WW consent and obligations. A meeting was held with a representative from Hawkes Bay Regional Council on Thursday 28th October to update on the Bylaw review and progress with the charging model. It was indicated that in future, resource consents may have increased focus on nitrates and phosphates. It was agreed that HBRC would be kept involved and shown a copy of any reviewed Bylaw in draft.

Objectives and advantages of an Integrated Trade Waste and Wastewater Bylaw

It is considered that there are a wide range of advantages to taking an integrated approach to the regulation and management of trade waste and wastewater in the district. These include:

- Protection of the built environment in an integrated, sustainable and planned manner will provide for positive environmental, social, cultural and economic outcomes that will follow through to future generations.
- Provides a common framework that enables the council to control discharges into the wastewater network which ultimately protects the receiving environment, public health and those people working on the networks, as well as ensures an integrated approach to ensuring compliance with the Council's own discharge consent.
- Provides clear regulatory direction for council's role in decision making on what is discharged into the Council wastewater network, regardless of the source.
- Allows for a consistent approach across the district that will improve organisational efficiency that is effective and easily understood.
- Future bylaw reviews will take an overall holistic approach to any issues affecting the wastewater network.
- Ensures a consistent and holistic approach to the promotion of sustainable behaviours and activities including water conservation, waste minimisation, cleaner production and on-site pre-treatment of wastewater.
- Fosters education focused on the interaction between all types of wastewater discharges, the network, the natural water cycle and the receiving environment.

Recommended changes to the Bylaw

In light of the findings above, the following changes to the current Bylaw are recommended:

- Consolidation of the Trade Waste and Wastewater Bylaws
- Clear and robust definitions, and records kept of reasons for Bylaw conditions with intentions for rollout.
- A simplified Bylaw with detail in Administration Manual and trade waste consents
- Review of trade waste classifications and the addition of a fourth category as follows:
 - Permitted (under flow and volume triggers, meets quality criteria without pre-treatment)
 - Controlled (under flow and volume triggers, requires pre-treatment to meet quality criteria)
 - Conditional (over flow and volume triggers, may require pre-treatment to meet quality criteria)
 - Prohibited (contains any substances listed as prohibited)
- A clearer and simpler registration/application process
- A solution for cultural issues such as tapu trade waste from funeral homes through engagement with Mana Ahuriri, (which has begun with a meeting and presentation).
- Ability to refuse trade waste flows during emergencies (e.g. heavy rainfall, emergency maintenance)
- More technical detail to be contained in the Administration Manual and in trade waste consents, with a technical review of the current specifications in the Bylaw
- Review of charges and development of charging model
- Better regulation of FOGs and EOCs
- Ability to use asset, financial and monitoring data annually to calculate and control trade waste loadings and charges
- Potential to certify liquid waste operators (tankers and sucker trucks), issue consents and manage through WasteTRACK.

Administrative Manual

It is proposed that the Bylaw will be accompanied by an Administration Manual. The purpose of the Administration Manual is to provide material complementary to the integrated Trade Waste and Wastewater Bylaw by bringing together those aspects which are of a more administrative nature and which may need regular review and updating. For example, a schedule referenced in the bylaw outlining methods for the control of contaminants that is likely to need updating regularly or public guidance documents. In taking this approach, it will simplify the administration of the bylaw, allow for administrative and technical processes to be kept up to date, and assist in interpretation of the bylaw.

Management of the Administration Manual would be conducted under delegated authority of the Bylaw, and will govern the implementation and operation of the bylaw. The Administration Manual will be a public document and available on the council's website alongside the bylaw.

In addition to making the bylaw simpler and more streamlined, the inclusion of an Administration Manual is intended to make amendments simpler and more responsive to change. Amendments to the Administration Manual can be made by council resolution, with

appropriate community engagement, and would not require the use of the Special Consultative Procedure, making decision-making more cost-effective and timely.

Charging model

A charging model has been developed by consultants BPO, who are experienced in the trade waste industry. The charging model uses asset and financial data provided by Council to calculate the costs of specific parts of the network according to what it is affected by, and is designed to:

- provide the real costs of treating major trade waste customers' waste;
- provide positive feedback and reward customers that practice waste minimisation and/or waste pre-treatment;
- provide operators with predictive charging options so that they can make intelligent decisions about the financial return of improvements to their discharge;
- equitably charge for the use of the wastewater treatment plant and the associated infrastructure based on the discharger's share of the peak and average loads to the plant;
- both incentivise waste reduction and is fair;
- ensure operators pay for their share of the operating and capital cost of the wastewater treatment plant based on a sophisticated breakdown of the waste components and allocation of appropriate cost for the component's treatment; and
- be issued as a "black box" to each industry allowing them to determine the benefit of any spend on waste minimisation.

It will allow for the allocation of loadings of certain contaminants the Council can accept at the WWTP and discharge in accordance with its resource consent. The most important change this will bring is financial incentive for businesses to comply with rules and improve pre-treatment.

Wastewater Drainage Bylaw Review – Gap Analysis Report

Introduction

Purpose of Gap Analysis

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The Bylaw was automatically revoked in December 2021 in accordance with s 160A of the Local Government Act 2002 (**LGA**), therefore the Council is now required to replace the Bylaw with a new bylaw addressing wastewater drainage issues in the City.

Given that both trade waste and wastewater are discharged into the wastewater system, the Council has considered the advantages of incorporating the Trade Waste Bylaw (which is also due to be replaced) and this Bylaw into one comprehensive document will allow the Council to take an integrated and consistent approach to the management of its network.

Scope of the Gap Analysis

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Background

Wastewater is the liquid waste that has water as the largest component, along with various types of impurities like human waste and used water from premises including houses, offices, factories, schools, hospitals, and industrial sites.

Domestic wastewater is generally comprised of toilet waste, household grey water (i.e. from kitchens, bathrooms and laundries) and waste from domestic pools and spa pools.

Liquid wastes produced by commercial and industrial businesses known as trade waste. Issues relating to trade waste are separately addressed by the Trade Waste Bylaw.

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.

Council's Wastewater Infrastructure

The Council's wastewater scheme serves 26,151 properties, roughly 97% of the population. The scheme comprises 392 km of wastewater mains, 49 wastewater pumping stations, a treatment facility located at Awatoto, and a 1.5km long marine outfall.

Approximately 64% of the network mains identified with condition rating from Moderate to Very Poor while approximately 73% percentage of pipe material belongs to non-plastic nature. Thus it is important to revise and implement the bylaw to achieve its purpose and objectives to sustain the operation and services as network protection and sustenance of operation is inevitable.

The current Bylaw

The purpose of the current Bylaw is to:

- Prevent the misuse of the Council's wastewater drainage system;
- Ensure the protection of wastewater authority (WWA) personnel and the general public;
- Protect the ability of the WWA to meet the requirements of legislation;
- Protect investment in the existing and any future infrastructure, treatment plant and disposal facilities.

Compliance with the current Bylaw should be achieved through:

- Resource consenting
- During Building inspection and certification,
- Compliance; monitoring the quality/quantity of discharge into the network, and
- Enforcement systems.

However, in practice the Bylaw had proved challenging to implement and enforce, for reasons including that much of the information contained in the bylaw is duplicated in the Council's Subdivision Code of Practice and is therefore redundant.

Legislative Framework

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

The RMA and associated regulations, including the National Policy Statement for Freshwater Management 2020 (NPSFM) point to increasingly stringent water quality standards. In particular, the NPSFM introduces the concept of Te Mana o te Wai. This refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. The NPSFM directs the Hawke's Bay Regional Council to establish objectives which describes how the management of freshwater in the region will give effect to Te Mana o te Wai.

The Hawke's Bay Regional Council's Regional Resources Management Plan (RMP) promotes the disposal of wastewater in a manner that avoids remedies or mitigates the adverse effects of contaminants entering surface waterbodies or coastal water, and includes standards and limits for the water quality of surface water bodies receiving contaminants, to prevent further degradation to water quality and promote improvements.

The Council conveys, treats and discharges wastewater from the city into the Ocean, which is managed with a consent held with Hawke's Bay Regional Council.

The *Coastal Permit to discharge domestic sewage and industrial waste water into Hawke Bay at Awatoto via a marine outfall (AUTH-118503-02)* contains various conditions which Council must comply with, including limits on contaminants and monitoring requirements at the outfall and in the wastewater treatment plans. The consent was initially granted in 2011 and granted by the Environment Court in 2012. It was reviewed in 2019 when QRMA conditions were added. It is due for renewal in 2036, but this may be brought forward if changes are made to the outfall pipe and pumping station.

Problems with current wastewater drainage management

As a result of observations made by Three Waters staff during operations and strategic planning, a number of problems with the current Bylaw have been identified:

- The Bylaw does not clearly distinguish between trade waste that enters the separated trade waste network and trade waste that is able to enter the domestic wastewater network.
- The Bylaw currently treats a number of waste streams as stormwater that are more appropriately categorised as wastewater (including water generated from the draining of domestic swimming and spa pools).
- Cooling and condensing water should also be treated as wastewater and not discharged into the stormwater network. Any discharge from domestic activities which would be a breach of the Stormwater Bylaw (2020) should be considered to be allowed as a wastewater discharge, as long as it would not cause damage to the network or compromise Council's ability to comply with its resource consents.
- Large private networks such as those at the new retirement villages (Summerset, BUPA etc.) should be required to install flow meters and telemetry to allow Council to have better control over the network downstream and adequately plan for capacity and maintenance.
- The Bylaw is overly complicated and lengthy and is lacking a number of important defined terms.
- There is a need for the Council to push some responsibility upstream to the network users in order to ensure compliance with its consent, and to protect infrastructure in the network and at the wastewater treatment plans. This is in conjunction with operational monitoring of the plant and planned upgrades to meet development requirements and any new conditions imposed by HBRC when the consent is updated or renewed.
- Some of the defined terms used in the Bylaw require the reader to reference an external document (the Napier City Introductory Bylaw).
- Separate Bylaws control trade waste and wastewater, despite these waste streams both being managed by the same network and regulated by the same regional resource consent (CD090514Wa). The Wastewater Bylaw mostly duplicates information which is also covered in the Code of Practice. It is not considered to be an effective tool for regulating domestic wastewater and so is under-utilised.

Additionally, a number of emergent issues have arisen that the Bylaw in its current form is ineffective at addressing, such as:

- Regular overflows of the wastewater network. These require significant resources to attend and resolve, and are often caused by blockages. There is a risk that overflows will enter the stormwater network, which is a breach of the Stormwater Bylaw (2020), and could ultimately enter the environment, in breach of the Resource Management Act 1991. The Wastewater Bylaw should aim to eliminate the sources of blockages which may come from domestic activities, as the Trade Waste Bylaw deals with commercial and industrial sources.
- The current Bylaw does not allow for low pressure sewers. The Bylaw will be reviewed/updated once the low pressure sewer system is adopted, the Engineering Code of Practice is updated and system added to the network.

Wastewater Management Objectives

The following core objectives have been identified for the new Bylaw to ensure for the provision of an effective and efficient public wastewater network and to align the outcomes of the council's investigation with its long term strategies for the district and key legislative requirements.

- To protect the wastewater network from damage, misuse and interference.
- To enable the Council to meet relevant legislative requirements, objectives, policies, standards and resource consents for discharges from the wastewater network.
- To protect the land, structures and infrastructure of the wastewater network, and to protect investment in the existing and any future infrastructure, treatment plant and disposal facilities.
- To protect public health and safety (including the health and safety of council personnel working on the wastewater network).
- To prohibit a range of contaminants (including stormwater and trade waste) being discharged to the wastewater network.
- To protect the environment from adverse effects of harmful substances discharged to the wastewater system.
- To ensure on-site wastewater systems and land application areas work efficiently and effectively.

Advantages of an Integrated Trade Waste and Wastewater Bylaw

It is considered that there are a wide range of advantages to taking an integrated approach to the regulation and management of trade waste and wastewater in the district. These include:

- Protection of the built environment in an integrated, sustainable and planned manner will provide for positive environmental, social, cultural and economic outcomes that will follow through to future generations
- Provides a common framework that enables the Council to control discharges into the wastewater network which ultimately protects the receiving environment, public health

and those people working on the networks, as well as ensures an integrated approach to ensuring compliance with the Council's own discharge consent.

- Provides clear regulatory direction for council's role in decision making on what is discharged into the Council wastewater network, regardless of the source.
- Allows for a consistent approach across the district that will improve organisational efficiency that is effective and easily understood.
- Future bylaw reviews will take an overall holistic approach to any issues affecting the wastewater network.
- Ensures a consistent and holistic approach to the promotion of sustainable behaviours and activities including water conservation, waste minimisation, cleaner production and on-site pre-treatment of wastewater.
- Fosters education focused on the interaction between all types of wastewater discharges, the network, the natural water cycle and the receiving environment.

Administrative Manual

It is proposed that the integrated Bylaw will be accompanied by an Administrative Manual that will provide material complementary to the integrated Trade Waste and Wastewater Bylaw by bringing together those aspects which are of a more administrative nature and which may need regular review and updating.

For example, diagrams indicating the location of the Point of Discharge for different types of Domestic Premises could be included in the Manual rather than in the body of the Bylaw.

In taking this approach, it will simplify the administration of the bylaw, allow for administrative and technical processes to be kept up to date, and assist in interpretation of the bylaw. Management of the Administration Manual would be conducted under delegated authority of the Bylaw, and will govern the implementation and operation of the bylaw. The Administration Manual will be a public document and available on the council's website alongside the bylaw.

In addition to making the bylaw simpler and more streamlined, the inclusion of an Administration Manual is intended to make amendments simpler and more responsive to change (including changes that may be made to the Council's Code of Practice for Land Use and Subdivision). Amendments to the Administration Manual can be made by council resolution, with appropriate community engagement, and would not require the use of the Special Consultative Procedure, making decision-making more cost-effective and timely.

Recommended changes to the Bylaw

In light of the findings above, the following changes to the Bylaw are recommended:

- Consolidate the Trade Waste and Wastewater Bylaws into a single Integrated Bylaw.
- Amend a number of existing definitions, and add new defined terms, to improve the clarity, usability, and enforceability of the Bylaw.
- Update legislative references and references to other external policy documents or regulations throughout the Bylaw.

- Incorporate various amendments to allow for low pressure sewers, specifically definitions and technical specifications.
- Reflect the new requirement that easements are obtained for all new sewers to ensure the ongoing protection of and access to the network, and incorporate an example of a standard wastewater easement.
- Insert cross references to the Napier City Council Code of Practice for Subdivision and Land Development where appropriate and remove unnecessary duplication of the Code of Practice requirements within the Bylaw.
- Update details about drainage plans and how they may be viewed by the public.
- Introduce further protections and obligations to avoid inflow and infiltration of the wastewater network by stormwater (including contaminated stormwater) and trade waste in a dedicated section about inflow and infiltration.
- Simplify the Bylaw and include more detail as to the Bylaw's implementation in the Administration Manual.