

Research Report

Research for Control of On-site Wastewater Disposal Systems Bylaw

1 Purpose

To describe and discuss the research for the Control of On-site Wastewater Disposal Systems Bylaw.

2 Context and Situation

The Council's Control of On-site Wastewater Disposal Systems Bylaw 2010 (the Bylaw) was due for review by 26 May 2020 but has not been reviewed. It will be automatically revoked on 26 May 2022. Under section 155 of the Local Government Act 2002, the Council is now required to consider whether a bylaw is the "most appropriate way of addressing the perceived problem".

3 Objectives

3.1 Purpose of research

To determine whether a bylaw is the most appropriate way to address problems regarding on-site wastewater disposal systems in the Far North District as per section 155 of the Local Government Act 2002.

3.2 Review objectives

- To define on-site wastewater related problems in the Far North District that are within Council's function to control.
- To identify if a bylaw is the most appropriate way to address the regulation of on-site wastewater disposal systems in the Far North District.

4 Problem definition

Most on-site wastewater disposal systems in New Zealand are septic tanks. In the Far North District, 78% of on-site wastewater disposal systems are septic tanks. All on-site systems require regular attention to function effectively. Unfortunately, research shows that many people don't understand or recognise the importance of managing and maintaining their on-site system, and some are not even aware their wastewater is treated by an on-site system¹.

Failure is generally defined as inadequately treated wastewater entering groundwater or surface water. Nationally, community failure rates range from 15 to 50%. Some causes of on-site wastewater disposal system failure are due to inappropriate design and installation; however, such risks are mitigated by the Building Act 2004 requirements. The main cause of on-site wastewater disposal system failure is lack of ongoing servicing and regular maintenance¹. Appropriate management and regular maintenance can help identify problems early and reduce the need for costly repairs, with the added benefit of improving the lifespan of on-site systems.

¹ [MFE NES On-site wastewater discussion](#)

Wastewater discharging from failing systems contains pathogens (e.g., E.coli, and campylobacter) and nutrients (e.g., nitrates, phosphorus and sodium) that can be harmful to humans and the environment. Effluent discharge and contamination can lead to:

- public health harm (disease and / or illness) from:
 - having direct contact with wastewater
 - drinking contaminated water
 - swimming and paddling in contaminated streams, lakes, estuaries, and beaches
 - eating contaminated shellfish, either from private or commercial shellfish gathering
- an increase in flies and mosquitoes
- economic harm caused by having to close shellfish farms (even if no disease occurs)
- nuisance weed growth and/or algal blooms caused by elevated nutrient levels
- deterioration of freshwater ecosystems due to reduced water quality
- permanent soil degradation caused by high levels of sodium and other salts from washing powders being disposed of through disposal fields.

Conservative estimates indicate that nationally more than 100 streams and over 100 coastal sites are affected by effluent discharge.

During 2002-2003, the Council conducted on-site effluent surveys and identified that 90% of effluent discharge, i.e. E. coli and faecal coliform found in stormwater samples, was due to the lack of maintenance of on-site wastewater disposal systems (septic tanks). To manage potential harms to the environment and public health the Council introduced a Bylaw in 2006.

4.1 Council's role relating to on-site wastewater

4.1.1 Local Government Act 2002

Council can specifically make a bylaw regulating on-site wastewater disposal systems under section 146a of the Act.

Under section 10, the purpose of local government is to "... promote the social, economic, environmental, and cultural wellbeing of communities, in the present and for the future". Failing and poorly maintained on-site wastewater disposal systems can have a negative effect on a community's wellbeing through direct impacts, such as affecting the physical health of people and causing environmental harm.

Under section 125, the Council is responsible for the provision of water and sanitary services in their districts and are required to assess the provision of these services. However, this requirement to assess sanitary services is for services available to communities and does not include assessments in relation to individual properties.

4.1.2 Building Act 2004

The Council is required, by way of a building consent process, to ensure that the design and installation of an on-site wastewater system will operate in such a way that no threat is posed to safety or public health. The development of an on-site wastewater system must comply with clause G13 of the Building Code.

The effects of the discharge from on-site wastewater systems on the wider environment are not considered through the building consent process.

There is no mechanism under the Building Act to include a requirement in a building consent for ongoing monitoring or maintenance of on-site systems.

However, the complete failure of an on-site wastewater system would be deemed an unsanitary building under section 123. In that case, section 124 empowers the Council to require a property owner to take actions to remedy a situation where a failing on-site wastewater system is deemed an unsanitary building.

Under section 18 there is no mechanism for the Council to require compliance that is more restrictive than the Building Code.

4.1.3 Health Act 1956

Under section 23, the Council has a duty to improve, promote and protect public health. Section 23 empowers the Council to require a property owner to take actions to remedy a situation where a failing on-site wastewater system is creating a nuisance or risk to public health.

Relating to on-site wastewater disposal, the Council can make a bylaw under section 64 for the following reasons:

- (a) improving, promoting, or protecting public health, and preventing or abating nuisances
- (g) regulating drainage and the collection and disposal of sewage, and prescribing conditions to be observed in the construction of approved drains
- (v) for the protection from pollution of food intended for human consumption and of any water supply.

Under section 65 the Council cannot make a bylaw that is more restrictive than the Building Act 2004 and the Building Code.

Nuisances are defined in section 29. Nuisances specific to on-site wastewater disposal systems are as follows:

- a) where any pool, ditch, gutter, watercourse, sanitary convenience, cesspool, drain, or vent pipe is in such a state or is so situated as to be offensive or likely to be injurious to health
- b) where any accumulation or deposit is in such a state or is so situated as to be offensive or likely to be injurious to health.

Under section 39 and 136, a person can be liable for a fine of \$500 upon conviction of an offense against the Act.

4.1.4 Resource Management Act 1991

Requires consideration of the wider effects on the environment, including effects on public health. Discharges from on-site wastewater disposal systems are regulated by Northland Regional Council under section 15 of the Resource Management Act via the *Regional Water and Soil Plan for Northland*.

This plan is soon to be replaced by the *Regional Plan for Northland* in which on-site wastewater discharges will be regulated under clause 6.1. The Regional Plan requires an on-site system to be maintained effectively and discharge to not contaminate water sources nor cause offensive or objectional odour.

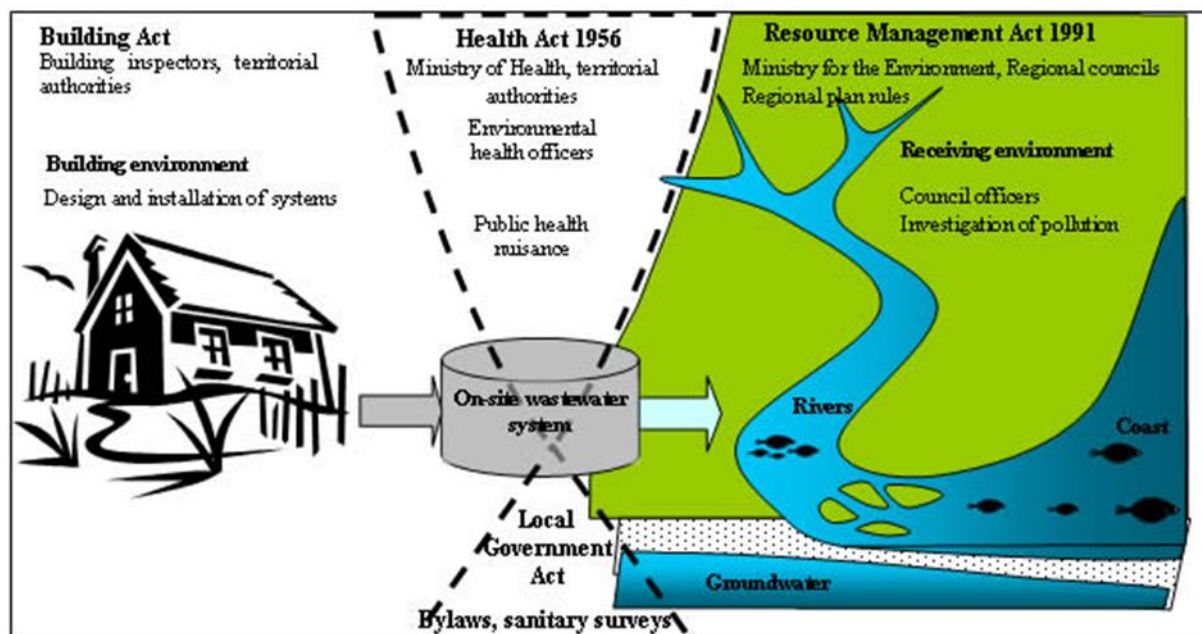


Figure 1: Showing an overview of roles relating to on-site wastewater disposal systems. Source: Ministry for the Environment¹

4.2 Scope

In scope

Problems relating to the ongoing maintenance of all types of on-site wastewater disposal systems in the Far North District which are a function of Council to control or address.

On-Site Wastewater Disposal System is defined as any system for the reception and disposal of wastewater, including any septic tank, mechanical system, alternative system cesspit, drainage or soakage pit or bore; and the field tiles, scoria, or stone contained therein; and, distribution bore, discharge field or soakage field that is a part of, or is connected to, any such system.

Out of scope

- The design and installation of on-site wastewater disposal systems as installation is regulated under the:
 - Building Act 2004
 - Resource Management Act 1991
 - Plumbers Gasfitters and Drainlayers Act 2006.
- Environmental harm as the effects of on-site wastewater disposal systems on the environment is regulated by Northland Regional Council.
- The assessment of sanitary services provided to communities as this is covered by section 125 of the Local Government Act 2002.

4.3 Purpose of current bylaw

The Onsite Wastewater Disposal Bylaw came into force in July 2006 after on-site effluent surveys at Okiato Point showed that 90% of effluent discharge was contaminated due to the lack of maintenance of these systems. The bylaw's primary objective is to protect the health and wellbeing of the community and to protect the environment from pollution arising from failed or deficient on-site wastewater systems.

The purpose of the bylaw was to ensure that all On-Site Wastewater Disposal Systems in operation or proposing to be installed, repaired or extended on properties in the District are installed, repaired, extended, operated and maintained in a safe and sanitary way with no or minimal adverse effects on the surrounding natural environment and in a manner that is culturally sensitive.

4.4 Other problems relating to on-site wastewater disposal systems not currently controlled or addressed by the Bylaw

Research has not identified any other problems relating to on-site wastewater disposal systems not currently controlled or addressed by either the Bylaw or existing legislation.

5 Review of current Bylaw

As part of determining if a bylaw is the most appropriate way to address problems relating to the maintenance of on-site wastewater the current bylaw requires review for effectiveness.

The current Bylaw includes the following sections:

- Requirements (building)
- Inspections
- Maintenance requirements
- Offences and penalties.

5.1 On-site Wastewater Systems in the Far North District

The Bylaw has enabled an accurate register of on-site wastewater systems in the Far North District. As shown in *Figure 1*, the number of registered on-site wastewater systems significantly increased after the Bylaw was implemented in 2006. The register also identifies the type of on-site wastewater system installed (as shown in *Table 1*).

Figure 2: Graph showing number of registered or installed on-site wastewater systems per year in the Far North District

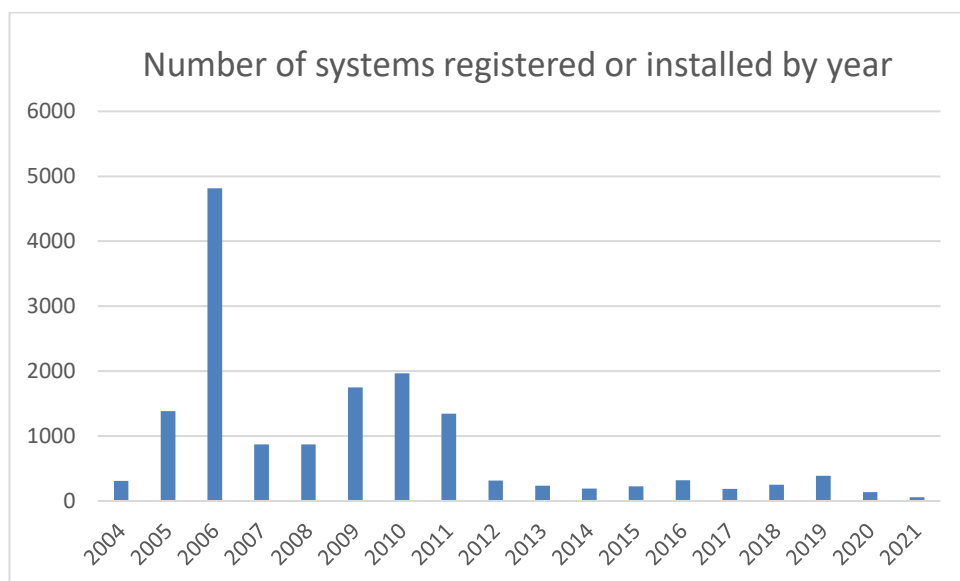


Table 1: Table showing type and number of on-site wastewater system installed in the Far North District

Type of on-site wastewater system installed	Number
Aerated Wastewater Treatment System Domestic	2793
Aerated Water Treatment System Commercial	3
E-Bin	6
Effluent Disposal System	166
Miscellaneous	149
Self-Composting System	264
Self-Serviced Aerated Wastewater Treatment System	8
Septic Tank	12213
Grand Total	15602

5.2 Requirements

The design and installation of on-site wastewater disposal systems is already regulated under the Building Act 2004 and Resource Management Act 1991. Some components of this section of the Bylaw repeat what is already covered in other legislation and are therefore unnecessary.

Clause 2803.2 states that “No On-Site Wastewater Disposal System shall be permitted to serve more than a single dwelling unit” meaning that decentralised wastewater systems are not permitted in the Far North District. Decentralised wastewater systems support urban growth, are easier to maintain, and are easier to retrospectively connect to a community wastewater system.

The current review of the Far North District Plan is investigating encouraging the use of decentralised wastewater systems. A new Bylaw would need to ensure decentralised wastewater systems are permitted.

5.3 Inspections

The Bylaw requires landowners in the Far North District to undertake any maintenance or repair work requested by the Council, at the owner’s expense. Inspections are conducted during audits, as a result of a complaint, or when identified as needed by on-site wastewater system maintenance contractors.

5.4 Maintenance requirements

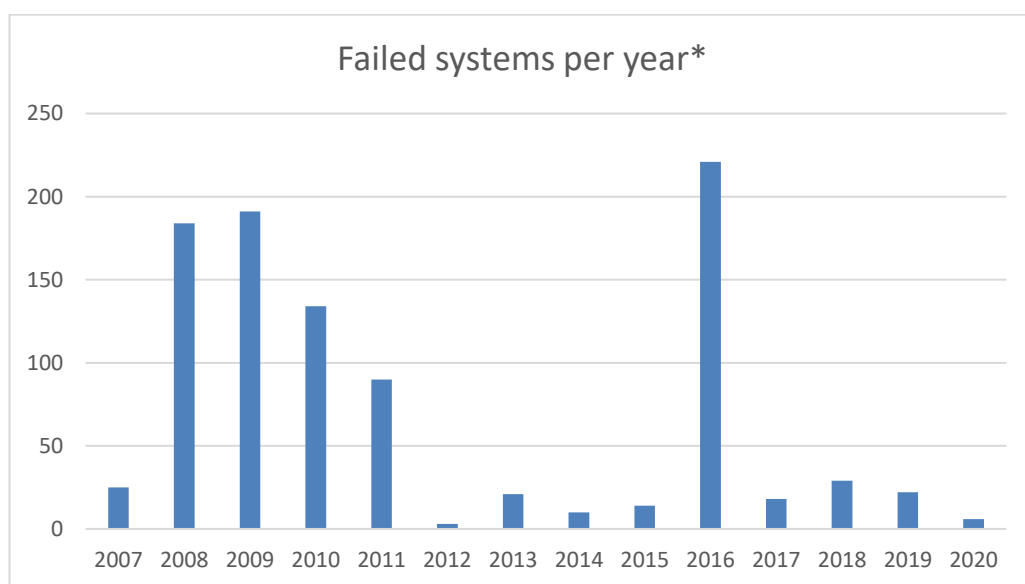
The Bylaw requires all on-site wastewater disposal systems to be assessed and if necessary, maintained every five years. The original Bylaw, made in 2006, required owners to assess their on-site wastewater disposal systems every three years. The 2010 review extended this to five years after community consultation. Further investigation is required to assess if five years is an appropriate maintenance schedule.

Septic tank cleaning and maintenance contractors are required to complete a site assessment check sheet and provide this information to Council. Secondary treated systems require the maintenance contractor to provide Council with evidence of routine maintenance. On-site wastewater disposal system contractors are approved by Council through an application process which includes health and safety assessments and allows for Council to provide quality control processes.

The owner of the on-site wastewater disposal system is responsible for the cost of assessment, cleaning and any repairs or maintenance.

Table 2 shows the number of failed on-site wastewater systems since 2007. As to be expected, there was a higher number of failed systems until 2011 as the Bylaw was being put into effect. The low numbers of failed systems from 2012 indicate that regular maintenance regulations are preventing systems failure and therefore preventing effluent discharge and contamination. Of note is the number of requests to rectify, of which there were none in 2019 and 2020 (Table 2).

Figure 3: Graph showing total number of on-site wastewater disposal system failures by year



*Failed systems relates to the total number of failures as per Table 2.

Table 2: Table showing total number of on-site wastewater disposal system failures by failure type per year in the Far North District

Failures	Year 2007 - 2020													
	07	08	09	10	11	12	13	14	15	16	17	18	19	20
EHO - Notice to Fix					1									
Failed soakage / Effluent Field				4	4				2	4				
Lack of Maintenance										1				
Failure Suspected											1	15		5
Failure Confirmed				4	4	2		4	1	2	1			
Maintenance Required				5	3			2	4	9	12	12	22	1
Request to rectify	25	184	191	121	78	1	21	4	7	205	4	2		
TOTAL	25	184	191	134	90	3	21	10	14	221	18	29	22	6

In 2016, audits were conducted on all properties near Kerikeri. This was to gather area specific research to support a proposal for a new community wastewater system. The audit identified several systems that required repairs, hence the high number of requests to rectify in 2016. The community wastewater system has since been installed.

6 Other possible methods (beside a bylaw) to address the maintenance of on-site wastewater disposal systems

6.1 Council services all on-site wastewater disposal systems in the Far North District

Council could service all on-site wastewater disposal systems. The service would include regular inspections and cleaning of on-site wastewater disposal systems. Cost for the service would depend on the type of on-site wastewater disposal system installed on the property and need to be recovered via a targeted rate.

The most common (78%) type of on-site wastewater disposal system in the Far North District is a septic tank. Current on-site wastewater cleaning contractors charge between \$500 and \$700 for each septic tank clean. Therefore, a targeted rate of between \$100 and \$150 per annum would be required for every property with a septic tank installed.

Currently, septage is placed through a screen at certain wastewater treatment plants. Not all plants have a septage screen. Therefore, screens may need to be installed to ensure septage is being processed within a localised area.

Council has systems in place for servicing on-site wastewater disposal systems as Council currently services on-site wastewater systems on council owned properties and specific communities for example Kohukohu.

There is a risk that the system could become damaged during the cleaning process and Council may be held responsible for repairs to damage. In some case it may be difficult to identify if the damage was pre-existing or caused by the cleaning process.

Even with Council servicing all on-site wastewater disposal systems, property owners would still be responsible for any repairs required to their on-site wastewater systems. Without a bylaw, this would need to be enforced under the Health Act 1956. Enforcement under the Health Act 1956 can only occur in the case of a complete failure of an on-site wastewater disposal system.

However, central government is currently in the process of undertaking significant reforms to Three Waters management. As a result of the reforms, it is highly likely that the operations and maintenance of wastewater will be regionalised. Therefore, it would be imprudent to make significant changes to the management of on-site wastewater disposal systems before the reforms have been finalised.

6.2 Council provides information, education, and advice

Council could support the on-going maintenance of on-site wastewater systems through a system of providing information, education, and advice.

The Bylaw has enabled the development of accurate on-site wastewater disposal system records and maintenance systems. As all new on-site wastewater disposal systems require Council consent, the records regarding the number and type of on-site wastewater disposal systems would remain accurate without a bylaw.

Council has a system in place to send reminder notices to property owners when their on-site wastewater disposal systems are due for assessment. Assessment is conducted by independent contractors. Contractors are audited for quality control, and education is provided to contractors to ensure adequate servicing of on-site wastewater disposal systems. Contractors inform Council of the status of a disposal system once cleaning has

occurred. Without a bylaw, these systems could remain in place and form the basis of an information, education and advice programme.

Information on maintenance of on-site wastewater disposal systems is provided on the Far North District Council, Northland Regional Council and Ministry for the Environment websites.

When the Bylaw was first introduced, Council provided property owners the option of having their septic tank inspected free of charge. This service no longer exists. However, to be able to provide advice to property owners, Council could reinstate the inspection service. The inspection service could be offered either free of charge or as a low-cost fee. The service would require at least one full time equivalent to implement.

Property owners are incentivised to regularly maintain on-site wastewater disposal systems as:

- poorly maintained on-site wastewater systems require expensive repairs and reduce the lifespan of a system
- the property owner is at the greatest risk of exposure to effluent discharge and contamination.

However, without the added incentive of regulation, property owners may delay the expense of routine maintenance for a year or two resulting in on-site wastewater disposal system failure.

The Far North District Council surveys conducted in 2002-2003 and national evidence indicate that relying on information only results in a 15-50% failure rate of on-site wastewater disposal systems. It is difficult to assess the potential effectiveness of maintaining the reminder notice system outside of a bylaw as research has not identified another territorial authority which uses a reminder system outside of a bylaw.

Enforcement would occur under the Health Act 1956 only in the case of a complete failure of an on-site wastewater disposal system.

7 Discussion

7.1 Is a bylaw the most appropriate way to address problems relating to on-going maintenance of on-site wastewater systems in the Far North District?

A bylaw is the most appropriate way to address problems relating to on-going maintenance of on-site wastewater systems in the Far North District for the following reasons:

- maintenance of on-site wastewater disposal systems is not covered under existing legislation
- the current Bylaw has been effective in preventing on-site wastewater system failures and therefore
 - preventing effluent discharge and contamination
 - protecting public health
 - preventing or abating health nuisances
- nationally, providing information only has resulted in a 15-50% failure rate
- without a bylaw, enforcement can only occur in the case of complete failure of an on-site wastewater disposal system

7.2 Is the current Bylaw the most appropriate form of bylaw?

Whilst the current Bylaw has been effective in regulating on-site wastewater disposal systems, some of the provisions of the Bylaw should be amended. Therefore, the new Bylaw should not keep the same provisions as the current Bylaw.

Amendments include:

- removing provisions which are covered under existing legislation e.g., Building Act 2004, Resource Management Act 1991
- streamlining provisions to ensure there is no duplication within the Bylaw

- removing provisions which only permit one dwelling to be served by a wastewater system, allowing for the provision of decentralised wastewater systems.

Further legal review will be required to ensure the most appropriate form of bylaw is presented to the Council before community consultation begins.

8 Conclusion

Bylaw controls remain a necessary regulatory mechanism for:

- ensuring the maintenance of on-site wastewater disposal systems, therefore
 - preventing effluent discharge and contamination
 - protecting public health
 - preventing or abating health nuisances.

A new, appropriate form of bylaw should be made to control on-site wastewater disposal systems.