



Ministry for the
Environment
Manatū Mō Te Taiao

Proposed
National Environmental Standard
for On-site Wastewater Systems

Report on submissions

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Manatū Mō Te Taiao

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1 Introduction

1.1 Background

On-site wastewater systems provide treatment of domestic wastewater and return it to the environment within the boundaries of the property of origin. It has been estimated that in some regions at least 20 per cent of homes rely on on-site wastewater treatment. This can include primary, secondary and tertiary treatment systems. Septic tanks are mainly primary treatment systems and represent the majority of on-site wastewater systems installed in New Zealand.

In many areas wastewater systems do not provide an adequate level of treatment and are adversely affecting human health and the environment. Failing systems can:

- contribute to lakes, rivers, estuaries and beaches becoming unfit for swimming, gathering seafood and marine farming
- lead to contamination of groundwater and surface water supplies, affecting the quality of drinking water supplies, and may increase the occurrence of algal blooms.

These effects occur because of a range of factors, including poor maintenance, sensitive receiving environments (lakes, rivers, streams, etc), high-density residential areas, shallow groundwater and unsuitable soil types. Regular inspection and maintenance can play a significant role in improving the performance of wastewater systems.

In response, the Government is considering developing a national environmental standard (regulations) for the inspection and maintenance of on-site wastewater systems.

1.2 The proposed standard

The aim of the proposed National Environmental Standard for On-site Wastewater Systems (the NES) is to improve the management and environmental performance of domestic on-site wastewater systems. In essence, the proposal is that:

Owners of properties with on-site wastewater systems in specific locations will be required to hold a current warrant of fitness that confirms their on-site system is functioning properly and is being maintained to an appropriate standard.

The standard would authorise regional councils to require property owners with an on-site wastewater system to hold a current warrant of fitness (WOF) for their system. To obtain a WOF, a system would be required to pass an inspection every three years. Regional councils would identify the areas where the standard would apply.

1.3 Feedback on the proposed standard

A discussion document and a separate two-page summary setting out details of the proposed standard were released for public comment on 19 July 2008. Public notices regarding the discussion document and the submission period were placed in major newspapers on the same day. (A copy of the public notice is included in Appendix 1 of this report.) The notices informed people about:

- the subject matter of the proposed standard
- the Minister's reasons for considering the proposals are consistent with the purposes of the Resource Management Act 1991 (RMA)
- how people could make a submission
- the deadline for submissions.

A total of 700 discussion documents were sent out to interested parties, including individuals, community groups, iwi, councils and industry. A further 500 copies of the two-page summary sheet were also distributed to interested parties and used to advertise the public workshops. The submission period ran for 10 weeks from 19 July 2008, closing on 26 September 2008.

During the submission period 14 public workshops were held throughout New Zealand. Public notices were placed in local papers ahead of workshops in an attempt to attract as many people to the workshops as possible. Altogether, around 300 people attended the workshops, asked questions and gave their feedback on the proposed standard. The workshop notes have been collected in table form and sorted under recurring themes (see Appendix 2). The feedback received during the workshops will be taken into account in the further analysis of the proposal.

1.4 Purpose of this document

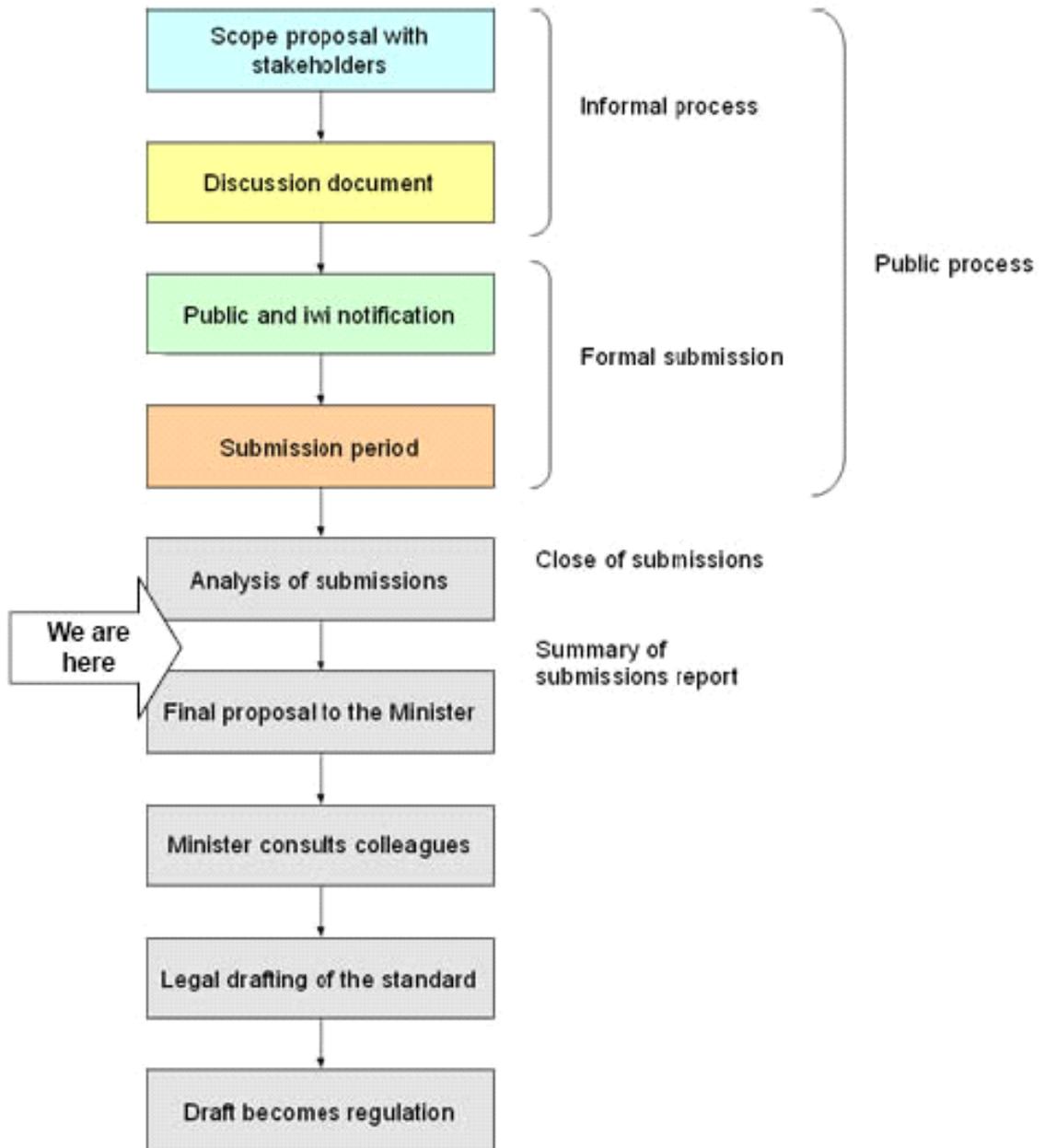
This document presents an overview of the written submissions received on the proposed NES for on-site wastewater systems. One hundred and thirty-five submissions were received (see Appendix 4 for a list of submitters). The discussion document posed 22 questions for discussion (see Appendix 3). Submitters also raised additional issues, the main ones of which are discussed in a special themes section at the end of this document.

This report is intended to provide a concise summary of the views expressed. It is not intended to analyse those views or make recommendations in response to the submissions. This will be done in a separate report.

1.5 NES development process

An outline of the NES development process, including the informal and formal submission stages, is shown in figure 1. The Ministry has completed the public process stage, and the release of this report on submissions marks the end of the submission stage.

Figure 1: National environmental standards development process



2 Overview of submissions

2.1 Breakdown of submissions, by type of submitter

A total of 135 submissions were received. The majority of these were received from three main groups:

- 40 (30 per cent) from local government (territorial authorities, regional councils and unitary authorities)
- 38 (28 per cent) from community groups and householders
- 29 (22 per cent) from representatives of industries involved in or affected by on-site wastewater systems.

These three main groups and the remainder of submissions have been broken down into the categories outlined in table 1.

Table 1: Breakdown of submissions, by category of submitter

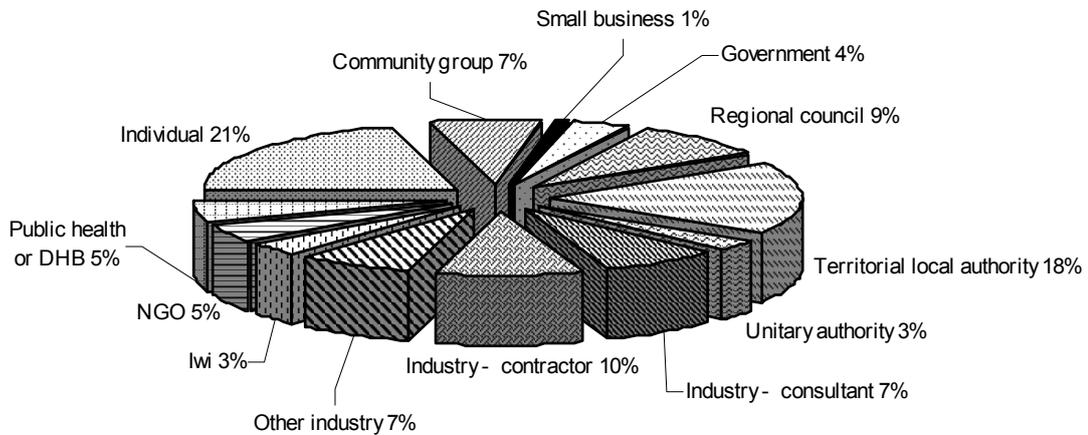
Category	Number of submissions
Individual	28 (21%)
Territorial local authority	24 (18%)
Industry – contractor	13 (10%)
Regional council	12 (9%)
Industry – consultant	10 (7%)
Other industry	10 (7%)
Community group	10 (7%)
NGO	7 (5%)
Public health or DHB	7 (5%)
Government	5 (4%)
Iwi	4 (3%)
Unitary authority	4 (3%)
Small business (café, lodge, etc)	1 (1%)
Total	135

Notes: NGO = non-government organisation; DHB = district health board.

The single biggest group of submitters were individuals (21 per cent), followed by territorial local authorities (18 per cent), and industry – contractors (10 per cent).

Figure 2 presents the different categories of submitters by their proportion.

Figure 2: Proportion of submissions, by category



2.2 Breakdown of submissions, by position

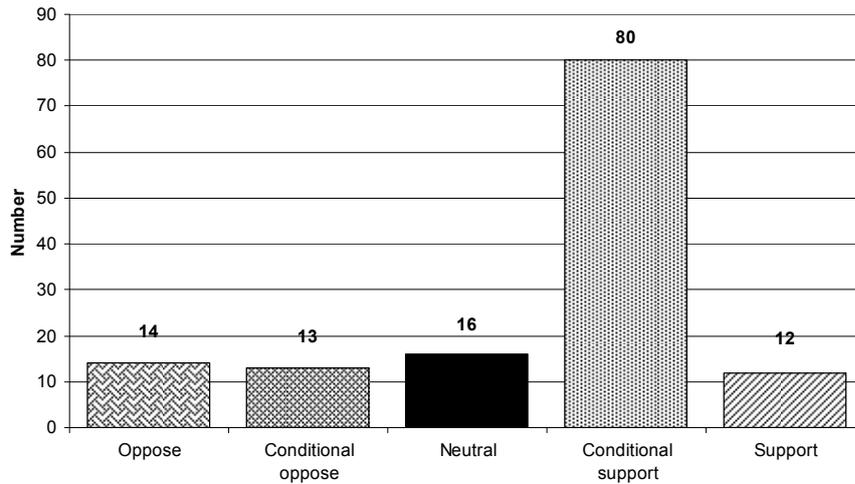
The majority of submitters supported, in principle, the objective of addressing the problem of failing on-site wastewater systems. However, submitters differed in their views on the most appropriate way to achieve this policy objective, and also where the actual problems arise. Submissions ranged from full support for the standard as proposed, to opposition and a preference for a different method of addressing failing systems, through to the contention that there is no problem at all so no action is warranted.

Submissions have been grouped into five categories according to their position on the proposal:¹

- **support** – clear support was indicated for the proposed NES
- **conditional support** – clear support was indicated for the proposed NES, but more than minor changes to the proposal were requested
- **neutral / not stated** – no clear statement of support or opposition to the proposed NES was given, and this could not be determined from the content of the submission
- **conditional oppose** – stating opposition to the proposed NES, but indicating that such opposition could be overcome by making specific changes to the proposal or by an alternative method of achieving the policy objective
- **oppose** – clear opposition to the proposed standard was indicated.

¹ This assessment is fairly subjective as most submitters did not specifically indicate a position.

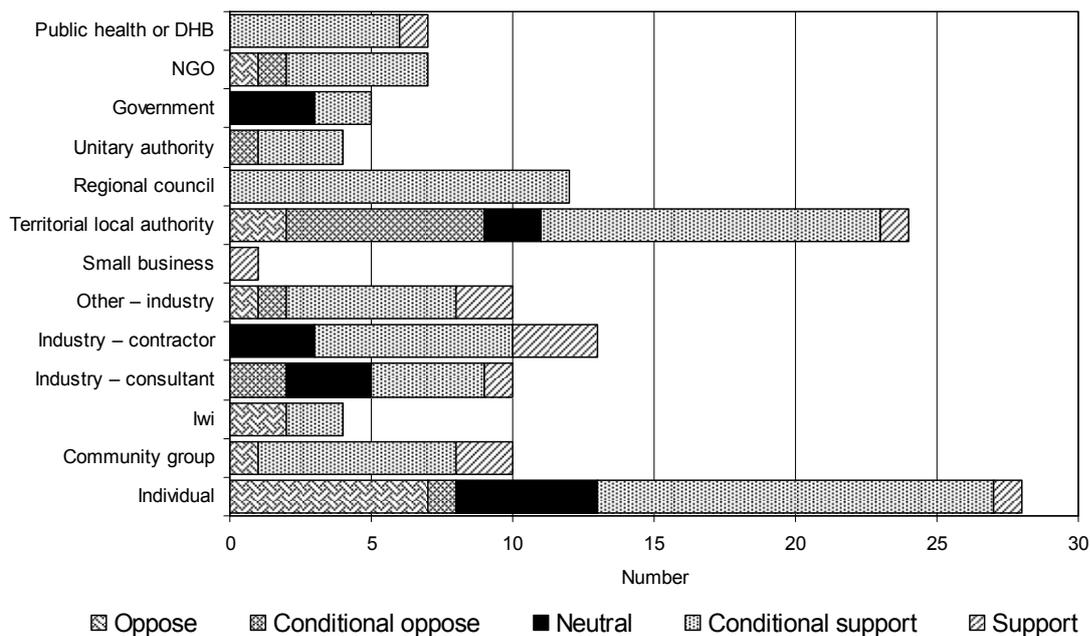
Figure 3: Breakdown of submissions by position



The breakdown of submissions by position for the proposed NES shows that 92 submitters or 68 per cent supported the changes, either as proposed (9 per cent) or subject to specific changes being made (59 per cent). Twenty per cent of submitters opposed the NES, either completely (10 per cent), or opposed the proposals unless significant changes were made (10 per cent). A further 12 per cent did not indicate a position.

The breakdown of submissions by both position and submitter group is depicted in figure 4. This shows that the majority of local government submissions supported the proposal, especially those from regional councils and unitary authorities. Territorial local authorities expressed a wider range of views. The majority of community groups supported the proposals. Individual submitters, along with other groups (including industry consultants and iwi), expressed a range of views about the standards. For example, of the four iwi submitters, half supported the proposed NES while the other half opposed it.

Figure 4: Breakdown of submissions, by submitter type and position



3 Summary of submissions

3.1 Key themes

Table 2 sets out the key themes that came through in submissions, based on the questions posed in the discussion document and further themes identified when the submissions were summarised. In addition to responses to the structured questions in the discussion document, many submitters also provided more general comments or observations on the proposal.

Table 2: Key themes in the discussion document

General theme	Question no.	Sub-theme
General comments	N/A	
Problem definition	Q. 1 Q. 2 Q. 3	Problem identification Extent of problems Problem quantification
Options	Q. 4 Q. 5 Q. 6	The policy objective Consideration of alternatives Analysis of issues
Proposed standard	Q. 7 Q. 8 Q. 9 Q. 10 Q. 11 Q. 12	General comments Scope of the NES Inspection intervals Pump-outs Maintenance requirements, checklist Treatment standard
Implementing the proposed standard	Q. 13 Q. 14 Q. 15 Q. 16	Targeting the NES to locations Risk assessment methodology Potential problems with implementation and administration Training for inspectors
Benefits and costs	Q. 17 Q. 18 Q. 19 Q. 20 Q. 21 Q. 22	Accuracy of costs and benefits and estimates Additional information from submitters on costs and benefits has been grouped together under question 18.
Special themes		Financial assistance
		Managing septage/sludge from pump-out
		Responsibility for administration of NES

3.2 General comments

The six main issues raised by submitters as general comments were:

- support for the policy objective but concerns about the proposed NES
- the proposal needs to be more comprehensive and should address the design and installation of on-site systems
- the proposal will result in additional bureaucracy and additional expense with no certainty of benefits
- support for flexibility in how and where the proposed NES is applied
- the benefits of the proposal need to be expanded/emphasised
- the proposal should consider and address potential funding for communities and individuals who may not be able to afford to pay for repairs or replacement of failing systems.

Most submitters supported the policy objective of better management of on-site systems, but there was considerable variation in views on the appropriateness or likely effectiveness of the proposed standard in achieving the objective. For example, one submitter said, “Agree in principle but don’t want to see an increase in local government bureaucracy to set up an inspection regime when one exists under the Building Act that could be adapted”; and “support in part having standards but have grave reservations about some of the recommendations”. Another submitter said, “individuals should no longer be able to continue using the ‘public’ environment for private or household waste disposal”. A third submitter acknowledged that “The proposal highlights the need for a tool to be put in place to start addressing the present issues of system failure and the future installation of onsite systems.”

These issues will be considered further during the analysis of submissions to help inform the final recommendations on the proposals that will be presented to the Minister for the Environment.

3.3 Problem definition

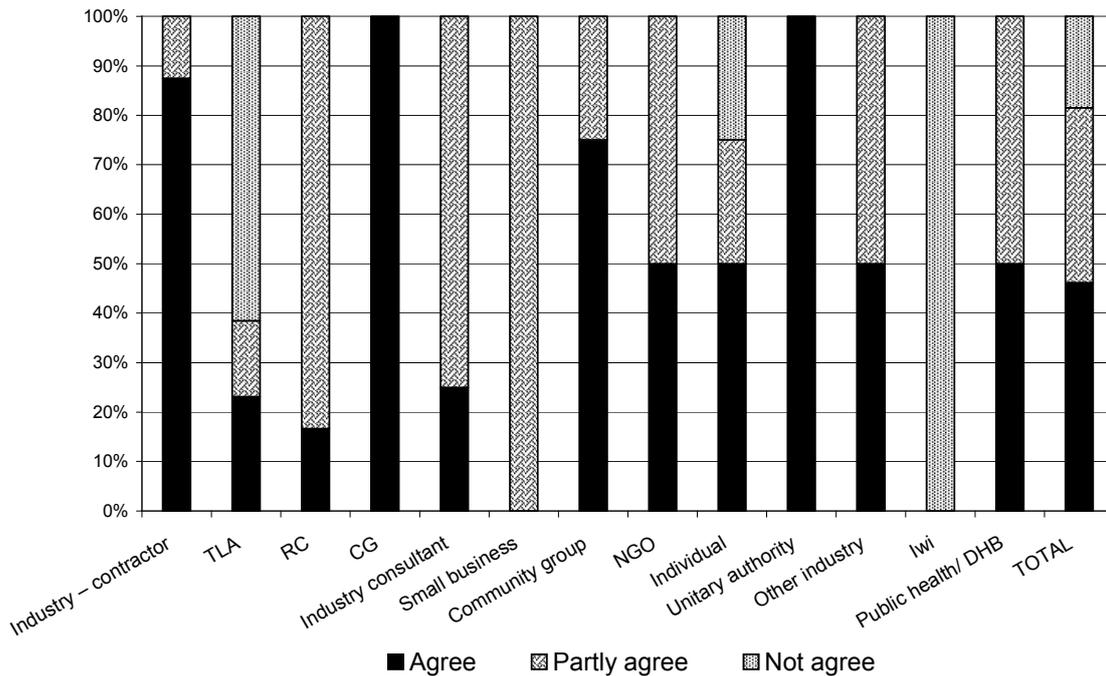
This key theme was split into three questions:

1. Have the problems been defined correctly?
2. Are there other problems you can think of?
3. What is the magnitude of these problems?

Question 1: Have the problems been defined correctly?

From a total of 65 replies to this question, 30 submitters agreed with the problems identified in the discussion document; 12 submitters did not agree, the great majority of which were territorial local authorities (TLAs); and 23 submitters partly agreed, often citing additional problems or putting a different emphasis on the problems identified in the problem statement (section 3.9) in the discussion document.

Figure 5: Submitters' position on problem definition



Notes: TLA = territorial local authority; RC = regional council; CG = central government; NGO = non-government organisation; DHB = district health board.

Among the agreeing submitters, an industry contractor stated that “Yes, have come across many instances of overflowing septic tanks that are polluting the environment, or septic tanks way past use by date and collapsed internally.” Gisborne District Council found it “consistent with our experiences”, and ESR Ltd stated that “NZ studies are consistent with overseas studies.”

Submissions that disagreed, or only partly agreed, that the problems were identified correctly can be roughly grouped into the following three categories.

Scope of problem too narrow or unclear

A large number of submitters felt that the NES only addresses a small portion of the problem themes, and that, for example, poor design and installation play a major role in the failure of on-site systems (see Question 2). Ngāti Tūwharetoa wanted a wider discussion of the effects of all classes of wastewater systems in New Zealand. Other submitters argued that problems exist not only in high-density areas but are also widespread in low-density rural areas. One submitter wanted clarification of the terms ‘hotspots’ and ‘sensitive areas’ as he considers one is preventive and the other reactive. There was a call from some submitters to quantify the problem in relation to other sources of pollution (eg, dairying). Central Otago District Council did not think the problems were clearly defined and saw the proposal as a reaction to a few isolated problems. Auckland Regional Council would have liked clearer reasons for the lack of ongoing servicing and maintenance to better inform a response to the options provided.

Problems defined wrongly

Many submissions from local government pointed out that in contrast to what was stated on page 18 in the discussion document, the tools to address the problem are already available, and that it is the resourcing to manage the situation proactively that is the problem. In the opinion of one industry consultant, the lack of clarity between councils was overemphasised, and it would

be better to explain how an NES will create a level playing field for industry that cannot be created by other methods. There was also some doubt that inadequate management is a primary cause of high numbers of failing systems in New Zealand. Many TLAs claimed that the problems are caused by the historical development of sites with lower standards and poor subdivision controls (see Question 2 below).

Environment Waikato identified three sets of problems.

- On-site systems are installed in unsuitable locations, meaning the success of the NES will only be partial at best.
- Effluent is surfacing because of poor maintenance or a failed disposal area, often not in high-risk areas, and the NES would not deal with that. The Health Act would deal with localised health risk if recognised.
- The cumulative effects of individual failing systems – the NES would go some way towards dealing with this situation.

Lack of hard facts and clear causation between failure and adverse effects

One criticism of the analysis was that no actual facts were provided, or they were oversimplified, and there was a lack of evidence to support the claims made. Doubts were expressed about the quality of the data, which had led to an inaccurate picture. The majority of submitters who did not agree with the problem definition in the discussion document were not convinced that failing on-site systems cause significant environmental effects when compared to other contamination sources.

Question 2: Are there other problems you can think of?

Fifty submissions identified additional problems. Many of the problems submitters identified as being important are included in the discussion document, but the proposed NES does not specifically deal with them because they are outside the scope of what an NES on operation and maintenance could cover. The additional problems can be broken down into several topics.

Poor design and installation

Seventeen submitters – mainly industry consultants, but also district councils – pointed out that poor design and installation (as well as management) play a major role in the failure of on-site systems. This includes inadequate site investigations, a lack of appropriate technical knowledge of systems by installers, and lack of innovation in developing systems applicable to a wide range of environments. A large proportion of advanced on-site systems would fail the manufacturer's specifications. Concern about the lack of integration between various standards and criteria (eg, AS/NZ1547 and guidance by the Department of Building and Housing) was also raised. Some submissions identified problems with the Building Act and claimed that TLAs were not carrying out their functions properly.

Another issue raised was problems arising from the owner or other unqualified people undertaking repairs that are not in compliance with current standards. Industry contractors attributed surface water flooding to inadequate lids, vents, mushrooms and gully traps, and explained groundwater and root intrusions by missing seals and drains constructed with poor materials by today's standards. A specific problem identified by Environment Southland was having disposal fields in close proximity (or over) tile drains, creating direct flow paths to ground and surface water.

Inadequate development controls

Many submissions identified the subdivision and building consent processes as a significant problem; for example, subdivision consents that created lots that were too small to accommodate adequate space for an on-site system, or a building consent granted without an on-site system being inspected. There was also criticism of the double consenting requirements (building consent and resource consent) for on-site systems.

The main concerns of submitters regarding development controls were:

- inappropriate subdivision consents allowing on-site systems where reticulation should be required or is available
- building permits issued for an on-site system with inappropriate design for the soil conditions, or systems not installed to design specification but approved by TLAs who may not have the technical background or capability for inspecting such systems
- TLAs not requesting as-built plans to include the location of the on-site system for the records
- TLAs not knowing, or lodging on their records, what special approvals they have permitted (eg, advanced on-site systems), or whether the reuse of greywater has been permitted.

Seven submitters, all TLAs, highlighted historical subdivision approvals that allowed inadequate lot sizes as a primary cause of failure. Also, at the time of large subdivision or district plan development, often the cheapest practical option for sewage treatment systems (reticulated versus on-site) would be selected, with maximum lots and with poor consideration of other lot activities or the design life of houses. Cumulative adverse long-term effects on the environment from large numbers of low-performance septic tanks (even though each system may be working satisfactorily) in small areas was seen as a significant problem by three submitters.

Warrant of fitness

A range of issues were raised in relation to applying a warrant of fitness using an NES. For example, one submitter voiced concern that an NES may not be fair where a system fails owing to design, site constraints, small sections, or inappropriate choice of treatment system. Another submitter stated that failure would often be measured by what can be seen, but systems can be failing with no visual impact. It was also pointed out by one industry consultant that there is a significant difference between system failure and risk. For example, a system may have failed but it cannot be assumed that the failure automatically creates a risk.

One submission considered that the wide variety of improved and advanced systems will challenge the NES to be broad and specific at the same time. This would imply that a broad knowledge base would be necessary to ensure the scope and effectiveness of the WOF was not limited. One submitter demanded that any minimum standard set of system components accommodate older systems (under-designed by current standards) that function with satisfactory performance. Another submitter wanted to have the quality of effluent considered. Support was expressed for a national testing facility and the inclusion of its performance certification in an NES.

One submitter thought the WOF regime under the proposed NES may give people false hope as to the need for reticulation, and that the proposed NES might be seen as a cheap alternative to reticulation. Another wanted the NES to provide a pathway to recognise the need for sewerage in areas of environmental constraints. A third submitter predicted a conflict if homeowners are required to upgrade when reticulation may be coming in the short to medium term.

Homeowner-related issues

A number of submissions commented on the ignorance of the common homeowner as to what on-site systems they have, what is acceptable performance and what to do about any problems. Three submitters emphasised the importance of the disposal fields and their maintenance. Another three saw the reasons for on-site system failure as being due to the changes in occupancy rates and densities, or increased usage of appliances such as dishwashers which cause greater loadings of wastewater. Another submission stated that the infrequent usage of holiday homes can lead to effluent not being treated appropriately. One of the industry contractors pointed out that for new specifically site-designed systems the maintenance is usually dropped after a few years or after a change in ownership of a property. A few submitters claimed that common operational issues such as drains blocked with soap powders and the usage of chemicals and other harmful or inappropriate cleaning agents being flushed through the on-site system have not been addressed in the discussion document.

One submitter raised concern about appropriate consultation with the homeowners the WOF will affect. Some criticism was raised that the current regime does not recognise economic and socio-economic issues, and that no incentives or adequate financial relief was proposed.

Other effects arising from failing systems

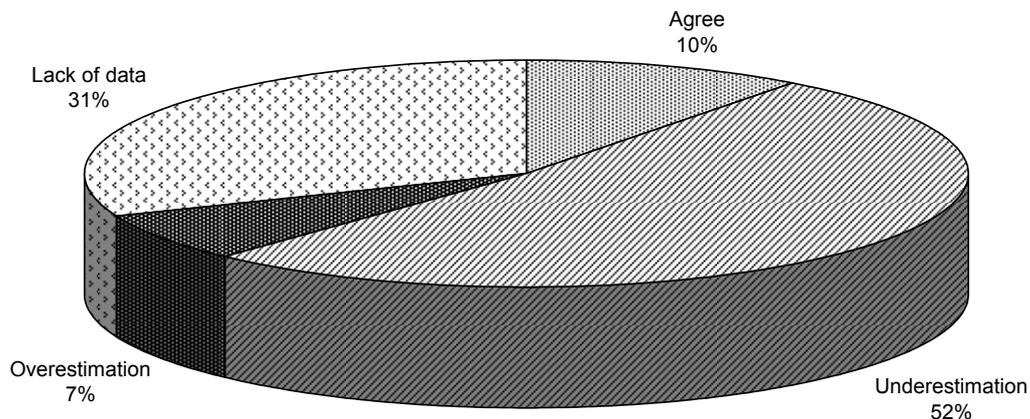
Northland District Health Board quoted a number of additional illnesses, such as asthma or cellulites, that could be attributed to contact with sewage resulting from failed on-site systems. They also noted that the impact on the mental health and wellbeing of occupants resulting from malfunctioning on-site systems should not be underestimated.

With regard to the natural environment, the Institution of Professional Engineers New Zealand (IPENZ) demanded further consideration of groundwater, while Environment Bay of Plenty wanted further discussion of water body eutrophication and ecosystem effects. Aquaculture New Zealand argued that risk perception is important to consider, both locally and internationally, so that New Zealand is seen to be managing risks before environmental degradation or human health effects occur. If commercial and non-commercial shellfish resources were affected, the value of some areas would be reduced. Other submitters raised concern about the degradation of land as a result of wastewater overflowing or ponding, adverse amenity effects (odours), and impacts on the economic prosperity of a community (eg, beach sites).

Question 3: What is the magnitude of these problems?

Thirty-nine submitters responded to this question, although only 28 responses specifically answered the question, with the remainder indicating they could not provide an answer due to a lack of data or information. Responses can be allocated as in figure 6.

Figure 6: Extent of problem as seen by submitters



There was wide agreement – especially from the contractors in the industry who deal with on-site systems daily in the field – that a large number of on-site systems are failing. From the 39 submissions received, 20 gave an estimate of the magnitude of the problem of failing on-site systems. The other submissions cited lack of data for not being able to make an assessment, or raised a number of related issues in this context. Interestingly, from the 20 submissions addressing the extent of the problem, 15 thought the figures given in the discussion document were probably an underestimate of the true extent of failing on-site systems in New Zealand. Only two submitters (one iwi and one regional council) thought that the numbers of failing systems were an overestimate. Three submitters agreed that the magnitude of the problem pictured in the discussion document was about right.

Reasons given for the likely underestimation of the extent of the problem were that most failing systems go unreported unless there are off-site discharges. There were also criticisms of the efforts by authorities to monitor the effects of their policies and plans. Two submitters pointed out that the cumulative effects of failing on-site systems are often not being taken into account. Canterbury District Health Board cited a Bay of Plenty study with a calculated failure rate of 60 per cent and pointed out that underestimating the problem would potentially compromise the NES in terms of the ability to address the situation in terms of the workforce and funds available. The Ministry of Health cited test data from Hawke’s Bay which showed that 67 per cent of on-site systems were not producing secondary treated effluent to the standards claimed by the manufacturers, and that the degree of failure could be similar in other areas. Some submitters thought that the problem will become even worse in the future due to the large number of ageing septic tanks and more peri-urban developments with an increasing use of on-site systems.

Nine submitters stated that they could not give an opinion due to the limited work done so far to quantify the magnitude of the problem. Eleven submissions raised some related issues, including the fact that the extent of failing systems would vary from location to location and could fluctuate seasonally (eg, due to the groundwater table level). Three regional councils stated that it was difficult to directly link failing on-site systems to water quality problems and that the source of *E. coli* may be predominantly non-human (eg, from dairy-shed discharges) or from urban reticulated sewerage system overflow.

Aquaculture New Zealand pointed out that poorly performing septic tanks have the potential to affect a number of commercial and non-commercial shellfish resources, and that shellfish contamination as an environmental public health problem needs to be recognised as a major

factor. In addition, Environment Bay of Plenty proposed putting greater emphasis on the effects on customary kaimoana gathering areas and relevance to Māori, especially with regard to recent legislation to protect customary rights.

3.4 The policy objective

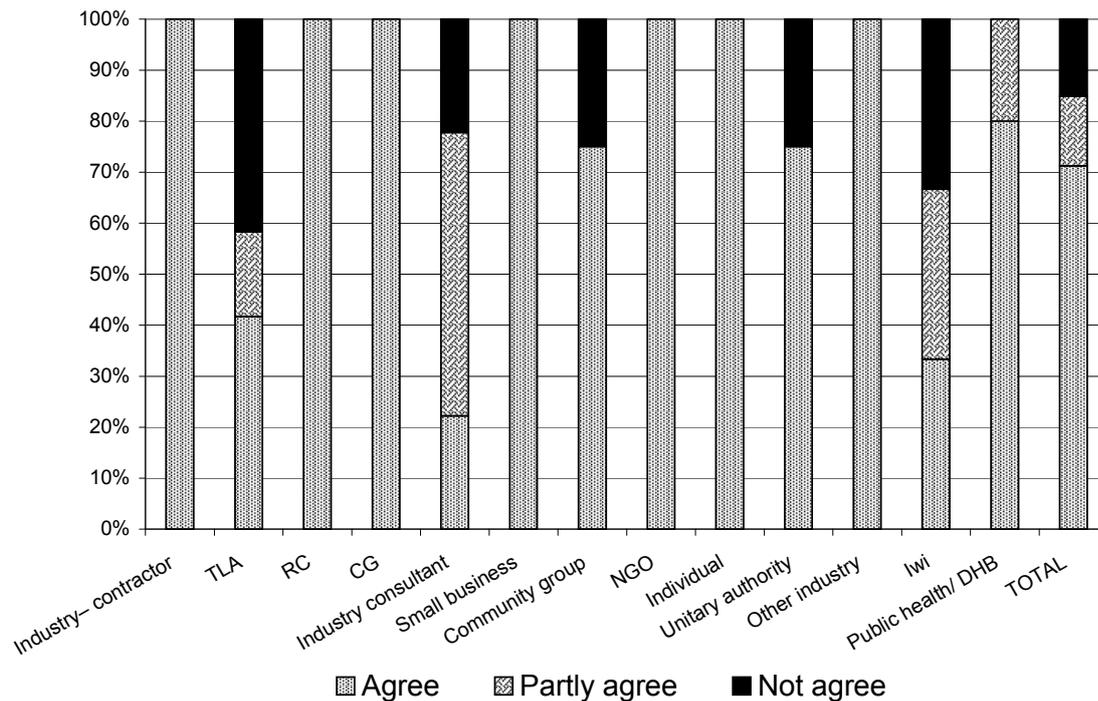
This theme was split into three questions:

1. Do you agree with the policy objective?
2. Is there an alternative approach that has not been considered?
3. Do you agree with the analysis provided in this section?

Question 4: Do you agree with the policy objective?

Sixty-six submissions were received on this question, with the overwhelming majority supporting the policy objective. Ten submitters did not agree, of which six were either a TLA or unitary authority. Nine submitters only partly agreed, five of which were industry consultants.

Figure 7: Submitters' agreement with the policy objective



Notes: TLA = territorial local authority; RC = regional council; CG = central government; NGO = non-government organisation; DHB = district health board.

Two local government submitters (one TLA and one regional council) confirmed that the policy objective aligns with their strategic documents and plans. One TLA also agreed, but did not consider it appropriate to be implemented at a national level.

Some of the agreeing parties would like to see minor wording changes to the policy objective. For example, one NGO made the comment that just stating cumulative effects suggests that

effects are only related to the density of on-site systems. One community group requested that the reference to “poorly maintained” be removed, as this is a value judgement and the policy should apply only to failed systems. The Ministry of Health supported the intent of the policy objective but recommended replacing “the risk to people” with “the risk to human health” to make the intent more transparent. Ngāti Kahungunu iwi agreed with the objective but suggested renaming the proposed NES “the Proposed National Environment Standard *for the Maintenance of On-site Wastewater Systems*”.

Five industry consultants agreed with the objective, with the caveat that the policy objective should also include the design and installation of on-site systems. One of these submitters wanted to add the wording “to improve the management, *functioning and maintenance of on-site systems*”. One district health board agreed with the policy objective in principle, but had the concern that the NES does not address the problem of cumulative effects as stated; ie, by providing tools to identify and monitor cumulative effects. Since assessment is only proposed on an individual site basis, the NES would need to be tightened to “on-site inspection and monitoring”.

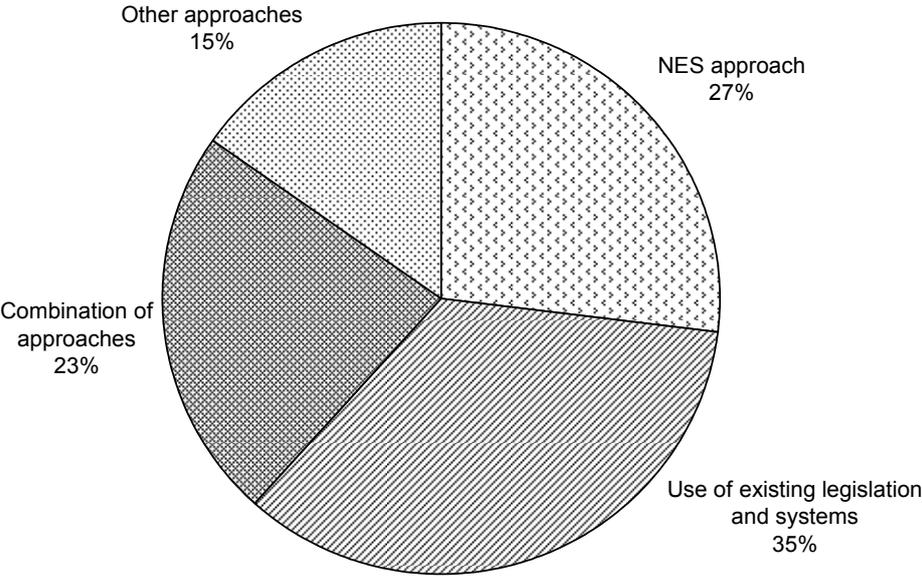
One TLA conceded that the statement on “polluter pays” may be well intentioned, but it would not always be possible to apply because the cause of the problem may not be due to the ‘polluter’ but a function of many factors. Since on-site wastewater systems have the potential to affect the wider community, funding from a wider source than just the polluter should be considered. A second TLA thought the polluter-pays principle should apply, but should also take into account financial considerations. In contrast, while supporting the policy objective, Ngāti Tūwharetoa Māori Trust Board did not agree with the polluter-pays principle.

All five TLAs opposing the policy objective were concerned that it was inappropriately limited and would require a more holistic approach that includes design and installation.

Question 5: Is there an alternative approach that has not been considered?

Forty-nine submissions were received on this question, with 35 offering one or more alternative approaches to the proposed NES. Many of these submitters reiterated the alternative approaches under section 4.2 in the discussion document, or preferred to use existing legislation and systems. Others favoured a combination of the NES and other initiatives. One comment was, “We need concurrent approaches rather than alternative approaches. The NES should not exist in isolation.”

Figure 8: Approaches suggested by submitters



Use of existing legislation and systems

Many submissions drew attention to various existing mechanisms, industry standards and provisions under various agencies and Acts that could be utilised. For example, seven TLAs felt that no adequate credence had been given to the use of bylaws under the Local Government Act as an alternative option.

Six TLAs argued that the use of compliance schedules and the Building Act needs further investigation, as the administration systems are already in place for this process. Master Plumbers, Gasfitters and Drainlayer NZ Inc, Local Government New Zealand and the Department of Conservation also wanted the potential to require a WOF through the compliance schedules of the Building Act to be reconsidered.

Five TLAs pointed to the existing tools under the Resource Management Act. One unitary authority proposed an NES that would require all on-site wastewater discharges, both new and existing, to have discharge permits with conditions that require a very similar level of inspection to that proposed by the NES’s WOF system.

The use of existing accredited contractors, or approved test certifiers as used in the Hazardous Substances and New Organisms Act, was supported, as was the WasteTrack system.

Combination of approaches

A number of submissions argued that the NES as proposed should be part of a wider management regime, including independent testing of wastewater systems, training programmes, and implementation of New Zealand standards (AS/NZ:1547). This industry-wide initiative should include system suppliers, designers, installers and homeowners, plus the Ministry of the Environment and councils. There was also a call for a tandem approach that includes design and installation in the NES.

Some submissions pointed out that a combination of some of the alternative approaches described in the discussion document could achieve similar benefits with less additional bureaucracy (eg, legislative change along with a national policy statement).

Other approaches

Other approaches suggested included:

- re-evaluation of reticulation as a first choice in hotspots
- monitoring waterways and aquifers, including testing for *E. coli* and protozoa, and investigating when and if there is a problem
- a staged non-regulatory approach leading to regulation, instead of immediately imposing an NES
- more education of homeowners (eg, through information delivered to homeowners' letterboxes).

Question 6: Do you agree with the analysis provided in this section?

Fifty-six submissions were received on the section that concluded that an NES is the best means to achieve the policy objective. Thirty submitters (54 per cent) agreed with the analysis of different options. Twenty submissions did not agree, of which eight were from TLAs and three from iwi. Six submitters (11 per cent) partly agreed with the analysis.

As a result, agreement or part agreement with the analysis was considerably lower (65 per cent) than agreement with the policy objective (85 per cent). This emphasises that while there is wide agreement on the policy objective, opinions are more divided on how to achieve this. Many arguments brought up had already been discussed in section 5 of the discussion document. However, the high number of TLAs that remained unconvinced that an NES is the best tool (and often favoured existing legislation as an alternative approach) mirrors the high proportion of TLAs that did not agree with the policy objective either.

Other common themes of the opposing submissions were that the assessment omitted many other industry-related problems, and that alternatives were not sufficiently considered.

3.5 The proposed standard

Question 7: Do you have any general comments about the proposed standard for the inspection and maintenance of on-site wastewater systems?

Sixty-nine respondents provided general comments about the proposed standard. These covered a wide range of issues, ranging from administration to the potential costs of implementing the proposals. Although the responses varied significantly, some common themes emerged, including:

- concern that the standards would impose significant costs on homeowners and councils
- the need for administration and clarity of roles
- one size fits all is not appropriate
- the need for flexibility in application

- a perceived focus on septic tanks/disposal fields over other types of systems
- the lack of focus on the major contributors of pollution (eg, agriculture or municipal)
- a preference for administration by either TLAs or regional councils.

The most common point raised as a general comment was in relation to the administration of the proposal. Nine submitters raised this issue, with four preferring TLA administration, two preferring regional council administration and one preferring a combined approach.² Linked to the preference for TLAs to administer the regime was the idea that this would facilitate the inclusion of information on property files held by TLAs.

Another strong theme in the general comments was concern that the discussion document focused too much on older (septic tank/disposal field) systems and did not fully consider or account for more advanced systems.

The standard is intended to address all types of on-site wastewater systems and ensure they are functioning appropriately regardless of the type of system or technology. However, the reality in New Zealand is that the vast majority of on-site systems are of the older septic tank and disposal-field type system.

Question 8: Should the proposed standard apply to private dwellings only ...?

A clear message from submitters was that the proposed standard should not be limited to domestic dwellings, but should be applied to all on-site systems, or to all on-site systems within a gazetted area. The common argument was that the servicing of businesses, schools, marae, camping grounds etc would not be consistently monitored under current resource consents. There were, however, some provisos in the submissions regarding this: 11 submitters suggested that consented systems should not be included because they would already have monitoring conditions on their consents, and three submitters suggested that consented systems should be included only where the proposed standard would require greater management requirements.

Other submitters suggested that the NES should go further and apply to cluster systems as well.

Question 9: Do you agree with the inspection interval of three years?

There was a clear dichotomy in the responses to Question 9. Forty-three submitters considered that a regular three-year compulsory inspection is appropriate and provides a simple approach. The other position was that inspections should be based on need, and the return period could be decided by the initial inspection, taking into account the risk factors, age and type of the system. Another suggestion was to set a default period of three years, with the ability to extend the inspection interval based on the initial inspection. Eight submitters simply stated that a three-year inspection interval was not appropriate, while 23 submitters sought flexibility in the inspection frequency. The suggestion was made to incorporate changes to the building, or an increase of usage and change of ownership, into the inspection regime.

² See also Question 15 and the special theme on responsibility for administration of NES, which canvasses all submission responses on this issue.

Several submissions argued for a link to existing maintenance contracts, as these are often six-monthly maintenance inspections by third parties that could provide valuable information on the condition of a system and reduce the potential for duplicate or unnecessary inspections.

IPENZ suggested a greater return period for basic/low-risk systems and more regular inspections for secondary and advanced systems that require greater levels of maintenance and have a greater risk of failure.

Question 10: Should inspections be coupled with an immediate pump-out?

There were 61 responses to the question of whether inspections should be linked with an immediate pump-out. Out of these, half (31) said that inspections should not be coupled with pump-outs. A frequent argument was that different systems require different pump-out intervals. There was also some concern about a potential conflict of interest if the inspector is also the pumping contractor. An additional 14 felt that only the initial inspection should be coupled with a pump-out so that a reasonable inspection can be carried out. The majority of these submitters also requested that subsequent pump-outs then be as required.

Sixteen respondents indicated a preference for pump-outs to be coupled with inspections. Reasons given for this included cost savings for combining inspection and pump-out, with one submitter saying, “it is important that the structural integrity of the tank is inspected for cracks/leaks.”

A three-yearly pump-out is a general rule of thumb used for older-style septic tanks servicing an average-sized family household. A three-yearly pump-out is generally not appropriate for more advanced systems, which may require regular inspection and servicing, often at six-monthly intervals.

Question 11: Do you agree with the proposed critical components for the checklist?

There were 59 responses to this question. Twenty-two respondents agreed completely with the critical components of the checklist, 13 disagreed, and the remainder (24) had suggestions or additions they would like to see included. In all, there was support or conditional support from 46 of the 59 submitters (78 per cent) that gave a response to Question 11.

The suggestions for changes or additions to the critical components of the checklist presented in the discussion document can be bunched into four main groups:

- a request for specific details to be included in the checklist
- a general request for more detail
- suggestions on who should carry out the inspections (linked to Question 16)
- a request for specific checklists for different system types.

Question 12: Should the proposed standard prescribe a minimum level of treatment for new on-site systems?

Sixty-two comments were received in response to whether an NES should prescribe a minimum level of treatment for new on-site systems. The clear response (74 per cent) from submitters was *no*. A further five submitters did not clearly state a preference but wanted the type of system and hence the level of treatment to be determined only after a full assessment of the site and the environment. This point was also highlighted by several of the submitters that supported specifying a minimum level of treatment.

Submitters noted that in some locations a simple septic tank and disposal field-type system would work fine if designed and installed appropriately. A simple system (ie, primary treatment) was also considered a practical solution in situations where a lack of electricity would make it impractical or financially impossible to install a more advanced system (eg, back-country huts in the Department of Conservation estate). Comments included:

NO! To make secondary treatment systems mandatory would increase problems and expenses.

Yes as this is what is to be controlled the output of wastewater systems. Should not ban septic tanks. But system type should be dependent on the physical conditions of a site.

3.6 Implementing the proposed standard

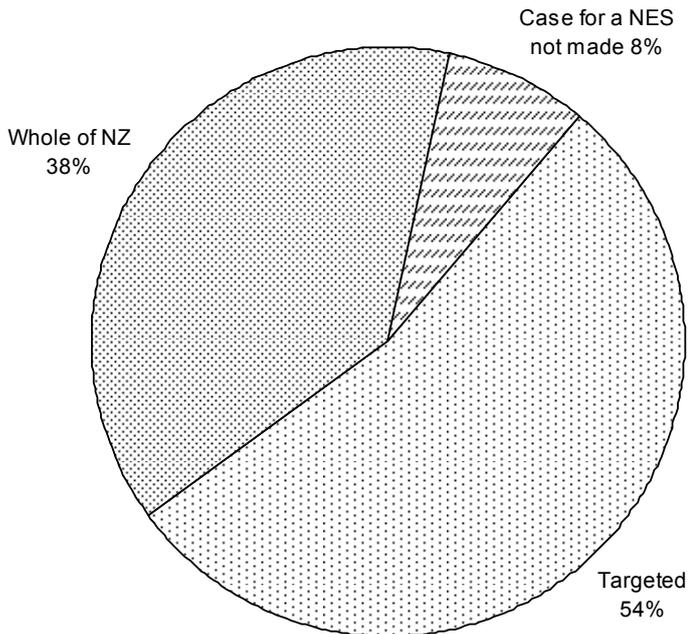
The following series of questions sought comments on aspects of the implementation of the proposed standard. Questions sought feedback on where and how the standard could be applied and asked submitters to identify any problems they could foresee with the implementation of the proposal. A high number of comments were received on the questions in this section of the discussion document.

Question 13: Should the proposed standard apply to targeted areas as proposed, or across the whole of New Zealand?

Seventy-two submitters, or more than half the total number of submissions received, commented on this question. Eleven submitters to this question were in opposition to the overall NES proposal while the rest either supported it or were neutral.

Reponses were split between targeting specific areas using a risk-based approach and applying the proposed regime to the whole of New Zealand. The majority of submitters (54 per cent) believe a targeted approach is the best option, 38 per cent opted for applying the NES to the whole of New Zealand, while 8 per cent (five submitters) claimed that the justification for implementing the NES had not been established through the discussion document.

Figure 9: Should the standard apply to targeted areas or the whole of New Zealand?



Among the responses to the preferred option there were several submitters who stated a secondary preference for whether the proposed NES should be targeted or applied nationally. Some thought the targeted approach should be used, while providing the flexibility to apply the regime to the whole country at the same time. Some submitters in favour of the whole-of-New Zealand approach, on the other hand, suggested that the implementation should be done in phases, addressing higher-risk/problem areas first, followed by the remainder at a later time.

Question 14: Do you agree with the risk assessment methodology and the proposed criteria for identifying targeted areas?

Question 14 sought to gauge people's thoughts on using a risk-based approach to deciding where to apply the proposed standard. This question leads on from the previous question regarding where to apply the proposed NES, so respondents that indicated a preference for the targeted approach for the proposed standard form the majority of respondents to this question.

Twenty-three submitters agreed with the methodology and criteria for identifying 'at risk' areas, commenting, for example, "The target area information list is comprehensive and well rounded". A further 29 submitters agreed with the methodology and/or criteria but had comments on or requested additions to the criteria. Six submitters disagreed with the methodology and criteria, of which five disagreed on the grounds that the proposed standard should be applied to the whole of New Zealand and not targeted to specific locations.

Recurrent themes regarding the methodology and criteria included the following.

- The importance of applying the criteria consistently in all regions – clarity in the criteria was requested to ensure national consistency in their application.
- Linking the risk assessment to existing measures to avoid duplication – for example, one submitter argued for the need to "use existing measures including: Assessments of water and sanitary services under the LGA".

- Additional criteria were frequently requested – the socio-economic factors of an area featured most often, followed by shellfish gathering/harvesting sites, although it was unclear from responses to this question how submitters thought socio-economic factors could be factored into the assessment criteria. However, further information on this is covered in the following section on costs and benefits.

One submitter commented that “the criteria are largely based on design factors and not the maintenance and management of systems”. Another highlighted “the initial assessment of the areas where the NES might apply including the option to move to a reticulated community system rather than an inspection system”.

Question 15: Do you see any problems with the implementation and administration of the proposed standard?

Seventy-three submitters responded directly to this question, one of the highest response rates for a question in the discussion document. Submitters identified a significant number of issues they considered would need addressing in order to facilitate effective and efficient implementation and administration of the proposed standard. The following table highlights the recurring points that were made by submitters and the number of submitters that referred to each issue. Most submitters raised several points in their responses.

Table 3: Issues raised by submitters on the implementation and administration of the proposed standard

Issue	Number of submissions raising this issue
<p>Roles of TLA and regional council</p> <p>TLAs indicated a clear preference to have the primary role in administering the proposed standard, although several submitters thought that regional councils should still have an oversight role to ensure consistency and to identify where the standard should apply. A more defined role for the district council and the medical officer of health in the implementation process was sought.</p>	18
<p>Creating additional bureaucracy vs utilising existing systems</p> <p>Submitters that raised this issue questioned the need to create a new regime to manage and monitor the WOF systems when local authorities had existing systems that could be adapted to achieve the same outcomes. For example, one city council commented that “TLAs should be responsible for the administration as it complements the existing work under Building Act and record keeping systems.” Another comment was that a new regime would compound the level of bureaucracy without clarifying the roles of TLAs and regional councils.</p>	14
<p>Resourcing and cost recovery for inspections</p> <p>There was a close relationship between the preference for TLAs to administer the proposed standard and comments regarding resourcing and cost recovery. TLAs are able to recover costs through rates for activities such as those proposed under the NES, but there is presently no equivalent mechanism under the Local Government Act for regional councils to do so. For example, one submitter commented, “where possible it should be controlled by local bodies which would allow for costs to be recovered in the rating system.” The issue of resourcing was mentioned in relation to councils having the staff resources or the ability to secure resources to administer the proposed NES.</p>	11
<p>Costs to homeowners and funding for poor people</p> <p>The costs to homeowners are raised further in the section on costs and benefits and the funding issue (section 3.8 below). The complex issue is first highlighted here in terms of the ability of people and/or communities to afford to fix problems if they are identified through an inspection regime. For example, one iwi noted, “implementation of the standard could trigger financial hardship for individual home owners ... where existing systems are considered (by council inspectors) to require replacement or substantial upgrading”.</p>	11
<p>Sufficient number of qualified inspectors</p> <p>Submitters raised concerns that there would not be sufficient qualified inspectors ready to undertake the inspections when the NES came into force because developing and implementing additional training programmes will take time and require resources. Some regions may be more affected by the lack of appropriately qualified inspectors than others.</p>	9

Issue	Number of submissions raising this issue
<p>Links to existing record systems, especially property files</p> <p>This sub-theme has been pulled out because submitters that commented on this were quite explicit that information should be held on property files so that it would be available and accessible to homeowners and potential property buyers.</p>	7
<p>Role of Ministry for the Environment</p> <p>The Ministry for the Environment was seen as having a strong role to play in the initial setting up and implementation of the proposed standard. Submitters suggested that this would include technical support, model administration systems that could be adopted (ie, a database), development of a unit standard for accreditation of inspectors, and development and implementation of the training programme for inspectors. One submitter requested that the Ministry prepare and disseminate a comprehensive implementation package.</p>	5

Question 16: What would be an appropriate training level for inspectors/certifiers?

Forty-eight submitters expressed a preference for the level of training they thought appropriate for inspectors to possess in order for them to carry out inspections. The majority (26) expressed a preference for an Industry Training Organisation or unit standard-type qualification for inspectors. Several submitters also thought that the initial qualification should be complemented by a requirement for regular refresher courses. Other submitters also wanted recognition within any qualification of the past experience of possible inspectors. Several submitters suggested that the level of training required would depend on the type of system that was being inspected, with “Less training for inspecting older septic systems, comprehensive training for inspecting newer systems”.

At the other end of the spectrum were submissions (six) that indicated a preference for simple training to upskill people already working in some aspect of on-site wastewater management. Comments were, for example, “Focus on up skilling existing technicians” and “A half day lecture would suffice to arm people for a walkover.”

3.7 Benefits and costs

The questions in the cost–benefit section of the discussion document sought to determine whether submitters agreed with the analysis provided and whether there was any further information they could provide to help inform the later cost–benefit analysis. The submissions received usually did not address the six specific questions individually under this section, but discussed benefits and costs more generically. All the responses are therefore canvassed under questions 17 and 18.

The initial cost–benefit analysis in the discussion document was based on information available at the time. The calculations were mostly based on real figures provided to the researchers. A decision was made to present the initial cost–benefit analysis based on the factual information available rather than try to estimate costs. The intention was to provoke a response to the analysis and encourage people to provide information they may have that would help us to better reflect the real costs and benefits of the proposal. A large amount of factual information was provided by submitters, which will be used to inform any comprehensive final cost–benefit analysis.

Question 17: Have we accurately reflected the range of costs and benefits ...?

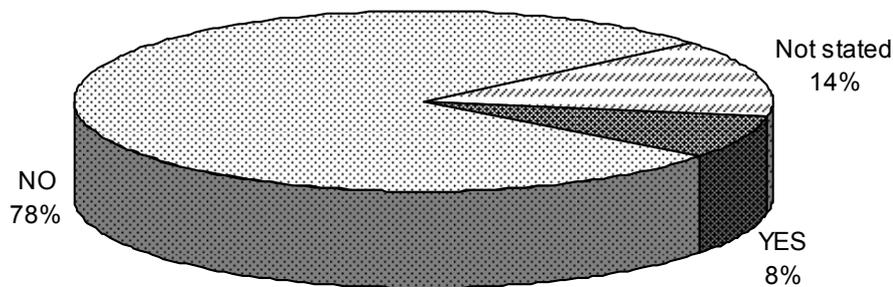
There was a clear message by the 65 submitters responding to this question: 51 indicated that no, we had not accurately reflected the range of costs and benefits, while five indicated that, yes, they thought we had. A further nine did not indicate either way, but provided suggestions on additional factors that could be considered.

The clear message was that submitters consider that the costs of the proposal have been underestimated – several submitters used terms such as “significantly underestimated”. Many of the comments related to the estimate of \$35 per inspection, which was quoted in the discussion document. Several submitters provided cost estimates for inspections based on current council charges for environment and building inspections. Some examples of inspection costs provided by submitters were as follows:

- \$48 for a car WOF (does not include a home visit by inspector)
- \$140 for a TLA building inspection
- \$258 for a regional council dairy shed inspection
- A\$50 on-site inspection in Australia
- US\$150 on-site inspection in the United States.

Councils in New Zealand that already run registration and inspection programmes have generally licensed the septic tank pump-out contractors to carry out initial inspections at the time of pump-out. There was some doubt whether an inspection system run separately from the pump-out process would be viable.

Figure 10: Have we accurately reflected the range of costs and benefits?



Question 18: Are there any costs and benefits we have overlooked?

Reponses to Questions 18 to 22 have been grouped together here because there was considerable overlap in the comments received on the individual questions. The other questions were:

19. Do you have information you would like to see included in the cost–benefit analysis that will occur after the submissions are received and analysed?
20. Are our estimates of costs and benefits accurate?

21. Do you have information on costs and benefits that could assist the second stage of our assessment (of the impacts of any final proposals)?
22. Do you have any information on costs and benefits that we have been unable to quantify?

Table 4 provides a summary of the types of costs and benefits that submitters identified as having been overlooked in the analysis provided in the discussion document.

Table 4: Costs and benefits identified by submitters as being overlooked or underestimated in the analysis

Costs	Benefits
Initial up-front costs and development costs	Improved public health, tourism and water-related industries
Set-up and training costs (including database development)	Intangible benefits such as improved quality of life, better health and greater productivity
Covering costs of inspection and maintenance and repair in lower socio-economic / high deprivation communities	Public good benefit
Training of new staff due to staff turnover	Potential reduction in costs for councils of not providing wastewater treatment plants for non-reticulated areas.
Educating new homeowners with on-site systems	Longer life-time of on-site systems through regular maintenance
Costs of consultation on hotspot areas	
Compliance costs	
Costs to the community if rates are raised to cover any compliance and administration expenses not directly recoverable from users.	
Audit and monitoring of inspectors	

Additional issues that submitters thought need to be considered included:

- a regional breakdown of numbers and/or an indication from regional councils of where they may apply the NES
- better estimates of the impacts of eating contaminated shellfish
- how to factor in the costs of inspecting and/or servicing remote or difficult-to-access locations
- procedures for handling failed systems.

Some submitters provided cost estimates based on their own experiences in councils or businesses for overheads and operating costs that will help inform the final cost-benefit analysis. Some individual submitters also provided figures in relation to the costs they experience for inspections and pump-outs in their areas.

Several responses indicated a preference for where the costs of the NES should lie. Responses ranged from complete ‘user pays’ and full cost recovery, to the suggestion that money to cover the costs of the proposed NES should come out of the general rates because the regime would create a public good that benefited everyone. There was also a middle ground, with one submitter suggesting there should be a public good component to dividing up the costs of the regime. One submitter who preferred full cost recovery from homeowners said, “individuals should no longer be able to use the public environment for private waste disposal.”

Affordability of the scheme and the potential social impact on parts of society that cannot afford repairs was a strong theme in responses to questions about the cost–benefit analysis. This is discussed further in the ‘Special themes’ section below, and is an issue that will require further work before the proposal can be progressed.

3.8 Special themes

3.8.1 Financial assistance

The main message carried through many submissions was: Without financial support the NES will not work successfully. Many people on low incomes would not be able to afford a new system or costly repairs, and therefore financial hardship needs to be considered before the NES is applied.

Eighteen out of 26 unsolicited responses focused on the need to offer financial assistance or funding options (offer a carrot rather than just a stick), such as grants (eg, “MfE to provide 50% of capital costs of repair or replacement in pre1970 systems over and above \$5,000 of expenditure,” “advanced payment of benefit”, “Recoverable Assistance for non-beneficiaries”, and “Special Needs that are administered by the Ministry for Social Development”), subsidies, interest-free loans to allow upgrading or replacement, or a rates rebate for low income and demonstrated financial hardship.

There was also council concern over implementation and administration costs, and the desire for financial assistance to cover the initial start-up costs (eg, for carrying out risk assessment and consultation on targeted areas).

The opinions of homeowners were split between opposing an additional set fee on homeowners and opposing the ratepayer carrying the additional costs. Another submission suggested a flat fee for inspectors and a mechanism for keeping fees low. There was also a request to provide more information on available grants. One submitter suggested the Minister consider the link between the NES and funding for wastewater system development to achieve environmental (including health) outcomes.

3.8.2 Managing septage/sludge from pump-out

Six submitters highlighted the issue of managing the increased amount of sludge that may result from requiring more regular pump-outs under a possible NES. Concern was raised that council treatment plants would not be able to cope and would require more treatment capacity and upgrades, which in turn would generate more costs to ratepayers. Another issue that was highlighted in the Bay of Plenty was the lack of consented sites under the RMA for the disposal of waste from on-site systems. The provision of consented sites would need to be sought prior to commencing a large-scale inspection regime. In addition, it was proposed that system owners should keep a record of where their septage has gone and who transported it. Submitters also noted that sucked material other than sludge is causing undue wear and tear on the district screening process, or is dumped at the district council discharge facility.

3.8.3 Responsibility for administering the NES

Twenty-four submitters gave suggestions as to who should administer the NES. A majority (17 submitters, including eight TLAs and three regional councils) favoured TLAs because they already have the administrative systems for managing properties and could more easily recover

costs. A subset of those agreed for regional councils to have the oversight role in the overall NES management. Two TLAs agreed that the responsibility should lie with the regional council, but requested mandatory consultation with the TLAs on targeted areas. Explicit reference in regulations to the ability to transfer powers under section 33 of the RMA was requested by three submitters.

Other concerns raised included the inconsistency between the various regional councils in terms of how the NES would be applied and administered, and a model data base was suggested to provide cost savings and ensure national consistency. One submitter proposed having a single point of contact for all complaints to ensure they are followed up and the situation remedied. The need to retain the opportunity for homeowners to source inspectors from the private sector instead of local government was also stated.

Appendices

Appendix 1: Public notice for release of discussion document

Ministry for the
Environment
Manatū Mo Te Taiao

National Environmental Standard for On-site Wastewater Systems (Septic Tanks) – call for submissions

In accordance with section 44 of the Resource Management Act 1991, the Minister for the Environment gives notice of the Government's intention to develop a national environmental standard (regulation) for domestic on-site wastewater systems (septic tanks).

The proposed national environmental standard aims to improve the management and environmental performance of septic tanks and other on-site systems used to treat domestic wastewater. This is consistent with the purpose of the Act as it will promote sustainable management of resources and help to safeguard the life supporting capacity of water and soil.

In essence, the proposal is that:

Owners of properties with on-site wastewater systems in specific locations be required to hold a current warrant of fitness that confirms their on-site system is functioning properly and is being maintained to an appropriate standard.

The standard would authorise regional councils to require property owners with an on-site wastewater system to hold a current warrant of fitness (WOF) for their system. To obtain a WOF, a system would be required to pass an inspection every three years.

A discussion document outlining the subject matter and rationale of the proposed standard has been produced by the Ministry for the Environment to help people make submissions. This document can be viewed at the Ministry for the Environment, 23 Kate Sheppard Place, Thorndon, Wellington and online at www.mfe.govt.nz

If you would like a printed copy of the discussion document, free copies are available by emailing your request to publications@mfe.govt.nz or by phoning (04) 439 7467.

Any person can make a submission on the subject matter of the proposed standard.

Please include the following information in your submission:

1. Your name, postal address, phone number and email address (if applicable).
2. That you are making a submission on the proposal to develop a national environmental standard for on-site wastewater systems.
3. Whether you support or oppose the proposal as detailed in the discussion document.
4. Your submission with reasons for your views.
5. Any changes you would like made to the proposed standard as detailed in the discussion document.
6. The decision you would like the Minister for the Environment to make.

Please send your submission to the Ministry for the Environment, PO Box 10362, Wellington or email to standards@mfe.govt.nz by 5 pm on Friday 26 September 2008.

The Ministry for the Environment will analyse the submissions and provide a report to the Minister with appropriate recommendations.

Appendix 2: Notes from Consultation Workshops

Location Key:

Whangarei [1]; Auckland [2]; Hamilton [3]; Rotorua [4]; Gisborne [5]; Napier [6]; Palmerston North [7]; Stratford [8]; Wellington [9]; Picton [10]; Christchurch [11]; Invercargill [12]; Dunedin [13], Greymouth [14].

Item	Topic Area	Comments	Location
1	NES implementation	<ul style="list-style-type: none"> Gazetting areas for NES after wide consultation by RC would avoid the hassle of a prolonged planning change process RCs and DCs should act jointly to designate areas Guidance needed on determining environmentally “sensitive” areas in relation to receiving environment Need a set of guidelines on undertaking remedial works Needs to be a collaborative process involving councils and communities Need an implementation package right up front at the time the NES is promulgated Inspection Package deals could be used to lower cost and administration Why is MoH not involved if health risk so great? Analysis desirable on how NES impacts on other government initiatives (e.g. reticulation, subsidy scheme) Change NES title to “Maintenance of on-site systems” Education of home owners is important – does MfE run an educational campaign prior to NES implementation? Would increase acceptance if cases of serious health effects from on-site systems are displayed in pamphlet Make roles and responsibilities between different councils clear to start process – need more guidance List of subsidies/ funding options should be included in the implementation pack What happens where an inspection process is currently in place? Provide central government support for first inspection (as this will be the most costly one) On-site systems should be identified on PIM for future home-owners to know about them NES should require to inspect at time of property sale to ensure compliance One size does not fit all – local solutions are needed Pressure on the municipal treatment plant if sludge from inspected on-site systems is discharged Better to enforce NES than to apply NZ/AUS Standard (good but not legal requirement) - useful tool for filling gap of maintenance This new bureaucracy of NES is not necessary Long-term benefit of having NES, but a lot of septic tanks are in a state of failing and need upgrading/ replacing, which costs a lot of money, thus need to fix them first, then manage 	<p>3;</p> <p>9;</p> <p>7; 3;</p> <p>5;</p> <p>5; 10; 3;</p> <p>6;</p> <p>6;</p> <p>2; 6; 12; 13</p> <p>6;</p> <p>6;</p> <p>8; 11; 12; 14</p> <p>11; 13</p> <p>11; 6;</p> <p>11;</p> <p>11;</p> <p>11;</p> <p>11; 6;</p> <p>6;</p> <p>12; 9;</p> <p>12;</p> <p>12; 10; 3</p> <p>12;</p> <p>12;</p>

Item	Topic Area	Comments	Location
1	NES implementation <i>continued</i>	<ul style="list-style-type: none"> • A lot of existing regulation can be used, e.g. building consent • Problems with staff delegation if inspection is not counted like a resource consent under RMA • More staffing will be required • Is MFE pushing with the NES for all systems to be secondary systems? Expensive systems are not necessarily better than simple systems • Resources are needed for identification, consultation and implementation • Danger of duplicating if councils already do something • There are consultation requirements under LGA for the process of gazetting sensitive areas • Needs to be stressed that home owners have responsibility and obligation to have system maintained • How can it be subsidised by ratepayers – is there a mechanism in place under the NES? • Government needs to give reasonable subsidy to get people's cooperation, else it costs three times in litigation, or it is discharged illegally/ covered up • Grant should not go directly to homeowner, but to council that adopt NES and paid to contractor on completion of job • Councils don't want to adopt it if it creates problems • RC first need to assess the extent of the problem 	<p>12;</p> <p>12;</p> <p>13;</p> <p>13;</p> <p>2; 3;</p> <p>7;</p> <p>7;14;</p> <p>7;</p> <p>7;</p> <p>14;</p> <p>14;</p> <p>14;</p> <p>14;</p>
2	Authority for NES Mandatory vs voluntary	<ul style="list-style-type: none"> • Can community challenge imposition of NES? • Can decision of inspector be challenged by homeowner? • How can we call it National Environmental Standard if it does not apply to whole NZ? • Voluntary NES not really a solution to ensure that NZers are safe in 5 to 10 years time – disappointing • If RMA gives tools to councils to deal with issues, why does MFE push NES through? • If it is a National Standard, but not compulsory, what is its point? Needs to be mandatory, else no teeth • If not mandatory, regional councils/district councils would not like to put pressure on homeowners • Would an NPS better filter into rules in plans across the board (and avoid voluntary measure)? • NES should reference reviewed AUS/NZ Standard on system management • Councils have to defend targeted areas, which is difficult with a voluntary NES • Make the NES mandatory due to possible serious health hazards • RC/TLAs already have possibility to deal with these issues • Education how to operate systems is better than compliance WOF (taking community along) • NES only focuses on maintenance, which loses sight of how whole system is working – NES as interim measure ok, but not long-term • Surprised that NES is only an option 	<p>1;</p> <p>6;</p> <p>6;</p> <p>6;</p> <p>6;</p> <p>6; 11;</p> <p>6;</p> <p>6;</p> <p>11;</p> <p>11;</p> <p>11;</p> <p>12;</p> <p>12;</p> <p>13;</p> <p>7;</p>

Item	Topic Area	Comments	Location
3	NES administration	<ul style="list-style-type: none"> District council administration likely to be better than regional council Regional Councils are not set up to manage property by property inspections Needs clarity of who administers District council bylaw more appropriate than NES Can RC delegate NES function to DC? Variation in how councils deal with on-site systems – an NES could help unify the approach The NES is not dealing with “failure” issues or cumulative effects, and thus is more DC responsibility (building consent) than a RC responsibility Keep process simple and avoid another layer of bureaucracy WasteTRACK is not adequate at the moment to record inspections results. Around half its users are dissatisfied with its current performance record WasteTRACK seems an unnecessary level of bureaucracy Is not WasteTRACK free in Australia? Regional Councils need to record info in conjunction with TLAs Info held by TLA and for RC not accessible No responsibility by RC to reply to requests by TLAs Lack of clarity where interface lays between RMA, Building Act and Local Government Act Proposed NES administration not aligned with local government functions – RCs don't have much of a relationship with local communities Sensitive areas selected by RCs, inspection process supervised by building inspectors If TLA's are responsible for LIMs, land use and resource consent they should rather have the NES under their control, or at least be in the link Conflict of interest, if TLA issues building permit and then monitor themselves Is a deadline for gazetting necessary? Administration and infrastructure costs money 	<p>1; 3; 4; 6; 8;7;</p> <p>6;</p> <p>3;</p> <p>1; 3;</p> <p>2;</p> <p>6;</p> <p>7;</p> <p>8;</p> <p>8;</p> <p>5;</p> <p>5;</p> <p>11;</p> <p>12;</p> <p>12;</p> <p>13;</p> <p>13;7</p> <p>7;</p> <p>13;7;</p> <p>9; 13;</p> <p>1;</p> <p>14; 3;</p>
4	Relationships between regional and district councils	<ul style="list-style-type: none"> Very good in Far North Taranaki MoU between RC and DCs works very well Split RC responsibility to industry and farming and let DC deal with urban and rural residential areas One approach may be for RC to identify hot spot/sensitive areas, then DC to implement NES The discussion document throughout refers to “councils”, but in many cases there is no clarity as to which councils (RC, DC, or both) are being referred to If RC does inspection and finds high levels of failures, cannot force sewers on the community. This means discussion with DC Consultation between regional councils and district councils is important, but what if councils don't agree (differing priorities)? WOF records should be maintained on District Council LIM records against each property title 	<p>1;</p> <p>8;</p> <p>8;</p> <p>3;</p> <p>3;</p> <p>3; 9;</p> <p>6; 9;</p> <p>4; 9; 12;14</p>

Item	Topic Area	Comments	Location
5	“everywhere” versus “targeted areas” <i>continued</i>	<ul style="list-style-type: none"> Sometimes soils vary within short distances, and systems failing can’t be addressed under one blanket target area Is an assessment for RCs compulsory to see where a NES may apply? 	14; 14;
6	Inspect systems other than single dwelling domestic	<ul style="list-style-type: none"> Marae, schools, campgrounds and commercial activity domestic wastes (cafes; employee facilities in factories and like) should all be covered Resource consented systems (as well as septic tank and soakage field permitted activity systems) should be included. (NES should require compliance with consent conditions) Do not want to double up on consented systems by having them subject to WOF as well Not all systems may fall under permitted activity rules If a resource consent costs \$900, then could have a further \$300 every three years for an inspection Should NES apply to holding tanks (as at wineries and other commercial premises)? What about other systems? Thought of determining what systems the NES applies to? The NES for consented systems will be complimentary to consent conditions as it focuses on maintenance inspections Often consented systems currently don’t get inspection either Problems exist more with lifestyle blocks than in urban areas 	1; 2; 5; 8; 9; 1; 2; 4; 6; 9; 2; 3; 5; 6; 8; 12; 6; 11; 12;
7	Inspection frequency	<ul style="list-style-type: none"> 3-yearly inspection interval not suitable for all situations (depending on household size); it is very expensive if inspection would have to dig out tank each time to check Inspection regime should reflect the risk Consider all areas with on-site systems “sensitive” and stage inspection frequencies according to risk in a tiered approach (3 yr initially may then extend to 5 or more yrs) Mechanical systems need inspections regularly (pumped dose systems; aeration treatment units). There can be higher failure rates with mechanical systems than conventional septic tank and soakage trench systems, hence the need for frequent WOF checks Some aerated wastewater treatment systems almost need 6-monthly inspection WOF at three years, but for new systems first inspection at 12 months Remote area systems do not need inspections (farmers can empty their own tanks and dispose the septage to land) A lot of new systems can “fail” within three years, which suggests that annual inspections to determine scum and sludge build-up rates is necessary Different systems require different maintenance 	1; 7; 3; 1; 3; 4; 7; 3; 5; 12; 3; 4; 8; 11; 5; 13; 3;
8	Pump-out frequency	<ul style="list-style-type: none"> Pump-out at every 3-yearly inspection (simple logistics) 3-year pump-out has cost and administration benefits when undertaken by District Councils and covered by rates Pump-out at first inspection to assess condition of tank (type of tank; capacity/volume; number of chambers; position of partition openings; condition of inlet and outlet fittings; potential for leakage in/out) 	1; 5; 6; 8; 12 1; 1; 8; 5;

Item	Topic Area	Comments	Location
8	Pump-out frequency <i>continued</i>	<ul style="list-style-type: none"> Pump-out to a schedule based on user population (1 person 16 yrs; 2 person 8 yrs; 4 person 4 yrs; 8 person 2 yrs) Pump-out at first inspection and thereafter on demand Implications if moving from low occupancy to high occupancy Septage quality shows high copper and zinc levels, and thus need to pump-out frequently to dilute these constituents in wastewater treatment plant biosolids (also to comply with Biosolids Guideline.) Thus three year pump-out -versus pump-out on demand- will prevent spikes in heavy metal concentrations in sludges from municipal treatment plant Remote sites (such as in the Marlborough Sounds) are such that it can be impossible to use tanker trucks or barges to undertake pump-out At the moment reactive to problems: Just pump-out is not fixing the problem WOF necessary to track, suckers don't report failing systems, as this is their livelihood Pump-out is not necessary with every inspection 	1; 1; 4; 5; 1;8; 1; 5; 8; 10; 12; 14;
9	Inspection timing	<ul style="list-style-type: none"> Winter versus summer inspections may show different indicators of land application performance Some weather events may cause temporarily adverse effects Inspect at peak occupancy NES should require inspection at time of property sale (and be applied throughout the country) Make inspection at time of shift in ownership – less invasive and very effective, cost at time of changing hands 	1; 2; 6; 7; 8; 6; 2; 7 1; 4; 6; 9; 10; 11; 14;
10	Inspectors	<ul style="list-style-type: none"> Let pump-out contractor be inspector of full system Pump-out contractor to do initial inspection and alert council staff if follow-up detailed inspection needed (for land application area) Would there be training courses also for secondary systems and qualifications for maintenance staff? Maintenance contractor could be incorporated in inspection process to avoid doubling up Estimated 300 additional inspectors to be trained across NZ Building inspectors are familiar with new systems, and could do subsequent WOF inspections Building inspectors average age throughout the country is around 58 years – need to recruit and train replacements Inspectors should be independent (not be council officers) DC are unlikely to want to get involved in WOF inspections. Their inspectors cover building consent requirements, not field performance assessments Who would be authorising passing of qualification? Could not homeowners undertake inspections – a well informed householder could be very useful? Sucker pump drivers are not qualified to do inspections – come from a driver background not a drainage background There is a skill shortage out there, high turnover in staff Building inspectors check system installation but do not have the background for NES inspections (operational failures) 	1; 8 1; 1; 2; 2; 3; 5; 3; 3; 4; 14 6; 14; 7; 8; 8; 8; 13; 14

Item	Topic Area	Comments	Location
10	Inspectors <i>continued</i>	<ul style="list-style-type: none"> • District councils should be leading/ involved in inspections (possible cover via extra rates) • Engineers would be preferred technically, but are often too busy, more experience in design than in the operating system • Experience is very valuable for an inspector (apprenticeship) • Council employees would enable a uniform approach rather than a group of independent inspectors applying varying approaches to inspection criteria • Independent inspectors would be liable for quality of their inspection • Part-time inspectors under council supervision could be satisfactory • How are disputes over outcome of the WOF check to be dealt with? • Inspectors need to be audited from time to time to maintain quality of standard • Process needs to be in place to catch the “cowboys” out • Training of inspectors will be most important as they must be available to commence activities as implementation begins • Need to ensure that inspectors are independent and not associated with companies undertaking remedial work • Need to work with existing industry/ accredited contractors to ensure sufficient inspectors are ready at start of NES • Very expensive for industry to attend qualification courses – MfE should fund training • Link into drainlayer ITO to develop qualification • Inspectors are crucial – qualification scheme would be beneficial • Most cost-effective if councils employ somebody to inspect and suggest what to do in case of failure 	<p>8; 12</p> <p>8;</p> <p>8;</p> <p>10;</p> <p>10; 3;</p> <p>10;</p> <p>6; 14</p> <p>6; 14</p> <p>11;</p> <p>7; 11;</p> <p>11;</p> <p>11; 6;</p> <p>12;</p> <p>13;</p> <p>7;</p> <p>14;</p>
11	Inspection procedures	<ul style="list-style-type: none"> • Checklist should cover placement of buildings over disposal fields and reserve areas • Gravity distribution into land application systems provide uneven loading of the system, and should be included on the inspection checklist • Can inspection procedures define operating problems? • Two categories of inspection results – gross failures are obvious, so how to determine “hidden” failures (poor performance potentially leading to pollution)? • Register number of persons in dwelling at inspection • Up to 17 persons can be in a dwelling • Housing NZ will undertake inspections and maintenance in certain areas • Homeowner wants a simple and pragmatic process, not generating another lengthy bureaucracy • Emptying tank does not solve problem if field system fails • Determine effluent quality during inspection • Need to define “failure” in respect of inspection outcomes • Good checklists will be the key to effective inspections 	<p>9;</p> <p>7;</p> <p>5;</p> <p>5;</p> <p>1;</p> <p>4;</p> <p>4;</p> <p>8;</p> <p>8;</p> <p>11; 12;</p> <p>11;</p> <p>11;</p>

Item	Topic Area	Comments	Location
11	Inspection procedures <i>continued</i>	<ul style="list-style-type: none"> • Worst case fail scenarios are rare, but takes much more time to discover rest of failing systems – not a simple process • Is WOF also issued if design and location of system is not appropriate? • Inspection checklist: contact Waitakere CC • Routine inspection criteria need to be carefully chosen – should inspections all be done at worst time? • Inspection should cover the whole system not only tanks • Could councils alter the national checklist to incorporate local issues? • MfE may need to set discharge quality levels to make sure RCs don't apply too different standards • Groundwater contamination difficult to detect 	12; 13; 2; 7; 14; 14; 14; 14;
12	Inspection costs	<ul style="list-style-type: none"> • The costs cited in the discussion document appear to be too low • \$150 to \$350 more likely cost • Hawkes Bay RC inspection costs are between \$80 and \$100 • \$370 (depending on distance) • Inspection fees in discussion document likely to be subsidised by councils • Older tank systems may take a morning to locate on a property • Work & Income can provide subsidy for households in deprivation areas • Cheapest way to have councils administer the system, and have inspectors and cleaners as one person • If cost is a barrier: Pump-out at time of inspection to do whole job at once (in Far North DC septic tank cleaners do preliminary site inspection and notify monitoring officer when problems) • NDHB stressed that there are immense health costs that need to be seen when discussing inspection costs • Best covered via rates • Need financial support for pensioners where older systems require upgrade • Councils should assist people who cannot afford remedial works by providing loans to be eventually recovered from the estate • Can be more economical to go with an NES inspection and pump-out at \$500 than to be rated at \$1,000/year for the sewer • WOF not cost-effective • Inspection/Pump-out should be organised and charged for by councils that have the records • No charging regime under NES, not sure if RC can collect revenue for that 	2; 6; 14 3; 3; 10; 6; 1; 7; 3; 1; 4; 7; 12 8; 1; 1; 4; 9; 3; 11; 11; 8; 12; 12; 13; 3;
13	Enforcement	<ul style="list-style-type: none"> • How will enforcement of remedial works requirements be ensured? • Health impact findings to still go through council Environmental Health officers • With 6,000 on-site systems being inspected, and 1% failing to act on inspection remedial actions, enforcement of the required actions will be costly 	1; 6; 7; 9; 2; 3;

Item	Topic Area	Comments	Location
13	Enforcement <i>continued</i>	<ul style="list-style-type: none"> Affordability of remedial works is a real issue in some communities Problem of enforcement – cars can be taken off the road, but you cannot ban homeowners from their house Leaky home syndrome – who is responsible? People are left with the costs of a faulty system despite operating the system appropriately Difficult for councils to block subdivisions, that is why NES would be important Would TLA have to pick up enforcement in the end? Financial incentives to replace/upgrade would be more useful than NES Implications for people who cannot afford replacing the system: They are made criminals under the RMA Will get a lot of objections by private owners Is enforcement base for action possible to be delegated? 	<p>1; 5; 9; 14;</p> <p>6; 9; 14;</p> <p>6;</p> <p>11;</p> <p>12;</p> <p>12;</p> <p>12;</p> <p>12;</p> <p>2;</p>
14	Environmental impacts of on-site systems	<ul style="list-style-type: none"> Drip irrigation systems laid on surface enable wash off of pollutants during rainfall In development each house is assessed separately and cumulative effects are not taken into account Ponded systems do not cause environmental effects Families can get sick from failed systems Health effects are not the problem, otherwise Ministry of Health would be campaigning for adoption of the NES Shallow irrigation systems under rainfall may have public health implications Health benefits of improving on-site system performance easier to assess than environmental benefits What is MfE doing about environmental impacts of inappropriately designed and located systems (septic tank soakage trenches on gravel plains and foreshores)? 	<p>1;</p> <p>6;</p> <p>6;</p> <p>6;</p> <p>6; 11;</p> <p>3;</p> <p>1;</p> <p>6;</p>
15	Technology challenges	<ul style="list-style-type: none"> Drip irrigation systems are showing a wide variety of problems New secondary systems are costly but fail a lot Piecemeal approach – pins costs on individual households to fix each system instead of looking at combined solutions Suppliers of technologies need to be checked to ensure that the science and engineering of their treatment systems is appropriate All disposal systems should have vents on distribution lines to ensure air access into the system Effluent outlet filters are highly variable in quality and performance Need to ensure inspection points are provided on new systems Why not encourage split blackwater/greywater systems as a cheaper option to fix things? MfE should be encouraging more use of composting toilets More innovative solutions to on-site wastewater servicing are required – meanwhile an NES is appropriate Freezing is a problem for system performance 	<p>2; 8;</p> <p>6; 9; 5;</p> <p>6;</p> <p>7; 12;</p> <p>8;</p> <p>8;</p> <p>10;</p> <p>10; 6, 12</p> <p>10;</p> <p>10;</p> <p>11;</p>

Item	Topic Area	Comments	Location
15	Technology challenges <i>continued</i>	<ul style="list-style-type: none"> Often system does not work properly for the first 6 weeks – problem for holiday homes Are there enough practitioners out there to undertake remedial work? 	11; 11;
16	Design and installation of systems	<ul style="list-style-type: none"> Cluster systems for 5 houses or more should be used more An NES should set performance standards for effluent quality from on-site treatment units Failures are the result of poor drain laying practices – rather than imposing an NES by MfE, BRANZ should be enforcing higher standards of installation An NES will not solve existing problems of needing to replace older septic tank systems which are failing If inspector finds a system not installed as per the design, who is responsible, and what will be done about the situation? Need to tie in AS/NZS 1547 maintenance requirements to the NES Need design of disposal field that works Public education is needed in terms of which system goes where National Testing Facility seen as very worthwhile to back up councils to choose the right systems, “consumer” ranking Possibly endorsing systems where site conditions are not suitable Need to ensure that installation of right systems for locations and that systems are accredited 	1; 6; 11; 6; 12 6; 6; 11; 11; 6; 6; 12; 12; 2; 13; 14; 7; 7;
17	Operation and Maintenance issues	<ul style="list-style-type: none"> Some chemicals provided off shelf for household use can result in performance issues and/or failure of septic tanks. More guidance and/or control is needed to prevent use of substances harmful to septic tank systems MfE should be promoting eco-friendly products MfE should be dealing with manufacturers of harmful products as these not only affect treatment and land application system performance, but enter the environment Need better information to assist people to look after their systems more effectively Benefit of WOF is that people are aware that they have on-site system Re-activating systems is better than replacement – how good are those products Attitude often is that people need not pay for long-term maintenance 	5; 5; 5; 10; 12; 13 12; 14; 14;
18	Maintenance contracts (mechanised treatment units)	<ul style="list-style-type: none"> Homeowners need flexibility in selecting contractor (often agreement is signed upon installation, stop telemarketing) Could not service contract records provide an alternative to NES inspection records (align existing maintenance contracts with the NES)? Service contractors are unlikely to point out problems Maintenance contracts perform 6-monthly checks 	1; 7; 14; 3; 7;1; 11;

Item	Topic Area	Comments	Location
19	Reticulation of problem areas	<ul style="list-style-type: none"> The NES process will raise awareness of issues related to on-site wastewater management, and should identify where existing systems are working (and thus inspection procedures can assist retaining on-site servicing), and where they are not working (and thus quantified assessment can lead to reticulation of an area) Is NES likely to be a driver for reticulation? NES will help discussion on reticulation versus on-site wastewater servicing Need funding support for reticulating problem areas An NES needs to provide “teeth” to ensure council consideration of sewer reticulation for problem areas Need guidelines on assessment (setting “trigger points”) of need to move from on-site to sewerred servicing Need to ensure that where inspection indicates area wide problems a review of on-site versus reticulated sewerage is undertaken If on-site system has recently been replaced, people will be very resistant to reticulation, even if necessary 	8; 3; 3; 5; 8; 6; 6; 8; 11; 6; 14;
20	Consultation process	<ul style="list-style-type: none"> What further consultation will be undertaken after submissions come in? Have iwi been approached for input or the Minister of Pacific Island Affairs? Is there a marketing of proposal/ TV ad to get feedback from homeowners – otherwise won't get a balanced response Criticism of consultation with tāngata whenua: Discussion document says with iwi authorities, but should be hapū and apply to all Māori. Meetings not advertised appropriately 	1; 2; 7; 13;

Abbreviations:

CC = City Council

DC = District Council

ITO = Industry Training Organisation

LIM = Land Information Memoranda

MfE = Ministry for the Environment

MoU = Memorandum of Understanding

NES = National Environmental Standard

NPS = National Policy Statement

RC = Regional Council

TLA = Territorial Local Authorities

Appendix 3: Discussion questions

Following are the questions presented in the discussion document to help focus respondents.

Problems

1. Have the problems been defined correctly?
2. Are there other problems you can think of?
3. What is the magnitude of these problems?

Options

4. Do you agree with the policy objective?
5. Is there an alternative approach that has not been considered?
6. Do you agree with the analysis provided in this section?

Proposed standard

7. Do you have any general comments about the proposed standard for the inspection and maintenance of on-site wastewater systems?
8. Should the proposed standard apply to private dwellings only, or should it apply to all on-site systems (including consented systems) that treat domestic wastewater, including hotels, motels, camping grounds, restaurants, schools and marae?
9. Do you agree with the inspection interval of three years?
10. Should inspections be coupled with an immediate pump-out?
11. Do you agree with the proposed critical components for the checklist?
12. Should the proposed standard prescribe a minimum level of treatment (eg, secondary) for new on-site systems? (This could have the effect of banning the installation of new septic tanks in favour of treatment systems that provide greater levels of treatment.)

Implementing the proposed standard

13. Should the proposed standard apply to targeted areas as proposed, or across the whole of New Zealand?
14. Do you agree with the risk assessment methodology and the proposed criteria for identifying targeted areas?
15. Do you see any problems with the implementation and administration of the proposed standard?
16. What would be an appropriate training level for inspectors/certifiers? Is a unit standard qualification for inspectors an appropriate method for ensuring consistency of inspectors?

Benefits and costs

17. Have we accurately reflected the range of costs and benefits arising from the proposals for a national environmental standard, and who might bear the costs or receive the benefits?
18. Are there any costs and benefits we have overlooked?
19. Do you have information you would like to see included in the cost-benefit analysis that will occur after the submissions are received and analysed?
20. Are our estimates of costs and benefits accurate?
21. Do you have information on costs and benefits that could assist the second stage of our assessment (of the impacts of any final proposals)?
22. Do you have any information on costs and benefits that we have been unable to quantify?

Appendix 4: List of submitters

No.	Company Name	Name	Contact Type
1	Green Point Vineyard	Colin Harrison	Individual
2		Peter Olorenshaw	Individual
3	Petes Takeaways	Peter Harford	Industry – contractors
4		C. Bjarnesen	Individual
5		Fiona Reihana Ruka	Individual
6		Steve Richards	Individual
7		Kevin Neshausen	Individual
8	Salter's Cartage Ltd, Waiheke Septic Tank Services Ltd	Ron Salter	Industry – contractors
9		S. George	Individual
10		John Taylor	Industry – contractors
11	Terry Taylor Drainage Ltd	Terry Taylor	Industry – contractors
12		David Renouf	Individual
13	Glen L Drainage Pty Ltd	Glen Lemberg	Industry – contractors
14	Central Hawke's Bay District Council	Allen Vickress	Territorial local authority
15	Piha Ratepayers and Residents Association Inc.	Simon Brown	Community group
16	Environment Waikato	Urlwyn Trebilco	Regional council
17		Chris Currie	Individual
18	Aquaculture New Zealand	Dorothy-Jean McCoubrey	Government
19	DTS Riddiford	Dan Riddiford	Other industry
20	Ministry of Health	Frances Graham	Government
21	Duncan Bay Residents Association Inc	Lyn Sadd	Community group
22	Environmental Waste Ltd	Ken Copland	Industry – contractors
23	Waimakariri District Council	Ray Norris	Territorial local authority
24		Liz Travers	Individual
25	ecoEngLtd	Andrew Dakers	Industry – consultant
26	EcoNova NZ Ltd	Nick Meetan	Industry – consultant
27	Mahana Lodge	Ann and John Martin	Small business (café/lodge etc)
28	Gisborne District Council	Trevor Freeman	Unitary authority
29	Whenuapai Ratepayers and Residents Association	Graeme Barnard	Community group
30	Manukau City Council	James Corbett	Territorial local authority
31	Piha-Karekare Local Water Agenda Group	Simon Brown	Community group
32	Environmental Defence Society Incorporated	Garry Law	NGO
33	Nelson City Council	Martin Workman	Unitary authority
34	Marlborough Shellfish Quality Programme	Helen Smale	Other industry
35		Julie Lloyd	Individual
36	EnviroWaste Services Ltd	Scott Rhodes	Industry – contractors
37	InterClean Liquid Waste Disposal	Brenda Richardson	Industry – contractors

No.	Company Name	Name	Contact Type
38	Nelson Marlborough District Health Board	Neil Silver	Public Health or DHB
39	Master Plumbers, Gasfitters and Drainlayer NZ Inc	Eric Palmer	Other industry
40	Institute of Environmental Science & Research Limited (ESR)	Margaret Leonard	Industry – consultant
41	Environment Southland	Warren Tuckey	Regional council
42		Patrick Delich	Individual
43	Te Rakato Marae Trustees (Ngai Rakato)	Alice Wairau	Iwi
44	Duffill Watts Consulting Group	John Lavery	Industry – consultant
45		Andrew Fletcher	Individual
46		F.N.R Ciochetto	Individual
47	Lake Tarawera Ratepayers Association	Ann Nicholas	Community group
48		MJ Hill	Individual
49		RN Hellyer	Individual
50	Waitakere City Council	Tegan Brown	Territorial local authority
51	Department of Conservation	Kevin O'Connor	Government
52	Environment Canterbury	Phillipa Lynch	Regional council
53	Wairoa District Council	Linda Cook	Territorial local authority
54	North Shore City Council	Phill Reid	Territorial local authority
55	Rodney District Council	Alison Pye	Territorial local authority
56	Department of Building and Housing	Bruce Klein	Government
57	Horizons Regional Council	Garrick Murfitt	Regional council
58	Wastewater Transport Ltd	Peter McKean	Industry – contractors
59	Auckland Regional Council	Paul Walbran	Regional council
60	Environment Bay of Plenty	Raewyn Bennett	Regional council
61	Northland Regional Council	Glenn Mortimer	Regional council
62	Waitomo District Council (c/- MWH)	John Cocks	Territorial local authority
63	Tasman District Council	Rob Lieffering	Unitary authority
64	The Marlborough Environment Centre Inc. and Queen Charlotte Residents and Ratepayers Assoc. Inc.	Tim Newsham	NGO
65	Leech Drainage Services Ltd	Warwick Leech	Industry – contractors
66		Allan Bloomfield	Individual
67		John Futter	Individual
68	Palmerston North City Council	Ray Swadel	Territorial local authority
69	BioMarine Ltd	Jim Dollimore	Other industry
70	IPENZ, Engineers New Zealand	Tim Davin	Other industry
71	Uniclear Tanks Limited	Neil Perry	Industry – consultant
72	Whangarei District Council	David Coleman	Territorial local authority
73	Kaipara District Council (c/- Duffill Watts)	Andrew Carvell	Territorial local authority
74		Andrew Donaldson	Individual
75	RMPPro Ltd	Rob van Duivenboden	Industry – consultant
76	Mahia Isthmus Residents & Ratepayers Association	Vaughan Plowman	Community group

No.	Company Name	Name	Contact Type
	(MIRRA)		
77	Selwyn District Council	Hugh Blake-Mason	Territorial local authority
78	Standards New Zealand	Angela Henderson	NGO
79	Ormiston Associates Ltd	Sandy Ormiston	Industry – consultant
80	Southland District Council	Ivan Nicholson	Territorial local authority
81	Te Taiwhenua o Heretaunga	Christine Teariki	Iwi
82	Ruapehu District Council	Liezel Jahnke	Territorial local authority
83		Karen Christian	Individual
84	Public Health South	Andrew Shand	Public health or DHB
85	Clutha District Council	Murray Brass	Territorial local authority
86	Otago Regional Council	Sarah Valk	Regional council
87	Auckland Regional Public Health Service	Marilyn Burton	Public health or DHB
88	Local Government New Zealand	Natasha Bava	NGO
89	Federated Farmers of New Zealand (Waikato Province)	Paul Le Miere	NGO
90		P Rene	Individual
91	Ngati Kahungunu Iwi Inc	Kym Hamilton	Iwi
92	Federated Farmers of New Zealand	Stewart Wadey	NGO
93	Invercargill City Council	W.J. Watt	Territorial local authority
94	Utilities Management NZ Ltd	Chris Edmunds	Industry – contractors
95	Franklin District Council	Sisira Jayasinghe	Territorial local authority
96	Housing New Zealand Corporation (c/- OPUS)	Alex Jepsen	Government
97	AWT New Zealand Ltd	Sarah McDonald	Industry – consultant
98	Ngati Tuwharetoa Maori Trust-board	Matthew Lark	Iwi
99	Western Bay of Plenty District Council	Kelvin Hill	Territorial local authority
100	Auckland City Council	Penny Pirrit	Territorial local authority
101	Waihi Beach Environmental Society Inc.	Murray Craig	Community group
102	Genesis Energy	Sally Baguley	Other industry
103	Greater Wellington Regional Council	Nicola Shorten	Regional council
104	Regional Public Health – Wellington	Chris Edmonds	Public health or DHB
105	Plumbers, Gasfitters and Drainlayers Board	P W Routhan	Other industry
106	Beacon Pathway Ltd	Dorothy Wilson	Other industry
107	Manawatu On-site Wastewater users group (Duffill Watts)	Hamish Lowe	Community group
108	Manukau Water Limited	Iris Tscharntke	Other industry
109	Waitaki District Council	Richard Mabon	Territorial local authority
110		Peter Anderson	Individual
111	Orenco Systems Inc	Nicholas Noble	Industry – consultant
112	Clevedon CARES Inc	Mary Whitehouse	Community group
113		G.J. Struik	Individual
114		J. Roger Bray	Individual
115	Green Environmental Ltd	Jim Green	Industry – contractors

No.	Company Name	Name	Contact Type
116	Oratia Ratepayers and Residents Assoc	S. Marsden	Community group
117		Edmond Ronald Sturm	Individual
118	Hawkes Bay Regional Council	Barbara Garbutt	Regional council
119	Waikato District Health Board	Greg Morton	Public health or DHB
120		Alex Woods	Individual
121	Transpower New Zealand Limited (Burton Consultants)	Prue Hancox	Other industry
122	Canterbury District Health Board	Pauline Harris	Public health or DHB
123	Horowhenua District Council	B.H. Austin	Territorial local authority
124	Central Otago District Council	Louise van der Voort	Territorial local authority
125	Northland District Health Board	Jeffery Garnham	Public health or DHB
126	Taranaki Regional Council (+ STDC, SDC & NPDC)	Lisa Mahony	Regional council
127	GHD Limited	Tim Preston	Industry – consultant
128		R.A and P.A. Mason	Individual
129	Waikato District Council	Peter J. Harris	Territorial local authority
130	Wayne's Waste Limited	Helen Baty	Industry – contractors
131	New Zealand Water & Wastes Association	Catherine Waugh	NGO
132	Otorohanga District Council	Andrew Loe	Territorial local authority
133	Marlborough District Council	Pere Hawes	Unitary authority
134		WMG Yovich	Individual
135	The West Coast Regional Council	Lillie Sadler	Regional council