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Drinking Water Source Water Protection

Proposed Regulatory Provisions for TANK Catchments
April 2019

Havelock North Joint Working Group on Drinking Water Safety
(as a Working Committee of TANK)

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1 INTRODUCTION

The Havelock North Joint Working Group on Drinking Water Safety was established following an outbreak of campylobacteriosis in the Havelock North drinking water supply in August 2016. The Joint Working Group consists of representatives from municipal water suppliers (Hastings District Council, Napier City, Central Hawke’s Bay District and Wairoa District Councils), District Health Board, Ngati Kahungunu and Hawke’s Bay Regional Council. The Joint Working Group is a multi-agency collaborative group focused on providing clean, safe drinking water within its jurisdictional area.

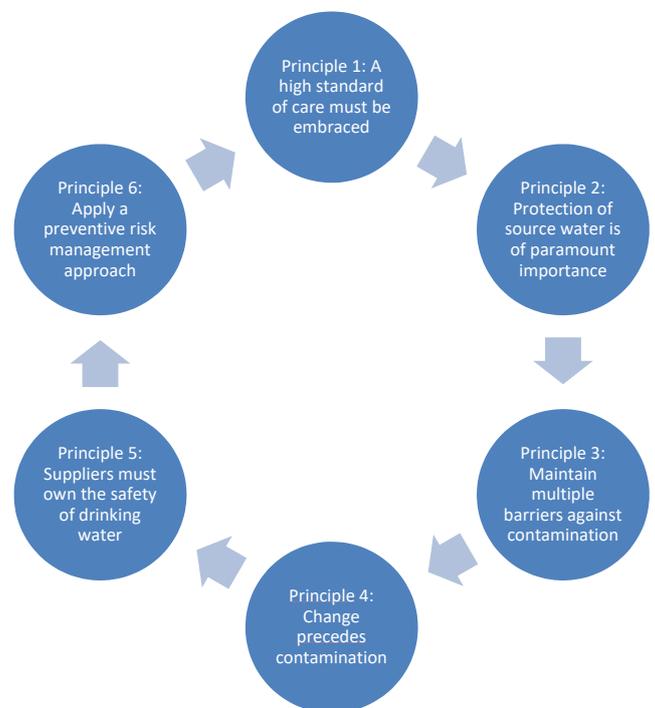
The Board of Inquiry in to the Havelock North drinking water contamination event found that the most probable cause of contaminated water entering the drinking water supply was via land contaminants (sheep faeces) entering the aquifer and then subsequently being abstracted and entering the supply network.

In its findings, the Board identified six fundamental principles of drinking water safety and noted that these principles need to imbue every aspect of our approach to drinking water in New Zealand, including the regulatory framework relevant to the source water. These principles include maintaining multiple barriers to contamination, and that protection of source water (as one of those barriers) is of paramount importance.

Coincident with the Joint Working Group addressing the delivery of safe drinking water within this context, the Hawke’s Bay Regional Council is at the end of the six year stakeholder collaborative process to develop a Regional Plan Change for the Tutaekuri, Ahuriri, Ngaruroro and Karamu Catchments. This is known as the TANK Plan Change process.

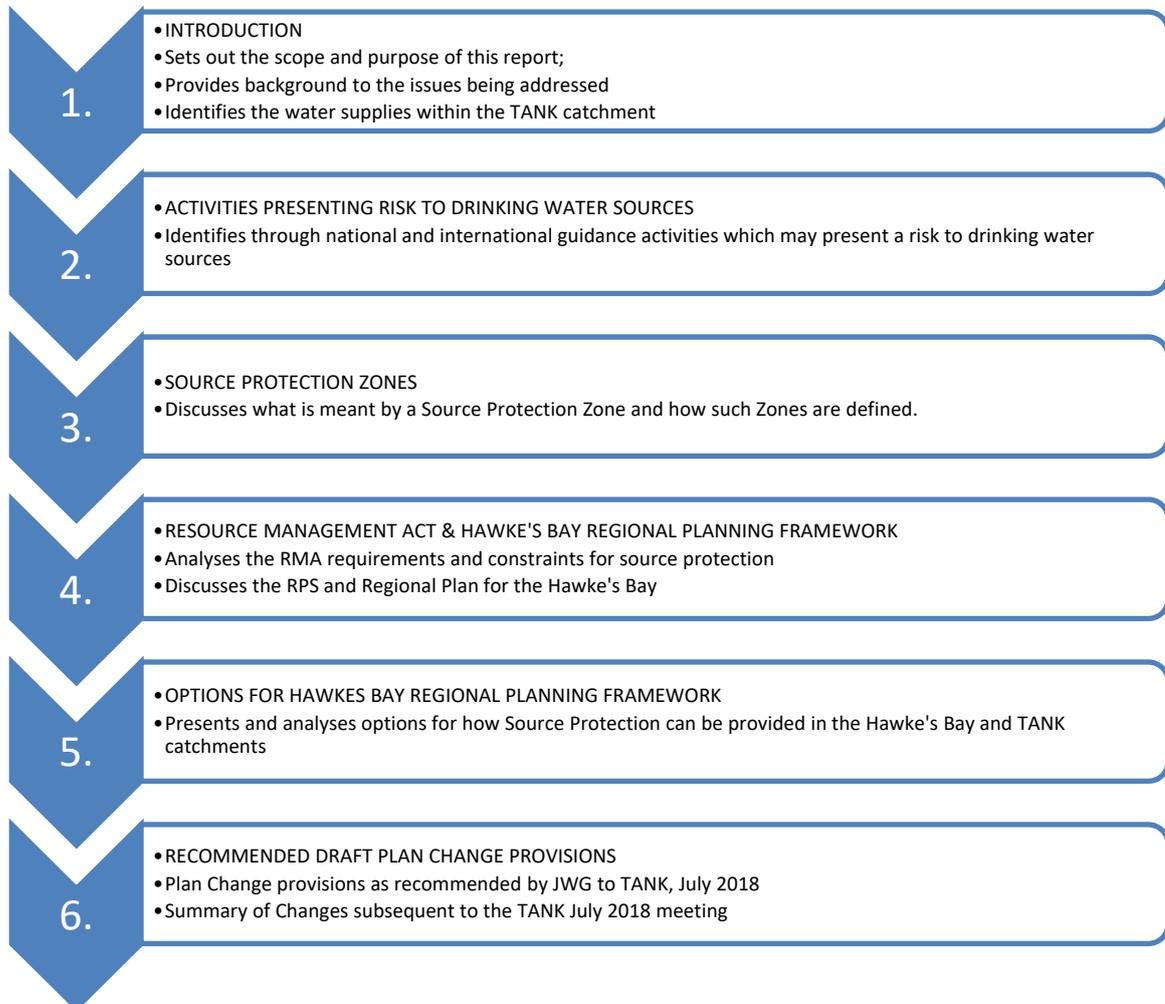
The TANK Plan Change process provides an opportunity for consideration of including source protection of drinking water within the Hawke’s Bay Regional Plan. Any source protection provisions which could be incorporated in the TANK Plan Change would be limited to Regional Plan provisions only, and the geographical area of the TANK catchment. However, given that the TANK area includes the two major municipal water supplies in the region (Napier and Hastings), the JWG considers there are compelling reasons to seek to achieve source protection provisions in the TANK Plan Change. For the purpose of the TANK Plan Change, the JWG has been provided status as a working committee of TANK for purposes of providing recommendations as to drinking water source protection provisions.

Good Earth Matters Consulting Ltd has been engaged by the Joint Working Group (with administrative support provided by the Hawke’s Bay Regional Council) to provide recommendations on source protection provisions within the Resource Management Act regulatory framework and to develop draft objectives, policies and rules for the JWG’s recommendation to TANK. The purpose of this report is therefore to identify the framework for source protection provisions within the Resource Management Act framework and the Hawke’s Bay Regional Plan in particular; and to provide recommendations of draft objectives, policies and rules for consideration by the JWG for recommendation to TANK. Noting that effective source protection is dependent on multi-agency



collaboration and implementation and that there are restrictions as to what may be able to be achieved via the TANK Plan Change and through the RMA framework, this report also identifies additional methods required to support the proposals put forward.

The roadmap for this report is summarised in the following diagram.



1.1 Background

Within New Zealand, effective supply of safe drinking water relies on a multi-agency and multi-legislative approach to provide safe water from the source to the tap (refer Figure 1.1 below). That approach has been found to have significant gaps and resulted in failure to provide safe drinking water as evidenced by the Havelock North contamination event in August 2016 in which some 5,500 people became ill by drinking water which had been assessed as compliant with the Drinking Water Standards for New Zealand. This section of the report provides background information as is relevant to the issue of protection of source water.

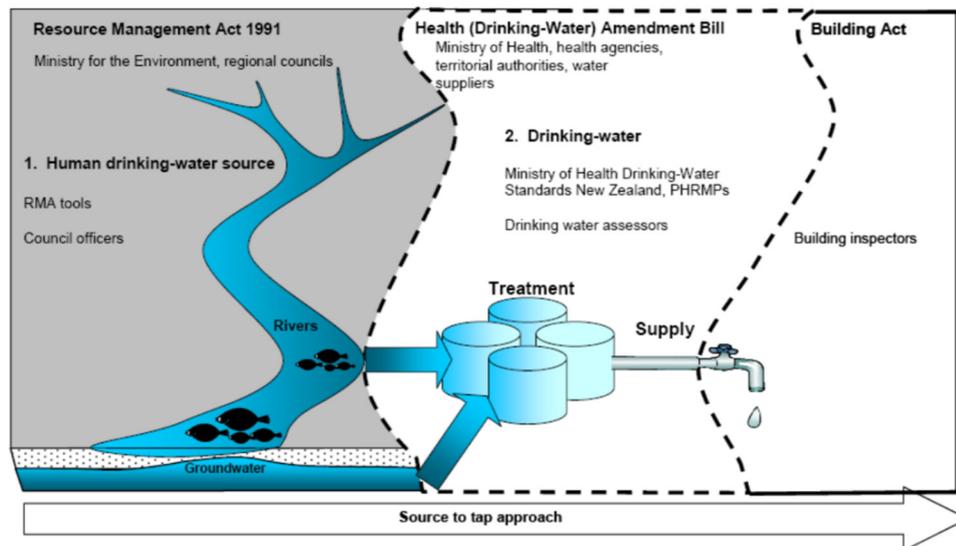


Figure 1.1
Source To Tap Approach to Drinking Water
(extract from MfE User Guide to the NES for Sources of Human Drinking Water)

1.1.1 Havelock North Drinking Water Contamination Event & Board of Inquiry

The Havelock North Drinking Water Board of Inquiry was established by the government following the August 2016 campylobacteriosis outbreak in Havelock North. During that outbreak, “some 5,500 of the town’s 14,000 residents were estimated to have become ill with campylobacteriosis. Some 45 were subsequently hospitalised. It is possible that the outbreak contributed to three deaths, and an unknown number of residents continue to suffer health complications.”¹ The cause of the outbreak was found to be contamination of drinking water source via sheep faeces, and that water then being supplied to the Havelock North community via the public drinking water system.

Most Probable Contamination Pathway

The Board of Inquiry Stage 1 report found that the most probable contamination pathway was as follows (emphasis added):

“[218] ...Faeces from sheep grazing in paddocks adjacent to the pond in the Mangateretere Stream were carried by heavy rainfall into the pond. The predominant run-off pathway of flood water in paddocks 2 and 3 was into the pond or stream. From the pond the contaminated water travelled into the aquifer and was then drawn into Brookvale Road bore 1 via the casing or screens. This pathway was assessed as “most probable 78 per cent”.

[219] The Science Caucus Report discussed the possibility of entry via defects in the casing. Subsequent pressure testing, as described above, has all but ruled out entry by that means.

[220] The Inquiry accepted the finding of the Science Caucus, but observed that the most likely means of entry would have been via the screens. The Inquiry heard evidence of the zone of influence around bores by which water in the zone may be drawn into the bore. Contaminated water from the pond, having entered the aquifer within such zone, would have been drawn up through the screens and then pumped into the reticulation system. The Inquiry has concluded on the totality of the evidence that this pathway for the contamination was most probable.”

¹ Government Inquiry into Havelock North Drinking Water; May 2017; Report of the Havelock North Drinking Water Inquiry: Stage 1; paragraph 1; ISBN: 978-0-473-39743-2

The sheep farming activity was a permitted activity under the Regional Plan for Hawke’s Bay. The key point of relevance to the work detailed here is that the Board found that the contamination event was most likely caused by permitted land use activities causing contamination of a drinking water source.

Fundamental Principles of Drinking Water Safety

The Board of Inquiry investigated systemic issues associated with the supply of safe drinking water in a New Zealand wide context. It identified fundamental principles of drinking water safety - embedded in international best practice - that have been developed to address the basic problem of all drinking supplies, namely that *“supply systems are vulnerable in countless ways to contamination and a single vulnerability has the potential to cause widespread illness in consumers.”*². Further, the Board concluded that addressing this basic problem in New Zealand requires these fundamental principles to be ingrained and *“imbue every aspect of the New Zealand approach to drinking water”*³. The Principles which are directly relevant to source protection are Principles 2 and 6.

Principle 1: A high standard of care must be embraced

- *Unsafe drinking water can cause illness, injury or death on a large-scale. All those involved in supplying drinking water (from operators to politically elected representatives) must therefore embrace a high standard of care akin to that applied in the fields of medicine and aviation where the consequences of a failure are similarly detrimental to public health and safety. Vigilance, diligence and competence are minimum requirements and complacency has no place.*

Principle 2: Protection of source water is of paramount importance

- *Protection of the source of drinking water provides the first, and most significant, barrier against drinking water contamination and illness. It is of paramount importance that risks to sources of drinking water are understood, managed and addressed appropriately. However, as pathogenic microorganisms are found everywhere, complete protection is impossible and further barriers against contamination are vital.*

Principle 3: Maintain multiple barriers against contamination

- *Any drinking water system must have, and continuously maintain, robust multiple barriers against contamination appropriate to the level of potential contamination. This is because no single barrier is effective against all sources of contamination and any barrier can fail at any time. Barriers with appropriate capabilities are needed at each of the following levels: source protection; effective treatment; secure distribution; effective monitoring; and effective responses to adverse signals. A “source to tap” approach is required.*

Principle 4: Change precedes contamination

- *Contamination is almost always preceded by some kind of change and change must never be ignored. Sudden or extreme changes in water quality, flow or environmental conditions (for example, heavy rainfall, flooding, earthquakes) should arouse particular suspicion that drinking water might become contaminated. Change of any kind (for example, personnel, governance, equipment) should be monitored and responded to with due diligence.*

Principle 5: Suppliers must own the safety of drinking water

- *Drinking water suppliers must maintain a personal sense of responsibility and dedication to providing consumers with safe water. Knowledgeable, experienced, committed and responsive personnel provide the best assurance of safe drinking water. The personnel, and drinking water supply system, must be able to respond quickly and effectively to adverse monitoring signals. This requires commitment from the highest level of the organisation and accountability by all those with responsibility for drinking water.*

Principle 6: Apply a preventive risk management approach

- *A preventive risk management approach provides the best protection against waterborne illness. Once contamination is detected, contaminated water may already have been consumed and illness may already have occurred. Accordingly, the focus must always be on preventing contamination. This requires systematic assessment of risks throughout a drinking water supply from source to tap; identification of ways these risks can be managed; and control measures implemented to ensure that management is occurring properly. Adequate monitoring of the performance of each barrier is essential. Each supplier’s risk management approach should be recorded in a living WSP which is utilised on a day to day basis.*

² Board of Inquiry, Stage 2 report; paragraph 26

³ Board of Inquiry, stage 2 report; paragraph 27

1.1.2 Resource Management Act & Drinking Water Source Protection

The following discussion identifies the degree to which the current Resource Management Act regulatory framework provides for the protection of water quality for human drinking water purposes.

The purpose of the Resource Management Act purpose is (Section 5):

- "(1) ...to promote the sustainable management of natural and physical resources.*
- (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*
- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
 - (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment"*

The findings of the Board of Inquiry, in its Stage 2 report, were that the protection of source water is included in this purpose, principally through provisions relating to protection of people and communities' health and safety, however, it noted [para 613] that source water protection was an implicit rather than explicit requirement. The Board further noted that it is "essential that the protection of drinking water sources be expressly recognised" in the RMA, and further that, as "the RMA regime already affords such protection, it would simply be a matter of clarification to make that protection express" [para 617].

The Resource Management Act is implemented through a cascading level of planning instruments from the Act itself to National Policy Statements, National Environmental Standards and then on to regional documents (Regional Policy Statements and Regional Plans) and Territorial Authority Plans. The RMA requires that lower order planning documents are not inconsistent with the higher order planning instruments.

At the national level the National Policy Statement on Freshwater Management (NPSFM) and the National Environmental Standard for Sources of Human Drinking Water are of relevance. The NPSFM requires management of freshwater through assignment of values and attributes to Freshwater Management Units (FMU). It specifies two compulsory National Values which must be assigned to all FMUs and a series of other Values which may be assigned to specific FMUs depending on local and regional factors. The value of "Water Supply" is an optional national value, meaning that Freshwater Management Units are only required to be managed for Water Supply purposes if that value is attributed to the FMU via a formal planning process under the NPSFM. Figure 1 of the Draft TANK Plan Change (version 8) identifies that 'Household and urban water supply (by drinking and other uses)' is a value that applies across the TANK catchments.

An attempt to make the protection of source water explicit under the Resource Management Act was made through the introduction of the National Environmental Standard for Source of Human Drinking Water in 2008. The NES was designed to "plug that legislative gap" and provide "statutory recognition of the importance of the first barrier in the multi-barrier risk management system attaching to safe drinking water" [BOI Stage 1, Para 392]. The Draft Users Guide for the NES notes:

The NES for Sources of Human Drinking Water was introduced to strengthen the protection of source water. This is possibly the most important barrier because it reduces the contaminant load that later barriers have to remove.

While the intent of the NES was to provide for first barrier protection, its implementation has been constrained by lack of access to information; poor or no spatial definition of areas where the NES is to be considered; and scope restrictions regarding the types of activities which may be regulated under the NES. The Ministry for the Environment undertook a review of the NES published in December 2018. The findings of that review were consistent with the Board of Inquiry findings, including that the regulations (NES) are not fit for purpose and noting the Board of Inquiry's recommendations for significant changes to the NES including source protection zones to define the spatial area to which the regulations apply and extending the scope of the NES to apply to a wider range of activities governed by the RMA.

While the NES has not yet been amended to give effect to these recommendations, the NES does provide for Regional Plans to be more restrictive than the NES so only presents a minimum standard for source protection and does not constrain individual regions from including higher standards of protection within their Regional Plans.

The details of the RMA framework are discussed in more detail in Section 4 of this report.

1.1.3 Drinking Water Supplies in the TANK Catchments

What is a Drinking Water Supply?

Definitional issues around a drinking water supply are important as that will then determine which supplies may or may not be afforded a level of source protection through the recommended planning provisions.

Within legislation and within a review of regional planning documents undertaken as part of the work informing this report, there are a range of ways in which drinking water can be described / defined, all of which will have a bearing on the number, scale and type of drinking water sources which may be protected by planning provisions.

Examples include:

- **Urban or Municipal Water Supply:**
Suggests larger urban areas (eg Napier and Hastings) but not necessarily the smaller communities or non-Council supplies.
- **Community Water Supply:** :
Suggests Council or community owned water supply scheme including smaller urban or village centres, papakainga housing.
- **Drinking Water:**
Suggests all drinking water supplies including individual dwellings and self-supplies.
- **Registered Drinking Water Supply:**
This is as defined in the Health Act. It includes networked suppliers, bulk suppliers, water carriers, operators of designated ports or airports and specified self-suppliers. Specified self-suppliers are those who supply water to community purpose buildings owned by them (Health Act, Section 69J). It does exclude non-specified self-suppliers some of which can be significant in terms of number of persons served and potential health risks.

For the purpose of this work, the JWG has determined that the provisions developed should apply to **Registered Drinking Water Supplies**.

Supplies within the TANK Catchments

The following diagram shows the Registered Drinking Water Supplies of Registered Network Suppliers servicing 25 or more people in the Hawke's Bay Region and those which are located within the TANK Catchments. These are the supplies as recorded in Part One of the Register of Drinking Water Suppliers of New Zealand (August 2018). In addition to these, there are also Networked Suppliers servicing fewer than 25 people and Specified Self-Suppliers on the Register. All registered supplies in the TANK catchment are shown on the plan included in Appendix A.

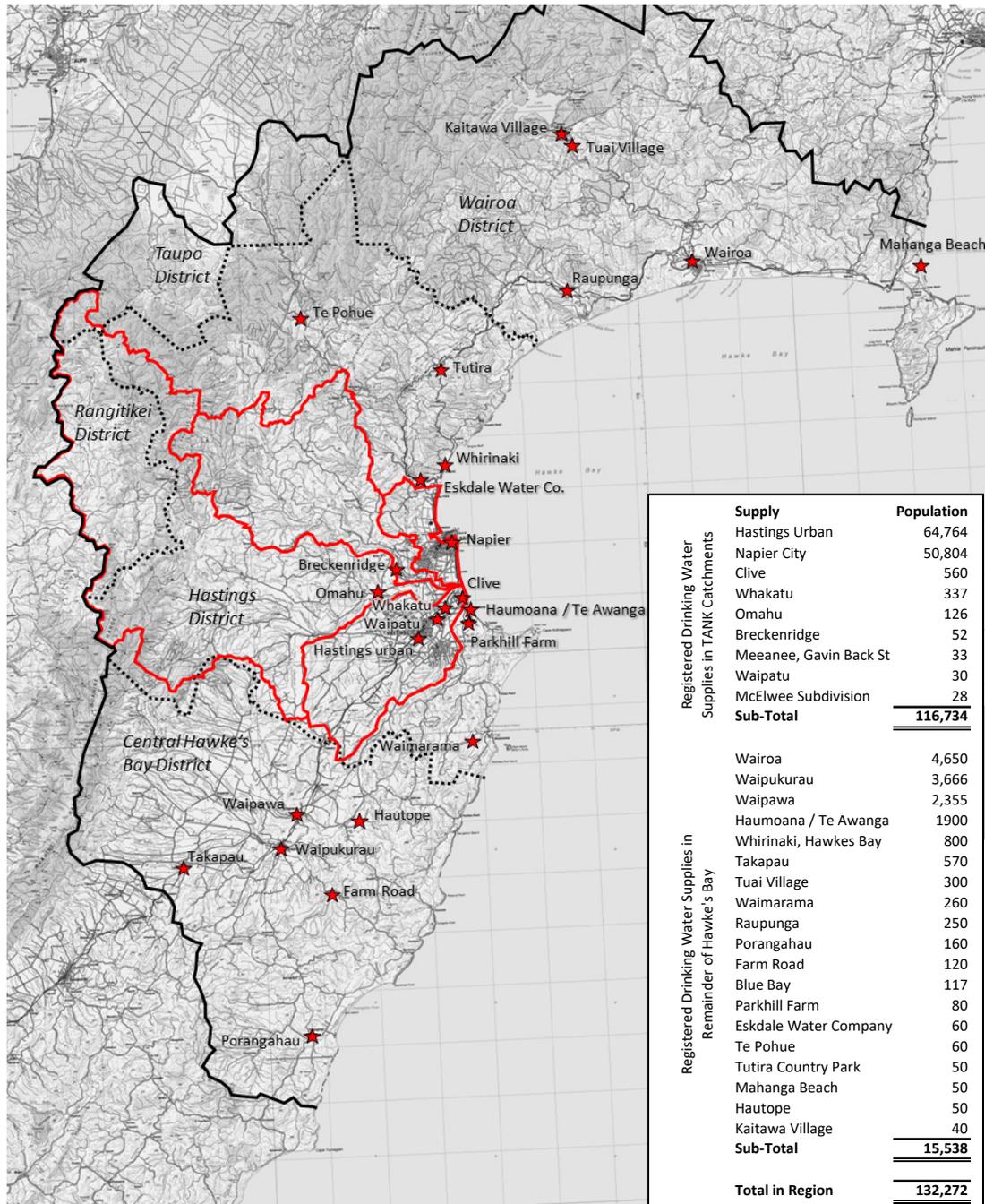


Figure 1.2
Registered Network Water Supplies Servicing 25 or More People in the TANK Catchments and Hawke's Bay Region

The usually resident population of the Hawke's Bay Region was recorded in the 2013 Census as 151,179. This indicates that approximately 88% of the population is provided with drinking water from a registered drinking water supply identified in Figure 1.2 above.

The largest two supplies are the Hastings Urban and Napier City supplies, both of which are located within the TANK catchment. These supplies provide drinking water to 76% of the Hawke's Bay Region's population.

Registered drinking water supplies from networked suppliers servicing more than 25 people within the TANK catchment service 88% of the population supplied from registered drinking water supplies in the entire Region; and 77% of the Region's total population.

2 ACTIVITIES PRESENTING RISK TO DRINKING WATER SOURCES

In order to identify appropriate source protection planning provisions, it is necessary to understand what activities may occur in the catchment and protection zones which could present a risk to drinking water quality.

The methodology used to identify activities which may require specific consideration within the regulatory framework due to potential risks presented to drinking water sources has been to:

- Undertake a review of relevant New Zealand and international guidance with respect to identifying risks within a drinking water source area
- Consider the activities identified against the regulatory framework provided under the RMA in general, and the RRMP, including draft TANK provisions.
- Identify those activities where further consideration is required and / or additional regulatory protection may be beneficial.

A desktop literature review has been undertaken to identify activities which may present a change in risk profile for a drinking water source if they are to occur within a drinking water protection zone. This assessment has been undertaken to inform consideration of a planning framework for source protection. Identification of an activity as a "Risk Activity" in this report memorandum does not necessarily mean that it presents an increased risk to any specific drinking water source, nor that it requires specific policy or regulatory controls.

2.1 Best Practice Guidance Documents

In order to identify risk activities, a review of relevant compliance and guidance documents has been undertaken. The documents reviewed are those within the New Zealand jurisdiction which provide either a compliance basis or guidance as to catchment risk assessments, and from international jurisdictions where those jurisdictions have been identified through the Board of Inquiry process and water sector as being sources of "best practice".

Review of guidance documents has focused on elements which address source water quality in particular, and specifically elements which provide guidance as to how to identify and assess activities within catchment or protection zones which may present a risk to source water. That is, **the review has looked at 1st barrier elements only**, and has not considered any requirements or guidance for drinking water management that does not relate to source water.

A matrix has been developed and is detailed in Appendix B which identifies the guidance documents reviewed and the risk activities explicitly identified within each document. It is noted that the guidance documents recommend a catchment or source protection specific investigation and risk assessment process, and activities identified are intended as examples or indications of what may be considered. They are not intended to be, nor should they be, used as a prescriptive check-box style list.

Nonetheless, the activities are considered here in order to inform the matters which should be considered in the development of draft planning provisions. Further, identification of risk activities within documents that represent best practice for source protection indicates a body of work which can assist in demonstrating a need for planning controls. This is important as it is considered that the inclusion of risk activities in national and best practice guidance documents constitutes a body of knowledge identifying that those activities may present a risk to drinking water quality. This body of knowledge assists to inform any s32 analysis required to support any proposed policies and rules.

2.2 Local Risk Assessments

Hastings District Council has also provided a Risk Ranking Methodology paper prepared by Tonkin + Taylor as part of the Catchment Sanitary Investigations for the Hastings Urban Supply. This methodology provides a more prescriptive list of potential risk activities and assigns risk factors based on whether or not it is a current activity; contaminants are stored in bulk; there is offsite discharge to surfacewater or discharge to ground; contaminant degradation and mobility; whether vertical penetration within the aquifer is likely; and, in relation to services the condition, conveyance method (gravity or pressure), material type, and age; the toxicity of the contaminants; HBRC aquifer vulnerability scores; and proximity to water abstraction site.

This work is relevant to the current project as it includes a local risk assessment for one of the major drinking water supplies, and also considers not just the type of activity but the resultant risk to supply of safe drinking water within the local groundwater and planning context. The risk evaluation results from this work have been used to inform recommendations as to regulation of activities via Regional Plan rules.

2.3 Contamination Pathways

The existence of a specific activity in the protection zone does not directly correlate to an impact on the delivery of safe drinking water. An assessment is required as to the risk the activity presents to the drinking water source, taking into account the likelihood of an impact occurring, as well as the consequence of that impact occurring.

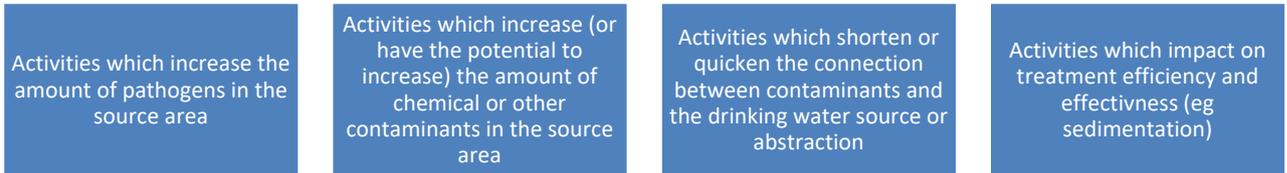
For source protection, this requires consideration of:

- The **amount of contaminants present and their toxicity** (ie how much does it take to cause a health impact).
- The **ability of the contaminants to enter the source water**. For surface water this generally occurs via overland flow or direct discharges. For groundwater this can occur via direct discharge to the groundwater; seepage through the strata of soils above the aquifer; or through direct pathways between surface and groundwater such as penetrations in to the aquifer or changes in flow pathways.
- The **rate at which contaminants travel** through the source water to the abstraction point, **combined with the survival rates / decay times** for the specific contaminant.

Some contaminants may also not present a health risk in and of themselves, but may impact on the efficacy of any treatment processes. For example, a surfacewater source that experiences high sediment concentrations may mean that treatment processes such as filtration and UV have reduced effectiveness and supply of safe drinking water is compromised.

2.4 Broad Grouping of Activities

As a result of the above considerations, potential risk activities can be categorised in to four key categories. The categorisation distinguishes between activities which increase the amount of pathogens and the amount of other (eg chemical) contaminants in the source area as their mobility, survival rates and risks to health can differ significantly.



2.5 Activities Identified

Given the risk based approach adopted in the majority of these guidelines, a prescriptive list of activities which present a risk to a drinking water source is not included. However, typical types of activities which may be of concern and warrant further consideration are identified by way of examples and case studies throughout the documents. These are identified in Table 2.1 below. That Table also identifies those activities which are currently regulated in some manner under the existing Regional Plan.

Table 2.1
Catchment Activities which May Present Risks to Drinking Water Sources

Generic Activity or Land Use	Specific Activities	Regulated in some manner under existing Regional Plan
Rural Land Use / Rural Activities	Fertiliser application	✓
	Pesticide and agrichemical storage / use	✓
	Wastewater disposal	✓
	High stocking rates	✓
	Offal Pits	✓
	Sheep dips, offal pits, tannery pits, carcass pits	✓
	Solid waste disposal	✓
Industrial	Underground storage tanks	✗
	Storage and use of hazardous substances or chemicals	Only via discharges
	Mining activities	Only via discharges

Generic Activity or Land Use	Specific Activities	Regulated in some manner under existing Regional Plan
Urban Land Use	Landfills	✓
	Wastewater reticulation & disposal	Discharges only
	Earthworks dewatering discharges	Via general discharge or drainage rules
	Stormwater attenuation and discharge	Via discharges only
	Runoff from roading and sealed surfaces	✗
Forestry	Land clearing, planting and / or felling (increase in silt runoff)	✓
Activities impacting on the integrity of the aquitard	Poorly sealed and / or abandoned bores	✓
	Foundation piles	✗
	Poles (eg power poles)	✗
	Drilling activities (creating vertical connection & with respect to drilling fluids)	✓
	Earthworks	✗

In addition to the above, it is expected that the Water Safety Plan for each supply will identify risks within the specific source protection zones.

The following table extracted from the Guidelines for Drinking Water Quality Management for New Zealand also informs the type of activities which may require planning controls.

Table 3.5: Human activities and associated inputs into freshwater ecosystems with human health risks

Activity	Contaminants	Health risks
Agriculture and horticulture	Sediments	Immune and endocrine disruption
	Nutrients	
	Pesticides and other toxic chemicals and metals	Retarded physical and cognitive development, blue baby syndrome
	Faecal microbial contaminants	
Industry	Nutrients	Foetal malformation and death
	Toxic chemicals and metals	
	Oils	
Mining	Sediments	Nervous system and reproductive dysfunction
	Toxic chemicals and metals	
Urbanisation, infrastructure and development	Sediment	Behavioural changes Cancers Waterborne disease
	Pesticides and other toxic chemicals and metals	
	Oils	
	Faecal microbial contaminants	
Recreation	Oils and fuel	
	Toxic chemicals	

Modified after Slaney and Weinstein 2004.

The following sections of this report identify how the areas of interests (Source Protection Zones) may be identified; how the above activities are managed (or not) via the RMA framework; and options for improving source protection zone including potential policy guidance and regulation for some activities.

3 SOURCE PROTECTION ZONES

One of the barriers to the successful implementation of the NES has been that there has been a lack of clarity as to what is meant by “upstream” or “upgradient” of an abstraction point. This relates to difficulty in accessing the drinking water register to confirm which supplies fall within the scope of the NES; lack of spatial definition as to the abstraction point locations; and lack of spatial definition of the area which is considered upstream or upgradient of the abstraction.

With respect to surfacewater sources, assuming the abstraction point is able to be defined, upstream areas are relatively easily identified. However, the NES does not define any upper limit to the consideration of the upstream area and for large catchments, a large number of activities may be unnecessarily captured.

With respect to groundwater sources, the NES defines “upstream” as being “up-gradient of the abstraction point”. Defining the spatial extent of the “up-gradient” area can be extremely complex and require a detailed understanding of the groundwater system including interactions with surfacewater and other groundwater abstraction regimes.

The development of Source Protection Zones assist to overcome these information gaps and provide clarity to resource users and regulators.

3.1 Capture Zone Guidelines for New Zealand

The key technical guidance document for development of Source Protection Zones in New Zealand is GNS’s 2014 report “Capture Zone Guidelines for New Zealand” (Moreau, et al). The following discussion is taken largely from those guidelines.

The GNS Guidelines identify three types of protection zones as summarised below.

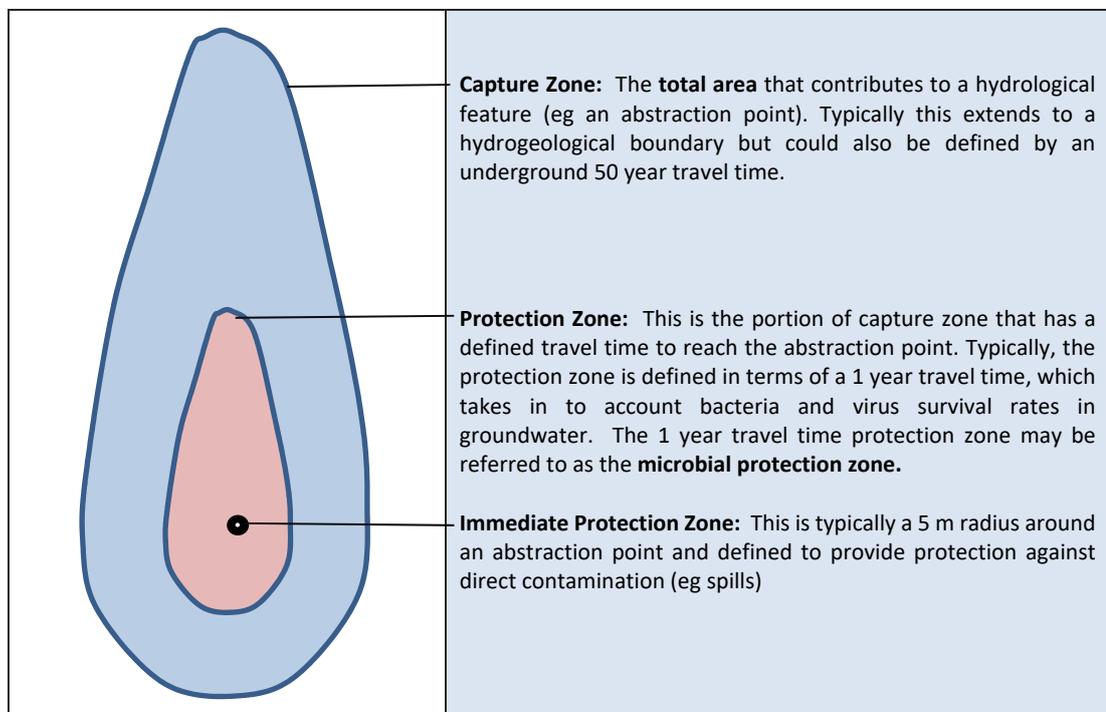


Figure 3.1
Protection Zone Definitions

The Capture Zone Guidelines identify a range of techniques for delineating and defining capture zones and protection zones. The techniques vary widely in terms of the information and resource requirements to define their zones, as well as the level of uncertainty associated with the zone definition. The Guidelines note that the “level of expertise required to use the method, the amount of information required by the method, the time involved implementing the method and therefore the cost, are factors influencing which methods of capture zone delineation a user may select”. The range of techniques presented in the Guidelines are summarised in the following (Figure 2.1, Moreau et al).

Good Earth Matters notes that the intended use of a protection zone must also be considered in the choice of methodology. If the intent is to regulate activities within the zones, then the method used must be appropriate to meet any statutory evaluation tests to enable regulation.

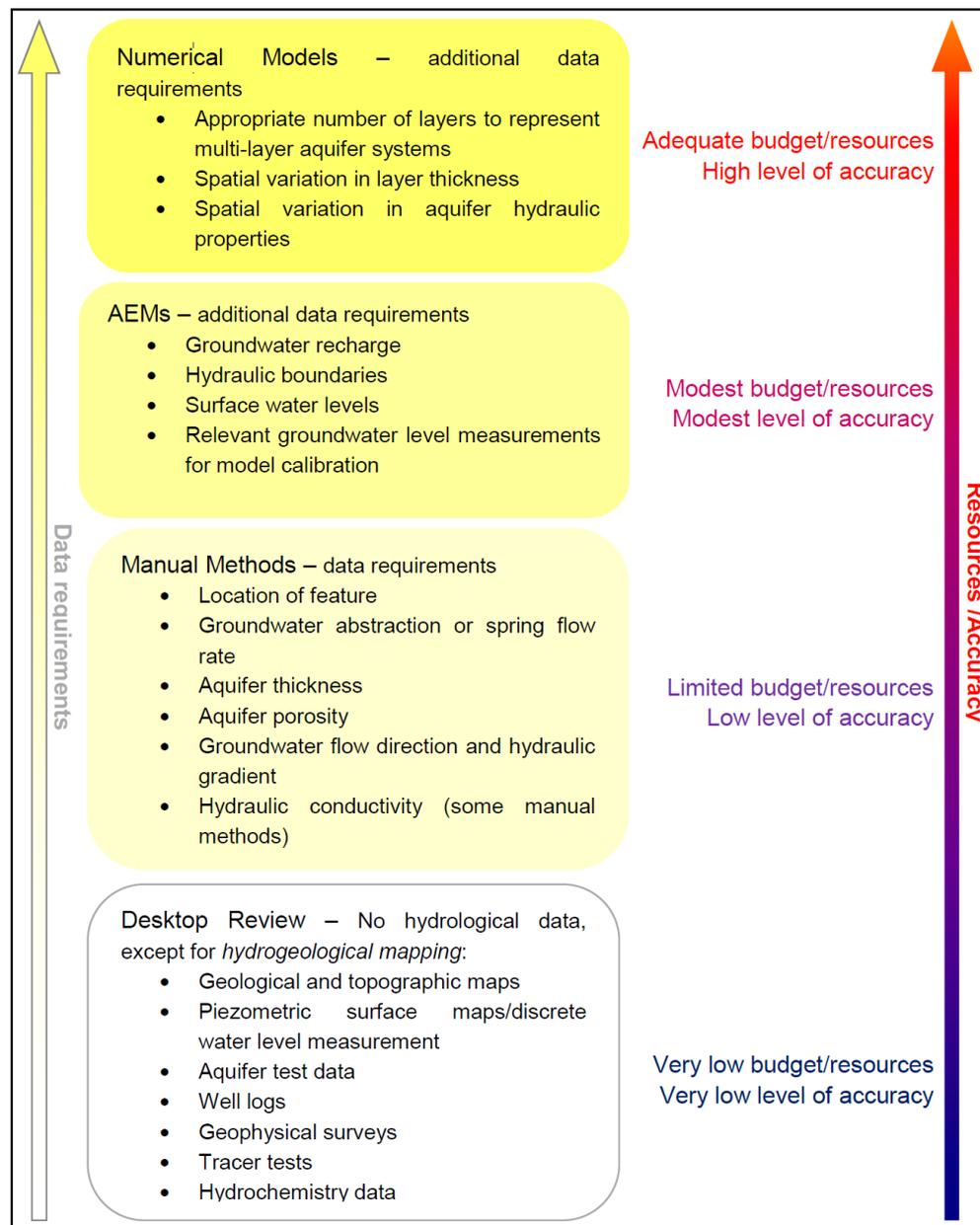


Figure 3.2
Methods of Determining Source Protection Zones
Source: Capture Zone Guidelines, Moreau et al

3.2 Source Protection Zones Defined for the TANK Catchments and Hawke's Bay Region

HBRC's Default Zone – 2km radius

There are currently no Source Protection Zones defined within the Regional RMA planning framework. In the absence of defined Protection Zones, it is understood that the Regional Council has adopted a default zone of 2 km around water supply wells. The Regional Council acknowledges that this is not currently referenced in the Regional Plan and does not take in to account bespoke information relating to land uses that may be of higher or lesser risk to drinking water⁴. The 2 km radius can be considered an internal practice guidance for consent officers when processing applications for water permits and discharge permits and determining whether or not assessment under the National Environmental Standards for Sources of Human Drinking Water is required. As an indication of the extent of this area, the map of registered water supplies in Appendix A includes a 2 km radius around each supply.

The adoption of a default radius is a defined method in the Capture Zone Guidelines, but is at the lower end of the range of methods defined in Figure 3.2 above. This indicates that it is likely to be of low level of accuracy in defining abstraction specific source protection zones, and it is unclear as to how the 2km radius has been derived.

HBRC acknowledges that the default 2km radius is being used in the absence of more specific information and can therefore be considered an interim placeholder zone until such time as more specific protection zones are identified.

Hastings Urban Supply

Preliminary Source Protection Zones have been defined for the Hastings Urban supply, which consists of the Eastbourne, Frimley, Portsmouth Road and Wilson Road borefields. As identified in Figure 1.2, this supply provides drinking water to approximately 65,000 people across the Hastings Urban area, including Havelock North and including the communities of Bridge Pa and Pakipaki.

The preliminary Source Protection Zones are shown in Figure 3.3 below. These zones have been defined via an Analytical Element Method (AEM) as defined in the Capture Zone Guidelines. This method is towards the upper range of Figure 3.2 indicating a relatively high level of accuracy for the defined Source Protection Zones.

Figure 3.3 shows the modelled SPZs for the Hastings Urban Supply as defined in Figure 6.1 of Tonkin + Taylor's October 2018 report 'Source Protection Zones for Public Supply Bores'.

⁴ Joint Working Group, White Paper Concerning Recommendations C & D to the Joint Working Group: Havelock North Drinking Water Inquiry: Stage 1

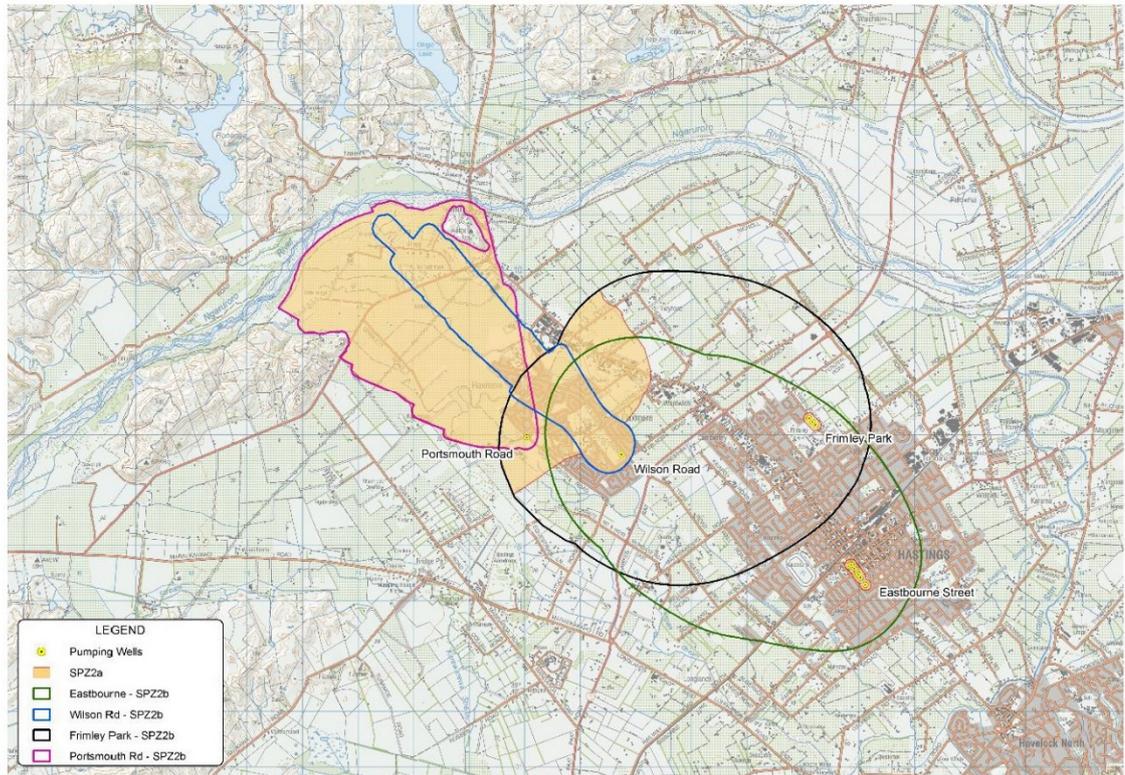


Figure 3.3
Hastings Urban Preliminary Source Protection Zones
(Source: Figure 6.1 of Tonkin + Taylor Limited’s October 2018 Report - Source Protection Zones for Public Supply Bores)

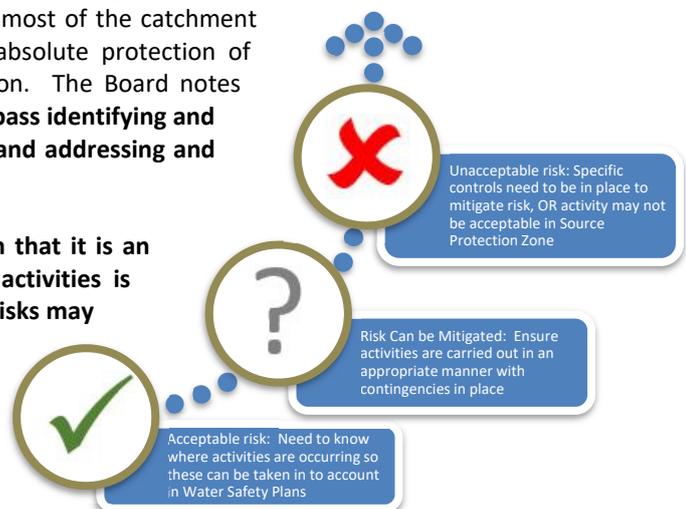
Other Supplies in the TANK Catchments and Hawke’s Bay Region

It is understood that definition of Source Protection Zones for the other registered drinking water supplies in the TANK catchments or Hawke’s Bay Region, is in process.

3.3 What is meant by “Source Protection”

The Board of Inquiry has noted, in its Stage 2 report, the need to “be precise and careful with the wording” that is used with respect to any changes to making protection of source drinking water explicit in the RMA. Given the varied land uses in most of the catchment zones for New Zealand drinking water supplies, absolute protection of drinking water sources is not a realistic expectation. The Board notes (paragraph 624) that **“Protection’ needs to encompass identifying and understanding the risks to drinking water source and addressing and managing them accordingly”**.

The Source Protection Zone therefore could mean that it is an area where an increased level of knowledge of activities is required in order that a systematic assessment of risks may be undertaken. Any planning framework should therefore allow for a greater level of visibility and knowledge as to activities occurring, and provide an effective means of integrating risk assessment processes in to RMA planning approvals.



4 RESOURCE MANAGEMENT ACT & HAWKE'S BAY REGIONAL PLANNING FRAMEWORK

4.1 Resource Management Act

The following discussion identifies the degree to which the current Resource Management Act regulatory framework provides for the protection of water quality for human drinking water purposes.

The purpose of the Resource Management Act purpose is (Section 5):

- "(1) ...to promote the sustainable management of natural and physical resources.*
- (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*
- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
 - (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment"*

As has been discussed earlier, the Board of Inquiry considered in their Stage 2 deliberation whether or not this purpose encompasses protection of source water. Their report records that:

- "[612] The RMA does, in its current form, afford protection to sources of drinking water. The Act's sustainable management purpose relevantly includes providing for the health and safety of people and communities, while safeguarding the life-supporting capacity of water.*
- [613] However, as all expert panel members agreed, that protection is implicit in the current regime. There is no express or specific reference anywhere in the primary legislation to the protection of drinking water sources."*

Further, the National Policy Statement for Freshwater Management includes "Water Supply" as an optional National Value for management of freshwater bodies and the National Environmental Standard on Sources of Human Drinking Water sets regulation for activities which occur upstream or upgradient of drinking water abstractions. **The conclusion is that the protection of source water for the purpose of ensuring safe drinking water is clearly within the legislative framework of the Resource Management Act.**

Regional Council and Territorial Authority Functions

Functions of the respective Councils under the RMA are detailed in Sections 30 and 31 of the Act.

Section 30 sets out functions of Regional Councils, which includes:

- The control of the use of land for the purpose of the maintenance and enhancement of the quality of water in water bodies (s30(c)(ii))
- The control of the taking, use, damming and diversion of water (s30(e))
- The control of discharges of contaminants into or onto land, air, or water and discharges of water into water (s30(f))
- The strategic integration of infrastructure with land use through objectives, policies and methods (s30(gb)).

These functions clearly require Regional Council to control the use of land and water for maintenance and enhancement of water quality. It is noted that this is a general obligation for maintenance and enhancement of water quality, and does not explicitly state the values or uses for which water quality is being managed. This notwithstanding, use of water for drinking water purposes is a well-established use in New Zealand (eg s14 of the RMA states that water takes are not restricted under the Act if they are for the purpose of “an individuals reasonable domestic needs”). Therefore it seems reasonable to assume that one of the Regional Council’s function is to control land uses and the use of water for the purpose of, *inter alia*, human drinking water.

Section 31 sets out the functions of territorial authorities, being District and City Councils, which include:

- the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district (s31(1)(a))

Within this function is a requirement for territorial authorities to manage the effects of land use on natural and physical resources of the district.

The RMA functions assigned to both regional and district councils encompass the types of activities that may need to be controlled in a source protection planning framework and there is some overlap, particularly in terms of land development and earthworks type activities. It is considered though that these overlaps needn’t, and shouldn’t, lead to any attempt by either regional or district councils to either solely ‘own’ (plan for) or disown (not plan for) source protection. Rather, it is considered that the matter of source protection is clearly within the scope of the functions of both regional and district councils and that this multi-organisational approach is necessary for effective source protection planning and that such an approach is reflective of the BOIs recommendations for better integration across organisations. For the purpose of the work at hand, recommendations in the form of planning provisions are only being made to that part of the Regional Resource Management Plan which is subject to the TANK plan change process. It is envisaged that changes or additions to the Regional Policy Statement are likely to be necessary, particularly in order to ensure that the role of district plans within the region in terms of planning for source protection is addressed and guidance is provided to territorial authorities in this regard.

4.1.1 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2014 (amended 2017) provides national guidance under the RMA and sets out objectives and policies for freshwater management.

The NPS identifies two compulsory national values for freshwater management, being “Ecosystem Health” and “Human Health for Recreation”. The Human Health for Recreation value is focused on contact recreation and does not relate directly to drinking water.

“Water Supply” is identified in the NPS as an “Other National Value”. In this context, water supply is defined as (NPS, Appendix 1):

Water Supply – The freshwater management unit can meet people’s potable water needs.

Water quality and quantity would enable domestic water supply to be safe for drinking with, or in some areas without, treatment.

Section CA of the NPS relates to the National Objectives Framework. Its objective and supporting policies as they relate to water supply values, is summarised in the diagram below.

Objective CA1: To provide an approach to establish freshwater objectives for national values, and other values that:

- a) is nationally consistent
- b) recognises regional and local circumstances

Policy CA1: Regional Council is required to identify Freshwater Management Units (FMU) that include all freshwater bodies within its region.

Policy CA2: Requires the Regional Council to follow a defined process for developing objectives for Freshwater Management Units (FMUs). This MUST be done **through discussions with communities, including tangata whenua.**

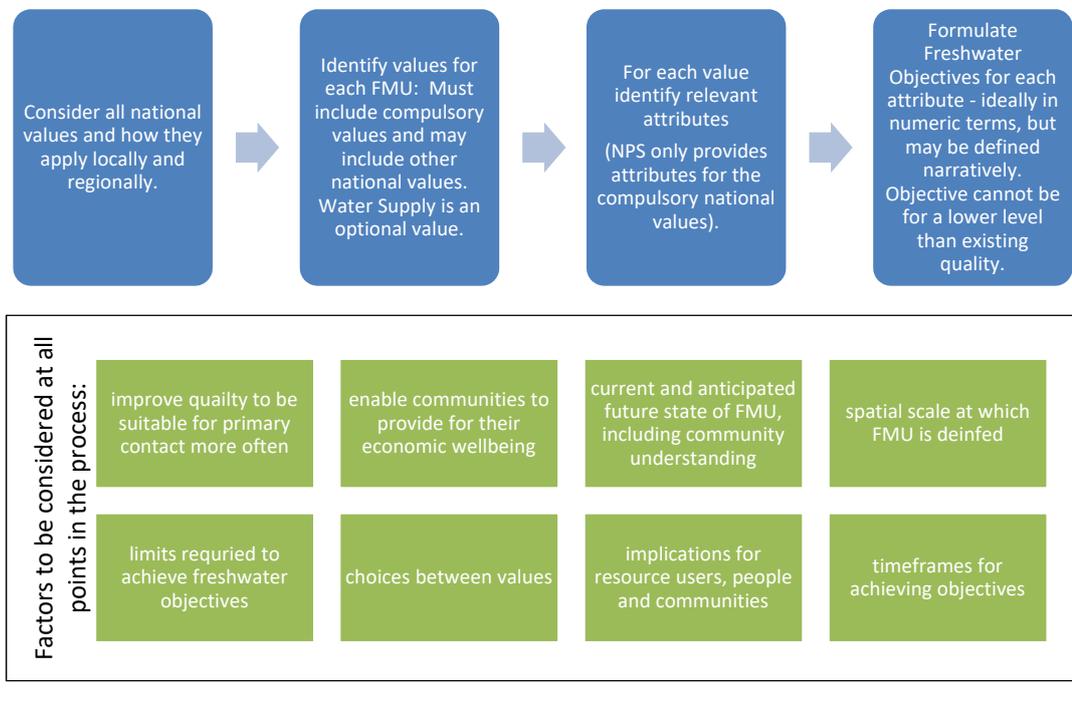


Figure 4.1
NPSFM Framework for determining Freshwater Management Values and Objectives

Of relevance from this framework is:

- **Water Supply** is identified as an **optional National Value** for freshwater bodies under the NPS.
- Identifying that a freshwater management unit is to be managed for Water Supply Values under the NPS framework requires this to be done in consultation with tangata whenua and local communities and for the attributes and objectives to be defined in a manner which is relevant for the local and regional context.

It is understood that Water Supply has been identified as a groundwater value for the TANK Catchments.

4.1.2 National Environmental Standard for Sources of Human Drinking Water

The National Environmental Standard for Sources of Human Drinking Water came in to effect on 20 June 2008. According to the Ministry for the Environment, the purpose of the NES is “to improve drinking water management by ensuring that catchments are included in the management of drinking water”⁵.

The NES attempts to strengthen source protection by regulation directed at resource consents as well as what activities may be permitted in Regional Plans.

This report acknowledges that gaps in the NES to meet its objectives are now recognised and the Ministry for the Environment has implemented a review process (as discussed further in section 4.1.4). This notwithstanding, any Plan Change provisions are required to comply with the current NES and therefore the following discussion and analysis is based on the NES as currently gazetted.

Scope of the NES

The scope of the NES is summarised in the following diagram.

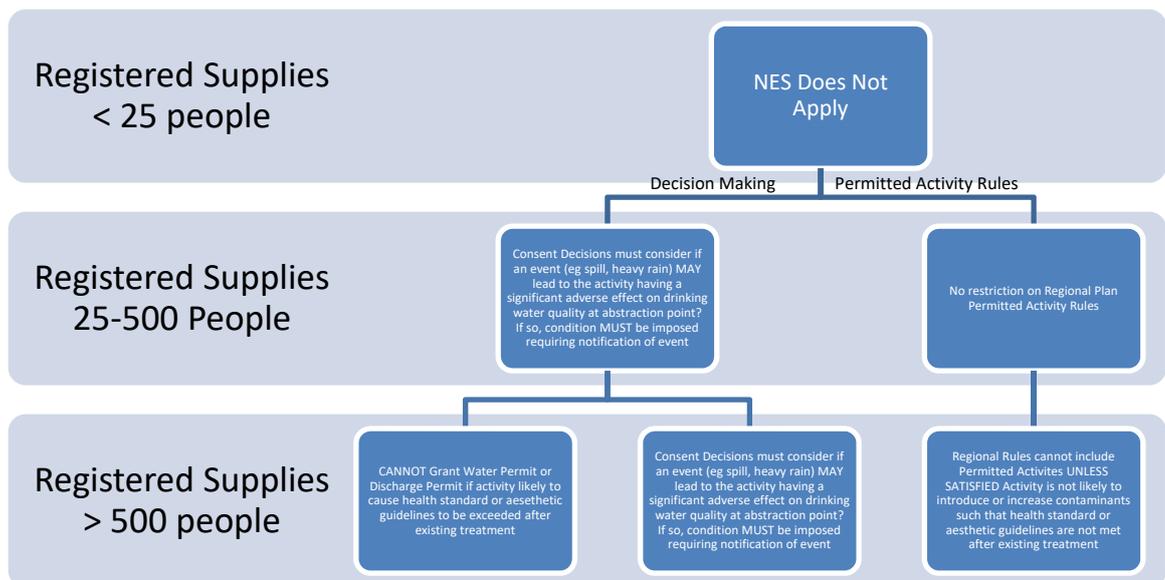


Figure 4.2
Summary of NES Provisions

The NES is limited in scope in that it is only concerned with **registered drinking water supplies**⁶ which supply water to 25 or more people for not less than 60 days each calendar year.

⁵ Draft Users Guide

⁶ Defined as “a drinking water supply that is recorded in the drinking water register maintained by the chief executive of the Ministry of Health (the Director-General) under section 69J of the Health Act 1956”

NES in Consent Decision Making Processes

In terms of resource consent processes, the NES restricts grant of certain permits and also requires conditions to be imposed on resource consents in certain circumstances.

a) **Restrictions on Grant of Water Permits and Discharge Permits** **Registered Drinking Water Supplies servicing 500 or more people**

The restriction on granting of permits under the NES is only relevant to the consideration of water permits or discharge permits (ie, it does not apply to land use consents).

Regulation 7 applies to activities upstream (or up-gradient) of an abstraction point where the drinking water meets the health quality criteria.

Meeting health quality criteria is defined in the NES (Regulation 4). It relates to testing of water in accordance with compliance monitoring requirements of the New Zealand Drinking Water Standards, with the testing point being after treatment.

The NES Regulation 7 requires that a Regional Council **must not grant** a water permit or discharge permit that will occur upstream of an abstraction point if the activity is likely to

- a) *introduce or increase the concentration of any determinands in the drinking water, so that, after existing treatment, it no longer meets the health quality criteria; or*
- b) *introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinands at values exceeding the guideline values.*

Regulation 8 is similar, but applies when the drinking water is not tested or does not meet health quality criteria. In this case, where the supply is not tested, the criteria for whether or not consent can be granted is whether the activity is likely to increase the concentration of any determinands in the water by more than a minor amount. Where the supply is tested and already does not meet health quality, the criteria for whether or not consent can be granted is whether the activity is likely to increase the number of exceedances of the drinking water standards by more than a minor amount.

b) **Conditions Required to Prevent “Event-based” contamination – any consentable activity** **Registered Drinking Water Supplies servicing 25 or more people**

Regulation 12 of the NES applies to any activity which has the potential to affect a registered drinking water supply that services no fewer than 25 people with drinking water for not less than 60 days each calendar year. Regulation 12 requires that, when considering a consent application, a consent authority must consider whether the activity may:

- a) *itself lead to an event occurring (for example, the spillage of chemicals) that may have a significant adverse effect on the quality of the water at any abstraction point; or*
- b) *as a consequence of an event (for example, an unusually heavy rainfall) have a significant adverse effect on the quality of the water at any abstraction point.*

Where either of these conditions are met, the NES **requires** that any consent granted include a condition which requires the consent holder to notify, as soon as reasonably practicable, the registered drinking water supply operator and the consent authority, if an event occurs that may have a significant adverse effect on the quality of water at the abstraction point.

Note that this regulation applies to any activity which requires a consent and therefore is required to be implemented across both Regional and District jurisdictions. (That is, it can and must be imposed on land use consents as well as water and discharge permits, if the above criteria are met).

To implement the regulation requires the consent authority to have an up-to-date and detailed knowledge of the what activities and events could result in a significant adverse effect on the quality of the water at the abstraction point. Even where that knowledge is available in other agencies (eg the water supplies / drinking water regulator), access to that knowledge may be difficult to obtain due to resourcing constraints and time requirements associated with consent processing.

Restrictions on Regional Plan Permitted Activity Rules

The NES's restrictions on Permitted Activity Rules only relate to protection of registered drinking water supplies that service no fewer than 501 persons for more than 60 calendar days per year.

Regulation 10 requires that a Regional Plan **cannot include a Permitted Activity Rule to permit an activity upstream of an abstraction point UNLESS SATISFIED that the activity is not likely to introduce or increase contaminants so that, after existing treatment, the water no longer meets the health quality criteria or aesthetic guideline values.** This relates to activities under Section 9, 13, 14 or 15 of the Act, namely land use activities (excluding those afforded existing use rights under Section 10), use of beds of lakes and rivers, water permits and discharge permits.

Regulation 14 notes that existing Regional Plans are not required to be updated immediately to give effect to Regulation 10. It does, however, require that Regional Plans give effect to regulation 10 at the time of a scheduled plan review; or when a plan change or variation that relates to an existing rule affected by Regulation 10 is introduced.

This means that if Permitted Activity Rules are proposed to be amended within the TANK Plan Change process, an assessment under the NES is required, and the Permitted Activity Rule would need amendment if it does not meet the test of Regulation 10.

Regional Plan may be More Stringent than the NES

Regulation 13 states that a Regional Plan may include rules which are more stringent than the NES requirements. This means that the NES Regulation 10 represents a minimum standard for source protection in a Regional Plan context.

4.1.3 Potential Shortfalls of the NES

As noted above, the NES provides a minimum standard for source protection. While acknowledging that, it is considered that there are a number of areas where the NES does not provide a standard of source protection required to ensure safe drinking water and give effect to the fundamental principles of drinking water safety.

Level of Source Protection Linked to Treatment Processes

The NES clearly links the assessment of potential effects of activities of source protection to the level of existing treatment of the drinking water source. Consideration as to whether or not consent can be granted, or whether or not an activity may be permitted via a Regional Plan is entirely dependent on the existing treatment provided to that water. This is counter to the multiple barrier approach which considers the source protection and treatment processes as two separate barriers. The multiple barrier approach is necessary as no single barrier is effective against all sources, and any barrier can fail at any time. Principle 2 also states the "protection of source water is of paramount importance" and is the first, and most significant, barrier against drinking water contamination and illness. Linking source protection to the treatment process effectively combines these two barriers in to a single barrier, thereby increasing potential risk of delivering unsafe water.

Potential Degradation of Source Water up to the Point of Non-Compliance

In the absence of other decision making considerations, the NES regulations only require consents to be declined if it is likely that the determinand is increased to the point of exceeding the health standard or aesthetic guideline. It doesn't require preserving any 'headroom' between the existing water quality and compliance standard.

Scope Restrictions

The NES only influences consent decision making relating to water permits and discharge permits and does not control any land use activities which may affect the pathway for contaminants to enter the source water. Further, it only directs Regional Plan Permitted Activity considerations and does not direct considerations relating to other activity types or activities regulated through District Plans.

Protection not Afforded to Small Supplies

Other than regulations relating to the "emergency notice" conditions, the NES regulations only provide protection for supplies that service more than 500 persons. Within the Hawke's Bay Region, there are at least 2,203 persons supplied by registered drinking water supplies servicing less than 500 persons. This figure doesn't include persons supplied by unregistered drinking water supplies or self-serviced supplies.

Emergency Notice Condition

The Board of Inquiry agreed with submitters who commented that the emergency notice condition was "essentially futile" given that once an emergency event had happened, the damage has been done. This condition is therefore focused on contingency measures and response and does not provide source protection. The Board also noted that notification to the District Health Board and Drinking Water Assessor would also be beneficial.

4.1.4 NES Review

The Ministry for the Environment initiated a review of the NES in June 2017 which focused on assessing the implementation and effectiveness of the NES and considered the findings of the Board of Inquiry in to the Havelock North Drinking Water contamination event. The report summarising the review outcomes was published in December 2018. It concluded:

"Overall, the review found a need to improve the current practices of many regional councils in managing risks to drinking water sources. A key issue identified was insufficient monitoring of changes to drinking water quality before treatment, which is critically important for informing applicable RMA decisions.

The key findings of the review of Drinking Water NES are:

- the implementation of the Drinking Water NES varies across the country, and many regional councils do not have clear methods and processes in place for identifying activities that need to be assessed against the requirements of the regulations*
- while this variation does not necessarily indicate regional councils are not meeting their obligations under the Drinking Water NES, it is clear that the existing regulations are not promoting consistency in RMA decision-making with regards to activities that pose a risk of contamination of community drinking water supplies*
- following the introduction of the Drinking Water NES, regional councils have taken steps to consider risks of contamination in certain RMA decisions. However, the available evidence suggests this has not had any discernible impact on the concentration of contaminants in drinking water supplies*

- *achieving the purpose of the Drinking Water NES would require regional councils to apply the regulations to a wider range of activities and RMA decisions (beyond those prescribed under the regulations). This suggests the regulations are not fit for purpose.*

These findings and evidence are consistent with the findings of the Government Inquiry into Havelock North Drinking Water ('the Inquiry'). This indicates the issues identified by the Inquiry are not confined to Hawke's Bay and water supplies in other regions may also be exposed to a risk of contamination.

To improve the effectiveness of the Drinking Water NES the Inquiry recommended significant changes to the regulations, including using source protection zones to define the spatial area to which the regulations apply and extending the scope of the regulations to apply to a wider range of activities governed by the RMA."

The outcomes of the review are currently being considered by the Government as part of its system wide review of the drinking water regulatory framework.

4.2 Hawke's Bay Regional Planning Framework

The Hawke's Bay Regional Council's Regional Resource Management Plan (RRMP) is an integrated Regional Policy Statement and Regional Plan for the Region. The following summarises the provisions of the RRMP as far as they are relevant to the protection of source water for drinking water purposes.

4.2.1 Regional Policy Statement

As noted above, the drinking water sources for registered drinking water sources within the TANK catchment are predominantly groundwater sources, and therefore the following analysis is based on the provisions relevant to groundwater management. Outside of the TANK catchments, some registered drinking water sources rely on surface water sources and a further analysis of the surfacewater provisions would be required prior to considering appropriate source protection for surfacewater supplies.

Recognition of Matters of Significance to Iwi / Hapu

Objective 34 is to "recognise tikanga Maori values and the contribution they make to sustainable development and the fulfilment of HBRC's role as guardians, as established under the RMA, and tangata whenua roles as kaitiaki, in keeping with Maori culture and traditions.

Policy 57 requires that where policy is developed for the management of natural and physical resources, regard shall be had to:

- a. Noa: Where effects have minimal or no measurable impact on the state of mauri of a resource – no, or minimal regulation
- b. Rahui: Where actual or potential effects of an activity on the state of mauri are significant – the activity is to be dealt with on a case by case basis according to those effects
- c. Tapu: where the impacts of an activity have a severe and irreversible impact on the state of mauri, the activity shall be prohibited.

Groundwater Quality

Objectives 21 and 22 are the primary objectives in the Regional Policy Statement which relate to groundwater quality. These state⁷:

⁷ As per Change 5 - Amended by Decision NZEnvC50[2015] dated 27 March 2015.

Objective 21:

No degradation of existing groundwater quality in the Heretaunga Plains and Ruataniwha Plains aquifer systems.

Objective 22:

The maintenance or enhancement of groundwater quality in aquifers in order that it is suitable for human consumption and irrigation without treatment, or after treatment where this is necessary because of the natural water quality.

These objectives are explicit in terms of no degradation of existing groundwater quality and also that the groundwater quality is to be maintained or enhanced in order that it is suitable for human consumption without treatment. Where treatment is considered in Objective 22, it is only considered where necessary because of natural water quality, not due to degradation of source water quality.

Policies 15 to 22 of the RPS support the achievement of the above objectives. In summary, these policies provide for the following:

- **Policy 15: Role of Non-Regulatory Methods**

This policy is to use non-regulatory methods, in support of regulatory methods. The specific non-regulatory methods identified are liaison with territorial authorities regarding future development, existing on-site sewage problems, provision of services, connection to services and contaminated sites; as well as education and coordination and encouragement for self-regulation.

These non-regulatory methods can be used to support the protection of source drinking water and, it is noted that they do not restrict the use of other non-regulatory methods. While changes to the RPS are not within scope of the current project, any future changes to this policy may consider including liaison with iwi, drinking water regulator and any multi-agency working groups such as the Joint Working Group.

- **Policy 16: Regulation – Discharges over Heretaunga Plains and Ruataniwha Plains Aquifer**

This policy states that the Regional Council will regulate specific activities over the Heretaunga Plains unconfined aquifer (Schedule Va) or Ruataniwha Plains unconfined aquifer (Schedule IV). The activities which this policy states will be regulated are listed as:

- The storage of stock feed
- The use of compost, biosolids, and other soil conditioners
- Animal effluent discharge
- Management of solid waste
- Existing domestic sewage disposal systems
- New domestic sewage disposal systems
- Stormwater discharges
- Discharges to land that may enter water

In terms of providing for drinking water source protection, this policy limits regulation to the abovenamed activities only (albeit that “discharges to land that may enter water” could be interpreted widely). Activities which may cause a direct link between surface and aquifer or affect the integrity and depth of the aquitard layer (eg bores, vegetation removal, earthworks) are not able to be regulated under this policy. The policy also only relates to a specific area being those mapped in Schedules Va and IV. Schedule IV is outside of the TANK catchment.

Figure 3.3 above shows the SPZs for the Hastings Urban Supplies with the shaded areas representing the portion of the SPZs which are mapped as ‘unconfined aquifer’ in Schedule Va of the Plan. This shows that the Scheduled area covers most of the source protection area for the Flaxmere bores (Wilson Road and Portsmouth Road), but does not cover the source protection

zone for the main Hastings borefields of Frimley or Eastbourne; nor would it cover source protection zones for any of the other supplies in the TANK catchment, including Napier City. This means that any protection of groundwater quality provided through this policy and its subsequent regulation is unlikely to be effective in providing a consistent level of drinking water source protection across the TANK catchments or throughout the Region.

- Policy 17: Decision Making Criteria – Activities Affecting Groundwater Quality.**

This policy sets out decision making criteria including:

- achieving compliance with environmental guidelines for groundwater quality;
- encouraging discharges onto or into land where this is likely to result in less adverse effects than discharges into water;
- considering effects of taking of groundwater on the quality of groundwater;
- preventing or minimising spills or breaches of consent conditions causing contamination of groundwater particularly in those areas of high vulnerability as shown on the DRASTIC map in Schedule V by requiring preparation and implement of site management plans and spill contingency measures;
- disallowing any discharge activity which presents a significant risk of groundwater contamination in areas of high vulnerability as shown on the DRASTIC map in Schedule V.

Figure 4.3 shows the source protection zones for Hastings overlain on the DRASTIC map of the Schedule V of the Regional Plan. The DRASTIC map is an interpretation of aquifer vulnerability to contamination with the acronym representing the factors taken in to account, namely Depth to Water (D), net Recharge (R), Aquifer Media (A), Soil media (S), topography (T), impact of the vadose zone (I) and Hydraulic Conductivity (C).

The policy refers to “High Contamination Vulnerability” areas, however Schedule V maps these on a 11 colour range from “least vulnerable” to “most vulnerable” and it is not clear which categories are considered to be “High” in terms of vulnerability. As with the unconfined aquifers discussed above, the areas towards the “most vulnerable” end of the colour spectrum have a loose alignment with the source protection zones for the Hastings urban supply’s Flaxmere bores, but areas which are within the remainder of Hastings urban source protection zone and likely to be within any source protection zone of the Napier supplies, are towards the lower end of the vulnerability mapping in the RRMP, at least in part.

This means that any protection of groundwater quality provided through the consideration of aquifer vulnerability as set out in this policy and its subsequent regulation is unlikely to be effective in providing a consistent level of drinking water source protection across the TANK catchments or throughout the Region.

- Policy 18: Decision Making Criteria – On Site Sewage Discharges**

This policy is in six parts as follows:

- For consent applications over the Heretaunga Plains unconfined aquifer area, a treatment and disposal system is required to meet specified criteria (Suspended solids < 10 g/m³; even distribution across the land application area; and specific design for discharge volumes greater than 2 m³/day or where they are subject to irregular use).

As noted above, the unconfined aquifer area does not align with likely source areas for the registered drinking water supplies in the TANK catchment or overall region, and therefore if this policy were relied upon, it could not be used to give consistent decision making on on-site sewage discharges in relation to all registered drinking water supplies. Further, the criteria relate to suspended solids only, and does not specify criteria for determinands of concern from a safe drinking water perspective (eg pathogens).

- For discharges in areas with a high water table (groundwater being within 600 mm vertically of the point of discharge), the treatment system must result in effluent with a maximum faecal coliform level of less than 1000 cfu/100 mL. If the discharge is in an area where groundwater is used as a potable water supply, the treatment system must also reduce the

level of nitrate-nitrogen to less than 30 g/m³. The land application method must also achieve even distribution and have at least 450 mm soil adsorption.

- Low maintenance systems are encouraged
 - Requiring connection to reticulated systems where that is available
 - To allow discharge via long-drop method only where the soil infiltration rate is low, groundwater quality will not be affected and the discharge is of a short-term or temporary nature.
 - To use a process specified in the Regional Plan as a general guide for assessing the types of treatment and land disposal that may be acceptable.
- **Policy 19: Decision Making Criteria – Effects of Freshwater Pasture Irrigation on Agricultural Effluent Disposal Areas**
This policy is to minimise the leaching of nutrients to groundwater by ensuring combined hydraulic loading rates do not exceed soil capacity.
 - **Policy 20: Decision Making Criteria – Agricultural Effluent Discharges in Sensitive Catchments**
This policy relates to the management of effects of discharges of agricultural effluent, particularly dairy shed effluent, onto land in sensitive catchments as shown in Schedule VIb. The Sensitive Catchments maps in Schedule VIb are predominantly in the upstream catchment areas of surface waters, but also includes the area mapped as the unconfined aquifer on the Heretaunga Plains. As noted above, this aligns with some of the areas defined as source protection zones for the Hastings supply (mostly the Flaxmere bores), but does not include the main supply bores for the Hastings Urban supply, nor will it include any protection zones yet to be developed for the balance of registered drinking water supplies in the TANK catchment or wider region.
 - **Policy 21: Decision Making Criteria: Bore Construction**
This policy is to ensure that bores are “drilled, constructed and maintained” in a manner which avoids any cross-contamination of groundwater aquifers and which does not allow any seepage or backflow of contaminants into the groundwater. It is noted that despite the policy title of “bore construction”, the policy relates to maintenance as well as construction.
 - **Policy 22: Decision Making Criteria: Risk Assessment of Contaminated Sites**
This policy sets out factors to be taken in to account when assessing the risks to environmental and public health arising from effects of contaminated sites on groundwater. Factors include, but are not limited to, the level of contamination and characteristics of contaminants (eg mobility); proximity to sensitive ecosystems; possible exposure pathways and the degree and nature of the discharges from the site. The policy requires that remediation and / or containment is required to ensure the final level of contamination is appropriate for the current, proposed or any permitted use of the land.

The above objectives and policies form part of the Regional Policy Statement and therefore are unable to be altered through the TANK process, given that it is a Regional Plan Change. The Regional Plan is required, under Section 67 of the RMA, to “give effect to” the Regional Policy Statement

The RPS provisions discussed above identify a number of mapped (scheduled) areas where a higher level of regulation and / or different decision making criteria are to apply. Consideration must therefore be given to whether or not these scheduled areas and the protection afforded via the current RPS and Regional Plan provisions are sufficient to also achieve protection of source water for drinking water purposes. Overlaying the scheduled areas against the Source Protection Zones for the Hastings urban supply and location of the remainder of the registered drinking water supplies (which do not yet have mapped source protection zones), shows that the scheduled areas do not align with the drinking water source areas for registered drinking water supplies. Therefore the current Plan provisions protecting the unconfined aquifers are unlikely to be sufficient to provide the same level of protection to the drinking water SPZs.

Groundwater Quantity

Source Protection considerations are predominantly focused on quality of groundwater, however groundwater quantity is relevant in that effects which affect the velocity and / or direction of groundwater flow can have adverse effects on the drinking water source.

Objective 24 of the RPS is for the avoidance or remedying of any significant adverse effects of water takes on the operation of existing lawful efficient groundwater takes. In this context “efficient” is defined in the Plan in relation to the bore construction details, and does not relate to the use of the water once abstracted.

Policy 26 relates to the location of new bores and is focused on ensuring that interference effects on exiting lawful efficient users is minimised, while Policy 27 relates to criteria for bore construction.

Other Matters

There are no objectives or policies within the RRMP that directly relate to the management of earthworks or land disturbance (eg vegetation removal) for purposes of managing effects on groundwater quality.

Objective 32 is a potentially enabling objective for incorporating source protection considerations. That objective is for the “ongoing operation, maintenance and development of physical infrastructure that supports the economic, social and/ or cultural wellbeing of the region’s people and communities and provides for their health and safety”. Registered drinking water supplies would fall within this consideration as infrastructure which provides for communities’ health and safety.

Objective 20 is for the management and use of organic material from primary processing industries is undertaken in a manner that does not result in any adverse effects on humans or the environment. Policy 12 states that the Regional Council may request a Management Plan for discharges from the use of organic material in circumstances where, inter alia, the groundwater resource is particularly susceptible to contamination (eg Heretaunga Plains unconfined aquifer or on highly permeable soils).

4.2.2 Regional Plan

The Regional Plan is currently a region wide plan, with the exception of specific objectives and policies related to the Tukituki Catchment (effected through Plan Change 6). As the Tukituki Catchment is not part of the TANK catchment area, the Tukituki catchment provisions have not been assessed here.

The Regional Plan portion of the RRMP includes objectives for groundwater quality that repeats the RPS objectives 21 and 22 discussed above. Policy 75 of the Regional Plan establishes environmental guidelines for groundwater systems as shown below.

Issue	Guideline
CONFINED, PRODUCTIVE AQUIFERS IN THE HERETAUNGA PLAINS AQUIFER SYSTEM (as shown in Schedule IV)	
1. No degradation	There should be no degradation of existing water quality.
OTHER PRODUCTIVE AQUIFERS	
1. Human consumption	The quality of groundwater should meet the "Drinking Water Quality Standards for New Zealand" (Ministry of Health, 1995) without treatment, or after treatment where this is necessary because of the natural water quality.
2. Irrigation	The quality of groundwater should meet the guidelines for irrigation water contained in the "Australian Water Quality Guidelines for Fresh and Marine Waters" (Australian and New Zealand Environment and Conservation Council, 1998) without treatment, or after filtration where this is necessary because of the natural water quality.

Note that this requires no degradation within the confined and productive aquifers in the Heretaunga Plains Aquifer System. Elsewhere, it requires that "other productive aquifers" have a groundwater quality that meets the Drinking Water Quality Standards for New Zealand (Ministry of Health, 1995) without treatment (or after treatment only where that is necessary because of natural water quality). The version of the Drinking Water Standards referenced herein as outdated, being the 1995 version. The current standard is 2008 and it is expected that this will be reviewed, potentially substantially, within the near future.

The Regional Plan includes a policy which provides guidelines as to how these environmental guidelines are to be implemented. It notes that the key implementation methods are via resource consents and regional rules.

The Anticipated Environmental Results specified in relation to these policies are:

Anticipated Environmental Result	Indicator	Data Source
No degradation of existing groundwater quality in confined productive aquifers	Nitrate levels Pesticides and herbicides	Ministry of Health Council SER monitoring
Groundwater quality in productive aquifers which meets the "Drinking Water Quality Standards for New Zealand" (MoH, 1995)	Nitrate levels Pesticides and herbicides	Ministry of Health Council SER monitoring
Groundwater quality in productive aquifers which meets irrigation guidelines contained in the "Australian Water Quality Guidelines for Fresh and Marine Waters" (Australian and NZ Environment and Conservation Council, 1998)	Nitrate levels Pesticides and herbicides	Ministry of Health Council SER monitoring

While the anticipated environmental result is that groundwater in productive aquifers meets the Drinking Water Standards, the indicators are listed as nitrate, pesticides and herbicides only. No indicators relating to pathogens are included.

The Rules framework of the Regional Plan has been analysed in relation to the degree to which protection may be afforded to registered drinking water supply sources and whether the Permitted Activities are likely to meet the test required under the NES as discussed above. To avoid repetition, the existing rules, analysis and any recommended amendments are presented in detail in Section 5 of this report.

5 OPTIONS FOR HAWKES BAY REGIONAL PLANNING FRAMEWORK

This section of the report identifies and discusses options for how protection of drinking water source water could be incorporated within the Hawke’s Bay Regional Plan. The suggested framework is limited to the Regional Plan elements of the regulatory framework and assumes that the Regional Policy Statement is unchanged. While some amendments to the Regional Policy Statement may be beneficial to the effectiveness of source protection provisions (as discussed in Section 4.2.1), the existing objectives for groundwater – particularly as they relate to no degradation of groundwater quality and groundwater quality to be suitable for drinking water without treatment - are considered sufficient to enable a source protection regime to be implemented in the Regional Plan.

In addition to the Status Quo scenario, there are three high level options identified and assessed, as summarised below.

All options are premised on having an objective and policy within the Regional Plan that provides for protection of sources of water used for registered drinking water supplies. The difference between the options relate to the degree to which Source Protection Zones are spatially defined in the Regional Plan, and whether or not activities are regulated in order to protect source water.

In addition to the above options, the Status Quo option of not explicitly providing for drinking water source protection is also evaluated.

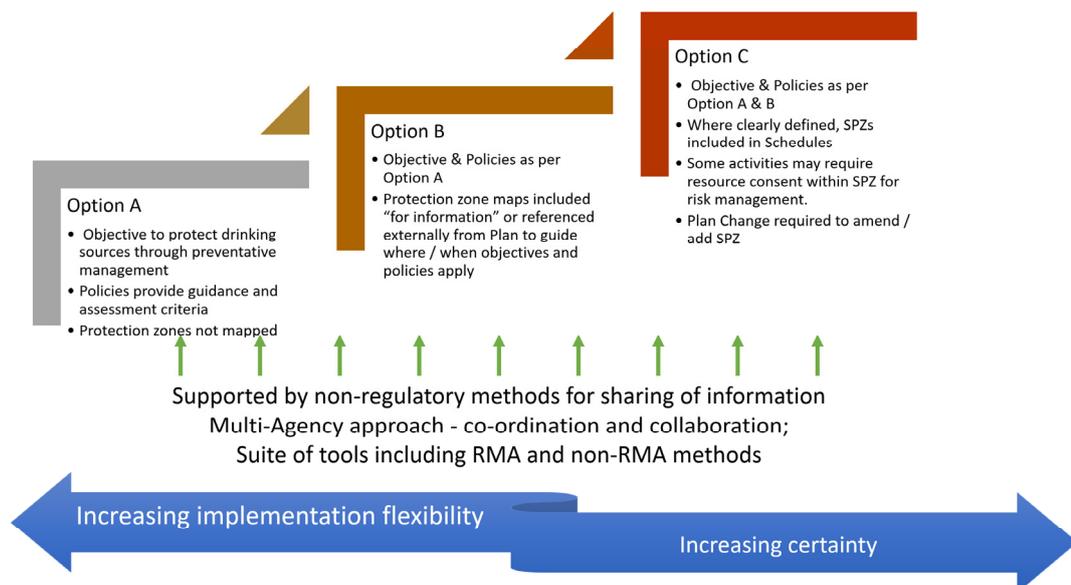


Figure 5.1
Overview of Options Considered for Source Protection Planning Provisions

5.1 Status Quo

The Status Quo option is to rely on the existing, and proposed TANK provisions for protection of source water. Maintaining the status quo planning provisions is not recommended for the following reasons:

- It does not provide any guidance to the user, decision maker or consent authority as to how to effectively implement the NES within the Hawke’s Bay Region.
- It has failed to provide for effective source protection as has been evidence through the Havelock North Contamination Event and the subsequent findings of the Board of Inquiry.

- The spatial areas where a higher level of regulation and / or policy direction is required in order to avoid degradation of groundwater are not sufficient to protection sources of registered drinking water as they do not align spatially with the defined Source Protection Zones or the likely Zones (based on location of abstraction points).
- Several Permitted Activity Rules do not meet the requirement of Regulation 10 of the NES (ie, that Permitted Activity rules cannot be included in a Regional Plan unless the Regional Council is satisfied that the activity is not likely to cause the contaminants in source water to no longer meet health quality criteria. (refer below)).

Maintaining the Status Quo and not providing provisions in the Regional Plan regarding source protection is therefore not recommended.

Regional Plan Permitted Activity Analysis against NES Regulation 10

NES Regulation 10 requires that a Regional Plan not include a rule in a Regional Plan to allow a permitted activity, under sections 9, 13, 14 or 15 of the Act, upstream of an abstraction point UNLESS SATISFIED that permitting the activity is not likely to introduce or increase concentrations such that health quality criteria or aesthetic guidelines are exceeded. The following table provides an assessment of the current Permitted Activity rules against this criteria.

Table 5.1
Assessment of Permitted Activity Rules Against NES Regulation 10

PA Rule	Commentary	Meets NES Regulation 10?
4: Decommissioning of bores	To be Permitted, bores must be backfilled and sealed to prevent groundwater contamination and vertical movement of groundwater, be undertaken by a suitably qualified person and the Regional Council is to be advised of the bores that are decommissioned. The requirement for notification to Regional Council and that the works are to be undertaken by a suitably qualified person is considered to meet the NES Regulation 10 criteria. The Rule could potentially be strengthened by confirming what is meant by “suitably qualified” and requiring documentation verification the decommissioning to be provided.	Yes
5: Feedlots and Feedpads	Feedlots and feedpads are permitted under Rule 5 provided that the land used for the feedlot or feedpad is "managed in a manner that prevents any seepage of contaminants into groundwater". Separation distances are required to some land uses but there is no specified separation distance to drinking water abstractions. The Rule is not prescriptive as to the performance standard required to prevent seepage, nor does it require notification or verification evidence to be provided to the Regional Council.	No
7: Vegetation Clearance and Soil Disturbance	The Permitted Activity Rule would enable activities such as earthworks which may impact on an aquitard and tree removal which could result in rotting of roots creating a preferential flow path to the aquifer.	Unknown
9: Small Scale Application of Agrichemicals	Rule requires agrichemical use in accordance with NZ Standards and that use is in a way which does not enable agrichemicals to enter water bodies.	Yes
10: Widespread Application of Agrichemicals	Rule requires application to be undertaken in accordance with GROWSAFE Certification.	Yes
11: Fertiliser User	Permitted subject to their being no effects which are noxious, offensive or objectionable.	Yes
12: Stock Feed	One of the criteria is that, where the activity is over a scheduled unconfined aquifer and there is potential for contamination of groundwater by seepage, the activity is to be managed in a way which prevents seepage. Given the spatial differences between the unconfined aquifer and likely source protection areas, it is considered that the criteria requiring prevention of seepage to groundwater only in the scheduled unconfined aquifers does not provide sufficient protection to drinking water sources. The Rule also requires a separation distance of 30 m from a bore.	No

PA Rule	Commentary	Meets NES Regulation 10?
13: Use of Compost, Biosolids and other Soil Conditioners	<p>One of the criteria is that, where the activity is over a scheduled unconfined aquifer and there is potential for contamination of groundwater by seepage, the activity is to be managed in a way which prevents seepage. Given the spatial differences between the unconfined aquifer and likely source protection areas, it is considered that the criteria requiring prevention of seepage to groundwater only in the scheduled unconfined aquifers does not provide sufficient protection to drinking water sources.</p> <p>The Rule also requires a separation distance of 30 m from a bore and for the discharge to be at least 600 mm vertically above the winter groundwater table level.</p>	No
31: Discharge of Water to water	<p>The discharge must not cause or contribute to flooding of another property; cause scour or erosion or alter the natural temperature by more than 3degrees Celsius. This rule relates to discharge of water only (ie not contaminants). While it appears to be drafted in the context of discharges to surfacewater it could also permit discharge of water to groundwater (ie direct injection). The activity in this regard is the discharge of water only, and the injection method would require consideration under the bore provisions. For this reason, it is considered that this rule most likely meets the NES Regulation 10 test.</p>	Yes
32: Discharge of Drainage water (gravity flow systems)	<p>The rule requires no adverse flooding effects, no scouring or erosion of any land, no adverse effect on any wetland, temperature to be changed by no more than 3 degrees Celsius, the drainage water to be in to the same catchment as it would normally flow, and suspended solids to comply with the environmental guidelines of Policy 72.</p>	Unknown
34: Discharge of bore drilling fluids onto land	<p>The rule requires there to be no discharge to surface water or to any other property without consent. The discharge is to have oil and grease content of less than 15 g/m³ and suspended solids less than 100-150 g/m³ (depending on whether the discharge is to groundwater or land); and temperature not to change by more than 3 degrees Celsius.</p>	Unknown

PA Rule	Commentary	Meets NES Regulation 10?
35: Existing sewage systems	<p>Existing sewage systems which discharge less than 2 m³/day (7 day average) are Permitted under Rule 35. Conditions require that:</p> <ul style="list-style-type: none"> - the activity not occur over the Heretaunga Plains unconfined aquifer; - there be no ponding or direct discharge to a surface water body; - there be no increase in concentration of pathogenic organisms in any surface water body; - either the discharge be at least 600 mm above the highest seasonal groundwater table, OR not result in or contribute to a breach of the Drinking Water Standards in any groundwater body after reasonable mixing <p>The Either-Or aspect of being at least 600 mm above groundwater or not causing a breach of the drinking water standards in groundwater may be of concern with respect to groundwater quality in general and drinking water source protection zones specifically. For example, a sewage system which had a discharge 600 mm above groundwater table but still caused or contributed to the drinking water standards being exceeded would be a compliant Permitted Activity.</p>	Uncertain. Rule amendments could be made to remove the 'either / or' provision.
37: New sewage systems	<p>New Systems are Permitted Activities subject to similar conditions to existing systems as discussed above (Rule 35) but with additional conditions relating to the land area for disposal and application rates; discharge quality; design of the land application system; separation distance from groundwater bores drawing from unconfined aquifers. In addition, the "Either/Or" requirement for depth to groundwater and not exceeding drinking water standards has been modified such that both conditions must be met. Given the spatial differences between the unconfined aquifer and likely source protection areas, it is considered that the exclusion area for consideration as a Permitted Area should be expanded to include SPZs.</p>	No
42: Diversion and discharge of stormwater	<p>This rule excludes drains from industrial or trade premises in general and industrial or trade premises less than 2 ha where hazardous substances are stored or used.</p>	Yes
47: Discharges to surface water	<p>Rule 47 provides for discharges of contaminants to be Permitted subject to several conditions including that the rate of discharge is less than 50 m³/d and specified water quality standards not being exceeded. These are provided on an individual contaminant basis along with the general requirement that the discharge not cause the concentration of any contaminant, after reasonable mixing, to increase in the water body by more than 5-10% (natural-modified water bodies), or exceed the standards in ANZECC and MfE guidelines (Bacteriological Water Quality).</p>	Yes

PA Rule	Commentary	Meets NES Regulation 10?
48: Discharge of solid contaminants to land that will not enter water	<p>Rule 48 provides for discharge of solid contaminants including cleanfill to land as a Permitted Activity. Conditions include that there not be any increase in the concentration of hazardous substance or pathogenic organisms on or in any land and that the discharge not cause any increase in the risk of human or animal disease. There is to be no discharge within 20 m of any surface water body or over the scheduled unconfined aquifers. Where the volume exceeds 100 m³, Regional Council is to be notified.</p> <p>Given the spatial differences between the unconfined aquifer and likely source protection areas, it is considered that the exclusion area for consideration as a Permitted Area should be expanded to include SPZs. Further it is likely that an ability to apply conditions and / or decline consent for the activity would be beneficial if more than 100 m³ were to be discharged to land within a SPZ.</p>	No
49: Discharges to land that may enter water	<p>Discharges to land that may enter water are permitted if they are less than 50 m³/day; are at least 600 mm above groundwater table; don't cause ponding or runoff; aren't within 20 m of a surfacewater body or over scheduled unconfined aquifers, aren't within 30 m of a bore drawing groundwater from an unconfined aquifer, and don't cause degradation of the existing groundwater quality in confined aquifers. For other aquifers, the discharges must not cause drinking water standards to be exceeded after reasonable mixing.</p> <p>Given the spatial differences between the unconfined aquifer and likely source protection areas, it is considered that the exclusion area for consideration as a Permitted Area should be expanded to include SPZs.</p>	No
50: Disturbance of bed of river / lake by livestock	Relates to the disturbance of a permanently flowing river bed arising from entry of livestock. Requires that disturbance not cause faecal coliform levels to exceed 200 cfu/100 mL.	Yes for groundwater; may need further assessment for surface water.
53: Minor takes & uses of groundwater	Takes of less than 20 m ³ /day are permitted. Note that this is for the take and the mechanism for the take (bore) is considered separately.	Yes
54: Minor takes & uses of surface water	Takes of less than 20 m ³ /day are permitted.	Yes
56: Minor Diversions	Provides for the diversion of water within the same catchment. Note that it relates to the diversion of water and not bed disturbance associated with any stream realignment.	Yes
57: Lawfully established diversions	Provides for existing lawfully established diversions.	Yes

PA Rule	Commentary	Meets NES Regulation 10?
58: Diversions in artificial water courses	Provides for diversion of water associated with the maintenance and removal of structures. The activity is the diversion of water, not the bed disturbance associated with the structure maintenance.	Yes
60: Transfer of permits to take and use surface water from a lake	Relates to transfer of rights (not change of activity) within a Lake.	Yes
63: Use of Structures	Use of any lawfully established structure.	Yes
64: Maintenance of Structures	These activities are permitted subject to a number of performance criteria. Depending on how activities are undertaken and the nature of the structures, there is potential for penetrations to be made creating preferential pathways between surface and groundwater.	Unknown.
65: Replacement and upgrading of structures		
66: Removal and demolition of structures		
67: Dams, weirs and other barrier structures		
70: River control & Drainage works & Structures		
72: Erection and placement of other structures		
73: Small scale river bed gravel extraction	Criteria required that total extracted is less than 1 m ³ /year per person.	Yes
75: Other disturbance of river and lake beds	The maximum area of disturbance is to be no greater than 5 m ² and the disturbance is permitted to change the natural course of any river or lake. These criteria mean that permitted activities are unlikely to be of sufficient scale to materially change any connection between surface and groundwater.	Yes
76: Planting of plants (Beds of rivers)	Conditions include that plants not result in any reduction in the ability of water body to convey flood flows or cause significant erosion or scour.	Yes

Permitted Activity Rules relating to Discharges to Air have not been detailed above. As there are no known pathways for contamination of drinking water sources from air discharges, it is considered that assessment under NES Regulation 10 is not required. Further, the scope of the TANK Plan Change process does not include Discharge to Air provisions of the Regional Plan and changes to those Rules are not proposed at present.

As the TANK Plan change process is not within the Tukituki Catchment, the Permitted Activity rules that apply only within the Tukituki Catchment area have also not been assessed.

Note: The following text details the options considered prior to presentation of the JWG's recommendations to TANK at the TANK meeting of 26 July 2018. Recommendations as presented to TANK on 31 May 2018 are detailed in section 6 of this report where subsequent amendments post the 31 May 2018 meeting are also noted.

5.2 Option A: Objective & Policies only

This option would consist of an objective for source protection and a supporting policy to provide guidance and assessment criteria to assist applicants and decision makers. It does not involve any spatial mapping or definition of Source Protection Zones.

Suggested wording for an Objective and Policy are as follows:

Objective

Activities in Source Protection Zones for Registered Drinking Water Supplies are managed to ensure that they do not cause water in those zones to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed.

Policy

1. *When making decisions on applications which require resource consent within Source Protection Zones for Registered Drinking Water Supplies, the consent authority shall consider:*
 - a. *the potential effects of the activity on the quality of water within the source protection zone including the amount, concentration and type of contaminants likely to be present on the site and in any discharges from the site; the potential pathways for those contaminants to enter the drinking water supply's source water (including any likely or potential preferential pathways); the mobility and survival rates of those contaminants in the source protection zone.*
 - b. *the risks that the proposed activity has either in isolation or in combination with other existing lawful land use activities within the source protection zone on the provision of safe drinking water from the registered drinking water supply.*
 - c. *The degree to which the assessments under a and b are likely to change in the event of non-routine but foreseeable events including, but not limited to, abnormal weather events and activities on site which may depart from standard operating procedures.*
 - d. *The effectiveness of proposed mitigation measures to reduce potential adverse effects on the quality of source water for registered drinking water supplies or the risk of provision of safe drinking water.*
 - e. *The extent to which the effectiveness of mitigation measures is able to be verified.*

A critical disadvantage of Option A is that it is only effective in influencing decision making on activities which require resource consent under the current (and proposed TANK) Regional Plan. Activities which do not require resource consent (ie currently Permitted Activities) will not be affected in any way with Option A.

It is considered that Option A would not meet the statutory requirement of the NES, given that a number of Permitted Activity Rules exist within the Plan that do not meet the test of the NES Regulation 10. That is, Regional Council cannot be satisfied that the Permitted Activities are not likely to introduce or increase the concentration of contaminants in the drinking water so that health criteria are no longer met. This is evidenced by the fact that the land use activity which caused the contamination of the aquifer in the case of the Havelock North outbreak was a Permitted Activity.

The NES requires that, where a Plan Change is proposed that would affect a rule which does not meet the NES Regulation 10, it must amend the rule to meet the NES provisions. Any Permitted Activity rules which are proposed to be amended under the TANK Plan change which do not meet the NES Regulation 10 requirement must therefore be amended. Option A does not provide for this amendment.

Additional Implementation Measures Necessary

The potential benefits of Option A could only be achieved if those making decisions under the Regional Plan have access to information which would enable them to accurately judge where the decision making policy is required to be implemented, along with access to expert information to enable the assessment criteria to be assessed in a meaningful manner. This would likely require:

- Structured and ongoing methods for sharing of information between agencies involved in the provision of safe drinking water
- Access to expertise and resources to assist in the assessment of risks to the drinking water sources associated with specific activities, including identification, quantification and appropriate management of risks. These expertise and resources would need to be able to be accessed in a short timeframes and without forward planning in order to meet the statutory requirements for timeframes for resource consent processing.

Methods for making the above information available to consent applications would also be beneficial in order to assist applicants to present complete and quality Assessments of Environmental Effects.

5.3 Option B: Objective & Policies supported by Non-Regulatory SPZ Maps

This option is as per Option A but includes provision of Source Protection Zone maps, where available, in the Regional Plan. These SPZ maps would be included in order to inform implementation of the policy. However, the SPZ maps would not have any effect on the status of activities in the Rule framework.

Suggested wording of the Objective and Policies would be as per Option A with the addition of a further policy which states:

To define Source Protection Zones for registered drinking water supplies via Schedules in the Regional Plan which show the Source Protection Zone as determined by an appropriate technical method or, in the absence of a supply specific Source Protection Zone, by applying a default 2km radius from the location of abstraction points for registered drinking water supplies.

Ability to Implement in TANK Plan Change

The objective and policy could be incorporated into the proposed structure of the TANK plan change without impacting the overall structure of the Regional Plan. They would be included as additional objectives and policies in the TANK Chapter of the Regional Plan and apply within the TANK Catchments only. This would not provide any source protection for registered drinking water supplies outside of the TANK Catchments, however, this could be introduced in a similar manner when a regional wide or other catchment specific plan change was implemented.

Advantages of Option B

By providing an objective and policy, the need to protect source water for drinking water purposes is made explicit in the Regional Plan and guidance is provided to decision makers as to how resource consent decisions may be made.

Inclusion of SPZ maps provides additional guidance to both applicants and decision makers as to where the objective is to be achieved and the policies applied. This has the benefit that the application of the policy can be targeted to those applications within the SPZ areas and may result in more effective implementation of the decision making policy.

A potential advantage of Option B relates to the fact that the mapped SPZ boundary does not influence a change of consent activity status in terms of the Regional Plan Rules. Where a boundary is used to implement regulation (eg change an activity from, say, Permitted to Discretionary), it has the effect of restricting private property rights. As such, a higher level of certainty as to the need for the regulation is required. By using the SPZ maps to inform the application of policy, as opposed to regulation of activities, SPZs may be able to be developed and / or amended in a way which is more flexible to new information and/or less intensive in terms of cost and resourcing. That notwithstanding, it is considered that any new plans or maps introduced in to the Regional Plan would require a Plan Change process to be followed, albeit that a streamlined process as provided for under the RMA could be followed.

Disadvantages of Option B

As with Option A, a critical disadvantage of Option B is that it is only effective in influencing decision making on activities which require resource consent under the current (and proposed TANK) Regional Plan. Activities which do not require resource consent (ie currently Permitted Activities) will not be affected in any way with Option B.

Similarly, Option B may not meet the statutory requirement of the NES, given that a number of Permitted Activity Rules exist within the Plan that do not meet the test of the NES Regulation 10.

Additional Implementation Measures Necessary

While this Option provides information within the Plan as to where the objective and policy apply, it is considered that decision makers would still need to have access to expert information to enable the assessment criteria to be assessed in a meaningful manner. This would require similar implementation support as Option A, namely:

- Structured and ongoing methods for sharing of information between agencies involved in the provision of safe drinking water.
- Access to expertise and resources to assist in the assessment of risks to the drinking water sources associated with specific activities, including identification, quantification and appropriate management of risks. These expertise and resources would need to be able to be accessed within short timeframes and without forward planning in order to meet the statutory requirements for timeframes for resource consent processing.

Methods for making the above information available to consent applications would also be beneficial in order to assist applicants to present complete and quality Assessments of Environmental Effects.

5.4 Option C: Regulation of Activities Based on Mapped Source Protection Zones

This Option has the objective and policy as per Option B, but would include varying resource consent activity status for some activities where they occur within a defined Source Protection Zone.

In this instance, Source Protection Zones would be mapped and included in Schedules of the Plan. In order to avoid delays in implementing source protection, the Schedules may incorporate the SPZs which are currently defined, but also encompass a default zone around the remainder of registered drinking water supplies. When SPZs are defined at a later date, a Plan Change process would need to be followed to incorporate these in to the Regional Plan.

A rule framework can then be established which introduces a more restrictive level of activity status (and therefore more onerous consenting requirements) for specified activities located within the protection zones. The current Regional Plan includes several rules where activity status changes depending on whether or not the activity is occurring in an area where there is a greater risk of contamination of the groundwater (eg over unconfined aquifer). Option C would involve introducing the SPZ boundary as a further spatial criteria for determining activity status for specified activities. In this instance, the rationale for a different activity status relates to:

- the potential for contamination of source water;
- the need to have better visibility as to what is occurring within the source protection zone in order to undertake appropriate risk assessments and / or inform water safety management; and
- the potential for significant consequences if contamination of the source water occurs.

The consequences of contamination of water within the source protection zones is significantly greater than the consequences of the same contamination occurring outside of the source protection zone due to the number of people being supplied with drinking water from the registered drinking water supply. The consideration of the potential consequences arising from the down-gradient use of the source water for drinking water falls within the RMA definition of effect as per Part 3 of the Act and therefore requires appropriate management. Under Part 3, effect is defined to include:

- Any temporary or permanent effect. Temporary effect encompasses event based changes to the drinking water source, eg high rainfall events.
- Any potential effect of low probability but has a high potential impact. The high potential impact in this case relates to the potential health and disease burden on a large number of persons relying on the registered drinking water supply for delivery of safe drinking water.

Ability to Implement in TANK Plan Change

The format of the TANK Plan Change is to introduce a new chapter to the Regional Plan which will set out the issues, objectives and policies which relate to the TANK catchment areas only. Inclusions of objectives and policies relating to source protection within this chapter can be achieved without affecting the structure of the Plan Change.

With respect to the rule framework, the draft Plan Change documents leading in to the TANK 26 July 2018 meeting indicate that new rules will be introduced regarding Production Land Use, Stock Access, take and use of water within TANK water management zones and stormwater discharges. In addition, amendments are proposed to the Permitted Activity Rule for Vegetation Clearance.

As noted above, the following discussion relates to the draft TANK Plan Change documents as at July 2018 and informed the JWG's recommendations to the TANK 26 July 2018 meeting. Subsequent changes to the Draft Plan Change are discussed in section 6.

Production Land Use Rules

In terms of the **Production Land Use Rules proposed via TANK**, the activity status hierarchy is that:

- Production Land Use is intended to be a permitted activity subject to criteria regarding stock access to waterbodies and, for properties greater than 10 ha the property is managed under the framework of a Farm Environmental Plan, a Forestry Management Plan or the owner or manager is a member of a TANK industry Programme or TANK Landowner Collective. The TANK programme / collective involves having an Environmental Management Plan prepared by a qualified person, the contents of which are required to focus on sediment, nutrients and microbiological contaminants including identification of appropriate mitigation measures.
- Production Land Use that doesn't meet the Permitted Activity criteria relating to the Environmental and Management Plans or participation in the TANK programmes is Controlled Activity. As a Controlled Activity, consent must be granted although conditions can be placed on the consent.
- Production Land Use that doesn't meet the Stock Access requirements for Permitted Activities is a Restricted Discretionary Activity.
- Production Land Use Changes that result in an increase in annual N above 20 kg N/ha is a restricted discretionary activity.

Two options were considered with respect to proposals for the Production Land Use rules in order to incorporate source protection provisions. These are:

a. **Require Consent (Controlled or Restricted Discretionary) for Production Land Use within Mapped SPZs**

Source Protection Zones could be incorporated within the proposed rule framework by amending the Permitted Activity and Controlled Activity criteria to include that the Production Land Use must be outside of a Source Protection Zone for a registered drinking water supply (as per Schedules of the Plan).

A new Rule may be inserted for Production Land Use within a Source Protection Zone to be considered as a Controlled or Restricted Discretionary with matters of control or discretion relating to the effects of the activity on quality of the source drinking water and risks to the provision of safe drinking water to the registered drinking water. A controlled activity status should only be considered if there is a high degree of certainty that any potential risk to the registered drinking water supply is able to be adequately mitigated via consent conditions which are legal under the RMA framework. If there are potential situations where it would be considered beneficial to have the ability to decline the use of land for Production Land Use within a Source Protection Zone, then a minimum of a restricted discretionary activity status is required. A restricted discretionary activity status is considered appropriate given that the only reason for the increased activity status is that fact that the activity is located within the Source Protection Zone. The consent authority's discretion can therefore easily be restricted to matters relating to source protection. Further, it is considered that restricted discretionary status for source protection matters is consistent with classifying production land use as restricted discretionary where there is an increase in N losses from the proposed activity.

b. **Retain Permitted Activity Status for Production Land Use in SPZ but require consideration of source protection in Farm Environmental Plans**

This option retains Permitted Activity status for Production Land Use in the SPZ areas, but requires the Farm Environmental Plans (required to meet Permitted Activity Status) to be developed in consultation with the Water Supply Authority. The intent of this is to not place a consenting

burden on existing production land whilst also encouraging engagement between the land owner / user and the water supply authority. Such an approach would be generally as follows:

- If the production land use is within an SPZ, consultation with the Water Supply Authority would be required in the preparation of the Farm Environmental Plan. Further, the Farm Environmental Plan is required to state management measures adopted to mitigate any potential risks to the registered drinking water supply. Production land use will remain a Permitted Activity, but this amendment requires landowners to engage with the water supplies.

If consultation does not occur and / or mitigation measures are not documented in the Farm Environmental Plan, the activity would not meet the Permitted Activity criteria and would be considered as a Controlled Activity. Note that there is nothing in this framework that would set the level / extent of consultation required, nor do the provisions compel the landowner to adopt the recommendations or requests of the Water Supply Authority. To require an approval mechanism in this Permitted Activity Rule is considered problematic and likely unlawful in that it would require a third party approval in order to meet the Permitted Activity status requirement.

- Add consideration of public health risks in SPZ areas to the Controlled Activity Rule. If consent is required for the production land use (either because the Farm Environmental Plan is not prepared via consultation with the Water Supplier, or one of the other conditions of the Permitted Activity rule are not met), then consent is required but must be granted. Adding a clause regarding the SPZ to the controlled matters enables conditions to be set as to how risks are to be managed. In this instance, it is expected that the Regional Council (as consent authority) would consult with the Water Supplier to understand risks and develop appropriate conditions.

This assumes that any risks associated with production land use in the SPZ areas can be appropriately mitigated via consent conditions as there is no mechanism to refuse consent.

The above approach assumes that the consultation / engagement process required for meeting Permitted Activity status is sufficient to manage potential risks and meet the requirements of the NES. Note that under this framework, the requirement is only to demonstrate there has been consultation with the Water Supplier and to document what the landowner has agreed to do to manage potential risks. There is no compulsion for the landowner to agree to the requests of the Water Supplier nor is there any opportunity for the activity to be elevated to a more restrictive activity status if the potential adverse effects of it are considered to be more than minor by either the Water Supplier or the Consent Authority. Further, there is no process for ensuring that the mitigation measures are implemented, albeit that this is a wider issue associated with the Permitted Activity rule in general as to the appropriateness/ quality of the Farm Environmental Plans and the effectiveness of their implementation.

In terms of meeting the NES Regulation 10 test, the permitted activity rule option for dealing with production land use in SPZs against clause (1), which is for a water supply that is tested and meets health quality criteria has been assessed. Regulation 10 applies as the rule (production land use) relates to an activity regulated under Section 9 of the Act (land use). The Permitted Activity Rule would therefore only meet the NES requirement if the Council is satisfied that production land use under the Permitted Activity Rule is not likely to:

“Introduce or increase the concentration of any determinands in the drinking water so that, after existing treatment, it no longer meets the health quality criteria; or

Introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinands at values exceeding the guideline values”

If it is considered that the Permitted Activity rule (including the requirement to consult with the water supplier with respect to the Farm Environmental Plan) may result in either of the above outcomes, then the proposed rule framework would not meet the NES Regulation 10 test. This notwithstanding, it is noted that the NES Regulation 10 test is not that there is an increase in risk, but that the activity causes the health quality criteria to no longer be met after treatment. The Permitted Activity option is therefore likely to meet the Regulation 10 test for a Permitted Activity to be included in a Regional Plan.

Option b above is the option that was supported by the JWG and presented as a recommendation to the TANK meeting of 26 July 2018.

Water Take Rules

In terms of the draft rules relating to **Water Takes for TANK**, new rules are proposed for the take and use of water for the TANK Water Management Zones and it is assumed that these will effectively override the general water take and use rules of the Regional Plan. The draft activity status hierarchy is as follows:

- Minor Surface water and groundwater takes (5 - 20 m³/day) are Permitted (TANK 5 and 6).
- Reapplication of water permits for groundwater takes in the Heretaunga Plains Water Management Zone will be either Controlled or Restricted Discretionary (TANK 7). As at July 2018, the spatial definition of the Heretaunga Plains Water Management Zone had not been reviewed and it was unknown to what extent it correlates with source protection zones. A matter of control was the “effects of the take on other water user or values of the water body given in table XX”. It was understood that water supply is a value that will be specified in the as yet unnumbered table.

An additional matter can be added so that activities within source protection zones are assessed in terms of the effects on source water of registered drinking water supplies.

- Groundwater and surfacewater takes (low flow) for applications in respect of s124 of the Act will be either Controlled or Restricted Discretionary (TANK 8). As above, a matter of control is the “effects of the take on other water user or values of the water body given in table XX”. It was understood that water supply is a value that will be specified in the as yet unnumbered table.

An additional matter can be added so that activities within source protection zones are assessed in terms of the effects on source water of registered drinking water supplies.

- Groundwater and surface water takes at low flow will be a Discretionary Activity (TANK 9). As a Discretionary Activity, there is a wide range of matters which can be considered by the consent authority and the proposed objectives and policies for source protection would be included in the assessment. The draft rule does include Assessment Criteria and a specific assessment criteria could be added regarding source protection zones.
- Taking of Water not meeting the above TANK rules would be either non-complying or prohibited (TANK 10). The notes on the draft plan change document (dated 31 May 2018) imply that it is likely that this will be non-complying. A non-complying activity can only be granted consent if effects are less than minor or the activity is not contrary to the objectives and policies of the Plan (refer Section 104D of the RMA). As such, any takes within Source Protection Zone areas would be assessed under the objectives and policies proposed for source protection and the non-complying activity status is considered a sufficiently high hurdle in terms of assessment that further regulation within a source protection zone is not warranted.
- Taking of water at high flows, including damming and storage of surface waters is a Discretionary Activity (TANK 11). As with rules above, an additional assessment criteria can be added so that activities within source protection zones are assessed in terms of the effects on source water of registered drinking water supplies.

- Damming of the Ngaruroro and Tutaekuri Rivers will be a Prohibited Activity (TANK 12). As a Prohibited Activity, an application for resource consent cannot be made.

Stormwater Rules

The draft TANK rules set up a rule structure which encourages connections to territorial authority managed stormwater networks and for those networks to be managed as Controlled Activities with Integrated Catchment Management Plans.

Where there is no stormwater network available, new and existing small scale residential activities are able to manage their stormwater discharges as a Permitted Activity; whereas industry or trade premises where low risk contaminants are stored have stormwater discharges managed as Controlled Activities. It is considered that the Permitted Activity for residential stormwater is likely to be acceptable within an SPZ area, whereas the Controlled Activity Rule for the industry and trade premises discharges should be amended to include consideration of drinking water risks as a matter for consent conditions. This assumes that acceptable consent conditions will be able to be determined in all cases, as there is no provision to refuse consent for Controlled Activities.

Discharges of stormwater from industry or trade premises where high risk contaminants of concern are stored or used are to be managed as Restricted Discretionary Activities. It is recommended that the matters of discretion include drinking water risks where these activities are located in an SPZ.

Overall, the proposed rule framework for stormwater is considered an appropriate hierarchy and the amendments recommended are to provide for risks to drinking water sources to be included in the consent decision making process where the activities are located within an SPZ.

Vegetation Clearance – Existing Permitted Activity Rule to be amended by TANK

RRMP Rule 7 provides for vegetation clearance as a Permitted Activity subject to a number of criteria which are predominantly focused on protection of surface water quality. The draft TANK provisions include amendment to this rule to require that no clearance of indigenous vegetation occurs within 10 metres of any river in the TANK catchments; no cultivation of land occurs in TANK catchments where slope is over 20° except if it is less than 10% of the paddock area; and no cultivation of land occurs in the TANK catchments which would result in exposure of bare soil within 5-15 metres of a river except where it is part riparian management improvement or crossing construction works.

This is an existing Permitted Activity Rule which is being amended as part of the TANK Plan Change and therefore Regional Council must be satisfied that it meets NES Regulation 10. With regard to SPZs, vegetation clearance has the potential to result in preferential vertical flow paths where the vegetation cleared has a root structure which penetrates the aquitard and / or confining layer. Therefore, an amendment could be considered to exclude such activities from Permitted Activity status where they occur within an SPZ and require consideration as a Restricted Discretionary Activity under Rule 8. A proposed wording was presented to TANK in July 2018 noting that further work would be required to better define situations under which vegetation clearance cannot be undertaken as a Permitted Activity in a SPZ.

Discharge of Drainage Water - TANK Amendments and New Rules

The draft TANK provisions propose changes to Rules 32 and 33 relating to discharge of drainage water from gravity (Permitted) and Pumped (Controlled) systems respectively. As the Permitted Activity Rule 32 is being amended through the Plan Change, it is required to meet the NES Regulation 10 test.

Rule 32 as currently in the Regional Plan provides for discharges of drainage water from gravity flow systems into water or onto or into land, subject to there being no adverse flooding effects, not causing scour or erosion, not adversely affecting a wetland, meeting temperature and suspended solids limits, and being within the same catchment that the water would naturally flow.

Rule 33 has similar conditions as Rule 32, but is for pumped drainage systems and requires resource consent as a controlled activity.

The draft TANK provisions add to both Rule 32 and 33 by requiring dissolved inorganic nitrogen, dissolved reactive phosphorus and suspended solids levels to be met in the TANK Water Management Zones within 10 years.

The draft TANK provisions also introduce a new Permitted Activity Rule for existing small scale (< 10 ha) pumped drainage systems subject to the same provisions of Rule 32 (gravity systems). This is a new Permitted Activity Rule and therefore must also meet the NES Regulation 10 test.

If the criteria of Rules 32, 33 or the new TANK Rule cannot be met, then discharge of drainage water is considered a Discretionary Activity under Rule 52.

Upon consideration of the above matters and potential risks, the JWG concluded that the existing provisions were likely sufficient and no changes to the drainage water rules were recommended.

Other Activities within Source Protection Zones

In terms of other activities which may affect source protection zones, including amendments to Permitted Activity Rules required to meet the NES Regulation 10, these may be more difficult to achieve within the current structure of the TANK Plan Change. With the exception of amendments to Permitted Activity Rule 7 (Vegetation Clearance and Soil Disturbance), the TANK Plan Change as at July 2018 was not recommending amendments to the existing Rule framework. Three options for addressing this matter were considered:

- i. Do not seek additional Rule changes via the TANK Plan Change and accept status quo position. This would potentially leave a gap in terms of source protection for activities not covered in the above discussion, and Permitted Activity Rules which do not meet the NES Regulation 10 requirement would remain as status quo. Where activities do require consent, guidance can be provided via the draft objectives and policies relating to source protection.
- ii. Expand the scope of the TANK Plan Change with a series of amendments to Permitted Activity Rules that only apply to source protection zones within the TANK Catchments, and introduce a new Rule(s) which apply only in the TANK Catchments to require consent for activities that don't meet Permitted Activity Criteria where they are located in source protection zones in the TANK Catchments.
- iii. Initiate a Region Wide Plan Change to give effect to Source Protection Zones on a regional wide basis. If this option were to be adopted, the objective and policy for Source Protection Zones would need to be amended to be a region wide objective and policy and not be restricted to the TANK catchment.

It is considered that Option (ii) could present a complex rule framework that could potentially be inconsistent with the overall Plan Structure and has the potential to expand the scope of the TANK Plan change considerably. It is also considered a potentially 'messy' interim step to a Regional Wide Plan Change that would require careful and considered plan drafting to avoid unintended consequences. Option (iii) is considered the ideal scenario and would provide a consistent approach to the protection of source water across the region. That notwithstanding, if there are likely to be significant delays in being able to implement option (iii), then an interim scenario consistent with option (ii) should be progressed as it would provide improved source protection to the registered drinking water supplies which, combined, supply water to 77% of the Region's population.

After consideration of the above matters, JWG recommended to TANK that option (ii) above be implemented taking in to account the need to achieve effective source protection for the main water supplies in the Region, the earlier recommendation to retain Permitted Activity Status within the Source Protection Zones, and the likely timeframe to fully implement option (iii).

The recommended rule amendments are as follows:

- Bores:
Amend rules so that bores within SPZ areas are no longer controlled but are Restricted Discretionary under a new rule which covers both bore use and maintenance. The costs to the applicant are not expected to be significantly different between a controlled and restricted discretionary activity, however the restricted discretionary activity status signals that consultation / limited notification may be sought to engage the Water Supply Authority, and also enables the activity to include the bore use and maintenance, not solely the construction.

Amend Rule 4 for decommissioning of bores as a Permitted Activity to include a requirement to confirm to Regional Council that compliance criteria have been met.

- Feedlots:
Amend Permitted Activity rule so that feedlots and feedpads in SPZ areas are not permitted (Rule 5). Such activities would become Restricted Discretionary under Rule 6 and a matter for discretion relating to drinking water is to be added to Rule 6. Given the lack of feedlots and feedpads in the SPZ areas and that large numbers are not anticipated in the future, there are no significant cost impacts arising from requiring consent for these activities within the SPZ areas.

- Agrichemicals:
No changes proposed. It is considered that the existing requirement to adhere to NZ Standards and GROWSAFE Certification is sufficient.

- Agricultural Activities – Fertiliser Use, Stock Feed, Compost, Animal Effluent, Solid Waste
 - Current Permitted Activity rule for Fertilise User is considered appropriate.
 - For Stock Feed and Use of Compost, Biosolids and other Soil Conditioners, amendments to the Permitted Activity rules (Rules 12, 13) are recommended which would have the effect that the activity remains permitted within the SPZs albeit that notification and verification of compliance with Permitted Activity standards is required. This will enable improved visibility and information as to the location and extent of these activities within the SPZ areas as well as provide active management that the Permitted Activity criteria are met.
 - Animal Effluent: discharges of animal effluent are currently controlled, subject to a range of conditions including that the storage area is managed in a way to prevent contamination of groundwater; odour, dust and runoff is managed; there is a 30 m separation distance to any bore or well, and nitrogen loading rates are less than 150 kg N/ha/yr where grazed or less than the nitrogen uptake rate for cropping. If these conditions are not met, the activity is considered Discretionary under Rule 52.

The Animal Effluent Rules also include Rule 15 which requires discharge of animal effluent in “sensitive catchments” to be considered as a Discretionary Activity. The sensitive catchments are identified in Schedule VIb and include headwaters of the main rivers as well as the unconfined aquifer areas.

Animal effluent management within SPZ areas can have an effect on public health risks associated with the source water. As a minimum, the controlled activity rule should be amended to include matters relating to drinking water risks, however, the current rule framework provides for animal effluent in sensitive areas to be considered as Discretionary Activity and it would therefore be consistent with the Plan to include SPZ areas as “sensitive catchments” with respect to animal effluent. The recommended changes are such that animal effluent in SPZ areas is to be considered as a Discretionary Activity.

- Management of Solid Waste on Production Land: Rule 16 provides for on-farm solid waste of unlimited quantity (including the use of farm tips and offal holes) as a Permitted Activity subject to a number of conditions including not being located over the unconfined aquifer, being at least 600 mm above the winter groundwater table, not causing any contamination of groundwater and not being within 30 m of a bore. If these conditions are not met, then the activity would be considered a Discretionary Activity under Rule 52.

Given that the rule framework already provides for exclusion to the Permitted Activity status for this activity over the unconfined aquifers, it is considered that it would be consistent with the rule structure to require resource consent for other sensitive groundwater areas such as SPZ areas. It is therefore recommended that changes be made to exclude SPZ areas from the Permitted Activity rule such that solid waste to land in the SPZ areas will be considered as Discretionary Activities.

- Discharge of Bore Drilling Fluids – Permitted Activity.
No recommended changes are made to this rule. It is noted that the consenting requirements for the bore construction in the SPZ areas are likely to enable setting of appropriate conditions relating to bore construction methodology that any risks are able to be addressed through that consenting process. If this was not sufficient, then the Permitted Activity Rule could be amended to exclude SPZ areas and a new Restricted Discretionary Activity rule included for discharge of bore drilling fluids in SPZ area.

- Domestic Sewage Discharges to Land.
Under current rules, existing sewage systems are permitted, existing high discharge volumes (> 2m³/day) are restricted discretionary; and new sewage systems are permitted but have a higher quality standard requirement than existing systems. All of these rules are subject to criteria including that they are not over the unconfined aquifer and have either 600 mm separation to groundwater or don't result in the groundwater breaching the Drinking Water Standards. As noted previously the either / or element of this rule is considered potentially ambiguous and should be addressed. However, this is best addressed through a Regional Plan change addressing the Permitted Activity rules in general. Discharges which don't meet the standards set out in these rules would be considered as Discretionary Activities under Rule 52.

The Rule framework distinguishes between existing and new sewage systems. Given existing systems represent an existing risk, that there are already criteria in the rules for protection of groundwater to meet Drinking Water Standards, and other work programmes associated with this matter (including ability to manage under other legislation and investigation of extended reticulated sewage systems), it is considered overly onerous to impose an additional consenting requirement on existing systems.

However, new sewage systems within SPZ areas should be able to be considered in respect of their potential effects and risk to the drinking water sources. The Rules for new sewage systems contain provisions to regulate these activities over sensitive groundwater areas (unconfined aquifers) and require sewage systems in those areas to be considered as Discretionary Activities. It is recommended that the Rule for new sewage systems be amended to require a similar approach where these are located within SPZ areas.

- Landfills, Transfer Stations & Waste Oil
The existing rules provide for discharges from operating landfills and transfer stations as Discretionary Activities and the discharge of waste oil as a non-complying activity. Consent is therefore required, can be declined and the proposed objective and policy for SPZs would require effects on drinking water sources to be considered and addressed.

The existing rules also provide for discharges from closed landfills as a Controlled Activity. This activity status is considered appropriate given the closed landfills are unable to be relocated. It is recommended that changes be made to the Controlled Activity Rule to include consideration of measures to mitigate risks for drinking water sources where the closed landfills are located within SPZs.

- Generic Discharge Rules – Contaminants to land / water
Rules 47-50 provide for a discharge to surface water (Rule 47), solid contaminants to land that will not enter water (rule 48), discharges to land that may enter water (Rule 49) and distance of bed of river / lake by livestock (Rule 50) as Permitted Activities. If Permitted Activity criteria are not met, the activity must be considered as a Discretionary Activity under Rule 52.

Rules 47 and 50 are assessed as meeting the NES Regulation 10 test (albeit that Rule 50 may need further assessment for surface water SPZs). Rule 47 in particular requires that the activity not cause an increase in pathogenic organisms.

Rule 48 relates to discharge of solid contaminants in to land that will not enter water. While the solid contaminants may not enter water in this rule, it is unclear whether or not the rule satisfactorily addresses any potential leachate. The Rule does not include a quantity limit on the amount of solid contaminants discharged to land (except to require notification to Regional Council if in exceedance of 100 m³) but does require that the activity not be located over unconfined aquifers. It is considered that it would be consistent with the rule structure to require resource consent where the discharge is to occur over other sensitive groundwater areas such as SPZ areas. It is therefore recommended that changes be made to exclude SPZ areas from the Permitted Activity rule such that solid waste to land in the SPZ areas will be considered as a Discretionary Activity.

Rule 49 – Discharges to land that may enter water – also requires that the discharges not be over unconfined aquifers in order to meet the Permitted Activity Status. It is recommended that this Rule also be amended to exclude SPZ areas from the Permitted Activity rule such that discharges to land that may enter water in the SPZ areas will be considered as Discretionary Activities.

Process for Updating SPZs and Bringing in new SPZs to the Regional Plan

A Plan Change process would be necessary given that the SPZ maps would form part of the Regional Plan and would be used to regulate activities based on the spatially defined protection zone. Consideration has been given to whether or not the maps could be included by way of reference (eg in the way some rules which refer to external documents such NZ Standards for compliance standards).

RMA Schedule 1 Part 3 relates to “Incorporation of Documents by Reference in Plans or Proposed Plans”. Section 30(1) of that Schedule states that the following may be incorporated:

- standard, requirement, or recommended practice of international or national organisation,
- a standard, requirement, or recommended practice prescribed in any country or jurisdiction,
- written material that deals with technical matters and is too large or impractical to include in, or print as part of, the plan or proposed plan.

It is considered that the SPZ maps do not meet the criteria set out above as to what material may be incorporated by reference in a Plan. This notwithstanding, incorporation by reference does not negate the requirement to undertake a Plan Change to give effect to a new version of the incorporated material. RMA Schedule 1 Part 3 states that an amendment or replacement of material incorporated only has legal effect if an approved change has been made to the Plan stating that the amendment or replacement has legal effect. It is therefore considered that there is no benefit to be gained from incorporating SPZs by a reference in the Regional Plan.

Resource Legislation Amendment Act 2017 introduced Subpart 5 Streamlined planning process. This intends to provide an expeditious planning process and it may be that this can be used to update versions of the source protection zone maps as needed. A consent authority must apply to the Minister for approval to use an “expeditious planning process that is proportionate to the complexity and significance of the planning issue being considered”. The criteria for consideration as to whether or not a streamlined planning process will be approved is that the one of the following criteria is met:

- it will implement a national direction:
- as a matter of public policy, the plan change is urgent:
- the proposed plan change will meet a significant community need:
- the current plan or policy statement raises an issue that has resulted in unintended consequences:
- the proposal will combine several policy statements or plans to develop a combined document
- the expeditious process is required in any circumstance comparable to those set out above.

It is considered that adding new SPZs as they are developed may meet the criteria related to public policy and meeting of a significant community need, however, this would need to be tested in more detail to confirm that a streamlined planning process would be available. If a streamlined planning process were not able to be used, a Schedule 1 Plan Change process would be required.

Advantages of Option C

As with Options A and B, the inclusion of an objective and policy is that the need to protect source water for drinking water purposes is made explicit in the Regional Plan and guidance is provided to decision makers as to how resource consent decisions may be made.

Option C has the further advantage that certain activities are able to be regulated within the defined Source Protection Zones such that there is the ability to impose conditions on activities to ensure that risks are appropriately managed as well as the ability to decline resource consents should the assessment outcome be that the risks to the source water of a registered drinking water supply are unacceptable and unable to be mitigated.

A further advantage of Option C is that the consent authority and, via arrangement for sharing of information and multi-agency collaboration, the water supplies and regulator have a greater level of visibility of activities which are located within source protection zones. This will enable more effective monitoring and assessment of overall risks to the water supply and appropriate risk mitigation and management by the water supplier. It further assists the water supplier to fulfil their responsibilities under section 69U of the Health Act, namely to take reasonable steps to contribute to protection of source of drinking water.

The regulatory aspect of Option C (depending on the sub-options adopted) also means that many activities where there has only been passive management in the past can be shifted to an active management framework. For example, Permitted Activities which currently do not require verification of compliance, are proposed to be subject to a requirement for verification of compliance and / or consent requirements such that the consent authority is able to confirm the level of compliance and undertake appropriate monitoring.

Disadvantages of Option C

Option C involves regulation of activities and has the potential to impact what land owners are currently able to do on their properties. While any Plan Change must be subject to a section 32 analysis regarding the costs and benefits of the proposal, the regulatory aspect of Option C may mean that the evaluation process will be subject to a higher level of scrutiny and / or challenge than Options A and B. The technical processes and level of uncertainty attached to the definition of the Source Protection Zones, including any evidential basis for the default protection zone, may be subject to challenge if it becomes material to key stakeholders if they are inside or outside the line. Similarly, the evidential basis that links an activity to a potential risk to safe drinking water, along with the process for quantifying those risks may come under scrutiny.

The above notwithstanding, it is noted that the evaluation required under Section 32 is not solely limited to costs and benefits. Section 32(2) requires an assessment of the efficiency and effectiveness of the proposed provisions in achieving the objective, to:

- (a) *identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—*
 - (i) *economic growth that are anticipated to be provided or reduced; and*
 - (ii) *employment that are anticipated to be provided or reduced; and*
- (b) *if practicable, quantify the benefits and costs referred to in paragraph (a); and*
- (c) *assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.*

Of note is that, an assessment of the benefits and costs is only required “if practicable”, and further that the assessment must include the “**risk of acting or not acting**”. It is considered that the experience of the Havelock North contamination event, the findings of the Board of Inquiry report, and the subsequent new information that is now available regarding the groundwater system means that the risk of not acting can be demonstrated to be high.

A second potential disadvantage of Option C is that a Plan Change process is required to incorporate new or amend existing Source Protection Zones in to the plan. This will most likely require a Schedule 1 Plan Change process to be undertaken, although as discussed above, such Plan Changes may be eligible for streamlined planning processes to be adopted.

Additional Implementation Measures Necessary

As with other Options, effective implementation of this Option will also require decision makers to have access to expert information to enable the assessment criteria to be assessed in a meaningful manner. This would require similar implementation support as per Options A and B, namely:

- Structured and ongoing methods for sharing of information between agencies involved in the provision of safe drinking water
- Access to expertise and resources to assist in the assessment of risks to the drinking water sources associated with specific activities, including identification, quantification and appropriate management of risks. These expertise and resources would need to be able to be accessed in a short timeframes and without forward planning in order to meet the statutory requirements for timeframes for resource consent processing.

Methods for making the above information available to consent applications would also be beneficial in order to assist applicants to present complete and quality Assessments of Environmental Effects.

It is noted that, due to the regulatory aspect of Option C, it is reasonable that a higher degree of input from water suppliers and regulators would be required in the consenting process (eg applicant consultation; requests for approvals; technical commentary on applications). Appropriate resourcing of these agencies will be required to be able to have effective input to enable the objectives to be achieved within statutory consent processing timeframes.

5.5 Overall Evaluation

The following section provides a summary of the above evaluation and identifies a recommended approach. The draft planning provisions for the recommended approach are presented in Section 6.

Note that, as discussed in section 5.1, the Status Quo option is not recommended and is therefore not included in the summary table below.

Table 5.2
Overall Evaluation of Options for Source Protection

	Option A: Objective & Policy	Option B: Objective & Policy + Non-Regulatory Spatial Definition	Option C: Regulation of Activities via Spatial Definition of Protection Zones
Overview of Option	Include a new objective and supporting policy for source protection. No spatial definition or additional regulation.	Include a new objective and supporting policy for source protection. Spatial definition of SPZs (where known) and default zones elsewhere, for information and policy guidance only.	New objective and policy for source protection. Spatial definition of SPZs (where known) and default zones elsewhere. Regulation of specified activities located within mapped SPZ areas.
Ability to Implement in TANK Process	New objective and policy can be included in the TANK Chapter. This could be relocated to apply to the overall Region at a later date when a region wide plan change is implemented.	New objective and policy can be included in the TANK Chapter. This could be relocated to apply to the overall Region at a later date when a region wide plan change is implemented.	New objective and policy can be included in the TANK Chapter and appropriate rule framework can be incorporated for Production Land Uses, water takes and stormwater discharges. Sub-options for amending other rules in the Regional Plan available.
Advantages	Makes consideration of source protection explicit in decision making processes.	Makes consideration of source protection explicit in decision making processes. Includes guidance as to where objective and policies should be applied.	Makes consideration of source protection explicit in decision making processes, including spatial definition for application. Regulatory approach enables active management of activities within source protection zone and the ability to set appropriate conditions and / or decline consent where risks are not able to be appropriately mitigated or managed. Greater visibility and verification of activities occurring within Source Protection Zones. If sub-option for amending other rules is adopted, would enable NES Regulation 10 to be achieved.

	Option A: Objective & Policy	Option B: Objective & Policy + Non-Regulatory Spatial Definition	Option C: Regulation of Activities via Spatial Definition of Protection Zones
Disadvantages	<p>No guidance as to where objective and policies are required to be applied.</p> <p>Only influences activities which require resource consent under the current Rules. Does not influence or change Permitted Activities.</p> <p>Does not satisfy requirements of the NES Regulation 10.</p>	<p>Only influences activities which require resource consent under the current rules. Does not influence or change Permitted Activities.</p> <p>Does not satisfy requirements of the NES Regulation 10.</p> <p>Requires Plan Change process to introduce new or amended SPZs.</p>	<p>Plan Change process required to introduce new or amended SPZs.</p> <p>Regulatory aspect may result in higher level of scrutiny / challenge to evidential basis for definition of source protection zone and risk assessment.</p> <p>Will affect land and water users whose activities are permitted under the current regime and will require consent under the new provisions by increasing regulation of existing activities and will have an associated cost increase for those users.</p>
Additional Implementation Measures Necessary	<p>Non-regulatory methods for information sharing, cross agency collaboration and access to expertise and resources regarding risks to safe drinking water.</p>	<p>Non-regulatory methods for information sharing, cross agency collaboration and access to expertise and resources regarding risks to safe drinking water.</p>	<p>Non-regulatory methods for information sharing, cross agency collaboration and access to expertise and resources regarding risks to safe drinking water.</p> <p>Consenting support for existing land and water users now needing to apply for consent.</p> <p>Potentially additional resource required from water supply and regulatory agencies to participate effectively in consent processes.</p>
Evaluation	<p>NOT RECOMMENDED:</p> <p>Unlikely to result in effective management of source protection zones over and above that of the status quo. Lack of spatial definition likely to result in ineffective implementation of source protection zone policy. Does not enable greater level of visibility of activities across the source protection areas. Events which were found causative in the Havelock North contamination event would not be prevented from reoccurrence.</p>	<p>NOT RECOMMENDED:</p> <p>Unlikely to result in effective management of source protection zones over and above that of the status quo, with only exception being that activities which currently require resource consent would have a more explicit decision making process regarding source protection matters.</p> <p>Does not enable greater level of visibility of activities across the source protection areas. Events which were found causative in the Havelock North contamination event would not be prevented from reoccurrence.</p>	<p>RECOMMENDED:</p> <p>Provides improved source protection for registered drinking water supplies within the TANK catchment. These supplies service 77% of the region's population.</p> <p>Ability to have greater visibility as to activities occurring in the source protection area and to ensure that activities are undertaken in a manner which minimises risks to the source water.</p>

5.6 Recommended Approach

For the reasons set out in Table 5.2 above and as discussed in section 5.4 above, the recommended approach is Option C.

5.7 Actions Required Beyond Regional Plan Change

Implementation of Source Protection Zones including objective, policies and rules within the Regional Plan TANK Plan Change process is only one aspect of effective source protection zones. As noted above, there are registered drinking water supplies which are outside of the TANK Catchments, and therefore a region wide Plan Change should be implemented to achieve a consistent approach across the region.

Further, there are several aspects of effective Source Protection which are not able to be implemented through a Regional Plan. These include, but are not necessarily limited to:

- Amendments to the Regional Policy Statement (refer discussion in Section 4.2.1) to ensure consistency across the planning framework and to give direction, where appropriate, to territorial authorities.
- Amendments to District and City Plans to effectively control land use activities under their jurisdiction which may impact on, or present risks to, drinking water sources.
- Effective multi-agency collaboration, coordination and sharing of information to enable informed assessment of risks to drinking water sources and agree best means of managing those risks.
- Activities undertaken under the Health Act framework for drinking water including catchment sanitary inspections, and Water Safety Plans.
- Provision of new or extended infrastructure services (eg wastewater reticulation) to remove contaminants sources from the source protection areas as far as practicable.
- Controls and approvals on chemical and hazardous substances storage and use as effected under legislation such as the Hazardous Substance and New Organisms Act.

6 RECOMMENDED DRAFT PLAN CHANGE PROVISIONS AS PRESENTED TO TANK 26 JULY 2018

The following provides a summary of the recommendations arising out of section 5 above and as presented by JWG to TANK at its meeting on 26 July 2018. A copy of the information presented to TANK on 26 July 2018 is included in Appendix C.

Also included in Appendix C is a copy of the presentation provided to TANK at its earlier meeting of 31 May 2018. The May 2018 presentation was for information purposes only.

Note that the proposed wording for Plan provisions is draft only and further “word-smithing” is likely to be required to ensure consistency with the remainder of the Plan provisions. The following wording is presented to provide intent as to the provisions to be included.

6.1 Overview of Recommended Provisions

Figure 6.1 provides a summary of the overall structure and intent of the proposed plan provisions for source protection.

Objective

- Manage activities in SPZs of registered drinking water supplies to ensure water does not become unsuitable for human consumption & risks to supply of safe drinking water are appropriately managed

Policy

- Define SPZs via an appropriate technical method; adopt 2km default radius where SPZ undefined
- Regulate activities that have potential to cause adverse effect / risk to source water safety
- Guidance for decision making on consents
- Encourage & participate in sharing of information and collaborative multi-agency groups

Rules

- Improve knowledge re activities in the SPZs and verify Permitted Activity criteria are met
- Where activities already require consent, ensure that risks to drinking water sources are part of decision making process when located within the SPZs
- For some activities where there is an potential risk to drinking water sources, require consent in SPZ areas.
- Activity status to match activity status of other sensitive areas (eg unconfined aquifers)

Figure 6.1
Summary of Proposed Plan Provisions

6.2 Recommended Provisions

Source Protection Zone Schedules

Maps to be included which show the Source Protection Zones which are currently available (understood to be limited to the Hastings urban supply) and a default zone around the remainder of the registered drinking water supplies in the TANK Catchment.

For purposes of a placeholder name, this schedule has been referred to as Schedule SPZ in the text presented below.

New Objective

Activities in Source Protection Zones for Registered Drinking Water Supplies are managed to ensure that they do not cause water in those zones to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed.

New Policy

1. *To define Source Protection Zones for registered drinking water supplies via Schedules in the Regional Plan which show the Source Protection Zone as determined by an appropriate technical method or, in the absence of a supply specific Source Protection Zone, by applying a default 2km radius from the location of abstraction points for registered drinking water supplies.*
2. *To regulate activities within Source Protection Zones such that:*
 - a. *Activities which will not cause an adverse effect on the quality of sources of drinking water and do not present a risk to the supply of safe drinking water are not regulated for this purpose.*
 - b. *Activities which have the potential to cause an adverse effect on the quality of sources of drinking water or present a risk to the supply of safe drinking water require resource consent.*

3. When making decisions on applications which require resource consent within Source Protection Zones as defined in Schedule SPZ, the consent authority shall consider:
 - a. the potential effects of the activity on the quality of water within the source protection zone including the amount, concentration and type of contaminants likely to be present on the site and in any discharges from the site; the potential pathways for those contaminants to enter the drinking water supply's source water (including any likely or potential preferential pathways); the mobility and survival rates of those contaminants in the source protection zone.
 - b. the risks that the proposed activity has either in isolation or in combination with other existing lawful land use activities within the source protection zone on the provision of safe drinking water from the registered drinking water supply.
 - c. The degree to which the assessments under a and b are likely to change in the event of non-routine but foreseeable events including, but not limited to, abnormal weather events and activities on site which may depart from standard operating procedures.
 - d. The effectiveness of proposed mitigation measures to reduce potential adverse effects on the quality of source water for registered drinking water supplies or the risk of provision of safe drinking water.
 - e. The extent to which the effectiveness of mitigation measures is able to be verified.
 - f. Whether or not the applicant has undertaken any consultation with the supplier and / or regulator of the registered drinking water supply and the outcomes of that consultation.
4. The Regional Council will encourage and participate in the sharing of information between agencies, and collaborative multi-agency groups involving such agencies, which have roles and responsibilities in the provision of safe drinking water.

New or Amended Rules

New or Amended Rules to be included as per Table 6.1 below.

Table 6.1
Recommended New Rules or Rule Amendments

Provision	Amendment Recommended
TANK 1: Production Land Use (Permitted Activity)	Add Conditions / Standards / Terms (b2): <ul style="list-style-type: none"> • Where the property is located within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, the Farm Environmental Plan shall include details of consultation undertaken with the Water Supply Authority relevant to the SPZ and identify mitigation measures identified to address potential public health risks to the drinking water source water.
TANK 2: Production Land Use (Controlled Activity)	Add to Matters: <ul style="list-style-type: none"> • Measures to prevent or minimise the Production Land Use activity having an adverse effect on the quality of the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.

Provision	Amendment Recommended
TANK 7, 8 re surface and groundwater takes	Add Matters to each for rule: <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
Stormwater 2 (Controlled) Existing or New TLA Managed Systems	Add to matters for control / discretion: <ul style="list-style-type: none"> Where the stormwater network (or part thereof) or discharge locations are located within a Source Protection Zone of a registered drinking water supply, measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.
Stormwater 3 (Controlled) Low Risk Industry or Trade Premises	Add to matters for control / discretion: <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
Stormwater 4 (Restricted Discretionary)	Add to matters for control / discretion: <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply, the effect of the proposed activity, and the appropriateness of mitigation measures, on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.
<p>Note: As the Plans to be included in Schedule SPZ are only to be for the TANK Plan Change initially, the amendments will only be effective over the TANK Catchment area.</p> <p>The following recommendations have been made based on the assumption that drinking water is source from groundwater. Further analysis would be required to ensure any recommendations are appropriate for surface water drinking water sources should they be implemented by way of a Region wide Plan Change.</p>	
Rule 1: Bore Drilling (controlled)	Add Conditions / Standards / Terms: <ul style="list-style-type: none"> The bore is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ. <p><i>The outcome of this is to make bore drilling in the SPZ area a Restricted Discretionary Activity Under Rule 2</i></p>

Provision	Amendment Recommended
<p>Rule 2: Bore Drilling that does not comply with Rule 1 (Restricted Discretionary)</p>	<p>Amend Rule title to include “including Bore use and maintenance of bores located with Drinking Water Source Protection zones”</p> <p>Add to Matters for control / discretion</p> <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
<p>Rule 4: Decommissioning of Bores (Permitted)</p>	<p>Add to Conditions / Standards / Terms:</p> <ul style="list-style-type: none"> Where the bore is within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, records to confirm compliance with criteria a to e shall be provided to Regional Council.
<p>Rule 5: Feedlots and Feedpads (Permitted)</p>	<p>Add Conditions / Standards / Terms:</p> <ul style="list-style-type: none"> The land used for the feedlot or feedpad is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ. <p>[The outcome of the above would be to make Feedlots and Feedpads in the SPZs a Restricted Discretionary Activity]</p>
<p>Rule 6: Feedlots and feedpads that do not comply with Rule 5 (Restricted Discretionary)</p>	<p>Add to matters for control / discretion:</p> <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
<p>Rule 7: Vegetation Clearance and Soil Disturbance (Permitted)</p>	<p>Add to Conditions / Standards / Terms:</p> <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, the activity shall not involve clearance of vegetation that has a root structure that penetrates the aquifer confining layer or involve earthworks or land that would result in penetrations of the aquifer confining layer. <p>Note: When presented to TANK, JWG acknowledged that further work would be required to better define the situations under which vegetation clearance cannot be undertaken as a Permitted Activity in a SPZ.</p>

Provision	Amendment Recommended
<p>Rule 8: Vegetation Clearance and Soil Disturbance that does not meet Rule 7 (Restricted Discretionary)</p>	<p>Add to matters for control / discretion:</p> <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
<p>Rule 12: Stock Feed (Permitted)</p>	<p>Amend clause (a) to read:</p> <p>a. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), or the Ruataniwha Plains unconfined aquifer (Schedule IV) <u>or a Source Protection Zone of a registered drinking water supply (Schedule SPZ)</u> which is used for storing stock feed, including silage, and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination.</p> <p>Add new clause (aa)</p> <p>aa. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing stock feed, including silage.</p> <p><i>Outcome of above is the activity remains Permitted within the SPZs albeit that notification and verification is required. This matches the approach taken for protection of unconfined aquifer water in general.</i></p>
<p>Rule 13: Use of Compost, Biosolids and other Soil Conditioners (Permitted)</p>	<p>Amend clause (a) to read:</p> <p>b. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), or the Ruataniwha Plains unconfined aquifer (Schedule IV) <u>or a Source Protection Zone of a registered drinking water supply (Schedule SPZ)</u> which is used for storing organic material and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination.</p> <p>Add new clause (aa)</p> <p>aa. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing organic material.</p> <p><i>Outcome of above is the activity remains Permitted within the SPZs albeit that notification and verification is required. This matches the approach taken for protection of unconfined aquifer water in general.</i></p>
<p>Rule 14: Animal Effluent (Controlled)</p>	<p>Add to Conditions / Standards / Terms:</p> <ul style="list-style-type: none"> The storage and discharge of animal effluent is not located within a Source Protection Zone for a registered drinking water supply as defined in Schedule SPZ.

Provision	Amendment Recommended
Rule 15: Discharge of Animal Effluent in Sensitive Catchments (Discretionary)	<p>Amend the activity description to read:</p> <ul style="list-style-type: none"> The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent, including dairy shed effluent, piggery effluent, and poultry farm effluent in the <u>Source Protection Areas shown in Schedule SPZ or in the following catchments as shown in Schedule VIb:</u>
Rule 16: Management of Solid Waste on Production Land (Permitted)	<p>Amend Conditions / Standards / Terms f to read:</p> <p>f. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown in Schedule IV, <u>or over a Source Protection Zone for a registered drinking water supply as shown in Schedule SPZ.</u></p>
Rule 37: New Sewage Systems (Permitted)	<p>Amend Clause d to read:</p> <p>d. The discharge shall not occur over the Heretaunga Plains or Ruataniwha Plains unconfined aquifer as shown in Schedule IV <u>or over a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ.</u></p> <p><i>The outcome of this is that new sewage schemes become Discretionary under Rule 52. Rule 52 is the General Discretionary Rule and does not contain assessment criteria. If activities in SPZ were considered under Rule 52, it would be assessed in accordance with the new objective and policy for SPZ.</i></p>
Rule 40: Discharges from Closed Landfills (Controlled)	<p>Add to matters for control / discretion:</p> <ul style="list-style-type: none"> Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.
Rule 48: Discharges of Solid Contaminants to Land (Permitted)	<p>Amend clause g. to read:</p> <p>g. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown I Schedule IV, <u>or within a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ, or within 20 metres of a coastal marine area, except for material extracted from a surface water body associated with the maintenance of legally established structures.</u></p> <p><i>The outcome of this is that the activity within a SPZ would become a Discretionary Activity under Rule 52. Rule 52 is the General Discretionary Rule and does not contain assessment criteria. If activities in SPZ were considered under Rule 52, it would be assessed in accordance with the new objective and policy for SPZ.</i></p>

Provision	Amendment Recommended
Rule 49: Discharge to land that may enter water (Permitted)	<p>Amend Clauses g and j to read:</p> <p>g. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown I Schedule IV, <u>or within a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ,</u> except for material extracted from a surface water body associated with the maintenance of legally established structures.</p> <p>j. The discharge shall not cause any degradation of existing groundwater quality in confined aquifers in the Heretaunga Plains, and Ruataniwha Plains aquifer systems <u>and in the Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ,</u></p> <p><i>The outcome of this is that the activity within a SPZ would become a Discretionary Activity under Rule 52. Rule 52 is the General Discretionary Rule and does not contain assessment criteria. If activities in SPZ were considered under Rule 52, it would be assessed in accordance with the new objective and policy for SPZ.</i></p>

6.3 Changes to Recommended Provisions Subsequent to July 2018 TANK Meeting

The above has presented the recommendations made by JWG to TANK at its meeting of July 2018. That meeting largely endorsed the recommendations of the JWG with the following amendments or qualifications:

- That the requirement for Production Land Use Farm Environmental Plans to consider the effect of the activity on source water be extended to apply to the default zone of all registered drinking water supplies and not just the mapped Source Protection Zones;
- That further work is required relating to recommendations for the vegetation clearance rule as it is considered untenable at present. It is noted that this matter was identified by JWG in its recommendations, and the JWG subsequently accepted the vegetation clearance rule as currently in the Regional Plan without amendment;
- That further technical work be carried out to identify a more appropriate 'default' zone than the current 2 km radius.

JWG's paper also identified that further work was required with respect to refinement of the recommended policy for source protection.

Version 8 of the Draft TANK Plan Change was completed in December 2018 and has incorporated the recommended provisions for source protection with some wording amendments as expected to achieve consistency with the overall Plan Change.

The following provides a comparison between the wording of the JWG recommendations and that included in Draft TANK Plan Version 8.

Objective

<p><u>JWG Recommendation</u></p> <p><i>Activities in Source Protection Zones for Registered Drinking Water Supplies are managed to ensure that they do not cause water in those zones to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed.</i></p>	<p><u>Draft TANK Plan Change v8, Objective 17</u></p> <p><i>Activities in Source Protection Zones or within a default radius for Registered Drinking Water Supplies are managed to ensure that they do not cause water in these zones to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed.</i></p>
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Policy re Spatial Definition of Protection Areas

<p><u>JWG Recommendation</u></p> <p><i>To define Source Protection Zones for registered drinking water supplies via Schedules in the Regional Plan which show the Source Protection Zone as determined by an appropriate technical method or, in the absence of a supply specific Source Protection Zone, by applying a default 2km radius from the location of abstraction points for registered drinking water supplies.</i></p>	<p><u>Draft TANK Plan Change v8, Policy 6a and 6b</u></p> <p>6. <i>For the groundwater of the Heretaunga Plains and surface waters used as source water for Registered Drinking water Supplies, in addition to Policy 1 the Council will:</i></p> <ol style="list-style-type: none"> a) <i>to define the spatial extent of Source Protection Zones for Registered Drinking Water Supplies by defined technical methods or</i> b) <i>Where a Source Protection Zone has not been defined, apply a specified default radius for a Registered Drinking Water Supply.</i>
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The revised wording is considered to be consistent with the intent of the recommendations. It is noted that technical work is ongoing to define a default zone, the outcome of which is unlikely to be a circular shape. It may therefore be more appropriate to use the phrase 'default zone' rather than 'default radius'.

Policy re Regulation of Activities

<p><u>JWG Recommendation</u></p> <p><i>To regulate activities within Source Protection Zones such that:</i></p> <ol style="list-style-type: none"> 1. <i>Activities which will not cause an adverse effect on the quality of sources of drinking water and do not present a risk to the supply of safe drinking water are not regulated for this purpose.</i> 2. <i>Activities which have the potential to cause an adverse effect on the quality of sources of drinking water or present a risk to the supply of safe drinking water require resource consent.</i> 	<p><u>Draft TANK Plan Change v8, Policy 6c</u></p> <p><i>Regulate activities within Source Protection Zones that may actually or potentially affect the quality of the source water or present a risk to the supply of safe drinking water because of;</i></p> <ol style="list-style-type: none"> (i) <i>direct or indirect discharge of a contaminant to the source water including by overland flow or percolation to groundwater</i> (ii) <i>an increased risk to the safety of the water supply as a result of a non-routine event</i> (iii) <i>potentially impacting on the level or type of treatment required to maintain the safety of the water supply</i> (iv) <i>shortening or quickening the connection between contaminants and the source water, including damage to a confining layer</i> (v) <i>in the case of groundwater abstraction, the rate or volume of abstractions causing a change in groundwater flow direction or speed and/or change in hydrostatic pressure.</i>
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The JWG recommendation was for a more general and flexible policy to regulate activities which have the potential to cause an adverse effect on source water or present a risk to the supply of safe water (including not to regulate when there are no potential effects or risks).

The opening sentence of the Draft TANK Policy reflects the same meaning as part (b) of JWG’s recommended policy (ie that activities that may cause effects or present risk are to be regulated). The Draft TANK Policy refers to both actual and potential effects. It is agreed that, wording referring to “actual or potential” effects is appropriate.

The Draft TANK policy elaborates on this by specifying the effects or risks that are being managed. The wording is to regulate activities where there is a potential effect or risk “because of” the subsequently listed clauses. While the more prescriptive approach provides clarification as to the type of activity and risk to be managed, there is a potential for this to be limiting to the ability to deal with any risks or effects not listed in the policy (either through omission or due to new contaminants / pathways being identified).

The above notwithstanding, the draft TANK Plan Change wording is considered to meet and provide for the intent encapsulated in the JWG recommended wording.

Policy re Guidance for Decision Making

<u>JWG Recommendation</u>	<u>Draft TANK Plan Change v8, Policy 7</u>
<p><i>When making decisions on applications which require resource consent within Source Protection Zones as defined in Schedule SPZ, the consent authority shall consider:</i></p> <p>a. <i>the potential effects of the activity on the quality of water within the source protection zone including the amount, concentration and type of contaminants likely to be present on the site and in any discharges from the site; the potential pathways for those contaminants to enter the drinking water supply’s source water (including any likely or potential preferential pathways); the mobility and survival rates of those contaminants in the source protection zone.</i></p> <p>b. <i>the risks that the proposed activity has either in isolation or in combination with other existing lawful land use activities within the source protection zone on the provision of safe drinking water from the registered drinking water supply.</i></p> <p>c. <i>The degree to which the assessments under a and b are likely to change in the event of non-routine but foreseeable events including, but not limited to, abnormal weather events and activities on site which may depart from standard operating procedures.</i></p>	<p><i>The Council, when considering applications to discharge contaminants or carry out land use activities within;</i></p> <p>a) <i>the specified default radius for Registered Drinking Water Supplies, to take into account possible contamination pathways and risks to the quality of the source water for the water supply,</i></p> <p>b) <i>a Source Protection Zone, avoid or mitigate risk of contamination from the activity of the source water for the water supply by taking into account criteria including but not limited to:</i></p> <p>(i) <i>the amount, concentration and type of contaminants likely to be present as a result of the activity or in any discharge</i></p> <p>(ii) <i>the potential pathways for those contaminants, including any likely or potential preferred pathways;</i></p> <p>(iii) <i>the mobility and survival rates of any pathogens likely to be in the discharge or arising as a result of the activity;</i></p> <p>(iv) <i>any risks the proposed land use or discharge activity has either on its own or in combination with other existing activities, including as a result of non-routine events</i></p>
	<p>(v) <i>any effects of abstraction on groundwater flow direction or speed and/or hydrostatic pressure.</i></p>
<p>d. <i>The effectiveness of proposed mitigation measures to reduce potential adverse effects on the quality of source water for registered drinking water supplies or the risk of provision of safe drinking water.</i></p>	<p>(vi) <i>the effectiveness of any mitigation measures to avoid or mitigate risk of contaminants entering the source water and the extent to which the effectiveness of the mitigation measure can be verified</i></p>
<p>e. <i>The extent to which the effectiveness of mitigation measures is able to be verified.</i></p>	
<p>f. <i>Whether or not the applicant has undertaken any consultation with the supplier and / or regulator of the registered drinking water supply and the outcomes of that consultation</i></p>	<p>(vii) <i>notification, monitoring or reporting requirements to the Registered Drinking Water Supplier</i></p>

Clause (a) of the Draft TANK policy refers to considerations in the default zones where SPZs are unspecified and therefore only comes in to effect where a consent is required for other reasons. It is general in nature. Clause (b) is specific regarding the matters to be taken in to account when making decisions because an activity is within a defined SPZ. The wording of clause (b) is similar in intent and meaning of the policy put forward by JWG, with the exception of a shift in the focus of consultation as noted below.

The Draft TANK Policy limits the application to only discharge and land use consents. Prior to notification it is considered that changes are required to either not specify the resource consent type (as per the JWG recommendation) or to include water takes, otherwise the policy framework will be inconsistent with clause (v) and the proposed rules.

The JWG wording signalled that the applicant should consult with the water supplier and specified that the outcomes of consultation were to be taken in to account in decision making (clause (f)). That wording has been removed and replaced with wording (TANK clause (vii)) relating to notification, monitoring and reporting requirements. This signal to consult prior to lodging applications appears to have been replaced with an indication of consent conditions relating to notification. The draft TANK policy wording is considered appropriate and the change in wording is unlikely to have a material impact on implementation particularly when noting non-regulatory measures being implemented to provide for source protection via the JWG and its constituent organisations.

Policy re Multi Agency Collaboration

<u>JWG Recommendation</u>	<u>Draft TANK Plan Change v8, Policy 8</u>
<p><i>The Regional Council will encourage and participate in the sharing of information between, agencies, collaborative multi-agency groups involving such agencies, which have roles and responsibilities in the provision of safe drinking water.</i></p>	<p>8. <i>The Council will work with the agencies which have roles and responsibilities for the provision of safe drinking water including Napier City Council, Hastings District Council, Hawkes Bay District Health Board and Drinking Water Assessors and through multi-agency collaboration to:</i></p> <ul style="list-style-type: none"> <i>a) implement a multi barrier approach to the delivery of safe drinking water for Registered Drinking Water Supplies through the consideration of source protection measures, water treatment and supply distribution standards; and</i> <i>b) understand the nature and extent of the water resources used to supply communities, their connectivity with other waterbodies and their recharge sources</i> <i>c) understand the nature of the relationship between water age and water quality, the use of water age as an attribute and implications for its management;</i> <i>d) understand risks to the quality of water used for Registered Drinking Water Supplies, including through consultation on any applicable resource applications in SPZs or default radius areas</i> <i>e) maintain shared databases of activities that have the potential to adversely affect quality of water used for community supply</i> <i>f) develop solutions that address risks to water quality including wastewater reticulation solutions in Source Protection Zones;</i>

<u>JWG Recommendation</u>	<u>DRAFT TANK Plan Change v8, Policy 8</u>
	<p>g) <i>implement a multi barrier approach to the delivery of safe drinking water for Registered Drinking Water Supplies through the consideration of source protection measures, water treatment and supply distribution standards.</i></p>

Clause (g) of the TANK wording is a repetition of clause (a) and it is expected that this will be removed prior to notification.

The policy approach with respect to multi-agency collaboration differs, with the JWG recommendation being a general policy for encouraging and participating in collaborative approaches and information sharing, while the Draft TANK policy is prescriptive by naming the agencies and specifying the topics to be addressed. It is considered that the prescriptive approach in this instance is not limiting as other mechanisms can be adopted and do not need a Regional Plan policy to be initiated. The prescriptive approach in this instance could be more beneficial as it commits the Regional Council to the measures identified.

Rules

The amendments to the rules in the Draft TANK Plan Change with respect to activity status are generally consistent with the JWG recommendations, albeit that amendments to the wording have been made in some areas. These are consistent with the intent and meaning of the JWG recommendations subject to the following comments. A comparison of the wording recommended by JWG (as presented in Table 6.1 above) and the Draft TANK Plan Change v8 is included in Appendix D.

- Production Land Use Rules:

JWG’s recommended wording included an explicit requirement that consultation with the water supplier was required in the development of a Farm Environmental Plan. This clause has been removed from the Rule wording and the need to consider drinking water sources is included in the Schedule detailing information requirements of the Farm Environmental Plan. That schedule does not include an explicit requirement for consultation, but requires that the Farm Environmental Plan (or similar documents as relevant) include:

“The location of any Source Protection Zone or default radius for any Registered Drinking Water Supply that any properties in the programme area are located in, plus the contact details of the water supply manager (Note - Maps included with this plan show the locations of the SPZs and the default radius for any Registered Drinking Water Supplies. Contact information for the supply manager is available on the Council website).”

and

“Measures required to reduce risk of contamination of the source water for any Registered Drinking Water Supply.”

- Some matters of control/discretion do not have specific wording to consideration of risk to the source water in the TANK Plan Change v8. These are TANK 2 (Production Land Use - Controlled Activity), and TANK 7 & 8 (Water Takes - Restricted Discretionary).
- Some matters of control/discretion do not have specific phrasing requiring assessments to be undertaken ‘irrespective of any treatment’ in the TANK Plan Change v8 wording. These are Stormwater4 (Restricted Discretionary); RRMP Rule 2 Bore Drilling (Restricted Discretionary) and RRMP Rule 40 Discharges from Closed Landfills (Controlled). It is noted that the TANK wording relates to the actual or potential effects on the quality of source water and therefore it would seem logical that the assessment is made without consideration of any treatment that is provided. However, other rule provisions in the draft TANK Plan Change have included the phrase

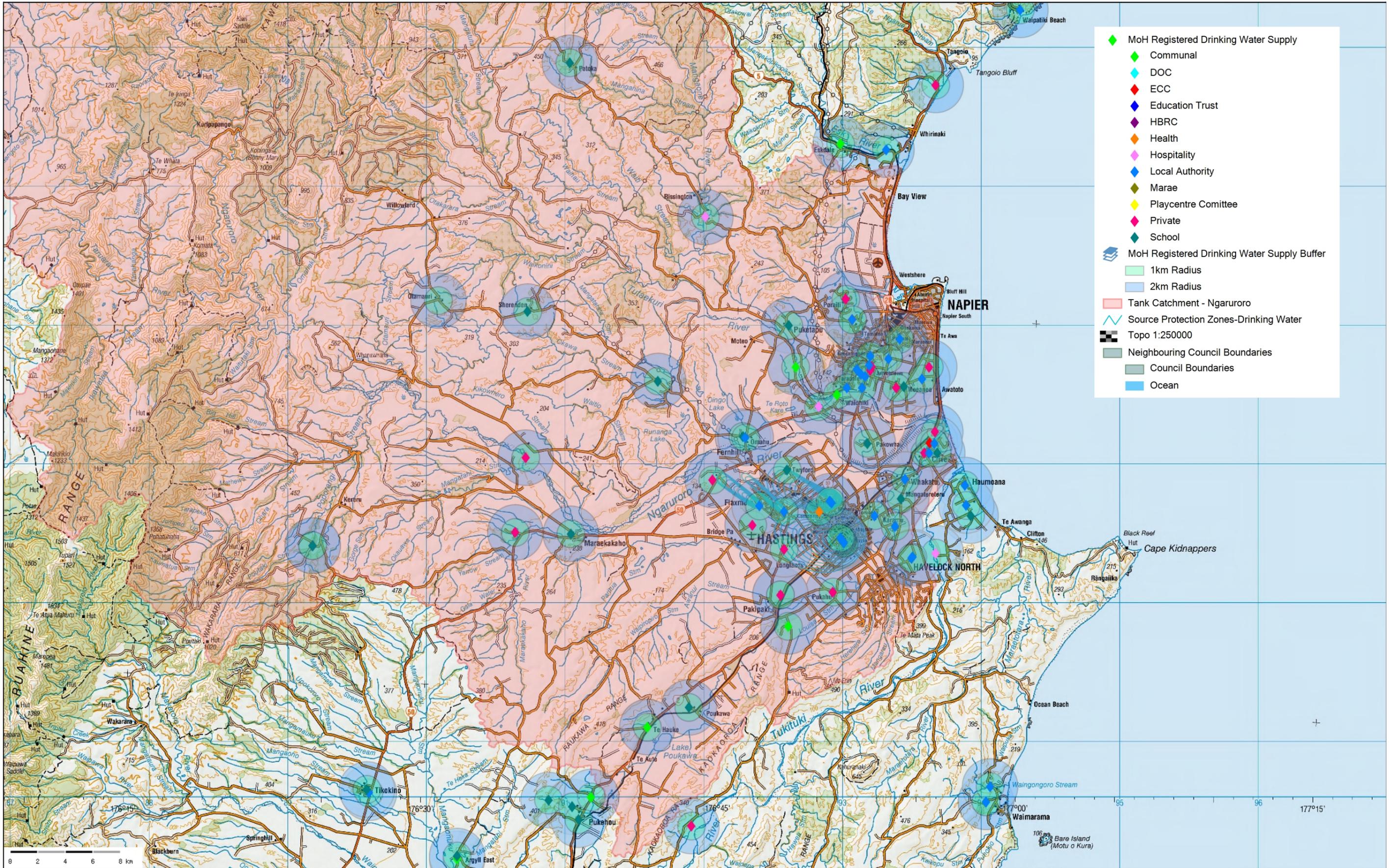
‘irrespective of’ or ‘without’ treatment and therefore for consistency and to prevent misinterpretation it is considered that such phrasing should also be included in these Rules.

- The TANK Draft Plan Change includes wording related to notification requirements to the Registered Drinking Water supplier which is supported.
- RRMP Rule 12 being the Permitted Activity Rule for Stockfeed currently only requires contamination to groundwater by seepage of contaminants to be prevented where the activity is over an unconfined aquifer. The JWG’s recommended change would have extended this requirement to the SPZ areas, however this has not been included in the draft TANK Plan Change v8.
- Requirements to demonstrate compliance with Permitted Activity rule criteria (bore decommissioning, RRMP Rule 4 and Stock Feed RRMP Rule 2) are ‘on request’ in the draft TANK Plan Change v8.

Subject to the above matters being addressed to the JWG’s satisfaction, it is considered that the Draft TANK Plan Change provisions are consistent with intent of the proposed provisions set out in section 6 of this report and as recommended to TANK by the JWG.

Appendix A

REGISTERED WATER SUPPLIES IN THE TANK CATCHMENT



- ◆ MoH Registered Drinking Water Supply
- ◆ Communal
- ◆ DOC
- ◆ ECC
- ◆ Education Trust
- ◆ HBRC
- ◆ Health
- ◆ Hospitality
- ◆ Local Authority
- ◆ Marae
- ◆ Playcentre Committee
- ◆ Private
- ◆ School
- MoH Registered Drinking Water Supply Buffer
- 1km Radius
- 2km Radius
- Tank Catchment - Ngaruroro
- Source Protection Zones-Drinking Water
- Topo 1:250000
- Neighbouring Council Boundaries
- Council Boundaries
- Ocean



Appendix B

MATRIX OF RISK ACTIVITIES

DRINKING WATER SOURCE RISK ACTIVITY MATRIX

SOURCE	AGRICULTURE/FORESTRY												INDUSTRY			RECREATION		RURAL/URBAN WASTE				OTHERS							
	Land Use in General	Offal/carcass pits, sheep dips, tannery pits	Livestock saleyards	Animal husbandry: livestock grazing, pasturing, feedlots and other intensive feeding operations (e.g. calving/lambing), Storage, management, and application of pesticides and fertiliser to land, including agricultural chemicals	Livestock accessing unfenced streams/cattle stream crossings	Fuel storage and use for farming	Ploughing and clear-cutting	Storage, management, and application of agricultural source material to land (e.g. animal manure, wastewater, sludge)	Irrigation of freely-draining soils and drainage	Leaching sediment	Market gardens, viticulture	Hospitals, laundromats, electronics, paper making and printing, rubbers and plastics, car washes, metal and oil contaminants, cold storage	Discharges from industrial land use	Meat and milk processing	Handling and storage of toxic and hazardous substances (both above ground and underground), including toxic chemicals, metals and sediments from mining activities	Boating, including use of oils and fuel	Public and animal access to catchment areas for recreational activities	Septic tanks	Wastewater treatment train (e.g. waste stabilisation ponds), and effluent discharges to water and land	Stormwater run-off and infiltration, including road runoff	Solid waste disposal and landfill	Uncased or inadequately cased bores and/or unconfined and shallow aquifers	Decommissioned or abandoned wells	Inadequate buffer zones	Mining	Contaminated Sites (discharges and leaching)	Wildlife (native and feral)	Algal blooms	
New Zealand Based Documents																													
<i>NZ Drinking Water Standards (Appendix 3, Catchment Risk Categorisation Survey Form)</i>				✓	✓								✓				✓	✓											
Guidelines for Drinking-water Quality Management for New Zealand (Ministry of Health, 2017)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water Safety Plan Guide: Surface and groundwater sources [Version 2] (Ministry of Health, 2014)	✓	✓		✓	✓	✓		✓	✓	✓		✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International Documents - Australia																													
Australian Drinking Water Guidelines 6 [Version 3.4] (Australian Government, 2017)				✓	✓	✓				✓		✓		✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Water quality protection note no. 25: Land use compatibility tables for public drinking water source areas (Government of Western Australia, 2016)				✓	✓					✓		✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operational policy 13: Recreation within public drinking water source areas on Crown land (Government of Western Australia, 2012)															✓	✓													
International Documents - WHO																													
Protecting Surface Water for Health: Identifying, assessing and managing drinking-water quality risks in surface-water catchments (World Health Organization, 2016)		✓		✓	✓				✓	✓				✓	✓		✓	✓	✓				✓				✓	✓	✓
A practical guide to auditing water safety plans (World Health Organization, 2015)				✓	✓					✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protecting Groundwater for Health: Managing the quality of drinking-water sources (World Health Organization, 2006)				✓	✓	✓				✓				✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
International Documents - Other																													
Tables of Drinking Water Threats [as per the Clean Water Act, 2006] (Government of Ontario, 2009)				✓	✓					✓				✓	✓		✓	✓	✓										
An Introduction to Drinking Water Contaminants, Treatment and Management (Institute of Environmental Science and Research, 2008)				✓	✓					✓			✓	✓				✓	✓	✓			✓						✓

NOTES & NATURE OF RISK:

AGRICULTURE/FORESTRY

1. Offal/carcass pits - microbiological and chemical (including nutrients, such as nitrogen and phosphorus).
2. Sheep dips - microbiological and chemical
3. Livestock saleyards - microbiological and chemical
4. Animal husbandry - microbiological, i.e. the land use may result in the presence of one or more pathogens in groundwater or surface water through faecal contamination.
5. Pesticides and commercial fertilizer - microbiological and chemical (including nutrients, such as nitrogen and phosphorus).
6. Livestock accessing unfenced streams/cattle stream crossings - microbiological
7. Wintering off paddocks with high stocking rates - microbiological
8. Fuel storage and use for farming - chemical
9. Ploughing and clear-cutting - physical, i.e. can lead to large losses of sediment and cause erosion of soils, leading to high levels of turbidity.
10. Agricultural source material (e.g. animal manure, wastewater, sludge) - microbiological and chemical, i.e. agriculture source material such as manure can contain several components that are either directly or indirectly of concern to health, e.g. pathogens, nitrate and phosphorus.
11. Irrigation and drainage - chemical and physical, i.e. leaching of naturally occurring inorganic chemicals from soil due to irrigation and drainage. Drainage may also increase concentrations of soluble soil component in the receiving waterbody.
12. Leaching sediment - physical (turbidity)

NOTES & NATURE OF RISK:

INDUSTRY

1. Hospitals, laundromats, electronics, paper making and printing, rubbers and plastics, car washes, metal and oil contaminants, cold storage - chemical
2. Meat and milk processing - microbiological and chemical
3. Handling and storage of toxic and hazardous substances - chemical

RECREATION

1. Boating, including use of oils and fuel - chemical
2. Public and animal access to catchment areas for recreational activities - microbiological and chemical

RURAL/URBAN WASTE

1. Septic tanks - microbiological
2. Wastewater treatment train (e.g. waste stabilisation ponds), and effluent discharges to water and land - microbiological, chemical (including nutrients, such as nitrogen and phosphorus) and physical (turbidity)
3. Stormwater run-off and infiltration - microbiological, chemical and physical (turbidity and colour)
4. Solid waste disposal and landfill - microbiological and chemical (including nutrients)

NOTES & NATURE OF RISK:

OTHERS

1. Uncased or inadequately cased bores and/or unconfined and shallow aquifers - microbiological, chemical and physical
2. Decommissioned or abandoned wells - microbiological, chemical and physical
3. Inadequate buffer zones - microbiological, chemical and physical
4. Wildlife - microbiological
5. Algal blooms - microbiological, chemical (toxins) and physical

Appendix C

INFORMATION PRESENTED TO TANK, 31 MAY 2018 AND 26 JULY 2018

Source Water Protection

Presentation to TANK Meeting of behalf of
Havelock North Joint Working Group on Drinking Water Safety
31 May 2018

Introduction & Overview

- Introduction & Scope of Work
- Why do we need RMA provisions to protect drinking water sources?
- Drinking Water Sources in TANK Catchment
- What activities & risks need to be managed?
- How are Source Protection Zones determined?
- Options for Regional Plan provisions

**Presentation is for Information Purposes only.
No decisions required from TANK at this meeting**

Issue Identification: Why do we need Source Protection?

Water is a precious taonga, highly valued in its own right and as a source of human drinking water.

RMA and National Environmental Standard

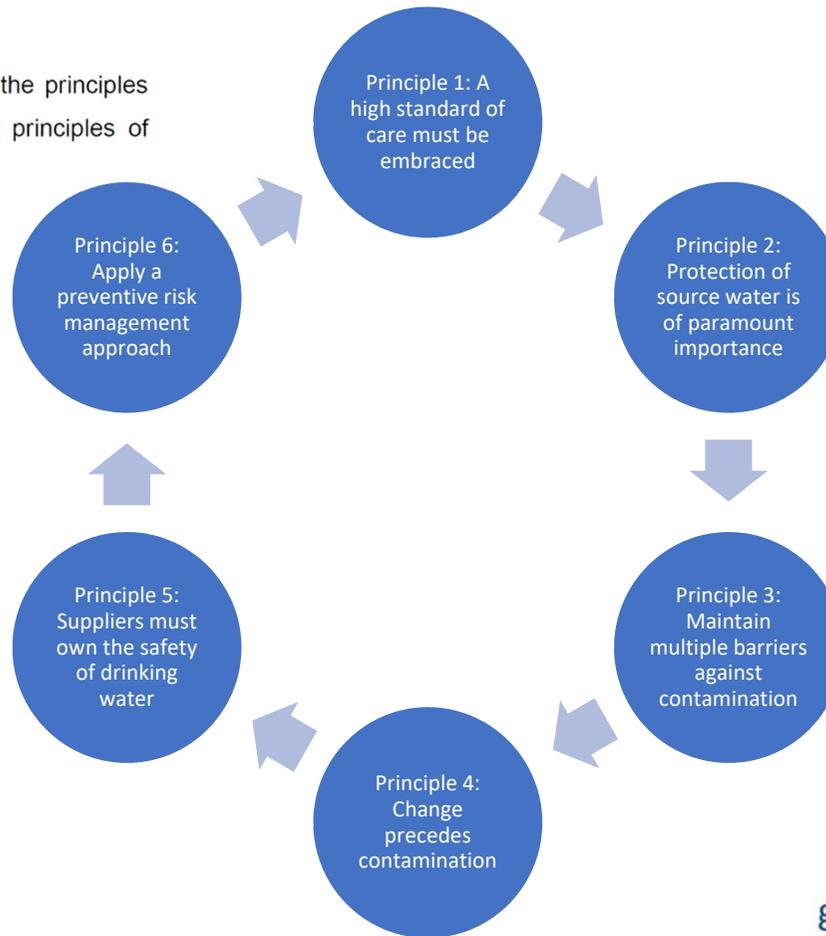
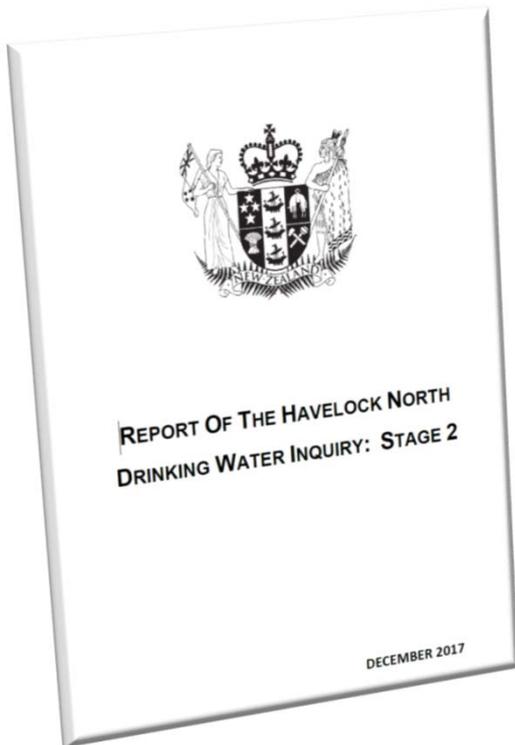
Board of Inquiry Findings

RPS and RRMP Objectives

Board of Inquiry – 6 Principles

The Principles

[31] In light of the evidence it heard, and the varying expression of the principles internationally, the Inquiry has identified the following six fundamental principles of drinking water safety for New Zealand:



Board of Inquiry – 6 Principles

Principle 2: Protection of source water is of paramount importance

Protection of the source of drinking water provides the first, and most significant, barrier against drinking water contamination and illness. It is of paramount importance that risks to sources of drinking water are understood, managed and addressed appropriately. However, as pathogenic microorganisms are found everywhere, complete protection is impossible and further barriers against contamination are vital.

Principle 6: Apply a preventive risk management approach

A preventive risk management approach provides the best protection against waterborne illness. Once contamination is detected, contaminated water may already have been consumed and illness may already have occurred. Accordingly, the focus must always be on preventing contamination. This requires systematic assessment of risks throughout a drinking water supply from source to tap; identification of ways these risks can be managed; and control measures implemented to ensure that management is occurring properly. Adequate monitoring of the performance of each barrier is essential. Each supplier's risk management approach should be recorded in a living WSP which is utilised on a day to day basis.

RMA & the National Environmental Standard (Sources of Human Drinking Water)

- Source protection included in Part 2, but is implicit, not explicit

“promote the sustainable management of natural and physical resources. managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety”

- National Environmental Standard Sources of Human Drinking Water was an attempt to “plug a legislative gap” and provide statutory recognition of 1st barrier approach

NES in Summary

Registered Supplies
< 25 people

NES Does not apply

Registered Supplies
25-500 people

Resource Consents

Consider if an event (eg spill, heavy rain) MAY lead to significant adverse effect on drinking water quality? If so, condition MUST be imposed requiring notification of event

Regional Plans

No restriction on Regional Plan Permitted Activity Rules

Registered Supplies
> 500 people

CANNOT Grant Water Permit or Discharge Permit if activity likely to cause health standard or aesthetic guidelines to be exceeded after existing treatment

Consider if an event (eg spill, heavy rain) MAY lead to significant adverse effect on drinking water quality? If so, condition MUST be imposed requiring notification of event

Regional Rules cannot include Permitted Activities UNLESS SATISFIED not likely to introduce or increase contaminants such that health standard or aesthetic guidelines are not met after existing treatment

National Environmental Standard

- A Regional Plan may be more restrictive than the NES
- Do not need to immediately amend Regional Plan Rule until
 - Scheduled Plan Change; or
 - A Plan Change that relates to a relevant Rule is introduced
 - TANK Process requires consideration of Permitted Activity Rules that apply upstream of abstraction points for drinking water sources serving more than 500 people.
- What is meant by “upstream” or “upgradient”?

Drinking Water Supplies in TANK

From Drinking Water Register:

Supply	Pop. Served
Hastings Urban	64,764
Napier City	50,804
Clive	560
Whakatu	337
Omahu	126
Breckenridge	52
Meeanee, Gavin Back St	33
Waipatu	30
McElwee Subdivision	28



Risk Activities

- What sorts of activities are of interest in a water supply protection zone?

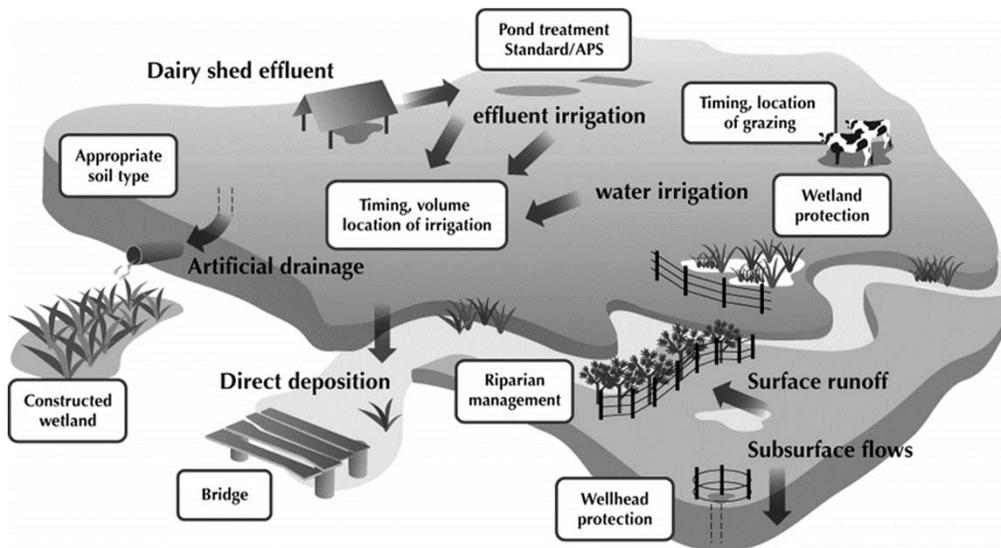


Table 3.5: Human activities and associated inputs into freshwater ecosystems with human health risks

Activity	Contaminants	Health risks
Agriculture and horticulture	Sediments Nutrients Pesticides and other toxic chemicals and metals Faecal microbial contaminants	Immune and endocrine disruption Retarded physical and cognitive development, blue baby syndrome
Industry	Nutrients Toxic chemicals and metals Oils	Foetal malformation and death
Mining	Sediments Toxic chemicals and metals	Nervous system and reproductive dysfunction
Urbanisation, infrastructure and development	Sediment Pesticides and other toxic chemicals and metals Oils Faecal microbial contaminants	Behavioural changes Cancers Waterborne disease
Recreation	Oils and fuel Toxic chemicals	

Modified after Slaney and Weinstein 2004.

From: Guidelines for Drinking Water Quality Management, NZ

Risk Activities

- Board of Inquiry, Stage 2 report, Part 3 – GENERAL RISK LANDSCAPE
 - Baseline vs Event
 - “events typically include flooding and heavy rain, droughts, power failures, or organisational factors such as complacency or inadequate resourcing. **Evidence of supply safety under baseline conditions is not evidence that this safety will be maintained under such event conditions.** Failures can occur at any time, may occur slowly over time without red flags being raised, and cannot necessarily be detected in a timely manner to prevent consumer exposure to contamination”
 - Aquifer Changes
 - “GNS advised the Inquiry that the **permeability of aquifers and aquitards should be considered a dynamic variable** which can change as a result of stress and strain.”

Risk Activities

- Board of Inquiry, Stage 2 report, Part 3 – GENERAL RISK LANDSCAPE
 - Bores drilled through aquifer protection layers
 - Sources of human wastewater (disposal areas, wastewater infrastructure)
 - illegal earthworks or connections
 - discharges of nitrates upstream of collection areas or into water sources
 - building piles;
 - use of herbicide /pesticides and, more generally, pollutants from farmland
 - urban land use activities
 - forestry
 - Landfills (closed and operational)

Understanding & Assessing the Risks

- Source Protection Zone ≠ Eliminating Risks

[624] The Inquiry emphasises the need to be precise and careful with the wording that is used for this clarification in ss 6 and 30. Several expert panel members noted the challenge of absolute protection of drinking water sources in the New Zealand context where sources are varied and often part of complex systems. This accords with the risks posed to source water discussed in Part 3. The Inquiry agrees with Dr Mitchell's sentiment that "protection" needs to encompass identifying and understanding the risks to drinking water sources and addressing and managing them appropriately.



How are Risk Activities Currently Managed?

Activity	RRMP	Activity	RRMP
Fertiliser application	Permitted	Stormwater	New TANK provisions
Pesticides / Agrichem	Permitted, GrowSAFE	Vegetation clearance	Permitted (conditions apply)
Wastewater Disposal	Permitted – Discretionary (depends on scale & system)	Bore drilling	Controlled – consent must be granted
High Stocking Rates	Feedlots are Permitted (conditions apply)	Abandoned / unmaintained bores	Non-Complying
Offal Pits or similar	On-property: Permitted	Bore decommissioning	Permitted – no consent required.
Solid waste disposal	On-property: Permitted Otherwise requires consent	Landfills	Controlled - Discretionary
Animal Effluent Disposal	Controlled		
Hazardous substances	HASNO	Foundation Piles, poles	Building Act ?
Fuel Storage Tanks	HASNO	Earthworks	District / City Plans
Mining	District & Regional Plans	Road runoff	District / City Councils / Stormwater Rules
Wastewater reticulation	District / City Councils		

Determining Source Protection Zones

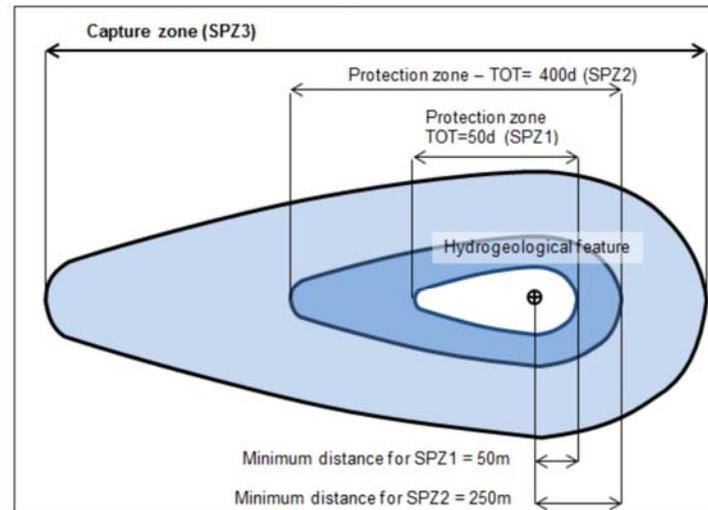
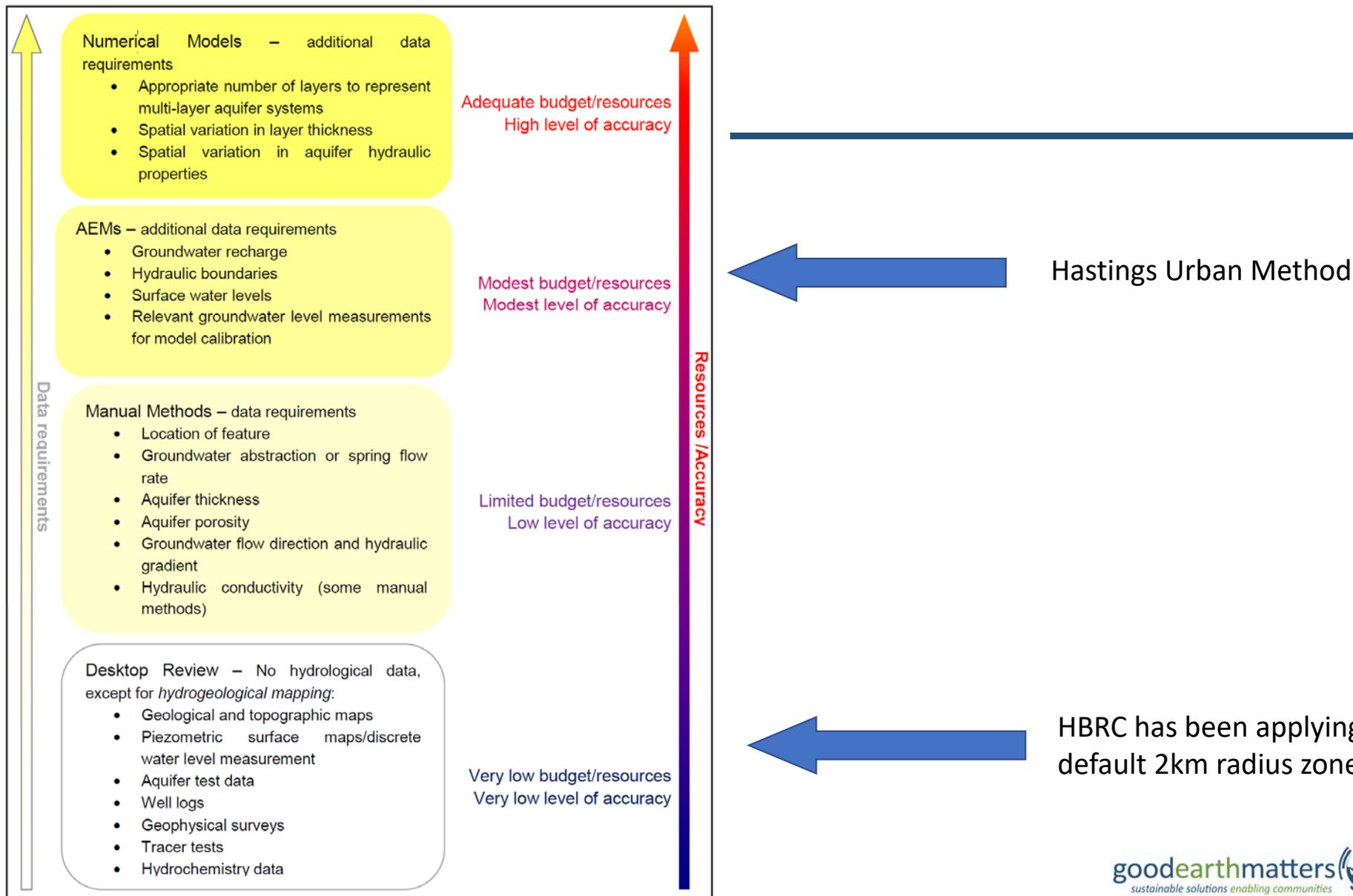


Figure 3: Schematic representation of CZ and PZ for a pumping well in a homogeneous anisotropic aquifer (modified from Carey *et al.*, 2009). The regional groundwater flow direction is from left to right. Drawdown contours are not shown.

Capture Zone: TOTAL area that contributes to water that will eventually end up at the abstraction point.

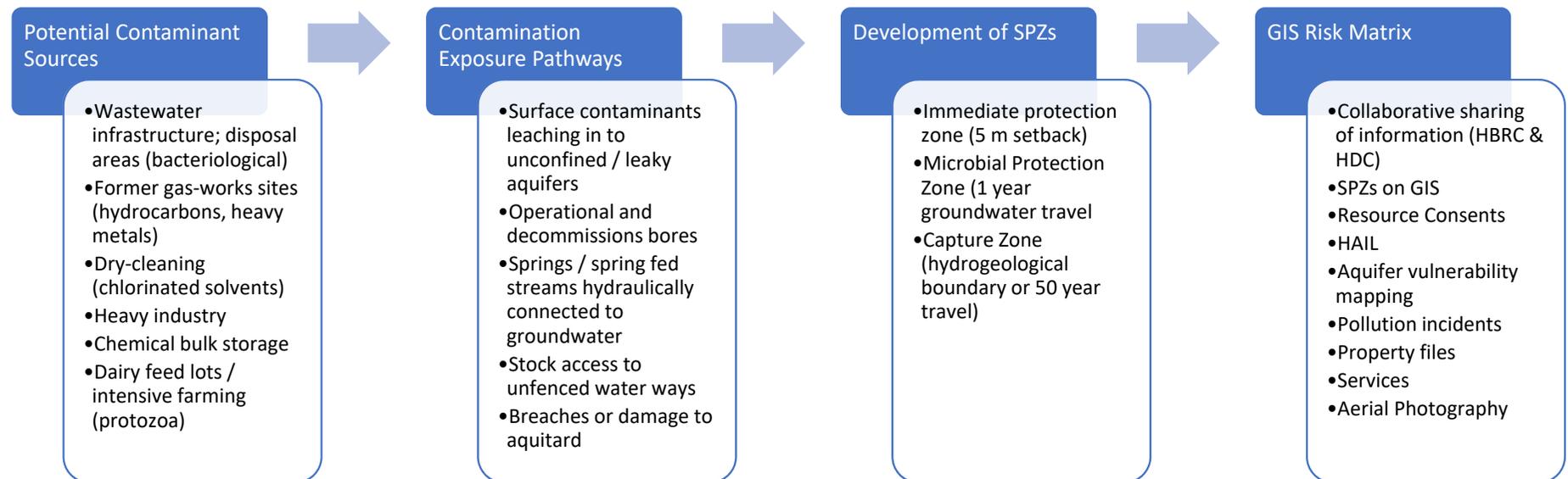
Protection Zone: Area defined by travel time of water to the abstraction point.

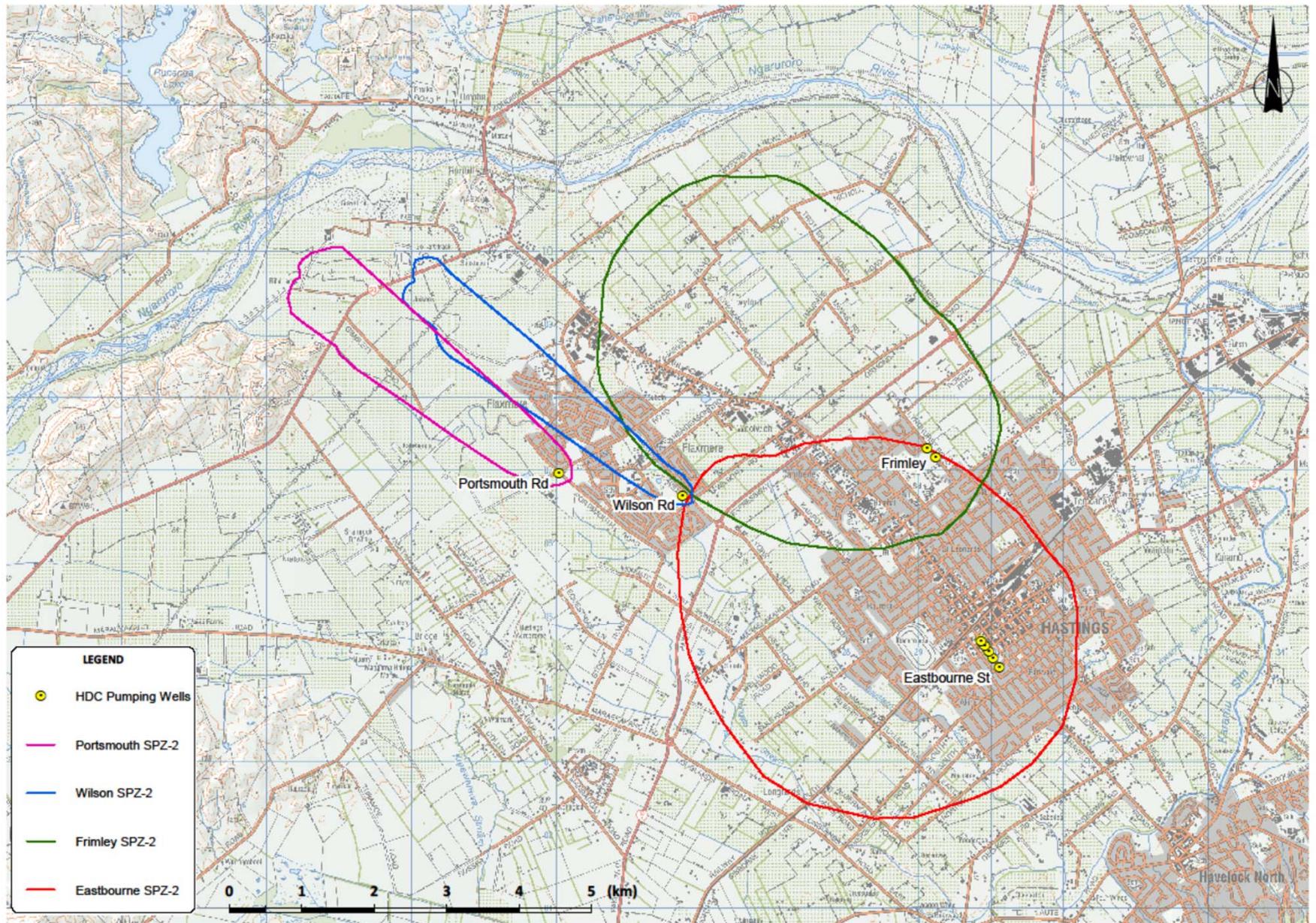
Protection zone depends on the contaminants of interest. Typically defined as a **Microbial Protection Zone – 1 year travel** based on bacteria and virus survival.

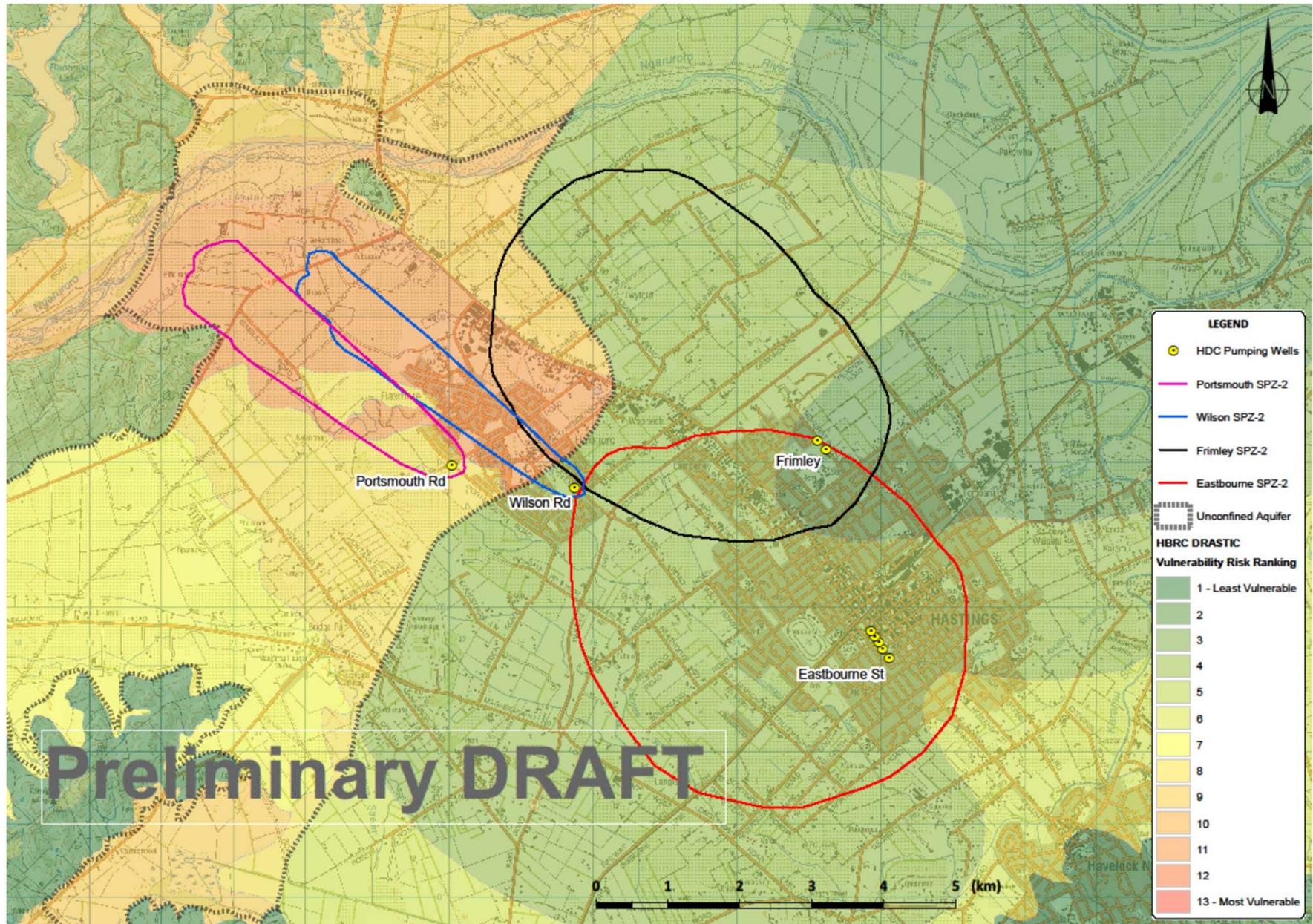


Hastings Urban Water SPZs

- Tonkin + Taylor have been developing SPZs for the four main supply bore fields, primarily to support Catchment Sanitary Inspection, assist with risk assessments and support future management.







Options for including SPZs in TANK Plan

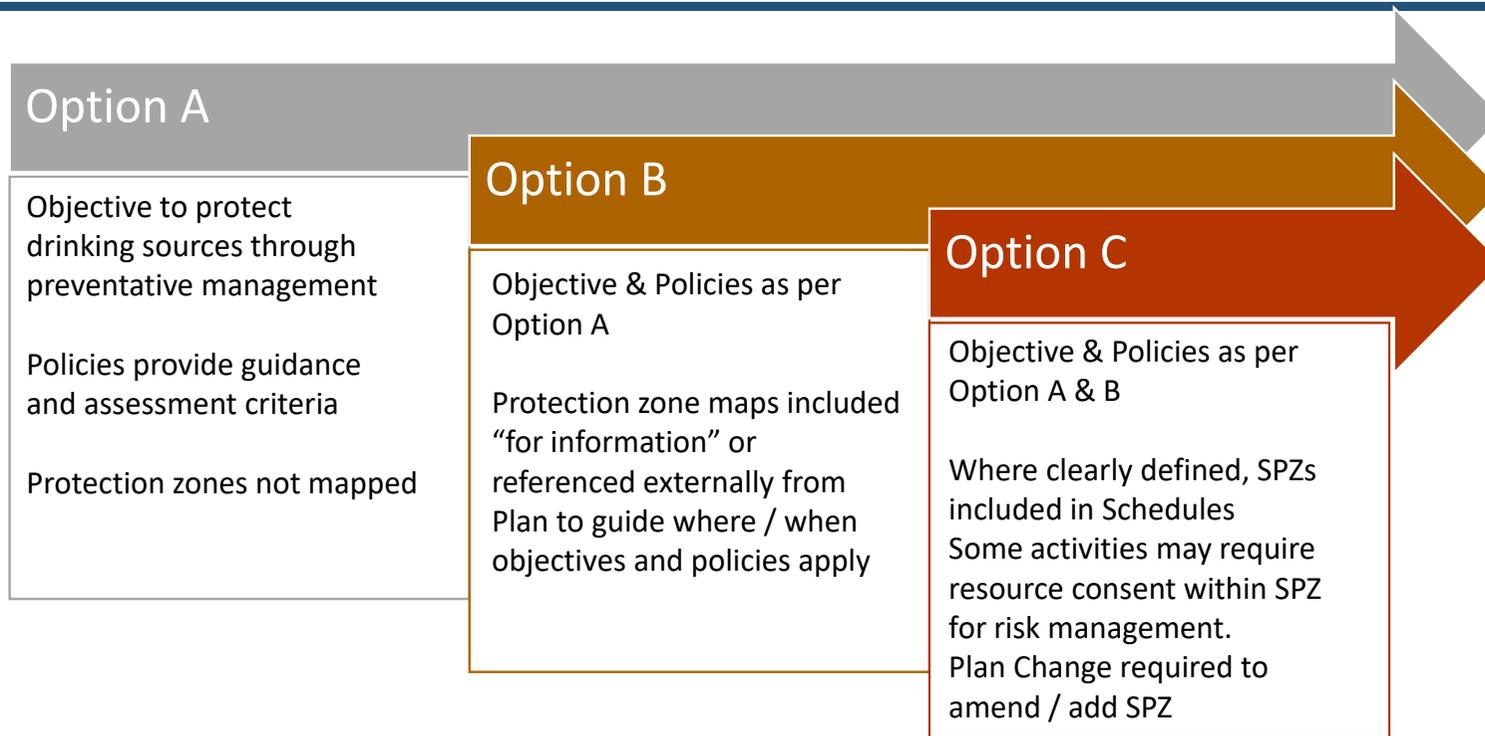
Intention is to:

- Provide guidance as to where & what activities may present risks to drinking water sources
- Explicit consideration of effects on drinking water sources
- Obtain better information about what activities are occurring in source zones

Assumptions:

- Registered drinking water supplies only
- Application restricted by TANK Catchment boundaries at present
- SPZs need to be defined to high level before regulatory (Rule) options can be considered
- Likely suite of tools including RMA and non-RMA methods

Options for Including SPZs to TANK Plan



Supported by non-regulatory methods for sharing of information and agency co-ordination and collaboration; Suite of tools including RMA and non-RMA methods

Next Steps

- Feedback from TANK Meeting
- Development & Assessment of Options A, B, C
- Reporting back to JWG and TANK for consideration

NES and Source Protection Zone

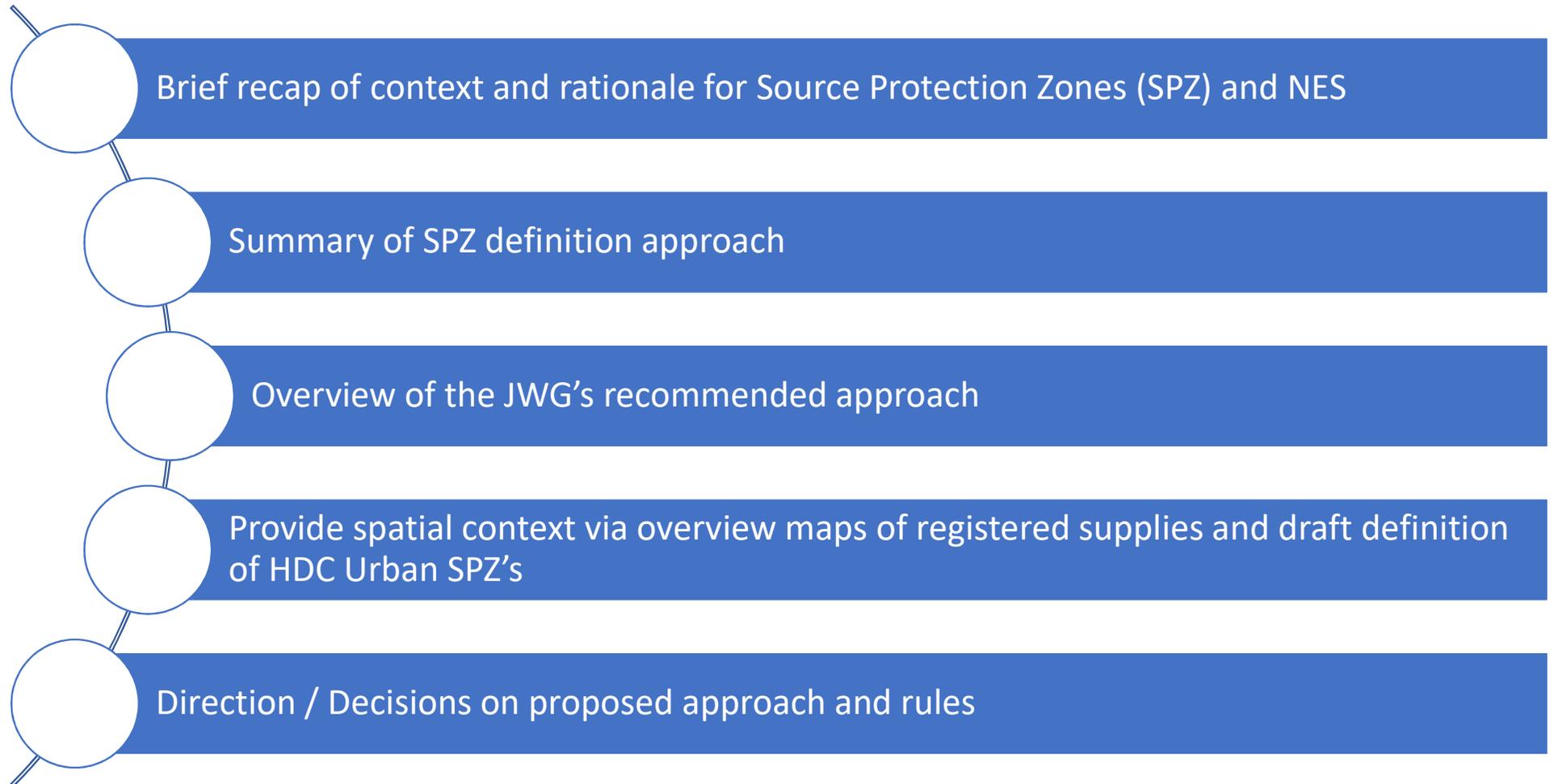
HB Drinking Water Joint Working Group

Tank 42 Presentation

26 July 2018

Information from; JWG, HDC, HBRC, GNS, GEM, and T&T

Presentation Coverage



Issue Identification: Why do we need Source Protection?

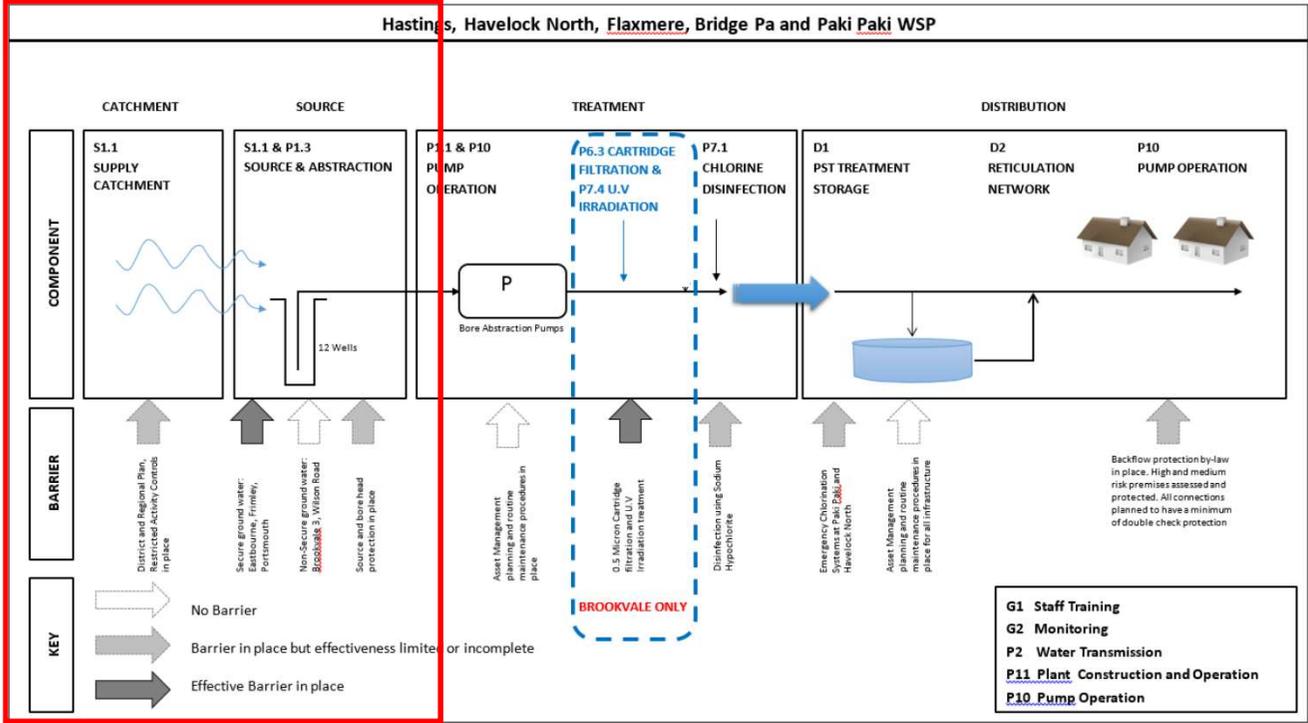
Water is a precious taonga, highly valued in its own right and as a source of human drinking water.

RMA and National Environmental Standard and Health Act

Board of Inquiry Findings

RPS and RRMP Objectives

Catchment and Source management is the critical first barrier in a multiple barrier protection approach



Summary of Current NES requirements,

The NES has direct relationship to statutory obligations in the Health Act for Drinking Water

Registered Supplies
< 25 people

NES Does not apply

Resource Consents

Registered Supplies
25-500 people

Consider if an event (eg spill, heavy rain) MAY lead to significant adverse effect on drinking water quality? If so, condition MUST be imposed requiring notification of event

Regional Plans

No restriction on Regional Plan Permitted Activity Rules

Registered Supplies
> 500 people

CANNOT Grant Water Permit or Discharge Permit if activity likely to cause health standard or aesthetic guidelines to be exceeded after existing treatment

Consider if an event (eg spill, heavy rain) MAY lead to significant adverse effect on drinking water quality? If so, condition MUST be imposed requiring notification of event

Regional Rules cannot include Permitted Activities UNLESS SATISFIED not likely to introduce or increase contaminants such that health standard or aesthetic guidelines are not met after existing treatment

Some of potential contaminant sources

Active and abandoned
wastewater
infrastructure
(microbiological)

Emerging contaminants of concern (e.g.
PFAS, micro plastics, nanoparticles,
hormone disruptors such as endocrine
disruptors)

Dairy feed lots or
intensive calf rearing
(protozoa)

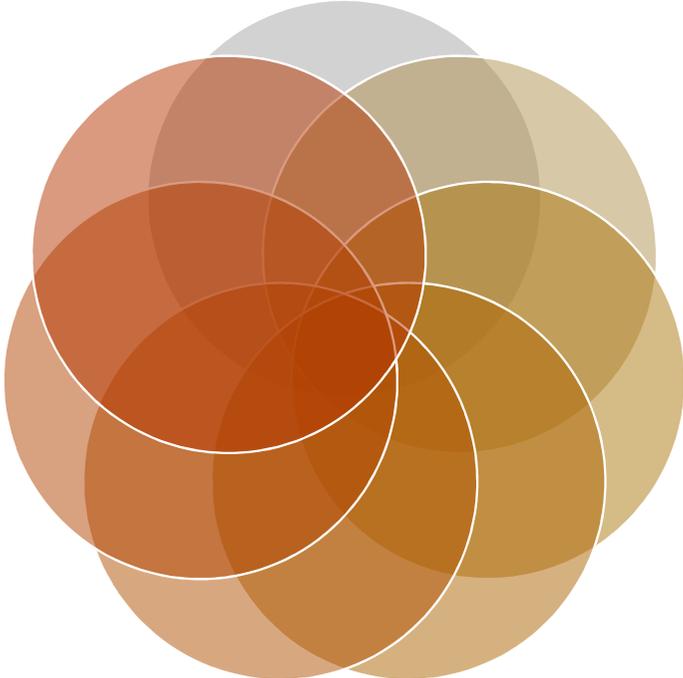
Onsite wastewater
disposal/treatment
(microbiological)

Bulk storage of
chemicals

Former gasworks
sites (hydrocarbons/
heavy metals)

Heavy industry
(various)

Dry-cleaning
(chlorinated solvents)



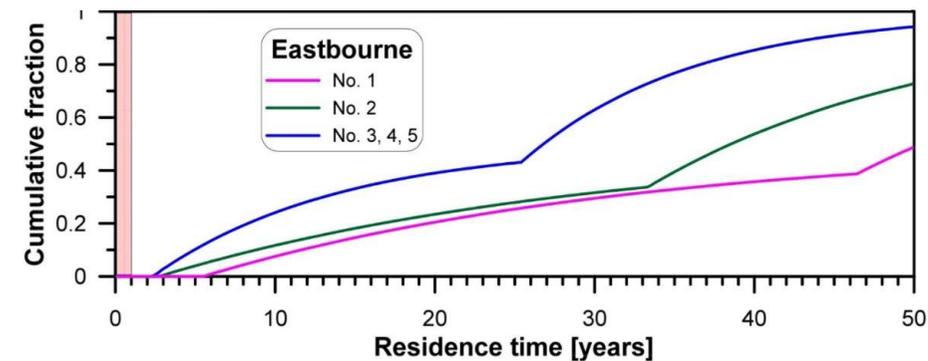
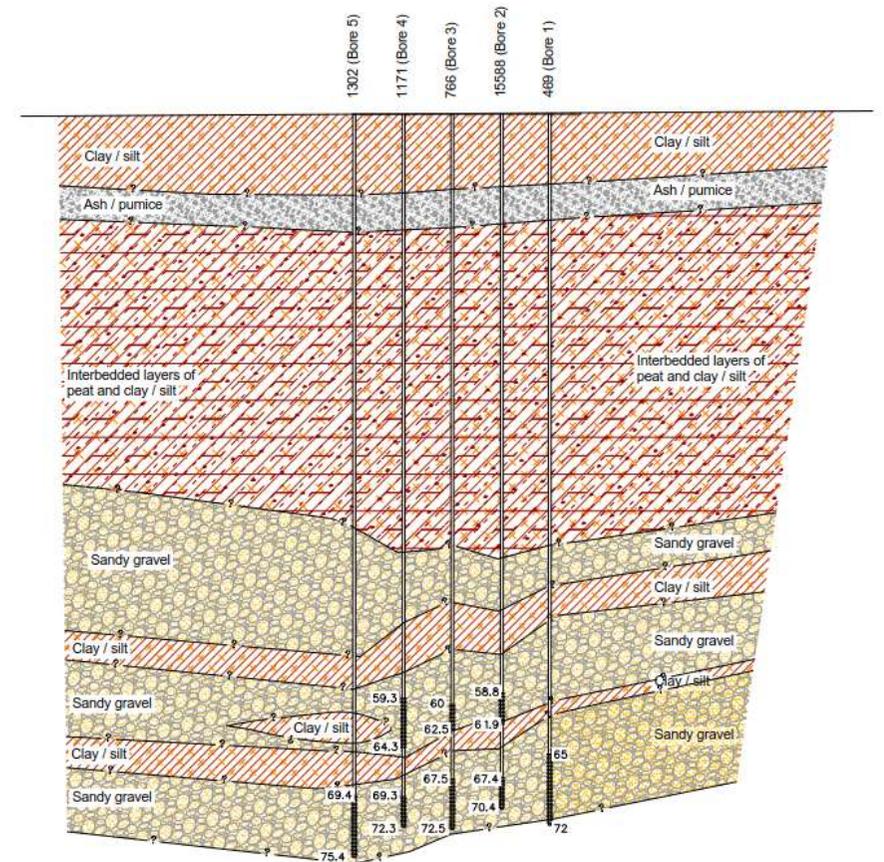
Contamination Exposure pathways

Contamination can enter Heretaunga Plains aquifer systems by:

- Surface contamination leaching into unconfined areas of the aquifer, or in confined areas where the aquitard is thinner or “leaky”
- Operational and decommissioned private bores which intercept the aquifer system - poor bore head security - direct or less restricted pathway into groundwater
- Contamination of springs and spring feed streams for hydraulically connected bore fields
- Stock access to unfenced water ways or run-off during high rainfall events
- Breaches or damage to the aquitard could open pathways for contamination of the aquifer.

Eastbourne Street borefield

- Aquitards separating the aquifers are not considered to be continuous - groundwater levels are similar for each sandy gravel layer (aquifer)
- Three layers are considered to be part of the same hydrogeological unit/aquifer
- Potential for downward movement of groundwater from surface towards the sandy gravel layers when water levels in the aquifer are below ground level
- Below 100 m depth groundwater sourced from the Ngaruroro River
- Above ~80 m the groundwater has been identified as rainfall or of mixed source at the Tollemache test bore (GNS 2017/33) - applicable to the Eastbourne borefield (2 km northeast)



Approach for developing SPZs

T+T adopted the approach published by GNS Science (GNS) to establish the SPZ's, including:

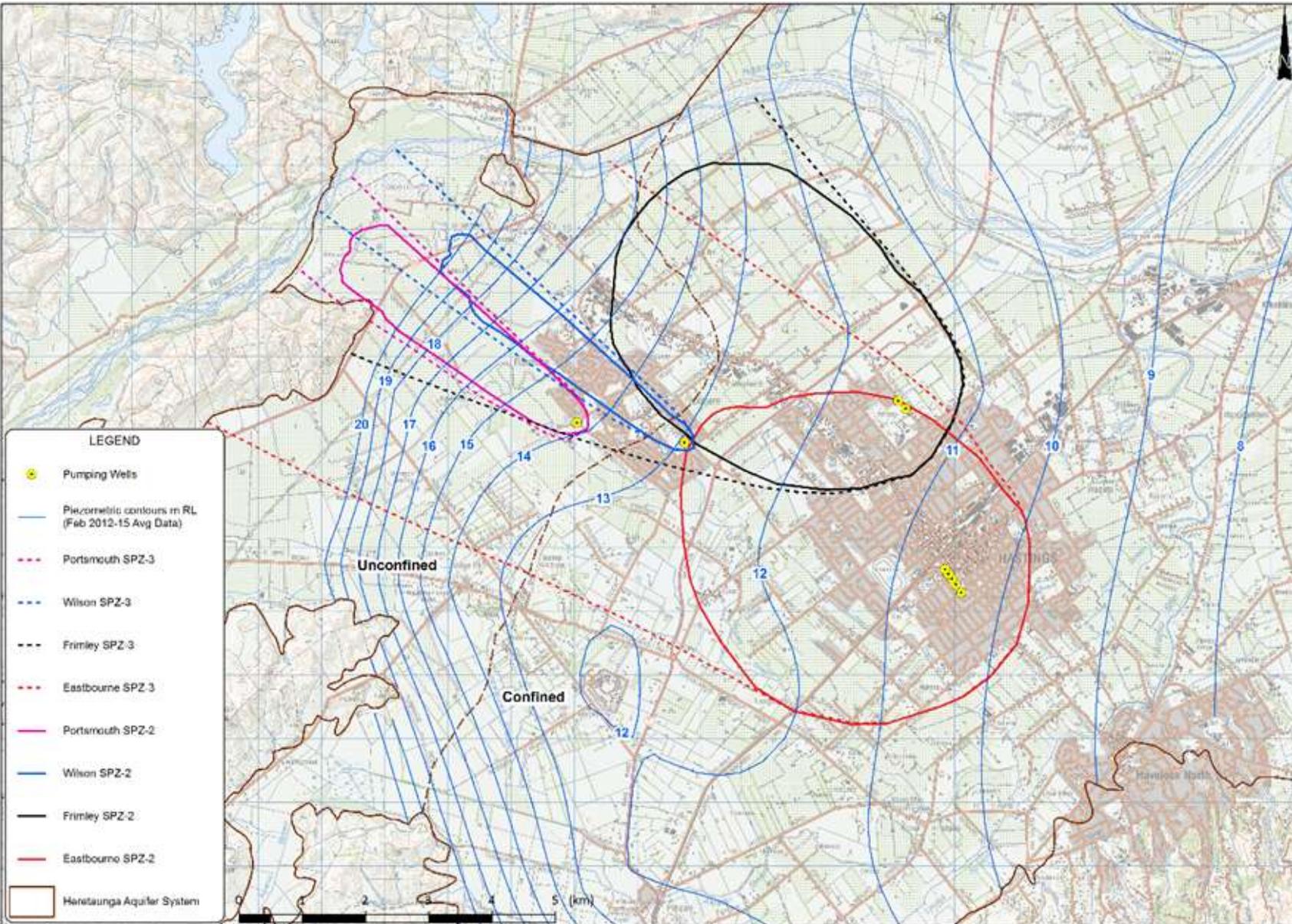
- **Immediate protection zone (SPZ1):**
- **Microbial protection zone (SPZ2):** defined by numerical modelling that represents a 1 year groundwater travel time from the bore field (GNS method also allows for an arbitrary fixed radius)
- **Capture zone (SPZ3):** defined by a catchment or hydrogeological boundary. Where a time of travel zone is required to prepare an SPZ3 a 10 year time of travel threshold was used

Source: GNS Science, 2014. *Envirolink Tools Project – Capture Zone Delineation – Technical Report, 2013/57.98p.*

Zone definition approach

- Used USEPA WhAEM model, confirmed appropriate by GNS
- Performed sensitivity analyses
- Peer review by GNS, confirmed approach and suggested further variables reviewed
- Updated zone based on Peer review
- Further refinement and other zones will need to be added over time
- 5 yearly review proposed

Source protection zones - SPZ2 and SPZ3



Non-microbial contaminants

Evaluated whether SPZ suitable for non-microbiological contaminants for each bore field for following sources:

- Arsenic from orchard and timber treatment sites,
 - Boron and PCP from timber treatment sites,
 - BTEX from petrol stations,
 - TCE, PCE from dry cleaners and workshop sites.
- Organic contaminants: contaminant migration in groundwater, biodegradation and dispersion.
 - Levels would be below DWSNZ for plumes originating outside the SPZ, except for TCE (factor of 8 above DWS)

JWG proposed Planning approach

Recommended Regional Plan Amendments Overall Structure & Intent

Objective

- Manage activities in SPZs of **registered drinking water supplies** to ensure water does not become unsuitable for human consumption & risks to supply of safe drinking water are appropriately managed

Policy

- **Define SPZs via an appropriate technical method; adopt 2km default radius where SPZ undefined**
- Regulate activities that have potential to cause adverse effect / risk to source water safety
- Guidance for decision making on consents
- Encourage & participate in sharing of information and collaborative multi-agency groups

- Proposed approach is ONLY those SPZs identified by an appropriate technical method can be used to determine consent status; default areas only inform decision making where consent is required for other reasons
- Activity status in SPZ areas to match activity status of other sensitive areas (eg unconfined aquifers)

Recommended Regional Plan Amendments

Overall Structure & Intent

Objective

- Manage activities in SPZs of registered drinking water supplies to ensure water does not become unsuitable for human consumption & risks to supply of safe drinking water are appropriately managed

Policy

- Define SPZs via an appropriate technical method; adopt 2km default radius where SPZ undefined
- Regulate activities that have potential to cause adverse effect / risk to source water safety
- Guidance for decision making on consents
- Encourage & participate in sharing of information and collaborative multi-agency groups

Rules

- Improve knowledge re activities in the SPZs and verify Permitted Activity criteria are met
- Where activities already require consent, ensure that risks to drinking water sources are part of decision making process when located within the SPZs
- For some activities where there is an potential risk to drinking water sources, require consent in SPZ areas.
- **Activity status in SPZ areas to match activity status of other sensitive areas (eg unconfined aquifers)**

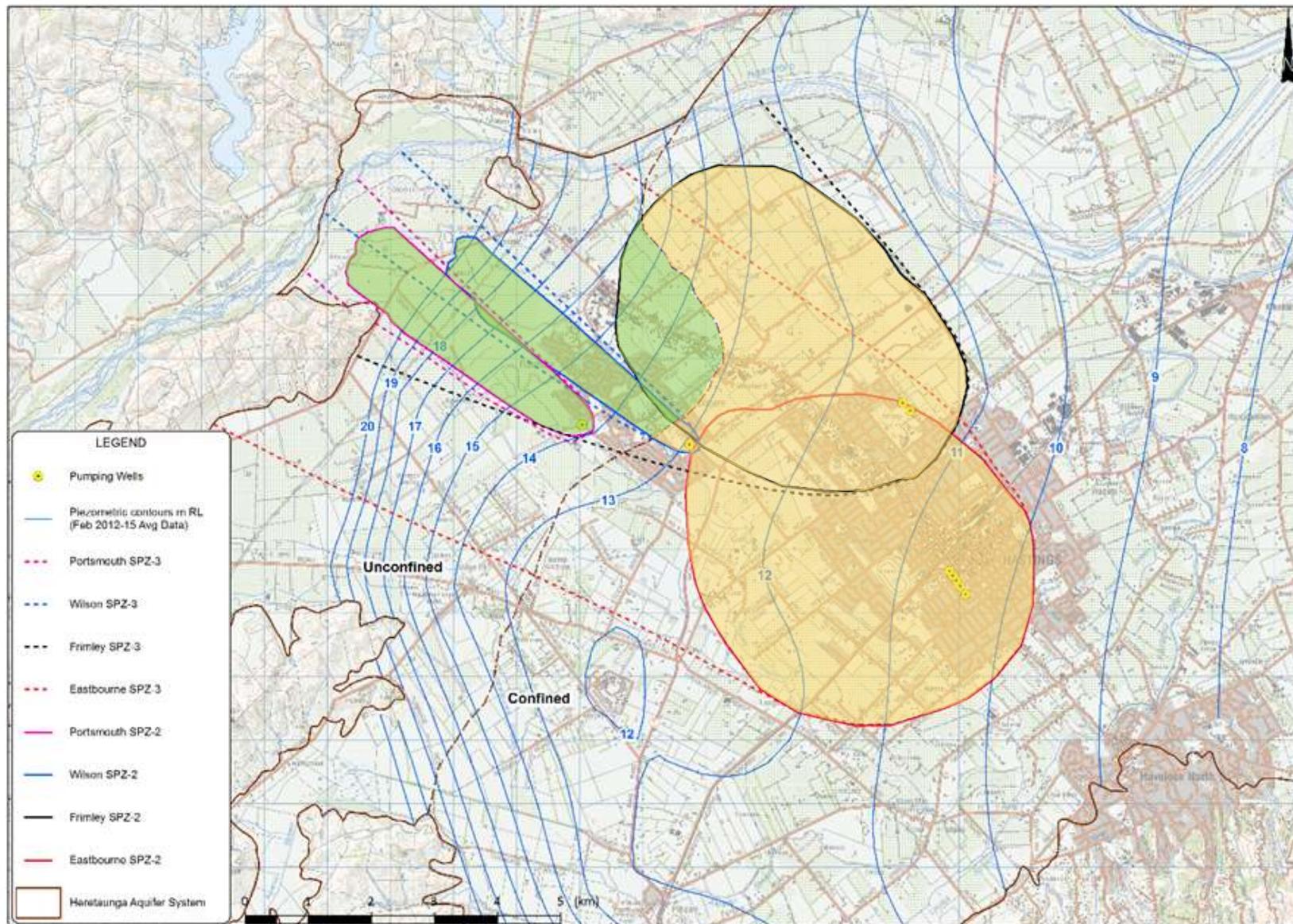
Overlay of Hastings SPZs with unconfined aquifer

Portsmouth Road, Wilson Road and part of Frimley SPZs are in unconfined aquifer. Activities recommended to be discretionary in SPZs already require consent as Discretionary activity over unconfined aquifer.

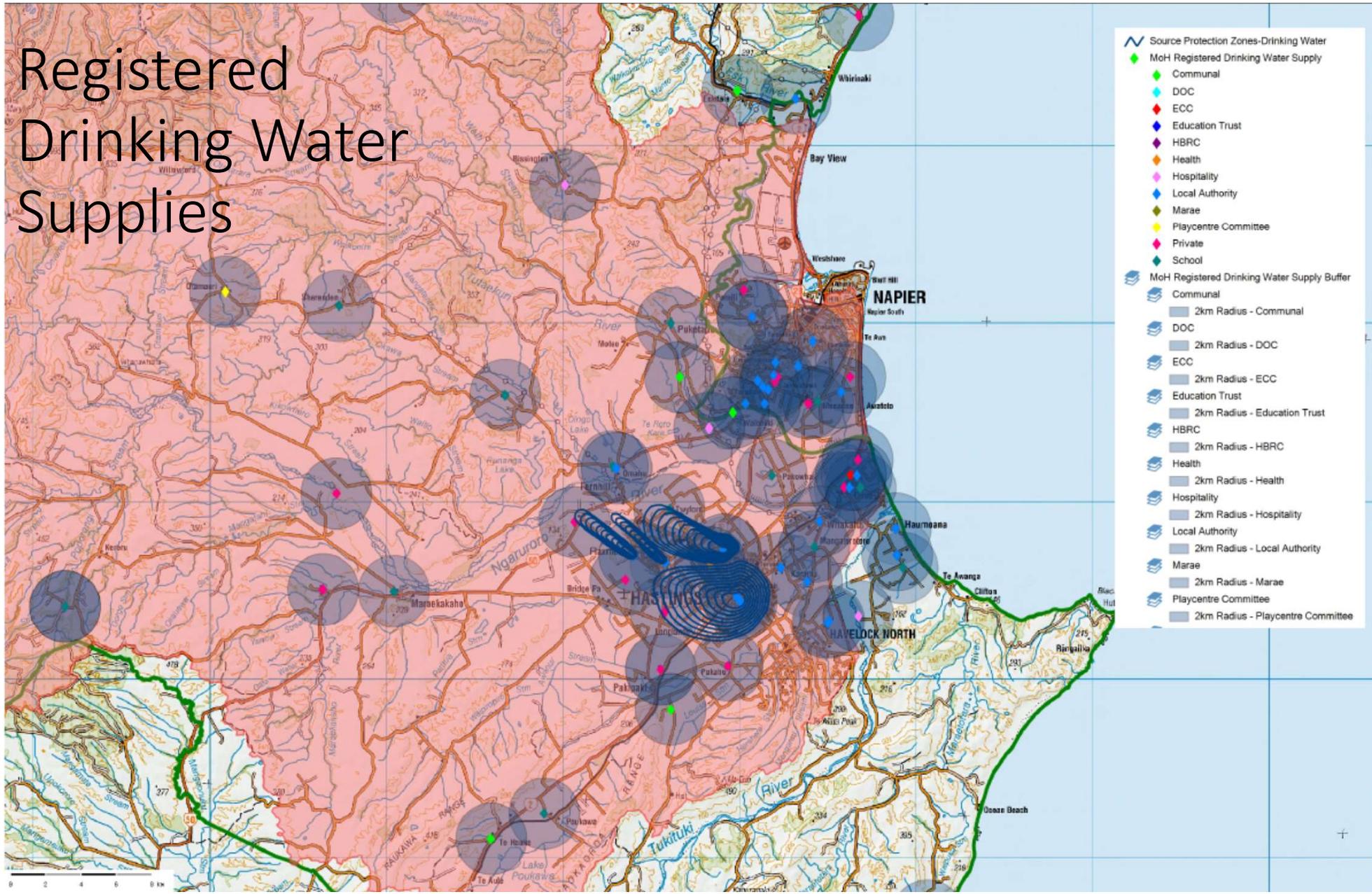
[Solid waste on production land; new sewage systems; solid waste to land; discharges that may enter water; animal effluent]

 Recommendations do not change activity status in these areas

 Recommendations change activities from Permitted or Controlled (Animal Effluent) to Discretionary (ie, give the SPZ similar status to the unconfined aquifer area)



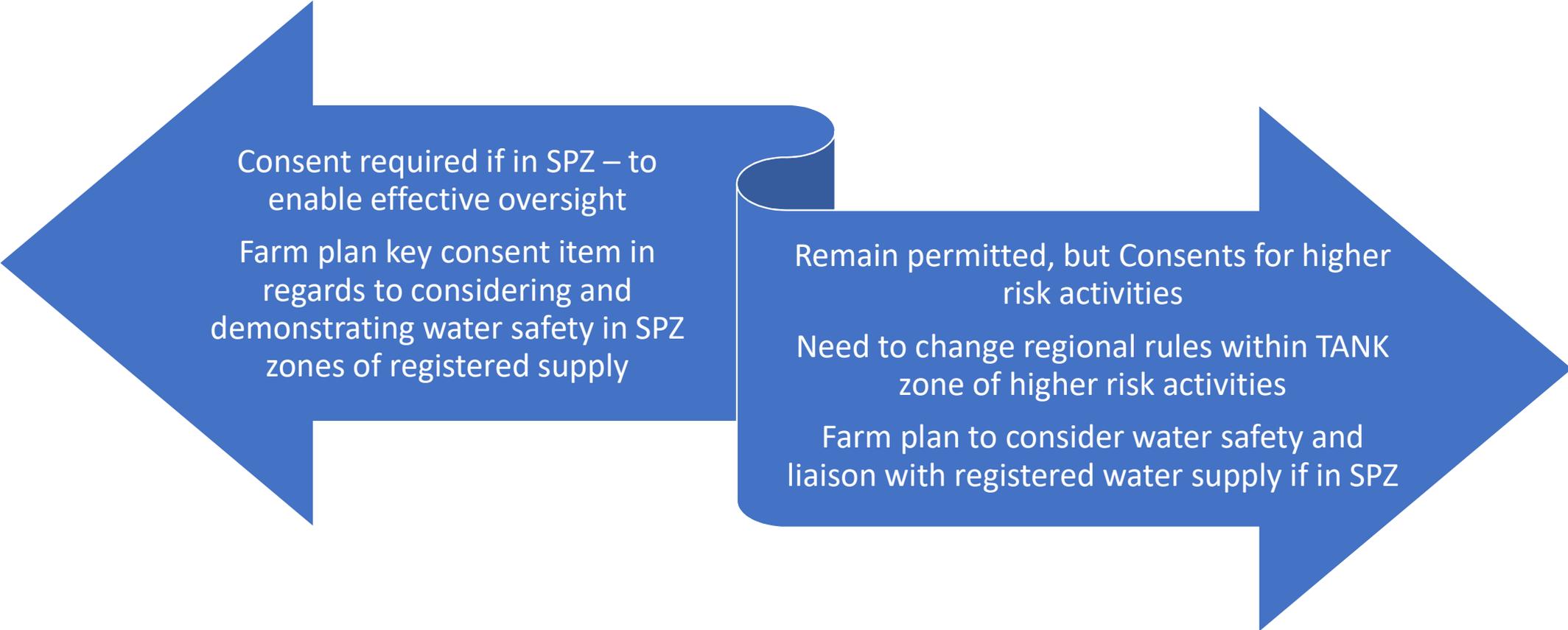
Registered Drinking Water Supplies



Rule Recommendations – Summary & Intent

	Current Activity Status	Recommendation	Activity
No Change to Activity Status: Addition of standards / matters of control or discretion	Permitted	Retain Permitted Activity status but require more information and / or notification & verification within SPZs	Stock Feed, Compost, biosolids & Soil conditioners Bore Decommissioning Production Land Use (require consultation with water supply authority in development of Farm Plans)
	Controlled or Restricted Discretionary	Add matters of control / discretion to include drinking water sources where activity is located within SPZ	Renewal of existing water takes Stormwater discharges Closed landfills
Changes to Activity Status where activity occurs within SPZ	Permitted	Elevate to Restricted Discretionary within SPZ	Vegetation Clearance (where root structure intersects aquitard or confining layer) Feedlots / feedpads
		Elevate to Discretionary within SPZ (as per current rule framework where activity is over unconfined areas)	Solid waste on production land New sewage systems Solid waste to land Discharges to land that may enter water
	Controlled	Elevate to Restricted Discretionary within SPZ	Bores (construction & use)
		Elevate to Discretionary within SPZ (as per current rule framework where activity is over unconfined areas)	Animal effluent

Productive land JWG discussion on 2 options



Consent required if in SPZ – to enable effective oversight

Farm plan key consent item in regards to considering and demonstrating water safety in SPZ zones of registered supply

Remain permitted, but Consents for higher risk activities

Need to change regional rules within TANK zone of higher risk activities

Farm plan to consider water safety and liaison with registered water supply if in SPZ

Decisions

- Recommendation one: production land use controls to be included in permitted activity rule with expanded requirements for Farm Environment Plans in SPZ, and changes to regional rules for noted activities - Y/N
- Recommendation two: All other rules to be accepted by TANK as recommended by JWG subject to further technical refinement Y/N

HAVELOCK NORTH JOINT WORKING GROUP ON DRINKING WATER SAFETY

RECOMMENDATIONS TO TANK FOR RULE CHANGES TO PROVIDE FOR SOURCE PROTECTION ZONES IN THE TANK CATCHMENTS

NEW OBJECTIVE

A new objective is proposed to provide an explicit statement in the Regional Plan that there is an objective to recognise and provide for source protection zones in order to meet the purpose of the National Environmental Standard on Sources of Human Drinking Water, to ensure that water within the source catchment areas is suitable for human consumption and that risks to the source water are appropriately managed. This objective is necessary in order to implement the proposed policy and regulatory approach to managing source waters for drinking water.

JWG is proposing that the objective, policy and rules apply to those drinking water sources which are registered on the Ministry of Health's Drinking Water Register.

Wording for the objective is recommended as follows:

Activities in Source Protection Zones for Registered Drinking Water Supplies are managed to ensure that they do not cause water in those zones to become unsuitable for human consumption, and that risks to the supply of safe drinking water are appropriately managed.

NEW POLICY

A new policy is recommended to support the above objective and provide guidance as to how the objective is to be achieved. In summary, the policy intends to:

- Provide for Source Protection Zones to be mapped in a new schedule of the Regional Plan. The mapped schedules are only those which have been defined via a technically appropriate method (typically this would be in accordance with the GNS 2014 reports "Capture Zone Guidelines for New Zealand" and "Envirolink Tools Project – Capture Zone Delineation – Technical Report").

Where SPZs have not been mapped for a registered drinking water supply, the policy will recognise a default SPZ. The shape of this default SPZ is still to be determined at a technical level. At present, Regional Council's internal policy is to adopt a 2km radius around a drinking water supply bore in determining whether the provisions of the National Environmental Standard on Sources of Human Drinking Water apply. It is recognised that a more appropriate default zone could be defined. In the interim, the policy references the 2km default radius but it is expected that this will be redefined prior to the proposed Plan Change being notified. The JWG's recommendation is that any rules only apply to the mapped SPZs and do not apply in the default SPZ areas.

- Provide for activities to be regulated within SPZs where activities have a potential to cause an adverse effect on the quality of drinking water sources or to increase the risk to the supply of safe drinking water.
- Provide guidance on how consent decisions will be made
- Encourage sharing of information between agencies and collaborative multi-agency groups.

Wording for the policy is recommended as follows, noting that this is subject to further refinement with HBRC policy team:

1. *To define Source Protection Zones for registered drinking water supplies via Schedules in the Regional Plan which show the Source Protection Zone as determined by an appropriate technical method or, in the absence of a supply specific Source Protection Zone, by applying a default 2km radius from the location of abstraction points for registered drinking water supplies.*
2. *To regulate activities within Source Protection Zones such that:*
 - a. *Activities which will not cause an adverse effect on the quality of sources of drinking water and do not present a risk to the supply of safe drinking water are not regulated for this purpose.*
 - b. *Activities which have the potential to cause an adverse effect on the quality of sources of drinking water or present a risk to the supply of safe drinking water require resource consent.*

3. *When making decisions on applications which require resource consent within Source Protection Zones as defined in Schedule SPZ, the consent authority shall consider:*
 - a. *the potential effects of the activity on the quality of water within the source protection zone including the amount, concentration and type of contaminants likely to be present on the site and in any discharges from the site; the potential pathways for those contaminants to enter the drinking water supply's source water (including any likely or potential preferential pathways); the mobility and survival rates of those contaminants in the source protection zone.*
 - b. *the risks that the proposed activity has either in isolation or in combination with other existing lawful land use activities within the source protection zone on the provision of safe drinking water from the registered drinking water supply.*
 - c. *The degree to which the assessments under a and b are likely to change in the event of non-routine but foreseeable events including, but not limited to, abnormal weather events and activities on site which may depart from standard operating procedures.*
 - d. *The effectiveness of proposed mitigation measures to reduce potential adverse effects on the quality of source water for registered drinking water supplies or the risk of provision of safe drinking water.*
 - e. *The extent to which the effectiveness of mitigation measures is able to be verified.*
 - f. *Whether or not the applicant has undertaken any consultation with the supplier and / or regulator of the registered drinking water supply and the outcomes of that consultation.*
4. *The Regional Council will encourage and participate in the sharing of information between, agencies, collaborative multi-agency groups involving such agencies, which have roles and responsibilities in the provision of safe drinking water.*

REVIEW

The SPZ maps are likely to be added to over time (as new SPZs are developed) and / or amended as new information / modelling techniques are implemented.

Because the mapped SPZs are recommended to be used to determine where consent is required for some activities, any changes to the mapped SPZs will need to be introduced in to the Regional Plan and would require a Plan Change Process. It is noted that Resource Legislation Amendment Act 2017 introduced Subpart 5 Streamlined planning process intended to provide an expeditious planning process. It may be that this can be used to update versions of the source protection zone maps as needed. A consent authority must apply to the Minister for approval to use an "expeditious planning process that is proportionate to the complexity and significance of the planning issue being considered". If a streamlined planning process were not able to be used, a Schedule 1 Plan Change process would be required.

RECOMMENDED RULE CHANGES

Key points in the recommended rule changes:

- Where activities already require a resource consent, add matters of control / discretion that enable the risk to drinking water sources to be considered, where those activities are located in mapped SPZ areas.
- Some activities already require consent when they occur in sensitive areas (eg over the unconfined aquifer). Recommendations are to require a similar consenting process over the SPZ areas as over the unconfined aquifers.
- Some of the existing Permitted Activity rules don't meet the requirements of the National Environmental Standard for Sources of Human Drinking Water. It is proposed to make amendments to these rules so that the NES requirements are met.
- Production Land Use in SPZ area to be permitted activity as proposed by TANK, but require that the Farm Environmental Plans include consultation with the water supply authority and identify any measures to manage risks to drinking water sources.

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
TANK1 Production Land Use	The use of production land on farm properties or farming enterprises in the TANK catchments pursuant to s9(2) RMA	Permitted	(a) (a) Except as provided in conditions (b) and c), any properties greater than 10ha, a farm property or enterprise owner or manager of the property is either; 1. A member of a TANK Industry Programme or TANK Landowner Collective within the timeframes specified in Schedule 3 Or 2. Subject to a Forestry Management Plan (as specified in the NESPF) where the property is forested (b). The farm property or enterprise is subject to a Farm Environmental Plan and: 1. information about the mitigation measures identified for the property and timeframe for completion of any works shall be supplied to the Council on request 2. Where the property is located within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, the Farm Environmental Plan shall include details of consultation undertaken with the Water Supply Authority relevant to the SPZ and identify mitigation measures identified to address		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p style="color: blue;">potential public health risks to the drinking water source water.</p> <p>2. . Stock Access:</p> <p>(d) The entry into or over the bed of any river lake or wetland by cattle, deer and pigs is a permitted activity provided that</p> <p>(i) stock are at a stocking rate less than 18su/ha in the paddock adjacent to the river the stock have access to and</p> <p>(ii) The slope over 60% or more of the paddock is greater than 15 degrees</p> <p>(d) Rivers that are crossed by formed stock races are bridged or culverted by 31 May 2023</p> <p>(e) The entry into or over the bed of any river, lake or wetland by cattle, deer and pigs not permitted by condition (d) is a permitted activity until 31 May 2023</p> <p>(f) Conditions (d) to (f) apply only to rivers with an active formed channel</p>		
TANK2 Production Land Use	The use of production land on farm properties or farming enterprises in the TANK catchments pursuant to s9(2) RMA	Controlled	The use of production land on farm properties or farming enterprises on any farm property or enterprise that does not meet the any one of the conditions (a) – (c) of Rule TANK1 is a controlled activity	<ol style="list-style-type: none"> 1. Whether water quality objectives in Table 1 are being met in the catchment where the activity is being undertaken 2. The extent to which a TANK Industry Programme or Landowner Collective is undertaking measures to meet water quality objectives, and the effect of the land use activity on contributing to the objectives in table 1 of this plan 3. Nature and scale of actual and potential contamination loss from the property in relation to the objectives specified in Table 1 4. Measures required to reduce the actual or potential contaminant loss occurring from the property, taking into account their costs and likely effectiveness in relation to matters (1)- (3) and including performance in relation to industry good best practice and <ol style="list-style-type: none"> a) Efficient use of nutrients and minimisation of nutrient losses, b) Wetland management c) Riparian management 	Non-notified

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				<ul style="list-style-type: none"> d) Management of farm wastes e) Management of stock including in relation to water ways and contaminant losses to ground and surface water f) Measures required to maintain or improve the physical and biological condition of soils so as to reduce risks of erosion, movement of soil into waterways, and damage to soil structure <p>5. Measures required to reduce the actual or potential contaminant loss occurring from the property in order to meet water quality objectives, including performance in relation to industry good best practice and efficient use of nutrients and minimisation of nutrient losses,</p> <p>Measures to prevent or minimise the Production Land Use activity from having an adverse effect on the quality for the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.</p> <ul style="list-style-type: none"> 6. Timeframes for any alternative mitigation measures 7. Duration of consent 8. Lapsing of consent 9. Review of consent conditions; 10. The collection, recording, monitoring and provision of information concerning the exercising of the consent 	
<p>7 Vegetation clearance and soil disturbance <i>Refer to POL 3, 67, 71</i></p>	<p>Vegetation clearance or soil disturbance activities.</p>	<p>Permitted</p>	<ul style="list-style-type: none"> a. All cleared vegetation, disturbed soil or debris shall be deposited or contained to reasonably prevent the transportation or deposition of disturbed matter into any water body. b. Vegetation clearance or soil disturbance shall not give rise to any significant change in the colour or clarity of any adjacent water body, after reasonable mixing. c. No vegetation clearance shall occur within 5 metres of any permanently flowing river, or any other river with a bed width in excess of 2 metres, or any other lake or wetland, except that this condition shall not apply to: 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> i. the clearance of plantation forestry established prior to the date of this Plan becoming operative, or ii. the areas identified in Schedule X to this Plan. d. Deposition of soil or soil particles across a property boundary shall not be objectionable or offensive, cause property damage or exceed 10 kg/m². e. Where the clearance of vegetation or the disturbance of soil increases the risk of soil loss the land shall be: <ul style="list-style-type: none"> i. re-vegetated as soon as practicable after completion of the activity, but in any event no later than 18 months with species providing equivalent or better land stabilisation; or ii. retained in a manner which inhibits soil loss. f. there is no clearance of indigenous vegetation within 10m of any rivers in the TANK catchments (ref maps/zones) except where the clearance is part of improvements to riparian management for water quality/biodiversity purposes or for construction of crossings g. There is no cultivation of land in the TANK catchments (ref maps/zones) over 20° except where it is less than 10% of the paddock area. h. There is no cultivation of land in the TANK catchments (ref maps/zones) that results in exposure of bare soil; <ul style="list-style-type: none"> (i) Within 5 m of any river, modified watercourse or drain where the land is flat to gently rolling (0-7°) (ii) Within 10 m of any river, modified watercourse or drain where the land is moderately rolling (>7 – 20°) (iii) Within 15 m of any river, modified watercourse or drain where the land is over 20° <p>except where cultivation is part of improvements to riparian management for water quality/biodiversity purposes or in relation to activities permitted by Rule 70.</p> <ul style="list-style-type: none"> i. Where the activity is located within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ the activity shall not involve clearance of vegetation that has a root structure that 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>penetrates the aquifer confining layer or involve earthworks or land disturbance that would result in penetrations of the aquifer confining layer.</p> <p><i>NOTE: Further work likely required to better define the situations under which vegetation clearance cannot be undertaken as a Permitted Activity in a SPZ</i></p>		
<p>8</p> <p>Vegetation clearance and soil disturbance</p> <p><i>Refer to POL 3, 67, 71</i></p>	<p>Vegetation clearance or soil disturbance activities which do not meet the conditions in Rule 7.</p>	<p>Restricted discretionary</p>		<p>a. The conditions, standards or terms which the activity cannot comply with, and the related environmental effects.</p> <p>b. Monitoring and reporting requirements.</p> <p>c. Duration of consent.</p> <p>d. Review of consent conditions.</p> <p>e. <i>Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.</i></p>	<p>Applications may be considered without notification, without the need to obtain the written approval of affected persons.</p>
<p>TANK 7</p> <p>Re-application for water permits – groundwater in HPWMZ</p>	<p>Application to continue to take water in respect of permits subject to section 124 (Heretaunga Plains Water Management Zone)</p>	<p>Controlled or RD?</p>	<p>The taking and use of water from the Heretaunga Plains Water Management Zone that does not comply with the conditions of rules TANK 6 is a controlled activity, if it complies with the following conditions and terms:</p> <p>[Not included in this memo for brevity]</p>	<p>Matters of Control / Discretion</p> <p>[draft matters not listed]</p> <p>Add:</p> <p><i>Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.</i></p>	
<p>TANK 8</p>	<p>Application to continue to take water in respect of</p>	<p>Controlled or RD?</p>	<p>The taking and use of water from surface water bodies in the TANK Water Management Zones that does not comply with the conditions of rule TANK 5, TANK 6 or TANK 7 is a</p>	<p>Matters of Control / Discretion</p> <p>[draft matters not listed]</p>	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
Surface water takes (abstraction at low flows)	permits subject to section 124		controlled activity, if it complies with the following conditions and terms: [Not included in this memo for brevity]	Add: Where the activity is located within a Source Protection Zone of a registered drinking water the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	
STORMWATER 1	The diversion and discharge of stormwater into water, or onto land where the stormwater or drainage water may enter water from any new and existing small-scale residential	Permitted	The diversion and discharge; (a) shall not cause scouring or erosion of land or any water course at or beyond that point of discharge (b) shall not cause or contribute to flooding of any property (c) contains no hazardous substances (d) shall not cause any of the following to occur: i) production of oil or grease films, scums or foams, or floatable or suspended materials ii) any emission of objectionable odour iii) Any conspicuous change in colour or the visual clarity iv) result in any freshwater becoming unsuitable for consumption by animals v.) any significant adverse effects on aquatic life, ecosystems and mahinga kai (e) There is no stormwater network at the property boundary (f) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound. (g) The person who discharges or diverts, or who causes the discharge or diversion to be undertaken, must provide such information upon request by the Council to show how the conditions (a) [Erosion], (b) [Flooding], (c) [Hazardous Substances], (d) [Water Quality] will be met.		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
STORMWATER 2	Diversion and discharge of Stormwater from an existing or new TLA managed stormwater network into water, or onto land where it may enter water	Controlled	<p>The diversion and Discharge</p> <p>(a) shall not cause scouring or erosion of land or any water course beyond that point of discharge</p> <p>(b) does not contain wastewater,</p> <p>(c) shall not, cause any of the following to occur after reasonable mixing:</p> <ul style="list-style-type: none"> i) production of oil or grease films, scums or foams, or floatable or suspended materials ii) any emission of objectionable odour iii) Any conspicuous change in colour or visual clarity iv) result in any freshwater becoming unsuitable for consumption by animals <p>(d) After [date of notification] any new connections to the stormwater network which include roof runoff, is from rooves which are clad with inert roofing</p> <p>e) There is no discharge to land from (to be defined) sites over the unconfined aquifer</p>	<p>1. the Approval of an Integrated Catchment Management plan that contains as necessary and relevant, the following measures to demonstrate how the network manager will meet objectives for water quality that may be adversely affected by stormwater discharges;</p> <ul style="list-style-type: none"> (i) Monitoring to assess existing water quality and level of impact on receiving water quality standards (ii) Identification of the priority streams or catchments where stormwater discharges are resulting in receiving water quality below the standards specified in policy X (iii) Identification of any industrial or trade sites, that use or store contaminants of concern on site located over the unconfined aquifer (iv) A programme of mitigation measures including timeframes and milestones for the enhancement of streams identified in (ii), (v) Identification of sites within those catchments that have a high risk of contaminants entering the stormwater network or land where it might enter groundwater, including industrial and trade premises and areas subject to new urban development. (vi) A programme to ensure industrial and trade premises where contaminants of concern are either being stored or used prepare site management plans (schedule X) and where necessary, install stormwater treatment devices to reduce risk of contamination from the site. (vii) Where the stormwater network (or part thereof) or discharge locations are located within a Source Protection Zone of a registered drinking water supply, measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply. 	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
				2 Reasonable mixing zones 3. Identification of areas at risk of flooding and where levels of service to protect communities from risk of flooding are not being met, to provide information about how this will be managed 4. Potential effects of climate change on infrastructure capacity and mitigation measures including the identification of secondary flow paths 5 Monitoring and reporting programmes	
STORMWATER 3	Discharge of stormwater into land or water from industry or trade premises where low risk contaminants of concern (see the Table 3.1 of the Hawke's Bay Waterway Guidelines Industrial Stormwater Design) are stored or used	Controlled	The diversion and discharge; (a) shall not cause scouring or erosion of land or any water course beyond that point of discharge (b) shall not cause or contribute to flooding of any property, (c) shall not or be unlikely to contain hazardous substances (d) The diversion and discharge shall not cause any of the following to occur: i) production of oil or grease films, scums or foams, or floatable or suspended materials ii) any emission of objectionable odour iii) Any conspicuous change in colour or the visual clarity iv) result in any freshwater becoming unsuitable for consumption by farm animals v) any significant adverse effects on aquatic life, ecosystems and mahinga kai (e) There is no stormwater network at the property boundary (f) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound.	Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	
STORMWATER 4	Discharge of stormwater into land or water from industry or trade premises where high risk contaminants of	Restricted discretionary	(a) The diversion and discharge; (i) shall not cause scouring or erosion of land or any water course beyond that point of discharge (ii) shall not cause or contribute to flooding of any property, (iii) shall not result in surface ponding persisting for longer than 6 hours after the cessation of rainfall	1. The preparation of a Site Management Plan (Schedule xx) including measures adopted to minimise the risk of contaminants of concern entering stormwater including: (i) Installation of stormwater management devices including as set out in table 3.1 of the Hawke's	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	concern (see table xx) are stored or used		<p>(iv) shall not or be unlikely to contain hazardous substances</p> <p>(e) The diversion and discharge shall not cause any of the following to occur after reasonable mixing:</p> <p>i) production of oil or grease films, scums or foams, or floatable or suspended materials</p> <p>ii) any emission of objectionable odour</p> <p>iii) Any conspicuous change in colour or the visual clarity</p> <p>iv) result in any freshwater becoming unsuitable for consumption by animals</p> <p>(f) Any structure associated with the point of discharge or diversion is maintained in a condition such that it is clear of debris, does not obstruct fish passage and is structurally sound.</p>	<p>Bay Regional Council Industrial Stormwater Waterway Design Guidelines.</p> <p>(ii) compliance with relevant industry guidelines and best practice standards.</p> <ul style="list-style-type: none"> • Where the activity is located within a Source Protection Zone of a registered drinking water supply, the effect of the proposed activity, and the appropriateness of mitigation measures, on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply. <p>2. Water quality standards in relation to any contaminants being used on site and specific methods for treating these</p> <p>3. Reasonable mixing zones</p> <p>3. Monitoring and reporting</p>	
1 Bore drilling <i>Refer POL 17, 21, 27, 75</i>	The drilling, construction, and alteration of bores.	Controlled	<p>a. The bore shall be cased and sealed to prevent aquifer cross-connection, and leakage from the ground surface into ground water.</p> <p>b. The bore is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ</p>	<p>a. Bore location, diameter, depth.</p> <p>b. Bore screen slot size, length, depth and diameter.</p> <p>c. Well head completion.</p> <p>d. Backflow prevention.</p> <p>e. Information requirements, including bore logs, hydraulic head levels and aquifer tests.</p> <p>f. Duration of consent.</p> <p>g. Lapsing of consent.</p> <p>h. Review of consent conditions.</p> <p>i. Compliance monitoring.</p>	Applications will generally be considered without notification, without the need to obtain the written approval of affected persons.
2 Bore drilling that does not comply with Rule 1, including bore use and maintenance of bores located within drinking	The drilling, construction, or alteration of bores that does not comply with Rule 1.	Restricted discretionary		<p>a. Bore location diameter, depth.</p> <p>b. Bore screen slot size, length, depth and diameter.</p> <p>c. Bore head completion.</p> <p>d. Backflow prevention.</p> <p>e. Information requirements, including bore logs, hydraulic head levels and aquifer tests.</p> <p>f. Duration of consent.</p> <p>g. Lapsing of consent.</p> <p>h. Review of consent conditions.</p>	

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
<p>water Source Protection Zones Refer POL 17, 21, 27, 75</p>				<p>i. Compliance monitoring. Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures</p>	
<p>4 Decommissioning of bores Refer POL 75</p>	<p>The decommissioning or sealing of bores.</p>	<p>Permitted</p>	<p>a. Decommissioned bores shall be backfilled and sealed at the surface to prevent contamination of groundwater. b. Decommissioned holes and bores intersecting groundwater shall be sealed to prevent the vertical movement of groundwater, and to permanently confine the groundwater to the specific zone (or zones) in which it originally occurred. c. Backfill materials, where used between permanent seals, shall consist of clean sand, coarse stone, clay or drill cuttings. The material shall be non toxic. d. Decommissioning shall be undertaken by a suitably qualified person. e. The Council shall be advised of any bores that are decommissioned. f. Where the bore is within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, records to confirm compliance with criteria a to e shall be provided to Regional Council.</p>		
<p>5 Feedlots & feedpads Refer POL 71</p>	<p>The use of land for the purposes of operating a feedlot or feedpad.</p>	<p>Permitted</p>	<p>a. The land used for the feedlot or feedpad shall be managed in a manner that prevents any seepage of contaminants into groundwater. b. The feedlot or feedpad shall be located no less than 20 m from any surface water body. c. The feedlot or feedpad shall be located no less than: i. 150 metres from a residential building or any other building being part of a place of assembly on another site ii. 50 metres from a property boundary, and iii. 20 metres from a public road.</p>		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> d. Runoff from the surrounding catchment area is prevented from entering the feedlot or feedpad. e. The land used for the feedlot or feedpad is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ 		
6 Feedlots & feedpads that do not comply with Rule 5 <i>Refer POL 17, 20, 47, 48, 71</i>	The use of land for the purposes of operating a feedlot or feedpad, in a manner which does not comply with Rule 5.	Restricted discretionary		<ul style="list-style-type: none"> a. The conditions which the activity cannot comply with, and the related environmental effects. b. Duration of consent. c. Lapsing of consent. d. Review of consent conditions. e. Compliance monitoring. <p>Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.</p>	
12 Stock feed <i>Refer POL 12, 69, 71, 75</i>	The discharge of contaminants into air, or onto or into land arising from the storage, transfer, treatment, mixing or use of stock feed on production land, including silage.	Permitted	<ul style="list-style-type: none"> a. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), or the Ruataniwha Plains unconfined aquifer (Schedule IV), or a Source Protection Zone of a registered drinking water supply (Schedule SPZ) which is used for storing stock feed, including silage, and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination. aa. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing stock feed, including silage. b. Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property. 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. e. There shall be no discharge within 20 m of any surface water body. f. There shall be no surface ponding in any area used to store stock feed or feed stock, and no runoff of contaminants into any surface water body. g. There shall be no discharge within 30 m of any bore or well. 		
<p>13 Use of compost, biosolids & other soil conditioners <i>Refer POL 12, 69, 71, 75</i></p>	<p>The discharge of contaminants into air, or onto or into land, arising from the storage, transfer, treatment, mixing or use of compost, biosolids and other (solid or liquid) organic material for soil conditioning purposes including:</p> <ul style="list-style-type: none"> • paunch grass • apex meal • stockyard scrapings • grape marc • compost (except as regulated by Rule 28) and 	<p>Permitted</p>	<ul style="list-style-type: none"> a. Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), or the Ruataniwha Plains unconfined aquifer (Schedule IV) or a Source Protection Zone of a registered drinking water supply (Schedule SPZ) which is used for storing organic material and when there is a potential for contamination of ground water by seepage of contaminants, shall be managed in a manner that prevents such contamination. aa. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing organic material. b. Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property. c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	<ul style="list-style-type: none"> poultry manure (except as regulated by Rule 11 or 14). 		<ul style="list-style-type: none"> e. There shall be no surface ponding in the area used to store, mix or use the organic material, and no runoff of contaminants into any surface water body. f. There shall be no discharge within 30 m of any bore or well. g. The discharge shall occur no less than 600 mm above the winter ground water table. h. Where material is discharged onto grazed pasture, the application rate shall not exceed 150 kg/ha/y of nitrogen. i. Where material is discharged onto land used for a crop, the application rate shall not exceed the rate of nitrogen uptake by the crop. 		
<p>14 Animal effluent <i>Refer POL 8, 12, 14, 17, 19, 47</i></p>	<p>The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent, including dairy shed effluent, piggery effluent, and poultry farm effluent, including associated sludges (except as provided for by Rules 13 & 15).</p>	<p>Controlled</p>	<ul style="list-style-type: none"> a. Any area used for storing animal effluent, where there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents any such contamination. b. Either: <ul style="list-style-type: none"> i. there shall not be offensive or objectionable odour, or noxious or dangerous levels of gases or other airborne liquid contaminants, beyond the boundary of the subject property, or ii. for discharges of effluent from piggeries, every point of discharge shall be sited so as to meet the requirements of the "Code of Practice - Pig Farming" (New Zealand Pork Industry Board, 1997), in respect of buffer zone distances. c. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. d. There shall be no runoff of any contaminant into any surface water body. e. There shall be no discharge within 30 m of any bore or well. f. Where effluent is discharged onto grazed pasture, the nitrogen loading rate from the effluent application shall not exceed 150 kg/ha/y of nitrogen. 	<ul style="list-style-type: none"> a. Amount of effluent per discharge. b. Frequency of discharge. c. Maintenance of vegetative cover. d. Buffer zone requirements. e. Measures to avoid a breach of the environmental guidelines for surface and groundwater quality set out in section 5.4 and 5.6. f. Management of cumulative adverse effects. g. For discharges of effluent from piggeries, use of the best practicable option for minimising discharges of odour beyond the boundary of the subject property. h. Duration of consent. i. Review of consent conditions. j. Compliance monitoring. 	<p>Applications may be considered without notification, without the need to obtain the written approval of affected persons, except that written approval of affected neighbours may be required for new consents, but upon renewal the approval of affected neighbours will not be required.</p>

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>g. Where effluent is discharged onto land covered by a crop, or to be used for cropping purposes, the application rate shall not exceed the rate of nitrogen uptake by the crop.</p> <p>h. The storage and discharge of animal effluent is not located within a Source Protection Zone for a registered drinking water supply as defined in Schedule SPZ.</p>		
<p>15 Discharge of animal effluent in sensitive catchments <i>Refer POL 8, 17, 19, 20, 47</i></p>	<p>The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent, including dairy shed effluent, piggery effluent, and poultry farm effluent in the Source Protection Areas shown in Schedule SPZ or in the following catchments as shown in Schedule VIb:</p> <ul style="list-style-type: none"> • Headwaters of Mohaka River • Headwaters of the Ngaruroro River • Maungawhio • Lake Hatuma • Lake Tutira • Heretaunga Plains 	<p>Discretionary</p>			

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	unconfined aquifer <ul style="list-style-type: none"> • Ruataniwha Plains unconfined aquifer • Lake Whakaki • Headwaters of the Tutaekuri River • Headwater of the Tukituki River. 				
16 Management of solid waste on production land <i>Refer POL 16</i>	The discharge of contaminants into air, or onto or into production land, arising from the storage, transfer, treatment or disposal of solid waste, including: <ul style="list-style-type: none"> • the use of farm tips • offal holes. 	Permitted	<ol style="list-style-type: none"> a. The waste shall have been generated on the subject property, or on another property under the same ownership as that used for disposal. b. There shall be no disposal of waste oil or other hazardous substances. c. Any discharges to air shall not cause any offensive or objectionable odour, or noxious or dangerous levels of gases, beyond the boundary of the subject property. d. There shall be no visible discharge of any material, including dust, beyond the boundary of the subject property, unless written approval is obtained from the affected property owner. e. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. f. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown in Schedule IV, or over a Source Protection Zone for a registered drinking water supply as shown in Schedule SPZ. g. There shall be no ponding in the area used for waste management, and no runoff of contaminants into any surface water body. h. There shall be no discharge within 30 m of any bore or well. 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> i. The discharge shall not cause any contamination of groundwater. j. Any waste disposal shall be no less than 600 mm above the winter groundwater table. k. Any offal holes used shall be securely covered, and shall be constructed in soil with an infiltration rate not exceeding 150 mm/hour. 		
<p>37 New sewage systems <i>Refer POL 16, 71, 75</i></p>	<p>Except as provided for in Rule 35 or Rule 36, the discharge of contaminants (including greywater) onto or into land, and any ancillary discharge of contaminants into air, from a new sewage system.</p>	<p>Permitted</p>	<ul style="list-style-type: none"> a. Where the wastewater receives no more than advanced primary treatment, the discharge shall be onto or into a property with a land area of no less than 2500m². aA. Where the wastewater receives more than advanced primary treatment then: <ul style="list-style-type: none"> i. the discharge shall be onto or into a property with a land area of no less than 1000m²; and ii. the net site area to discharge volume ratio shall not be less than 1.5 m² per litre per day. b. The rate of discharge of sewage (including greywater) shall not exceed 2 m³/d, averaged over any 7 day period. c. The treatment and disposal system shall be designed to cater for the peak daily loading. d. The discharge shall not occur over the Heretaunga Plains, or Ruataniwha Plains unconfined aquifer as shown in Schedule IV, or a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ. e. The discharge and land treatment field shall not be within 20 m of any surface water body (including any stormwater open drain or roadside drain), or any tile drain or within 1.5 metres of any property boundary. eA. The system shall be designed and installed in accordance with the requirements specified in Figure 6. f. There shall be no surface ponding as a result of the discharge, or direct discharge into any water body. g. The discharge shall be distributed evenly over the entire disposal area. 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<ul style="list-style-type: none"> h. There shall be no increase in the concentration of pathogenic organisms in any surface water body as a result of the discharge. i. At the time of installation and commencement, the discharge shall not occur within 30 m of any bore drawing groundwater from an unconfined aquifer into which any contaminant may enter as a result of the discharge. j. The point of discharge shall be no less than 600 mm above the highest seasonal groundwater table. k. The discharge shall not result in, or contribute to, a breach of the “Drinking Water Quality Standards for New Zealand” (Ministry of Health, 2005 (Revised 2008)) in any groundwater body after reasonable mixing. l. The discharge shall not cause any emission of offensive or objectionable odour, or release of noxious or dangerous gases (including aerosols) beyond the boundary of the subject property or on any public land. m. For discharges using pit privies: <ul style="list-style-type: none"> i. the privy shall be constructed in soil with an infiltration rate not exceeding 150 mm/h, and ii. the privy shall not be the primary wastewater system for any permanently occupied dwelling. n. The system shall be designed, constructed, operated and maintained in a manner which ensures that there is no clogging of the disposal system or soils. nA. The discharge shall not be into a trench or bed disposal system constructed in category 5 or 6 soil except where wastewater receives at least secondary treatment. o. Where the wastewater receives secondary treatment or better, the discharge shall not exceed 20 g/m³ of BOD, and 30 g/m³ of suspended solids. p. The wastewater treatment and land application system shall be maintained in accordance with the manufacturer’s instructions, or if no manufacturer’s instructions exist, in accordance with the best management practice as described in AS/NZS 1547, or TP58: On-site Wastewater Systems: Design and Management Manual (Auckland Regional Council 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
			<p>Technical Publication No. 58), or other alternative recognised on-site wastewater design manuals. A schedule of maintenance shall be kept, and this schedule shall be available for inspection by the Regional Council upon request.</p> <p>q. The discharge shall not be disposed of by way of spray irrigation.</p> <p>r. The discharge shall not be into a raised bed.</p>		
<p>40 Discharges from closed landfills <i>Refer POL 17, 47</i></p>	<p>The discharge of contaminants onto or into land, or into water, arising from closed landfills.</p>	<p>Controlled</p>	<p>a. Management of the site shall be undertaken in accordance with a Landfill Management Plan approved by the Hawke's Bay Regional Council.</p>	<p>a. Adequacy of protection of the landfill from saltwater and fresh water intrusion.</p> <p>b. The permeability of the compacted capping layer.</p> <p>c. The ability of landfill surfaces to prevent ponding.</p> <p>d. The adequacy of the grass cover.</p> <p>e. Mitigation measures to meet required water quality standards.</p> <p>f. Frequency, location and method of sampling, and the determinants to be measured and method of measurement.</p> <p>g. Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.</p>	
<p>48 Discharges of solid contaminants , including cleanfill, to land that will not enter water <i>Refer POL 67</i></p>	<p>The discharge of solid contaminants, including cleanfill, onto or into land in circumstances that will not result in any contaminant entering water, pursuant to section 15 (1) (d) and</p>	<p>Permitted</p>	<p>a. The discharge shall not increase land instability or the risk of erosion.</p> <p>b. The discharge shall not cross the boundary of the subject property onto any other property, unless written approval is obtained from the affected property owner.</p> <p>c. The discharge shall not cause any increase in the concentration of any hazardous substances or pathogenic organisms on or in any land.</p>		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	section 15 (2) RMA, except as expressly regulated by other rules in this Plan.		<ul style="list-style-type: none"> d. The discharge shall not cause any increase in the risk of human or animal disease. e. The discharge shall not have any acid producing potential. f. Upon request by the HBRC, a management plan, setting out how the conditions above will be met shall be prepared and provided to the HBRC. g. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown in Schedule IV, or within a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ, or within 20 metres of the coastal marine area, except for material extracted from a surface water body associated with the maintenance of legally established structures. h. Where the volume of solid contaminants on the subject property is greater than 100 m³ the person responsible for the discharge shall notify the Hawke's Bay Regional Council within 7 days of that volume being reached or exceeded. 		
49 Discharges to land that may enter water <i>Refer POL 16, 71, 79</i>	The discharge of contaminants onto or into land, in circumstances which may result in those contaminants (or any other contaminant emanating as a result of natural processes from those contaminants) entering water, pursuant to section 15 (1) (b) RMA, except as expressly	Permitted	<ul style="list-style-type: none"> a. The rate of discharge shall be no greater than 50 m³/d. b. The discharge shall not result in a breach of any of the conditions set out in Rule 47. c. The discharge shall not result in a breach of any of the conditions set out in Rule 48. d. The point of discharge shall occur no less than 600 mm above the winter ground water table. e. There shall be no surface ponding in the area of discharge, or runoff of any contaminant into a surface water body as a result of the discharge. f. The discharge shall not result in any airborne liquid contaminant being carried beyond the boundary of the subject property. g. There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown in Schedule IV, or within a Source Protection Zone of a registered drinking water supply as shown in Schedule 		

Rule	Activity	Classification	Conditions/Standards/Terms	Matters for Control/Discretion	Non-notification
	regulated by other rules in this Plan.		<p>SPZ except for material extracted from a surface water body associated with the maintenance of legally established structures.</p> <p>h. There shall be no surface ponding in the area used to store, mix or use the organic material, and no runoff of contaminants into any surface water body.</p> <p>i. There shall be no discharge within 30 m of any bore drawing groundwater from an unconfined aquifer into which any contaminant may enter as a result of the discharge.</p> <p>j. The discharge shall not cause any degradation of existing ground water quality in confined aquifers in the Heretaunga Plains and Ruataniwha Plains aquifer systems or in the Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ.</p> <p>k. For other aquifers, the discharge shall not cause or contribute to a breach of the following guidelines after reasonable mixing:</p> <ul style="list-style-type: none"> i. The “Drinking Water Quality Standards for New Zealand” (Ministry of Health, 1995). ii. The guideline for irrigation contained in the “Australian Water Quality Guidelines for Fresh and Marine Waters” (Australian and New Zealand Environment and Conservation Council, 1998). <p>l. Where the quality of ground water in any aquifer encompassed by condition (k) breaches the standards specified in that condition prior to the discharge occurring, the discharge shall not cause any further degradation of the quality of ground water in any such aquifer after reasonable mixing.</p>		

Appendix D

COMPARISON OF RULE AMENDMENT WORDINGS
(JWG RECOMMENDATIONS - TANK PLAN CHANGE V8)

PROPOSED RULE CHANGES – COMPARISON OF WORDING BETWEEN JWG RECOMMENDATION AND TANK DRAFT PLAN CHANGE V8

Provision	JWG Recommended Wording	TANK Plan Change v8
TANK 1: Production Land Use (Permitted Activity)	Refer above comment.	
TANK 2: Production Land Use (Controlled Activity)	Measures to prevent or minimise the Production Land Use activity having an adverse effect on the quality of the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.	Measures to prevent or minimise any adverse effects on the quality of the sources water used for a Registered Drinking Water Supply.
TANK 3: Stock Access (Restricted Discretionary)	-	Measures to prevent or minimise any adverse effects on the quality of the sources water used for a Registered Drinking Water Supply.
TANK 4: Production Land Use (Controlled)	-	Measures to prevent or minimise any adverse effects on the quality of the sources water used for a Registered Drinking Water Supply.
TANK 7 & TANK 8: water permits (Restricted Discretionary)	Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	Where the take is in a Source Protection Zone, the actual or potential effects of the rate of take and volume abstracted on the quality of source water for the water supply and any measures to prevent or minimise any adverse effects on the quality of the source water used for a Registered Drinking Water Supply irrespective of any treatment including notification requirements to the Registered Drinking Water supplier.
STORMWATER 2: Existing or New TLA managed networks (Controlled)	Where the stormwater network (or part thereof) or discharge locations are located within a Source Protection Zone of a registered water supply, measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or increasing the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.	Where the stormwater network (or part thereof) or discharge locations are located within a Source Protection Zone of a registered water supply, a description of measures to prevent or minimise adverse effects on the quality of the source water for the registered drinking water supply or any increase in the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply.

Provision	JWG Recommended Wording	TANK Plan Change v8
STORMWATER 3: Low Risk Industry or Trade Premises (Controlled)	Where the activity is located within a Source Protection Zone of a registered water supply the effects of the proposed activity on the quality of source within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	The actual or potential effects of the discharge on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality.
STORMWATER 4: (restricted Discretionary)	Where the activity is located within a Source Protection Zone of a registered water supply the effects of the proposed activity on the quality of source within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	Where the discharge or any land contributing to the discharge is in a Source Protection Zone, the actual or potential effects of the discharge on the quality of source water for restricted drinking water supplies and any measures to reduce the risk to the water quality.
RRMP Rule 1: Bore Drilling (Controlled)	The bore is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ.	The bore is not located within a Source Protection Zone.
RRMP Rule 2: Bore Drilling (Restricted Discretionary)	Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	The actual or potential effects of the bore and bore drilling on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water supplier, the maintenance of the bore and the well head, including decommissioning of the bore where necessary.
RRMP Rule 4: Decommissioning Bores (Permitted)	Where the bore is within a Source Protection Zone of a registered drinking water supply as defined in Schedule SPZ, records to confirm compliance with criteria a to e shall be provided to Regional Council.	Where the bore is in a Source Protection Zone, information to confirm compliance with conditions (a) to (e) shall be provided to the Council upon request.
RRMP Rule 5: Feedlots and Feedpads (Permitted)	The land used for the feedlot or feedpad is not located within a registered drinking water supply Source Protection Zone as defined in Schedule SPZ.	The feedpad or feedlot is not located in a Source Protection Zone.

Provision	JWG Recommended Wording	TANK Plan Change v8
RRMP Rule 6: Feedlots and Feedpads (Restricted Discretionary)	Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	The actual or potential effects of the feedlot or feedpad on the quality of source water for Registered Drinking Water Supplies irrespective of any treatment and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water Supplier.
RRMP Rule 12: Stock Feed (Permitted)	Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), the Ruataniwha Plains unconfined aquifer (Schedule IV) <u>or a Source Protection Zone of a registered drinking water supply (Schedule SPZ)</u> which is used for storing stock feed, including silage, and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing stock feed, including silage.	Where the activity is in a Source Protection Zone, information to confirm compliance with conditions (a) to (g) shall be provided to the Council upon request
RRMP Rule 13: Compost, Biosolids, and other Soil Conditions (Permitted)	Any area in the Heretaunga Plains unconfined aquifer (Schedule Va), the Ruataniwha Plains unconfined aquifer (Schedule IV) <u>or a Source Protection Zone of a registered drinking water supply (Schedule SPZ)</u> which is used for storing organic material and when there is a potential for contamination of groundwater by seepage of contaminants, shall be managed in a manner that prevents such contamination. Where the activity occurs in a Source Protection Zone of a registered drinking water supply (Schedule SPZ), the landowner shall provide documentation to the Regional Council that demonstrates compliance with clause (a) prior to the use of that land for storing organic material.	Where the activity is in a Source Protection Zone, the storage or processing of compost or bio-solids and other soil conditions does not exceed < cubic metres > of material.
RRMP Rule 14: Animal Effluent (Controlled)	The storage and discharge of animal effluent is not located within a Source Protection Zone for a registered drinking water supply as defined in Schedule SPZ.	The activity is not within a Source Protection Zone.

Provision	JWG Recommended Wording	TANK Plan Change v8
RRMP Rule 15: Discharge of animal effluent in sensitive catchments (Discretionary)	The discharge of contaminants into air, or onto or into production land, arising from the management of liquid animal effluent, including dairy shed effluent, piggery effluent, and poultry farm effluent <u>in the Source protection Areas shown in Schedule SPZ</u> or in the following catchments as shown in Schedule Vlb.	Insert at end of list: Or in any Source Protection Zone.
RRMP Rule 16: Management of Solid Waste on Production Land (Permitted)	... or over a Source Protection Zone for a registered drinking water supply as shown in Schedule SPZ.	The activity is not located in a Source Protection Zone.
RRMP Rule 37: New Sewage Systems (Permitted)	The discharge shall not occur over the Heretaunga Plains or Ruataniwha Plains unconfined aquifer as shown in Schedule IV <u>or over a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ.</u>	The activity is not located in a Source Protection Zone.
RRMP Rule 40: Discharges from Closed Landfills (Controlled)	Where the activity is located within a Source Protection Zone of a registered drinking water supply the effect of the proposed activity on the quality of source water within the Source Protection Zone and its suitability for drinking water use without treatment, including the potential for the proposed activity to increase the risk of unsafe drinking water being provided to persons and communities supplied by the registered drinking water supply, and the appropriateness of any proposed risk mitigation measures.	The actual or potential effects of the activity on the quality of source water for Registered Drinking Water Supplies and any measures to reduce the risk to the water quality including notification requirements to the Registered Drinking Water Supplier.
RRMP Rule 48: Discharges of Solid Contaminants to Land (Permitted)	There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown I Schedule IV, <u>or within a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ</u> , or within 20 metres of a coastal marine area, except for material extracted from a surface water body associated with the maintenance of legally established structures.	The activity is not located in a Source Protection Zone.

Provision	JWG Recommended Wording	TANK Plan Change v8
RRMP Rule 49: Discharges to land that may enter water (Permitted)	<p>There shall be no discharge within 20 m of any surface water body, or over the Heretaunga Plains or Ruataniwha Plains unconfined aquifers as shown I Schedule IV, <u>or within a Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ</u>, except for material extracted from a surface water body associated with the maintenance of legally established structures.</p> <p>The discharge shall not cause any degradation of existing groundwater quality in confined aquifers in the Heretaunga Plains, and Ruataniwha Plains aquifer systems <u>and in the Source Protection Zone of a registered drinking water supply as shown in Schedule SPZ.</u></p>	The activity is not located in a Source Protection Zone.
New RRMP Rule 62A: Transfer of Permits to take and use water (Controlled)	n/a – was not included in previous draft TANK Plan Change versions.	The quantity, rate and timing of the take including rates of take and any other requirements in relation to any relevant minimum flow or level or allocation limit or drawdown effects, including in relation to any Source Protection Zone for a registered drinking water supply.

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