

Report No.	19-195
Information Only - No Decision Required	

DRINKING WATER

1. PURPOSE

- 1.1. To provide Council with a progress report on drinking-water research undertaken to date as a part of Horizons new drinking water research programme introduced through the Long-term Plan, and outline the next steps for this regional programme.

2. EXECUTIVE SUMMARY

- 2.1. The need for collaboration between agencies involved with drinking-water management was a key finding of the Havelock North Inquiry. Since 2017, following the outbreak of campylobacter in the Havelock North drinking-water supply, Horizons Regional Council has been working in collaboration with city and district councils and the region's Health Boards to improve drinking-water management in the region.
- 2.2. This report provides an update on progress to Council. It includes background information around the management of public drinking-water supplies, reports on progress to date (both regionally and nationally), and outlines the next steps and recommendations for the work programme.
- 2.3. Work completed to date has included an initial stocktake and prioritisation of drinking-water supplies, completed in 2017. An update of this report was recently completed (currently in draft undergoing review) based on work undertaken during 2017-18. A comparison between these reports shows a reduction in the number of high priority water sources where urgent action was required, and an increase in lower priority water sources. This reflects work undertaken by the Councils during the 2017-18 year to address identified issues and improve monitoring and reporting.
- 2.4. The work programme for 2018-19 was expanded through a joint funding model by the Regional, District and City councils. The programme included delineation of drinking-water source protection zones for council-operated drinking-water supplies providing water to more than 500 people and bore-head security inspections of groundwater supplies. Individual reports summarising the findings were compiled for each city/district. Each report contains a summary of recommendations to address identified risks to water source protection areas. While a summary of common recommendations has been provided in this Council report, we recommend reviewing the individual reports for full details.
- 2.5. During 2019-20 we intend to focus on implementing a number of recommended actions to address identified risks to water source areas; and delineating source protection zones for non-council operated supplies providing drinking-water to more than 500 people and any remaining council-operated supplies (i.e. those providing drinking-water to less than 500 people). Work is also underway at Totara Reserve water supply, operated by Horizons Regional Council, with staff investigating options for treatment of this water supply.
- 2.6. A number of council reports have been completed to date (including this Strategy and Policy Committee report), with an annual progress report scheduled for later in the reporting year (June 2020). Links to these reports are provided for the reader.
- 2.7. Nationally, the previous **Water Information New Zealand 'WINZ'** database has been replaced by the new 'Drinking-Water Online' website. Proposed upgrades to the website include the introduction of geospatial maps and integrated reporting dashboards, and improved functionality (data integration) and reporting. A new public-facing website

'Drinking-water Aotearoa' is also proposed to provide the public with information about drinking-water management, receive information about compliance of supplies with the **Drinking Water Standards for New Zealand (DWSNZ)** and Health Act, and allow users to find out about their drinking-water supply based on their address.

- 2.8. Government recently agreed to establish a new drinking-water regulator as an independent Crown entity, who will also contribute to fresh water outcomes by providing central oversight and guidance for the sector's wastewater and stormwater regulatory functions. Associated legislation will be introduced to Parliament in the coming months and is expected to be passed in 2020.
- 2.9. Irrespective of the timeframes and intent of central government, our recommendation is for agencies involved in drinking-water management in our region to establish a co-operative management system to help ensure that the high levels of care and diligence necessary to protect public health are in place.

3. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 19-195.

4. FINANCIAL IMPACT

- 4.1. There are no current financial impacts associated with this item. This report reflects previously endorsed budgets approved as part of Council's annual planning and long term planning processes, and identified work programmes delivered as part of the Science Operational Plan.
- 4.2. It is noted that the **Territorial Authorities (TA's)** have contributed co-funding and time in-kind to this work programme, which has increased the scale and scope of work completed to date.

5. COMMUNITY ENGAGEMENT

- 5.1. This is a public item. Information around the regional drinking-water research programme was made available to the public as part of Horizons State of Environment report, released in May 2019.

6. SIGNIFICANT BUSINESS RISK IMPACT

- 6.1. No significant business risk has been identified.

7. BACKGROUND

Roles and Responsibilities

- 7.1. There are a number of different organisations with responsibilities for managing and monitoring potable drinking-water in New Zealand, including regional councils, district councils, and regional public health boards. The over-arching aim of the regional drinking-water work programme is to ensure these legislative requirements are met, and that the relevant organisations are working together proactively to improve drinking-water supply management in the Horizons Region.
- 7.2. Regional councils have responsibilities pertaining to water quality under both the **Resource Management Act (RMA)** and regulations set out in the **National Environmental Standard for Sources of Human Drinking Water (NES)**. With respect to water quality under the RMA, regional councils are responsible for the use of land for the

purposes of maintaining and enhancing the water quality of water in water bodies; and the discharge of contaminants into or onto land, air or water, and discharges of water into water. Drinking-water suppliers require a resource consent from the regional council to take water and as part of the determination of that consent, the regional council must have regard to the relevant provisions of the NES.

- 7.3. The functions of TA's (District and City Councils) are narrower than those of Horizons', however they are responsible for creating and implementing district plans, which must not be inconsistent with regional plans. TA's also have responsibilities as consent holders for water take consents and must comply with the conditions of those consents. As drinking-water suppliers, TA's are required to manage and monitor drinking-water supplies to ensure the supply complies with the **Drinking-water Standards for New Zealand (DWSNZ)**, take reasonable steps to protect both the source of this supply from contamination and the supply system from pollution, and prepare and implement a **Water Safety Plan (WSP)**.
- 7.4. Under the Health Act, **drinking-water assessors (DWA's)** have primary responsibility for monitoring and enforcing compliance of drinking-water suppliers with the Health Act, DWSNZ, and water safety plans.

8. DISCUSSION

Stocktake and prioritisation of drinking-water supplies 2017 and 2018

- 8.1. An initial stocktake of public water supplies (and their sources) in the Horizons Region, and assessment of risk was completed in December 2017 by independent consultancy **Pattle Delamore Partners (PDP)**, funded by Horizons, with in-kind support from MidCentral Health and Territorial Authorities.
- 8.2. Information was initially based on the 2016-17 compliance reports, and was recently updated to incorporate 2017-18 compliance information.
- 8.3. Water supplies and sources are ranked from high (Priority 1) to low (Priority 3) based on the following information: *E. coli* or protozoa detection or breach of any **maximum acceptable value (MAV)** set in the **Drinking-Water Standards New Zealand (DWSNZ)**; the treatment systems in place or lack of treatment; whether the source is low risk as defined by the DWSNZ (groundwater sources only); land use activities surrounding the water intake; flooding risk; and the presence of an approved Water Safety Plan (WSP).
- 8.4. The most recent report shows a significant reduction in the number of Priority 1 supplies/sources and an increase in the lower priority (Priority 2 and 3) supplies/sources between 2017-18 (Figures 1 and 2) and (Table 1). For the 2018 assessment:
- Priority 1: *Action is required as soon as practicable to improve the management of the water supply.* High priority supplies have reduced from 13 supplies (16 sources) identified in 2017 to three supplies (3 sources) including: Levin, Feilding (surface water source) and Dannevirke (see Table 1 and Table 2 for details).
 - Priority 2: *A heightened standard of vigilance and conservative management is required.* These supplies have increased from 9 supplies (20 sources) in 2017 to 15 supplies (27 sources).
 - Priority 3 sites: *Maintenance of current management practices is expected to minimise contamination risks.* These supplies increased from 7 supplies (7 sources) in 2017 to 10 supplies (10 sources).
 - Three sites (four sources) are presently unknown. These sites include Taumarunui (Whanganui River for Matapuna) and National Park (Mangahua Stream) in the Ruapehu District, and the Marton supplementary supply (Calico and Tutaenui bores) which are currently offline.

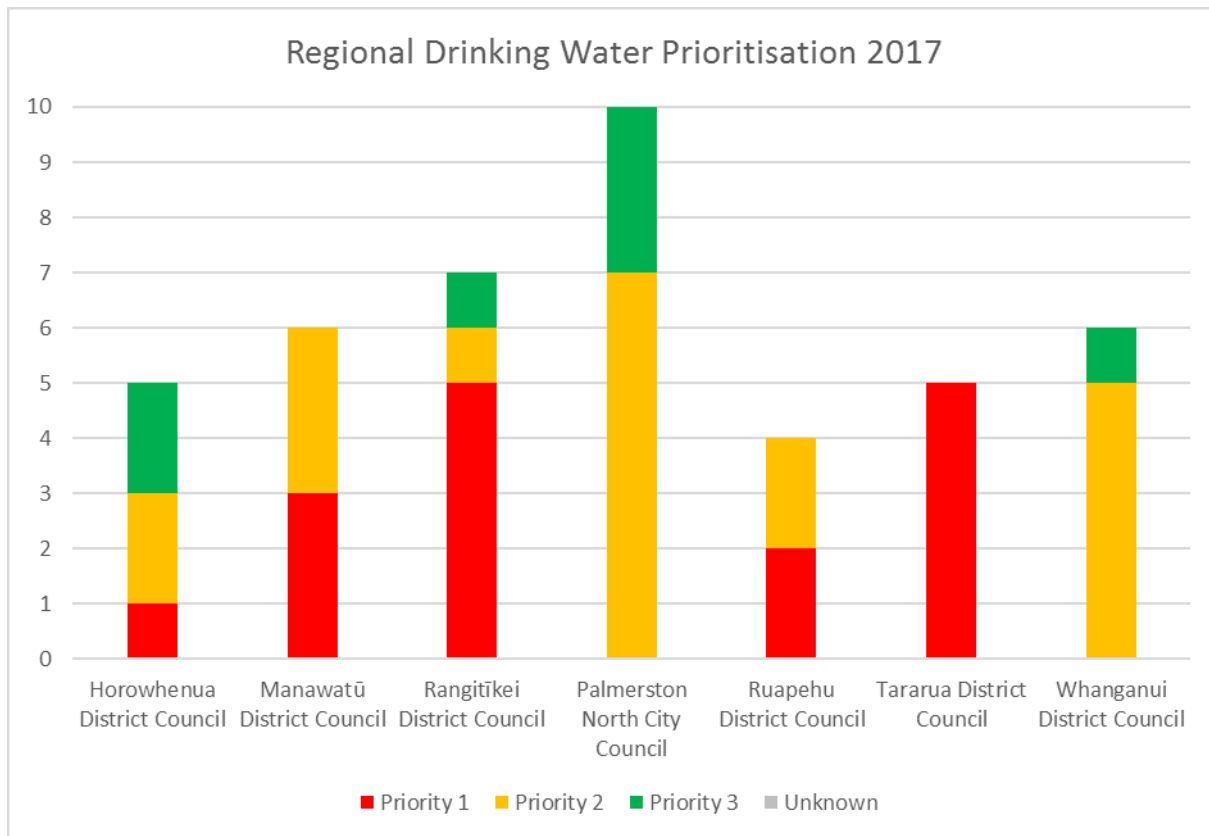


Figure 1 Regional Drinking-water Prioritisation 2017, based on risk to the water source.

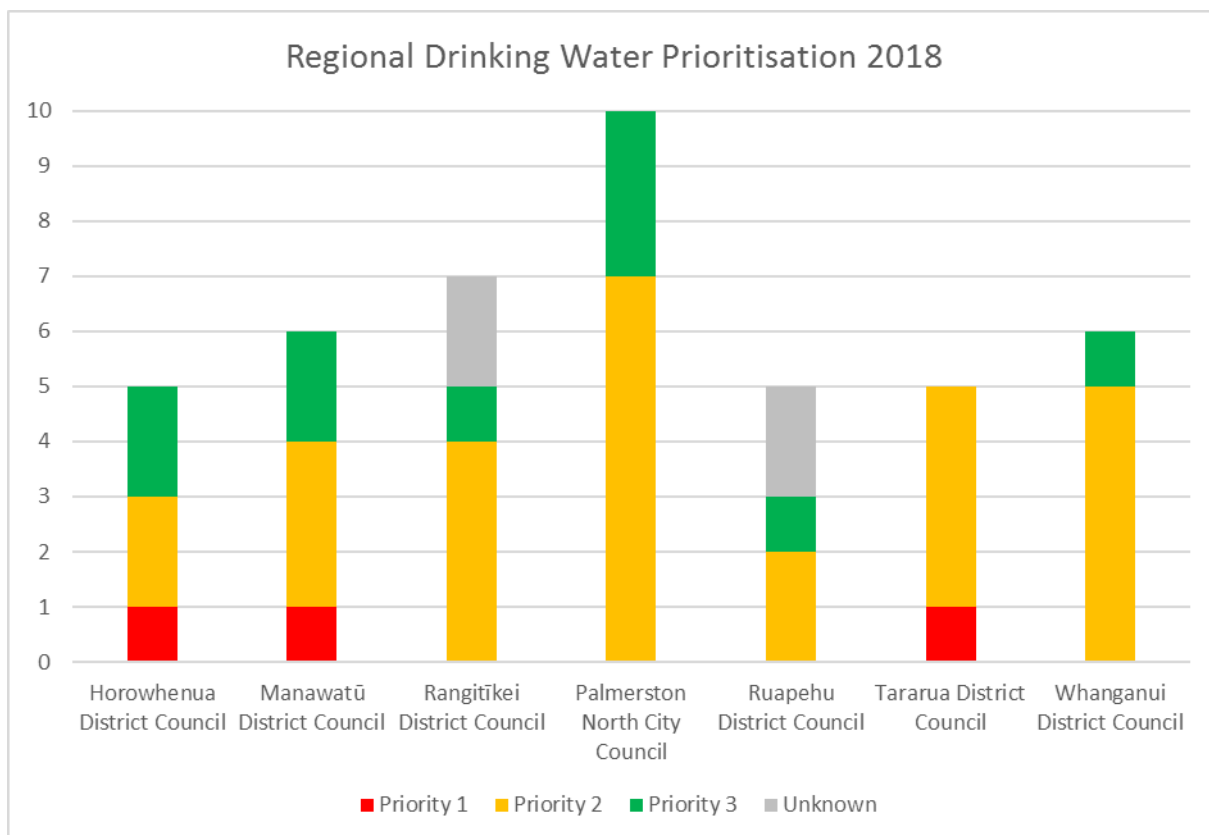


Figure 2 Regional Drinking-water Prioritisation 2018, based on risk to the water source.

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Table 1 Prioritisation status of council-operated drinking-water sources in the Horizons Region by district. The 2018 prioritisation is shown with the 2017 prioritisation in brackets. Priority 1 sites (those identified as requiring action) from the most recent stocktake are also outlined in the table.

Council	Prioritisation 2018 (2017 in brackets)				Priority 1 Sources
	Priority 1	Priority 2	Priority 3	Unknown	
Horowhenua District Council	1 (1)	2 (2)	2 (2)	0 (0)	Levin
Manawatū District Council	1 (3)	3 (3)	2 (0)	0 (0)	Feilding (surface water source only)
Rangitīkei District Council	0 (5)	4 (1)	1 (1)	2 (0)	
Palmerston North City Council	0 (0)	7 (7)	3 (3)	0 (0)	
Ruapehu District Council	0 (2)	2 (2)	1 (0)	2 (0)	
Tararua District Council	1 (5)	4 (0)	0 (0)	0 (0)	Dannevirke
Whanganui District Council	0 (0)	5 (5)	1 (1)	0 (0)	
TOTAL	3 (16)	27 (20)	10 (7)	4 (0)	

Table 2 Schedule of proposed actions for Priority 1 Sites

Supply	Cause of high priority rating	Action
Horowhenua District Council - Levin	Failed protozoa compliance, turbidity not demonstrated (81% of data compliant), but improved through year as plant performance improved. Surface water source supplying more than 5,000 people.	Upgraded treatment plant (7 log treatment plant upgrade currently underway)
Manawatu District Council - Feilding	Failed for bacterial and protozoa compliance, failed for continuous monitoring at Almadale TP because compliance could not be demonstrated in monitoring data.	Improved monitoring system.
Tararua District Council - Dannevirke	Failed for bacteria and protozoa compliance. Insufficient number of samples for <i>E. Coli</i> . Additionally, 12 months of treatment plant monitoring not available for assessment.	Improved monitoring and sampling routine.

Work Programme 2018-19 findings and recommendations

8.5. The 2018-19 work programme was expanded through a co-funding model between Regional, City and District Councils. The programme sought to further understanding of risks posed to communities and provide information around the security of council-operated drinking-water supplies so that, where necessary, improvements can be made. The scope the work programme included:

- (1) the delineation of source protection zones for Council-operated water supplies serving 500 people or more;
- (2) bore-head security inspections for groundwater sources of these supplies; and

- (3) an updated risk assessment and gap analysis of these supplies to incorporate the latest information. The work programme was co-funded by Horizons and the region's TAs.

Source protection of drinking-water sources

- 8.6. The importance of protection of water supplies at their source was identified during the Havelock North Inquiry, and subsequently in the 'New Zealand Drinking-water Safety Plan Framework' released in December 2018. The 2018-19 work focussed on source protection for council-operated drinking-water sources supplying more than 500 people, and included delineation of three source protection zones (Zones 1 to 3) for a total of 31 water supplies, which included 44 water supply sources.
- 8.7. A site-specific approach was applied to delineate the zone of contribution to surface water sources and groundwater sources. The following three source protection zones are defined for the water supply takes:
- Intake Zone (SPZ1), which is the area in the immediate vicinity of the intake structure;
 - Intermediate Zone (SPZ2), for surface water intakes this is a zone where contaminants can reach the supply in 8 hours; for groundwater intakes this is a zone where microbiological contaminants could reach the intake at harmful concentrations; and
 - Catchment Zone (SPZ3), defines the remainder of the catchment that contributes water to the intake.
- 8.8. Recommended actions to improve or ensure the ongoing security of each water source have been identified for the three protection zones, and individual reports have been prepared for each council summarising the findings. A broad summary of these recommendations was provided in a [report](#) to Council's Strategy and Policy Committee on 12 June 2019.
- 8.9. Each report includes several recommendations that are common to all areas, as well as some recommendations that are specific to individual sources. These reports should be consulted for a more comprehensive understanding of source protection findings and recommendations.

Bore-head security for groundwater sources

- 8.10. Bore-head security inspections were also completed for those supplies sourced from groundwater. Validation of the desktop-based catchment risk assessments was carried out in the field at the same time as the bore-head security inspections.
- 8.11. In general, the inspections showed that bore heads for larger groundwater supplies in the region were in reasonable condition, without significant issues identified that could compromise the safety of the source. However, in some cases issues were identified including:
- Old and disused bores within close proximity to a supply source that were not properly decommissioned;
 - An absence of 'as built' plans for bore heads, making identification of some pipework and flow movements at the sources difficult and also difficulties in identifying the seal around the bore casing; and
 - Reliance on treatment of water where there were potential issues around the bore head, which provides the first barrier to potential contamination of the water source.
- 8.12. The findings of these inspections have been incorporated into the suite of source protection management reports. We note that some inspections identified actions to improve the protection of bore-head security for groundwater supplies and recommend that councils address these recommendations as a priority.

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Stocktake and prioritisation update

8.13. Finally, an update of the initial stocktake and prioritisation report, based on the 2017-18 compliance reports was also provided, with the results reported in the previous section of this report (see section 8.0).

Work Programme 2019-20Source protection

8.14. During 2019-20, further source protection delineation is planned, focussing on non-council operated supplies providing water to more than 500 people, as well as council-operated drinking-water supplies providing drinking-water to less than 500 people. The proposed water supplies are shown in Table 3 (below).

8.15. In 2019-20 this activity will be funded by Horizons, with in-kind support (staff time) required from Horizons, MidCentral Health and Territorial Authorities.

Table 3 Proposed water supplies for source protection delineation for the 2019-20 work programme which includes a mixture of council-operated and non-council operated supplies.

District	No. of Supplies	No. of Sources	Supplies
Palmerston North City	6	12	Brandlines Limited, Goodman Fielder Meat Division (Mainland Meats), Longburn Adventist College, Massey University, Ministry of Defence (Linton), Fonterra (Longburn)
Whanganui District	4	4	Whanganui District Council (Fordell, Maxwell and Mowhanau) and Dept of Corrections (Kaitoke)
Horowhenua District	3	4	Horowhenua DC (Himatangi Estate), Tatum Park Holiday Conference Centre, Te Moana Enterprises Ltd
Manawatu District	8	8	Manawatu District Council (Kiwitea, Halcombe/Stamway, Waituna West, Raumai Reserve, Rongotea), Horizons Regional Council (Totara Reserve), Ministry of Defence (Ohakea), Oroua No.1 Water Scheme
Ruapehu District	8	13	Ruapehu District Council (Ohura and Owango), Ministry of Defence (Waiouru), Ruapehu Alpine Lifts (Turoa and Whakapapa Skifields), Piriaka Community Group Ltd., Kakahi Water Supply, Raurimu Residents and Ratepayers
Rangitikei District	3	3	Rangitikei District Council (Hunterville and Mangaweka), Kaupeka Ki Runga Trust (Moawhango)
Tararua District	6	6	Tararua District Council (Akitio, Eketāhuna, Noreswood, Pongoroa), Fonterra (Pahiatua), Pleckville Rural Water Supply Committee

Addressing identified actions to improve drinking-water security

8.16. Work to address recommendations outlined in the district source protection zone (SPZ) reports completed in 2018-19 is also planned. This includes initial contact with landowners to inform them that they are located within a SPZ (applies to those located in SPZs 1 and 2). This will be co-ordinated by Horizons on behalf of all councils however, this should not deter water supply managers from engaging directly with land owners where necessary, particularly where existing relationships are already in place.

8.17. Horizons will also initiate a groundwater bore survey programme to identify and address any non-council owned bore-head security issues within SPZs 1 and 2. It is noted that the scope of this activity in relation to the size of the task is yet to be scoped. An appropriate process will also be initiated by Horizons to ensure city and district councils are informed of

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any applications for bore drilling consents within SPZs 1 and 2, and any known land use change in all zones.

- 8.18. Further actions will be prioritised and actioned where possible within existing budgets, for example prioritising riparian planting and stock fencing within SPZ1, water quality sampling, and reviewing farm management plans.
- 8.19. We also recommend that Councils review their individual source protection report to determine any other recommended actions that need to be implemented. For example, where identified bore-head security issues should be addressed, and additional water quality sampling carried out.

Totara Reserve Water Supply

- 8.20. Horizons' Regional Park and only managed public water supply. The supply currently has a 'boil water' notice as water is sourced from a shallow, riparian bore and is untreated. Council is currently assessing options for treatment and expects to advance this work inside this financial year. This activity is funded via Horizons.

Sharing of drinking-water data and information

Council reporting

- 8.21. Progress around the regional drinking-water programme is regularly reported to Horizons Regional Council. Council reporting activities rely on in-kind support (staff time) from Horizons, Manawatū District Council (as project sponsor) and other Territorial Authorities, and MidCentral Public Health Service.
- 8.22. Reports have been provided to:
- [Regional Council](#), 28 November 2017
 - [Environment Committee](#), regular progress reports from 2017 to 2019.
 - [Strategy and Policy Committee](#), 12 June 2019.
 - Strategy and Policy Committee, 10 Dec 2019.
 - A further annual progress report is also scheduled for June 2020.

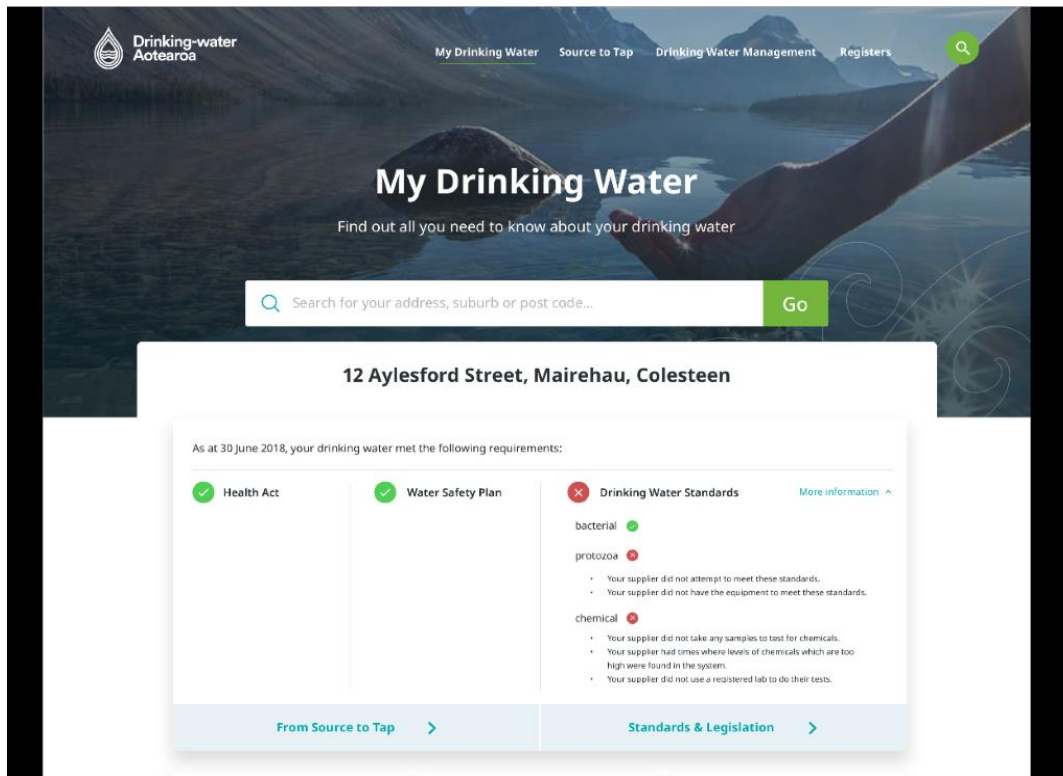
Drinking-water Online

- 8.23. The new Drinking-Water Online website was launched in late 2017, replacing the previous WINZ database. Access is via a login and information on supplies, sources, plants, zones and water carriers is available, along with information about water quality testing and compliance information. A number of the Councils including Manawatū, Rangitikei, Whanganui and Palmerston North have granted Horizons permission to access this information directly from the website rather than having to request information from council staff. This encourages open and transparent sharing of information about the region's water supplies.
- 8.24. Further upgrades to the Drinking-water Online website are proposed, including: geospatial maps of sources, plants and zones; integrated reporting dashboards; and the ability for Drinking-water Assessors to update supply structures directly.
- 8.25. Additional functionality is proposed and includes rolling compliance reviews throughout the year, which can be aggregated for the annual survey to reduce the effort required during the reporting period; and better integration to import data directly from other systems.

Drinking-Water Aotearoa Website

- 8.26. At a national level, work is also currently underway to create a new public-facing website "Drinking-Water Aotearoa", to share the results of the annual report on drinking-water quality.

- 8.27. It is proposed that the website will provide the public with information about drinking-water management, receive information about compliance of supplies with the DWSNZ and Health Act, and allow users to find out about their drinking-water supply based on their address.



Regional data holdings and information sharing

- 8.28. As a part of the initial work programme in 2017, it was identified that a shared information portal or data sharing workspace was necessary for Councils, and the Health Board to share information however, the proposed changes may negate the need for this. In the meantime, information sharing between our agencies should continue. A key dataset for Councils is the GIS-based source protection zones which Horizons currently holds and is available to the Councils on request.

Drinking-Water Authority

- 8.29. On 30 September, the Government agreed to establish a new drinking-water regulator as an independent Crown entity, who will also contribute to fresh water outcomes by providing central oversight and guidance for the sector's wastewater and stormwater regulatory functions.
- 8.30. An Establishment Unit is being created within the Department of Internal Affairs, with support from the Ministry of Health and the Ministry for the Environment, to design and operationalise the new regulator. This work includes a range of planning and pre-establishment tasks to get the regulator up and running. Associated legislation will be introduced to Parliament in the coming months and is expected to be passed in 2020.
- 8.31. According to the Government, the new regulator will:
- deliver a strengthened approach to drinking-water regulation and have a clear focus on drinking-water safety;
 - have an organisational structure that prioritises drinking-water regulation;
 - help build and maintain public confidence in drinking-water safety;

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- build capability among drinking-water suppliers by promoting education and training;
- ensure that tikanga Māori, kaitiakitanga and Te Mana o te Wai with regard to drinking-water will be enabled and supported; and
- contribute to improved environmental outcomes for fresh water by providing central oversight and guidance for the sector's wastewater and stormwater regulatory functions.

8.32. Irrespective of the timeframes and intent of central government, our recommendation is to establish a structured working arrangement between our Councils, where roles and responsibilities are agreed and a clear, prioritised work programme is outlined.

Structured Working Arrangement

8.33. The aim is to establish an ongoing co-operative management system across Horizons, the Territorial Authorities and the Drinking-Water Assessors to ensure that the high levels of care and diligence necessary to protect public health are in place for the future.

8.34. Developing a Memorandum of Understanding and/or Terms of Reference to clarify roles and responsibilities and clarify the ongoing structure and function of this cross-organisation work programme will be an initial first step. In addition to building capability by providing technical support to staff across our agencies, it is envisaged that the group will work together to provide a more cohesive approach to drinking-water management in our region.

8.35. If this progresses, this activity will need to be funded by support from Horizons, MidCentral Health and Territorial Authorities.

9. CONSULTATION

9.1. No community consultation has been carried out as part of this report. However, staff did meet with regional Chief Executives on 3 December 2019 to provide an update on the regional programme, overview progress to date, and discuss the next steps outlined in this Council report.

9.2. Staff continue to meet and collaborate with council asset managers and MidCentral Health drinking-water assessors around regional drinking-water management.

10. TIMELINE / NEXT STEPS

10.1. Key focus areas for the programme in over the next 12 months includes:

- addressing the recommended actions identified in each city/district source protection report, as summarised above;
- delineation of source protection zones for smaller council-operated supplies (those serving less than 500 people) and non-council operated supplies serving 500 people or more;
- improved security of Totara Reserve water supply; and
- further work to progress data and information sharing around drinking-water supply management through the establishment of an on-going co-operative management system.

11. SIGNIFICANCE

11.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Abby Matthews

SCIENCE AND INNOVATION MANAGER

Jon Roygard

GROUP MANAGER NATURAL RESOURCES & PARTNERSHIPS

ANNEXES

There are no attachments for this report.