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Government Inquiry into Havelock North Drinking Water: Stage II

Infrastructure New Zealand is the peak industry body for the infrastructure sector and promotes best practice in national infrastructure development through research, advocacy and public and private sector collaboration. Infrastructure New Zealand members come from diverse sectors across New Zealand and include infrastructure service providers, investors and operators.¹

We support the Inquiry into Havelock North drinking water (the Inquiry) and welcome this opportunity to submit.

Our recent report drawing on learnings from a delegation to Scotland has already been submitted to the Inquiry. This submission relates findings from Scotland and other Infrastructure New Zealand research to the Havelock North experience.

Havelock North failings were across the sector

We have read the Inquiry's Stage 1 report which provides comprehensive analysis of what went wrong in Havelock North in August 2016 and why.

A particular strength of the Stage 1 report was the attribution of responsibility for the Havelock North water crisis.

We note that the Hawke's Bay Regional Council failed to meet its responsibilities under the Resource Management Act 1991 (RMA). (Para 1.10.e)

We also note that the Hastings District Council did not embrace or implement the high standard of care required of a drinking water provider. (Para 1.10.h)

¹ This submission represents the views of Infrastructure New Zealand as a collective whole, and may not necessarily represent the views of individual member organisations.

We note that the local Drinking Water Assessors failed to require the District Council to respond to issues it identified through the course of its activities. (Para 10.1.m)

And we note that the technical advisor to the District Council failed competently to assess and report on bore-head security. (Para 10.1.o)

In summary, the Inquiry's Stage 1 report highlighted failings across all organisations involved in the provision of safe drinking water to Havelock North residents.

That is, the water crisis was not the result of misfortune or unforeseeable events, but of avoidable problems relating to the organisations and personnel involved in water supply in the Havelock North area.

Why did the entities responsible for water supply in Havelock North fail in one or more of their duties?

One explanation for the Havelock North water crisis is the presence of issues unique to the organisations and personnel responsible for water supply in the Hawke's Bay. Under this scenario, New Zealand's system of supplying and administering water supply is basically sound, but failings specific to the organisations and personnel in Hawke's Bay led to the crisis.

An alternative explanation is that issues which are not unique to the Hawke's Bay led to the crisis. Under this scenario, New Zealand's arrangements for supplying and administering safe drinking water are weak. It is these arrangements which should shoulder the majority of the blame for the crisis because they permitted a situation where relatively small and not unusual errors by key actors could lead to such a crisis.

Water service problems are systemic

There is no doubt that the root cause of the Havelock North drinking water crisis of August-September 2016 is systemic in nature.

New Zealand's arrangements for supplying, monitoring and delivering safe drinking water to residents are inadequate and these arrangements allowed human and institutional error in Havelock North to materialise as a public health crisis.

The evidence that New Zealand's water supply arrangements are flawed is clear from annual Ministry of Health reporting.

In their latest report,² the Ministry of Health finds that 20 per cent of the 3.8 million New Zealanders linked to registered water supplies received water which did not meet all standards.

Over 97 per cent of the networked population received water which met the bacteriological standards, but even this high level still left approximately 100,000 New Zealanders receiving water which did not meet bacteriological standards.

² Ministry of Health, Annual Report on Drinking Water Quality, 2015-2016.

It is worth further noting that supplies which met standards “part-way” through the monitoring period are deemed to have achieved the standard.

That is, it is likely that more than 100,000 people received drinking water over the 2015-2016 year which did not meet bacteriological, let alone protozoal and chemical, standards.

It should be acknowledged that standards are improving. Stronger regulation implemented in recent years has required greater compliance with drinking water standards.

In 2010, for example, consultancy firm LECG estimated that almost 200,000 people were at risk of bacteriological and protozoal disease.³

LECG then estimated that approximately 35,000 people suffer acute gastrointestinal illness (AGI) contracted from networked drinking water due to non-compliance with the Standards.

While we are confident this number has since reduced, we are equally confident that many thousands of New Zealanders, in Havelock North and beyond, are exposed to unsafe drinking water every year.

It is not uncommon to receive unsafe networked drinking water in New Zealand and to suffer illness as a result.

Why is it acceptable to continue to deliver unsafe drinking water?

The reason why a significant number of New Zealanders receive unsafe drinking water and become unwell as a result is clear: cost.

To bring supplies up to standard requires investment. For many of the organisations responsible for water supply, i.e. territorial authorities, the level of investment required is either unaffordable, deemed not worth the risk or not supported by the community (i.e. opposition to rates increases prevents investment).

The decision is thus made, willingly or otherwise, to continue to provide sub-standard drinking water.

Tolerance of this situation is a consequence of the actors involved in water delivery and the arrangements for monitoring and enforcing standards.

Local councils, who provide water, are able to point to the impost on residents of maintaining acceptable levels of service.

Regional councils, who monitor water sources, are under-resourced and under pressure to balance competing water needs across complex hydrological systems.

Performance monitoring by public health institutions is not easily available to the public and transgressions are tolerated.

³ LECG, Cost benefit analysis of raising the quality of New Zealand networked drinking water, June 2010.

Every function responsible for delivering water to consumers is managed by public agencies conflicted by the need to deliver safe drinking water at the lowest possible cost.

At every point in the water supply chain, a culture of acceptance to poor levels of service is accepted across wide parts of New Zealand; there is no other way to explain the consistent an ongoing failure to deliver water which meets national standards as set out in annual Ministry of Health reporting.

Under these circumstances it is unavoidable that from time to time otherwise minor mistakes will be made which lead to outbreaks similar to that seen in Havelock North.

Under current arrangements, New Zealanders will continue to receive substandard water and occasional outbreaks of illness should be expected.

Addressing systemic problems in water service delivery

For outbreaks such as that witnessed in Havelock North to be avoided (to the greatest extent reasonable), changes to the existing system of delivering, monitoring and ensuring safe drinking water are required.

Ministry of Health reporting provides insight into how this can be accomplished.

Overall achievement of water supplies against standards in the latest year (broadly replicated in preceding years) was 80 per cent (i.e. 80 per cent of the networked population received fully compliant water).

However, in “large” zones (supplies serving populations of 10,000 or more) achievement was almost 90 per cent.

In medium zones (5000-10.000) population, achievement was 65 per cent.

In minor zones (500-5000 population), achievement was 45 per cent.

In small zones (100-500), achievement was 25 per cent.

This data indicates that scale has an impact on the quality of water supply.

Part of the reason for this may be that larger supplies carry higher political risks and thus receive greater focus and investment.

But the greater part of the explanation is that large supplies tend to be managed by larger organisations and larger organisations are able to maintain higher levels of expertise and to allocate and reallocate capital to high priority areas when required.

In both cases, scale facilitates higher levels of service which in the delivery of safe drinking water is of primary importance.

Enabling sufficient scale to deliver quality water services is not sufficient in and of itself. Ministry of Health monitoring shows that even large providers are often challenged to meet standards.

Given the modest size of even “large” zones in the Ministry of Health analyses, there may be some value in the Inquiry understanding whether service levels are materially higher in areas serving 50,000 or 100,000+ populations.

In any case, a second requirement of an improved water service system for New Zealand is to strengthen enforcement of standards so that breaches and transgressions, once identified, are addressed.

New Zealand’s water monitoring is out of step with international best practice because of the large number of monitoring agencies and the general lack of transparency of their findings.

In Scotland, for example, environmental monitoring is performed by the Scottish Environmental Protection Agency (SEPA), water quality is monitored by the Drinking Water Quality Regulator and price by the Water Industry Commission for Scotland.

The Scottish approach carries several advantages.

First, scale. Just as scale facilitates the development and application of expertise to service levels, so it enables expertise in monitoring and enforcement. The Scottish approach sees each category of regulation delegated up to the national level, allowing a concentration of skills and expertise in each national agency.

Second, focus. Each regulator’s sole duty is to manage that single aspect of water regulation across the country and is not distracted by competing activities and objectives.

Third, independence. Scottish regulators are public but independent of ministers and local government. Their job is solely to monitor and enforce and in this way conflicts of interest are limited.

In contrast, the New Zealand approach sees environmental monitoring expertise dispersed across 18 regional authorities, constraining professional development, limiting experience and reducing the potential for continual improvement.

Several regional authorities (unitary authorities) are also water providers, creating the potential for conflict of interest within organisations.

There is no price regulation of water services in New Zealand. Councils (or their providers) are required to deliver services at cost which, while apparently rendering price regulation unnecessary, also prevents benchmarking and comparisons across New Zealand. Many councils do not know how much water service provision costs and cannot know whether or not they are delivering an efficient service.

Drinking water quality regulation is overseen by a government department. The absence of independence, such as that experienced by the Commerce Commission, Electricity Authority and Environmental Protection Authority, reduces the influence of the regulating body. Public awareness of the Ministry of Health’s reporting is extremely poor and would be improved if published annually by an expert body with the ability to issue fines or exercise other powers of enforcement.

With the exception of Watercare in Auckland and, to a limited extent, Wellington Water, no water authority in New Zealand is focused solely on their water function. Regional and district councils and the Ministry of Health undertake multiple activities of which water functions are one.

Wastewater provision

Given the intertwined nature of drinking water supply and wastewater provision and the fact that these two services are in almost all circumstances managed as a single system, it is necessary to briefly emphasise that water service problems in New Zealand are not limited simply to drinking water.

Territorial authorities are just as challenged to deliver quality wastewater services. The consequences of service failure tend to be less overt, but may over the longer term be more acute.

Most obviously, failure to adequately treat wastewater results in millions of litres of raw sewerage leaking into natural environments every year.

This is currently considered acceptable across many parts of the country. For example, 2016 saw the completion of Greymouth's first wastewater treatment plant. For 100 years, raw sewerage of Greymouth has been discharged directly into the Grey River.

The reason for Greymouth's long wait and the reason why a number of systems continue to discharge raw sewerage into the natural environment is obvious: cost. Building and maintaining wastewater treatment facilities is expensive and the local population is too small and too constrained to be capable (and desiring) of investing in an adequate scheme.

In addition to ongoing discharge of raw sewerage, councils are often challenged to procure a wastewater treatment plant. For many smaller councils, such an activity will likely be the largest and most complex project they will ever purchase.

Consequently, issues of budget overruns and poor performance are frequent as small, inexperienced authorities struggle to comprehend the complexity of asset purchases.

Whanganui's recent experience with its wastewater plant purchase is indicative.

What these and other examples highlight is a sector which is under-resourced, both in labour and financial capacity, and struggling to meet the expectations of residents in the 21st century.

General investigations, such as the Auditor General's finding that councils will underfund depreciation by \$6-7 billion over the next decade,⁴ are as frequent as boil water notices and sewerage discharges into the natural environment.

The arrangements for the water sector are failing and this Inquiry provides a unique opportunity to be candid about the challenges facing councils and water provision.

⁴ Auditor General, Water and Roads: Funding and Management Challenges, 2014.

Conclusion

New Zealand's water sector arrangements are failing and it is this systemic, national failure which is ultimately responsible for the water crisis in Havelock North.

This fact does not exonerate actors involved in the Havelock North crisis, but better systems are available and, if in place, would have prevented the outbreak of August-September 2016.

Recommendations

1. Investigate an appropriate scale for water service delivery in Hawke's Bay and wider New Zealand and report findings to the Government.
2. Transfer water supply and wastewater activities from territorial authorities to locally owned, water service providers with capacity to raise debt and prioritise investment independent of council owners.
3. Transfer environmental monitoring of water to the EPA from regional authorities.
4. Establish a central independent water price regulator with the power to require councils to provide water cost provision information for regular benchmarking.
5. Establish a specialised central drinking water quality regulator independent of the Ministry of Health.