MANATŪ HAUORA
MINISTRY OF HEALTH

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27 July 2022

John Holyoake
Chief Executive
Western Bay of Plenty District Council
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Tēnā koe Mr Holyoake

Decision in relation to fluoridation direction

Thank you for responding to my letter of 3 May 2022. I have considered the information you have provided, alongside further information I am required to consider under section 116E of the Health Act 1956 (the Act). I have also received and considered advice from the Director of Public Health.

Informed by the matters I am required to consider, I have decided to exercise my statutory powers under section 116E of the Act to direct you to fluoridate the Athenree and Wharawhara drinking water supplies in your region.

In accordance with section 116I of the Act, you are required to ensure that by 31 July 2025 you are fluoridating at the optimal levels (between 0.7ppm to 1ppm, parts per million) at the Athenree supply and the Wharawhara supply. Contravening these requirements, or permitting these requirements to be contravened, constitutes an offence under section 116J of the Act.

Fluoridation of the Athenree and Wharawhara drinking water supplies is an important step in improving the oral health of your community, and it is my intention that Manatū Hauora (the Ministry of Health) will work constructively with you to implement these important changes.

In reaching my decision to issue this direction to you, I considered the scientific evidence on the effectiveness of adding fluoride to drinking water in reducing the prevalence and severity of dental decay. I am satisfied that community water fluoridation is a safe and effective public health measure that significantly reduces the prevalence and severity of dental decay. In reaching this conclusion, I considered: *Water fluoridation to prevent tooth decay* (Cochrane Collaboration 2015), *Health effects of water fluoridation: A review of the scientific evidence* (PMCSA and Royal Society Te Apārangi 2014) and *Fluoridation: An update on evidence* (PMCSA 2021).

In reaching my decision, I also considered whether the benefits of adding fluoride to the drinking water outweigh the financial costs, taking into account: the state or likely state of the oral health of your community served by the Athenree and Wharawhara supplies; the number of people who are reasonably likely to receive drinking water from these

supplies; and the likely financial cost and savings of adding fluoride to the drinking water of these supplies, including any additional financial costs of ongoing management and monitoring.

I am satisfied that the benefits of introducing community water fluoridation across the Athenree and Wharawhara drinking water supplies outweigh the financial costs of doing so. In reaching this conclusion, I gave weight to the following:

- the Athenree and Wharawhara communities would each receive significant benefit, through improvement to the state of its oral health, because fluoridation of each drinking water supply would significantly reduce the prevalence and severity of dental decay in its community

- approximately 5,125 and 5,700 people are reasonably likely to receive drinking water from the Athenree and Wharawhara supplies, respectively

- the likely financial cost and savings of adding fluoride to drinking water for the Athenree and Wharawhara supplies, taking into account the estimated capital and operational costs of implementing the measure that you provided for each supply.

My decision-making process included inviting written comment from Western Bay of Plenty District Council and having regard to the comments I received. Below I summarise and respond to the comments I received:

- the estimated capital cost of introducing fluoridation for the Athenree supply is $286,000. The estimated ongoing management and monitoring costs are $26,000 per annum.

- the estimated capital cost of introducing fluoridation for the Wharawhara supply is $280,000. The estimated ongoing management and monitoring costs are $29,000 per annum.

- the timeframe by which Western Bay of Plenty District Council would be able to comply with a direction for the Athenree and Wharawhara drinking water supplies is 24 – 36 months.

As part of considering whether to issue a direction to fluoridate, I considered the cost estimates you provided for each supply. I also accept the timeframe you specified by which you could comply with a direction for each supply. This is reflected in the compliance date stated earlier in this letter.

Appendix 1 presents a more extensive summary of the information that informed my decision-making, including the advice I received and considered from the Director of Public Health.

Funding

Manatū Hauora is making capital works funding available for local authorities that have been issued a direction to fluoridate, and that begin work to fluoridate drinking water supplies by the end of 2022. It will shortly provide detailed information about the application process for this funding to cover fluoridation-related capital costs.

Communicating this 'direction to fluoridate' decision

Manatū Hauora is responsible for communicating this decision at a national level. Please note too, that as required under section 116E(5) of the Act, all direction letters will be published on the Manatū Hauora website in due course.

Next steps

An official from Manatū Hauora will contact your team in the coming weeks to discuss any needs you might have for further clarity or additional information. Manatū Hauora recognises that this is a busy time for local authorities and wishes to work with you to make the process as straightforward as possible for your team.

Nākū noa, nā

Dr Ashley Bloomfield
Te Tumu Whakarae mō te Hauora
Director-General of Health

Appendix 1:

Western Bay of Plenty District Council: Athenree and Wharawhara water supplies

Analysis	
Criterion	**1. Scientific evidence on the effectiveness of adding fluoride to drinking water in reducing the prevalence and severity of dental decay**
Evidence	The Ministry has considered the following information: • Fluoridation: an evidence update | Office of the Prime Minister's Chief Science Advisor (June 2021) • Health effects of water fluoridation: A review of the scientific evidence (August 2014) Office of the Prime Minister's Chief Science Advisor and Royal Society of New Zealand Te Apārangi • Water fluoridation to prevent tooth decay | Cochrane Collaboration (June 2015) Fluoridation: An update on evidence (PMCSA 2021) examines new evidence on water fluoridation published since the Royal Society Te Apārangi report in 2014. The Cochrane Collaboration's water fluoridation to prevent tooth decay (2015) is a high-quality scientific meta-analysis of a large number of high-quality research studies conducted over a long period worldwide.
Analysis	The sources of evidence referred to above are reviews that examine substantial bodies of research generated over periods of time on the safety of community water fluoridation (CWF) and its effectiveness at reducing dental decay. Considered together, these reports provide an up-to-date and high-quality scientific assessment of the state of the scientific evidence on the health effects of CWF. They find that the provision of CWF at a level of 0.7-1 mg/L is safe and significantly reduces the prevalence and severity of dental decay. The summary analysis of evidence stated above justifies the conclusion that provision of CWF at a level of 0.7-1 mg/L in the Athenree and Wharawhara water supplies would be safe and effective at significantly reducing the prevalence and severity of dental decay in the populations serviced by each of these water supplies.
Director of Public Health advice	Informed by the findings of the reviews noted in 'Criterion 1 Evidence' above on CWF, my assessment is that there is strong evidence that CWF is a safe and effective way to improve oral health outcomes, by reducing and preventing dental decay. I also consider that this strong evidence applies to the communities served by the Athenree and Wharawhara water supplies.
Criterion	**2. whether the benefits of adding fluoride to drinking water outweigh the financial costs, taking into account:**
Criterion	**2a. the state or likely state of the oral health of a population group or community where the local authority supply is situated**
Evidence	The Ministry has considered the following information: • data on Age 5 and Year 8 oral health outcomes from the Community Oral Health Service (Ministry of Health) • data from the New Zealand Health Survey: Oral Health (New Zealand Health Survey | Ministry of Health NZ) • Oral Health Survey Report (Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey | Ministry of Health NZ) • 2013 New Zealand Index of Deprivation (NZDep) (Socioeconomic deprivation profile | ehinz)

	This is the most relevant up-to-date data available. It should be noted that oral health outcome data can take a long time to change substantially.
Analysis	The Athenree and Wharawhara supplies are situated within the previous Bay of Plenty District Health Board area. 2020 data for children aged 0-12 in Bay of Plenty District Health Board show: - overall, 50 percent of children had experienced tooth decay at age five - on average, children at age five have 2.41 decayed, missing or filled primary teeth, and at school year 8 have on average 1.06 decayed, missing or filled adult teeth - Māori and Pacific children have significantly worse outcomes than other children within Bay of Plenty District Health Board. For example, 65 percent of Māori children had experienced decay at age five compared to 36 percent for all other (non-Māori and non-Pacific) children. The 2017- 2020 New Zealand Health Survey results for Western Bay of Plenty District Council show: - 55.4 percent of adults (15+) had one or more teeth removed in their lifetime due to decay, an abscess, infection or gum disease - 5.9 percent of adults (15+) had one or more teeth removed in the last 12 months due to decay, an abscess, infection or gum disease. From the data summarised above, it is reasonable to conclude that there are significant levels of dental decay in the communities serviced by Athenree and Wharawhara water supplies. There is strong evidence that CWF reduces dental decay. There are therefore also significant opportunities for oral health improvement for the communities served by the Athenree and Wharawhara water supplies. The evidence indicates that fluoridation of the Athenree and Wharawhara water supplies would make significant improvements to oral health outcomes for communities it serves. Within Western Bay of Plenty area, there are significant levels of deprivation. In the 10-level score in which decile 1 has the least, there are areas in Western Bay of Plenty that are in deciles 8-10. Athenree and Wharawhara are in decile 6. There is a significant body of evidence that levels of tooth decay are highest among the most deprived socioeconomic groups.
Director of Public Health advice	Informed by the evidence and data sources listed above at 'Criterion 1 Evidence' and 'Criterion 2a Evidence', I have reviewed the state of oral health of the populations served by the Athenree and Wharawhara water supplies. In summary, my assessment is as follows. The Athenree and Wharawhara populations each presently have significant levels of preventable dental decay. The evidence that CWF improves oral health outcomes by reducing dental decay is applicable to each of these two populations. So too is the evidence that these benefits tend to be greater for populations that experience higher levels of tooth decay, such as Māori and Pacific communities. Fluoridation of the water supply that serves each of these communities would consequently improve oral health outcomes for each and is likely also to reduce health inequities.
Criterion	**2b. the number of people who are reasonably likely to receive drinking water from the local authority supply**

<table>
<tr><td>Evidence</td><td>The Ministry has considered the following information:
the Public Register of Drinking Water Suppliers</td></tr>
<tr><td>Analysis</td><td><table><tr><th>Water supply</th><th>Population size</th></tr><tr><td>Athenree</td><td>5125</td></tr><tr><td>Wharawhara</td><td>5700</td></tr></table></td></tr>
<tr><td>Criterion</td><td>2c. the likely financial cost and savings of adding fluoride to the drinking water, including any additional financial costs of ongoing management and monitoring</td></tr>
<tr><td>Evidence</td><td>The Ministry has considered the following information:
Review of the Benefits and Costs of Water Fluoridation in New Zealand. Sapere Research Group. May 2015.
Water Fluoridation Engineering Costs. August 2015.
Western Bay of Plenty District Council’s estimated costs, including ongoing management and monitoring costs (for more detail on Western Bay of Plenty District Council’s comments see table below).</td></tr>
<tr><td>Analysis</td><td>The 2015 Sapere Report estimated that adding fluoride to New Zealand’s water treatment plants classified as medium sized and above (ie, those supplying populations of over 5000) is cost-saving, and for smaller supplies (ie, those supplying populations of over 500) is likely to be cost-saving. The Sapere report also noted:
an estimated total net discounted saving over 20 years for smaller supplies and above to be $1,401 million, made up of a cost of fluoridation of $177 million and cost offsets of $1,578 million from reduced dental decay
“We estimate the 20-year discounted net saving of water fluoridation to be $334 per person, made up of $42 for the cost of fluoridation and $376 savings in reduced dental care”
The Athenree and Wharawhara supplies each fit into the category of supplies servicing over 5000 people (see further detail in Criterion 2b). For water supplies servicing 5001 – 10,000 people, Sapere 2015 estimated $61,034 for capital costs and $8742 per annum for management and monitoring costs; while for the Athenree supply servicing 5125, Western Bay District Council estimated $286,000 for capital costs and $26,000 per annum for management and monitoring costs. For the Wharawhara supply servicing 5700, Western Bay District Council estimated $280,000 for capital costs and $29,000 per annum for management and monitoring costs.<table><tr><th>Water Supply</th><th>Population size</th><th>Western Bay of Plenty District Council estimate of capital cost</th><th>Western Bay District Council estimate of management and monitoring costs (per annum)</th></tr><tr><td>Athenree</td><td>5125</td><td>$286,000</td><td>$26,000</td></tr></table></td></tr>
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	Wharawhara	5700	$280,000	$29,000
	Total	**10,825**	**$471,000**	**$55,000**

Summary of the information received from Western Bay of Plenty District Council
As required by section 116G, Western Bay of Plenty District Council was invited to give written comments on the estimated financial costs of adding fluoride to the drinking water, including any additional costs of ongoing management and monitoring; and the date by which each local authority would be able to comply with a direction. Western Bay of Plenty District Council responded within the required timeframe. A copy of Western Bay of Plenty District Council's formal response is attached to this Report as Appendix One. For Western Bay of Plenty District Council's estimated financial costs of adding fluoride to the drinking water, including any additional costs of ongoing management and monitoring please see Criterion 2c above. **Athenree Water Supply** Western Bay of Plenty District Council stated that the timeframe by which it would be able to comply with a direction for the Athenree supply is 24-36 months **Wharawhara Water Supply** Western Bay of Plenty District Council stated that the date by which it would be able to comply with a direction for the Wharawhara supply is 24-36 months.