FOR INFORMATION | NGĀ MŌHIOTANGA

TO	Mayor and Councillors
AUTHOR	Connan Negus Treatment Team Leader
FILE REFERENCE	Document: 3104301 Appendix A: 3104202 Appendix B: 3104754
PORTFOLIO HOLDER/S	Councillor Ross Harris Water Portfolio
MEETING DATE	23 February 2022
SUBJECT	**Potential Fluoridation of HDC Drinking Water Supplies**

SUMMARY | TE WHAKARĀPOPOTANGA

HDC currently does not fluoridate drinking water. Recent changes in legislation have moved the responsibility for fluoridation determination to the Director General (DG) of Health. Fluoridation is a health matter and thus this is the correct decision making framework. The DG has issued his intention to mandate the addition of fluoride to supplies where the levels of naturally occurring fluoride are low. It is likely that HDC will be required to fluoridate its drinking water supplies, at a capital cost of close to $500,000 and annual operating expenditures of close to $30,000.

RECOMMENDATION | TE WHAIKUPU

THAT the report be received.

1 PURPOSE | TE ARONGA

This paper has been prepared to inform the Councillors of the likely requirement for HDC to fluoridate our drinking water supplies.

The Ministry of Health has indicated they are likely to mandate fluoridation of all drinking water supplies in New Zealand. In order for HDC to comply, all four Water Treatment Plants (Kerepehi, Paeroa, Waihi and Waitakaruru) will need to be upgraded to facilitate this, and this will incur costs not currently budgeted for on the LTP.

2 BACKGROUND | TE KŌRERO Ā MUA

Fluoridation is a Health-consideration rather than a Water Supply-issue as the *Water Services Act 2021 Section 47.3* states:

"*Drinking water standards must not include any requirement that fluoride be added to drinking* water."

The Health (Fluoridation of Drinking Water) Amendment Act 2021 (the Act) received Royal Assent on 15 November 2021. This legislation removes the decision to fluoridate drinking water from water suppliers and places the responsibility for the decision making with the Director General of Health. Clause 116(E) of the Act states:

> **116E Director-General may direct local authority to add or not to add fluoride to drinking water**
> (1) The Director-General may direct a local authority to add or not to add fluoride to drinking water supplied through its local authority supply.

The Director-General of Health issued a letter (Appendix B) on 15 December 2021 stating:

> "I expect to consider *issuing directions to fluoridate from mid-2022 onwards and implementing these directions will take a staged approach. This will align with the significant reforms to the Three Waters infrastructure announced last month.*
>
> *I encourage all local authorities with un-fluoridated community water supplies that service over 500 people to start fluoridation-related preparatory work now (a list of these supplies is attached as Appendix one), especially in areas with larger populations or that have poor oral health outcomes.*
>
> *Please note local authorities do not need to wait for a potential direction from me to start fluoridating water supplies in their area.*
>
> *…*
>
> ***To support early adoption, the Ministry has a limited amount of capital works funding available for local authorities that are willing and able to begin the capital works to fluoridate by the end of 2022.***"

No expected timeline for delivery is mentioned in this document. We only need to respond by completing the associated Request-for-Information spreadsheet on our current fluoridation infrastructure and any planned projects.

This information is due to be submitted by the 11th of March 2022.

3 SCOPE OF WORKS REQUIRED

In order to prepare for the likely mandate, staff have prepared a capital cost estimate and programme of required works. We are intending to engage a consultant to help prepare a more detailed costings and preliminary design. This will be funded from existing budgets.

When HDC proceeds with installation of fluoridation equipment, each WTP is likely to need:

1. Bulk storage tank for *hydrofluorosilicic*-acid (the most common chemical used in NZ, as well as the simplest and safest operationally)
2. Dosing pumps (duty and standby)
3. Instrumentation to monitor and control fluoride dose and tank conditions
4. Associated pipework and valving
5. Civil works

Operationally, these systems will require approximately 300 man-hours per year, and 240 tonnes of hydrofluorosilicic-acid.

A preliminary estimation of these costs (Appendix A – M 3104202) is:

1. Capital Expenditure: $482,000.00

2. Annual Operational Expenditure: $30,000/annum

If HDC commences with the works before the end of 2022, it may enable us to get partial funding from the Ministry of Health.

Under clause 116I of the Act, we are required to comply with an instruction to fluoridate made under clause 116E of the Act. We will not be required to consult (clause 116H) on an order from the Director General and face significant penalties (clause 116J) should we not implement the fluoridation mandate if received. The penalties are a fine not exceeding $200,000 and up to $10,000 per day until compliance with the instruction is achieved.

At this stage, we intend to act only on the clear instruction and direction from the Director General of Health, however believe it prudent to plan to undertake the works.

4 NEXT STEPS | TE ARA KI MUA

Timeframe	Action	Comments
31/01/2022	Commission a contractor to give us a more accurate estimate of scope and costs.	Quote received: $16,930.00 excl. GST

Approval

Prepared by	Connan Negus **Treatment Team Leader**
Recommended by	Johan de Vos **Utilities Manager**
Approved by	Adrian de Laborde **Group Manager Service Delivery**

Appendix A

Chemical usage						Labour								
	Molar Mass			HDC Retic		Routine	1	hr/wk.plant				Operating	$ 29,144.54	/yr
H_2SiF_6	144	g/mol	FY2018/19	4958989	m^3/yr	Deliveries	2	hr/mnth/plant				Capex	$ 482,000.00	
F	19	g/mol	FY2019/20	6704494	m^3/yr	Rate	38	$/hr						
			FY2020/21	6652845	m^3/yr	Total/plant	76	hr/yr						
Strength	17	%	Forecast	6700000	m^3/yr	Total/HDC	304	hr/yr						
Strength	170000	mg/L as H_2SiF_6				Total/plant	2888	$/yr						
Strength	134583.33	mg/L as F	Dose	0.7	mg/L	**Total/HDC**	**11552**	**$/yr**						
Cost	435.2	$/tonne	Forecast	4.69E+09	mg/yr									
			Forecast	34848.297	L/yr of H_2SiF_6									
Density	1.16	kg/L	Forecast	40.424025	tonne/yr of H_2SiF_6									
			Total/HDC	**17592.536**	**$/yr**									
Instruments			Pumps			Tanks			Pipework			Civil work		
Fluoride			Quantity	2	duty/sby	Unit Cost	50000	$	Unit Cost	10000	$	Unit Cost	25000	$
Quantity	2	(pre-res and post-re	Unit Cost	6000	$/instrument	**Total/HDC**	**200000**	**$**	**Total/HDC**	**40000**	**$**	**Total/HDC**	**100000**	**$**
Unit Cost	5000	$/instrument	Installatio	500	$									
Installatio	1000	$	Total/plan	13000	$									
Total	12000	$	**Total/HDC**	**52000**	**$**									
Level														
Quantity	1	Assume bulk												
Unit Cost	4000	$/instrument												
Installatio	500	$												
Total	4500	$												
Temperature														
Quantity	1	Assume bulk												
Unit Cost	1000	$/instrument												
Installatio	500	$												
Total	1500	$												
Flow														
Quantity	1	Assume bulk												
Unit Cost	4000	$/instrument												
Installatio	500	$												
Total	4500	$												
Total/plan	22500	$												
Total/HDC	**90000**	**$**												