
SUBJECT: WATER SUPPLY - FLUORIDATION - W.155.00
PREPARED BY: DIRECTOR WORKS

HISTORY

Council at its ordinary meeting of 19 April 2005 considered a report on water fluoridation in the Northern Rivers area.

The matter was initially raised through Rous Water and Council received several items of correspondence both for and against fluoridation.

Council resolved that the information be received and noted on the understanding that the Department of Health prepares information for consideration by the Council/Water Authorities in the Northern Rivers area.

Subsequently at Council's Ordinary Meeting Tuesday, 21 March 2006, Council considered an additional report associated with a request by Rous to the Department of Health to conduct a community consultation, information and awareness campaign of constituent Councils on the question of Fluoridation. On 7 March 2006, North Coast Councils received a briefing from the Northern NSW Oral Health Network on dental disease issues and on surveys undertaken in relation to water fluoridation in northern NSW.

The purpose of this report is to consider, how, Council may deal with the matter of water fluoridation in the Richmond Valley Council area.

REPORT

The intent of this report is not to debate the advantages and disadvantages of fluoride in the water supply. Nor is it to reproduce large amounts of information on benefits/hazards of fluoridation of water (information on both positions are available on the following web sites respectively www.fluoridenow.com.au, www.fluoridealert.org).

Council has been furnished with significant amounts of information from the NSW Health indicating that there is an unacceptably high level of dental disease on the North Coast of NSW and that it is a major public health issue. The information provided to council at the Lismore briefing in March is publicly

available from the website at www.fluoridenow.com.au. The additional survey work being undertaken to assess NSW and north coast attitudes to fluoridation is expected to be released at the end of 2006.

Since consideration of fluoridation of the water supply commenced in earnest in the Northern Rivers in 2005, Council has received regular letters and has been forwarded articles associated with the apparent health risks posed by fluoride.

Neither council nor its staff can claim to be experts on the issues associated with the benefits and risks of water fluoridation. There are strong arguments that fluoridated water is a major factor in developing healthy teeth in children. This benefit does not appear to be as significant into adolescence or for mature teeth but it remains a benefit nonetheless. Certainly there appear to be other options to water fluoridation. The evidence suggests that at a population health level, however, water fluoridation is the most effective.

The question therefore is “what can Council do and what options does it have available to it, in order to determine the matter of water fluoridation in Richmond Valley Council area?”

Options

1. Council can decide to fluoridate the water supply;
2. Council can decide not to fluoridate the water supply;
3. Council can elect to conduct a public referendum on fluoridation;
4. Council can refer the matter to the NSW Health;
5. Council can await the final outcomes of the NSW survey on community attitudes to fluoridation;
6. Council could resolve to do nothing (this is effectively a decision not to fluoridate).

The options available to Council will be explored further in this report.

Fluoridation of Public Water Supplies Act 1957

The Fluoridation of Public Water Supplies Act 1957 is the legislative document in NSW which allows a water supply authority to fluoridate.

Part 4 of the Act identifies the constitution of a Fluoridation of Public Water Supplies Advisory Committee.

The function of the Committee under Part 5 includes initiating and referring to the Minister proposals with respect to the addition of fluorine to public water supplies.

Part 6 of the Act Section 1, authorizes a Water Supply Authority (subject to the provisions of the Act and Regulation) to add fluorine to any public water supply under its control. It also identifies that the Secretary (Director General) can direct a Water Supply Authority to add fluorine to any public water supply. (The Secretary means the Secretary, now referred to as Director General, of NSW Health.) Further a Water Supply Authority shall not add fluorine to any public water supply except with the approval of or at the direction of the Secretary.

The Secretary may only direct a Water Supply Authority if the Water Supply Authority has referred the question of fluoridating the public water supply to the Secretary for consideration and the Secretary has received the advice of the Committee as regard to the question. Part 6b of the Act identifies that a Water Supply Authority shall not discontinue Fluoridating the Public Water Supply concerned, unless the approval or direction is revoked by the Secretary (ie once council starts, it cant stop without approval.

The actual practice of Fluoridation is controlled by the “Code of Practice for the Fluoridation of Public Water Supplies August 1997”. The Code covers both the design and operation of fluoridation systems and is currently under review by the NSW Health. There would be a need to conduct a community education campaign before commencing water fluoridation to ensure awareness and avoid excessive fluoride intake for those taking fluoride tablets already. NSW Health has assisted with these campaigns in areas recently directed to fluoridate.

The Code of Practice identifies the equipment requirements, the measurement of dosing, qualifications of operators, analysis of water samples, safe handling and storage of chemicals etc. It provides the Reference document in relation to assessing the costs of ongoing operation of a Fluoride Dosing System for Council.

The capital cost of installing fluoridation equipment is met in full by the NSW Health (thus NSW Government). Council is responsible for all ongoing operational costs.

Operational Considerations

The issue of fluoridation of water supplies of Richmond Valley Council is complicated by the two supply sources for Casino

and the Lower River. The Casino Water Treatment Plant when designed and built made provision for the future addition of fluoridation and a dosing room was set aside in the design and construction of the plant.

The Lower River area is supplied by trunk main into reservoirs by Rous.

The three main chemicals used for fluoridation are hydrofluorosilicic acid, sodium silicofluoride and sodium fluoride.

In larger supplies such as Casino sodium silicofluoride is normally used due to the lower cost of dosing with this chemical. The sodium silicofluoride would be delivered on site in 1000kg bags.

In a larger water supply, the lower capital costs of the infrastructure required to dose hydrofluorosilicic acid may be offset by high yearly costs of purchasing this product.

Fluoridation of the Casino water supply can be achieved with the utilisation of an existing room within the water treatment plant building. At present this room consists of an 8m x 6m area and includes an overhead gantry with access to the ground, provision for pipe work to injection points, provision for electrical cabling to connect to the PLC (Programmable Logic Controller). There is also capacity within the PLC itself for operation of the dosing plant.

A "package" fluoride dosing plant could be simply installed within this room with some modifications and upgrades of the room to comply with OH & S and legislative requirements. This may include dust extraction systems, bunded areas, mechanical ventilation, platforms to assist in manual handling, and added security, depending on the method of fluoridation utilised. All these potential modifications and add ons to the existing room can be achieved with minimal difficulties.

Testing of samples and monitoring of the fluoridation plant is achievable at the Casino water treatment plant with appropriate training of the current treatment plant operators. The experience and skills of these operators can be drawn on in this instance to ensure legislative operational and process control requirements are adhered to for this facility. Routine testing is currently carried out at this site with testing and analyses of Fluoride

concentrations being feasible with the purchase of required equipment and reagents.

The option to dose the Lower River supply would require the installation and operation of fluoridation facilities at the following locations:

- Evans Head – There are currently two outlets from this reservoir, a gravity line from the north west of the reservoir and a pumping line from the south east. This would necessitate two dosing points or alternatively reconstruction of the mains reticulation in this location to enable a single dosing point from the reservoir. With the location of the in line pumps this may be possible but difficult to undertake.

There is sufficient space for the construction of the required building for the fluoridation plant and associated infrastructure, and access for chemical deliveries is possible.

- Broadwater – Injection of Fluoride may be achievable with the construction of an injection point within the valve pit on the outlet of this reservoir.

There is sufficient space available for a building to house the fluoridation plant and associated infrastructure, and for deliveries at this location.

- Woodburn – The injection point for Woodburn would be immediately adjacent the Rous meter along the Highway at North Woodburn.

Space would be an issue at this location. The Roads and Traffic Authority require that any structure must be a minimum of 9m from the edge of the existing seal. Therefore, the acquisition of land adjacent to this point may be the only alternative to enable construction of the buildings for the fluoridation plant and associated infrastructure, and for chemical deliveries.

- Coraki – The injection of fluoride into the Coraki reticulation is limited only by space for the building in which the fluoridation plant and associated infrastructure will be housed. A more thorough investigation is required to determine available space.

In addition to the issues associated with installation of the fluoridation plants to service the Lower River water supply, operational and process requirements must be carefully considered. Additional or existing staff must be trained to manage the operation and maintenance of the fluoride dosing plant and equipment within stringent minimum legislative requirements. These staff would also be required to undertake testing and analysis of the fluoride concentrations on a daily basis.

Hydrofluorosilicic acid (or liquid fluoride) is not normally feasible for smaller water supply such as those in the Lower River due to the large minimum quantities currently being delivered by suppliers. An option for dosing the Lower River water reticulation systems is sodium fluoride. This chemical is delivered in bags that can be readily handled, however the cost of the product in this form is greater than hydrofluorosilicic acid or sodium silicofluoride.

As such compliance with the Code of Practice and Regulations governing the method of fluoridation will be far more difficult in the Lower River as Council would need to construct purpose built facilities at reservoirs should Rous elect not to fluoridate water.

NSW Health covers the capital costs of installing a fluoridation system. Richmond Valley Council would then be responsible for the ongoing maintenance of the system as well as the purchase of the fluoridating agent.

Contact with NSW Council's who already fluoridate their water supply have indicated annual operating costs varying between \$1.30 per head of population for Council's with similar demographics to Richmond Valley Council down to \$0.30 per head for Sydney.

A detailed assessment has not been undertaken of the annual operating cost for staff, chemicals, maintenance, repairs, depreciation, water testing, quality control and training. Although the information provided above is a good indicator of financial operational impacts. If Council were to implement fluoridation and assumed an upper level operating cost of \$1.30 per head of population served the increased cost for 15,000 population from Casino would be in the order of \$20,000.

For the Rous supplied area, it is assumed an additional employee would be required to comply with the testing and management requirements of the Fluoride Act, Regulation and Code of Practice. A vehicle would also be required. Assuming a higher cost for the Lower River of say \$80,000 per annum, the total cost to Council to operate and maintain fluoridation systems for the whole shire could be in the order of \$100,000 per annum. This cost is not currently factored into Council's Strategic Plan for Water Supply. Total annual consumption has averaged 2,593,000 kilolitres over the last four years. Proposed charges for 2006/07 in the draft revenue policy is \$1.05/kl for the first 200kl then \$1.50/kl there after. A \$100,000 annual cost would increase both charges by approximately 4 cents /kilolitre..

A quarter of total RVC consumption is by the Northern Cooperative Meat Company (NCMC). The water is used in meat processing. There are no issues with fluoridation of water from an international meat sales perspective. The benefit v's cost would still need to be assessed if water charges increased.

If Rous were to provide fluoridation for the lower river then costs for this area could be assumed at \$1.30 which would result in a total cost of 1.2 cents /kilolitre fluoridation for RVC overall.

Council's Options

Options 1 and 2 from the above list do not progress consideration of fluoridation.

Option 3, assumes that the community as a whole is sufficiently well informed of all arguments for and against fluoridation, to vote on a course of action. It also assumes that the number of respondents for and against is representative of the whole communities' views.

Option 4, may well be considered a decision to proceed with fluoridation given that the NSW Health is a strong advocate of fluoridation of water supplies. NSW Health would then deal with all complaints and enquiries. NSW Health would also be responsible for the community education program required before fluoridation could commence.

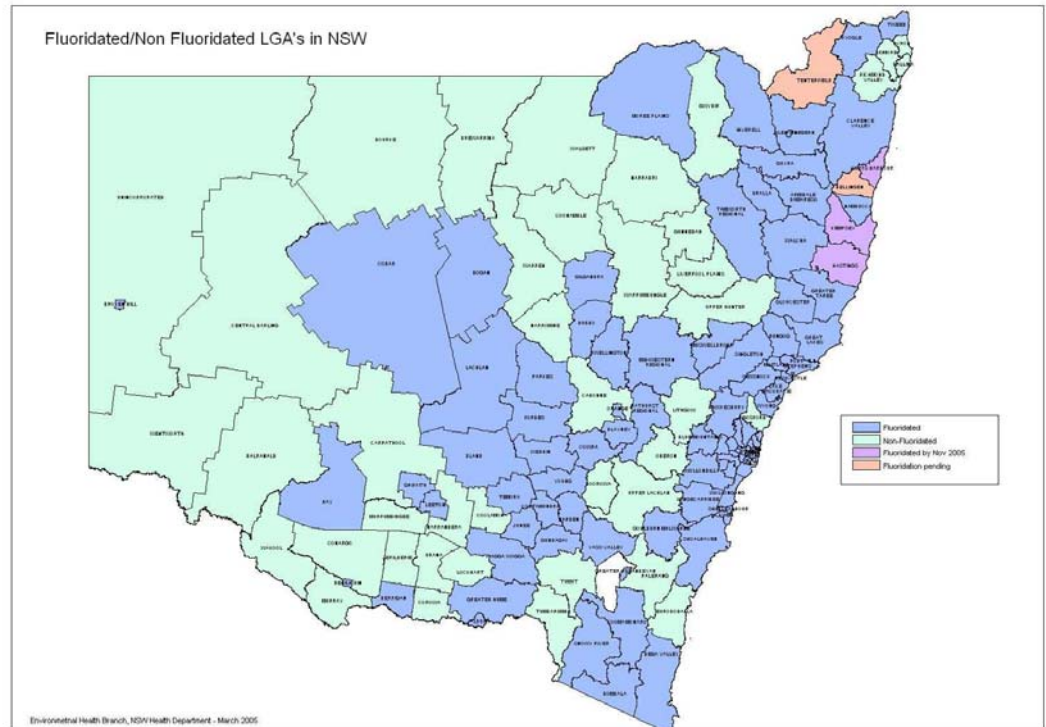
Option 5, delays the matter further. Council would also have to ask itself what additional survey undertakings it would consider sufficient above that which was presented at the March 7th briefing.

Option 6 does not progress the informed consideration of the issues.

To assist in considering its options, the following map indicates the fluoridated water supplies by local government area, as of March 2005.

Since this map was produced, Hastings, Coffs Harbor, Kempsey and Bellingen LGA's have resolved to refer the matter to the Department of Health. Directions to fluoridate have subsequently been given and most systems should be operational by November 2006. This will result in the majority of the eastern seaboard having fluoridated water supply.

Tenterfield is a little more complex in that the matter was referred to NSW Health for determination. A by-election then arose, after the direction to fluoridate was issued, and Council held a public poll on the fluoridation of water. A minority of the eligible population voted though of those that did, most voted No and council requested the direction be delayed. The request is being considered by NSW Health.



Summary

Council has been advised by the Centre for Oral Health Strategy at NSW Health, that there is an unacceptably high level of dental disease in the Richmond Valley Shire and it is a major public health issue.

As it is a major public health issue, the decision on how best to deal with the matter is one for NSW Health.

Council can refer the matter for decision to the Director General of NSW Health in accordance with the provisions of the Fluoridation of Public Water Supplies Act 1957.

This is likely to result in a direction to fluoridate.

NSW Health will fund all capital costs if a direction to fluoridate is given.

NSW Health will deal with all complaints and enquiries.

Council would be responsible for all operational and maintenance costs.

Complications with dealing with Rous supplied areas will need to be considered before any decisions to fluoridate are made given the additional operational cost impacts.

RECOMMENDATION

Recommended that:

1. In accordance with the provisions of Section 6A(2) of the Fluoridation of Public Water Supplies Act 1957, Council refer to the Secretary (Director General, NSW Health), the question of fluoridation of water supplies, in Richmond Valley Council area, for consideration
2. The consideration by the Secretary, address operational costs associated with fluoridation of Rous supplied areas.

2006-301 **RESOLVED THAT** the above recommendation be adopted.
(Cr. Jeffery/Cr. Wheatley)