



SEDDON WATER TREATMENT PLANT COUNCIL UPDATE

RECORD NO. 16199617

DESIGNING AND MINISTRY OF HEALTH SUBSIDY

The application for subsidy included a preliminary design report for the treatment plant. The volume of water to be treated was determined after much discussion with Ministry of Health officials. They were adamant the design volume to be considered for subsidy was kept to a flow which was to provide for household use. The figure within the subsidy application has only a small component for irrigation use. There is an allowance in the application for growth at 4.5% up until 2031. The population projection figures used were based on the 2011 census and historic growth. Consideration was made for up to 400 RSE workers living in Seddon however they are present in autumn and winter when irrigation demand is reduced. The design figure for water demand used in the preliminary design report was 510 cubic metres per day. This matches well with summer average demand but does not match some peak day water use.

The tender for design and build is calling for proposals to treat 700 cubic metres per day over 23 hours each day. The subsidy will only apply to costs to provide 510 cubic metres per day. If the cost for the additional water were to exceed the cost cap of \$240 per property Council and the Seddon community will have to assess how an increase will be funded. If necessary consultation regarding additional costs will form part of reporting on the results of the tender process.

DESIGNING AND BUILDING THE NEW TREATMENT PLANT

Nine firms responded to our advertisement asking for expression of interest in designing and building the Seddon water treatment plant. They were evaluated using the following criteria:

1. Proposed DWSNZ compliance strategy
2. Proposed Project delivery structure and approach
3. Previous track record and relevant experience delivering projects of a similar nature and scale in recent years
4. Health and safety and environmental management systems
5. Financial capacity and capability



After evaluation, four applicants emerged with a significant margin above the other participants, meeting all the criteria. They are Fulton Hogan Ltd, Filtec, Hawkins Ltd and CityCare Ltd. All four have been contacted and advised they will be invited to tender for the project this month.

There are numerous advantages of a design and construct contract, the most applicable one to this project include:

- Reduces risk to Council - The design and construction are performed by a single contractor, under one contract
- Time benefits – ie; ordering of key items and site work begin before the total design is complete.
- There is a closer, contractual relationship between the design and construction teams
- Overall, design-build contracting has greater potential to save time and reduce cost.

PROGRESS UPDATE

Council are in the process of preparing a formal offer for the location of the water treatment plant. The selected site will be on Wakefield Street and provides numerous benefits including the close proximity to the reticulation system and having suitable elevation for significant pump savings. Securing the location of the treatment plant did take more time than anticipated, with alternative options being considered to ensure the location selected was the most cost effective option both during construction and operationally.

The tender documents are to be released by the end of October and the successful tenderer awarded before Christmas.

Council is focused on achieving the November 2017 deadline for Government subsidy funding and are working closely with the engineering consultants Beca to ensure no major set-backs occur

AWARENESS OF WATER CONSERVATION

It will be no surprise to residents that the largest increase in water consumption is over summer when lawns, gardens and public spaces are being irrigated. Council is planning to have the irrigation for the rugby ground, the bowling club and Starborough Farm (stock water) connected to the Marama Road water main to reduce the volume that has to be treated. There is potential to do this for the school irrigation water as well although we believe they are exploring options to use the Blind River scheme for their irrigation requirements. This will further reduce the volume requiring treatment.

Residents can reduce the volumes of water they use for irrigation around the home by employing the following methods:

- Mulch around plants to help retain moisture in the soil.
- Irrigate late in the evening or early morning to avoid the heat of the day and Marlborough's

winds. This will reduce evapotranspiration during the hottest or windiest part of the day. Use dripper irrigation systems wherever possible. This places water at the base of the plants where it's needed most and avoids water waste. Spray and wand irrigating loses a lot of water to evaporation before plants get any benefit from the water.

- When used set up spray or wand irrigation units so water is not wasted on hard surfaces like concrete paths and driveways
Landscape using drought-tolerant plants.
- Don't mow the lawn too short. Leaving them a little longer will reduce evapotranspiration.
- Consider using greywater (water from the washing machine and bathtub) to water plants in the garden.

Metered water users often ask Council "how do they monitor their water use so they know when the allocated amount has been exceeded". Unfortunately as Council only read meters three times a year for Seddon and four times in other areas we can't provide this information until after the allowance has been exceeded. However we are working on a project which will give property owners the ability to view their water meter data on Council's systems via the internet. This will also enable them to input water meter readings they take of their water meter. These readings will not be used for billing purposes but they will enable an owner to keep track of the water used for the year and compare this to the allocated amount. This will be available quite soon.

FUNDING

From 01 July 2017 the capital and operating costs of all Council water supplies, including Seddon, will be spread out across all users within Council water supply areas, under Council's Combined Water Rating formula.

This will operate similar to Council's Combined Wastewater Rating where all users contribute to the costs for all sewer networks

As well as getting the benefit of this funding arrangement, the agreement of a \$240 limit on costs to Seddon ratepayers for the treatment plant will still apply.

When the tender results are reported to the community Council staff will present information to show how the Combined Water Rating formula will operate and what its impact is for Seddon properties. This will be a public meeting the date of which is yet to be determined.

TREATMENT USING COAGULATION AND FLOCCULATION

The additive that allows coagulation in the water (stopping turbidity so that the water complies with microbiological measures) is key to the quality of the water supply.

Most treatment plants in NZ use aluminium-based coagulants. A well-operated coagulation process would typically have lower aluminium concentrations than those found in the raw water supply.

The World Health Organisation has conducted a number of studies on the use of aluminium-based coagulants in drinking water. These studies conclude there is no evidence of health risk

The alternative is to add iron salts - not widely used in NZ and more expensive than aluminium-based coagulants. Iron coagulants have the following disadvantages when compared to aluminium coagulants:

- More likely that pH correction will be required after coagulant addition.
- Some iron salts, eg; ferric chloride, are highly corrosive so extra care must be taken with storage and handling.
- It is more difficult to get the dose rate right compared with aluminium-based coagulants.

Iron coagulants were chosen for use in the Nelson water treatment plant commissioned about 10 years ago but they have proven extremely difficult to work with and Nelson is currently converting to another product.

For these reasons it has been recommended that an aluminium-based coagulant be used for Seddon's water treatment.

FLUORIDE

The decision to add Fluoride to the water supply is a matter determined by the Ministry of Health. Marlborough District Council has not been approached by the Ministry of Health and therefore no allowance has been made for the addition of Fluoride to the Seddon water supply. Any lobby to fluoridate water is a matter for the District Health Board or Ministry of Health to consider, not the Council.

POINT OF ENTRY WATER TREATMENT

Council has budgeted to begin consulting with rural Awatere/Seddon water supply users on the treatment of their water from next year. If there is a decision to go ahead with treatment, it would not be until early to mid-2019. Properties which have already installed complying POE systems will be able to continue using the existing devices.

The favoured option is likely to be using Point of Entry systems which many have already installed. Devices would be installed at each property to treat the water entering each household for use within the house only. There are many varieties of these systems available but not all meet the requirements of the Drinking Water Standards for NZ.

If property owners are considering installing a POE unit before 2019 they are encouraged to contact Council to ensure the device they install will meet the requirements of the standard. Council can supply information about the water so the required level of treatment necessary is known to the POE device supplier.

This will enable installation of the correct device.