

Proposed Marton Water Supply Strategy

Introduction

The Marton Water Supply has been plagued with periodic colour, odour and taste problems for many years. While the water produced has not generally presented public health concerns, the aesthetic nature of the water has, on occasions, generated high levels of community concern. That level of concern appears to be increasing as these adverse water quality events occur. The root cause of many of these events appears to be the significant quality variations of the raw water from the B/C Dams that feed the Marton water treatment plant (WTP). The majority of these adverse events appear to have one or two common elements: the presence of elevated levels of organic material (e.g. algal blooms) and the high levels of dissolved manganese.

Over the years there have been reviews and studies commissioned to identify options for reducing/eliminating these problems. Over the last century there has been significant investment in new sources, and treatment and reticulation upgrades. Substantial benefits have been achieved from these investments – notably the consistency of achieving the required public health standards and the volume of supply. However, the ability to deliver an aesthetically high quality water on a consistent basis remains a challenge.

The recent coloured water event in January 2019 has prompted consideration for developing a comprehensive Water Supply Strategy for Marton. This proposed Water Supply Strategy will focus on identifying what is required to deliver a consistently high quality drinking water for Marton, and cover all aspects of water supply service provision. The Strategy process won't be limited to just considering aesthetic (colour, odour, taste) issues, but take a wider view to ensuring a fit-for-purpose water supply to meet current and future needs/requirements.

The purpose of the Water Supply Strategy will be to achieve the following goal:
To consistently deliver good quality, affordable, safe drinking water at volumes for today and the future.

The strategy will consider all possible solutions covering the following aspects:

- Raw water source
- Treatment
- Storage
- Delivery network

The first stage of developing the strategy will be a review of research, studies and reports of the Marton water supply problems and challenges previously commissioned by Council. It is important to avoid duplication of work that already exists and has already been paid for.

Water Supply Strategy Scope

As mentioned in the introduction above, the Strategy will look at all aspects of water supply services. The scope of the Strategy will include the following portions of work:

1. Raw Water Source

At present Marton drinking water is drawn from two impounding reservoirs on the Tutaenui Stream and supplemented by the Calico Line bore during emergency supply events. The variability of the raw water quality has been an issue for many years. The primary problems are seasonal algal blooms and high concentrations of manganese in the raw water. The summer algal blooms can cause taste and odour in the treated water, and the high concentrations of manganese can stain washing. There is also a risk of contamination of the source water through runoff from the surrounding farm catchments.

The permanent, long term raw water supply for Marton will have to mitigate or eliminate these problems. Factors to consider in the final source selection, which may be retaining the existing source, will include the lifecycle costs of accessing the water source and the complexity and lifecycle costs of treating the water delivered by the raw water source. The permanent water source will have to be able to supply sufficient water quantities to provide for the current demand, as well as a suitable amount of spare capacity to accommodate future residential and industrial developments.

2. Water Treatment

The existing water treatment plant (WTP) employs coagulation, sedimentation, followed by gravity sand filtration, UV reactors and disinfection with chlorine gas. The source water presents a number of treatment challenges such as dissolved manganese, taste and odour compounds, dissolved organic material and elevated chlorine demand.

If a new suitable raw water source has been selected as the preferred option, then the most appropriate treatment for the continuous production of good quality drinking water will be identified and assessed. The treatment process will have to guarantee no variability in the quality of the treated water under all expected conditions (excluding a major emergency event). Business recovery plans will be reviewed to ensure continuity of service in the event of any supply disruption.

The selected treatment process will comply with New Zealand Drinking Water Standards and will have to be able to comply with all current and future performance requirements. The plant will have to be able to treat the required daily volumes to achieve the required demands.

The treatment plant will make use of the most appropriate electronic controls, monitoring and alarming systems to achieve the required treatment outcomes. The plant will also make use of suitable data collection and trending systems to allow effective process analysis and problem solving.

3. Water Storage

One of the fundamental factors to be determined by the water supply strategy is the current water demand for Marton as well as the future required demand. The new reservoir will be assessed against the required future demand to determine whether additional storage capacity may be required, and if so, when.

4. Water Supply network

Previous work on the Marton water supply identified very high per capita water use (litres per person per day). The high daily water use can be the result of many things, such as inefficient water use, water leaks from an aging water supply network or water leaks on private properties.

This part of the water supply strategy will be looking at the supply network in more detail to determine how the network is performing in the following areas:

- Pipe sizes and performance assessment of the network.
- Identifying water leaks from the network and quantifying the total daily volume lost, and confirming a best practice approach water loss management.
- Pressure management
- Asset condition assessment of the water supply network.

Strategy Development process and indicative timeframes:

The work described above will be completed by Council staff, Shared Services staff and consultants where necessary. As mentioned, the first phase of the work will be a full review of existing reports and completed projects. This review will identify any additional work that will be required to inform the development of the Strategy. An outline of the Strategy development process and indicative timelines is set out in the table below:

Stage	Expected Timeframe
Problem/Opportunity Definition	February/March 2019
Review of existing information/reports and recent works and work programmes	April 2019
Identification of further information required	May 2019
Development of Draft Strategy and Action Plan	June – August 2019
Adoption/Confirmation of Strategy	September 2019
Strategy/Action Plan informs future Annual Plan/Long Term Plan projects, programmes and budgets	October 2019 onwards

Recommendations:

1. That the Assets/Infrastructure Committee receive the draft proposed Marton water strategy (February 2019)
2. That the Assets/Infrastructure Committee endorse [as amended/without amendment] the draft proposed Marton water strategy (February 2019) and the indicative development process and timelines.

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