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Submission form

“Protecting Twizel’s community water supply at source”

CONTACT DETAILS

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HEARINGS (submission hearings will take place on 3 May 2018 in the Council Chambers in Fairlie and on 4 May 2018 at the Events Centre Community Lounge in Twizel.)

Do you wish to present your submission to Council in person? **Yes Twizel 4 May Afternoon**

“Principle 2: Protection of source water is of paramount importance

Protection of the source of drinking water provides the first, and most significant, barrier against drinking water contamination and illness. It is of paramount importance that risks to sources of drinking water are understood, managed and addressed appropriately. However, as pathogenic microorganisms are found everywhere, complete protection is impossible and further barriers against contamination are vital.” (Report of the Havelock North Drinking Water Inquiry: Stage 2, Department of Internal Affairs, December 2017)

Summary

The Mackenzie District Council has taken significant steps to protect the community drinking water supply in Twizel. International guiding principles for the provision of safe drinking water supply emphasize the need for a very high level of care and diligence and the paramount importance of protecting water at source. Currently there is human effluent being discharged into the Twizel Water Supply Protection Area in the Hocken/Lyford lane area. The current draft Long Term Plan emphasizes water treatment and the upgrading of asbestos cement pipes. This submission argues that MDC’s 2018-2028 LTP also needs to make provision for protecting Twizel’s water at source. This submission suggests a practical solution to provide infrastructure to allow existing and future households to connect to the Glen Lyon Road reticulated line which will completely avoid human effluent and household grey water from entering the area’s aquifers.

“Protecting Twizel’s community water supply at source”

Introduction

Safe drinking-water is a cornerstone of protecting people’s health. The right to access safe drinking water is enacted by the Health (Drinking-Water) Amendment Act 2007 administered by the Ministry of Health. The Act obligates suppliers of drinking water (such as Mackenzie District Council) to;

1. Take all practicable steps to ensure they provide an adequate supply of drinking-water that complies with the New Zealand Drinking-Water Standards;
2. Ensures all reasonable steps to contribute to the protection from contamination of sources from which they obtain drinking-water.

While there have been improvements in drinking water quality across New Zealand there is still concern that a significant percentage of smaller suppliers are not meeting acceptable standards. The Ministry of Health notes that in most cases part of the reason relates to levels of contamination such as faecal material – picked up from human and animal sources in the catchment from which the water is drawn – exceeding acceptable standards.

Currently, the area designated as the Twizel Water Supply Protection Area (which includes the private road named Hocken or Lyford Lane) has uncontrolled stormwater and human effluent through septic systems being discharged into it. This submission proposes that the MDC makes provision in its Long Term Plan and Infrastructure Strategy to further protect the Twizel community’s drinking water by providing infrastructure for property owners in the Lyford Lane/Hocken Lane subdivision to connect to the town reticulated sewerage system (utilising a shared costs model).

While the Twizel treatment plant has the ability to treat contaminants, it is widely recognized that protection of water at source is best practice. Twizel draws its drinking water from this area and this submission proposes an opportunity to balance the existing development in the area and new sewerage infrastructure to protect the community’s water. Councillor Russel Armstong captures this opportunity in the statement, “we need to grow while also protecting the environment”.

In the case of the Twizel Water Supply Protection Area this is a practical, reasonable and cost effective step which will protect a critical community resource into the future.

Background

Safe drinking water is a key area where the Mackenzie District Council has and needs to continue to consider investment. As the Consultation Document states “if we don’t continue to invest in key areas, there is a risk of service decline or failure and of not meeting legislative obligations”. The Consultation Document and the 30 year Infrastructure Plan identifies replacing asbestos cement water mains in Twizel as a key issue for the water supply. But if there are contamination issues in the Twizel drinking water catchment there is going to be a serious issue before the water even reaches the asbestos mains.

Water treatment may be inevitable, but surely, living in this beautiful area, close to pure source water, we can expect the Council to take all practical steps to ensure our water is as clean as possible at source?

To respond to its obligations under the Health (Drinking-Water) Amendment Act 2007 the Mackenzie District Council have put in a number of measures to ensure the community has a safe drinking water supply, including the development of the Twizel Water Safety Plan, upgrades to the treatment plant, and the establishment and enforcement of the Twizel Water Supply Protection Zone.



Figure 1: Twizel Drinking Water Protection Zone

Community water is sourced through shallow bores adjacent to the Fraser Stream. The water flows through alluvial gravels north of the bore. A calculated area upstream of the bore has been protected from contaminants in the District Plan - the Twizel Water Supply Protection Area.

The Water Supply Protection Area was established over an existing subdivision. Within the protection area there were already activities that posed risk to the water supply including the discharge of human effluent, grey water and uncontrolled storm water direct to ground. Anecdotally this occurs through direct discharge of storm water to ground from roofs, treated human effluent via septic systems to ground and poorly treated human effluent via poor quality/maintained/failed septic systems to ground.

In In 2013/14 the MDC took the decision not to upgrade the current supply from the bore adjacent to Fraser Stream. This decision emphasizes the need to protect the water supply at its current source within the Twizel Water Supply Protection area.

In the Hocken/Lyford Lane area there are existing properties plus a number of sections which are in various stages of early development planning. To ensure the protection of the community water supply at source future developments are required under the District Plan to either connect to the reticulated system on Glen Lyon Road or for all black and grey water to be safely stored and removed from each site (an impractical and expensive option). Extensive discussions with MDC and Environment Canterbury indicate the most modern septic tank systems would not meet the stringent discharge requirements in this zone. This submission provides a solution that balances development allowed in the District Plan and protection of a key community resource.

The MDC 30 year Infrastructure Strategy references the Havelock North Inquiry (over 5000 people fell ill as a result of contaminated drinking water). The initial Inquiry Report provides key messages for this submission. The Report stresses the the first principle of drinking water safety as the need for a very high standard of care and diligence due to the potential to cause widespread illness and potential death. The Report has developed six principles of drinking safety. All of these apply to this submission but the second principle is critical;

Principle 2: Protection of source water is of paramount importance

Protection of the source of drinking water provides the first, and most significant, barrier against drinking water contamination and illness. It is of paramount importance that risks to sources of drinking water are understood, managed and addressed appropriately. However, as pathogenic microorganisms are found everywhere, complete protection is impossible and further barriers against contamination are vital.

The Havelock North report goes on to suggest that the “direct cause of drinking water disease outbreaks is invariably the contamination of drinking water by microbial pathogens from human or animal faecal matter...Due to the large number of microbial pathogens per unit, extremely small quantities of faecal matter may contaminate drinking water to levels capable of causing illness. “

The Havelock North inquiry heard there is a significant risk from proximity of sewerage and drinking water assets, combined with the earthquake risk. This risk is exacerbated by the fact the systems are ageing, liable to leakage, and situated underground so that failure is difficult to detect.

Given the paramount importance of safe drinking water for the community, and the existing ageing septic systems in the area there is an opportunity for the MDC to take a practical and reasonable step to protect the Twizel community’s water supply at source. This submission seeks to balance the interests of existing and future homeowners in the area with the responsibility to protect the community’s water supply.

Proposal

This submission proposes that the MDC further protects source water contamination by making a modest provision in the LTP for a sewerage line from the Lyford/Hocken Lane area connecting to the Glen Lyon reticulated sewerage system.

- The infrastructure would involve a main 60mm sewerage line across private land in Hocken/Lyford Lane, go under the Fraser Stream and cross land adjacent to Glen Lyon Road to connect to the reticulated line (there is an existing easement for power that could be varied to allow for access)
- The capital costs of the infrastructure could be part recovered by a connection levy for properties in the area.
- Existing properties would be expected to connect to the system as their existing sewerage/stormwater systems require upgrades. The cost savings of a new septic system for these properties would cover the capital infrastructure connection to MDC.
- Each property would be responsible for the provision of approved sewerage infrastructure from site to the connection point along the council sewerage line. This would most likely include an emergency holding tank, double macerator pumps and appropriate valve systems.
- Existing land holders would make provision across land for an easement to allow the shortest route to the Glen Lyon Road reticulated system. Use of the private road as an access path may be possible in parts.

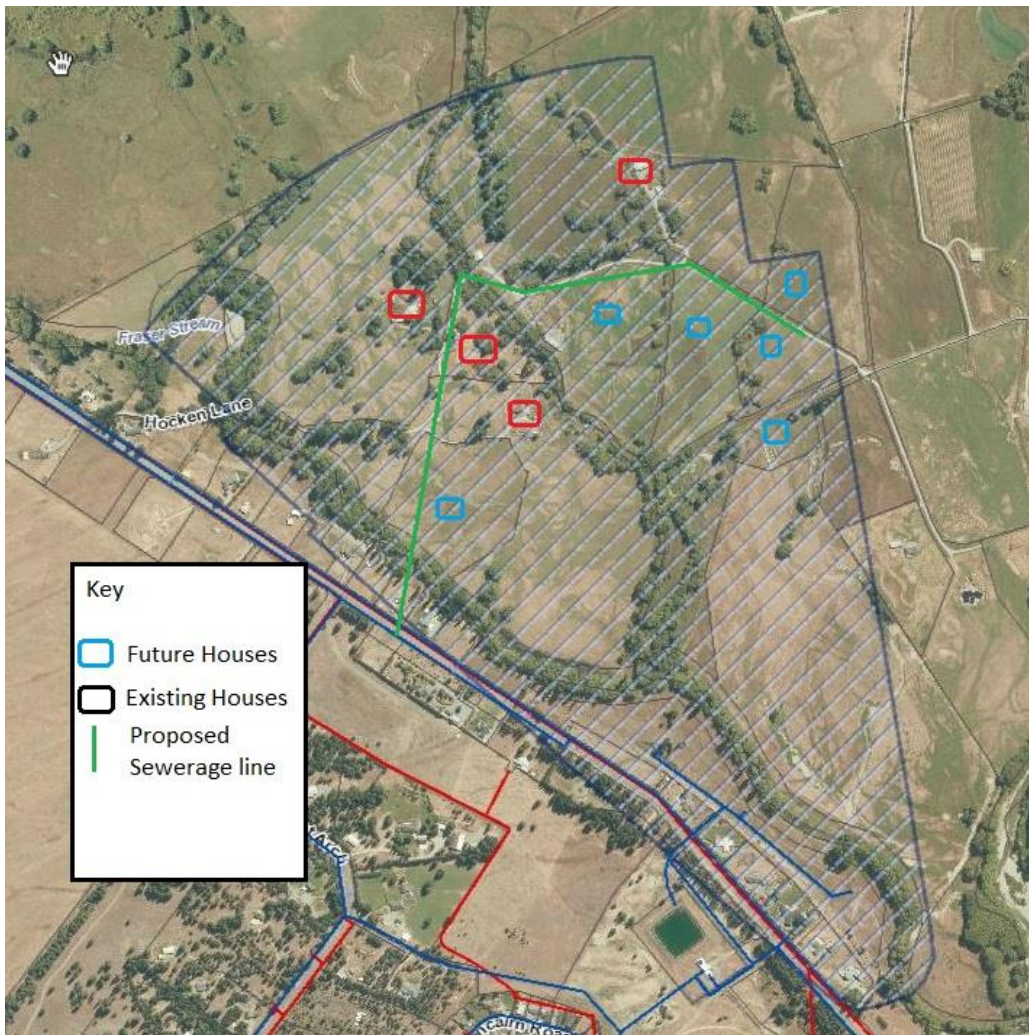


Figure 2: Proposed sewerage line (green)

Cost

Discussion with MDC suggests the costs for the infrastructure to allow households to connect do not appear to be great. There are costs associated with the install of the 60mm sewerage pipe into the area and the connection to a manhole point along the reticulated sewerage line along Glen Lyon road. From a practical perspective it is possible to use the existing power supply easement to gain the shortest route into the area. The install would involve a mixture of trenching and mole drilling (under the Fraser stream). Costs to connect to the system and for household services within individual land owner sites would be paid by users.

The shortest route for the line would be to follow the power easement directly across my site. As the site has not been developed yet there is an opportunity to gain access across this site which keeps cost to a minimum. There are at least four empty sections in the zone which are likely to be developed in the near future which could contribute to the capital outlay if MDC includes plans for this infrastructure in the 2018-2028 LTP and relevant infrastructure planning.

future households in the area and contributions from existing households as septic systems are replaced over time the proposal could be structured at a subsidized cost to the Council. These cost amortized over a 30 year period represent excellent value for money for ratepayers to protect the health and safety of the community.