

# LYTTTELTON HARBOUR COMMUNITY SEWAGE

Carissa Harris

At present, wastewater from residential properties in Diamond Harbour, Governors Bay and Lyttelton is pumped to treatment plants also located at these areas (Christchurch City Council, 2008). Treated wastewater is then released into the harbour. Approximately 95% of the Diamond Harbour, Governors Bay and Lyttelton population use the current sewage facility (Christchurch City Council, 2008). The present methods of treating and discharging sewage will not meet the terms of consent requirements of the Christchurch City Council's resource consent CRC031546 obtained from the Canterbury Regional Council (ECan) "to discharge treated wastewater from the Diamond Harbour sewage treatment plant into coastal waters" (ECan, 2008). The options discussed in this article will be paid for by all Christchurch ratepayers which makes the future of Lyttelton Harbour Sewage a topical issue for all Christchurch home owners (Christchurch City Council, 2008).

## Descriptions, actions, policies, issues and current status

With a view to investigating new treatment and disposal options for the Diamond Harbour, Governors Bay and Lyttelton sewage, the Lyttelton Harbour Working Party was established in 2005 (Christchurch City Council, 2008). The working party offered various areas of expertise, including representatives from ECan, Department of Conservation, Ngai Tahu, local resident representatives and others with an interest in local environmental and community issues (Christchurch City Council, 2008).

Nine options were investigated in order to meet the obligations of resource consent CRC031546 conditions 19 to 24 which commenced on 7 October 2004 and will expire on 1 October 2014 (ECan, 2008).

## Consent conditions:

19. To ensure that the Christchurch City Council investigates "all practicable options for the treatment and disposal of wastewater that is presently treated and discharged" at Diamond Harbour, Governors Bay and Lyttelton wastewater treatment plants (ECan, 2008).

20. To ensure that the above investigation is undertaken in discussion with the community, iwi, interest groups and the Christchurch City Council via the working party.

21. To ensure that an independent facilitator who has prior knowledge of public consultation organizes and assists meetings of the working party.

22. The working party must be established within three months of consent commencement.

23. The Christchurch City Council must provide to ECan "on the first four anniversaries of the commencement of this consent, an annual progress report by the working party on the investigation required by condition 19" (ECan, 2008).

24. To ensure that Christchurch City Council give to ECan, before the fifth anniversary of the start of this consent, a report on the favoured options consequential from the examination of options necessary under condition 19, and provide an Implementation Plan (ECan, 2008).

After investigation the working party chose two preferred options which aimed to lower the amounts of wastewater, be environmentally friendly and be economically sustainable.

The first preferred option is to apply treated wastewater to land. This entails wastewater being treated at current treatment plants and used to irrigate certified land areas.

The second preferred option is to make use of the Christchurch Wastewater Treatment Plant (Christchurch City Council, 2008). This option entails raw sewage from Governors Bay and Diamond Harbour being pumped via a double pipe under the sea to a new wastewater pump station at Cyrus Williams Quay in Lyttelton. This would then be combined with the Lyttelton sewage. With the establishment of a new pipe system the sewage would then be pumped to the Christchurch Wastewater Treatment Plant. After treatment at the plant the waste would then be pumped to Pegasus Bay and deposited by means of an ocean outfall (Christchurch City Council, 2008).

Environment Canterbury's Natural Resources Regional Plan and Regional Coastal Environment Plan include various policies and rules which relate to the two preferred options, which should guide decision making. This Lyttelton Harbour Community sewage project is a large project and important to many. Once constructed it

would be hard to reverse and would cost a lot of money to Christchurch ratepayers (Doughty & Penman, 2007).

As assessed by MWH consultants in 2007, for the Christchurch City Council, the net present value of applying wastewater to land is \$36.6 million. This includes the net value of operating and capital costs (Doughty & Penman, 2007). Costs include treatment works required, pipes to relocate sewage from the Lyttelton Harbour to the treatment plants in Christchurch and the insulation of irrigators to irrigate certain areas of land (Doughty & Penman, 2007).

Values to be considered when applying treated water to land include special recognition of Ngai Tahu and mahinga kai, and significance of water maintenance and quality. There are potential cumulative impacts especially in wet weather conditions and the potential for wastewater to pollute groundwater. However, provided that groundwater is not contaminated, a key issue highlighted by Te Whakatau Kaupapa for Ngai Tahu, is that it is preferable to discharge effluent onto land than into water (Tau et al., 1990). Wastewater would not be applied to significant Maori areas which therefore reduces the cultural impacts of this option.

As also assessed by MWH consultants in 2007 for the Christchurch City Council, the second preferred option to make use of the Christchurch Wastewater Treatment Plant has a net value of \$21.2 million. This includes net value of operating and capital costs, which entails new pipelines, irrigation mains, a new pump station and the depositing of waste by means of an ocean outfall (Doughty & Penman, 2007).

Values to be considered relating to the use of the Christchurch Wastewater Treatment Plant, depositing treated sewage by means of an ocean outfall are acknowledged by local iwi. Water holds a spiritual significance for all, especially Ngai Tahu (Tau et al, 1990). The maintenance of the quality of a water body should always be paramount. This option will mean that treated wastewater would enter the water body but contamination would be mitigated as much as possible, decreasing the local effect of the ocean outfall (Doughty & Penman, 2007).

Submissions will be heard later this year and the Lyttelton Harbour Wastewater Working Party will continue to assess the best option. This is a continuing process that will enable the community to have their opinions heard (Christchurch City Council, 2008). There is

especially a need to upgrade the current sewer system as the facilities are old and the community generally has increased expectations of appropriate environmental standards. Construction of this new wastewater system is not expected until March 2010 (Doughty & Penman, 2007).

### **The main issues presented in this article are summarised below:**

- **Ngai Tahu and effect on cultural values:** Ngai Tahu has a representative in the working party and cultural issues have been assessed (Christchurch City Council, 2008).
- **Issue of contamination of groundwater (in an event of a flood):** There is a very low risk that contamination could occur when treated wastewater is applied to land but this risk would be mitigated in the development process and is highly unlikely (Doughty & Penman, 2007).
- **What is the most viable option of wastewater discharge?** As analysed by MWH Consultants in 2007, making use of the Christchurch Wastewater Treatment Plant has a net value of \$21.2 million compared to applying treated wastewater to land which has a net value of \$36.6 million (Doughty & Penman, 2007).
- **Who is paying for this project?** All Christchurch ratepayers (Christchurch City Council, 2008).

### **Comment:**

In investigating the Lyttelton wastewater issue the establishment of the Lyttelton Working Party has been beneficial, ensuring that the Christchurch City Council investigates all options available in relation to conditions 19-24 of resource consent CRC031546 (ECAN, 2008). The working party has been able to combine the expertise of a number of local actors that give a fair representation of professional and local people. Christchurch residents can be assured that the working party have consulted widely and put a lot of effort in to the investigation to select the best option. At the end of November this year (2008) we can expect to find a report on the process so far and by March 2010 the Christchurch Community can expect construction to be completed (Christchurch City Council, 2008).

### **References**

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*Editor's note: Public consultation on the above options is currently underway and we will maintain a watching brief on this project.*