

FRIENDS of Banks Peninsula Inc.

Akaroa's Community Environment Society since 1990



Community Update

29 August 2017

1 Introduction

The following report presents work carried out since the Akaroa Wastewater submission was lodged on April 30, 2017.

Friends of Banks Peninsula lodged an extensive submission supporting the Purple Pipe network with a harbour outfall for disposal of residual water. We requested that the treatment standard be raised to suitable for watering salad crops so that water in the Purple Pipe system was safe for all garden use. The purpose was to ensure people felt confident in the uptake of this water.

The Friends of Banks Peninsula submission was supported by 247 people when lodged, and since then the number has risen to 300.

On June 8 submitters received the extraordinary news that the Council had not calibrated the flow meter on the Akaroa Wastewater system since 2009. As a result of submissions requesting the Purple Pipe network it had reviewed the flow figures and discovered that the meter was faulty and the wastewater flow had been substantially underestimated.

Since receiving this news, we have continued to work on the issue through submitting Official Information Act requests. This report gives a summary of where we are up to now.

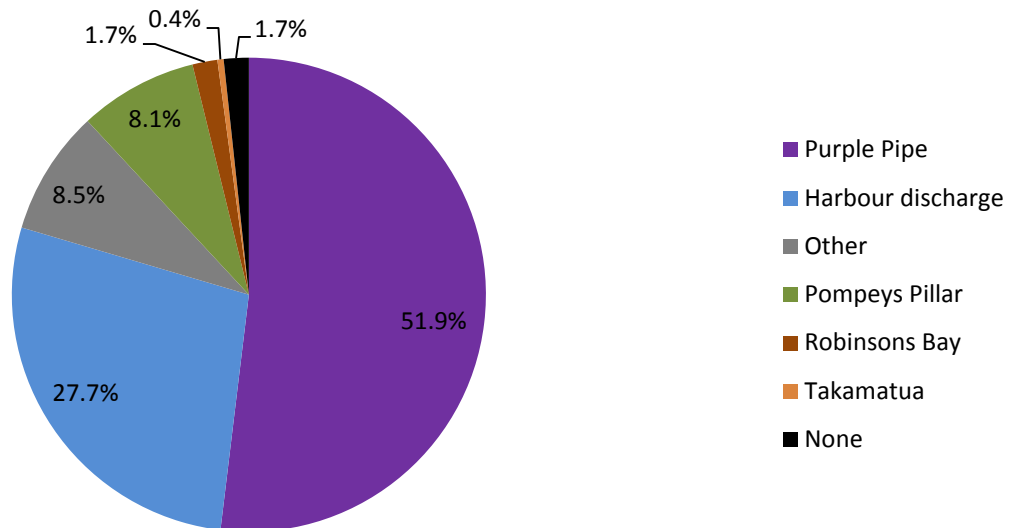
We are aware that the Council has reported the problem to the Environment Court and asked for more time to resolve the issues it now faces.

2 Analysis of submissions

The Council received 235 submissions. Several submissions were supported by multiple people. The Friends of Banks Peninsula submission was endorsed by 300 people.

The Council has released 234 of these submissions on its website, and withheld one. The following analysis has been conducted by Friends of Banks Peninsula based on the 234 submissions released, counting each submission as equal weight, regardless of how many people it represents.

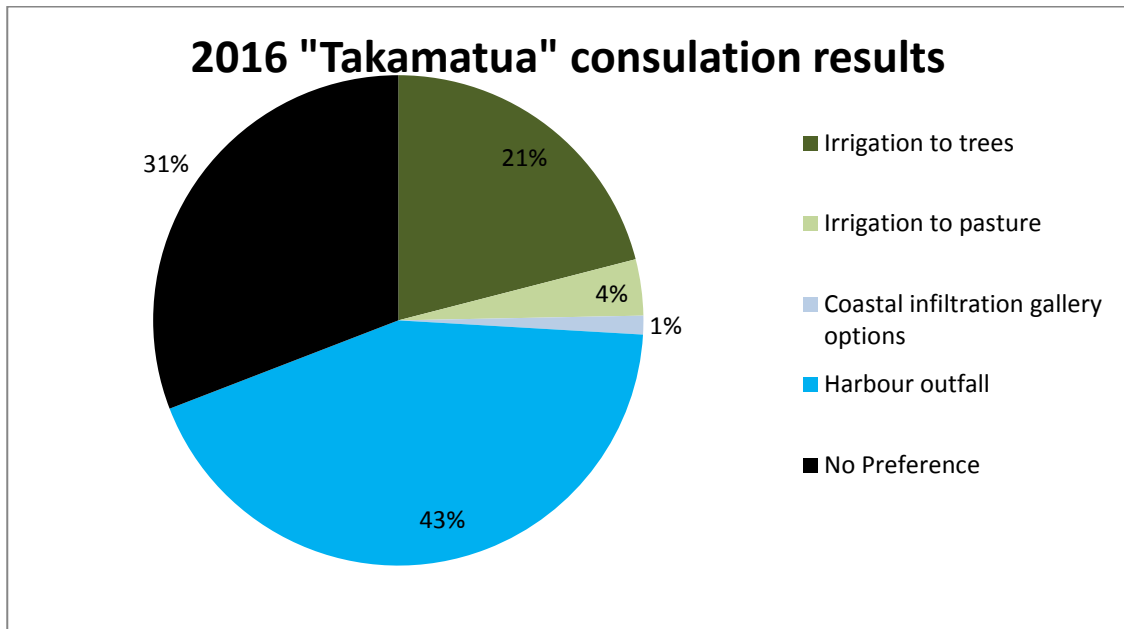
2017 Consultation top preferred option



- The land disposal options put forward by Council are overwhelmingly rejected by the consultation. 88% choose an option other than land disposal: Purple Pipe (51.9%), Harbour Outfall (27.7%) or Other (8.5%) with no option selected by (1.7%).
- Only 12% of submissions support one of the land disposal options as their top choice. Of these, Pompey's Pillar is the top choice at 8.1%, with only 1.7% and 0.4% supporting Robinsons Bay and Takamatua respectively. **Land disposal to Robinsons Bay and Takamatua has been roundly rejected.**
- Only the top selected option has been used in this analysis. Submitters were asked to rank options in order of preference, but it is clear from comparing the rankings with the written comments in submissions that submitters put different interpretations on the meaning of ranking the options in preference order. This confusion comes about because some of the options (Purple Pipe, Takamatua) were only partial options. This is particularly relevant when analysing the second choices of those who had selected Purple Pipe, the most popular option. Some people went on to use their second ranking as their choice for the residual water given Purple Pipe was presented as a partial option only. Others use the second ranking to give their second choice if the Purple Pipe was not selected. This makes detailed analysis of people's intentions regarding the residual option in a Purple Pipe scenario difficult to tease out, but it appears to be that the **strongest overall preference is for a Purple Pipe/Harbour Outfall combination, with the second choice being a Purple Pipe/Pompeys Pillar.**
- The above results are based on the **counts of submissions**, not the number of people who have taken an interest. Many submissions represent multiple people. The FOBP submission was endorsed by 300 people of which 222 did not make their own submission (so would not be double counted if the FOBP submission is weighted as representing 222 submitters). We have not at this stage produced a weighted analysis, but from reading through the submissions it would skew more heavily in favour of purple pipe.

2.1 Changes in views since the 2016 "Takamatua" consultation

- Support for land disposal has significantly decreased since the Council's first submission process in 2016. That had offered irrigation to trees, pasture, a variety of coastal/wetland infiltration systems and harbour outfall. No Purple Pipe reuse option was offered.

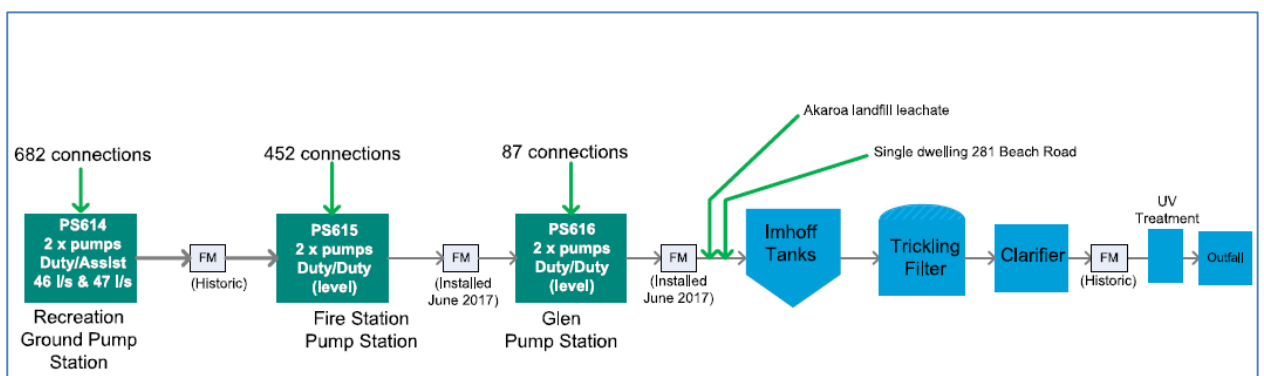


- Under this scenario Harbour Outfall was the clear preference with 43% support, 31% of people could not state a preference, and 25% favoured some form of land disposal. Any form of coastal infiltration gallery disposal was roundly rejected.
- The movement of views shows that people have now solidified in their views. The new Purple Pipe reuse option was not offered in the early consultation, but once it is, then it is supported by a clear majority of 52%. In the second consultation only 1.7% failed to express a preference support for land disposal has decreased by 52%. Support for harbour disposal has also dropped but less so, dropping by 37%.

3 Revised wastewater flow data

- On June 8, 2017 the Council revealed that the flow meter on which all the design work had been done was faulty and that a new meter was being installed.
- The following diagram was obtained in response to a LGOIMA request.

Figure 1 Akaroa Wastewater system diagram



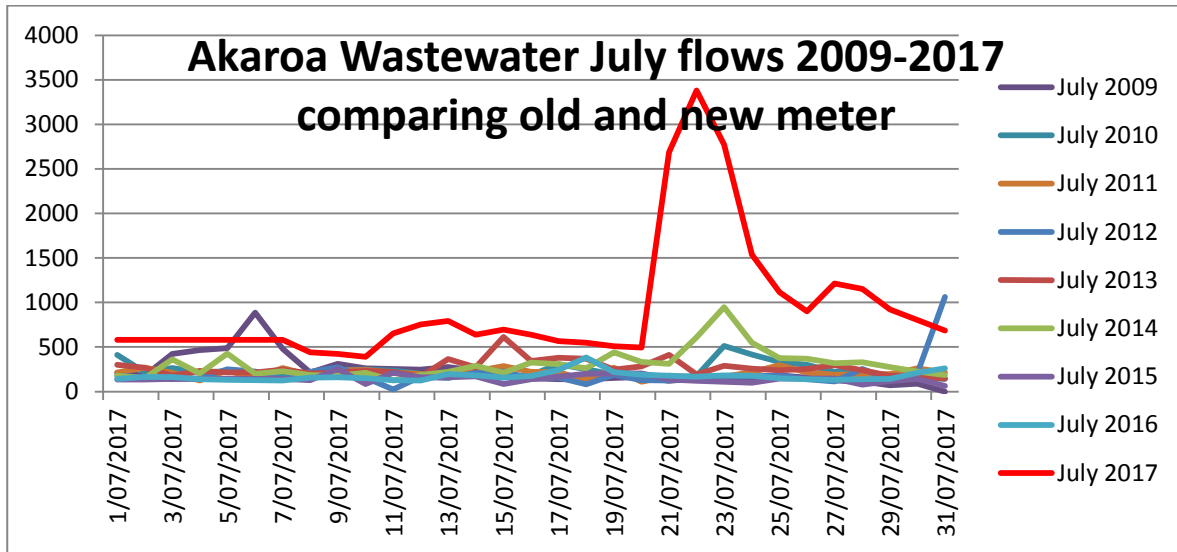
- FM indicates a flow meter.
- The failed meter is the one labelled (Historic) between the clarifier and the UV treatment. The new meter is after the Glen pumping station.

- The diagram reveals that **the wastewater plant receives leachate from the former Akaroa landfill.** This is not something the Council has ever acknowledged before. The new meter does not appear to include this in its measurements.
- The Council has not been explicit about when in June it has installed the new meter. Given the figures subsequently released, we are working on the basis that the new data starts on July 1

3.1 July flow data

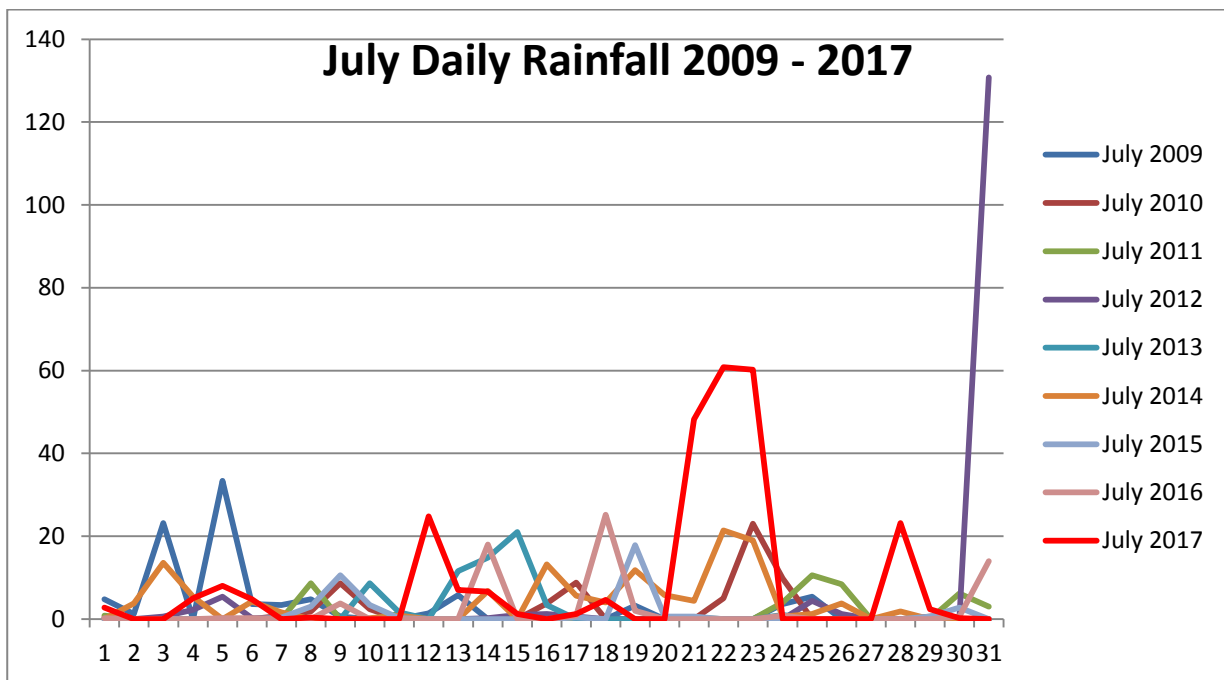
- The following chart compares the flow data uploaded to the Council’s website for July 2017 with July data for the 8 previous years. We are presuming that the July 2017 data has been recorded by the new meter, but have an OIA request to check this. The red line shows the July 2017 data is much higher than anything previously recorded.

Figure 2 July Wastewater Flows over past 9 years



- 2017 has been a wet winter. Could the increased red line be due to increased rainfall and storm water infiltration into the sewer network?

Figure 3 July rainfall over past 9 years



- The above graph shows daily rainfall in July since 2009. This shows that the single biggest cumulative rain event took place between 21-23 July 2017. This accords with the highest spike on the wastewater flow chart.
- However, the rainfall in the rest of July is within the patterns seen in other years, and markedly less than at the beginning of the month in 2009. The red line of the Akaroa Wastewater Flow in July 2017 is consistently higher even during periods when there is no significantly higher rainfall than in other years.
- The difference does therefore seem to be in the measurement of wastewater flow, rather than exceptional rainfall. Our estimate of the increased flow now being measured, when adjusted for rainfall, is that it is 2.6 times what the old meter would have measured. However, we do not at this stage have access to the old meter data. We have an OIA request ready to lodge asking for this.

3.2 Tying together the submission responses and the increased flow data

- Submissions have already overwhelmingly rejected all land disposal options
- By the Council's own admission and by our calculations based on the July data, the actual wastewater flows are likely to be twice as great as those provided in the consultation options, and on which the pond storage and land disposal was sized.
- The Peninsula has experienced an extremely wet winter, with flooding and slips.
- We have requested the Council to supply the model used to calculate the pond storage and land disposal areas, with a view to checking the figures this would generate with the rainfall experienced this winter using the old meter data, and so that it could also be tested with the new meter data.
- The Council has refused to supply this model on the grounds of commercial sensitivity.
- Regardless, if the wastewater flow is now at least double that previously stated, at a minimum the storage pond requirements double **and** the land area for disposal doubles. If the land area doesn't double, the storage goes up approximately four fold. (see discussion on modelling below)
- Given that the public roundly rejected land disposal when the search was for a 1.7ha – 3ha site for pond and 25ha for irrigation, it does not seem credible to think that it will be met with more favour when the pond and land areas double.

4 Infiltration issue

- A BRANZ report from 2008 estimates winter water usage in New Zealand and an average of 168L per person per day, or 458l per household
- The council chart given in Figure 1 above shows there are 1222 sewer connections for Akaroa.
- The 2013 NZ Census reports and occupancy rate of 41% in houses across Akaroa harbour
- Applying the per household usage to 41% of 1222 houses, suggests the winter flow for Akaroa in July (when it is at its least occupied) would be in the order of 244,122L per day. The actual flow averaged across the dates 8 July to 20 July (excludes dodgy data at beginning and high rainfall at the end) is 580,231L per day. This is approximately 238% of what would be expected. This points to an extreme groundwater infiltration problem as well as the obvious infiltration problem during heavy rain events.
- The implication of this is that the wastewater treatment system is having to cope with more than double the volume that it should. Under the new regime this would include
 - Pumping all this additional water to a treatment plant up Takamatua hill
 - Pumping all this additional water to pond storage and land disposal site

5 Storage and land requirement modelling

We requested the Council supply the model developed by PDP to calculate the storage pond and land area requirements. The purpose of this was to

- Understand the assumptions behind the Council/BECA's modelling, such as what level of soil moisture deficit they were working with
- Quantify the level of uncertainty in the storage volumes
- Test the model against the heavy rainfall levels experienced this autumn and winter.

The Council declined to release the model citing commercial confidentiality.

6 Current LGOIMA requests

A new set of OIA requests has been sent to the Council to try to find out:

- The current wastewater flow data, measured by the old faulty meter and the new meter so we can try to assess the difference
- How often, based on the new data, the Council has breached its consent conditions
- The level of infiltration the Council now estimates is taking place
- What contaminants are in the Akaroa dump leachate and the volume of leachate
- The parameters used by Beca to model the pond size and land area, and the sensitivity and uncertainty of their modelling
- The Council's analysis of the submissions
- Whether they have conducted any work on the Friends request to raise the treatment standard to one suitable for watering salad crops
- Whether any Council staff attended the wastewater conference in Palmerston North held in April
- What discussions have taken place with Ngai Tahu since the discovery that the flow meter was faulty.

7 What's happening next?

- We have heard the Council is looking for other sites on remote headlands further afield than Pompeys Pillar
- There are rumours that the Working Party will reconvene, but we are yet to hear this officially or have any dates set.
- With wastewater flows from Akaroa now likely to be more than double that previously measured, the Council is likely to be breaching its existing consent frequently. We have no indication yet as to how the Council is planning to deal with this problem, deal with the infiltration, or whether it still considers land disposal feasible. Unless the infiltration is brought right down, its clear now that Akaroa would not be able to reuse all of its wastewater through a purple pipe system and that the storage requirements are even more massive than previously thought.
- A further update will be sent out when we have received responses to our OIA requests.