

Proposed Community Sewerage Scheme for Glenorchy: Answers to your Questions

1. What options have been considered for the location of the treatment plant / disposal area?

Four sites were considered:

Township reserve land (Cemetery/Sheil St).

The key disadvantages of this site are:

- Relatively shallow groundwater beneath the site is likely to require a higher standard of treatment;
- Its location - up-slope of the landfill site and within an active flood hazard area;
- The limited area of land available for future expansion;
- Proximity to the township.

The key advantages include the following:

- The Council owns the land
- The reduced amount of pipes and pumps that would be needed compared to other sites

Grant Block

The key disadvantages of this site are:

- Its location within a flood hazard area;
- The land is privately owned

Area around the old Landfill Site

The key disadvantages of this site are:

- The potential risk from flooding
- The soils are unsuitable

A more detailed assessment of this site is attached to this document.



Peninsula land

The key disadvantages of this site include:

- The requirement to cross the Buckler Burn;
- The need to establish a power supply to the site.

The key advantages include the following:

- The Council owns the land;
- The amount of land available for future expansion;
- The amount of separation from groundwater compared to other sites;

2. What is the proposed connection charge?

The current cost estimate is \$15,750+GST for a single residential dwelling

3. What payment options are available?

The Council proposes to offer two payment options for existing dwellings and vacant lots:

- 1) Lump sum with 4x lump sum payments of \$3,973.50 + GST over 12 months via rates. No interest charges will apply to this option
- 2) Payment plan with connection charge spread evenly over 15 years (including interest). The annual payment is expected to be \$1,622 + GST/year (Assumes interest at 6.0% pa)

The 15 year timeframe reflects the Council's preferred position and is the same as that offered to properties within the Luggate, Arthurs Point and Lake Hayes schemes. A 50 year loan option has been considered but is not favoured by the Council. The indicative cost of such a loan funded scheme would be in the order of \$1,022 + GST/year. However this excludes the cost of renewals, which would also need to be taken into account.

4. Will holiday homes advertised/rented out as visitor accommodation pay the same connection charge?

At this stage, it is assumed that these properties will pay a residential connection fee.

5. What are the expected timeframes to implement the community sewerage scheme?

The likely key stages and milestones are:

- Inclusion in the Draft Ten Year Plan, released for public consultation in March 2015 and confirmed in June 2015;
- Decision to proceed to detailed design, discharge consent application and tendering made shortly after;
- Design and consenting in late 2015;
- Tendering late 2015 / early 2016;
- Final decision to proceed following assessment of detailed tenders early 2016;
- Anticipated construction duration of 12-16 months
- Commissioning mid-2017.

6. If I'm in the flood area, what will be on my property and who owns and manages this?

A small pressure sewer system pump station tank will be located on your property. These are typically cylindrical and about 1 metre across and up to 2 metres deep. They are buried but an access lid will be visible on the surface. These will be owned and maintained by QLDC. The pipework between the house and the tank will be owned by the resident, who will be responsible for its maintenance. The Council owns and maintains the pipework from the tank out to the boundary kit. The work on the private property will be covered with a Landowner Entry Consent where both the Council and the landowner agree on location, pipe alignment and access to the property.

7. I'm in the flood area; how much will the pressure sewer pump station cost to run?

Based on an average dwelling generating 750 litres of wastewater/day and an average pumping rate of 0.6 litres/second, the pump can be expected to run for approximately 20 minutes per day. Assuming a power cost of 30c/kWhr and a 1kW pump, it will cost about 10c/day or \$30-\$40/year to run the pump.

8. Will we still be able to use the disposal area on the peninsula as a recreation reserve?

In general yes, although there will be some restrictions to access and use during construction and for infrequent maintenance activities. We expect that these types of activities will be staged to ensure that some land is available for public use at all times.

9. How will the risks associated with the Buckler Burn crossing be mitigated?

The exact details of the Buckler Burn crossing will be confirmed during the detailed design stage of the project. However, the wastewater pipeline will most likely be laid within a separate pipe or duct that is laid beneath the active river bed, most likely using directional drilling techniques. In technical terms, we can ensure the duct is placed under the active bed because the minimum active bed level is ultimately controlled by the level of the lake. As well, the bed of the Buckler Burn is generally building up as gravel and sediment are constantly being washed downstream from the upper catchment.

10. Has the Council notified all ratepayers of the proposal?

The Council will be notifying all Glenorchy ratepayers.

11. Will the Council hold a vote and if so what is the timetable and the result required to proceed?

A non-binding ratepayers' vote will be held to gauge the general level of support for the scheme. This will include the owners of vacant and developable land. The Council will weight the vote from large users to account for the expected ultimate cost contributions. If approximately 75% of participants vote in favour of proceeding, the Council would view this as a clear indication of support, although the vote itself is non-binding and the ultimate decision will be made by Councillors as the community's elected representatives.

12. Will the Council impose the scheme in the event of a 'no' vote and if so what is the legal mechanism and process for doing so?

This is a possibility if the Councillors decide it is in the community's best interest to proceed, notwithstanding a lower level of support from property owners.

13. If the community, at a future date, wishes to rezone parts of the township, eg as commercial or to extend the extent of the township, is there an assurance that the design of the proposed scheme would not be used as an argument against such a re-zone or township extension?

The Council can never give a categorical assurance regarding future possibilities or decision-making processes. However, the scheme as currently proposed can readily be scaled up and expanded to cater for future growth. On that basis, it is reasonable to assume that further expansion beyond the current "ultimate" capacity would be feasible.

One of the key advantages of the peninsula site is the area of land available for possible future expansion and lack of constraints associated with this.

14. In the past, the Council has used funds from the sale of Commonage land to fund wastewater infrastructure for Queenstown. What could be done to subsidise a scheme for Glenorchy?

The money from the sale of Commonage land in Queenstown was tied to waste and wastewater services in Queenstown. It could not be used to offset the cost of these services in Glenorchy. At this stage, the Council is not aware of any such funding sources available to Glenorchy.

15. If calculations indicated that aggregating operating costs of wastewater schemes across the Wakatipu ward would markedly reduce the costs of this scheme for Glenorchy ratepayers, would the Council support adopting that model for charging?

The Council may canvas this as an option in the Draft Ten Year Plan. If so, consultation on the issue would be undertaken across the Wakatipu Basin with a decision in June 2015. To be clear, however, this relates solely to the ongoing operations and maintenance costs of a community scheme and will not affect the capital connection charge.

16. If this scheme proceeds, there will be significant financial savings for the Otago Regional Council. What contribution or assistance are they providing?

The Otago Regional Council has advised that at this stage it does not intend to provide financial assistance towards the proposed Glenorchy wastewater scheme. The adoption of a community scheme would not result in significant financial savings for the ORC, as it applies the "polluter pays" principle to its regulatory functions. The full costs of consent processing, non-compliance follow up, and enforcement are recovered from the responsible parties through the scale of fees and charges set out in the ORC's annual plan.

17. What happens if someone is unable to pay the cost of this scheme?

The Council is offering a payment option which spreads the cost over 15 years at a very low interest rate (6.0% pa), as set out in the answer to Question 3. Any residents who were unable to pay the connection charge would need to discuss their circumstances with the Council on an individual basis.

18. What is the level of risk of an environmental issue occurring if the status quo remains and what is the evidence to support the calculation of that risk?

Modelling completed by the Regional Council in 2014 identified Glenorchy as an area of extremely high septic tank density and high risk for groundwater contamination. Nitrogen loading rates across the township were estimated to range from 0.1 to 136 kg N/ha/year with an average of 47.7 kg N/ha/year. To put that in perspective, discharges of nitrogen from farming activities in the nitrogen-sensitive Wakatipu Basin are expected to be less than 15kgN/ha/year by 2020, under the Regional Plan: Water.

19. Has any nutrient/ water quality testing been undertaken, and if so what did the results reveal. Has this been undertaken over a prolonged period of time?

The Regional Council published a report on groundwater quality in 2006, which focussed on the community supply bore near the Buckler Burn. The report found that while the supply bore was not at immediate risk, the aquifer was reasonably vulnerable to land use impacts. Sampling from two wells within the township itself returned elevated concentrations of ammonia-N and nitrate-N, indicative of septic tank pollution. These results were within Drinking Water guidelines, but continued discharges are likely to cause a further deterioration in groundwater quality. Further development, either through increasing resident or visitor numbers, will exacerbate the risk of groundwater pollution.

20. Which proprietary system has the cost for the primary / secondary treatment been based upon?

The estimates have been based on information from several different treatment processes and suppliers. If the scheme proceeds, the supply of the treatment system will be subject to a competitive procurement process to ensure that the community receives the best value for money. This will consider both the initial up-front capital cost and also the ongoing operations and maintenance costs.

21. Why is this scheme based on 750 litres wastewater per day per household when the engineering reports for potential schemes in Cardrona used a figure of 1450 litres per day?

The Cardrona figure will be reviewed. It's in everyone's interest to reduce wastewater volume as much as possible to achieve an affordable wastewater scheme. Less volume means savings in reduced pipe sizes, pump run times, treatment plant size, disposal field, capital cost and operational costs.

22. The community has been aiming to establish a foot / cycle bridge across the Bucklerburn to provide ready access to the Peninsula Reserve. Could such a bridge be used to carry the waste pipe instead of burying it under the stream?

In principle yes, but this is not favoured. We know from experience that structures suspended above a riverbed are more prone to damage and being washed away during floods.

23. Will the use of the land at the Peninsula Reserve for wastewater disposal prejudice other uses in the future?

While the land is being used as a disposal area there will be some practical restrictions, primarily to development of the area. However, if the land ceased to be used as a disposal area, we don't envisage the need for future restrictions.

24. Has this scheme taken into account the existing agreed plans between Council and the Glenorchy Riding Club for that Club to construct an all-weather arena and jumping area on the Peninsula Reserve?

Yes, and this will be given further consideration during the detailed design stage of the project. Given the area of land available on the site, we are confident that it is possible to work in with other users.

25. What assurance is there regarding escalation of cost with the project?

No categorical assurances are possible at this stage. However, we expect that the final decision to proceed with the scheme will be made following the procurement process based on tendered costs to install the system. If these are higher than the amount budgeted and consulted on, then the project could be set aside.

26. Of the \$5.9m for the first phase how much will come from existing residential landowners, how much from Commercial landowners, how much - the unfunded portion - from future ratepayers and how much is the Council contributing?

Based on the financial model, QLDC would fund approximately \$1.9M (excluding GST) in year 1. This is gradually recovered as additional properties connect to the scheme but also periodically increases as necessary to fund future expansions to the scheme. \$2.9M would be funded by residential landowners (includes existing dwellings, vacant properties that could have a dwelling constructed, new dwellings and residential subdivisions). Approximately \$1.1M would be funded by commercial users.

27. What is the cost of having the Council act as a banker for over 50 years and where do they arise from? How has the figure for the unfunded portion been derived?

The Council costs cover the portion of the initial costs that relate to the allowances for future growth within the initial scheme. In the first few years this largely relates to the cost of installing the reticulation that will ultimately benefit everyone. However, as the treatment plant gets expanded in stages to accommodate future growth, a significant portion of this will also cover the treatment plant costs. The Council will borrow \$5.9M for the cost of the scheme and recover

\$4m of those costs progressively from existing property owners and the remaining \$1.9m from future property owners once growth occurs.

28. Does the \$5.9m include consent fees payable to ORC and if so what is the order of these fees?

An allowance of \$50,000 + GST has been made for obtaining an ORC discharge consent, based on a relatively straightforward consent process without a hearing. However, ORC cautions that costs are based on the actual staff time needed to process the application, plus any costs associated with notification and/or hearings. Costs are largely driven by the scale and complexity of the application, and the potential significance of any environmental effects. As a rough estimate, a non-notified application may be processed for less than \$10,000 while a fully notified application that requires a hearing could cost more than \$100,000.

29. Does the \$5.9m include the \$190,000 Council has previously spent on schemes that have not proceeded?

No, this has been written off.

30. How do the connection charges and operating charges for this scheme compare with schemes elsewhere in the District?

The capital connection fee of \$15,750 is high when compared to other areas, which range from \$6,144 to \$8,130. This reflects the smaller number of properties in Glenorchy to spread the capital cost over. The operating charge of \$500 to \$800 is also high when compared to other areas, which range from \$320 to \$590, but these costs will rise for the rest of the Wakatipu due to the increased operating costs of Project Shotover. The new range is expected to be from \$480 to \$820.

31. If the yearly operational costs of wastewater schemes were aggregated across the Wakatipu ward, what effect would that have on the \$500-\$800 annual operational figure associated with this scheme?

As above, Project Shotover is expected to significantly increase existing operational charges, which means that it is unlikely there would be much decrease. This depends on the treatment process utilised and also the options and opportunities available at the time for dealing with sludge.

31. How will you estimate the wastewater generated by a commercial business - metering, based on development contribution calculation or some other method?

In general, the contribution is based on a pan charge per toilet. It would be possible to install meters to measure and charge for wastewater and water supply, but this would need to be discussed on an individual basis. The design of the wastewater scheme must be based on peak flows.

8943HUM
08 September 2006

Bryce Biggs
Humboldt Park Limited
C/o Anderson Lloyd Cauldwell
Private Bag 1959
DUNEDIN

Dear Bryce

GLENORCHY LANDFILL SITE - POTENTIAL FOR WASTEWATER DISPOSAL

As requested by Wyuna Station, we have undertaken further investigation to assess the suitability of the former Glenorchy landfill as a potential site for land treatment of wastewater from the Glenorchy township in regard to any future joint wastewater scheme (between the Queenstown Lakes District Council (QLDC) and Humboldt Park) to be developed for Glenorchy. Our investigations encompassed discussions, desktop investigations and a site visit undertaken by myself with Martin O'Malley (Senior Engineer) from QLDC.

Although in theory, the QLDC are theoretically not opposed to using the former landfill site for wastewater application, they have concerns over flood risk. We understand that they are providing a letter with their concerns. We concur with this concern and conclude that the area is not a suitable option for this use based on the following reasons:

1. Unsuitable soil development. The site visit revealed that the covering over the site is essentially river outwash gravels and cobbles with very little soil development. Sufficient soil develop is a fundamental requirement for land treatment of wastewater and this is clearly lacking. This is due to the site being on the floodplain and main flood channel of a highly erosive stream. This visual assessment has been further confirmed by the drilling log of a bore at the landfill to monitor leachate. This shows no topsoil, just sandy gravel to 15 m depth.
2. Potential risk from flooding. Even if the site had suitable soil development, the potential flood risk to the site is high. This flood risk is from a stream channel running through the site in a north west direction which is sourced from a large catchment area behind the site up on Wyuna Station. A small retention pond and diversion channel have been constructed on the site to mitigate potential flooding from this. However, in our opinion, these structures are inadequate given the size of the catchment area feeding into the

Let Bryce Biggs - Glenorchy Landfill (2)



stream and the fact that there has also been several instances where failures have occurred resulting in widespread flooding over the site.

3. We do not have concerns over the site being partially used as a landfill, as investigations reveal that the area used appears to be rather limited. Land treatment over the filled area would not be recommended due to enhanced leachate mobilisation.

Based on these factors, we could not recommend, and the QLDC is unlikely to allow, the former landfill area to be utilised for any future wastewater application.

We hope this provides to you some clarification on this issue. In the meantime, could you please discuss this letter with the owners of Wyuna Station in order that the area set aside for land application on Wyuna Station from the three small developments can proceed to a hearing. In addition, it needs to be reiterated that land treatment (3 - 4 mm/day via drip irrigation) is very different from land disposal (30 - 50 mm/day via trenches). Thus the land can be used for grazing, native regeneration, etc. but not built on.

If you have any further queries regarding this, please do not hesitate to contact us.

Yours sincerely

GLASSON POTTS FOWLER LIMITED



Rob J Potts
Director Science and Engineering

Rob.potts@gpf.co.nz

cc: Martin O'Malley (QLDC)
Buzz Scown
Michael Hannah (Darby Partners Limited)