

# **Glenorchy Wastewater Project**

## **Cost Estimate Update and OSWWD Review**

### **1.0 Database of Existing OSWWD Systems**

- 1.1 HCL have prepared a database of existing On-Site Wastewater Disposal systems within the Glenorchy Township. This has been based on property data provided by QLDC from the rating database along with review of building consent and plumbing and drainage information contained within the QLDC edocs system.
- 1.2 The database is presently a desktop assessment tool that provides a preliminary risk rating of each existing OSWWD system. The database will be refined as further information, and in particular further field information, is obtained for each property. It is intended that properties classified as higher risk through the desktop assessment will be subject to more detailed field investigations and the risk ratings further refined and updated based on new field investigation information.
- 1.3 The database includes a total of 167 properties within the township boundary which include improvements (dwelling construction). Of the 167 properties, 12 are non-residential and are the subject of a separate review by QLDC. Within the remaining 155 residential properties there are 38 properties where no plumbing or drainage records or detail are available. By default, these 38 properties have been classified as high risk, requiring further investigation.
- 1.4 Where sufficient information was available within edocs the preliminary risk ratings have been based on the location and elevation of the site as an indicator of likely proximity of the discharge to groundwater and Lake Wakatipu, the age of the dwelling which is assumed to match the age of the OSWWD system (as it affects the likely design and construction standards of the day) and also the general practices at that time, the type of treatment system installed as it impacts the likely quality of the discharge and the size and type of land application system as it affects the likely residual treatment available through renovation within the soil column.
- 1.5 Each factor has been assigned a rating between 1, being low risk and 3, being high risk and the overall risk rating is the combined score and ranges from 4 (low risk) to 12 being extremely high risk.
- 1.6 Where details of the OSWWD system were not available in QLDC edocs the risk rating was based solely on the location/elevation and age of the dwelling and in this case the combined score was re-weighted (doubled) to result in a similar overall risk rating scale of 4-12.

- 1.7 From this preliminary risk assessment, 64 of the residential properties with individual OSWWD systems were assessed as having a moderate risk or higher (Overall risk rating 9 or greater), requiring further investigation.
- 1.8 To refine and calibrate the database and risk assessment it is proposed to physically investigate and monitor some of these 64 higher risk systems to more accurately confirm system performance. As an additional reference, investigation and monitoring will also be performed on systems which were classified as low risk. This data should provide an understanding of the relative performance between the older (higher risk) systems and the more recently installed residential systems.
- 1.9 We recommend that planning of more detailed field assessment of existing OSWWD systems be undertaken, initially focussing on those sites identified as potentially high risk in order to update and verify the preliminary database and assess the actual quality of existing discharges.
- 1.10 This field work is likely to include locating and accessing existing septic tanks on private properties in order to facilitate measurements of items such as tank sizes, sludge levels and where possible disposal field areas. Soil sampling to determine effective levels of treatment from disposal areas is also desired. The field work will also include an element of information gathering from the property owner to assist with location and gather additional information for the database including items such as maintenance history.

## **2.0 Updated GSS Rough Order Costs Estimate**

- 2.1 The previous rough order cost estimate has been updated to account for the revised location of the WWTP and LTA that is now proposed to be at the Glenorchy Aerodrome site.
- 2.2 The total cost for the initial stage Hybrid/Gravity GSS is estimated to be have increased by approximately 7% to approximately \$7.01M as a result of the change in location of the WWTP and LTA.
- 2.3 Note that no adjustment for inflation or increase in general construction prices has been included in the figures above. Similarly, we note that this estimate is based on a number of assumptions regarding likely discharge consent requirements and these assumptions are subject to confirmation once the discharge consent is finalised.

## **3.0 Cost Estimates for New OSWWD Systems & Upgrades**

- 3.1 A number of discussions have been had with local drain layers and contractors in regards to the likely costs of installing new OSWWD systems within the Glenorchy township and also the costs associated with upgrading more basic existing systems to reduce the risks

associated with low quality treatment and disposal systems. In all instances these estimates are provided for a typical or average 3 bedroom residential dwelling.

- 3.2 The estimated cost to supply and install a new OSWWD system to provide secondary level treatment for a new build dwelling in an area removed from the lake and elevated at least 3m above high groundwater is approximately \$14,500 + GST.
- 3.3 In areas closer to the lake and/or groundwater the costs for a new OSWWD system providing secondary treatment and using a lower effluent loading rate and UV disinfection, is expected to be approximately \$19,500 + GST.
- 3.4 The cost to retrofit a secondary treatment system to an existing basic septic tank and construct a new land application area in an area removed from the lake and elevated at least 3m above the maximum groundwater level is approximately \$12,000 + GST.
- 3.5 In areas closer to the lake and/or groundwater the costs to retrofit secondary treatment and UV disinfection to an existing septic system where a lower effluent loading rate should be utilised and UV disinfection also provided the expected cost increases to approximately \$17,000 + GST.
- 3.6 We note that in all instances the systems and upgrades outlined above will still result in discharge in relatively close proximity to groundwater and Lake Wakatipu.