

Ref: PR 22-01-27 ACS 000000 - Wastewater LT.Docx

27 January 2022

Clutha District Council
PO Box 25
BALCLUTHA 9240

Attention: Gerry Essenburg

Dear Sir

Clutha DC Wastewater Treatment and Disposal Options with a Focus on Land Treatment Options

1.0 Introduction

Thank you for the opportunity to offer our services to Clutha District Council (CDC) on this project. We understand from your brief that CDC would like a review of the wastewater treatment and disposal options with a focus on land treatment options available to them for the wastewater generated by the wastewater treatment facilities at the following communities:

- Waihola
- Milburn
- Milton
- Stirling
- Kaitangata
- Balclutha
- Kaka Point

As discussed, we understand that you would like us to look at wastewater treatment and disposal options for each of the communities separately and to also investigate options of treating and disposing of combined wastewater flows from several communities where a cost-effective solution may be available.

Please find our proposed scope of works and fee estimate for the work presented below.

2.0 Scope of Works

We propose a staged review process approach for this project as follows:

2.1 Stage 1 – Understanding Flows and Loads

To allow us to understand the extent of the infrastructure required to evaluate options we propose that we work with CDC to gather the following information at the outset:

- Wastewater flow records for flows currently arriving at and leaving the treatment facilities for each of the communities. We would ideally want at least a year of data for each site to understand peak and low flow fluctuations. Our estimated fee assumes only small amounts of data cleaning and tabulating is required to produce flow profiles.
- Wastewater quality records for each of the sites for flows arriving and leaving each of the wastewater treatment plants. The information required would be total nitrogen, phosphorus, e-coli, suspended solids and BOD records. Copies of the annual monitoring reports would also be helpful. Our estimated fee assumes only small amounts of data cleaning and tabulating is required to produce wastewater quality trends.
- Rainfall and temperature records for the areas.
- Catchment population numbers for each of the treatment plants and an understanding of growth potential.
- Gain an understanding as to whether there are any industrial discharges feeding into the treatment plants. At this stage we would assume no significant industrial discharges would be being treated at the existing plants when considering the communities being serviced.
- Obtain and read any historical reports and consents pertaining to the performance of the existing wastewater treatment plants and current disposal methods.
- Gain an understanding from the Otago Regional Council and CDC as to the expected treated wastewater discharge conditions to be imposed in the future.
- Undertake a brief review of the current treatment processes and identify any further issues and/or constraints at each of the wastewater treatment plants.
- Complete a desktop study to evaluate distances, topography and soil types around and in between various existing treatment plant sites.

Using the information gathered above we will be able to understand the impacts of flows and loads emanating from each site to allow us to evaluate the size of infrastructure to manage, treat and dispose of the flows. We will also be able to understand the issues that need to be considered in upgrading any of the sites and the potential for combining flows from various communities.

We will then meet with CDC staff to agree the data that is to be used going forward and come to an agreement as to the options that need to be considered such as the number of land treatment sites and which communities should be considered as being combined as an option.

2.2 Stage 2A – Desktop Evaluation of Land Suitability and Mapping for Land Treatment Consideration

As noted above, we have been asked by CDC to focus on land treatment options as part of this study. As a result, we propose to engage the services of Lowe Environmental Impact Consultants to undertake this work. They are very experienced in the sizing and design of land treatment systems and have worked with us on the design of the Palmerston and Moeraki wastewater land treatment areas over the last few years.

The works completed under this stage will identify the nutrient and hydraulic limitations of the land at potential land treatment sites. This assessment will include evaluations of:

- Potential nutrient loading rates;
- Cropping considerations;
- Geological and soil types commonly occurring in the area;
- Occurrence of high groundwater; and
- Climatic limitations that may occur.

LEI will use a GIS based process to identify general areas of land that have greater suitability for land application. This study will use the information listed above as well as soil types, slopes, flood return and degree of wetness limitations as criteria for prioritising soil suitability for land application. The inclusion of depth to groundwater, along with the potential nutrient loading will enable the nutrient leaching risk to be assessed. Maps of the study's outcomes will be produced with a traffic light approach to identify and rank suitable sites. Please note that land ownership will be noted but will not be considered as a constraint to its future use as part of this study.

The size of the land area required to further treat and dispose of the wastewater will then be able to be calculated using the wastewater flow and load information gathered in Stage 1 and the ground characteristics determined above. LEI will then prepare rough order cost estimates for the infrastructure required at each land disposal site. Please note that the report will not consider the potential cost to purchase or lease the land from the owner. We have assumed that CDC will be able to make an assessment of these costs.

2.3 Stage 2B – Civil Infrastructure Evaluation

While LEI is completing an evaluation of land areas for treatment, we will complete concept designs of pumping stations and rising mains to allow us to estimate the cost of providing the civil infrastructure to get the wastewater to the land treatment sites for the various options.

Options also considered in this stage will also include the development of the water balance models that consider the timing of discharges to the land treatment sites and the inclusion of possible additional storage in order to limit the size of the infrastructure required when combining flows from various sites.

Once LEI have completed their works, we will further refine our concept designs and cost estimates and combine them with the land treatment area cost estimates to be able to give CDC an understanding of the costs associated with each option.

2.4 Stage 3 – LTA Options Report

We will gather all the information determined above and compile an initial land treatment and disposal options report to present to CDC showing the information received, the assumptions made, the land treatment options considered and the environmental, social, cultural and financial ramifications for each options along with concept design preliminary construction cost estimates, operational costs and Net Present Value calculations.

2.5 Stage 4 – Alternate Treatment and Disposal Options and Report

As noted above, albeit that the initial works will concentrate on land treatment and disposal options we will also investigate other options to collect, treat and dispose of wastewater from the various communities. The other options may include:

- upgrading existing plants to meet expected discharge consent requirements,
- combining flows to feed into a new treatment plant,
- applicable, cost-effective new treatment technologies
- alternate disposal methods such as ocean outfalls

Similar to above, we will gather all the information and compile a report relating to the alternative treatment and disposal options noting the assumptions made and the environmental, social, cultural and financial ramifications for each option. The report will also take into consideration and make comparisons with the findings from the initial land treatment and disposal options report.

CDC will be able to use this information to determine a way forward in regards to the treatment and disposal of the wastewater from the seven communities.

2.6 Future Works

Once CDC have made a decision as to the preferred options that they wish to consider further, both LEI and Fluent Solutions are happy to continue with this project to further evaluate the preferred options and provide preliminary designs and cost estimates to help provide more certainty to CDC. We understand that this information could then be used in the formation of CDC's next Activity Management Plan at the end of 2023.

3.0 Programme

We envisage that the works for Stage 1 could be started within the next two weeks and be completed within 2 months assuming the timely delivery of information from CDC. LEI have indicated their availability to complete their works (Stage 2A) at the end of that period. The extent of works required will be dependent on the number of sites being considered. At this stage LEI have estimated the cost per site for their Stage 2A works to be up to \$6,500 per site. It is difficult for us to estimate our time and costs for Stage 2B until we understand the extent of the options to be considered.

Stages 2B and 3 should be able to be completed by the middle of June 2022 with Stage 4 commencing at that time.

4.0 Fee Proposal

As noted above, it is difficult for us to estimate the time and costs related to the above works and we therefore propose that we be engaged on a time writing basis such that CDC only pay for the works completed. Notwithstanding the above statement we have estimated the potential cost of the various stages and have presented them in the table below.

Stage	Description	Fee Estimate (Excluding GST)
1	Understanding Flows and Loads	\$33,000
2A	Desktop Evaluation of Land Suitability and Mapping – based on 10 sites – includes LEI costs	\$74,000
2B	Civil Infrastructure Evaluation	\$16,000
3	LTA Options Report	\$6,000
4	Alternate Treatment and Disposal Options	\$30,000
4	Final Report	\$6,000
Total (excluding GST)		\$165,000

4.1.1 Personnel and Hourly Rates

We propose the following staff who will be working on this project:

Title	Chargeable Rates (per hour) (Excluding GST)
Senior Civil Engineer (Project Manager)	\$200
Senior Environmental Scientist	\$250
Soil Scientist	\$165
Environmental Scientist	\$135
Infrastructure Engineer	\$160
Senior CAD Technician	\$150

Note that depending on skill requirements for the work as the scope develops, we would include other staff as required.

Note also that estimated costs of sub consultants has been included in our fee estimate.

Any disbursements would be charged at cost + 10%. Our travel rates are billed at \$1/km.

5.0 Terms and Conditions of Engagement

We propose to undertake this work under the ACENZ / Eng NZ Short Form Agreement for Consultant Engagement (December 2017). A copy is attached to this offer for signing.

6.0 Proposal Acceptance

If this proposal is acceptable, please sign and return the attached Short Form for Consultant Engagement form to complete and confirm our engagement.

Thank you for this opportunity to provide a proposal. To address outstanding points and discuss clarifications required please contact Anthony Steel in our Dunedin office - Telephone: (03) 929 1270 or Mobile: 021 838 661.

Yours faithfully

FLUENT INFRASTRUCTURE SOLUTIONS LTD

Per:



Anthony Steel
Managing Director

Enclosure:

- Short Form Agreement for Consulting Engagement
(Ref: SFA 22-01-27 ACS 000000 – Wastewater LT)

Short Form Agreement for Consultant Engagement

Between: *Clutha District Council*

.....
(Client)

and: *Fluent Infrastructure Solutions Limited*

.....
(Consultant)

Collectively referred to herein as the "Parties" and individually as a "Party"

Project: *Communities Wastewater Treatment and Disposal Options Study*

Location: *Clutha District*

Scope & nature of the Services:

As described in Fluent Solutions letter PR-22-01-27 ACS 000000 dated 27 January 2022.

Programme for the Services:

As described in Fluent Solutions letter PR-22-01-27 ACS 000000 dated 27 January 2022.

Fees & timing of payments:

As described in Fluent Solutions letter PR-22-01-27 ACS 000000 dated 27 January 2022.

Information or services to be provided by the Client:

The Client engages the Consultant to provide the Services described above and the Consultant agrees to perform the Services for the remuneration provided above. Both Parties agree to be bound by the provision of the Short Form Model Conditions of Engagement (overleaf), including clauses 2, 11 and 12 and any variations noted below. Once signed, this agreement, together with the conditions overleaf and any attachments, will replace all or any oral agreement previously reached between the Parties.

Variations to the Short Form Model Conditions of Engagement (overleaf):

Outstanding accounts over 3 months may be referred to a debt collector. All costs associated with debt collection will be added to the outstanding invoices.

Client authorised signatory (ies):

Print name: *Julian James With*

Date: *4/02/2022*

Consultant authorised signatory (ies):

Print name: *Anthony Steel*

Date: *27 January 2022*

SHORT FORM MODEL CONDITIONS OF ENGAGEMENT

1. The Consultant shall perform the Services as described in the attached documents.
2. The Client and the Consultant agree that where all or any of, the Services are acquired for the purposes of a business the provisions of the Consumer Guarantees Act 1993 are excluded in relation to those Services. However, nothing in this Agreement shall restrict, negate, modify or limit any of the Client's rights under the Consumer Guarantees Act 1993 where the Services acquired are of a kind ordinarily acquired for personal, domestic or household use or consumption and the Client is not acquiring the Services for the purpose of a business.
3. In providing the Services, the Consultant must use the degree of skill, care and diligence reasonably expected of a professional consultant providing services similar to the Services.
4. The Client shall provide to the Consultant, free of cost, as soon as practicable following any request for information, all information in the Client's power to obtain which may relate to the Services. The Consultant shall not, without the Client's prior consent, use information provided by the Client for purposes unrelated to the Services. In providing the information to the Consultant, the Client shall ensure compliance with the Copyright Act 1994 and shall identify any proprietary rights that any other person may have in any information provided.
5. The Client may order variations to the Services in writing or may request the Consultant to submit proposals for variations to the Services. Where the Consultant considers a direction from the Client or any other circumstance is a variation the Consultant shall notify the Client as soon as practicable.
6. As soon as the either Party becomes aware of anything that will materially affect the scope or timing of the Services, the Party must inform the other Party in writing.
7. The Client shall pay the Consultant for the Services the fees and expenses at the times and in the manner set out in the attached documents. Where this Agreement has been entered by an agent (or a person purporting to act as agent) on behalf of the Client, the agent and Client shall be jointly and severally liable for payment of all fees and expenses due to the Consultant under this Agreement.
8. All amounts payable by the Client shall be due on the 20th of the month following the month of issue of each GST Invoice or at such other timing as agreed in writing between the parties. If the Client fails to make the payment that is due and payable and that default continues for 14 days, the Consultant may provide written notice to the Client specifying the default and requiring payment within 7 days from the date of the notice. Unless payment has been made by the Client in full, the Consultant may suspend performance of the Services any time after expiration of the notice period. The Consultant must promptly lift the suspension after the Client has made the payment.
9. Where the nature of the Services is such that it is covered by the Construction Contracts Act 2002 (CCA) and the Consultant has issued a payment claim in accordance with the CCA, the provisions of the CCA shall apply. In all other cases, if the Client, acting reasonably, disputes an invoice, or part of an invoice, the Client must promptly give the reasons for withholding the disputed amount and pay any undisputed amount in accordance with clause 8.
10. Where Services are carried out on a time charge basis, the Consultant may purchase such incidental goods and/or Services as are reasonably required for the Consultant to perform the Services. The cost of obtaining such incidental goods and/or Services shall be payable by the Client. The Consultant shall maintain records which clearly identify time and expenses incurred.
11. Where the Consultant breaches this Agreement, the Consultant is liable to the Client for reasonably foreseeable claims, damages, liabilities, losses or expenses caused directly by the breach. The Consultant shall not be liable to the Client under this Agreement for the Client's indirect, consequential or special loss, or loss of profit, however arising, whether under contract, in tort or otherwise.
12. The maximum aggregate amount payable, whether in contract, tort or otherwise, in relation to claims, damages, liabilities, losses or expenses, shall be five times the fee (exclusive of GST and disbursements) with a maximum limit of \$NZ500,000.
13. Without limiting any defences a Party may have under the Limitation Act 2010, neither Party shall be considered liable for any loss or damage resulting from any occurrence unless a claim is formally made on a Party within 6 years from completion of the Services.
14. The Consultant shall take out and maintain for the duration of the Services a policy of Professional Indemnity insurance for the amount of liability under clause 12. The Consultant undertakes to use all reasonable endeavours to maintain a similar policy of insurance for six years after the completion of the Services.
15. If either Party is found liable to the other (whether in contract, tort or otherwise), and the claiming Party and/or a Third Party has contributed to the loss or damage, the liable Party shall only be liable to the proportional extent of its own contribution.
16. Intellectual property prepared or created by the Consultant in carrying out the Services ("New Intellectual Property") shall be jointly owned by the Client and the Consultant. The Client and Consultant hereby grant to the other an unrestricted royalty-free license in perpetuity to copy or use New Intellectual Property. Intellectual property owned by a Party prior to the commencement of this Agreement and intellectual property created by a Party independently of this Agreement remains the property of that Party. The ownership of data and factual information collected by the Consultant and paid for by the Client shall, after payment by the Client, lie with the Client. The Consultant does not warrant the suitability of New Intellectual Property for any purpose other than the Services or any other use stated in the Agreement.
17. The Consultant has not and will not assume any duty imposed on the Client from time to time pursuant to the Health and Safety at Work Act 2015 ("the Act") arising out of this engagement. The Consultant and Client agree that, for the purpose of the Act, the Consultant will not at any time have management or control of the Project workplace.
18. The Client may suspend all or part of the Services by notice to the Consultant who shall immediately make arrangements to stop the Services and minimise further expenditure. The Client and the Consultant may (in the event the other Party is in material default that has not been remedied within 14 days of receiving the other Party's notice of breach) either suspend or terminate the Agreement by notice to the other Party. If the suspension has not been lifted after 2 months the Consultant has the right to terminate the Agreement and claim reasonable costs as a result of the suspension. Suspension or termination shall not prejudice or affect the accrued rights or claims and liabilities of the Parties.
19. The Parties shall attempt in good faith to settle any dispute by mediation.
20. This Agreement is governed by the New Zealand law, the New Zealand courts have jurisdiction in respect of this Agreement, and all amounts are payable in New Zealand dollars.

WASTEWATER

Table 3 Major Wastewater Capital Expenditure

Period	Item	Value \$	Category
2022/30	Balclutha Sewer Network Renewals	2.5M	Renewal
2024/28	New Treatment Plant for Milburn industry	26.5M	Growth
2026/28	Waihola Consent Renewal and Upgrade	4.5M	Level of service
2021/23	Balclutha Sewerage Treatment Plant Upgrade	4.5M	Level of service
2021/51	Districtwide Sewer Network Pipeline Renewals	2.1M	Renewal
2031/33	Balclutha Consent Renewal and Upgrade	4.5M	Level of service
2042/44	Milton Consent Renewal and Upgrade	2.1M	Level of service
2044/46	Kaitangata Consent Renewal and Upgrade	4.5M	Level of service
2044/46	Tapanui Consent Renewal and Upgrade	2.1M	Level of service
2044/46	Owaka Consent Renewal and Upgrade	4.5M	Level of service
2044/46	Lawrence Consent Renewal and Upgrade	2.1M	Level of service
2044/46	Kaka Point Consent Renewal and Upgrade	4.5M	Level of service
2033/40	Heriot Consent Renewal and Upgrade	2.1M	Level of service

STORMWATER

Table 4 Major Stormwater Capital Expenditure

Period	Item	Value \$	Category
2021/26	Milton Main Street Stormwater Renewals	\$3.1M	Renewal
2021/51	Districtwide Network Renewals	\$9.7M	Renewal

