

CAPABILITY STATEMENT

Wastewater Treatment Facilities

WHO WE ARE

GWE Consulting Engineers is a company of highly experienced geotechnical, environmental, process, mechanical and civil engineers. The company's core services include geotechnical engineering, contaminated site remediation, 3 waters infrastructure, civil structures and land development engineering.

We work closely with councils, developers, planners and architects to provide our clients with all the technical and project management resources they need to plan, investigate, design and deliver their projects.

Our staff have the skills and experience to deliver projects across a range of specialist areas, from **site investigation, feasibility studies, consenting and assessment of effects on the environment, detailed design, safety in design, value engineering, procurement, asset management planning and construction management.**

Our brand essence, ***Creative Thinking | Better Environments*** drives the approach to all our work. We always put a premium on the quality of our output, and its relevance to your needs.



Project Shotover WWTP, Queenstown Lakes District Council

We treat you as valuable team members, and we always keep you fully informed on how your project is progressing. We respect your time and your style of interaction, and we are always sensitive to your inputs. We are flexible and work to your deadlines and treat your time requirements with the highest regard.

WHAT WE DO

GWE Consulting Engineers' wastewater capability builds on the combined experience of Gareth Williams, our managing director and our professionals who have joined the company in recent years. This experience is complemented by the skills of many of our longer serving staff.



Kawakawa Bay WWTP, Watercare Services Ltd

We undertake the following wastewater planning and design work:

- **Master planning of sewerage schemes**
- **New treatment plant facilities**
- **Plant process upgrades**
- **Plant capacity upgrades**
- **Sludge handling and treatment**
- **Pumping and pipelines**
- **Disposal of treated effluent to land and/or water**

Our company offers a diverse range of specialist services, drawing on solid professional experience in private practice consulting roles and local government. Team members have completed projects in New Zealand, Australia, Ireland and the United Kingdom.

We collaborate closely with a select range of specialist companies and individuals, whose work meets our standards, to offer clients a unique consulting team with the highest level of skill required for each project.

OUR SERVICES

Feasibility Studies – including fatal flaw analyses and the identification of conceptual options, eliminating those that do not meet statutory requirements or service delivery timeframes

GWE Consulting Engineers

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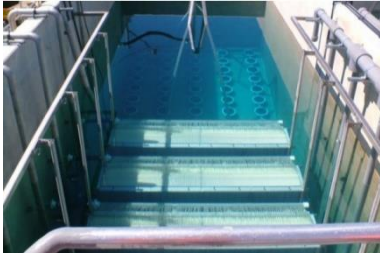


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Options Studies - Developing a long list of options for a proposed wastewater scheme and investigating feasibility using a range of criteria including environmental effects, public health effects, cultural considerations, constructability and cost. Assessing a short list of options through an in-depth multi-criteria analysis (MCA) and selecting the Best Practicable Option.

Wastewater Characterisation Studies – incorporating a plan for sampling and analysis of the wastewater in the collection system to obtain baseline data for an expanded list of pollutants of concern (POCs). The characterisation results will assist in identifying pollutants that may influence the process design and/or plant operations.



Turangi MBR, Taupo District Council

Resource Consents and Assessment of Effects on the Environment – investigating and describing the effects of the activity on the receiving environment and developing methods of mitigating or avoiding

those effects through appropriate process and plant design

Preliminary Design Reports - incorporating design calculations, process description, control philosophy and design parameters. P&ID's, PFD's and plant layout drawings. Preliminary Equipment and Instrument Schedules.



Tokoroa STP, South Waikato District Council

Detailed Design Reports - Revisions to the Preliminary Design Package incorporating detailed process functional description, P&ID's, PFD's and site general layout drawings, detailed general arrangements and layouts of plant equipment and equipment and Instrument Schedules.

Final Design Reports - Revised documents and drawings, Draft Operation and Maintenance Manual

Safety in Design – managing a process that integrates hazard identification and risk assessment methods early in the design. The process considers how to eliminate, isolate or minimise the risks of ill health, injury or even death to those who construct,

operate, maintain, decommission or demolish an asset.

Value Engineering – an exercise to review a project during the design phase to reduce costs, increase functionality and add the project without taking away from its purpose.

Procurement Strategies – The primary objective of the procurement strategy is to obtain best value for money spent. In using a specific procurement method we ensure the client gives regard to the broad economic, environmental and social purpose of the organisation, and to the desirability of competition.



Edendale Dairy Factory, South Waikato District Council

Asset Management Plans - Develop and maintain the client's Asset Management System including creating asset schedules for the new facility and incorporation into the asset database to effectively support long term planning.

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SELECTION OF RELEVANT PROJECT EXPERIENCE OF GWE PERSONNEL

Project Shotover WWTP

Design of a new WWTP for Queenstown including, modifications to existing inlet works, new biological nutrient removal reactor, new clarifier, and a new UV plant.

Kawakawa Bay WWTP

Design of first-time sewerage scheme for Kawakawa Bay. Scheme included a vacuum sewage collection system and an MBR wastewater treatment plant.

Turangi MBR

Design of a new MBR treatment plant and discharge to wetlands and Lake Taupo. The new plant replaced oxidation ponds.

Tokoroa STP

Various process upgrades to the existing plant including inlet screening, refurbished clarifier, submerged aerated filters and UV disinfection. Discharge to the Whakaruru Stream.

Edendale Dairy Factory

A process review of the existing treatment plant and characterization of the factory wastewater. Design of upgrades to the plant including modifications to the aeration lagoons, upgrade of aeration equipment, and upgrades to sludge thickeners and ancillary equipment.

Mangere WWTP

Final design, commissioning, and optimisation of two new sludge dewatering centrifuges and

transfer conveyors at Watercare's Mangere treatment plant.



Mangere WWTP, Centrifuge and Conveyor Upgrades, Watercare Services

KEY GWE PEOPLE

Gareth Williams **Director**

Gareth is a process engineer and specialises in wastewater treatment facilities for small communities. Gareth has commercial oversight of all our projects and actively engages in client relationship management.

Colin Cranfield **Technical Director**

Colin is a civil/environmental engineer and has over 20 years' experience in the wastewater sector. He has been the project lead on a number of treatment plant upgrades including Tokoroa, Putaruru, Tirau, Te Kuiti, Kawakawa Bay, Kaitaia and Inghams Chicken processing plant at Waitoa. Colin is currently working on the design of the land disposal of treated effluent scheme from the Kinloch WWTP.

Patrick O'Riordan **Wastewater Manager**

Patrick is a mechanical engineer with over 10 years' experience in industrial and municipal wastewater treatment plant design. Prior to coming to NZ, Patrick completed numerous projects for Irish Water including sludge thickening and odour control projects at Dublin's Ringsend WWTP. Patrick has significant experience in NZ and Australia on plant design using clarifiers, floatation systems and belt presses in the food and mining sectors.

Dylan Walton **Senior Process Engineer**

Dylan is a process engineer with over 15 years' experience working for Wessex Water and in the consulting industry in the UK and NZ. Dylan's expertise is in process optioneering and design of treatment plants. He has worked on municipal plants in Queenstown, Mangere, Rolleston, Riversdale Beach and in the food sector on treatment plants for Fonterra. Dylan is experienced in the use of BLOWIN modelling software.

Jolivette Thompson **Process Engineer**

Joli has over 6 years' experience working for the Samoa Water Authority as a research scientist and as process engineer in the consulting industry in NZ. She has experience in the consenting and design of treatment plants for small communities.

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