
Water & wastewater infrastructure

Capability brochure



Fulton Hogan creates, connects and cares for communities



Above: Humble beginnings, Fulton Hogan 'work gang', 1960.

Front and back cover: Rosedale wastewater treatment plant upgrade stage 5, Auckland.

For over 80 years, Fulton Hogan has been working to connect communities; building the roads, ports, airports and infrastructure which bring people together.

When Jules Fulton, an assistant surveyor, and Bob Hogan, a mechanic, lost their jobs with an asphalt company at the height of the Great Depression, they seized the opportunity to form their own quarrying and asphalt surfacing company.

From these humble beginnings in 1933, Fulton Hogan has grown to become one of Australasia's leading civil construction companies, expanding through both organic growth and acquisition.

Years of construction experience, as well as diverse expertise and a well-developed business model means that Fulton Hogan can provide skills and services to customers across a range of infrastructure sectors around New Zealand.

From our quarries supplying our asphalt plants and civil projects, all the way through to our precast businesses delivering materials directly to our construction projects, our vertically integrated business delivers end-to-end contracting solutions.

For Fulton Hogan customers, this level of integration optimises communications, reduces risk and allows a high level of control over all aspects of a project, including logistics, cost and quality.

From motorways, rail and bridge construction, through to specialist infrastructure such as water and energy projects, precast and piling services, we seek to provide customers with all the elements of civil construction.



Fulton Hogan's Kohimarama wastewater storage tank project team, 2015.

Creating collaborative partnerships

The water infrastructure sector continues to be challenged with both the requirements to repair and replace aging infrastructure, as well as implement and manage the ongoing operations of advanced technology installed to maximise efficiency.

Over the past 15+ years, Fulton Hogan has had the opportunity to partner with a wide range of public and private customers to help jointly solve these challenges. It is the highly collaborative environment created by owners and managers that drives Fulton Hogan's involvement in this sector. As a company committed to creating long-lasting relationships we enjoy sharing knowledge and experience to maximise innovation and value added solutions.

To support asset owners and managers in their quest to improve infrastructure, Fulton Hogan employs a strong team of civil, mechanical and electrical engineers, commissioning experts, and environmental, safety and quality professionals. Each bringing technical excellence and a can-do attitude that enables Fulton Hogan to design, construct, upgrade and maintain water infrastructure in a collaborative manner.



Fulton Hogan completed two reservoirs and a membrane water treatment plant at our Kapuni site.

It was a complicated project but with the positive approach from Fulton Hogan staff and their willingness to be team players with the design team and project management team, the project was extremely successful.

All the problems were made to look easy with the collaborative approach. Fulton Hogan also completed a further three reservoirs in the district.



South Taranaki District Council



Excavation and pipe laying works at Thomas Road, Auckland, as part of the Watercare Services Ltd Hunua 4 watermain project, delivered by the Fulton Hogan John Holland Joint Venture.

The Fulton Hogan advantage

Comprehensive services

As a specialist in civil and infrastructure construction, Fulton Hogan provides a whole-of-life management service. Our vertically integrated model allows us to deliver end-to-end contracting solutions. We construct and upgrade water supply, wastewater, stormwater and irrigation facilities and maintain this infrastructure to ensure a long and efficient life.

New Zealand wide

Fulton Hogan has over 3800 employees operating from 13 regions throughout New Zealand. This widespread geographical footprint allows us to deliver outstanding project results through our regional knowledge and by engaging with local communities. Our people are our greatest strength. We employ the best people who take pride in delivering the best results in all the projects they work on.

Maintaining a customer focus

Our contract delivery focus is on understanding our customers' long-term needs, delivering projects and services on time and on budget, and exceeding expectations. For example, after the successful completion of the Manaaki Wai water treatment plant extension and upgrade for New Plymouth District Council in 2007, Fulton Hogan continued with the upgrade of New Plymouth's water infrastructure with the construction of a major sewerage pump station at Oakura and water storage reservoir at Barrett Road in 2009.

We have also had the opportunity to design and construct the Wai Taatari aeration upgrade to the New Plymouth wastewater treatment plant as a result of our strong customer focus.

In-house specialists

Fulton Hogan has in-house water specialists comprised of civil, mechanical, electrical and commissioning engineers. Together with our environmental, safety and quality professionals, we work in partnership with customers to deliver value-adding solutions.

Leaders in innovation

Fulton Hogan is committed to achieving outstanding results by going beyond convention and seeking new and innovative solutions for our customers' needs. An excellent example of this is the Nelson Water Supply project. The original concept design called for two treatment plants in the Maitai and Roding catchments, however, Fulton Hogan's understanding of the Nelson City Council's long term requirements resulted in us proposing a single treatment plant, with the ability to transfer raw water from the Roding catchment. This generated several million dollars of savings and allowed the project to proceed within the client's budget. In addition, the use of Zenon ultrafiltration membranes was a key innovation and only the second time these membranes have been installed in a state-of-the-art treatment plant in New Zealand.



Cashmere reservoir construction, Christchurch.



Christchurch earthquake recovery work, Huntsbury 3 reservoir.

Experienced in collaborative relationships and partnerships

Fulton Hogan thrives on collaborating with customers to achieve better outcomes for the community. This desire to involve and engage with public and private customers has seen us enter into successful collaborative arrangements, both as a partner and head contractor. The Gisborne District Council water, wastewater and stormwater operations and maintenance contract is just one example of how we collaborate. Sharing offices with the client, consultant and delivery team working on the Watercare Services Ltd Hunua 4 watermain project ensures value is incorporated at every step of the way.

Financially stable

With assets of over \$1.5 billion and a long history of financial stability, Fulton Hogan has the strength to ensure projects are successfully delivered. This stability allows us to manage multiple projects across the water sector without compromising stakeholder relationships.

Stable, long-term relationships

Fulton Hogan values and fosters open and honest relationships with its customers, employees, suppliers and subcontractors. We are proud that the vast majority of our work is from repeat customers.

Industry-leading safety practices

Working safely is Fulton Hogan's number one priority. Our 'Zero Harm' policy has led to the company being recognised for safety achievements such as Transpower's 2012 Best Health and Safety Team Performance Star Award. We understand and appreciate the water sector has some specific safety issues including working in hazardous environments such as confined spaces or in live sewers. Our teams are fully trained to manage these risks, and coupled with our systems and training, we continue to lead safety.



Fonterra Pahiatua wastewater treatment plant under construction.

**“
Fulton Hogan
is committed to
achieving outstanding
results by going
beyond convention
and constantly
seeking new and
innovative solutions
for our customers’
needs.
”**

Water supply and treatment

Value-engineered, innovative solutions

From planning and design management, through procurement, construction, commissioning, maintenance and operation, customers work with Fulton Hogan to deliver water supply and treatment facilities for communities throughout New Zealand.

Drawing on a wide range of specialist internal technical resources and proven subcontractors – mechanical, process, instrument, control and electrical engineering as well as commissioning

specialists – Fulton Hogan deliver all aspects of a project, including structures, pumping stations, storage tanks, pipework, mechanical, instrumentation, control and electrical systems, roads and drainage. Our comprehensive services also include testing and proof of performance.

Our clients include district and city water authorities throughout the country in both rural and urban locations.

Key projects

- **Akaroa water treatment plant** – A new 2MLD membrane filtration plant completed in 2015 for Christchurch City Council including the water treatment plant building and the mechanical and electrical systems.
- **Taupo water treatment plant** – A new 25MLD membrane filtration plant completed in 2013 for Taupo District Council including the water treatment plant building and the mechanical and electrical systems integrating the client supplied membranes.
- **Stratford water treatment plant** – Demolition of the old facility, construction of a new state-of-the-art 4MLD water treatment plant and establishment of a second, 6ML reservoir, completed in 2013 for Stratford District Council.
- **Milton water treatment plant** – A new 4.5MLD membrane filtration plant completed in 2009 for Clutha District Council. Fulton Hogan also operates this facility.
- **Kapuni water treatment plant** – Construction of a new 13MLD water treatment plant completed in 2009 for South Taranaki District Council.
- **New Plymouth water treatment upgrade** – This 70MLD capacity upgrade included a total upgrade of clarifiers, filters, chemical storage, mixing and dosing systems and was completed in 2008 for New Plymouth District Council.
- **Oamaru water treatment plant** – Construction and commissioning of a new membrane water treatment building and reticulation completed in 2007 for Waitaki District Council.
- **Southern treatment plant** – Construction of civil works, structures and piping completed in 2005 for Dunedin City Council.
- **Nelson water treatment plant** – Design/build and operate contract for a new 42MLD ultra filtration membrane water treatment plant completed in 2004 for Nelson City Council. Fulton Hogan is the operator of this facility.
- **Wanaka water supply upgrade** – Construction and commissioning of a new water supply system completed in 2004 for Queenstown Lakes District Council.



Inside the Nelson water treatment plant.

Bulk water storage

A comprehensive approach to complex projects

Fulton Hogan has the capability, experience, people and technology to undertake a range of water storage related projects. We design and construct cost effective solutions for dams and have installed over 20 concrete reservoirs around New Zealand with capacities of up to 7500m³.

Additionally we have the ability to perform remediation and hydro power equipment upgrades.

Our construction teams recognise the challenges of working in a bulk water environment and strictly apply Fulton Hogan's 'Zero Harm' safety policy.



Huntsbury 3 reservoir earthquake recovery work, Christchurch.

Key projects

- **Picton water reservoir** - Construction of a 1ML concrete water reservoir including associated pipework for Marlborough District Council, to be completed by 2015.
- **Albany reservoir** - Construction of a 10ML reservoir, 43m diameter by 7m high, next to the current reservoir at Albany with associated piping and instrumentation for Watercare Services Ltd. Due for completion in 2015.
- **Cloudy Bay water reservoir** - Seismic strengthening and pipework upgrade completed for Marlborough District Council in 2014.
- **Christchurch earthquake** - Recovery work includes the repair and reconstruction of bulk of water storage facilities for the Stronger Christchurch Infrastructure Rebuild Team alliance. A major project is the rebuild of the 30,000m³ earthquake damaged Huntsbury 3 reservoir completed in 2013 and earthquake repairs to McCormacks Bay reservoirs completed in 2014.
- **Pegasus Bay reservoirs** - Construction of a new 2.7ML concrete water reservoir completed in 2011 for Pegasus Town Ltd.
- **Blenheim central water treatment plant reservoir** - A 3ML prestressed concrete treated water reservoir and associated works. The contract works formed part of the overall upgrading of water treatment facilities for the Blenheim water supply and was completed in 2010 for Marlborough District Council.
- **Cashmere reservoir, Christchurch** - Construction of a new water storage tank and valve chamber inside the existing reservoir with a new roof over the existing tank, completed in 2009 for Christchurch City Council.
- **South Taranaki reservoirs** - Design and construction of five 28m diameter 4.5ML post tensioned potable water reservoirs and associated pipework in 2008 for South Taranaki District Council.
- **Oamaru reservoir** - Construction and commissioning of a new 3ML reservoir was completed in 2007 for Waitaki District Council.
- **Scott Road reservoir** - A 7.5ML reservoir in Orewa was completed in 2005 for Watercare Services Ltd.
- **Oropi Reservoir** - Design and construction of a new 9.6ML circular concrete reservoir for Tauranga City Council completed in 2005.
- **Beacons Point reservoir, Wanaka** - Construction and commissioning of a new water supply system including a lake intake pump station and 3.5ML storage reservoir, completed in 2004 for Queenstown Lakes District Council.

Wastewater treatment and storage

Working with customers and communities

Fulton Hogan has a proven track record in delivering wastewater treatment plants (WWTP), including new plants, upgrades and augmentations.

With 3500+ staff across New Zealand, Fulton Hogan is able to draw on its comprehensive in-house construction and project management resources. We have also established long-term relationships with specialist suppliers and subcontractors to complement our skill base.

However, many consider Fulton Hogan's greatest strength to be our ability to work with customers and their communities to develop innovative design and construction solutions that often exceed their environmental, quality and performance expectations.

Key projects

- **Fonterra Lichfield WWTP** - Construction of a 36m diameter clarifier, 32,200m³ intermittent aeration pond with lining, 13,800m³ aeration pond with lining and 100,000m³ treated water storage pond with lining, to be completed for Fonterra by 2016.
- **Fonterra Pahiatua WWTP** - Design and construction of 23m diameter clarifier, 14,000m³ aeration pond with lining and 100,000m³ clean water storage pond with lining, to be completed for Fonterra in 2015.
- **Kohimarama storage tank** - Construction of a 3500m³ circular below ground concrete wastewater storage tank, 20m diameter by 16m deep, with a vacuum flushing system, high-level relief and sanitary sewer overflow chambers for Watercare Services Ltd. Due for completion in 2015.
- **Puketutu Island rehabilitation project phase 1** - Development of a 63,000m² earth embankment to contain 300 tonnes of biosolids per day for a service period of 35 years from the Watercare Services Ltd Mangere WWTP, completed in 2014.
- **Alliance UV plant** - New UV disinfection treatment facility at the Alliance Pukeuri plant near Oamaru, completed in 2014.
- **Queenstown WWTP upgrade** - Construction of a new rotary screen structure including all civil works, pipework, ventilation and compactors completed in 2014 for Queenstown Lakes District Council.
- **New Plymouth WWTP aeration upgrade project** - Design and construction of an aeration system upgrade to the existing treatment plant, completed in 2013.
- **Kawakawa Bay wastewater system project** - Design, build and operate contract for a new WWTP and forest disposal system completed in 2011 for Watercare Services Ltd, with vacuum reticulation system, pumping station and rising main.
- **Bells Island WWTP upgrade** - Included civil works for inlet works, clarifier and pipework completed in 2010 for Nelson City Council.
- **Beachlands/Maraetai WWTP upgrade** - Completed in 2009 for Manukau Water.
- **Rosedale WWTP upgrade stage 5** - Design/build project to increase the capacity of existing primary treatment processes completed in 2008 for North Shore City Council.
- **Project Pure wastewater treatment plant** - Subcontract to construct the civil works for Queenstown Lakes District Council's wastewater treatment facility in Wanaka, completed in 2008.
- **Pines wastewater treatment facility** - Including inlet works, clarifier and UV treatment completed in 2007 for Selwyn District Council.
- **Orewa wastewater storage tank** - Construction of a 4,500m³ wastewater storage tank completed in 2005 for Rodney District Council.
- **Silverfield wastewater storage tank** - Construction of an 11,000m³ wastewater storage tank for sewer overflows completed in 2004 for North Shore City Council.
- **Rosedale wastewater treatment plant stage 4 upgrade** - Design/build of peak flow treatment works, gravity thickeners, biofilters and pipelines completed in 2003 for North Shore City Council.
- **Paraparaumu WWTP upgrade** - Including wastewater treatment plant upgrading and sewage transfer pipeline completed in 2002 for Kapiti District Council.
- **Green Island wastewater treatment plant upgrade** - Completed in 2000 for Dunedin City Council.



Kohimarama storage tank, Auckland.

Wastewater schemes

Comprehensive services

As a specialist in civil construction and maintenance, Fulton Hogan provides a whole-of-life management service. Our vertically integrated model allows us to deliver end-to-end contracting solutions ideally suited to the construction of wastewater schemes.

Key projects

- **Mahia Beach community wastewater scheme** – New pump station including 60m³ of emergency storage and construction of treatment ponds and associated pipe work servicing 300 properties completed in 2013 for the Wairoa District Council.
- **Ruakaka South pressure sewerage scheme** – This scheme provides a pressure sewer system to 470 properties in Ruakaka South and connects them to the Ruakaka wastewater treatment plant, completed in 2013 for Whangarei District Council.
- **Benhar pressure sewerage scheme** – Design and build pressure sewer system for 50 houses in Benhar township completed in 2013 for Clutha District Council.
- **Ngawha pressure sewerage scheme** – Design and build project completed in 2012 for Far North District Council servicing 60 households in the Ngawha township.
- **Kawakawa Bay wastewater collection system** – Completed in 2011 for Watercare Services Ltd. Design, build and operate contract for New Zealand's first vacuum wastewater collection system, pumping station and rising main servicing 268 properties.
- **Brunswick/Rotokawa sewerage scheme** – Installation of 47 low pressure grinder pump stations, 7km of pressure mains, and 12km of gravity mains completed in 2009 for Rotorua District Council.
- **Lake Hayes Water supply and sewerage disposal scheme** – Design and construction of a complete water supply and sewerage disposal scheme to service a new 400 property development for Queenstown Lakes District Council, completed in 2002. Fulton Hogan also operates this scheme.

Kawakawa Bay wastewater collection system.

Pipeline and pump station

Building on experience

The challenging demands of working safely in confined spaces and on live water mains and sewers requires specialist knowledge and expertise. Our 15+ years' experience in this sector has given us a full understanding of these demands and has seen us work on complex operations involving large-diameter reticulation, outfall and trunk sewers, live sewers, rising mains, trunk water mains, stormwater drains and remediation works.

We are largely self-performing, having developed skilled pipeline teams that are supported by specialist plant and equipment and overseen by dedicated project managers.



Pump Station 105, Christchurch.

Key projects

- **Hunua 4 watermain** – Commenced 2012 and due for completion in 2016 for Watercare Services Ltd, this involves construction of 22km of 2m and 1.6m diameter concrete lined steel watermain through south to central Auckland, delivered by the Fulton Hogan John Holland Joint Venture.
- **Christchurch earthquake rebuild** – Fulton Hogan are currently engaged in the repair and replacement of major sewerage pumping stations and pipelines as part of the Christchurch earthquake rebuild alliance, Stronger Christchurch Infrastructure Rebuild Team including Pump Station 128, Pump Station 136, and Pump Station 105 completed in 2014.
- **Maitai raw watermain** – Duplication of a pipeline in three stages involving a total of 8km of 650mm diameter concrete lined steel pipe and valve installation, and 2.2km of local watermain completed for Nelson City Council in 2014.
- **Kaikoura sewer pump stations** - Two new sewer pump stations for Kaikoura District Council completed in 2013.
- **Fenton Park sewerage scheme upgrade** – Completed in 2012 for the Rotorua District Council, replacing 2.2km of existing sewer main and installation of 2.1km of large diameter new sewer main in the Fenton Park area of Rotorua.
- **Oakura sewerage pump stations and pipework project** – Completed in 2009 for New Plymouth District Council.
- **Bendemeer sewer rising main** - Installation of 3km of 355 PE pipe and a pump station upgrade at Lakes Hayes, Queenstown, completed in 2009 for Queenstown Lakes District Council.
- **Orewa wastewater pump station** – Included the installation of pumps, pipework, electrical work and a new control building, completed in 2005 for Rodney District Council.
- **Fairview Ave pump station upgrade and pipeline** – Water supply pump station upgrade and new pipeline installation completed in 2005 for Watercare Services Ltd in Auckland. Included 2.5km of pipeline with connections and pump station upgrades while maintaining network availability.
- **Scott Road pipeline** – 1.9km of water supply pipeline installation completed in 2005 for Watercare Services Ltd in Orewa, Auckland.
- **Hibiscus Coast trunk pipeline upgrade** – Installation of 17km of 560, 630 and 710mm HDPE sewer line from Orewa to the Army Bay wastewater treatment plant. Completed in 2005 for Rodney District Council.
- **Mt Eden pipeline** – Installation of 5km of concrete lined 600mm diameter steel pipe within highly trafficked roads completed in 2002 for Watercare Services Ltd.

Irrigation

Delivering end-to-end solutions

As a specialist in civil construction our vertically integrated model allows us to deliver end-to-end solutions ideally suited to the construction of irrigation schemes including dams, intakes, head races, distribution races, large piped networks, pump stations and control systems.



Key projects

- **Central Plains Water Stage 1 headrace** – 17km long lined canal with 13 bridges, intake structures and outlets, due for completion in 2015 for Central Plains Water Ltd.
- **Tekapo canal remediation** – Dewatered and relined 7.2km of canal using a PVC geomembrane for Genesis Energy over two seasons completed in 2014.
- **Waimakariri river intake upgrade** – Doubling of the capacity of the Waimakariri river intake at Browns Rock, completed in 2013 for Waimakariri Irrigation Ltd.
- **Barhill Chertsey irrigation project** – Construction of two new gate control structures at Methven and five new storage ponds with associated outlet structures and siphons for water extraction from the existing Rangitata Diversion Race, completed in 2011 for Barhill Chertsey/Electricity Ashburton.
- **North Otago irrigation scheme** – Construction of the secondary distribution system including 76km of pipe, five pumping stations and associated control systems, completed in 2007 for North Otago Irrigation Ltd.
- **Southern Valleys irrigation scheme** – Consisted of two distinct projects; the Southern Valley's irrigation scheme and the Renwick sewer project, completed in 2006 for Marlborough District Council.

Central Plains Water stage 1 headrace.

Operation and maintenance

Trusted operation and maintenance providers

Providing a complete whole-of-life service is a key driver for many owners of water infrastructure. They like the ability to deal with only one company, such as Fulton Hogan, as it simplifies the process and ensures that decisions made during the construction and commissioning phases take ongoing operational costs into consideration.

Fulton Hogan provides this important whole-of-life service and currently its water operations and maintenance contracts serve 175,000 people every day. We have 72 years operation and maintenance experience in seven water schemes.

Key operation and maintenance contracts

- Central Otago District Council – Water supply, wastewater and stormwater networks and treatment plants.
- Clutha District Council – Water supply, wastewater and stormwater networks and treatment plants.
- Gisborne District Council – Water supply, wastewater and stormwater networks.
- Kaikoura District Council – Water supply, wastewater and stormwater networks.
- Nelson City Council – Water treatment plant operation.
- Queenstown Lakes District Council – Lake Hayes water supply, wastewater and stormwater networks and treatment plants.
- Taupo District Council – Water supply, wastewater and stormwater networks.

“
Customers benefit from access to Fulton Hogan systems that provide information online and in real time. Our systems are designed to align with customer processes and formulate asset management strategies that consider whole-of-life costs.
”



Pump station maintenance, Lake Hayes, Queenstown.



Level 2, 15 Sir William Pickering Drive
Harewood, Christchurch 8053
PO Box 39185, Christchurch 8545
Phone +64 3 357 1400
Fax +64 3 357 1450
Email info@fultonhogan.com