

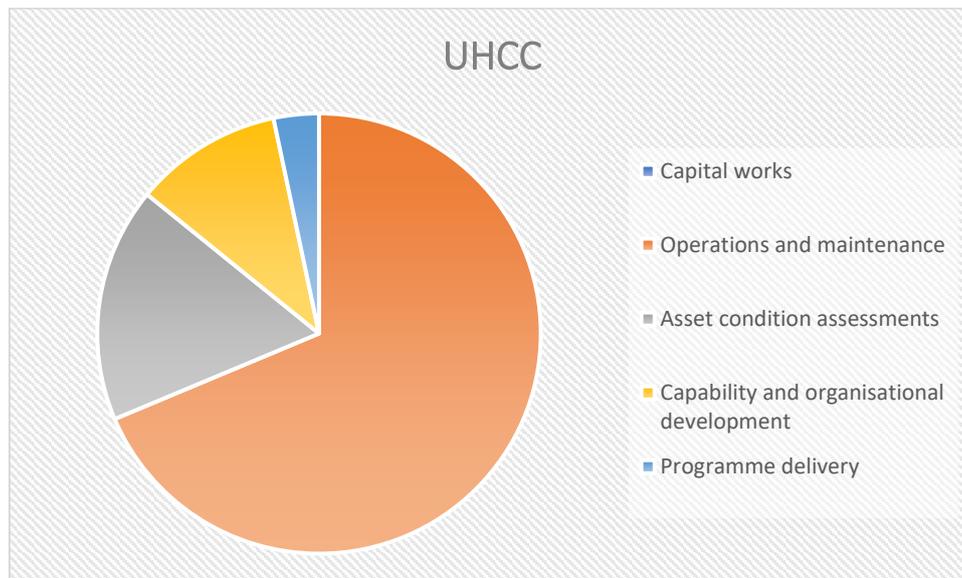
Update for Upper Hutt City Council on what has been achieved through the Stimulus Funding Programme

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UHCC was allocated \$4.7m stimulus funding in 2020, to be spent over the 2020/21 and 2021/22 years. As at the end of February 2022, \$3.55m has been spent.

- \$2.44m has been spent on operations and maintenance – a large part on ‘BAU’ reactive work but also work beyond BAU such as leak detection and planned maintenance
- \$612k has been spent on asset condition assessments of very high criticality assets
- \$384k has been spent on capability and organisational development (data & technology, asset management improvements, preparation for water reform)
- \$117k has been spent on programme delivery



This funding expires at the end of June 2022. The remaining \$1.15m will be spent across the above categories, with the majority on operations and maintenance.

Below is a summary of what we have achieved for UHCC in each workstream.

Capital Renewals

There was an opportunity through Government Stimulus Funding to undertake a capital renewals activity on aging drinking water and wastewater pipes, through targeted bundles of work across the region. The pipes selected for renewal are pipes that have poor (4-5) condition assessment scores for wastewater and for water were selected from pipes that had suffered historic bursts. The wastewater renewals have also targeted areas where there is a known impact on the environmental water quality.

To deliver the work efficiently and effectively the team trialled moving away from a project development model to an outcome development model with a fast-tracked prioritisation process. This involved providing a high-level problem statement, clear outcomes, and performance measure(s) of success. Integrated delivery teams made up of our contractor and consultant panels selected and developing bundles in liaison with COG and NET representatives. Due to the timing constraints of the Stimulus Funding the programme focused on low-risk renewals where engineering standards were readily available. The design information provided to contractors was minimised where possible, providing only overview or simplified plans. We have also used the programme to begin consolidating Wellington Water's library of standard design details and specifications, to save time in future design phases.

In May 2021 UHCC decided to fund these works directly through their capital programme. WWL has continued to report on the outcomes of this programme as the work was enabled through SFP. These figures are not included in the overview on the previous page.

The Renewals programme for UHCC commenced construction in late July and completed construction in November 2021. 320m of 630D PE100 and 412m of 150mm dia watermain have been renewed.

Benefits

- The forecast kilometres of pipe laid has exceeded the programme target.
- The cost per metre is less than the Wellington Water baseline cost.
- The consultant fee percentage is less than 10%, BAU delivery is around 13.5%. The reduction in consultancy fee percentage, as well as increasing the budget available for construction of assets, frees up engineering resources to focus on more complex works.
- The use of trenchless technology has exceeded the BAU baseline. Trenchless technology significantly reduces the impact on the community during construction and reduces carbon use in the build. Trenchless technology can also reduce the construction programme and health & safety risks associated with heavy machinery movements and open excavations.
- The approach to delivery developed as part of this programme is adaptable and is planned to be used to deliver the six-year rolling programme incorporating more complex renewals and the potential for coordination with other utilities.
- This programme has resulted in improved collaboration and relationships between consultants and contractors as well as an increasing appreciation and understanding for each other's roles in delivery. The team approach has enabled a right person – right job mentality and given joint ownership for delivery to the consultants and contractors.

Asset Condition Assessments

Asset condition information is critical to planning and prioritisation of maintenance and renewal activity. Stimulus funding gave councils the opportunity to significantly increase their investment into understanding of the health of Very High criticality assets across the region, as well as what measures are required to ensure they continue to maintain service to the community.

- The VHCA pumpstations are 95% complete with the balance being a few selected p/s switchboards that need to be assessed. About 50% of the UHCC pumpstation are assessed to have some assets in a poor or very poor condition
- Assessments of all the UHCC reservoirs is complete. About 5% of the UHCC reservoirs are assessed to be in a poor or very poor structural condition – in addition, individual aspects of a number of reservoirs need attention in regard to contamination and health and safety risks.

Some good news here is that roof sealing works has now been completed on several reservoirs to address some of these contamination risk issues, refer Water Safety Priorities below.

- Inspection and assessment of the pipes are progressing steadily with about 80% of the pipes across the full network that were scheduled for inspection have been inspected (note this schedule is about half the number of kms of pipes that have been desktop assessed and therefore physical inspections are focussed on the higher risk older pipes). While it varies by water about 10% of the UHCC VHCA pipes are assessed to be in a poor or very poor condition – at this point this is largely based on desktop condition assessments.
- Challenges with the pressure pipes means alternative technologies are now being worked through. The end result is pressure pipes will be under represented in the physical based assessments so there will be more reliance on desktop assessments for these pipes. Covid permitting, site works for scheduled pipe inspections are programmed for completion in March/April with data interpretation and finalised condition assessment remaining to be completed this financial year. While it is still early days the revised assessments based on physical pipe inspections is confirming the desktop based inspection completed last year.
- There are some assets (e.g. cast iron wastewater rising mains) that are not part of the VHCA assessment programme because we have enough evidence to confirm that they should be programmed for replacement as soon as possible.
- We have expanded the VHCA programme to incorporate some more specialised inspections of VHCA assets within our wastewater treatment plants. These assessments, including at Seaview WWTP, are underway and should be finalised by April.
- We have begun work on incorporating the VHCA findings into the LTP capex programme. Funding availability and industry capacity will likely be constraints on how quickly the poorer condition assets can be remediated, but the new information about their state and what we've learnt from the data gathered to date helps in the condition assessment prioritisation process.
- We are undertaking a study of the capacity and future investment needs of the Seaview Wastewater Treatment Plant. Sampling has been completed, and a calibrated process model is being currently being built.

Next steps

- Condition assessment scores will help to prioritise repairs and replacements within the forward work programme.
- An ongoing programme of condition assessments is being established, funded by LTP opex. This will continue to work through the very high criticality assets, then progressively work through the high and eventually less critical assets.
- There is a strong case to support increased condition assessment as, on one hand, the condition data can support stretching the life of an older asset in good condition past what would be its expected life and, on the other hand, the data supports early invention to avoid costly and high profile unexpected/premature failures.

Maintenance

The additional Stimulus funding for maintenance has allowed WWL to absorb the increasing number of faults and increasing costs of responding to them in the 2020/21 and 2021/22 financial years.

In addition to reactive maintenance, there has been a focus on building our capability: Incident response and management; Planned maintenance; Minor Reactive Capex renewals.

The purchase of capital equipment is a critical component in helping build our response capability and becoming less reliant on external contractors to supply some of the more basic response equipment. Emergency pumps to help manage stormwater events for vulnerable residents and flusher units for our prime daily activities in the drainage area are examples of where it is more responsive and cost effective to have our own gear.

In addition to equipment two full time positions were created in the customer planning group to ensure that the group's incident management and the longer residual post event capability was enhanced, while maintaining our ability to function in our normal daily activities and not drop the ball while the event management is in progress.

Business Improvement Programme

The Business Improvement Programme aims to lift organisational capability in a number of areas. These include:

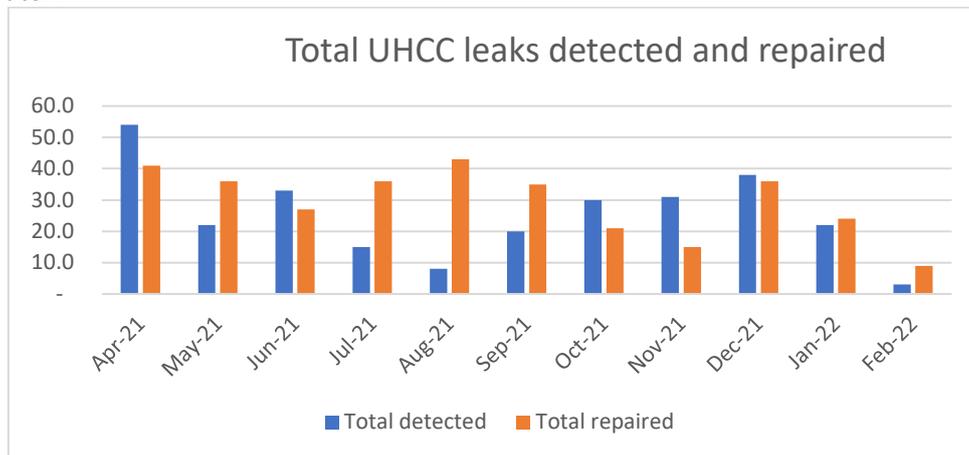
- **Asset Management Stream:** Improvements to WWL's asset management systems (people, processes, tools) to provide accurate, assured and timely data to enable better business decision-making. This includes development of the Wellington Water Asset Management Information system (Maximo) environment. Detailed design and functional workshops have outlined the key elements for the planning the platform configuration and build.
- **Ready for Regulation & Risk/Assurance Stream:** Addresses the immediate risks in the Water Treatment Plants regarding Processes, Standard Operating Procedures and an assurance framework for these, and sets up WWL to comply with requirements of Taumata Arowai, including development of source water risk management plans and management of backflow risks.
- **Data & Digital Stream:** The Data & Digital stream includes work on: Governance and Architecture, Enabling Processes & Practices, Core Capabilities and Skills & Competencies to address the critical risks in the Data and Digital domain. The top priority is to improve WWL's ability to repel and recover from cybersecurity attacks. Cyber vulnerability assessments have been completed and work is underway on the immediate actions required to reduce the chance of successful cyber attack. In the data and analytics space the focus is on ensuring quality data for decision-making, starting with addressing gaps in required data and ensuring core data management practices are in place.
- **Carbon roadmap:** We are looking to develop the set of investments needed to most effectively reduce the greenhouse gas emissions from the region's water services operations. This includes updating the emissions inventory we completed for the 2017/18.
- **Digital strategy and vision:** Data, analytics and digital technologies are expected to take an ever-increasing role in the delivery of the water services and our three waters strategy. With this project we are developing over-arching principles and architecture to ensure we focus on the right elements and are integrating them in a consistent and enduring manner.

Leakage Management

Through this workstream WWL has increased its capacity to identify and repair leaks, and is improving the process by which we do this. One of the aims of the work was to reduce minimum night flows compared month-by-month with the previous year – we have achieved this for some

months but on the whole we continued to see this figure rise despite the additional investment and activity.

The **proactive leak detection and repair programme** is active, with additional trucks and equipment purchased. There were 276 leaks detected and 323 repaired in UHCC to date. Contractors are working on both proactive and reactive leak repairs with an increase in number of leaks across the region being observed. We have hired a Leak Detection Technical Advisor and a Customer Hub administrator.



Drinking Water Leakage Detection and Repair Process: Using information from (existing) District Area Meters and (new) Small Area Monitors to automate Minimum Night Flows trends in various DMAs, and to establish, develop and document our end-to-end leak detection and repair process in Upper Hutt (as a Pilot), in order to identify areas for future improvements.

Household Smart Meters Trial: Proof-of-concept for the use of smart household water meters to test new technology in relation to water consumption monitoring and leakage detection, as well as associated consumer behavioural change. This is underway in Greytown.

Water Safety Priorities

Priority initiatives were identified from Wellington Water's regional Water Safety Plan. Investments are focused on improving water safety and quality, mitigating risks of reservoir contamination, purchasing equipment to provide more effective water quality monitoring and improvement, and are steps towards being able to meet anticipated water regulation requirements.

In UHCC, we have completed three reservoir roof repairs (Cruickshank 2, Timberlea and Trentham 2 reservoirs). These involve application of sealant to the roof which stops surface water from entering through cracks. Improvements in the water quality of the completed reservoirs is already apparent, and it extends their useable life.



Other projects have region-wide benefits:

- Reservoir cleaning: We have purchased a remote-operated cleaning drone and mobile clarifier, and it is in use. Significant savings of time, cost and water loss are already evident.
- We have purchased 15 real-time water quality sensors that will monitor water pH and chlorine levels in real time, rather than relying on manual water sampling which can take up to three days for an issue to be apparent
- Internal audit: We have engaged an Internal Audit specialist to audit higher risk business processes and activities, and a Process Writing contractor to develop processes and procedures for higher risk operational business activities.
- Chlorine dosing trailer: This will allow for targeted chlorination within the network creating a more rapid response to network failures where water quality is at risk and the process will require the use of less water, thereby reducing water demand on the network. The trailer design has been completed and the trailer is scheduled to be manufactured by March 2022.
- A study was undertaken on a potential cross-contamination risk from raw water to potable water at Te Marua WTP, Wainuiomata WTP, Waterloo WTP and Gear Island WTP and recommendations were given to reduce future risks.

Preparation for Reform

Dougal List has led this project to support the nine Wellington Councils through the reforms programme. WWL's owners, plus KCDC, MDC and CDC, have pooled their allocation of funding for this purpose.

Work has included:

- Review and analysis of government information
- Alignment with other councils in the Entity C area to support consistent information to elected members and senior staff.
- Analysis of the impact on local government of the water reforms, and transition to the new water entities and systems.
- Development of collateral to help explain the reforms process, key issues and potential next steps including workshop packs, public information and sections of council reports
- A joint submission to MBIE on the proposed economic regulation model.
- Numerous meetings with Wellington region councils, across the entity C area, LGNZ and DIA.