

Rehabilitation at Moa Point

Critical asset inspection leads to durable solution

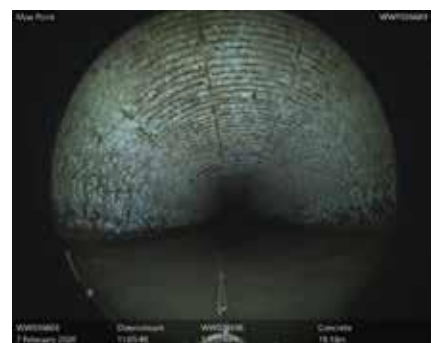


An above-ground demonstration of the pipe lining machine by Adam, a foreman for our contractor, Interflow, showed how the plastic compound spirals forward and is glued into place as it advances through the host pipe.

In a trenchless operation, a section of wastewater pipe near Moa Point Wastewater Treatment Plant has been lined to increase resilience and maintain reliability.

The project was fast-tracked after an inspection of a section of the main pipe which carries Wellington's wastewater to Moa Point for treatment—known as an interceptor—revealed internal corrosion exposing reinforcement bars.

The inspection was part of Wellington Water's standard ongoing review of critical assets that we make to understand the condition of our assets and prevent failures that impact people and the environment. Had the damage gone unnoticed until the pipe failed, there could have been a significant impact on the environment, or, as we saw with Dixon Street, a very expensive diversion operation to keep wastewater out of the sea.



A CCTV view of the interceptor's reinforced concrete interior revealed corrosion caused by hydrogen sulphide.



Wellington Water's team included Interflow's Project Manager Saadia Ali (left) EN Ramsbottom's Project Leader Michelle Hoffmann (centre) and Graduate Civil Engineer Kirstin Woods (right) from Stantec.

Before the damaged section of the tunnel could be fitted with the new corrosion-resistant lining, it was over pumped, which means the wastewater flowing through the interceptor was diverted in order to allow the lining machine to operate within the pipe. The over pumping was undertaken on behalf of Interflow by local contractor EN Ramsbottom.

Michelle Hoffmann, project leader for EN Ramsbottom, one of Wellington Water's contract panel, said that getting the diversion pipes in place before lock down was a challenge.



Pumps and temporary piping were used to by-pass the corroded section of pipe.

“The priority was to put a contingency plan in place in the event of the interceptor failing. Once that was in order, we trialled and fine-tuned the pumping before Interflow put in the new lining.”

“We had to act very quickly to get everything on site before the lock down took effect. The priority was to put a contingency plan in place in the event of the interceptor failing. Once that was in order, we trialled and fine-tuned the pumping before Interflow put in the new lining.”



Michelle Hoffmann on site with Wellington Water's Chief Advisor Wastewater, Steve Hutchison.

She said that while the working environment during lock down had its challenges, there was an upside. “With the airport being so quiet, our work with large machinery hasn't been restricted between 1 and 6 am. And we have not had to contend with vehicles parking in the long-term car park, where we have set up our pumps. Silver linings, you could say.”



A durable, long-term solution: Saadia Ali with a section of the PVC used to line the interceptor.

Interflow's Project Manager, Saadia Ali, said the material used to line the interceptor was PVC. Concrete grouting was then injected between the original pipe and the new liner. “PVC has a proven service life of 70-plus years in aggressive sewerage conditions, so this is a durable, long-term solution.”

Due to the trenchless re-lining process, digging up the road was not required, leaving service lines in the area undisturbed and minimising disruption. The interceptor is now fully operational.