



ESSS Resilience Master Plan

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ABSTRACT

The Selwyn District has one of the fastest population growth rates in New Zealand. In planning for future growth, Selwyn District Council recognised their existing wastewater networks as a key limitation to growth across multiple communities. The Eastern Selwyn Sewerage Scheme (ESSS) was developed as an overarching plan and scheme, to accommodate the immediate and future wastewater flows from the communities of Rolleston, Prebbleton, Lincoln, West Melton and Springston. This plan included a network of pumping stations and rising mains to connect each township's reticulation into a single integrated system. As part of ongoing expansion and upgrades to the network, instead of decommissioning old infrastructure, several lines have been left in place such that the network can be operated under various configurations and respond to emergency scenarios.

The ESSS Resilience Master Plan project was initiated to investigate and solidify the system's capability of responding to failure of key infrastructure throughout the network. The systems resilience was assessed with consideration of:

- *A range of operational scenarios including failure of critical wastewater pipelines, pump stations and access to the wastewater treatment plant;*
- *A review of how outages can be managed, as well as modelling response scenarios using a hydraulic network model; and*
- *Developing a list of recommended capital works to increase resilience of the network.*

This presentation will cover the unique characteristics of the ESSS network and detail the modelling investigation completed as part of the Resilience Master Plan project.



Modelling Group
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