

1 PROJECT BRIEF

Thames Coromandel District Council (TCDC) is looking to upgrade the stormwater network in Whangamata. Much of the town is at risk of flooding in the 10-year Average Recurrence Interval (ARI) event, as shown by an initial flood risk study (2018) and 1D-2D hydraulic model build (2021) by Hydraulic Assessment Limited (HAL). To address this risk, TCDC intends to upsize two trunk stormwater pipes on Williamson Road and Lincoln Road in line with their Stormwater Master Plan. Funding for this project has been allocated in TCDC's 2021-31 Long Term Plan.

The objectives of this study are:

- Preliminary design of two upsized stormwater trunk mains (one each on Williamson Rd and Lincoln Rd)
- Performance assessment of the upsized pipes considering future urbanisation and climate change to confirm that the design achieves the minimum level of service:
 - 1) Primary piped systems in urban areas capable of carrying a 5yr ARI (20% AEP) rain event plus a 20% allowance for climate change
 - 2) Overland flow paths capable of carrying a 50yr ARI (2% AEP) rain event plus 20% climate change allowance without entering buildings (including freeboard allowances in line with Table 6.1 TCDC Code of Practice for Subdivision and Development)
- Prepare preliminary design documentation (reporting, risk register, cost estimate and supporting drawings) to support funding approvals to progress to detailed design, procurement and delivery

2 OUR APPROACH

Metis will complete the tasks detailed in Table 1, in line with the programme shown in Section 3. Michael Arthur (Principal Engineer) will be the Project Manager and Technical Lead, with additional resources drawn from the wider Metis team as required.

Table 1: Tasks included within project scope

No.	Task	Milestones / Deliverables
1	Inception & stakeholder engagement support	
a	Inception meeting with TCDC (at the Metis office in Auckland, online or in parallel with the site visit)	• Site visit
b	Site visit along with a TCDC representative. Allowance for one visit by two Metis staff.	
c	Preparation of maps and other presentation materials for public engagement	• Materials for conducting engagement • Collated feedback summary
d	Attend in-person public engagement meeting collecting views on stormwater issues in Whangamata	
e	Collate feedback and incorporate into study	
2	Data review	

No.	Task	Milestones / Deliverables
a	Collate site data and mapping (HAL masterplan model, topography, flood maps, land use, asset data, and others as relevant)	<ul style="list-style-type: none"> GIS maps of existing site constraints
b	Request and review <i>beforeUdig</i> services information	
c	Review existing reporting and baseline model	
3	Hydraulic model update (to inform design process)	
a	Update HAL baseline hydraulic model of Whangamata to latest version of ICM (2023.2). No updates will be made to model parameters or assumptions.	<ul style="list-style-type: none"> Baseline flood depth maps
b	Rerun baseline model for additional ARI events in line with TCDC Code of Practice (5yr, 20yr, and 50yr ARI with and without climate change)	
4	Confirm pipe sizing and performance	
a	Review model results to confirm flood mechanism and impacted properties	<ul style="list-style-type: none"> Flood depth difference maps for options vs. baseline scenario Properties with reduced flood risk after option implementation
b	Confirm catchments for Lincoln Rd and Williamson Rd pipelines using GIS analysis	
c	Use rational method to confirm pipe and inlet size requirements for maximum probable development + climate change scenario, considering 5yr, 20yr, and 50yr events	
d	Use model to confirm that flood mitigation objectives can be achieved (tralling up to five pipe sizes)	
5	Preliminary design	
a	Confirm water quality requirements against discharge consents	<ul style="list-style-type: none"> Preliminary design drawings Engineers cost estimate Risk register
b	Check and confirm other consenting technical requirements with TCDC staff	
c	Complete draft design using sizing confirmed in Task 4	
d	Prepare draft design drawings (up to 5x CAD drawings for each location – 2x plan drawings and 3x long sections)	
e	Prepare engineers estimates using QV Costbuilder and TCDC staff input	
f	Prepare risk register for each option	
6	Reporting and meetings	
a	Monthly progress meetings with client	<ul style="list-style-type: none"> Materials for community board meetings Project report
b	Prepare community board reporting and respond to queries as required (2day allowance)	
c	Compile design report	

The following assumptions have been made while scoping the work:

- Unless specifically stated, meetings will be via video or teleconference
- No surveys will be commissioned for this study
- The initial hydraulic model in InfoWorks ICM 2020, developed by HAL, will be provided to Metis and is in good condition for upgrade to ICM 2023
- The project management allowance includes the following tasks:
 - Phone / email updates to the client as required
 - Internal project setup and invoicing
 - Technical review of deliverables