

Haddington - Drainage Area Study

Client: Scottish Water



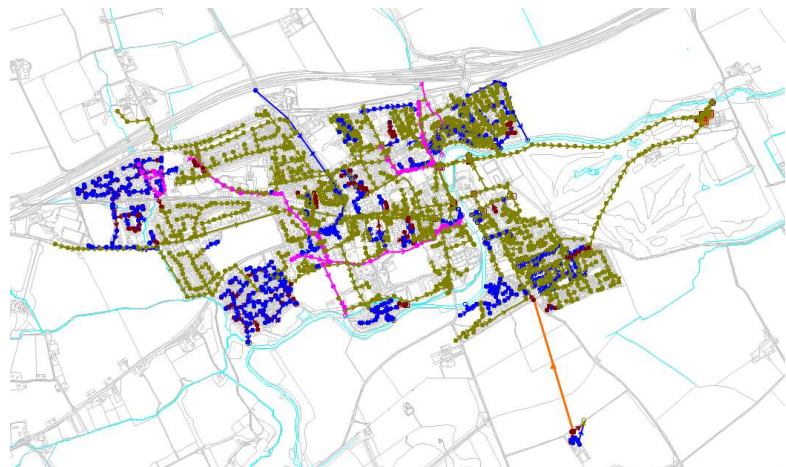
Caley Water, in conjunction with Stantec, were commissioned to undertake the Haddington Drainage Area Study (DAS), the objective being to provide Scottish Water (SW) with a hydraulic model that can be used to review catchment performance, identify deficiencies and ultimately support investment decisions.

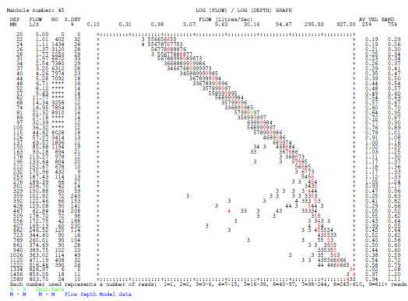
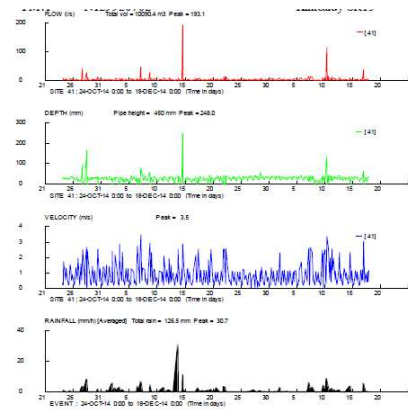
Drainage area studies support the strategic planning for catchments and allow essential understanding of sewerage systems and their performance against social, environmental and operational targets. Practical engineering experience is essential to support hydraulic modelling and desktop studies to ensure that capital investment is sustainable and present best value.

For the Haddington DAS, Caley Water planned and managed asset surveys in addition to a Rainfall and Flow Survey, which was used to verify the model. The existing InfoWorks hydraulic model was maintained in line with client specifications and further detail added to improve confidence in the modelling tool.

The updated dual drainage system model was used to review catchment performance in terms of flooding and CSO performance, in conjunction with interactions from fluvial sources to determine flood risk.

Projects such as this are extensive and it was imperative we maintained a high level of quality throughout, which was achieved through a rigorous internal QA/QC process.





Services provided

- Review existing data and undertake due diligence check on hydraulic model provided to determine suitability and critical areas within the model.
- Plan and manage manhole, ancillary and CCTV surveys.
- Plan and manage short term rainfall and flow surveys.
- Analyse RADAR rainfall in conjunction with rainfall survey.
- Model Build and Verification as per SW DAS specifications.
- Hydraulic model development and verification of flow inputs, including impermeable runoff surfaces and ground infiltration.
- 2D modelling to review overland paths and prepare flood risk maps for a range of return periods including climate change factors.
- Support preliminary design of solutions to address flood risk at properties with historic flooding issues.
- Liaise with all relevant stakeholders throughout the project life cycle and present study findings at stakeholder meetings.
- Prepare reporting in accordance with specification.

Solutions and added value

Model maintenance is essential if drainage area plans are to remain useful and current. Caley Water has extensive knowledge and experience in Drainage Area Studies, and we have used this knowledge to develop models targeted at specific catchment drivers such as flooding, unsatisfactory intermittent discharges and future growth. We are able to provide high quality models which allow our clients to use these as increasingly accurate tools with which to predict future performance of the sewerage network and identify critical areas of this network.

Our approach provided SW with a tailored product, delivered on time and within budget. This provided our client with:

- a greater understanding of the dual drainage systems
- improved knowledge regarding the current condition and operational performance of the network
- identified rehabilitation needs of infrastructure and allow prioritisation for investment
- range of solutions to address catchment needs to allow comparison against business requirements.