

FRM Act - Section 16 Assessments

Client: Scottish Water



Under Section 16 of the Flood Risk Management (Scotland) Act 2009 (FRM Act), Scottish Water is required to assess the possible risk of flooding from sewerage systems in areas designated as potentially vulnerable by SEPA through the National Flood Risk Assessment and the subsequent Flood Risk Management Strategies.

Caley Water, in conjunction with Stantec, has supported Scottish Water (SW) in their SR15 investment period, with the preparation of modelling outputs to fulfil statutory obligations. We have developed the models for 10+ catchments across Scotland and produced 2D modelling outputs.

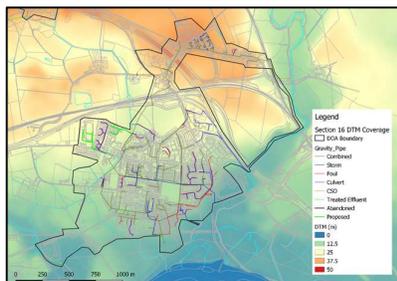
The Section 16 output following a DAS model build study is to produce a set of flood maps identifying the extent and depths of flooding from the sewerage system for a series of FEH Design Storms of up to 200 years return period, which will be utilised in conjunction with SEPA's flood risk and flood hazard maps, as well as further aiding the production of Flood Risk Management Strategies and Local Flood Risk Management Plans.

The outputs from the Flood Risk Management Section 16 assessments are:

- MapInfo table and ESRI Shape file depicting flooded manholes, whilst quantifying predicted flood depth and volumes.
- GIS based maps identifying flood depths in Raster Grid Format.
- MapInfo Table and ESRI Shape file illustrating the flooding extent within the catchment.
- A modelling report.

Services provided

- Review existing data and undertake due diligence check on InfoWorks ICM hydraulic models provided to determine suitability and critical areas within the model.
- Review DTM and assess suitability for the 2D modelling assessment.
- Data clean-up of DTM to address anomalies in the overland flow paths due to false boundaries.
- Develop catchment hydrology and climate change parameters
- Develop 2D mesh in InfoWorks ICM.





- Produce model simulations for range of return periods and storm durations, 1 in 1 year to 1 in 200 year.
- Extract results and prepare suite of flooding outputs, 1D results, 2D flood extents and depths.
- Prepare reporting in accordance with specification.

Solutions and added value

Caley Water has also been involved in the DAS model maintenance programme to improve the performance of hydraulic models. This knowledge and experience has been utilised to enhance the production of the S16 assessments. Through our experience in assessing the catchment performance using the 1D models in conjunction with historical flooding information, we can better inform and understand the 2D outputs.

We have worked in collaboration with the client to improve their specification for this type of work, develop process methodologies and enhance the GIS script that is used to produce standard sets of deliverables.