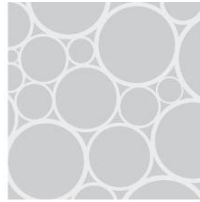




ENVIRONMENTAL



FLOOD RISK



DRAINAGE



ECOLOGY

# AD08 Type III Model Upgrades

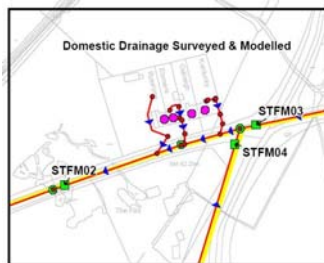
## Severn Trent, Asset Delivery, 2008-09

### Project aims

To upgrade a programme of 21 DAP models to Type III standard to allow the development of flooding schemes at over 50 different flooding locations. This involved planning and managing detailed localised flow and manhole surveys and further model verification and analysis. This was all undertaken against a very tight timescale of less than 6 months.

### Project summary

Model assessments were undertaken for each flooding location, and all model limitations identified. Survey activities were then scoped to allow the models to be upgraded and fit for purposes. Surveys included localised CCTV and manhole surveys, detailed domestic drainage and connectivity surveys, impermeable area surveys and flow surveys.



Site visits were undertaken at each project to better understand the flooding mechanism, particularly in terms of localised flood routing pathways, overland flows or interactions with local watercourses.

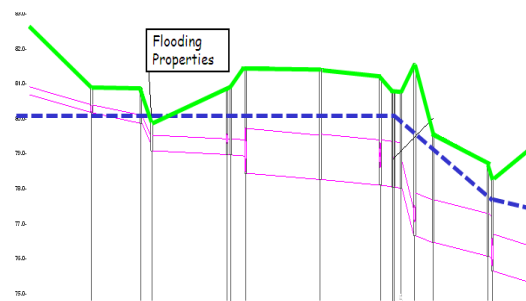
The models were upgraded in each scheme area and verified against the new detailed flow survey. In some cases, the further investigation highlighted or confirmed operational issues within the system to be the cause of flooding (e.g. frequent ragging of CSO

screens, or chip shop fat blockages), meaning that a hydraulic solution was not necessary.



Some areas of model upgrade required the SW system and culverted watercourse systems to be represented, due to interactions with these causing flooding from the combined system

A total of 21 model upgrade zones, covering 60 flooding properties and over 100 flow monitors were delivered within a 6 month period, allowing Severn Trent to fast track capital delivery at these locations before the end of AMP4.



The success to this study was accurate scoping of the survey requirements at start up, and identifying the flooding mechanism at an early stage so that efforts could be focused to accurately represent this aspect within the model. Efficient and close management of contractors was essential to meet the tight timescales afforded by the programme.

