

Sewerage Management Plans – ‘Live and Ready’ for the Future

Session 4: Future Visions for Urban Drainage

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Introduction

“Our plan is driven by – and for – our customers” Severn Trent Water Business Plan 2015–20 ¹.

The customer is at the heart of Severn Trent Water’s AMP6 Business Plan. In AMP6 Severn Trent will provide value for money; a robust and reliable service; will be fair and balanced; and will do the right thing for the long term for our customers. Sewerage Management Plans (SMPs) enable Severn Trent Water to deliver the AMP6 business plan.

There is more to Sewerage Management Planning than simply waste water hydraulic modelling. The journey of SMPs gives an enlightening glimpse into the future of Catchment Planning

Evolution of SMPs – ‘Live and Ready’

Severn Trent’s catchment planning has been evolving since the 1980’s. From AMP1 to AMP4, Drainage Area Planning was undertaken on a 10 year cycle. In AMP5, a risk based approach was adopted and developed using the principles of Sewerage Risk Management (SRM).

Using the SRM principles, sewerage management areas were prioritised using a Severn Trent wide risk analysis, highlighting catchments posing the highest risk to our customers. These SMP catchment areas, accounting for 50% of Severn Trent’s customers, were selected for a detailed ‘Live’ Sewerage Management Study. A ‘Live’ Sewerage Management Study includes wide ranging stakeholder consultations; model upgrades; model report and maintained datasets about assets and risks.

In AMP6, the aim is to achieve 100% of Severn Trent’s customers to be covered by a ‘Live and Ready’ Sewerage Management Study.

‘Live = We will be watching sewerage performance and change on all networks, so we can understand the best way to undertake catchment planning.’

‘Ready = Stakeholders can use SMP outputs to help deliver their needs in a timely and cost effective manner’

This means that the 50% ‘Live’ in AMP5 will be maintained, and will be ready to respond to the Business Plan. At the same time the remaining 50% population will be brought to the ‘Live and

1) Severn Trent Water Business Plan 2015-20 - www.stwater.co.uk/upload/pdf/Our-2015-2020-business-plan_1.pdf

Ready' status by the end of the AMP6. This will prepare SMPs for the AMP7 Business Plan and the visions for future AMP's.

'Live and Ready' is proactive 'Watching' of catchment data and acting appropriately to changing risks. SMP catchment planners are empowered to start risk mitigation processes, by engaging with stakeholders. The following definitions of 'Risk Status' entail a different risk mitigation response from SMP Consultants:

WATCHING - 'We are alive to changes that impact upon our service'

INVESTIGATING - 'We are actively analysing our service'

NON-PROMOTED - 'We are prepared to manage our system'

PROMOTED - 'We are actively managing our system'

Sewerage Management Planning will continue to evolve and provide intervention options to mitigate risk. This will create choices for decision making in a TOTEX environment of capital and operational investment for next AMP and future AMPs.

Business Support – 'Doing the right thing for the long term'

In AMP5, SMPs demonstrated their flexibility by responding to changing business needs. Blockage and pollution reduction strategies were implemented in response to Key Performance Indicators (KPI). SMPs responded by identifying the areas across Severn Trent with highest potential for performance improvements. For these areas an in-depth root cause analysis was undertaken to direct intervention work and implement a step change in performance, giving the best choices and the 'bigger bang for the buck'.

SMPs also inject pace into the capital programme. The HAFI (Hydraulic Assessment of Flooding Incidents) process was created to optimise the transition from flooding incident to promoted project. This hydraulic assessment enables an engineer to hit the ground running whilst in the feasibility stage of a project. In AMP6, the HAFI process may include predictive flooding incidents, and concept solutions ready to go. HAFIs will assist the AMP5 to AMP6 transition, as the business moves away from maintaining a Flood Register of properties to an outcomes approach.

Hydraulic Model Improvements – 'Going from good to great'

SMPs continuously improve hydraulic modelling stock with programmes of work such as 'Model Maintenance'. This process enables SMP hydraulic models to be updated as soon as known catchment changes occur. These include new housing developments and capital schemes. In AMP5, a programme of regular model maintenance was implemented. Hydraulic models were also combined and converted to meet the AMP5 SMP specification, and shared with the business. The success of Model Maintenance puts SMPs in a great position for AMP6 to be 'Live and Ready'.

Customised Products – ‘Creating Choice’

The changes in the planning process and the introduction of ‘Live and Ready’, have meant that SMPs have had to enable choices in product delivery. At the start of AMP5, the concept was that SMPs produced standard paper plans and reports to stakeholders. During AMP5 stakeholders challenged SMPs to deliver interactive GIS visualisations. This does not change ‘what’ SMPs do, but ‘how’ we do it.

The vision for AMP6 SMP product delivery is to enable the stakeholder to choose what they need, in the format they choose. Flexible products are in a variety of formats and are designed to communicate and share knowledge effectively. Products delivered to our stakeholders are monitored and evaluated to enable the full benefits of SMPs to be realised.

Innovative Systems – ‘It’s not what we do but how we do it’

To enable choice and help SMPs efficiently create custom products, innovative systems have been implemented to streamline data management, quality control, confidence assessments and metadata. AMP6 visualisation of SMP products will be brought to life by the Geoinformatics Planning Library (GPL). GPL is a data management system tailored for communicating catchment knowledge via GIS, and enables SMP products to be organised and structured. GPL provides the ‘recipes’ to be able to build products and customise visualisation depending on the stakeholder.

To manage the demand for ‘Live’ products in AMP6, systems such as the ‘Data Information and Management Outputs Database’(DIAMOND) has been built. DIAMOND streamlines Data Management and Quality Control processes to enable efficient delivery and anticipate changing business needs. In this way, ‘Live and Ready’ products are maintained in a safer, better and faster manner.

Data confidence – ‘Certainly Uncertain’

At the beginning of AMP5 it was recognised that SMPs needed to understand hydraulic model confidence. MICAS (Model Investment Confidence Assessment Score) was created to give an objective view of a hydraulic model. MICAS considers levels of verification achieved and certainty in the data, for example if assets had been surveyed or if assumed data was used. Using the principles of ‘Model Confidence’, the same can be applied to Data Confidence.

A need was identified for SMPs to generate metadata when sharing data. In AMP5, SMP products were being used by stakeholders for decision making, with little awareness of data quality, origins, precision or accuracy. To remedy this, customised metadata schema known as ‘DIVAS’ (Data Information and Validation Assurance Sheets) was created.

For AMP6, DIVAS has been migrated into the DIAMOND Database thus allowing the user to search and query metadata; the creation of an audit trail; the recording of version history; and improving usability. The aim of SMP metadata has not changed from AMP5 to AMP6, but how the system works has improved. This creates efficiency as the user can read and understand

metadata more easily, which in turn allows better awareness of SMP data, and more informed investment decisions.

Alongside DIVAS, In AMP6 there will be a focus on the quality of product delivery, and quality control measures will be implemented. Quality control is increasingly automated, saving time and maximising consistency and usability of products.

Stakeholder engagement – ‘It’s good to talk’

During AMP5, SMP Consultants have engaged with many stakeholders on a wide variety of issues relating to SMP catchments. These consultations have included internal Severn Trent stakeholders and external stakeholders such as Lead Local Flood Authorities and the Environment Agency. SMP Consultants have been in open dialogue with different departments within Severn Trent and have actively participated in meetings, Communication Cells, Community of Practices, and Forums as well as engaging with teams face to face. These consultations are best practice to holistically understand what is happening on the ground, and understand how SMPs can serve Severn Trent Water effectively. Conversely, engaging in this way has helped the Business to understand SMPs; improve communication and feedback; and help integrate SMP products on to company Systems. SMPs have found that stakeholder engagement and listening to feedback is the best way to achieve the right outcome first time. Benefits are fully realised when stakeholders are promoters of SMP processes themselves.

In AMP6, the aim is to widen stakeholder engagement; to support stakeholders where required; to embed SMP consultations as ‘Business As Usual’; and develop new ways of sharing SMP catchment knowledge. Stakeholder engagement and collaborative working helps alleviate issues such as flooding and pollution by getting to the root cause of a problem and working towards a common goal, together. This helps realise the full potential of SMPs to the business and ultimately the customer.

Conclusion

The change AMP6 it is not ‘*what*’ SMPs are doing, it is ‘*how*’ they are doing it. Following the innovations, successes, and lessons learned in AMP5, SMPs are looking forward to achieving AMP6 outcomes. The aim is to achieve 100% of Severn Trent’s customers to be covered by a ‘Live and Ready’ Sewerage Management Study. Catchment planning is evolving as AMP6 begins and the Planning process for SMPs is continuously improving to be ‘Live and Ready’. SMPs are well equipped to face the challenges of AMP6 and beyond with innovative systems, flexible products, and delivering efficiencies by being ‘Live and Ready’.