



Optimatics
optimizing water systems

KEY POINTS

- Identify vulnerable pipe locations to prevent pipe bursts
- Rapid response and effective decision making in the event of unexpected pipe breaks
- Accurately alert affected parties

“OptiCritical was used to support UU’s PR09 submission. It was used to process over 500 DMAs in terms of numbers of properties that would be subject to interruptions as a consequence of individual mains outages. The outages took account of the valves that were available to isolate the burst mains...”

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OPTIMATICS

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OptiCritical™ - Evaluating consequences of pipe failure

Powerful pipe criticality analysis software for all pipes in a water network

Enabling water utilities to identify where their network is most vulnerable to supply disruption and water quality issues and evaluate the consequence of failure to assist in making the most effective decisions in the event of unexpected pipe breaks and plan for rehabilitation and replacement of vulnerable pipes.

BACKGROUND

OptiCritical has been developed over the past three years, in close conjunction with major water utilities in the UK and Australia, in particular United Utilities (UU) which serves nearly 7 million people in cities including Liverpool and Manchester, England. This has ensured that OptiCritical is capable of handling your most complex water network system requirements.

OptiCritical enables water utilities to model the consequences of failure from security of supply, pressure, discoloration and water quality perspectives at the time of break and after isolation. The consequence of failure data can then be coupled with a probability



Pipe breaks cause environmental and community problems

of failure for each pipe based on age, material, break history, and so on to develop a true risk ranking of pipes nominated for rehabilitation or replacement.

OptiCritical includes an easy-to-use graphical user interface for manipulation and display of analysis results. The software can be customized to cater for individual water authority’s unique requirements. Assistance can be provided by Optimatics in importing GIS data and network models. OptiCritical is powered by an EPANET-compatible hydraulic engine and conversion from a wide variety of model formats is possible.

CAPABILITY

OptiCritical provides results that support:

- Planning for rehabilitation and replacement of the most critical pipes leading to a better return

on a utility’s pipe replacement spending

- Contingency planning in the event of a pipe break emergency, allowing operators to quickly understand the consequences of a break, and provide information to allow for a more effective response
- Quickly identifying the set of shutoff valves the response crew should close to isolate the break
- Modifying the selection of pipes to be shut off in the event that any valves are inoperable
- Assigning valve maintenance and pipe condition assessment priorities to ensure the most critical valves and pipes are addressed.

OptiCritical enables water utilities to quickly determine what valves to close in the event of a pipe burst

