Resilience Assessment Methodology for Drinking Water Infrastructure System

ABSTRACT:

The concept of infrastructure resilience can contribute to increased system preparedness and efficient recovery of infrastructure performance after disruption. However, translation of resilience from high level strategic frameworks to an operational set of methodologies and tools for application in daily infrastructure management has proven challenging. This paper presents a methodology for assessing resilience in water distribution infrastructure networks, from raw water extraction to the water distribution system. The methodology is based on network modeling, and is intended as a complementary decision support tool for current asset management frameworks and practices. A computerized model called ERASMUS (Effective Resilience Assessment Methodology for Water Utilities) was developed from the methodology. Although still in a very early development stage, the computerized model has provided some interesting results that may be useful for key managerial decisions. Those results are discussed here, along with a discussion on the limitations of this methodology.

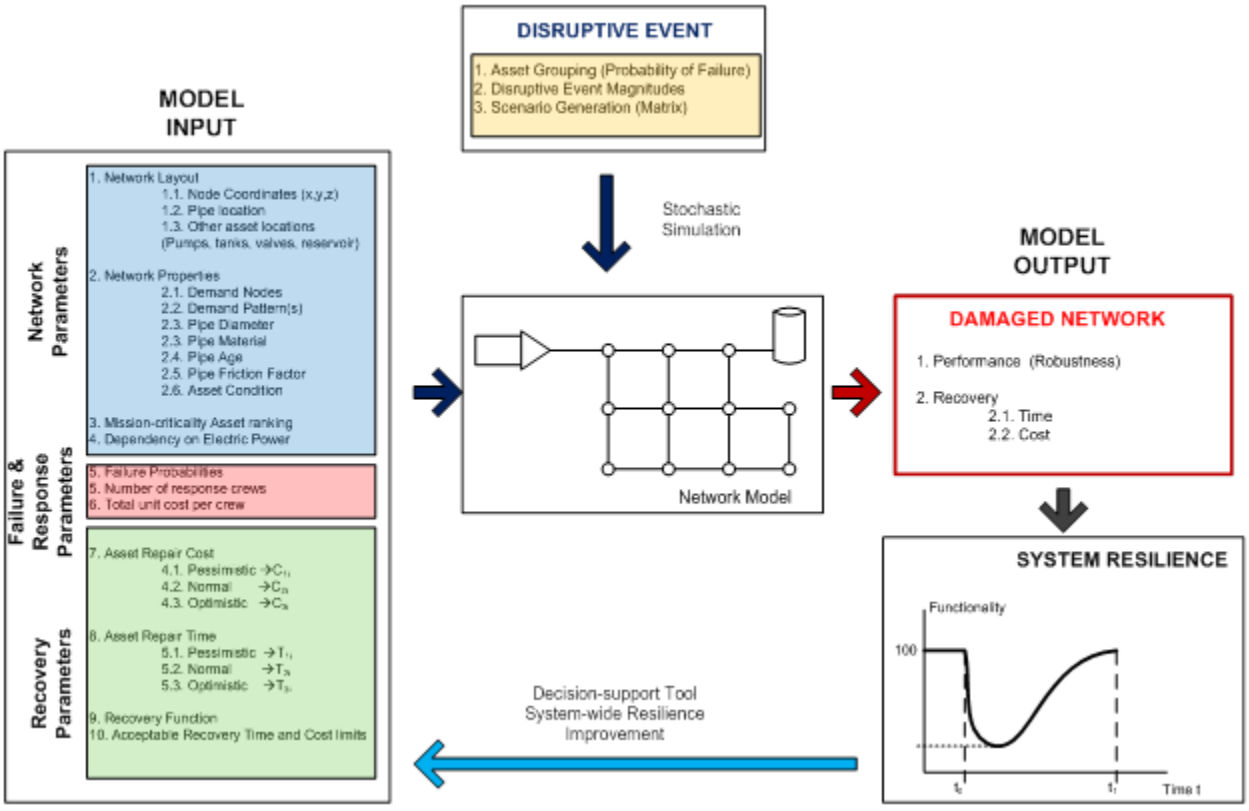

Figure 1: Water Infrastructure System Impact Vulnerability Assessment

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