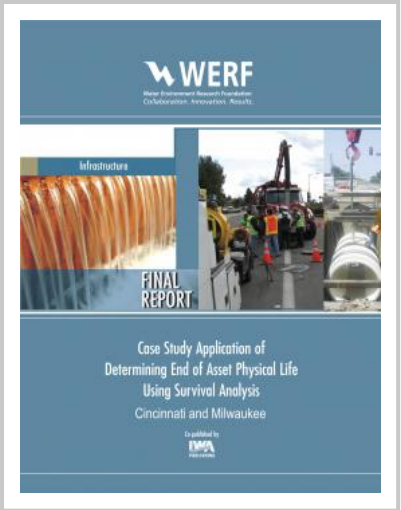
Case Study Application of Determining End of Asset Physical Life Using Survival Analysis: Cincinnati and Milwaukee



Utilities are about investment; the most significant management cycle is the annual operational and capital budget cycle. Budgets can be thought of as the financial characterization of those management strategies and plans an agency intends to deploy over the course of the fiscal year. The core management objective is to develop a budget investment strategy that represents the best integration of maintenance, operations, and capital investment where this integration delivers sustained performance at an acceptable level of service, at the lowest total cost of ownership, and at a level of risk the community is willing to tolerate.

Determining which investment strategy (that is, what mix of operations, maintenance, and capital investment) should be deployed for a given asset and when that strategy should change across the life cycle of the asset lies at the heart of asset management. Considerable progress has been made over the past decade, especially the last five years, in understanding how infrastructure assets actually fail. While much remains to be done, a body of refined techniques for assessing condition and predicting failure has emerged, based largely on the improved understanding of failure mechanics. This progress has focused on predicting remaining physical life.

Physical life is only one of several types of important “asset lives”. Service level/capacity life and economic life play critical roles in determining which management strategies are most cost effective and at what point to transition those investment strategies from maintenance/operations to capital reinvestment for a given asset.

The optimal investment strategy is directed at minimizing total cost to the utility – including deferral or avoidance of the consequences to customers and community of failure (alternatively, maximize benefit to the community). This research draws on concepts and techniques from advanced risk analysis, the reliability sciences and microeconomics to provide for the development of a web-based tool to guide the asset management practitioner in meeting the challenge of developing an investment strategy that represents the best integration of maintenance, operations, and capital investment.

A copy of the manual will be supplied to you and the order confirmed by email. This email is to be sent to Gina Street at WERF ongstreet@werf.org[1] as proof of purchase and copy of the tool will be supplied to you at no additional cost.

Also available as part of your Water Inteligence Online subscription

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