

# SEATTLE PUBLIC UTILITIES RISK MODEL AND CAPITAL INVESTMENT ANALYSIS



**CLIENT**  
Seattle Public Utilities

**LOCATION**  
Seattle, WA

**DURATION**  
3 years

**ROLE**  
Technical Lead

**BUDGET**  
\$80,000

**COMPLETED**  
Est. December 2021



**City of Seattle**

describes options and a recommended course for the level and type of capital investment needed to renew its gravity sewer system over both the short and long-term (a sixty-year period.).

First, the team worked together to better understand system goals and data collection needs. When performing a financial assessment, it is important to identify the risk levels being managed and the overall Utility’s goals. With these identified, Blue Cypress could build modeling “scenarios” that provide realistic investment alternatives that attempt to manage towards a particular set of goals. With regards to data, particular attention was placed on cost information and the need to pull both hard and soft costs for the program.

Utilizing the recently implemented Innovyze Infomaster program, Blue Cypress then worked with SPU to define how system risk impacts investment needs over time. The team developed a risk matrix and workshopped likelihood of failure and consequence of failure decision making points to best understand, based on pipe condition, when rehabilitation should occur.

Like cities throughout the country, Seattle is facing a growing backlog of aging and failing assets. In an effort to better understand its renewal needs and right-size its capital improvement program, Seattle Public Utilities (SPU) contracted with Blue Cypress to develop a capital investment analysis that

Not only did the team look at current system condition, forecasted degradation was considered as well. By dividing assets into various classes (anticipated to fail over similar times), Blue Cypress applied existing SPU failure methodologies to calculate system degradation over time and ultimately apply this to a financial model. All inputs were combined into a customizable financial renewal model. The renewal model accepts inputs for a variety of investment scenarios. It was important to model various scenarios so the Utility could make informed decisions by understanding system risk over different funding levels, usages of technology, and investment focus areas.

As a result, SPU was able to appropriately forecast funding needs to meet its desired system risk profile over a specified time horizon.

