

Rehabilitation of Water Distribution Systems: Selecting Rehab Methods (RV-11159)

1 hour course

Course Description

The average age of water distribution systems within the U.S. is between 50 to 100 years. This is right at the design life cycle of many systems, thus local water agencies are investing more and more in the rehabilitation of existing water distribution systems instead of the construction of new systems.

This interactive online course will go through the overall items that need to be considered when selecting a method to rehabilitate a water distribution system. At the end of this course Contractors, Engineers, Water System Operators and Architects will be able to select applicable technologies to be used to repair, rehabilitate and replace aging water distribution systems.

Course Objectives

By the end of this course, you will be able to:

- Define at least four of the most common problems in water distributions systems
- List at least 3 inspection methods used to assess the structural condition of pipes
- Given a rehabilitation method and a pipe diameter, estimate an order of magnitude capital cost
- Describe the disinfection requirements in rehabilitation projects to safeguard the public's health, safety and welfare

Introduction – 15 minutes

This course review some of the key items that need to be considered when selecting a rehabilitation method to maintain the operability of water distribution systems. At the end of this course Contractors, Engineers, Water System Operators and Architects will be able to select applicable technologies to be used to repair, rehabilitate and replace aging water distribution systems.

- Course Overview
- Learning Objectives

Identifying the Problem: Part 1 – 15 minutes

When it comes to the renewal of water distribution systems, the challenges fall into two categories – first into assessing the condition of existing pipes (which is defining the problem), and then, into selecting the appropriate technique to restore the pipe condition to a desired level (which is solving the problem).

- Selecting the Appropriate Method
- Pipe Evaluation Workflow
- Water Main Inspection Methods
- Structural Problems

Identifying the Problem: Part 2 – 15 minutes

For the water main requirement rule, the problem to be addressed needs to be well-defined and understood, such as the performance and condition of the asset and the cause of its deterioration. Once the problem is defined, different solutions can be developed based upon a review of available technologies that can address the current asset condition and extend the remaining asset life.

- Hydraulic Capacity
- External Corrosion
- Joint Leaks
- Water Quality

Factors Affecting the Selection of a Rehabilitation Method – 15 minutes

There are several factors that can affect the selection of a rehabilitation method. These factors are discussed in this section of the course with cost being, typically, the most important selection criteria utility agencies use to make renewal method selection decisions.

- Cost
- Maintenance Requirements
- Bypass Piping System Requirements

- Disinfection Requirements
- NSF/ANSI 61 Requirements and Limitations
- Accessibility and Scheduling

Conclusion – 5 minutes

To wrap up this course covered some of the items we need to consider when it comes to the context and the critical nature of water distribution systems.

- Summary

Resources

- References