

## TECHNICAL SPECIFICATION

The Contractor shall provide leak detection services of the entire 215 miles of water main to Lowell Regional Water Utility as requested by the executive Director and as directed by the Superintendent of Distribution and staff. The Contractor's scope of services shall be to conduct a Leak Correlation Survey (as detailed in Part B, below). All work to be performed under this Contract, shall be authorized by the Lowell Regional Water Utility. All contractors submitting bids for the leak correlation survey must have a minimum of five years' experience and provide the Lowell Regional Water Utility with supporting documentation.

### LEAK CORRELATION SURVEY:

Leak Correlation Survey: The Contractor shall provide one leak detection technician (or more than one at the discretion of the Contractor), all required leak detection equipment, and an appropriate vehicle to carry out the leak detection survey. The costs of all aspects of the leak detection survey, including, but not limited to, project administration, project management, coordination with Lowell Regional Water Utility, performance of the entire Leak Correlation Survey, report preparation, and all related expenses shall be included in the comprehensive per mile rate for leak detection of water main (cost proposal) for the Leak Correlation Survey. There will be no separate reimbursement for any additional project costs.

Comprehensive per Mile Rate for Leak Correlation Survey: \_\_\_\_\_ \$ per Mile of Water Main Leak Detection

### PART B – LEAK CORRELATION SURVEY

B1 The Contractor shall administer, manage, and coordinate all necessary work to complete the Scope of Services for each specific leak detection survey. Upon notification from Lowell Regional Water Utility, the Contractor shall contact the appropriate official. The Contractor shall review with Lowell Regional Water Utility officials the following: scope of services, estimated miles of leak detection survey required by Lowell Regional Water Utility, estimated project schedule, assignment of a representative (guide), and water system mapping. The Contractor shall report any specific issues to Superintendent of Distribution prior to commencing the leak detection survey. The leak detection services (Leak Correlation Survey) shall be executed between Lowell Regional Water Utility and the Contractor.

B2 The following general procedures shall be followed to complete the Leak Correlation Survey:

- a. Use sound intensifying equipment capable of detecting small amounts of leakage.
- b. Correlating accelerometers shall be placed directly on every hydrant, selected main line valves or selected sidewalk service connections to perform a correlation between them to determine if there is an unknown leak between the points of

contact. The maximum distance between these initial listening points shall not exceed 700 feet. The Contractor shall then select if needed additional mainline valves, hydrant valves, service connections or hydrant ports to accurately pinpoint the location of every leak found.

- c. Every correlation performed (not just those that indicate a potential leak) must be saved and submitted to Lowell Regional Water Utility in order for Lowell Regional Water Utility to review the data at a later time. The Contractor shall supply Lowell Regional Water Utility a licensed copy of the software that will allow the Utility to review the survey data files.
  - d. All leak site pinpointing shall be performed with a correlation system utilizing 2 or more sensors and verified with a sonic ground sounding technique.
  - e. The leak shall be classified as to estimated water loss and severity. A leakage site report shall be prepared for each suspected point of leakage. The report shall include a copy of each leak correlation graph that indicates a potential leak.
- B3 The Contractor shall provide one leak detection technician (or more than one at the discretion of the Contractor), all required leak detection equipment, and an appropriate vehicle to carry out the leak detection survey. Lowell regional Water Utility will provide a guide to assist the Contractor and two copies of the water system map if requested.
- B4 At the completion of the survey, a Leak Detection Report shall be prepared. The Report will include: a copy of the individual leak reports; a total estimated water loss; the start date and completion date of the leak detection survey; the number of leaks by classification per Section 12.09 paragraph (2) of the Leak Detection Regulations (360 CMR 12.00); list of leakage sources (mains, services, valves, hydrants) by number and estimated flow amount; and a summary of the overall project. If blow-off valves are found to be active, a separate list of those valves with their locations and estimated flow rates shall be included in the leak detection report. The Leak Detection Report shall also contain detailed diagrams for each identified leak which indicate the date of the survey, specific location of the leak, estimated leakage amount, suspected type of leak, and a copy of each leak correlation graph. Three (3) copies of the Draft Leak Detection Report shall be submitted to the Water Utilities Superintendent of Distribution within one (1) month of completion of the field work. Three (3) copies of the Final Leak Detection Report shall be submitted after the Draft Report is reviewed by the Superintendent of Distribution.
- B5 Lowell Regional Water Utility will be responsible for the arrangement and payment of police details, and for locating and/or excavating access points to the community water system that are deemed necessary.