

RESOLUTION NO. 3 - 21

**A RESOLUTION APPROVING THE PROPOSAL FOR A WATER DISTRIBUTION LEAK SURVEY FROM M.E. SIMPSON CO., INC.**

**WHEREAS**, the Village of Chatham (“Village”) is an Illinois Municipal Corporation existing and operating under the Illinois Municipal Code and the laws of the State of Illinois; and,

**WHEREAS**, the Village operates a water distribution system; and,

**WHEREAS**, M.E. Simpson Co., Inc. is a professional services firm that, among other things, provides water system leak detection services; and,

**WHEREAS**, the Village has previously utilized M.E. Simpson Co., Inc. to survey the Village’s water distribution system and detected several leaks, leading to a large cost savings for the Village; and,

**WHEREAS**, the Village President and Board of Trustees believe it to be in the best interest of the Village to perform a new water distribution system leak survey in accordance with the proposal attached hereto as **Exhibit A**.

**NOW THEREFORE, BE IT RESOLVED** by the President and Board of Trustees of the Village of Chatham, Sangamon County, Illinois, as follows:

**Section 1.** Recitals. The foregoing recitals shall be and are hereby incorporated into and made a part of this Resolution as if fully set forth in this Section 1.

**Section 2.** Approval of Water Distribution System Leak Survey. The Village Board hereby approves the Proposal for a Water Distribution System Leak Survey from M.E. Simpson Co., Inc. attached hereto as **Exhibit A** and authorizes the Village Manager and/or Village President to execute any documents necessary to effectuate the renewals.

**Section 3.** Effective Date. This Resolution shall be in full force and effect from and after its passage and approval.

SO RESOLVED this 26<sup>TH</sup> day of January, 2021.

	YES	NO	ABSENT	PRESENT
KRISTEN CHIARO	X			
ANDREW DETMERS	X			
BRETT GERGER	X			
RYAN MANN	X			
MATT MAU	X			
PAUL SCHERSCHEL	X			
DAVE KIMSEY				
TOTAL	6	0	0	-

**APPROVED** by the President of the Village of Chatham, Illinois this 26<sup>TH</sup> day of January, 2021.

  
Dave Kimsey, Village President

Attest:

  
Amy Dahlkamp, Village Clerk

**EXHIBIT A**  
**Proposal for a Water Distribution System Leak Survey**



December 21, 2020

Mr. Dustin Patterson  
Village of Chatham  
116 E Mulberry Street  
Chatham, IL 62629

**RE: PROPOSAL FOR A WATER DISTRIBUTION SYSTEM LEAK SURVEY**

Dear Mr. Patterson,

M.E. Simpson Co., Inc. is pleased to present the Village of Chatham Water Department our proposal for a Water Distribution System Leak Detection Survey Program. We are honored to be considered for this work and are confident our team will help make the project a success.

M.E. Simpson Co., Inc. is a Professional Services Firm dedicated to developing and providing programs and services designed to maximize peak performance for our clients' water distribution systems. Many of these programs are universally recognized as a part of "Best Management Practices" (BMPs) for utilities. We pride ourselves on delivering solid solutions using the highest quality technical and professional services by way of state-of-the-art technology and a skilled and well-trained staff of professionals. Our trained and experienced engineers and technical team are committed to the success of this project. They will be ready at a moment's notice to relieve your staff's burden and ensure a seamless continuation of your services.

Our services were developed and refined to provide utilities with programs that can be customized to meet their needs. From complete "Turn-Key" services to assisting with the development of "in-house" programs for utilities, M.E. Simpson Co., Inc. serves our clients with this ultimate goal: to deliver to the public the implicit faith that **"the water is always safe to drink"**.

Thank you for your consideration and this opportunity to acquaint you with our Water Distribution System Leak Detection Services and offer this response. We are committed to exceeding your expectations.

Sincerely,

Jeff Cunningham  
Regional Manager

Jeff Cunningham  
Regional Manager

3406 Enterprise Avenue  
Valparaiso, IN 46383

800.255.1521 P  
888.531.2444 F

Jeff.Cunningham@mesimpson.com

## SCOPE OF WORK

### Water Distribution System Leak Survey

The Field Scope of Service for the Leak Survey is understood to be the following:

M.E. Simpson Co., Inc. will furnish all labor, material, transportation, tools, and equipment necessary to survey the water distribution system areas selected by the Utility. M.E. Simpson Co., Inc. shall be required to provide such skilled and trained personnel and equipment necessary to complete the work herein specified. **There will be a minimum of Two Persons per team working on the survey at all times.**

- ◆ Work in an orderly and **safe** manner to insure protection of the local residents, Utility employees, and the Field Staff so that no **avoidable** accidents occur.
- ◆ All Field Staff will have readily observable identification badges worn while in the field.
- ◆ The leak detection equipment to be used will be that which was described in the “Equipment to be used” section.
- ◆ Initially listen to **all fire hydrants, all accessible main line valves**, and when necessary, selected service connections in the entire distribution system by making physical contact with the valve, hydrant, pipe, or B-box. (Listening points that are not accessible will be given to the Utility and when corrected they will be listened to.)
- ◆ Listening points of contact will be: valves, hydrants, service valves or meter settings. The preference of listening points in order as follows; direct contact with the pipe, main line valves, hydrant valves, hydrants, then service valves or meter settings.
- ◆ Specific listening distances will be determined by pipe material. Metallic type pipes; no greater than 500’ between listening points. Non-Metallic AC/Concrete type pipes; no greater than 300’ between listening points. Non-Metallic PVC/HDPE type pipes; no greater than 150’ between listening points.
- ◆ A “suspected leak” log shall be maintained indicating all areas where suspected leak noise was heard. This log will be reviewed when the Project Team is verifying the suspected leak area for confirmation of the actual existence of a leak. This log will be a part of the periodic reports turned into the Utility regardless of an actual leak located in the area or not, with an explanation of the noise source.
- ◆ When leak noise has been detected and or suspected, the Project Team will verify the suspected area a second time to confirm the noise. At least four hours will pass between the initial listening of the area before a second listen and confirmation is attempted.
- ◆ The Project Team will line locate the water main and service lines in the immediate area so the correct pipe distances can be input into the leak correlator and also so that the Water Utility will have an idea of where the water main is located prior to excavation. Non-metallic pipe locations will be “interpolated” as best that can be identified, given the line location of metallic services, Utility knowledge of the area, or other information regarding the actual location of the main.

- ◆ The Project Team will use “State of the Art” Electronic Leak Correlators to determine if a leak is present and use the same equipment to pinpoint the leak.
- ◆ For PVC water mains only the Echologics LeakFinder-ST w/hydrophones leak correlator or Fluid Conservation Systems (FCS) TriCorr Touch leak correlator, will be used for correlations because of the ability for these correlators to be able to analyze the particular sound frequencies inherent to PVC pipe.
- ◆ The leak location will be marked in the field (on the surface) using environmentally formulated Precautionary Blue paint.
- ◆ The Project Team will document all leak locations with a diagram indicating the location of the leak. Other information related to that correlation will be included as part of the field sheet such as the filters used for the correlation, line locations, distances between sensors, etc.
- ◆ The locations of leaks requiring immediate attention (immediate threat to life, injury or traffic) will be turned in as quickly as possible to facilitate the repair process.
- ◆ The Project Team will report daily or per request of the Utility, to assigned Utility Professional and go over the progress of the previous day, as well as cover what will be surveyed the current day.
- ◆ It may be necessary to conduct parts of the Leak Survey during “off hours” such as at night. This may be required in areas of high traffic volume where traffic noise may affect the ability to detect leak noise, and traffic volume may affect the ability of the Project Team to be able to safely access main line valves in the middle of the street. The Project Team will give 24-hour advanced notice of intent to survey a particular area that may require after hours surveying or nighttime surveying. This is so the Utility can plan for the area to be surveyed, give notification to the Police department, as well as other Public Works Divisions as to the activity that will take place.
- ◆ As a part of the leak program, mapping discrepancies found, distribution assets found in disrepair will be noted and turned into the utility.
- ◆ Leaks verified on the customer’s side of a service shut-off will not be located beyond the shut-off. If a leak appears to be on the Customers’ side, the Utility will be notified first, then the customer notified and permission granted prior to the water being shut off even for short periods of time where possible and as time allows, as well as the ability for the customer to respond.
- ◆ If the Utility requests leak locations beyond the service shut off on the customer’s side of the service line, this will result in an additional charge to the leak survey based on an hourly rate and this service must be agreed upon between the Utility and M.E. Simpson Co., Inc. prior to the start of the survey.
- ◆ Valves and hydrants will not be operated without Utility permission. Valves and hydrants that break during this type of operation are the sole responsibility of the Utility. M.E. Simpson Co., Inc. cannot be responsible for valves and hydrants that break due to pre-existing conditions.

- ◆ The Utility is encouraged to dig up and repair the leaks located as soon as possible so that the area may be re-surveyed while the Project Team is still working on the survey in that general geographical location to ensure no other leaks are present in that area.

## Equipment List

- ◆ FCS S30 Gutermann AquaScope electronically enhanced listening device.
- ◆ Echologics LeakFinder-ST w/hydrophones; FCS AC Digital, TriCorr Touch or Vivax-Metrotech HL6000X leak correlator systems.
- ◆ RADIO Detection Line Locators.
- ◆ Chicago Tape, Fisher M-Scope or Schonstedt magnetic locators.
- ◆ All necessary valve keys and hand tools
- ◆ Truck mounted arrow board/signage and warning lights.
- ◆ Traffic control equipment, including properly sized traffic cones with reflective stripes.

## Quality Control and Accuracy of Leak Locations

The level of accuracy of leak detection is a matter of taking in all the above considerations and applying those considerations to each individual potential leak location as it is being evaluated. Any statement made as to the level of accuracy of leak locations must be considered based on the individual conditions of each leak.

Locating leaks on a distribution system can be very challenging. It is not a perfect science. Pipes and fittings can leak for a variety of reasons (age, poor installation, material failures, bad soils, etc.), and the ability to locate leaks is dependent on the stated variables listed in the "Project Approach". By employing a strict methodology in the field for conducting a leak survey, these variables can be accounted for and mitigated. The depth of experience of the Project Team is extremely important to maintaining the ability to have accurate locations of leaks. Additionally, crews work as Two-Person Teams in the field, double checking the progress of the work as the survey progresses. The systematic procedure for leak confirmation has been stated in the Scope of Field Service and is restated here.

"Suspected leak areas are always listened to a second time, preferably at a different time of day than originally listened to. The mains and services will be line located to insure correct pipe distances are used for the correlations. Correlations may need to be performed several times with several configurations to insure all the possible scenarios have been covered. Sewer manholes may need to be opened and flows observed. If there is any doubt as to the existence of a leak, the area may be checked and correlated at different times to rule out water usage or other factors. The progress of the survey will be monitored by the use of daily logs and a progression map with suspected leak noise indications marked and possible leak locations will be maintained. Field leak location forms will be turned into the Utility according to the agreed schedule. The Project Team will follow up on leak locations by monitoring the repair schedule of the Utility. That way in case a potential leak location is wrong, the Project Team can return to the site and determine why the leak location was incorrect, and correct it. This means maintaining a good level of communication between the Project Team in the field, and the Utility.

As a matter of Quality Control for leaks in the field, our Correlators, FCS TriCorr Touch and Echologics LeakFinder-ST have the distinct ability to be able to detect and pinpoint more than one leak in the same relative area, thus allowing better leak coverage and insuring that one leak is not “masking” another leak in the same area. The use of progress reports and meetings will allow for open discussions of problems encountered so solutions can be examined.”

## Utility Observations

The M.E. Simpson Co., Inc. Project Team will welcome having staff of the Utility observe field procedures while the Leak Survey is in progress. They will be happy to explain and demonstrate the equipment and techniques that are employed by M.E. Simpson Co., Inc. for detecting and locating leaks on the Water System.

## Final Reports, Documentations & Communications

### ***M.E. Simpson Co, Inc. will perform the following:***

- ◆ Project Team will **meet daily** with assigned Utility personnel to go over areas of survey for prior workday and plan current day and area to survey.
- ◆ The field technicians will be readily available by cellular phone. This will facilitate communications between the Utility and the field technicians. A **24-hour toll-free 800 number** is available for direct contact with M.E. Simpson Co., Inc. for emergencies.
- ◆ **Diagram all leak locations**, date of location, and classify according to severity and an estimate of loss.
- ◆ **The Project Manager will** meet with the Utility regularly for a progress report.
- ◆ **Prepare a progress report** at monthly intervals for the Utility if requested.
- ◆ Develop a **Leak Survey log** of activity which will also have confirmed leaks listed and this list will be turned in weekly (in Excel format). The list will also be included with the final report that will include the following;
  1. Mechanical deficiencies discovered
  2. Mapping errors on the water atlas
  3. Type of monitored appurtenances
  4. Location of same for leaks discovered
  5. Total estimated loss

Effective communication...  
accurate documentation...  
**Insuring the success for  
the leak survey**



- ◆ **Prepare the final report** at the completion of the project which will include all leak location reports with drawings, total of estimated water loss, total pipe distance investigated, a description of the area surveyed, and other problems found in the system during the course of the survey that need the attention of the Water Utility. The leak summary will list leak types such as main leaks, service line leaks, valve leaks, or hydrant leaks.

A cost benefit analysis of the survey based on the “cost to produce” water will also be included that describes the financial impact to the Utility for water loss. Recommendations for system maintenance will be a part of this report based on field observations made during the survey.

**This final report shall be made available for submission to the Utility within thirty (30) working days of the completion of the fieldwork.**

### Assumptions & Services Provided by the Utility

- ◆ The Utility will furnish all maps in an electronic format or paper atlases (two copies), and records necessary to properly conduct the survey.
- ◆ The Utility will assist as necessary to clean out service valves, meter pits and valve-boxes needed for listening.
- ◆ The Utility will provide a Primary Contact Person and/or secondary contact person for the Field Staff to report to on a periodic basis. This person shall act as the official liaison for the duration of the Leak Survey. This person shall have a working knowledge of the water system and will be helpful in attempting to locate particularly hard-to-find water valves for listening and for general information about the water system. *This person will not need to assist the Project Team on a full time basis*, but only on an “as needed” basis.
- ◆ The Utility will assist, if needed, to help gain entry into sites that may be difficult to get into due to security issues or other concerns.
- ◆ The Utility will assist, if needed, to locate all nonmetallic pipe within the service area. This would include all Concrete Cylinder pipe, Asbestos Cement Pipe, PVC pipe and HDPE pipe.
- ◆ We will encourage the immediate digging of major leaks (main breaks) so that if there are problems with the leak location, the problems can be corrected while the Project Team is close by and can verify the site.

## PROJECT SAFETY PLAN

M.E. Simpson Co., Inc.'s Safety Programs cover all aspects of the work performed by M.E. Simpson Co., Inc. We take great pride in our safety plan/policy/program and that is evident in our EMR scores over the last five years. The safety of our employees, the utilities employees and that of the general public is our #1 priority.

Our Safety Plan/Policy/Program, with all of its parts, is 60 pages in length. In an effort to be more efficient and less wasteful we do not print copies of the safety program for RFPs. There is nothing secretive or proprietary contained within our plan/policy/program and we are happy to share its contents. If you would like a PDF copy of our plan/policy/program please contact Alex Hood, Operations Manager, at 800.255.1521 and a copy of our program will be sent via email to you.

Below is an overview of our plan/policy/program:



**Safety** is a major part of any project. M.E. Simpson Co., Inc. always provides a safe work environment for its employees. **Our staff is trained in General Industry OSHA rules, Confined Space Entry & Self-Rescue, First Responder First Aid, CPR, and Traffic Control.**

While in the field on your project, M.E. Simpson Co., Inc. and its employees will follow all of the necessary safety procedures to protect themselves, your staff and the general public.

### *M.E. Simpson Co., Inc. uses Two-Man Teams for Safety and Quality Assurance.*

The use of a "one-person" leak detection team is dangerous and impractical where water mains run under roadways. It would be a dangerous precedent to allow a "one-person" team to access main line valves located in the roadway, attempt to listen to the valve with headphones on, and at the same time try to control traffic flow at that person's location in the street.

Therefore M.E. Simpson Co., Inc. adheres to the following:

- ◆ The Project Manager and the Field Manager will be trained in accordance with OSHA Standard 1910 (General Industry) and be in possession of an OSHA 10 Hour or 30 Hour Card.
- ◆ Any listening points located in a "confined space" such as pit and vault installations that **require entry** will be treated in accordance with the safety rules regarding **Confined Space Entry, designated by the Utility, The Department of Labor and OSHA.**
  - All personnel are **trained and certified** in Confined Space Entry & Self-Rescue.
- ◆ We will follow all safety rules regarding **First Responder First Aid & CPR, designated by the Utility, The Department of Labor and OSHA.**
  - All personnel are **trained and certified** in First Responder First Aid & CPR.
- ◆ We will follow all **traffic safety rules, designated by the Utility, The Department of Labor, OSHA, and the Illinois Department of Transportation (per MUTCD).**
  - All personnel are **trained and certified**, by the **AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA)** in Traffic Control and Safety.

Current documentations of safety training and certifications can be provided for all project personnel for the Utility. These certifications are current and up to date (for 2016) for all project personnel.

## INVESTMENT

### A commitment to improving and maximizing the Village of Chatham's water distribution system.

M.E. Simpson Co., Inc. is pleased to present our "Proposal" for a Water Distribution System Leak Detection program for the Chatham Water Department. M.E. Simpson Co., Inc. will perform our leak detection services on approximately 85 miles of water main within the Utility's water distribution system. The survey will be completed by listening on the accessible main line valves, fire hydrants and as needed services by one of our two-man teams with all necessary equipment furnished by M.E. Simpson Co., Inc. as described within this document. The project will also include complete reporting of all issues found, with a final comprehensive report.

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#### **2020 Leak Survey**

Water Distribution System Leak Survey Program Fee:

Lump Sum Fee: ----- \$30,125.00\*\*

\*\*Any additional main surveyed beyond the original 85 miles will be assessed a fee of \$235.00 per mile for AC/Iron Pipe and \$450.00 per mile for PVC pipe.

This Pricing is valid through December 31, 2021

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We thank you for this opportunity to acquaint you with our Water Distribution System Leak Detection services and offer this proposal. If you have further inquiries or you wish to discuss our service in more detail, do not hesitate to call us.