



April 11, 2025

Mr. Bryan Roberts  
Water Superintendent  
Village of Thornton  
321 East Harriet  
Thornton, IL 60476

**RE: PROPOSAL FOR A WATER DISTRIBUTION SYSTEM VALVE EXERCISING PROGRAM**

Dear Mr. Roberts,

M.E. Simpson Co., Inc. is pleased to present the Village of Thornton our proposal for a Water Distribution System Valve Assessment and Exercising 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 highly-educated 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 Valve Exercising and Assessment Services and offer this response. We are committed to exceeding your expectations.

Sincerely,

Bill Hunt  
Regional Manager

**Bill Hunt**  
Regional Manager

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# SCOPE OF WORK

## Valve Assessment and Exercising Program Scope of Services

### Project Field Approach

The **Valve Assessment and Exercising Program** is conducted in the field by our technicians. M.E. Simpson Co., Inc. will locate and operate all designated valves in the system in accordance with AWWA standards (American Water Works Association Manual M-44, "Distribution Valves: Installation, Field Testing and Maintenance"). The important operation, location and asset management details of the valves will be noted and compiled on our "Valve Exercising and Assessment Report" and submitted to your office for your permanent records.

### Valve Assessment and Exercising

The **Water Distribution System Valve Assessment and Exercising Program** is conducted in the field by our Project Team (M.E. Simpson Co., Inc. uses **TWO** trained technicians on each valve team). All valves are operated manually and when necessary, M.E. Simpson Co., Inc. uses a hydraulic valve machine capable of operating 2" through 60" valves. This machine can be set with a torque as low as 5 foot pounds and is capable of increasing up to 2500 foot pounds. The hydraulic valve operator with the "adjustable torque control" feature, along with experienced operating personnel, prevents excessive breakage during valve operating. M.E. Simpson Co., Inc. will furnish all labor, material, transportation, tools, and equipment necessary to perform the program. M.E. Simpson Co., Inc. shall be required to provide such skilled and trained personnel and equipment necessary to complete the work herein specified. We will locate and operate each main line valve in the system. The important operation and location details of each valve will be noted and compiled on our "Valve Assessment and Exercising Report" and submitted to your office, in an electronic format, for your permanent records.

The importance of the **Valve Assessment and Exercising Program** is apparent when major emergencies arise and Utility personnel are unable to either locate or close a valve or several valves during a water main break. The same problem occurs when valves that are normally closed need to be opened during a firefighting effort and these valves then fail in the closed position. These situations can occur when valves are not operated annually or at least every two years.

**An organized field approach to this Valve Exercising and Assessment project will include the following:**

- ◆ **Introduce and maintain an interactive role** with the Utility Staff for the Valve Program. Conduct short interviews with staff about particulars of the distribution system such as problem areas prone to poor fire flow, age of pipe, and pressure problems in the distribution system. This will allow for a greater understanding of how the distribution system is functioning allowing priorities to be assigned to particular segments of the work
- ◆ **Divide areas of the distribution system** into geographic areas that can be assessed in progression and problems identified in an orderly fashion. This would include setting a schedule and maintaining a level of Field Staffing that will insure completion of the valve assessments within the schedule and budget allotted. This will require all maps of the distribution system to be examined during the course of the planning sessions to formulate a workable plan of action

- ◆ **Perform valve assessments on the distribution system** and document all locations and valves in a manner that will allow a prioritized list of maintenance items to be pursued according to the described “Scope of Work”
- ◆ **Locate** all valves in a manner that will allow their positions to be known and readily re-creatable by Utility personnel upon demand. (GPS Coordinates can be taken or the Utility can provide their GPS data for the records)
- ◆ **Document** each valve operated and individual valve data to such an extent as to provide information characteristic to each specific attribute as defined by the Utility
- ◆ **Provide constant communication** with the Utility staff so valves with issues can be addressed in a timely manner
- ◆ **Provide instruction and council to Utility staff** during the course of the valve exercising and assessments so once the program is concluded, the Utility staff will have a complete understanding of all the parameters of conducting valve exercising and assessments with the established goal of reducing the amount of maintenance required for the distribution system while providing up to date data for the Utility for each and every valve
- ◆ **Provide daily reporting** during the course of the project as well as a final report indicating all the pertinent details regarding the Valve Assessment and Exercising Program.
- ◆ **Provide recommendations for future valve assessment and exercising programs** such as a methodology and frequency for valve operating

## Valve Location - General

- ◆ **Examine the water maps** to determine the anticipated location of each water valve.
- ◆ **Attempt to verify** the existence of all water valves shown on the water atlas by visual inspection.
- ◆ **Search for water valves** shown, but not identified by visual inspection, using a magnetic locator.
- ◆ **Employ a combination** of recorded information, manual and technical testing techniques as needed to establish the location of remaining water valves.
- ◆ **Identify locations where a water valve is expected**, but not shown on the water map, and proceed through verification and search process.
- ◆ **Two attempts shall be made to locate “lost” valves** before these are turned into the Utility for location. M.E. Simpson Co. will ask permission to trace existing water mains by means of line locating equipment to establish the configuration of existing water mains and probable location of water valves should search by magnetic locator fail. If the utility cannot locate the valve within five working days, M.E. Simpson Co. shall be paid for the attempted locate.
- ◆ **Located valve boxes or valve vault covers** shall be painted with an environmentally formulated precautionary blue paint for future identification.

## Information & Data Collection

- ◆ All of the information and data collected will be provided in an electronic format so that it may be uploaded to the Utility's GIS-Based application or Pro Maps (yearly subscription required) This will be accomplished either live as the project is proceeding by the means of a laptop or tablet type device with a wireless connection to the internet and login onto the Utility's GIS-Based application or Pro Maps. Data will also be delivered to the Utility in an electronic format at the end of the project.
- ◆ The data collected shall include, but not be limited to, the following water valve information:
- ◆ Identifying number presently employed by the Utility's GIS-Based application or created by M.E. Simpson Co., Inc.
- ◆ Location referenced by coordinates in landmark system presently employed by the Utility's GIS-Based application
- ◆ Location by street and cross-street names
- ◆ Photo showing location of each valve
- ◆ Size
- ◆ Type
- ◆ Identified Problems: Box/Vault full of debris and/or water, Paved Over, Sealed Shut, Misaligned, Buried, Chlorination Whip in Vault, Bent Stem, Packing Leak, Missing Operating Nut, Rounded Operating Nut, Bolt Deterioration, Broken Stem, Inaccessible, Structural Deficiencies
- ◆ Operating nut depth
- ◆ Enclosure type
- ◆ Number of turns to achieve full closure
- ◆ Direction of closure
- ◆ Present valve position
- ◆ Date operated
- ◆ **Documentation:** As stated above; all documentation will be performed either "live", online through the Utility's GIS-Based online application or Pro Maps. Data will also be delivered to the Utility in electronic format at the end of the project.
- ◆ All of the information and data collected will be compiled by means of electronic tablet or laptop computer.
- ◆ The data collected shall include, but not be limited to, the following water valve information:
  - Identifying number consistent and compatible with system presently employed by the Utility
  - Location referenced by coordinates in landmark system approved by the Utility
  - Size
  - Type
  - Operating nut depth
  - Enclosure type

- Number of turns to achieve full closure
- Direction of closure
- Present valve position
- Date operated

## Valve Exercising

### The M.E. Simpson Co., Inc. Project Team will:

- ◆ Operate/Exercise selected valves in accordance with the AWWA manual M-44, "Distribution Valves: Selection, Installation, Field Testing and Maintenance"
- ◆ Valves requiring an operating torque greater than one hundred (100) foot-pounds shall be operated by a portable and/or truck mounted hydraulic valve machine. The valve operators used by M.E. Simpson Co., Inc. have torque-limiting capabilities that allow incremental settings from fifty (50) to twenty-five hundred (2500) foot-pounds of torque.
- ◆ The machine shall be solely and completely dependent upon the operator for continuous control of direction and torque, otherwise known as "non-locking" or "torque limiter" capability.
- ◆ All valves will be operated with the minimum torque required preventing valve damage.
- ◆ Using AWWA C500-02 Standards, the following maximum torques shall be as follows:
  - 4" gate valves – **200 ft. lbs.**
  - 6" through 12" gate valves – **300 ft. lbs.**
  - Gate valves larger than 12" – **600 ft. lbs.**
  - Butterfly valves – **200ft. lbs.**
- ◆ With guidance, review by M.E. Simpson Co. staff engineers, Utility review and Utility permission, maximum torque limits may be exceeded on a case by case basis to attempt to get the valve to operate.
- ◆ During initial valve closure, the valve will be turned no more than five (5) turns before turn direction is reversed to two (2) turns, thus allowing the threads of the stem and gate to free themselves. This closure and partial reversal process shall be repeated until the valve has achieved full closure.
- ◆ The valves will then be operated from full open to full closure until such time as this can be done without further turn range improvement or no further reduction in the required operating torque is noted, through a **minimum of three (3) consecutive ranges of operations**, or the valve is easily turning below 70 ft. lbs. of torque. All valves, regardless of operating torque, will be exercised repeatedly towards the closed position or "working the bottom" until there is no further increase in the number of turns from the fully opened position to the full closed position.
- ◆ **The M.E. Simpson Co., Inc. Project Team shall notify** the Utility, of intent to operate a certain group of water valves. The Team shall obtain permission to perform the work, at least twenty-four (24) hours or one (1) working day in advance of the intended start of that work.
- ◆ **Valves found in the closed position** shall be reported to the Utility immediately so verification can be made for operating or not.
- ◆ If there is reasonable evidence that a valve might break during the operating process, the Utility **will be notified immediately** and a decision will be made by the Utility to attempt or not to attempt the process.

- ◆ **Any valves** that fail or break during operation will be repaired or replaced by the Utility. M.E. Simpson Company cannot be held responsible for possible valve failures during the operating procedure.

## Documentation of Valve Exercising

Identifying number consistent and compatible with system presently employed by the Utility.

- Valve Number
- Size of Valve
- Type of Valve (Gate, Butterfly, Other)
- Valve Box/Vault
- Direction of Closure
- Depth of Operating Nut
- Valve Use (Mainline, Crossover, Service Line)
- ◆ Location information
  - Street Name
  - Cross Street Name
  - House Number (if available)
  - Site Location (Street, Parkway, Driveway, Easement, Centerline)
- ◆ Box/Vault Condition
  - Valve Box full of Debris
  - Valve Vault full of water
  - Paved Over
  - Valve Box Misaligned
  - Valve Box Buried
- ◆ Operational Conditions of Valve
  - Final Number of turns to close
  - Final Position
  - Date Turned
  - Crew performing operation
  - Valve Problems (Bent stem, Packing Leak, Missing Operating Nut, Rounded Operating Nut, Broken Stem, Inaccessible)
  - Comments

## Valve Exercising

**M.E. Simpson Co., Inc. takes great care when exercising/operating valves in the water distribution system.** Even with our years of proven experience in water system operations problems occasionally occur. Any valves that break or fail during the assessment program will be repaired or replaced at the expense of the water utility. M.E. Simpson Co., Inc. cannot be held responsible for possible valve failures during their operation due to pre-existing conditions. M.E. Simpson Co., Inc. cannot be held responsible for damage done to the water system during valve operating, such as water leaks, discolored water and turbidity that can possibly occur during the process.

## Equipment

The following equipment will be used for valve exercising/assessment work during the valve program for the Utility. All material listed will be on the job site at all times.

- ◆ Truck mounted or trailer mounted hydraulic valve operator with adjustable torque control
- ◆ Portable hydraulic valve operator adjustable torque control
- ◆ Truck mounted or trailer mounted Vacuum capable of 300 CFM
- ◆ Trucks are equipped with either a Honda 6.5 horsepower pump capable of discharging 150 GPM or a Stanley Hydraulic pump capable of discharging 450 GPM
- ◆ Extendable valve keys for manual operation
- ◆ All necessary hand tools needed
- ◆ Truck mounted Arrow Board/Signage, and warning lights on trucks.
- ◆ Traffic control equipment, including properly sized traffic cones with reflective stripes, when needed or required.
- ◆ A "Fischer M-Scope" / "Schonstedt" / "Chicago Tape" magnetic locator
- ◆ A "Radio Detection RD4000" series line locator
- ◆ **For OPTIONAL GPS Location Services (if chosen):** A Trimble GPS GeoExplorer 6000 Series GeoXH hand held receiver, and related equipment

## Utility Observations

The M.E. Simpson Co., Inc. Project Team will welcome having staff of the Utility observe field procedures while the Valve Assessment and Exercising program 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 assessing and exercising valves in 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 assessment program for prior workday and plan current day and valves exercised.
- ◆ 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.
- ◆ **The Project Manager will** meet with the Utility regularly for a progress report.
- ◆ **Prepare a progress report** at selected intervals for the Utility if requested.

Effective communication...  
accurate documentation...  
**Insuring the success for  
the valve exercising program**



- ◆ Provide a list of material deficiencies such as, broken valves, valves with minor issues and mapping discrepancies on a weekly (in Pro-Maps™ 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. Broken Valves
  4. Major Deficiencies
  5. Minor Deficiencies
- ◆ **Prepare the final report** at the completion of the project which will include all valve location, information and documentation reports, total of valves assessed and exercised, and a list of problems found in the system during the course of the valve assessment and exercising program that need the attention of the Water Utility. **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, in an acceptable electronic format, will furnish all maps, atlases, and records, necessary to properly conduct the valve-operating program.
- ◆ The Utility, in an acceptable electronic format, will provide all Valve ID numbers, type of valve (if known), Map page numbers or grid number, and any other additional information that can aide in helping the overall success of the program.
- ◆ The Utility, in an acceptable electronic format, will furnish all GPS Coordinate data.
- ◆ The Utility, in an acceptable electronic format, will provide records such as old valve cards or any additional information that would make the valve location and operating easier to perform. This information shall be regarded as **CONFIDENTIAL** by M.E. Simpson Co., Inc., and will not be shared with anyone outside of the Utility without consent of the Utility.
- ◆ The Utility will notify other departments as to the activity of Valve Assessment and Exercising Program so that various departments are aware that a program is in progress. This is to insure that if there should be a problem with part of the distribution system, notification can be made promptly.
- ◆ The Utility will also make available, on a reasonable but periodic basis, certain personnel with a working knowledge of the water system who may be helpful in attempting to locate particularly hard-to-find valves 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. This may be required of areas where distribution mains run in easements on private property.

## 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 Terrence Williams, 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.*

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 State 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 2022) for all project personnel.

## VALVES TO BE EXERCISED

The total number of valves to be exercised for the Utility is approximately **155**. The number of valves exercised and assessed may vary from the estimated number above. Any additional valves shall be charged a per unit price.

## PROPOSED PROJECT SCHEDULE

**Project Start Date:** TBD

**Hold Kick-off meeting:** TBD, to cover goals and objectives of Project.

**Fieldwork to be completed and documented:** TBD days depending on number of valves to be exercised and assessed.

**Valves Reports:** Thirty (30) working days after fieldwork is completed for the project.

## INVESTMENT

A commitment to improving and maximizing the Village of Thornton's water distribution system for future generations.

M.E. Simpson Co., Inc. is pleased to offer the Village of Thornton our proposal for a Valve Assessment and Exercising program. This program is based on locating, exercising, assessing, and documenting approximately **155** valves in the Village of Thornton's water distribution system. The exercising and documentation will be done by one of our two-man teams', in accordance with the above Scope of Service, with all necessary equipment furnished by M.E. Simpson Co., Inc. as described within this document.

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2025 Valves Assessed and Exercised at **\$67.00** each (Approx. 155)

**\$10,385**

*\*\* Any additional valves beyond the original sated amount per year will be assessed a per valve fee for that year.*

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These fees are all based on approximate numbers of valves to be exercised and assessed. **The total price will change according to the actual number of valves completed.** All procedures will be followed according to the above scope of services.

We thank you for this opportunity to acquaint you with our Valve Exercising and Assessment Program 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.