

**2020 - 2022**  
**Comprehensive**  
**Leak Detection & Location**  
**Survey Proposal**

for the  
**City of Aurora, IL**



**ASSOCIATED TECHNICAL  
SERVICES LTD.**  
*Est. 1979*

**Water Conservation Specialists**

[www.ATSLimited.com](http://www.ATSLimited.com)

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Leak Surveys • Leak Pinpointing • Utility Location • Hydrant Flow Testing • Water Main Flushing  
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March 12, 2020

**City of Aurora**  
**44 E. Downer Place**  
**Aurora, Illinois 60507**

**Attn: Mr. John D. Hoffman, P.E.**  
**Engineering Coordinator**

**RE: 2020-22 Water Distribution System  
Leak Survey Program Proposal**

Dear Mr. Hoffman,

We are pleased to present our proposal to perform **“Comprehensive Leak Detection and Location Surveys”** for the **City of Aurora** over the next three years. For nearly 40 years, **ATS** has enjoyed a successful relationship with the **City of Aurora**.

**Our mission goal for Aurora is simple:** Highly skilled and experienced **ATS** Specialists will accurately discover every detectable leak in your water system, and accurately pinpoint every one of those leaks using state of the art equipment. **ATS** will help ensure that **Aurora** is able to conserve water by repairing those leaks as efficiently and cost-effectively as possible while recovering the maximum amount of lost water and revenue.

### **ATS and the City of Aurora: A History of Success**

- **January 1980:** **ATS** completed our training with the inventor of the leak noise correlator, Dr. Allen Anway, PhD. Thanks to the relationship between my father's civil engineering firm and the Cities of Aurora and Mt. Prospect, both cities allowed Tom McGee Sr and Ralph L Gross to conduct full time field research on the first correlator and develop the field techniques and procedures that remain the standards of our profession.
- **May, 1980:** **ATS** performed our first emergency call out on Downer Place. We nailed it.
- **ATS** has accurately detected and pinpointed in excess of 2,500 leaks during over 500 Scheduled and Emergency Leak Location Callouts: During 15 Street Resurfacing Leak Surveys and 12 System-Wide Leak Surveys. **ATS** your water system very well.
- **ATS** in addition to creating the “industry standard” correlator-based leak survey techniques, **ATS** also created “Street Resurfacing Survey Programs”. **ATS** helps cities ensure that pre-existing water leaks don't get covered up with a new street surface.

Throughout those years, the **Aurora Water Department** has relied on **ATS** for efficient and accurate utility infrastructure services. As a result, **Aurora's water department and ATS** are excellent partners by providing valuable assistance to us under demanding circumstances. This history of successes together will enhance our effort in providing **Aurora** with the best possible leak survey program. The assumption that every leak detection company will detect the same number of leaks and pinpoint them with the same accuracy, doesn't hold water in the real world, and it can be a very costly assumption.

### **WATER LOSS REDUCTION SPECIALISTS**

**ATS Comprehensive ATS Leak Surveys are accomplished as follows:**

- **Pre-Survey Meeting** – Once our proposal has been submitted and approved, am **Annual Pre-Survey Meeting** with the **ATS Survey Project Manager** and The City to discuss all aspects of the project from methodology, equipment, documentation, timelines, milestone data and mutual cooperation activities.
- **Prepare a Survey Completion Schedule** - We would like to start your survey with two weeks of receiving City approval barring no mandatory delays caused by the Covid-19 Pandemic. While no one can predict how many leaks currently exist under your designated streets, **ATS** will work with you and mobilize the necessary manpower to sequence our surveying to coincide with your paving schedule.
- **The Designated “survey areas”** are established by the City and highlighted on the water atlas so **ATS can develop a strategic plan for efficiently surveying each area.**
- **ATS Crews will check in with the City at the start of every survey workday.** Work will be performed Monday through Friday until completion You'll know where we'll be that day and the progress we're making. **ATS Crews are available 24 hours a day / 365 days a year.**
- **Ultrasonic Leak Detection Phase** of every mainline appurtenance in each survey area. We will log monitored appurtenances, every detected suspect leak site, map discrepancies and any inaccessible points that need to be found or exposed so they can be surveyed.
- **Develop List of Inaccessible Points** that we are unable to locate or access. ATS never knows when we're going to discover a leak can only be detected at one hydrant or valve. Therefore, **ATS** doesn't overlook any of them. A “list of inaccessible points” is given to the **City** for preparation as needed so that every available access point can be surveyed for leak sounds.
- **Map Discrepancies** - All appurtenances that are shown incorrectly or omitted on your maps will be logged on our survey sheets. **ATS** can also GPS / locate them upon request so your GIS Database and water atlas can be updated.
- **Computerized Electronic Leak Location Phase** – Thoroughly Re-survey and analyze every suspect leak site and then accurately pinpoint every confirmed leak.
- **Leak Location Reports** are submitted daily as leaks are located. Leak locations are marked, diagramed and documented in detail and located with GPS upon request. The **City** will fill in leak repair data and fax copies of completed repaired leak reports to **ATS** for calculations.
- **Interim Progress Reports** - Area by area progress summary by phase, total leak types and calculated water and revenue recovery to date. They are typically prepared and submitted monthly by request anytime you need an update on the survey's status.
- **Re-monitor All Repaired Leak Sites** and pinpoint all subsequently detected Leaks.
- **Final Survey Report** - Gather Leak Repair Data, Recovery calculations, Maps displaying Leak Locations and assemble **Final Report**. Present the comprehensive **Final Survey Report** to the **City**

## **SCOPE OF WORK**

**City of Aurora 3-Year Comprehensive Leak Survey Program:** Our mission is to make every effort and take the time that is necessary to accurately discover and pinpoint every detectable leak. As a water system gets “tighter”, there is more emphasis on the surveyor to have to dig deeper to find the leaks that are not making obvious leak sounds. This fact makes monitoring every valve essential to finding these tough leaks. Valves, Hydrant Auxiliary Valves and Hydrants are the highest quality listening points and **ATS** surveys every one of them. The thoroughness of our intensified survey techniques ensures that every detectable leak is discovered and accurately pinpointed.

***The City has designated that the entire water distribution system be surveyed over a three-year period during 2020, 2021 and 2022. The City has divided the system into thirds, with approximately 1.3 million lineal feet of water main to be surveyed each year.***

**Year 1 / 2020: 1,305,746 Lineal Feet or 247.30 lineal miles of water main**

**Year 2 / 2021: 1,346,180 Lineal Feet or 254.96 lineal miles of water main**

**Year 3 / 2022: 1,220,135 Lineal Feet or 231.09 lineal miles of water main**

**Airport System: 15,791 or 2.99 lineal miles**

The **City of Aurora** water system serves a population of **± 197,900** residents through **± 49,171 metered** residential and commercial water service lines. This is significant because water service line leaks are the most common leak that we find during **ATS Leak Surveys**. While service leaks are routinely detected by **ATS**, Curb stops themselves aren't good conductors of sound for leak surveying purposes. Curb-Stops generally are surveyed during the location phase when a suspect leak has been detected or wherever PVC pipe exists in the system. Leaking service lines are detected and located by our skilled field technicians up to the curb stop. Leaks located on the property owner's side of the curb stop will be documented as such. Property owner side service leaks can't be pinpointed without direct access to the service line from within the building.

***Monitored System Appurtenances in the section designated for survey will include:***

- **Every fire hydrant and every accessible fire hydrant auxiliary valve = 9,515 HYDRANTS plus approximately 9,000 hydrant auxiliary valves**
- **Every accessible main line valve in valve vaults and valve boxes = 11,745 VALVES**
- **Strategically located service line curb stop valves (aka B-Boxes). est. 1,000 or more**
- **Every effort will be made to accurately locate every existing leak in the survey areas**

**Leak Repair Prioritization:** A preliminary leak size and type classification is made during the detection phase. A significant difference between an **ATS Leak Survey** and the other surveyors is in the ultrasonic leak detection phase's number of checkpoints. We put ourselves in the best position to detect more leaks by listening to as many points as possible - especially mainline valves. No one checks more points for leak sounds as accurately and as thoroughly as **ATS**.

### ATS Incentive-Based Comprehensive Leak Survey Programs

The **ATS Comprehensive Leak Surveys** are the most thorough and successful leak survey programs in the business on two fronts – **Superior results and Superior Accuracy**. **The Incentive-Based Pricing** gives the **City** the most flexibility and best opportunity to save money without sacrificing accuracy if the water system turns out to be tighter than expected. The **City** wins if it ends up that your water system contains many leaks because you won't spend an extra dollar without getting an accurate leak location in return. With no fee guarantees for beyond the detection phase, there is obvious incentive for **ATS** to find as many leaks as possible for you.

#### Estimate of Cost

*The City has designated a 733.35 lineal miles total for survey during the 2020, 2021 and 2022 budget years. Approximately one third of the water system will be surveyed annually for leaks until the City of Aurora's entire water distribution system has been completed.*

#### Leak Survey Objective – Accurately detect and pinpoint every detectable leak.

#### 2020 Survey Program

**Detection Phase:** 1,305,746 lineal feet of water main @ \$ 0.03 per LF = \$ 39,172.38

**Location Phase:** \$ 395.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

#### 2021 Survey Program

**Detection Phase:** 1,346,180 lineal feet of water main @ \$ 0.0325 per LF = \$ 43,750.85

**Location Phase:** \$ 410.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

#### 2022 Survey Program

**Detection Phase:** 1,220,135 lineal feet of water main @ \$ 0.035 per LF = \$ 42,704.73

**Airport System:** 15,791 lineal feet of water main @ \$ 0.035 per LF = \$ 552.68

**Location Phase:** \$ 425.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

**Annual Cost:** Total annual cost will be based upon actual total amount of surveyed water main that year, plus the actual total number and types of leaks that detected and pinpointed.

**Preferred Client Callout Savings:** Discounted Location Callouts for Survey Clients - While your leak survey is underway any leak or utility location callout, that can be scheduled while we are in town or the next weekday during normal work hours, will discounted to that year's leak survey leak location fee. This discount represents a significant savings from our normal callout charges with round trip mileage. Note that After-Hour, Emergency, Holiday and Weekend Service Calls will be charged per our normal standard basic schedule of prices which we has been previously submitted to the City.

## Scope of Work

**Project Scheduling:** **ATS** has performed many surveys for **Aurora**. Subsequently we have excellent knowledge of your water system throughout the **City**. There is not a stretch of water main that we haven't surveyed many times over. While no one can predict the types and number of leaks that currently exist in your water system, **ATS** will work with you and mobilize the necessary manpower to sequence our surveying to coincide with your schedule. We will schedule a timely start of your leak survey after receiving the City's approval.

**Survey Completion Time:** We estimate the **Detection Phase** of each annual survey can be completed in approximately **50** workdays or less by one full time survey crew. The duration of the **Location Phase** will depend upon the number of suspect leak sites to investigate and actual number, type and location of those pinpointed leaks. Based upon our experience in Aurora, another **40** workdays for pinpointing is possible. While **ATS** has a tremendous amount of experience in Aurora, it is impossible to accurately predict the number type of leaks that we will encounter, or how they will be spread out. Weather is always an unpredictable factor as well. We will assign additional crews to assist our primary crew whenever possible to expedite the survey.

**STEP 1 - Ultrasonic Leak Detection:** The existence and general neighborhood of every suspect leak is detected with **FCS S-30 Ultrasonic Leak Detection Equipment**. **Every** fire hydrant, **accessible hydrant auxiliary valve, and every mainline valve will be monitored for leak sounds**. The Aurora Water Distribution System primarily consists of diameter Gray Cast Iron, Ductile Iron Water Main and some PVC water main. All metallic pipe materials very adequately transmit leak sounds for accurate leak detection. PVC pipe is more challenging.

**Detection Survey Records:** **Every accessible fire hydrant, hydrant auxiliary valve and mainline valve that is monitored for suspect leak sounds will be documented**. Valuable survey and system data are collected and logged. ***This data includes:*** Appurtenance Type, Accessibility and Location, General Conditions Encountered, Map Errors and Leak Sound Data.

**Inaccessible Points & Map Discrepancies:** A listing of all appurtenances that are found to be inaccessible or visually un-locatable will be submitted to the **City** so **ATS** can return to check it. Once that point has been located and/or prepared for us. We never know when we will encounter a leak that is only detectable at one listening point. All leaks that we detect during this step will be accurately pinpointed, document and submitted to the City. This added measure ensures that every detectable leak is detected and pinpointed accurately.

**STEP 2 - Computerized Leak Analysis & Pinpointing:** Every suspect leak site, no matter how slight the sound, is electronically confirmed with one of our computerized **FCS Tri-Corr and Sewerin SeCorr Correlator Systems**. The pinpointing phase begins with ultrasonically resurveying every suspect leak site, electronic Correlator analysis of every suspect leak site to either eliminate a suspect leak site or accurately confirm the presence of the leak and pinpoint its exact location. By analyzing, timing and measuring leak sound waves simultaneously from two monitoring points, the leak's exact location is pinpointed with unmatched consistent accuracy.

**Water Main, Water Service and Valve Location:** Accurately locate and trace the water main and service lines in the vicinity of suspect leak locations. Tracing out the water main and service lines, helps ensure that every survey leak is pinpointed as accurately as possible. All utility line location work is expertly performed with **Radiodetection RD7100 and RD8100 Series High Performance Utility Location Systems and Schonstedt Ferromagnetic Locators**.

**STEP 3 - Leak Location Reports:** This is an individual report form that details the exact location and characteristics of each pinpointed leak. These forms are submitted daily as the leaks are pinpointed. The **City** then updates and faxes or emails each **Leak Report** with actual leak repair information which is used to calculate water loss and revenue recovery data for the **Final Report**. This repair data greatly expedites interim and final report preparations.

**“X” Marks The Spot!** The pinpointed location of every mainline, service line and valve leak will marked in the field with spray marking paint with an “**X**”. The exceptions are homeowner’s side service leaks and hydrant leaks.

**Property owner’s side service leaks** cannot be pinpointed without access into the building which requires an additional visit while accompanied by the City. There is an additional charge to pinpoint leaks between the curb stop and where the service enters the building. In the past, Aurora, will contact the property owners and schedule several appoints on a mutually agreeable days so the property owner and the City can be present to accompany our crew. A “**Leak Location Report**” form documents the location and type, characteristics of every pinpointed leak.

**GPS Leak Location Data:** Upon request, every pinpointed leak can be documented using **Trimble Professional GPS Receivers**. Locations will be electronically provided with industry standard sub-meter accuracy with sub-foot accuracy available if requested. The location of every pinpointed leak is also displayed in survey area maps in the **Final Report**.

**Overnight (24-Hour) Correlation Equipment (As-Needed):** Whenever conditions dictate that this type of equipment can be useful, **ATS** can employ **FCS Radcom SoundSens Leak Location Systems**. With this advanced technology **ATS** has the capability of placing 2 to 8 correlating remote sensors in a strategic pattern where leakage is suspected. Each Sensor can be programmed to run a correlation between it and any combination of Sensors to determine if and where leaks may exist. This is useful in more precarious areas where safety could be an issue at night or high traffic and industrial areas where ambient noise and noise from within buildings can prohibit accurate detection of a leak during normal weekday business hours.

**STEP 4 - Interim Survey Status Reports:** **Survey Status Reports** are typically submitted monthly, or upon request whenever you would like an up to date status report. This report concisely summarizes all of our survey activities and findings, breakdowns of the number and type of leaks found in each area; plus, revenue recovery calculations for each leak you’ve already repaired. This report gives you all the essential information you need so you’ll know the exact status of your survey with area-by-area completion percentages and water recovery.

**STEP 5 – Final Report:** Three (3) copies of a comprehensive **“Leak Detection & Location Survey - Final Report”** will be submitted after the completion of the survey. Additional copies are available upon request. These reports concisely detail all of our survey activities and findings; estimated & calculated leak sizes; revenue recovery calculations for each leak; area maps showing leak locations, leak location reports; general observations and recommendations.

**Final Survey Reports** are also digitally available in your choice of Microsoft Word or PowerPoint; or PDF formats, that can be printed, emailed or recorded on digital media upon request. The **Final Report** will be submitted within 30 days of the completion of our field work and can be amended and updated when all leak repairs have been completed.

## **KEY ATS STAFF MEMBERS FOR AURORA SURVEY PROGRAMS**

**Ralph L. Gross: Vice President, COO** - In 1979, Ralph received his instruction in Leak Correlator Operations from Dr. Allen Anway, PhD. who is the physicist that invented the first Leak Noise Correlator System. Subsequently, **ATS** became the first company in the world to exclusively conduct ultrasonic leak surveys with a leak noise correlator system. Ralph has conducted speaking engagements, educational seminars and training classes all over the country about Water Conservation and Correlator Based Leak Surveys. Among his students are several key personnel with FCS – Fluid Conservations Systems. Not least of which was FCS' longtime Director of Operations, Thomas J. McGee who started his career with **ATS** in 1983. Incidentally, Tom's father, Thomas C. McGee, retired in 2005 after 26 years with **ATS** as a Project Manager and Crew Chief. Ralph oversees the progress of every **ATS Leak Survey** thereby ensuring that your survey is performed to best of our abilities, on time and accurately to yield the highest possible water and revenue recovery for our clients.

**Paul J. Gross: Manager - Field Operations / Instructor** - Paul started with **ATS** in 1980 as a **Field Assistant**. Paul eventually became a Field Crew Chief, Survey Project Manager, as well as an Instructor for utility location systems and correlator operator training. Paul has conducted hundreds of municipal leak surveys over the past 34 years.

**John P. Gross: Survey Project Manager / Crew Chief / Instructor** - John started with **ATS** in 1980 as a **Field Assistant**. John eventually became a Field Crew Chief and Survey Project Manager, as well as an Instructor for utility location systems and correlator operator training. John has conducted hundreds of municipal leak surveys over the past 34 years including two partial surveys of Glen Ellyn.

**Patrick Warren: Survey Project Manager / Crew Chief / Instructor** - Pat started with **ATS** in 1994 as a **Field Assistant**. Pat eventually became a Field Crew Chief, Survey Project Manager, as well as an Instructor for utility location systems and correlator operator training. Pat has conducted hundreds of leak and utility location surveys over the past 20 years.

**Marcie Kapler: Survey Project Manager / Crew Chief** - Marcie started with **ATS** in 1989 as a **Field Assistant**. Marcie eventually became a Field Crew Chief and Survey Project Manager. Marcie has conducted hundreds of leak surveys over the past 25 years.

**Jason Green: Survey Project Manager / Crew Chief** - Jay started with **ATS** in 1999 as a **Field Assistant**. Jay eventually became a Field Crew Chief, Survey Project Manager. Jay has conducted hundreds of leak and utility location surveys over the past 15 years.

**Survey Project Teams:** In addition to our expert personnel mentioned above, **ATS** has additional experienced **ATS Survey Crew Chiefs** and **ATS Field Techs** that work with them. A **Survey Project Manager** will be assigned to each Village. They will be directly involved with the survey on a daily basis. Your **ATS Survey Project Manager** will report directly to the City with daily survey status. They will be available for immediate and ongoing contact on a 24 / 7 basis.

**Each survey crew consists of two experienced and fully trained survey technicians.** Each Crew Chief assigned to the survey will report to our Project Manager for their daily instructions so that the survey remains on track and is accurately performed. Additional survey crews can mobilize as needed during the detection and location survey phases.

***There are good reasons why your selection of **ATS** makes excellent business sense.***

**Superior Results** - ***Like anything in life, the person who practices their craft every day is going to have distinct and measurable advantages over the person that doesn't do it as often, and subsequently, as well.*** Since January, 1980, **ATS** has been out in the field everyday performing leak surveys, utility locations and leak pinpointing. Subsequently our listening skills are going to be that much more acute. Your survey is more effectively accomplished while we detect more leaks and pinpoint them with more consistent accuracy than anyone in the business

**Superior Experience** - ***ATS helped introduce leak location correlators, and subsequently started to specialize in leak detection in 1979.*** As a result, **ATS** has performed more leak surveys and pinpointed more leaks with this technology than anyone. **ATS** developed the leak survey techniques, correlator survey specs and field strategies that have become the standards for the industry. Over the years many of **FCS – Fluid Conservation Systems**' top people including Regional Managers, Sales Staff, Instructors and their longtime Director of Operations also received training from **ATS**. **FCS** also uses **ATS** for Beta testing new equipment innovations plus software upgrades and developments.

**Conserving Municipal Manpower and Resources** - Many public works departments are already stretched to their limit, providing quality services to your citizens. ***With our tremendous amount of municipal leak survey experience, ATS frees up your staff so that they can concentrate on their normal duties without distraction.*** Municipal involvement is normally answering questions, and freeing up inaccessible points \ during the location phase on an "as-needed basis"

**24 Hour Emergency Callout Services and Customer Support During and After the Survey** – ***ATS never has less than two crews on call 24 hours a day / 365 days a year. ATS has a fleet of 12 Correlator Equipped "ATS Leakmobiles" out in the field five days a week.*** Every mobile van is fully equipped with an experienced and trained two-person crew capable of handling any leak location or utility location situation you will ever have. ***While many Chicago area municipalities have to typically wait several hours or more for our competitors to arrive, ATS is always on the scene in 60 - 90 minutes or less of your call for help.***

**Cost Effectiveness** - Compare the actual survey results found by **ATS** verses the other firms. Call on our references. We've highlighted those municipalities that have used **ATS** and our competition. The differences in the survey findings between **ATS** and the others is substantial.

- **No one listens more intently to every accessible access point as ATS.** Therefore, we detect more suspect leak sounds than anyone else.
- **No one works a suspect leak site more aggressively than ATS.** Therefore, we turn more suspect leak sounds into confirmed leak locations than anyone else.
- **No one spends more time analyzing a suspect leak site as thoroughly as ATS.** **Therefore no one pinpoints more leaks as accurately as ATS does.** For our clients, more precise leak pinpointing means less digging and less restoration costs.
- **ATS spends more time performing your leak survey so that every detectable leak is pinpointed as accurately as possible so you can spend less time repairing them and get a greater return in recovering precious water and reducing your water losses.**

If reducing water non-revenue generating water losses due to leakage is your goal, then **ATS** is your best choice for achieving that objective. We've proven ourselves time and time again throughout the City of Aurora. We are proud of our history of success in **Aurora** and valuable partnership that we've enjoyed with **Aurora's** excellent staff over the decades. We stand ready to continue to serve you and the **City of Aurora** to the best of our abilities.

**Yours Truly,  
ASSOCIATED TECHNICAL SERVICES LTD.**



**Ralph L. Gross  
Vice President**

*Questions? Please contact me anytime day or night.*

*Email: [Ralph@ATSLimited.com](mailto:Ralph@ATSLimited.com)*

*Cellular: 630.935.3435 (24-hour Call or Text)*

## BASIC SCHEDULE OF PRICES

### **LEAK DETECTION & LOCATION SURVEYS**

*(Survey Area to be defined by Owner)*

**1 A)**

#### 2020 Survey Program

**Detection Phase:** 1,305,746 lineal feet of water main @ \$ 0.03 per LF = \$ 39,172.38

**Location Phase:** \$ 395.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

#### 2021 Survey Program

**Detection Phase:** 1,346,180 lineal feet of water main @ \$ 0.0325 per LF = \$ 43,750.85

**Location Phase:** \$ 410.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

#### 2022 Survey Program

**Detection Phase:** 1,220,135 lineal feet of water main @ \$ 0.035 per LF = \$ 42,704.73

**Airport System:** 15,791 lineal feet of water main @ \$ 0.035 per LF = \$ 552.68

**Location Phase:** \$ 425.00 for Every Pinpointed Main Line and Service Line Leak.

\$ 95.00 for Every Fire Hydrant Leak and Main Line Valve Leak.

**1 B) Additional Leak Location Callout Savings:** Discounted Leak Pinpointing for Survey Clients

While your leak survey is underway **any leak or utility location callout**, that can be scheduled while we are in town or the next weekday during normal work hours, **will discounted to that year's survey rate for leak location**. This discount represents a significant savings from our normal callout charges with round trip mileage. After-hour, Emergency, Holiday and Weekend service calls are charged per our normal basic schedule of prices.

**\$ 295.00 Homeowner's side service leaks** for service callouts that can be scheduled by the City during normal weekday work hours for the duration of the survey.

**2) MOBILIZATION & MILEAGE:** - *Only applied to leak callout services.*

\$ 1.75 per mile - round trip from **ATS** Office to the Project Site unless **ATS** is already in town.

**TERMS:** Upon receipt of invoice, Owner shall have 30 days to review and approve. Payment is due within 30 days of approval of invoice. If payment is not made within 30 days of approval, **ATS** may charge an interest penalty of 1% of any amount approved, per month, until the outstanding balance is paid in full.

**PLEASE NOTE:** All prices are based upon utmost cooperation and advance preparation by the **Owner**. Such as accurate plans and knowledge of the water system and making all needed appurtenances accessible to our survey crews. See Section II of the attached "**General Conditions for Leak Surveys**" for a detailed listing of responsibilities of **ATS** and the **Owner**. **ATS** reserves the right to adjust the "**Basic Schedule of Prices**" if preliminary field investigation of the survey reveals extraordinary, hazardous or otherwise adverse conditions. **Please forward any questions directly to Ralph L. Gross.**

## GENERAL CONDITIONS

### LEAK DETECTION & LOCATION SURVEYS

#### Responsibility of ATS / Associated Technical Services Ltd.

- A) Two-Person crew qualified to operate the *ATS Leak Detection & Location System*.**
- B) The “*ATS Leak Detection & Location System*” consists of:**
  - *FCS S30 Ultrasonic Leak Surveyor Instruments* (Leak Detection Phase)
  - *FCS/Fluid Conservation Systems and Sewerin Leak Noise Correlators* (Leak Location Phase)
  - *FCS and Sewerin Ultrasonic Preamplifiers* (Leak Location Phase)
  - *FCS, Wilcoxon, Vibrometer, Sewerin Accelerometers, Gas Sensors, Hydrophone Sensors*
  - *Radcom FCS SoundSens Programmable Leak Correlation / Localization System*
  - *Radiodetection RD7100 and RD8100 Utility Location Systems; Schonstedt Ferro Magnetic Location Equipment for buried valve enclosures.*
- C) “*ATS Leakmobile*” - Mobile Van with self-contained power supply and /or capability of operating from an alternate VAC 60 Hz source, or suitable alternate vehicle at the discretion of **ATS**.**
- D) *Mobilization / Mileage* – Round Trip, Portal-to-Portal and On-Site.**
- E) *On-Site Consultation* with Owner or their representatives as necessary.**
- F) The entire area designated by the *Owner* shall be surveyed for leakage.** Detected leaks shall be pinpointed only on that part of the water system maintained by the **Owner**. Unless it is previously specified and ordered, customer service line leaks will only be pinpointed up to the municipal side of the curb stop without additional charges. Leaks on the customer side of the curb stop typically require appointments arranged by the City so **ATS** can directly contact the service line within the building.
- G) Only those leaks that are detected by the **ATS Leak Survey** are to be included in the pinpointing phase of this contract. Unless other previous arrangements are made, any pinpointing of any incidentally or coincidentally occurring leakage, main breaks or previously known leakage that was not initially included in our proposal or as a part of this agreement shall be charged at our normal rates for scheduled / emergency service call-outs.**
- H) If the “*Re-monitoring of Repaired Leak Sites*” service is specified, included in our proposal and ordered, this agreement, leak repairs to that site must be completed within 30 days after that leak's location report was submitted to the **Owner**. The **Owner** then must notify **ATS** at the time of repairs so re-monitoring can be scheduled. All subsequently detected leakage will be located.**
- I) **ATS** will establish and mark the location of a leak or leaks in the field with either marking paint, a field stake and / or written individual “**ATS Leak Location Report**”.**
- J) **ATS** will provide basic traffic warning equipment and traffic control and re-direction with flagmen on an as-needed basis, whenever conditions dictate the necessity of these safety precautions. **ATS Work Zone Safety Equipment** includes but is not limited to safety vests, vehicle arrow boards, strobe warning lights and safety cones that are used whenever our vehicles are parked during the course of the leak survey on residential and other light or slower traffic areas.**

## GENERAL CONDITIONS FOR LEAK SURVEYS

### RESPONSIBILITY OF OWNER

The **Owner** will insure easy access to all main line valves, valve boxes or other strategically necessary access points. This may also include exposing and cleaning out auxiliary valves and b-boxes on an as-needed basis if they will facilitate the accurate confirmation and pinpointing of a detected leak. **This could include** breaking loose needed valve covers; pumping water out all valve vaults and boxes and, if necessary, removing debris from those enclosures to make the valves and adjoining pipelines accessible. The **Owner** will also make access available to any point or location strategically needed by **ATS** to perform said work at the discretion of **ATS**.

- If the **Owner** orders leak pinpointing between the curb stop and the customer's building, the **Owner** shall be responsible for making contact with the customer. Pinpointing can be performed on a weekday from 7:00 AM to 4:00 PM without incurring overtime charges.
- The **Owner** will make available to **ATS** any and all available location maps, schematics, as-built drawings, final reports from previous leak surveys, and any other data pertaining to the area being surveyed. Access to the "IDOT LMO-2" Annual Water Audit Reports is also very helpful.
- The **Owner** will make available knowledgeable, qualified personnel for consultation and assistance regarding the **Owner's** water system.
- Identify the authorized representatives of the **Owner** to act on behalf of the **Owner** and sign **ATS** agreements, purchase orders and additional work orders.
- Give **ATS** right of access, and necessary identification required, and notify appropriate authorities (Police, Fire Dept., Public Works Dept., Public Safety etc.) as needed of program underway.
- The **Owner** will at its option, provide **Traffic Warning Equipment, Traffic Control and Re-Direction with Flagmen** on an as-needed basis, should conditions dictate the necessity of this safety precaution. Instances such as a lane closure in a heavy traffic area may require hiring the services of a **Work Zone Safety Vendor** to provide the necessary traffic control equipment such as barricades, warning lights, arrow panels and temporary barriers. The **Owner** must approve any use of a Work Zone Safety Vendor in advance. **Owner** will be responsible for the costs of the **Work Zone Safety Vendor**.
- **Owner's** repair crews shall make a reasonable effort to provide **ATS** with accurate leak repair information whenever this data is available. **Repair data should detail the following:** Date of repair; type of leak; approximate size and shape of the leak orifice; approximate water pressure; and method of repair. This information is necessary for **ATS** to make leak size, water loss and revenue recovery calculations for a comprehensive "**Leak Survey Final Report**".

**Please Note: ATS does not guarantee the detection or accurate pinpointing of a leak or leaks but does assure that a best effort in that regard will be put forward.**

Certain input data to the **ATS Leak Detection & Location System** is based upon information received from the **Owner**. The accuracy of the **Owner's** data will directly affect the results of the Leak Survey. **ATS** will attempt to verify such data by consultation with the **Owner** and thereupon will have a right to rely upon the accuracy of the **Owner's** data. **ATS** is not liable for any costs to the **Owner** as a result of incomplete or inaccurate data supplied by the **Owner** or their representatives

### ATS Experience, Manpower and Equipment

- In 1979, **ATS** became the first company in the United States to use leak noise correlators.
- **ATS** developed the **correlator-based leak pinpointing and survey procedures** that are considered to standard of the industry and are subsequently taught by **FCS** and **ATS**.
- Every **ATS Field Technician** is Fully Trained and Experienced in a wide range of applications. We only use **Top of the Line – State of the Art Equipment** for All Phases of Leak Detection and Location Procedures; Field Strategies and Locating All Types of Underground Utilities.
- **ATS Crew Chiefs** average over **15 years** of Correlator Based Leak Survey Experience.
- Leading correlator manufacturers, **FCS/Fluid Conservation Systems, Metravib and Palmer**, have relied on **ATS** to perform beta testing of new equipment and software. **ATS** has trained some of **FCS**' key staff members and provides training assistance for new personnel.
- All phases of an **ATS Leak Survey** are performed with a Two-Person Crew.
- **ATS has Ten Complete Correlator Systems and dedicated Surveyor Vans (ATS Leakmobiles)** that are fully equipped with correlator systems; Utility Location Equipment and every tool needed to perform leak detection and location in all types of conditions.
- **No other Leak Surveyor matches up to ATS' Level of Experience, Accuracy and Results.**

**Leak Survey Equipment: ATS uses the best equipment available on the market today.**  
Here are some of the key components that are used to equip every “**ATS Leakmobile**”.

#### Leak Detection Phase

FCS S-30 Ultrasonic Leak Surveyors  
infraMAP Database Documentation Software  
Radcom SoundSens Programmable System

#### Leak Location Phase

FCS TriCorr Touch Leak Noise Correlators  
FCS Accu-Corr Correlators  
FCS TriCorr Leak Noise Correlators  
Sewerin SeCorr Correlators  
Radcom SoundSens Programmable System

#### Transducers (Sensors)

Various piezo-electric accelerometers,  
Hydrophones and Gas Sensors are used  
depending upon the situation and sensitivity  
that is needed to find the leak.

#### Correlator Preamplifiers

FCS Tri-Corr Preamplifiers  
FCS MP90 Ultrasonic Preamplifiers  
Sewerin SeCorr 08 Preamplifiers

#### Utility Location Equipment

All suspect water main and adjacent water service  
lines are electronically traced during every leak  
location to ensure accuracy.

Trimble TDS Recon	GPS Locators
Radiodetection RD8100	Receivers
Radiodetection RD7100	Receivers
Radiodetection RDT10watt	Transmitters
Schonstedt Ferromagnetic	Metal Locators

#### Valve Operation & Assessment Systems

EH Wachs ERV-750 / TM-7 / VMT-1 Systems  
On-Board Survey-Grade Trimble GPS Wachs  
VITALS Database Software  
infraMAP Database Documentation Software

#### Fire Hydrant Assessment, Flow Testing, Exercising; and Water Main Flushing

Little Hose Monster: Flows of 1,500 GPM or less  
Hose Monster HM4: Flows up to 2,800 GPM  
infraMAP Database Documentation Software



### KNOWN BY THE COMPANY WE KEEP

The clients that **ATS** has served provide the best reference as to the expertise of **ATS** manpower, superior results and unmatched accuracy of **ATS Leak Detection & Location Surveys**. Listed is the year of **ATS Leak Survey** and other firms they've hired. We can provide additional references and details about any **ATS Leak Survey** that's listed and those not listed. Other surveys: **Elgin, IL (310 leaks)**, **Arlington Heights (255 leaks)** and **Aurora, IL** for whom **ATS** conducted **12 system-wide surveys from 1999 - 2010** that accurately detected and located over 2,000 leaks

#### Lake County Public Works (S)

Heather Galan PE, Senior Engineer  
847.377.7500 – **290.5 miles of main**  
(**Annual Surveys: 12 water systems: 2012 - 2019**)

#### Village of Plainfield

Alan Persons, Director of Public Works  
815.436.3577 – **225 miles of main**  
(**ATS Annual Surveys: 1985 – 2010, 2015, 2016, 2018**)

#### Village of Palatine (P)

Jim Vlcek, Coordinator – Utilities Division  
847.705.5200  
(**ATS Annual Surveys: 2002 – 2010, 2016**)

#### City of St. Charles (S, W)

Tim Wilson, Environmental Services Manager  
630.377.4463 – **228 miles of water main**  
(**ATS Annual Surveys: 1990 – 2020**)

#### City of Darien (E, P, W)

Dan Gombac, Director of Public Works  
630.353.8106  
(**ATS Surveys: 1996, Annually 1999 – 2019**)

#### Village of Hillside

Joe Pisano, Director of Public Works  
708.449.6450  
(**ATS Bi-Annual Surveys: 1988 - 2018**)

#### Village of Villa Park (E,S,P,W)

Vydas Juskellis, PE, Director of Public Works  
630.834.8505  
(**ATS Annual Surveys: 1992-96, 2000-05, 2011-12, 2018**)

#### Village of Rolling Meadows

Dan Seveska, Utilities Foreman  
847.963.0500 ext. 7022  
(**ATS Annual Surveys: 1982 – 2019**)

#### Village of Norridge (P,S,O)

Joe Spain, Supt of Public Works  
708.906.9033 cell  
(**ATS Surveys: 1982, 1983, 2018, 2019**)

**Legend:** (E) = Earth Tech (Rust Environmental); (S) = ME Simpson; (W) = Water Services; (O) = Others

(P) = **ADS Environmental Services** (Pitometer, Severn Trent) **ATS Survey** always found significantly more leakage with better accuracy than any competitor's survey found on the same water system. **Please note the highlighted cities that have had experience with "other firms" besides ATS.** In every town, the **ATS Survey** has always found much more leakage with greater accuracy than the competitor's survey found for the same town.

### **PROFESSIONAL HIGH TECHNOLOGY SERVICES**



Established 1979

**"KNOWN BY THE COMPANY WE KEEP"**

*The following companies have benefited from the same professional high technology services that ATS can provide for you. We therefore proudly list these fine companies as references.*

AT&T Bell Laboratories	General Mills	Northwestern Univ. Medical Ctr.
Abbott Laboratories	General Motors Corporation	O'Hare International Airport
Albertsons	Gould Electronics Inc.	Olin Corporation
Alberto Culver Co	Governors State University	Palos Community Hospital
Alcoa Aluminum	Great Lakes Naval Training Ctr.	Pepper Construction
Allstate Insurance Co.	Grinner Fire Protection	Pepsi Co.
Amway Corp.	Helene Curtis Industries	Pfizer Inc.
American Airlines	Harper Rainey College	Praxair Inc.
Amoco Chemical Corp.	Hines VA Hospital	Purdue University
Amtrak	Holiday Inn Corp.	PPG Industries
Argonne National Laboratories	Hyatt Hotels	Quaker Oats Co.
Arlington Park Int'l Race Track	Illinois E.P.A.	Reynolds Metals
Benjamin Moore & Co.	Illinois American Water Co.	Revere Ware Corp.
Bennett & Kahnweiler	Industrial Risk Insurance	Rockwell
Bliss & Laughlin Steel Co.	Inland Steel	Rust-Oleum Corporation
Borden, Inc.	Inland Const. & Development	Safety Kleen
Borg Warner	Jewel Food Stores	Sante Fe Railway
Brookfield Zoo	Kemper Insurance	Scott Airforce Base
Brach & Sons Candy Co.	Kinder Morgan	S-K Hand Tool Corp.
Burlington Northern R.R.	Kraft Foods	Sargent Welch Scientific
Cambridge Homes	La Rabida Children's Hospital	John G. Shedd Aquarium
Canfield's Beverage Co.	Lewis University	Sherwin Williams Co.
Cargill Inc.	Lincoln Park Zoo - Chicago	Shell Oil Company
Carson Pine Scott & Co.	Lockheed Air Terminals, Inc.	State Farm Insurance
Carus Chemical Co.	Loyola University	Tootsie Roll Inc.
Center Point Properties	Loyola University Medical Ctr.	Toys R Us
Chicago Bridge & Iron	LW Steel & LTV Aerospace	Toyota Motors Corp.
Chicago & Northwestern P.R.	Lucent Technologies	Trammell Crow Corp.
Clorox Co.	Macy's Inc.	Unichema
College of DuPage	Masonite Corporation	Unicorn Thermo Technologies
College of Lake County	McDonald's Corporation	Union Carbide Corp.
Commonwealth Edison	M&M Mars Candy Inc.	Union Pacific Railroad
Comcast	Marathon Oil Company	United Airlines
Corn Products	Marriot Hotels	United Parcel Service
Del Webb Communities	McGraw Edison Company	Unocal Corp.
Dominic's Finer Foods	USGA & PGA Championships	US Gypsum
Dow Chemical	Merck Pharmaceutical	US Steel
Dresden Nuclear Power Station	Michael Reese Hospital	US Postal Service
DuPont	Midway Airport	US Army
Electro-Motive Div. of GM	Midwest Generation	US Air Force
Exelon Corporation	Mobil Oil Corporation	US Navy
Exxon Corporation	Morton Arboretum	University of Chicago
Federal Aviation Administration	Motorola	University of Illinois
Factory Mutual Insurance	Museum of Science & Industry	University of Wisconsin
Fermilab Accelerator Laboratory	Nabisco	Von Maur Department Stores
Field Museum of Natural History	Nalco Chemical Co.	Walgreens
Ford Motor Company	Navy Pier, Chicago	Waste Management
Fort Sheridan Military Base	Nestle	US Cellular Field (White Sox)
First Brands Corp.	NICOR	Wrigley Field (Cubs)
FSC Paper Co.	Northrop Grumman Corporation	Wrigley Gum Co.
General Electric	Northern Telecom	Xerox Corporation
General Foods	Northwestern University	Zenith Electronics Corp.

**WATER CONSERVATION SPECIALISTS**



**Water Main Leak Detection Services  
2020 through 2022**

**RETURN WITH BID**

(For complete information covering these items, see proposal specifications)

<u>NO.</u>	<u>ITEM</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT COST</u>	<u>AMOUNT</u>
<b>2020</b>					
1	Ultrasonic Leak Detection for approximately 247.30 miles of water main	Lump Sum	1	\$39,172.38	\$39,172.38
2	Pin point main line or service leak	EA	32	\$395.00	\$12,640.00
3	Pinpoint fire hydrant or valve leak	EA	32	\$95.00	\$3,040.00
4	On-Call Leak Detection (8am to 4pm)	Weekday Visits (2 hours Each)	0	\$600.00	\$0.00
5	On-Call Leak Detection (4pm to 8am)	Weekday Visits (2 hours Each)	0	\$700.00	\$0.00
<b>2020 EOPC Total =</b>					<b>\$54,852.38</b>
<b>2021</b>					
1	Ultrasonic Leak Detection for approximately 254.96 miles of water main	Lump Sum	1	\$43,750.85	\$43,750.85
2	Pin point main line or service leak	EA	40	\$410.00	\$16,400.00
3	Pinpoint fire hydrant or valve leak	EA	40	\$95.00	\$3,800.00
4	On-Call Leak Detection (8am to 4pm)	Weekday Visits (2 hours Each)	26	\$600.00	\$15,600.00
5	On-Call Leak Detection (4pm to 8am)	Weekday Visits (2 hours Each)	22	\$700.00	\$15,400.00
<b>2021 EOPC Total =</b>					<b>\$94,950.85</b>
<b>2022</b>					
1	Ultrasonic Leak Detection for approximately 234.08 miles of water main	Lump Sum	1	\$43,257.41	\$43,257.41
2	Pin point main line or service leak	EA	40	\$425.00	\$17,000.00
3	Pinpoint fire hydrant or valve leak	EA	40	\$95.00	\$3,800.00
4	On-Call Leak Detection (8am to 4pm)	Weekday Visits (2 hours Each)	27	\$600.00	\$16,200.00
5	On-Call Leak Detection (4pm to 8am)	Weekday Visits (2 hours Each)	21	\$700.00	\$14,700.00
<b>2022 EOPC Total =</b>					<b>\$94,957.41</b>
<b>\$244,760.64</b>					

Note: Please refer to ATS Basic Schedule of Prices for Schedule and Emergency Callouts enclosed with the ATS  
Proposal for a detailing of Weekday, Weekend, Holiday and After Normal Business Hours Service Callout Rates.