



VILLAGE OF FRASER LAKE LEAK DETECTION PROJECT REQUEST FOR PROPOSALS

April 13, 2021

PURPOSE

The Village of Fraser Lake is seeking proposals to develop and complete a Leak Detection Program for our Municipal Water Distribution System.

INTRODUCTION

The Village of Fraser lake is seeking proposals for the completion of a Leak Detection survey of the Village of Fraser Lake water distribution system.

In the completion of this activity, our primary goals are:

- Completion of a leak detection assessment to locate and evaluate our water distribution system for leaks.
- Document the location and volume of water system leaks.
- Creation of a written Leak Detection report providing information and insight into the state of our water distribution system.
- Conservation of water by reducing leakage from our water distribution system.

The Village of Fraser Lake is seeking a professional contractor, with demonstratable experience in leak detection, who will plan and execute a leak detection project on the 12,800 meters of water main that comprises the Village of Fraser Lake water distribution system. The information developed from this project will assist our Public Works Department in prioritizing water main repair and maintenance activities.

The final report is required within thirty (30) days following completion of the project.

The scope outlined herein describe the minimum requirements. Quality service in a timely manner is our expectation.

WATER SYSTEM DESCRIPTION

The Contractor will develop, plan and execute a program to perform leak detection services on the Village's approximately 12,800 metres of water main. The watermains are all DN150. The watermains are either asbestos cement (AC) or PVC-C900 pipe. The records are not good, but it is probable that 80% of the mains are AC (10,240 metres) and will be in the older parts of the Village.

There are approximately 365 residential water connections and 115 Commercial and Industrial (C&I) connections.

All the Village's potable water is treated at the WTP, where there is a bulk flow meter, and pumped, via a 'fill-and-draw' pipeline, to the Village's 2.27ML reservoir; there are no other bulk meters. There are 14 C&I water meters in the Village, but the remaining connections are unmetered. There are 78 main line gate valves and 57 hydrants.



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A map of the Village of Fraser Lake and our water distribution system (in blue) is noted above.

RFP SUBMITTIAL REQUIREMENTS

The submission shall not exceed 15 pages.

1. **GENERAL**

As with any project where there are gaps in available information, the Village would like the contractor to comment on potential problems that can be expected. We are also seeking information on the techniques that may be employed to solve those problems. Quality Control and Quality Assurance procedures are to be outlined.

Outline any roles/requirements/expectations that the Contractor has of the Village.

Provide a preliminary schedule



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The Village of Fraser Lake, if necessary, will post any addenda to the same site as this document. It is the Contractor's responsibility to check the site periodically and before submitting its bid to ensure that all addenda have been received.

2. FIRM'S EXPERIENCE / BACKGROUND

The Contractor will provide a company overview with the following information:

- An overview of the range of services provided by your company: your primary line of business; how long the company has been in business, and how long the company has been providing leak detection services.
- Subcontractors to be employed.
- Highlights of the proposer's and subcontractor's qualifications.
- Numbers of kilometers of leak detection on a project by project basis as well as the % of those kilometers which were PVC.
- Three (3) project references where the Contractor has completed similar work in size and scope within the last three (3) years. This will include:
 - A brief description of the work completed.
 - Contracted amount
 - Time required to complete the project.
 - Findings of the project.
 - Contact names, phone numbers, addresses, and e-mail addresses of the City/Utility authorizing the project.

3. EXPERIENCE OF KEY PERSONNEL

The Village of Fraser Lake is seeking a qualified professional services firm. The work must be delivered in a safe, efficient and professional manner. As a condition of this request, the Contractor must provide experienced, courteous, professional, trained and qualified personnel. It is expected that the project team will consist of appropriately skilled personnel. In this regard the Field Project Leader will possess at least three (3) years' experience in leak detection programs and the Field Technician, under the supervision and direction of the field project leader should have at least one (1) years' experience working with the field project leader.

4. TECHNICAL ASPECTS

Outline briefly, the following:

- the field plan / methodology for executing the work – no more than a page or two
- A list of the proposed equipment to be used in the detection of leaks - manufacturer and purpose.
- A statement of the accuracy of the methodology used for locating the leak in both material types.
- Methodology for leak detection on AC mains and the same for PVC mains – if it applicable to the Contractor's work plan.



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5. PROJECT BUDGET

Completion of **Appendix A1**, (Budget Sheet)

6. PROJECT SCHEDULE

Completion of **Appendix A2**, (Preliminary Construction Schedule)

PROPOSAL EVALUATION

Proposals will be evaluated on the following criteria and scoring:

1. Understanding of project scope and deliverables.	5
2. Experience and qualifications of the Field Work Leader.	15
3. Ability to complete similar projects on schedule and within budget.	15
4. Equipment proposed, familiarity with, and demonstrated success in leak detection for other water utilities.	35
5. Project Approach, Project Management, Methodology, Innovation in leak detection technology.	15
6. Overall pricing and demonstrated value.	15
TOTAL	100

REMUNERATION

The work will be remunerated as set out in Appendix A

CONTRACT REQUIREMENTS:

Contractor must be able to complete the project before Friday September 24, 2021.

The Contractor will advise the earliest date of when work can commence.

The Contractor will, if requested, present findings of the Leak Detection survey to the Village Council at a Regular Meeting as an optional item as identified in Appendix A.

The Contractor will advise the Fire Department and Fraser Lake RCMP of the work plan in general and also any planned street closures, so they can reroute their emergency vehicles. This notice shall be provided at least two working days in advance of the required closure.



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The Contractor will notify the Director of Public Works, Vern Hilman by phone at (250) 699-6562 or cellular (250) 699-1265 at least two (2) days in advance of the commencement of work.

During the operational phase of this project, the Contractor will report to the Director of Public Works, amongst other items, to provide progress reports.

PRE-CONSTRUCTION MEETING:

A meeting between the Contractor and the Director of Public Works will be held no later than five (5) days prior to the scheduled start of the project to coordinate activities.

Amongst other items, the Agenda will include a discussion on responsibility for operating valves, valves that don't work, known faulty hydrants, known leaks, known issues with the system, location and serviceability of curb stops, and other similar impacting factors to the success of the work. Local knowledge of the system will be shared at this meeting.

SCHEDULE OF WORK:

Upon contract award, the Contractor will submit a written schedule of work to the Village of Fraser Lake.

DETAILED SCOPE

1. GENERAL

In general, the work to be completed is as follows:

- Leak detection of the entire water distribution system using current leak detection methodologies that meet industry standards. This will include inspection and evaluation of main line valves, fire hydrants, service connections and system appurtenances only as they are encountered during the course of the work (provide condition commentary in the Leak Detection report).
- Correlation and documentation of located leaks.
- Compilation of the leak detection information and any other relevant observations into a complete and comprehensive report.

2. BASE BID

The Village believes that an appropriate approach to this leak detection project is first to apply the Step method. In this method, the Village's water system is divided up into numerous zones by sequentially closing main line valves and 'step'ing through the system. An isolation zone is created within closed valves – notionally 'the passive zone'. The passive zone is then fed from an active zone by linking cross-zone hydrants with NSF 61 hose or pipe and measuring the flow from the active zone to the passive zone with a flow meter. Ideally this would be accomplished in the still hours after mid-night, though, in low-demand times through the day, contacting residents in passive zones to go offline during the evaluation, is also acceptable. This is considered to be the 'base bid' on which tenders should be submitted.



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It is believed to provide superior results where PVC is installed, due to the difficulty of sonic devices in picking up PVC noise.

The passive zone results must be shared informally with the Village as they are generated. The Village will then decide whether also then to proceed to more specific testing as might be available, acoustically, hydrophonically, by 'ground mic-ing' or by tracer technology, as offered by tenderer.

Include in the base bid, a reservoir drawdown test from 12 midnight until 6 a.m. that same day with the level drop recorded every half hour and the volume used in that period calculated (in litres) making use of the internal dimensions of the reservoir. Include the results in the Leak Detection report. Coordinate with the Village, and also to ensure the supply pump/s don't come on during the test period. The Contractor may be able to get the required information from the SCADA at the WTP, but the required precision is not certain, and the read-out is not in length units i.e. reads as % full.

3. ALTERNATE, OR OPTIONAL-EXTRA BID

If tenderers do not have capability in these ancillary technologies, they may strike out this section in the tender form in Appendix A and thereby offer only on the base bid. If they do have additional capability, the Village may make use of these services as an optional extra / provisional item, as provided for in the form of tender. If tenderers do not have Step capability but believe they can offer an equal or better service with alternate technologies, they may strike out the base bid section of the tender and offer only on the alternate.

In AC pipe areas, acoustic, hydrophonic and ground microphone techniques are likely to be more successful than in PVC pipe areas. While Helium/Hydrogen and Tracer may be offered for this programme, it is not believed their use is warranted principally because of the probable depths of the mains and absence of, and experience with, this technology in this part of BC.

Where the alternate or optional extra work is undertaken, preference will be given to Contractors using one or more of the following recognized manufacturers of leak detection equipment:

- Echologics
- Sewerin
- Guterman

Leak detection activities should involve fire hydrants, main line valves, and when necessary, selected service connections in the distribution system. This will require physical contact with the valves, hydrants, pipe, and/or service connections.

Distances between listening points will not be greater than 152 metres on AC/Concrete pipe and no more than 60 metres on PVC pipe. Regardless, listening distances may not exceed 60 meters.

Maintain a log, recording all areas where suspected leak noise is heard. Include a copy of leak detection activity and the findings with the final report.

When leak noise is detected and/or suspected, the Contractor must verify its findings.



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The Contractor 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. For PVC type pipe, locations will be included to the best of the Contractor's ability.

The leak location will be marked in the field (on the surface) using environmentally formulated Precautionary Blue paint. Additionally, mark on a small scale (1:50) plan with dimensions to physical infrastructure such as poles, valves, hydrants, manholes, etc. Further, mark the information on a large scale (1:2000) plan to provide the big picture of leak clusters. As an alternate, GPS co-ordinates to 1m accuracy will be acceptable. 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.

If leak noises at service connections are confirmed, and the utility advises curb stops are operable, the contractor shall have the utility field staff isolate the service connection and listen to the service connection to determine if the leak noise is on the customer's side or the utility's side of the valve.

If it becomes necessary to conduct work during evening or night time hours due to traffic volume where traffic noise may affect results, the Contractor will provide the Village with 24-hour advanced notice. This is intended to allow the Village to notify neighboring residences who may be impacted by the noise of your work.

4. FINAL LEAK DETECTION REPORT

The final report will include:

- A brief description of when, the work was being done, the work plan/methodology and the equipment used.
- A numbered zone isolation map/sketch for each isolation zone
- The locations where work was performed by street name and intersection.
- A numbered summary sheet to match each isolation zone with field notes/observations, particular features within the zone (school, etc.), identification of possible zone overlaps, commentary on possible causes and locations (private property/within the RoW), the pipeline pressure at that location and the time, predicted flow into the zone, measured flow into the zone.
- Opinion of probable pipe material.
- Results of the overnight low flow reservoir draw down test.
- As best as can be determined from the site work, the depth and type of pipe or fixture encountered with commentary on its condition (good condition, broken, inoperable, leaking, etc.).
- A complete description of leaks, including a sketch of their local and overall location (GPS coordinates acceptable alternate), an estimate of their severity, or other distribution system issues / problems identified.
- Recommendations for repair, replacement or maintenance, or further/ separate leak detection work.
- Identification of mapping errors and corrections needed on the Village's Water Atlas to allow for correction of our mapping. The Village can make a CAD version of its water network available to the Contractor, though the CAD drawing scale has not been ground-truthed.



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GENERAL CONDITIONS OF CONTRACT

INSURANCE

The Contractor will not commence work until the Contractor has provided proof of insurance to the Village of Fraser Lake as required under this paragraph. The Contractor will not allow any sub-contractor to commence work on a sub-contract until all similar insurance requirements have been delivered to and approved by the Village. The Contractor agrees to maintain certificates of insurance for at least the minimum insurance coverage as set out below during the term of the contract. Such policies shall be in force and acceptable to the Village to afford protection against all claims for damages to public or private property, and injuries to persons, arising out of and during the contract term. The Village may require greater insurance, in which case same will be negotiated with the Contractor.

Note: A copy of the certificate of insurance shall name the Village of Fraser Lake, its officers, agents, employees, representatives as additional insured.

The policy of insurance will not contain any provisions that invalidate the naming of the Village as an additional insured. The insurance coverage and limits set forth below shall be deemed to be minimum coverage and shall not be construed in any way as a limitation on the Contractor's duty to carry adequate insurance or on the Contractor's liability for losses or damages under the Contract. The minimum insurance coverage and limits will always be maintained by the Contractor and his sub-contractors while providing, performing, or completing the work.

Required insurance coverages:

General Liability - The Contractor will carry a comprehensive general umbrella liability policy for all operations with limits of not less than \$5,000,000.00, for each accident, for bodily injury liability and not less than \$2,000,000.00, for each accident related to property damage liability.

Worker's Compensation - The Contractor is required to carry Worker's Compensation coverage for all employees employed through this project. The policy is for protection against liability under the Worker's Compensation Act and to meet the requirements of WorkSafeBC Statutes and Regulations in the Province of British Columbia with limits of not less than \$2,000,000.00 per claim.

Automobile/Vehicle/Truck Insurance - The Contractor will carry a minimum of \$2,000,000.00.

The Contractor agrees to notify the Village at least thirty (30) days prior to non-renewal, reduction, or cancellation during the operational period of this agreement. The Contractor shall cease operations if the insurance is canceled or reduced below the required amount of coverage. All costs for insurance, as specified herein, will not be paid for separately, but will be considered as incidental to the Contract.

SAFETY/ PROTECTION REQUIREMENTS:

The Contractor will be solely responsible for the safety of persons, property, or the work at or adjacent to the service area. During operational activities, decisions relating to site safety, the use and proper application of equipment and materials, and the protection of the general public from operations will be the responsibility of the Contractor.



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The Contractor will be responsible at his own expense to familiarize him/herself with and comply with the applicable provisions of WorkSafeBC regulations, including PPE (personal protection equipment), reflective safety vests, HSE requirements and the like.

The Project Team will follow all traffic safety rules, as is designated by the Ministry of Transportation, Village safety protocols, O.H&S of British Columbia and any other governmental agencies who may have jurisdiction over this type of work or the worksite.

ASSUMPTIONS AND SERVICES PROVIDED BY THE UTILITY:

The Municipality will furnish available maps and records necessary to aid in conducting the Leak Detection Project.

Worksite barricades or barriers will be supplied by the Village of Fraser Lake. It is the contractor's responsibility to manage work site security using the supplied barricades or contractor supplied flagging personnel to protect the work site, members of the public, animals, and the property against injury.

The Municipality will also make available, on a reasonable but periodic basis, certain personnel with a working knowledge of the water system who may be helpful with the leak detection project and for general information about the water system.

OTHER NOTES:

The Contractor will be permitted to work the necessary hours to complete its work. The Contractor shall limit the noise that is made by his operations to a minimum from 8 p.m. to 8 a.m.

The Contractor will be solely responsible for the means, methods, techniques, sequences and procedures used in this project. The Field Team Leader or supervisor will have full authority to act on behalf of the Contractor.

Communications given to the Field Team Leader will be as binding as if given to the Contractor. The Field Team Leader will perform adequate on-site supervision and to coordinate the work.

All licenses, permits, approvals, etc., required by law or ordinarily secured under recognized good business practices will be secured by the Contractor. Any additional costs resulting from compliance with these codes and ordinances will be considered incidental to the Contract.

Remove all machinery, equipment, materials and other related items upon the completion of the project. Leave the premises in a condition approved by the Village.



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INFRASTRUCTURE PROTECTION:

Reasonable steps must be taken to avoid damage to private property, water lines, electric conduits and lines, natural gas infrastructure, drains, sidewalks, curbs, fences, trees, culverts and other structures of any kind. Where items or structures need to be altered or removed to conduct this work, the contractor will get agreement from the Director of Public Works prior to altering or removing the structure.

The contractor will be liable for damages to public and private property.

NON-DISCLOSURE:

The Contractor acknowledges and agrees that certain information provided by the Village, relating to the products and services to be supplied by the Contractor, is confidential and shall not be disclosed, directly, indirectly or by implication, or be used by the Contractor, whether during the term of an agreement with the Village or at any time thereafter, except solely as required in the course of the Contractor's performance of services under its agreement with the Village. The Contractor shall comply with the applicable privacy laws and regulations affecting the Village, and will not disclose any of the Village's records, materials, or other data to any third party, other than its attorneys or other individuals within the Contractor's related business entities who have a need to know, and who agree in advance not to make further disclosure or unless required to do so by applicable law. The Contractor shall not distribute statistical analyses and reports utilizing data derived from information or data obtained from the Village without the prior written approval of the Village. Information relating to, and outcomes of this project, shall not be disclosed.

REJECTIONS/WAIVERS:

The Village reserves the right to reject any and all proposals; waive formalities, technical requirements and/or deficiencies and irregularities; solicit new proposals; or further negotiate with the Contractor of its choice if some other manner or negotiation better serves the Village's interests.

The Village reserves the right to determine the competence, financial and operational capacity of any Vendor/Contractor. Upon request of the Village, the Vendor/Contractor will furnish additional evidence as may be required by the Village (beyond that which is required in response to this RFP) to evaluate its ability and resources to accomplish the work required by the scope of services herein.

The Village reserves the right to award the RFP to the vendor which, in the Village's judgment, best serves the needs and interests of the Village and its residents.

WITHDRAWALS / DECLINATIONS:

If the Contractor wishes to withdraw a RFP, the Contractor shall submit written notification of such action to the Village Chief Administrative Officer Rodney J Holland, no later than the due date and time as specified in the Deadline for Submitting RFP.



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INQUIRIES:

Inquiries relating to the RFP process should be directed to the Director of Public Works, Vern Hilman phone: (250) 699-6562 or cellular (250)699-1265 or email: vhilman@fraserlake.ca or the Village Administrator, Rodney J Holland phone 250.699.6257 or email rjholland@fraserlake.ca

Inquiries pertaining to the locations of infrastructure in regard to scope of work should direct inquiries to the Director of Public Works Director, Vern Hilman phone: 250.699.6562, or by email to vhilman@fraserlake.ca

The Deadline for Questions is May 20, 2021.

PLACE TO SUBMIT PROPOSAL:

Submit the bid in a sealed envelope, with RFP “2021 Water Line Leak Detection Project” clearly marked on the envelope. Submissions may also be submitted electronically by email in PDF format to:

Village of Fraser Lake
c/o Rodney J. Holland, Chief Administrative Officer
210 Carrier Crescent,
Fraser Lake, BC V0J 1S0
email to rjholland@fraserlake.ca

DEADLINE FOR SUBMITTING RFP

The deadline for receipt of submissions is 12:00:00 PM PDT on May 27, 2021. Late submittals will be rejected without consideration. The Village assumes no responsibility for costs related to the preparation of submittals.

Proposals will be evaluated from May 27, 2021 to June 4, 2021.
Selection of Proposal – June 4, 2021.

All applicants will be notified by email, no later than June 4, 2021.

**APPENDIX A1
RFP PROJECT BUDGET**

**APPENDIX A2
PRELIMINARY CONSTRUCTION SCHEDULE**