



The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



Thomas S. Burack, Commissioner

**Request for Proposals**  
**Leak Detection Surveys at NH Community Water Systems**  
**Drinking Water and Groundwater Bureau**  
**September 2016**

**I. Introduction**

The New Hampshire Department of Environmental Services (“NHDES”) is requesting proposals for leak detection surveys at forty-two community water systems in New Hampshire during the 2017 field season. The purpose of the surveys is to reduce water and revenue loss by assisting water systems with leak identification and location. Projects range in size from entire distribution systems to portions thereof with the total length of pipe proposed to be surveyed spanning approximately 505 miles. Leak detection projects that are selected will be funded through a set-aside of the Drinking Water State Revolving Fund (DWSRF).

**II. Background**

In June of 2016, NHDES sent leak detection project solicitations to all community water systems in New Hampshire. A copy of the solicitation is attached, as well as a copy of each project request. A general summary of the systems requesting leak detection assistance may be found in Appendix A. Appendix A includes forty-one project requests—one project request being for two systems. The number of miles was derived based on estimates provided by the water systems and is intended for guidance only and should not be the sole determinant of contract price for each project.

**III. Scope of Work**

The work will consist of performing acoustic listening surveys on the distribution systems of the water systems selected from the list in Appendix A. The surveys shall be conducted in accordance with the “Manual of Water Supply Practices, Water Audits and Loss Control Programs” document identification number AWWA M36, American Water Works Association, 2016. Surveys must be performed in two phases: an initial screening of the area to identify suspected leaks followed by a pinpointing phase to locate the suspected leak. A detailed report of the findings must be filed with NHDES and the water system at the conclusion of each survey. It will be the responsibility of the water system to repair any leaks found.

**A. Task 1 - Initial Survey**

The leak detection firm (“firm”) will utilize specialized equipment to “listen” for sounds on direct contact points such as, but not limited to, main line gate valves, fire hydrants, meter/curb valves, and blow-off’s. The initial survey may be performed on contact points within the system, provided that leak sounds travel the entire distance between contact points. If leak sounds may not be heard the entire distance between points as a result of pipe material, pipe diameter, contact point spacing, system pressure, soil type, equipment sensitivity, or any other factor, a ground microphone must be used to listen directly over the pipe at a six to ten foot interval in addition to listening to available contact points. The firm will utilize a test rod and/or resonance plate in conjunction with the ground microphone in instances where the main is located more than three feet off of a hard surface.

## **B. Task 2 - Pinpointing Phase**

In areas where leakage is detected, the firm will first confirm the locations of mains and services through the use of maps and/or pipe locators. The firm will then perform an intensified pattern of sonic tests directly over the mains and services to identify the location of the leak. An electronic digital leak noise correlator may be used as a pinpointing tool, but a ground microphone shall be used to confirm the correlator results.

## **C. Task 3 - Leak Report**

The firm will prepare illustrated leak locations on diagrammatic reports. Each leak that is identified will be classified according to estimated size and hazard to help facilitate repair by the water system. The firm will meet with the designated representative of the water system on a daily basis and deliver leak reports from the previous day. At the conclusion of the survey, a final report will be prepared and submitted to NHDES and copied to the water system. The report will include the original leak reports, a breakdown of the rate of water loss by classification, a breakdown of the loss by source of leakage, and a summary of the project, including feedback on the accuracy of the survey as a result of system characteristics, such as the availability of listening points and the precise location of the water main.

## **IV. Proposal Format**

Please limit the information submitted to the below:

- A. Proposal Materials:** Please do not submit the proposal in a plastic binder or any other unnecessary materials.
- B. Firm Background:** One page maximum related to the services and background of the firm.
- C. Contact Information:** The name, phone number, and email address of the contact to which questions about the application may be directed and updates about the review process provided, and if different, the contact information for the firm.
- D. Personnel & Qualifications**
  - 1. The names of all personnel who will be assigned to this project and what their role will be.
  - 2. The number of personnel who will be in the field at any one time completing the survey.
  - 3. A description of their technical qualifications, training received, and experience.

## **E. Methodology:**

The methodology should reflect III. Scope of Work and specifically the below:

- 1. The systems proposing leak detection surveys range from larger residential systems, to clustered condominium complexes, to mobile home parks. These systems also vary in pipe materials, pipe sizes, number of listening points, and accuracy of information. It is expected that some systems will receive a more accurate survey due to the characteristics of the system. Please describe the main methodology that will be used to conduct the survey and describe variations in methodology and steps that will be taken to deliver the most accurate survey possible under the varying circumstances.

2. The methods for determining how far a small leak sound will travel, how this method may vary based on the system characteristics, and what alterations to the leak detection methodology will be made to address findings.

3. A description of the technology and equipment to be used to detect leaks and determine field location, as well as a description of the means to estimate leak volume.

**F. Cost & Time:** A breakdown of the cost and time required to complete each of the individual forty-one project requests. All of the projects may not be funded. Projects selected for funding will be determined in part based on the total cost of the proposals received.

**G. Previous Work:** A reference for and a brief summary of the three most recently completed leak detection surveys your firm conducted at community water systems, including the method of leak detection used, the approximate age of the system, the number of miles and type of pipe surveyed, and the number and type of leaks (ex. service, main, hydrant, valve) discovered.

**H. Attachment:** Please include an example of the daily and final leak report format that would be used in Task 3 (Section III.C.), above.

## V. Additional Information

Multiple contracts may be awarded to complete the surveys if time and/or personnel constraints present a problem such that the work could not be completed by a single firm during the 2017 season.

All firms are responsible for consulting with the individual water systems and/or reviewing NHDES files to ensure an accurate price is provided in the proposal(s). Many of the systems included a distribution map with their request for funding. The maps are of varying quality but may be viewed by contacting NHDES (see Section VIII below).

All water systems receiving assistance are required to work with the selected firm to ensure successful implementation. The firm selected will be responsible for contacting each water system to confirm the availability of water system staff to conduct the necessary work before and during the actual leak detection surveys.

## VI. Evaluation Criteria

A selection committee consisting of NHDES representatives will be used to evaluate the submitted proposals based on the following criteria:

- |                                                                |     |
|----------------------------------------------------------------|-----|
| • Overall understanding of the services to be provided         | 20% |
| • Adequacy of approach to identify leaks in diverse situations | 20% |
| • Qualifications and experience of staff                       | 20% |
| • Cost of projects                                             | 20% |
| • Time to complete                                             | 20% |

**VII. Proposal Submittal Date**

Three copies of the firm's proposal should be submitted no later than October 31<sup>st</sup>, 2016 at 4:00 pm to:

Kelsey Vaughn  
Drinking Water & Groundwater Bureau  
New Hampshire Department of Environmental Services  
29 Hazen Drive, PO Box 95  
Concord, NH 03302-0095

NHDES expects to notify all firms as to the outcome of the selection process by January 31, 2017.

**VIII. Questions**

All inquiries related to this Request for Proposals should be made to Kelsey Vaughn, who may be reached using the address above, by telephone at (603) 271-0659, or by email at [kelsey.vaughn@des.nh.gov](mailto:kelsey.vaughn@des.nh.gov).

**IX. Attachments**

Leak project solicitation

General map showing locations of proposed surveys

Project request submittals provided by the community water systems seeking assistance

## Appendix A. System Information

PROJECT REQUEST				SURVEY MILES BY PIPE MATERIAL				PROJECT CONTACT		
PWSID	WATER SYSTEM	TOWN	% OF SYSTEM	UNDIFFER-			TOTAL	NAME	PHONE	EMAIL
				METAL	NONMETAL	ENTIATED				
0202010	Abenaki Water/Lakeland	Belmont	100%	0.00	8.50	0.00	8.50	Alex Crawshaw	(603) 293-8580	acrawshaw@newenglandservicecompany.com
0262020	Abenaki Water/White Rock Water	Bow	97%	0.00	7.50	0.00	7.50	Alex Crawshaw	(603) 293-8580	acrawshaw@newenglandservicecompany.com
0201020	Belmont Water Department/North	Belmont	100%	2.50	1.00	0.00	3.50	Jim Fortin	(603) 528-2677	publicworks@belmontnh.org
0461010	Claremont Water Department	Claremont	17%	11.62	0.00	0.00	11.62	Rob Lauricella	(603) 543-0680	rlauricella@utilitypartnersllc.com
0481010	Colebrook Water Works	Colebrook	100%	10.00	0.00	0.00	10.00	Brian Sullivan	(603) 237-8019	briansullivan229@gmail.com
0501010	Concord Water Department	Concord	27%	53.25	0.00	0.00	53.25	Jeff Hoadley	(603) 230-3905	jhoadley@concordnh.gov
0511010	Conway Village Fire District	Conway	100%	0.00	21.00	0.00	21.00	Gregg Quint	(603) 447-5470	gquint@cvillagefd.com
0651010	Dover Water Department	Dover	100%	95.00	30.00	0.00	125.00	Bill Boulanger	(603) 516-6450	b.boulanger@dover.nh.gov
1212130	Eagle Brook	Jackson	100%	1.00	0.00	0.00	1.00	Julie Maiorano	(603) 387-5240	juliemaior@aol.com
1141020	Emerald Lake Village District	Hillsborough	100%	2.00	11.00	0.00	13.00	Joseph Damour	(603) 428-3525	waterjoe@aol.com
0851010	Franklin Water Works	Franklin	29%	17.00	0.00	0.00	17.00	Brian Sullivan	(603) 934-4103	bsullivan@franklinnh.org
0224010	Glenciff Home for the Elderly	Benton	100%	1.81	1.86	0.00	3.67	David Brown	(603) 989-3111 ext 1601	david.brown@dhhs.nh.gov
0911020	Grasmere Village Water Precinct	Goffstown	4%	0.00	0.38	0.00	0.38	Tina Daniels	(603) 497-8346	grasmerewater@comcast.net
0881020	Gunstock Acres Village Water District	Gilford	100%	13.00	1.00	0.00	14.00	Alex Crawshaw	(603) 293-8580	acrawshaw@newenglandservicecompany.com
1071010	Hanover Water Department	Hanover	35%	13.00	0.00	0.00	13.00	Todd Cartier	(603) 643-3327 ext 3236	todd.cartier@hanovernh.org
1191020	Hopkinton Village Precinct	Hopkinton	100%	0.40	2.60	0.00	3.00	Andrew Ashton	(603) 856-4836	hvpwater@gmail.com
1281010	Laconia Water Works	Laconia	45%	50.00	0.00	0.00	50.00	Thomas Giles	(603) 524-0901	gilest@city.laconia.nh.us
0862010	Lake Ossipee Village	Freedom	100%	0.00	8.50	0.00	8.50	Justin Benes	(603) 998-3989	justin@lakesregionwater.com
1361010	Lisbon Water Department	Lisbon	100%	2.00	0.00	0.00	2.00	Dan Merhalski	(603) 838-6376 ext 12	lisbonnadmin@ne.twcbc.com
1481010	Marlborough Water Works	Marlborough	100%	3.50	0.00	0.00	3.50	Neil Goodell	(603) 876-3751	marlborough-water@ne.rr.com
1392070	Midridge Condos	Londonderry	100%	0.00	0.14	0.00	0.14	Stacey Diodati	(603) 894-6300	s.diodati@avatarproperties.net
1561010	Milford Water Utilities Department	Milford	47%	25.50	0.50	0.00	26.00	Jim Young	(603) 249-0664	jyoung@milford.nh.gov
1581010	Milton Water District	Milton	50%	3.50	0.00	0.00	3.50	Mark Badger	(207) 457-3945 or (207) 651-0433	mbsroadking1997@gmail.com
0912050	Mount Laurel Estates	Goffstown	100%	0.00	1.50	0.00	1.50	Lee Minnich	(603) 497-3621	gwp@comcast.net
1101050	Mountain Lakes District Water Department	Haverhill	22%	4.00	0.00	0.00	4.00	Donald Drew	(603) 787-6180 or (603) 348-3266	mtnlakeswater@yahoo.com
1741010	Newport Water Works	Newport	6%	0.63	1.90	0.00	2.53	David Brennam	(603) 863-4271	waterandsewer@newportnh.net
0162050	North Ledge	Bartlett	3%	0.00	0.12	0.00	0.12	Bill Honen	(617) 833-3501	bill.honen@gmail.com
1392010	Oakridge Condos	Londonderry	100%	0.00	0.60	0.00	0.60	Stacey Diodati	(603) 894-6300	s.diodati@avatarproperties.net
1841010	Ossipee Water Department	Ossipee	48%	3.50	1.50	0.00	5.00	Wayne Eldridge	(603) 539-7150	ossipee_water@myfairpoint.net
2462040,	Pillsbury Lake District/Franklin Pierce &									
2462050	Peninsula	Webster	100%	0.00	7.50	0.00	7.50	Joseph Damour	(603) 428-3525	waterjoe@aol.com
2303010	Pine Grove Mobile Home Park	Swanzy	100%	0.00	2.50	0.00	2.50	Dan Crosby	(603) 357-2577	chem@eai-labs.com
1901010	Pittsburg Water Department	Pittsburg	100%	0.00	2.00	0.00	2.00	Richard Sargent	(603) 538-6678	toprichardsargent@gmail.com
1971010	Raymond Water Department	Raymond	100%	13.00	2.20	0.00	15.20	Scott Keddy	(603) 895-4657	skeddy@raymondnh.gov
1603010	Rolling Acres Mobile Home Park	Mont Vernon	100%	0.00	0.71	0.00	0.71	Kathleen Rush	(617) 510-0300	kathleenrush@gmail.com
2011010	Rollinsford Water and Sewer District	Rollinsford	100%	3.00	4.00	0.00	7.00	John England	(603) 742-8124	rollinsfordwsd@yahoo.com
0382010	Rosebrook Water	Carroll	100%	11.00	1.00	1.00	13.00	Nancy Oleson	(603) 278-4491	noleson@rosebrookwatercompany.com
2041010	Rye Water District	Rye	100%	34.00	2.00	3.00	39.00	Ken Aspen	(603) 436-2596	ken.ryewater@comcast.net
1053030	Taylor River Estates	Hampton	100%	0.00	1.50	0.00	1.50	Catherine Boston	(603) 498-4869	catherine.boston@comcast.net
2542070	Villages of Windham	Windham	100%	0.00	1.00	0.00	1.00	Bob Lefaiver	(603) 893-5589	joycenbob@comcast.net
0612240	Willow Bend	Derry	100%	0.68	0.00	0.00	0.68	Jan Wrona	(603) 432-6144 ext 5460	janwrona@derrynh.org
0112030	Wright Farm Condos	Atkinson	100%	0.00	1.50	0.00	1.50	Stacey Diodati	(603) 894-6300	s.diodati@avatarproperties.net
			<b>Total</b>	<b>374.89</b>	<b>125.51</b>	<b>4.00</b>	<b>504.40</b>			

PWSID	WATER SYSTEM	TOWN	FIRE PROTECTION	SERVICE CONNECTIONS
0202010	Abenaki Water/Lakeland	Belmont	N	158
0262020	Abenaki Water/White Rock Water	Bow	N	95
0201020	Belmont Water Department/North	Belmont	Y	50
0461010	Claremont Water Department	Claremont	Y	3,600
0481010	Colebrook Water Works	Colebrook	Y	480
0501010	Concord Water Department	Concord	Y	12,000
0511010	Conway Village Fire District	Conway	Y	890
0651010	Dover Water Department	Dover	Y	8,800
1212130	Eagle Brook	Jackson	N	26
1141020	Emerald Lake Village District	Hillsborough	N	520
0851010	Franklin Water Works	Franklin	Y	2,600
0224010	Glenclyff Home for the Elderly	Benton	N	11
0911020	Grasmere Village Water Precinct	Goffstown	Y	550
0881020	Gunstock Acres Village Water District	Gilford	N	576
1071010	Hanover Water Department	Hanover	Y	2,100
1191020	Hopkinton Village Precinct	Hopkinton	N	100
1281010	Laconia Water Works	Laconia	Y	6,200
0862010	Lake Ossipee Village	Freedom	N	215
1361010	Lisbon Water Department	Lisbon	Y	420
1481010	Marlborough Water Works	Marlborough	Y	300
1392070	Midridge Condos	Londonderry	N	40
1561010	Milford Water Utilities Department	Milford	Y	3,476
1581010	Milton Water District	Milton	Y	350
0912050	Mount Laurel Estates	Goffstown	N	46
1101050	Mountain Lakes District Water Department	Haverhill	N	320
1741010	Newport Water Works	Newport	Y	1,597
0162050	North Ledge	Bartlett	N	44
1392010	Oakridge Condos	Londonderry	N	100
1841010	Ossipee Water Department	Ossipee	Y	325
2462040	Pillsbury Lake District/Franklin Pierce	Webster	N	62
2462050	Pillsbury Lake District/Peninsula	Webster	N	52
2303010	Pine Grove Mobile Home Park	Swanzey	N	122
1901010	Pittsburg Water Department	Pittsburg	N	79
1971010	Raymond Water Department	Raymond	Y	1,200
1603010	Rolling Acres Mobile Home Park	Mont Vernon	N	40
2011010	Rollinsford Water and Sewer District	Rollinsford	Y	639
0382010	Rosebrook Water	Carroll	Y	408
2041010	Rye Water District	Rye	Y	1,575
1053030	Taylor River Estates	Hampton	N	36
2542070	Villages of Windham	Windham	N	69
0612240	Willow Bend	Derry	N	23
0112030	Wright Farm Condos	Atkinson	N	64