

# The City of Fort Lauderdale Water Leak Detection and Monitoring System





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## 4.2.4 EXECUTIVE SUMMARY

540 Technologies is a Smart Water Management Company formed on April 1st, 2017, as Flownetworkx dba 540 Technologies. We provide smart technology for all aspects of drinking water distribution system management from source to tap. We focus on water leakage mitigation along with reaction to leakage. As stated in the AWWA M36 Manual “The Effect Of Time On Leakage Losses,” pages 96-98, ALR (Awareness) (Location) (Repair) are the three components in the life of a water leak. Each of these three components must be minimized in order to control leakage.

### Our comprehensive product solutions offering specifically addresses:

**0.5% METERING ACCURACY** at all distribution entry points through multi-pair electrode electromagnetic insertion meters. Data output into system SCADA, remote host site, or both. Real-time alarm capability.

**DISTRICT METERED AREA (DMA) CREATION** through multi-pair and single pair electromagnetic insertion meters. DMA input versus customer consumption hourly/daily capable via customer AMI network. Data output into system SCADA, remote host site, or both as well as customer AMI network. Real-time alarm capability.

**ACOUSTIC LEAK LOGGER TECHNOLOGY.** Permanent deployment or lift and shift. Daily acoustic analysis. Android and iOS app-based deployment. All data cloud-hosted. Two-way communication. Customer GIS map integration for remote leak pinpoint via correlation. Comprehensive audio file filtering via audio and visual. User interchangeable logger status modes; Auto/Investigation Ongoing/Investigation Cleared/Customer Side Leak/Confirmed Noise Source. High/Low/Notch/Band Pass filters for local analysis or remote programming based upon site conditions.

**IN-FIELD LEAK PINPOINTING EQUIPMENT.** Real-time correlators w/20 v/G sensitivity across full audio spectrum, delayed time correlating pods for multi-point, unattended correlation. Ground microphones for final leak position verification, 0 – 5,200 Hz with filtering capability, Android/iOS app integration for cloud uploading, reporting, geo-referencing.

**HYDROPHONE LOGGER TECHNOLOGY.** 24/7 real-time monitoring of large mains inside the water column providing acoustic profile simultaneously with pressure. Android and iOS app-based deployment. All data cloud-hosted. Two-way communication. Customer GIS map integration for remote leak pinpoint via correlation. Comprehensive audio file filtering via audio and visual. User interchangeable logger status modes; Auto/Investigation Ongoing/Investigation Cleared/Customer Side Leak/Confirmed Noise Source. High/Low/Notch/Band Pass filters for local analysis or remote programming based upon site conditions.

**PRESSURE LOGGING.** System pressure logging. Real-time alarms based upon user set-points. Android and iOS app-based deployment. All data cloud-hosted. Two-way communication.

**PRESSURE TRANSIENT LOGGING.** One hundred samples per second secondary channel logging. Display pressure spikes at rapid log rate on host site. Used to track and eliminate sources of water hammer. Real-time alarms based upon user set-points. Android and iOS app-based deployment. All data cloud-hosted. Two-way communication.

**PRESSURE MODULATION.** Remote control and modulation of pressure reducing valves to maintain steady, desired downstream critical point pressure.

**REMOTE DATA ACQUISITION.** Data-logging of any existing utility device with an output. Integration to host site with all other devices for analysis and alarms.





- Located at 540 S High Street, Selinsgrove, PA 17870
- A wholly-owned subsidiary of LB Water Service, Inc, better known as LB Water
- Understands the importance of protecting our water supply and preserving our delicate ecosystems
- Best available technologies and best management practices for compliance
- 100% employee-owned; committed to the success of your business because we're committed to the success of ours

The 540 Technologies Corporate Office is located at 540 S High Street in Selinsgrove, PA 17870. Additionally, 540 Technologies has Sales Representatives located in Media, Windber, Chambersburg, Mineral Point, and Millerstown, Pennsylvania, as well as Marriottsville, Maryland; Carmel, Indiana; and Rocky Mount, North Carolina.

540 Technologies is a wholly-owned subsidiary of LB Water Service, Inc. Our friends and associates know us as LB Water. LB Water was formed in 1970 in Selinsgrove, Pennsylvania. LB Water is committed to environmental sustainability. We understand the importance of protecting our water supply and preserving our delicate ecosystems. We work closely with our vendor partners and customers to ensure compliance with federal, state, and local environmental laws and regulations governing construction projects and the management and processing of water, stormwater, and wastewater. Our affiliated company, S3™ Stormwater Solution Source, partners with leading companies in the stormwater industry to provide turnkey solutions to a wide range of stormwater challenges to help control the quantity of – and improve the

quality of – stormwater runoff. Our products, services, and on-site project consulting incorporate the best available technologies and best management practices for compliance with the EPA's National Pollutant Discharge Elimination System (NPDES) and Municipal Separate Storm Sewer Systems (MS4) permitting requirements. We support the use of products made from pre- and post-consumer recycled materials. LB Water works with contractors to implement Leadership in Energy and Environmental Design (LEED®) systems for a wide range of municipal, residential and commercial projects. LEED® promotes a whole-building approach to environmental sustainability by recognizing performance in five key areas of human and environmental health, including:

- Sustainable site development
- Water saving
- Energy efficiency
- Material selection
- Indoor environmental quality

With continued growth, we now operate ten full-service locations: seven in Pennsylvania located in Selinsgrove, Chambersburg, Ebensburg, Ephrata, Pittsburgh, Stoneboro, Ephrata, and Quakertown; two Virginia locations in Richmond and Virginia Beach; and one in Frederick, Maryland. Our vast inventory, typically exceeding \$3 million per location, aligns with our company mantra of "Right Material, Right Place, Right Time." With a combined employee total of 228 Employee Owners, we are adequately staffed to meet our customer's needs. Since 2002, LB Water has been a 100% employee-owned company. That means every LB Water employee receives an equal share in our Employee Stock Ownership Plan (ESOP) and has the same vested interest in the long-term success of our business.

From our CEO driving the company's vision to our team member answering your call, from the product specialist helping you with your order – we're all totally committed to the success of your business, because we're all equally committed to the success of ours.



# GET TO KNOW THE 540 TECHNOLOGIES BOARD OF DIRECTORS



**JAMES APP**  
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Chairman of the Board



**BILL EVERLY, SR.**  
540 Technologies  
Board Member



**MATTHEW MARKUNAS**  
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Board Member



**MARK PULASKI, CPA**  
540 Technologies  
Board Member



**WALT VANNUYS**  
540 Technologies  
Board Member

## CENTRAL BEACH ALLIANCE: WATER SERVICES

### LEGEND

Security Main	Valve	Emergency Overflow Point
Private Security Main	Water	Release
Force Main	Air Release Mainline	Fitting
Private Force Main	Plant	Cleanout
Effluent Line	Manhole	Plug
Air Line	Pump Station	Caking
Emergency Overflow Line	Private Pump Station	Detail
Storage Line	Well	Worked Outlets
Abandoned	Water Treatment Plant	Water Arrows
		Blueprints for Construction



## GET TO KNOW THE 540 TECHNOLOGIES MANAGEMENT TEAM



**SHAWN PULFORD**

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540 Technologies  
CEO



**MIKE  
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**BRIAN SHIRK**

LB Water /  
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**TROY DRESSLER**

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540 Technologies  
Executive Assistant



**JOHN BRUTZ**

540 Technologies  
General Manager

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# GET TO KNOW THE 540 TECHNOLOGIES MANAGEMENT TEAM



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Business Development  
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**JAKE SHADLE**

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**KEVIN TANGER**

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Transportation and Safety  
Manager

# GET TO KNOW YOUR PROJECT MANAGERS



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540 Technologies  
General Manager



**BILL EVERLY**  
LB Water /  
540 Technologies  
Business Development  
Manager



**DAN BAUSINGER**  
540 Technologies  
Technical Support Specialist

## CENTRAL BEACH ALLIANCE: WATER SERVICES

### LEGEND

Gravity Main	Valve	Emergency Overflow Point
Private Gravity Main	Water	Reluctor
Potable Main	Air Release Mainline	Fitting
Private Potable Main	Pipe	Cleanout
Effluent Line	Manhole	Offset
Air Line	Pump Station	Plug
Emergency Overflow Line	Private Pump Station	Casing
Bridge Line	Well	Detail
Abandoned	Water Treatment Plant	Water Control
	Water Arrog	Regulator for Consumption





The proposal we are submitting is to provide continuous acoustic monitoring in the two designated areas of the city as defined by the maps supplied by Fort Lauderdale, specifically Harbor Beach HOA and Central Beach Alliance from NE 9th Street south to Seville Street, including Addendum 1 continuing south to Castillo Street. We intend to do this through the use of the HWM/FCS PermaNet SU acoustic logger and its hosting platform. We shall assist and train field staff in deployment of the devices at the designated locations shown on the attached maps (pages 12-14). Appropriate apps shall be installed on field staff devices. We shall also train field staff on how to relocate devices if so desired. We will train field staff on the use of website and all capabilities. We will provide field installation, daily data interpretation, and leak location(s) reported to Fort Lauderdale for the life of this contract. Fort Lauderdale staff will still have full access to the website and training and can use it in concert with the subcontractor if desired. Our intent is to allow field staff to focus on leak repair while also allowing Fort Lauderdale to consider and evaluate whether in-house monitoring or outsourcing will work best for their future plans.

## WHAT 540 TECHNOLOGIES CAN DO FOR YOU

- Provide continuous acoustic monitoring in the two designated areas of the city
- Use of the HWM/FCS PermaNet SU acoustic logger and its hosting platform
- Assist and train field staff in the deployment of the devices at the designated locations
- Appropriate apps installed on field staff devices
- Train field staff on how to relocate devices
- Field installation, daily data interpretation, and leak location(s) reported to Fort Lauderdale for the life of this contract
- Allow field staff to focus on leak repair while also allowing Fort Lauderdale to consider and evaluate whether in-house monitoring or outsourcing will work best for their future plans.

## 4.2.3 EXPERIENCE AND QUALIFICATIONS

LB Water became the exclusive HWM/FCS distributor in the Mid-Atlantic region of the United States in September of 2010. From 2010 until the invention of the PermaNet SU, we worked with and supplied many cities, towns, boroughs, and private water utilities with its forerunner, the Permalog+.

Upon the invention of the PermaNet+ in May of 2015 (first generation of cellular logger before the PermaNet SU), American Water invited us to pilot this technology head-to-head versus Metrotech (which is now SebaKMT), Gutermann, and Echologics in Pittsburgh, Pennsylvania. During the 6-month trial, all aspects of the technologies were tested and compared. Such tests consisted of cellular reliability, freeze/thaw, drop tests, simulated and real leak conditions, and saltwater baths, among many others. At the conclusion, the HWM/FCS system distributed and supported by LB Water was chosen as the superior system.

We began project implementation in March of 2016. Each year to date, they have continued to add additional loggers throughout their facilities in Pennsylvania. To date, the logger program has identified 1,998 verified leaks that were dug and repaired, resulting in a flow reduction of 15,723,395 MGD of treated and distributed water saved.

Shown is a breakdown of logger totals in the corresponding water service areas.

### LOGGER TOTALS IN THE CORRESPONDING WATER SERVICE AREAS

DISTRICT	TOTAL LOGGERS
Abington District (Abington)	269
Bangor District (Bangor District)	85
Berwick District (Berwick District)	300
Brownsville District (Brownsville)	125
Butler District (Butler District)	372
Carnegie DMA (Carnegie, PA)	30
Coatesville District (Coatesville District)	296
Coatesville Lift & Shift DMA (Lift & Shift DMA)	1
Connellsville/Uniontown Districts (Connellsville/Uniontown Districts)	371
Hershey District (Hershey District)	834
Homestead DMA (Homestead DMA Zone)	45
Indiana District (Indiana District)	239
Lehman Pike District (Lehman Pike District)	171
McMurray District (McMurray District)	288
McMurray NW (McMurray NW)	174
McMurray SE (McMurray SE)	5
Mechanicsburg District (Mechanicsburg District)	1,106
Missing Verizon Loggers	4
Mon Valley District (Mon Valley District)	142
New Castle District (New Castle District)	1,288
Norristown District (Norristown District)	1,136
Phillipsburg District (Phillipsburg District)	355
Pittsburgh District (Pittsburgh District)	1,342
Pittsburgh Lift & Shift (Lift and Shift Loggers)	20
Pocono District (Pocono District)	242
Punxsutawney District (Punxsutawney District)	232
Royersford Prod (Spring City)	4
Steelton Installed (Steelton)	86
Susquehanna District (Susquehanna District)	137
Uniontown District (Uniontown District)	23
Warren District (Warren District)	158
Wyomissing District (Wyomissing District)	372
<b>TOTAL</b>	<b>10,258</b>



Throughout this journey, we have cooperatively worked with American Water and HWM to bring new innovations and improvements and will continue to do so. We have and continue to work with their staff on all phases of the project(s) on items such as:

- Order accuracy
- Delivery dates and locations
- Installation coordination (the districts vary by preference)
- Training staff and American Water personnel on installs
  - 540 installs
  - FCS team installs
  - 540 partner installs
- Complete, comprehensive SU system training at District level
- Ongoing support by 540 Technologies, LB Water, FCS, and/or HWM, as needed
- Custom leak detection training classes developed and delivered, as needed
- Logger maintenance contracts

In addition to Pennsylvania American Water, we continue to bring on new water utilities regularly. Below is a listing of our customers currently utilizing the PermaNet+ and or PermaNet SU system:

- Annapolis
- Aqua Pennsylvania, Inc.
- Aquarion Water Company of Connecticut
- Bellefonte Borough
- Big Flats Water Department
- Champaign District
- City Of Asheville
- City of St. Pete
- College Township Water Authority
- Hazleton City Authority
- Illinois American Water
- Kentucky American Water
- Mansfield Municipal Authority
- Miami Dade Water & Sewer Auth
- Milesburg Borough Water System
- Municipal Authority City of Sunbury
- Municipal Authority of Westmoreland County
- North Penn Water Authority
- North Wales Water Authority
- Northampton Borough Mun. Auth.
- Orwigsburg Borough
- Pittsburgh Water & Sewer Authority
- Sterung District
- Streator District
- Suez-Water Owego-Nichols
- Suez-Water Rhode Island
- Suez-Water New York
- Suez-Water Nyack
- The Municipal Authority of The Borough of Oakmont
- Town Of Manchester
- Town Of Westpoint
- Township Of Franklin
- Upper Leacock Township
- West Union Water Department
- Wilkinsburg-Penn Jt. Mun Auth.



## 4.2.4 APPROACH TO SCOPE OF WORK

In the United States, an estimated **6 billion gallons** of treated and pumped water is lost in our drinking water systems daily. To put this in perspective, there are 1 million seconds in 11.57 days. There are 1 billion seconds in 31.7 years. New York City produces and uses slightly upward of 1 billion gallons per day. Various agencies are reporting the average loss is 16 – 24% per utility. Water is essential for:

- Sanitation
- Protection from the spread of disease and infection
- Fire suppression
- Crop irrigation
- Food processing
- Manufacturing
- Cooling for energy production
- Economic development
- Quality of life

But, just three percent of the Earth's water supply is freshwater – and most of that is ice in the form of glaciers. Groundwater, contained in shallow portions of aquifers, accounts for approximately 30 percent of our usable, freshwater. And, in some areas – such as Florida, where aquifers supply more than 90 percent of the state's freshwater – these priceless underground resources provide a much larger percentage of a region's freshwater. Aquifers recharge when new, surface water enters them through precipitation, snowmelt, and streamflow. But freshwater levels in many aquifers are declining. That's because the amount of water being pumped is exceeding the aquifers' abilities to recharge.

Why?

- Population growth
- Agricultural needs
- Increases in industry and development





If water utilities aren't detecting and repairing the leaks in their underground distribution systems, and if they aren't successfully regulating their system's water pressure, they're pumping more water than needed from rivers, streams, and aquifers. This excessive pumping of surface and groundwater is gradually lowering the water table in many areas, slowly reducing the Earth's supply of usable water. A 2015 analysis by USA Today and The Desert Sun of the nation's groundwater using U.S. Geological Survey data for more than 32,000 wells over a period of two decades showed that:

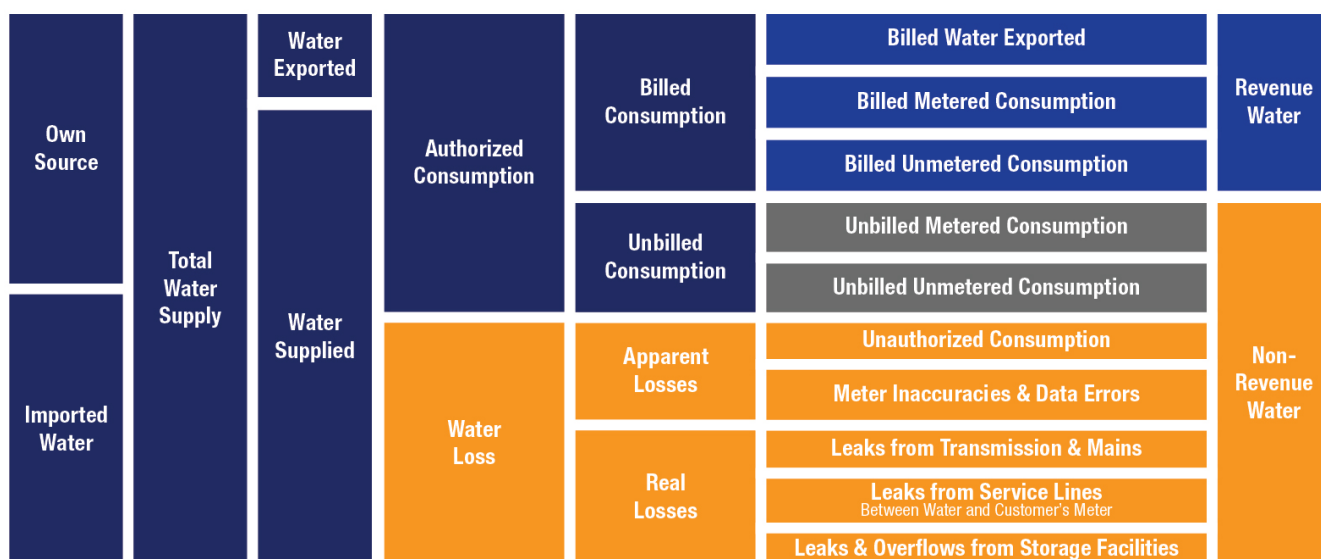
- Nationwide, water levels have declined in 64 percent of the wells listed in the database.
- Water tables have been falling consistently over the years, even in wet states like Florida and Maryland.
- The average decline has been more than 10 feet.
- In some areas, including areas in Maryland, the water table has dropped more than 100 feet.
- Even in parts of the Northeast, where rainfall and snowmelt have helped to offset pumping from aquifers, there have been "significant" declines.
- In Cumberland County, New Jersey, average water levels have decreased nearly six feet.
- Urban areas such as Long Island, New York, also have experienced long-term declines in their groundwater levels.

We believe that Fort Lauderdale is aware of this and would like to begin a comprehensive water loss management program. A program like this consists of many components as defined in the AWWA M36 Water Audit methodology.

## **AS THE LEVEL OF WATER IN AN AQUIFER DECREASES, THE AQUIFER BECOMES MORE VULNERABLE TO CONTAMINATION FROM**

- Salt water (especially in coastal areas)
- Biological waste (manure and septic tank discharge)
- Industrial chemicals (pesticides and petroleum products)
- According to the analysis by USA Today and The Desert Sun, saltwater has been infiltrating declining aquifers in Florida, in coastal cities such as Jacksonville, Miami and Tampa.

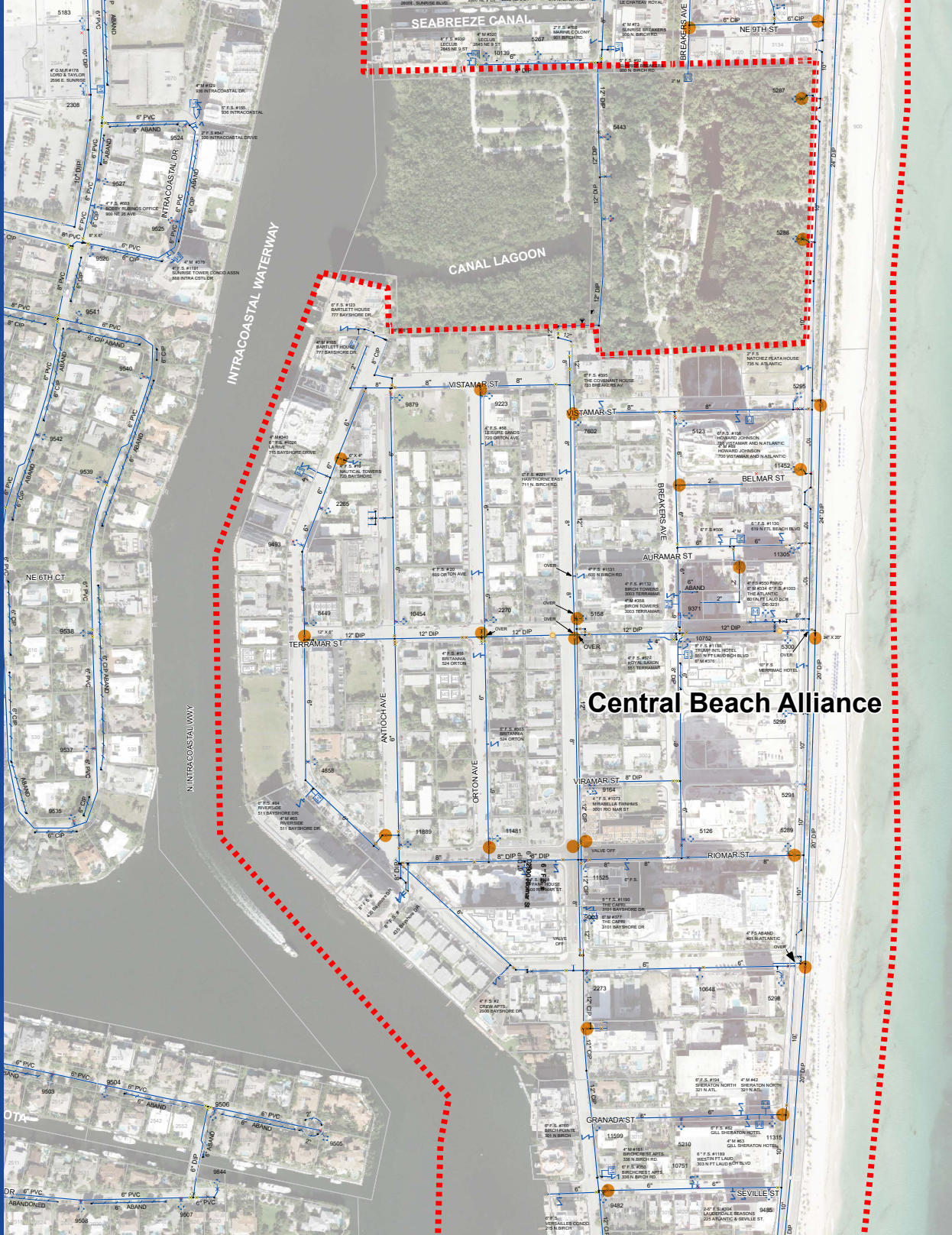
And, once an aquifer is compromised, it's very difficult to restore it. Water authorities may then be faced with digging new wells or investing in desalination technology.




## AWWA M36 WATER AUDIT METHODOLOGY

540 Technologies is positioned to help Fort Lauderdale both now and going forward. This RFP focuses on Real Losses, particularly Leaks from Transmission and Mains and Leaks from Service Lines. We will demonstrate how the PermaNet SU system can be implemented on this small scale to address this Real Loss box of the audit. It will illustrate how ALR could then be controlled system wide. We are hopeful to work with Fort Lauderdale in the future on other RFP's that address the other boxes above for complete system management and water loss reduction and control. However, regarding this specific RFP and the task at hand, the maps on pages 12-14 illustrate the proposed placement of each PermaNet SU.





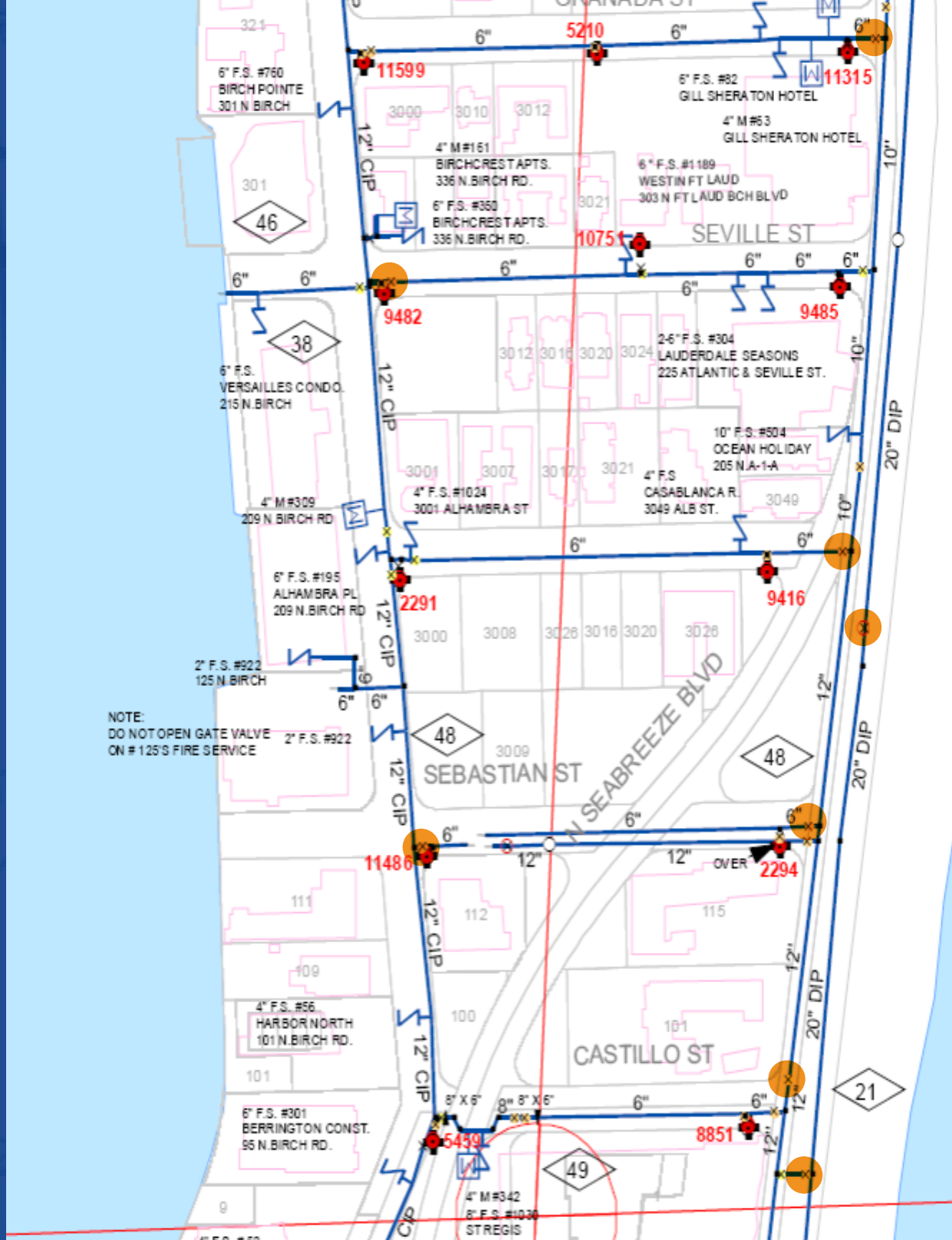
## KEY


 Logger Location  
 25 loggers

## LOGGER LOCATIONS: CENTRAL BEACH ALLIANCE

NE 9TH STREET SOUTH TO SEVILLE STREET  
25 loggers





## KEY

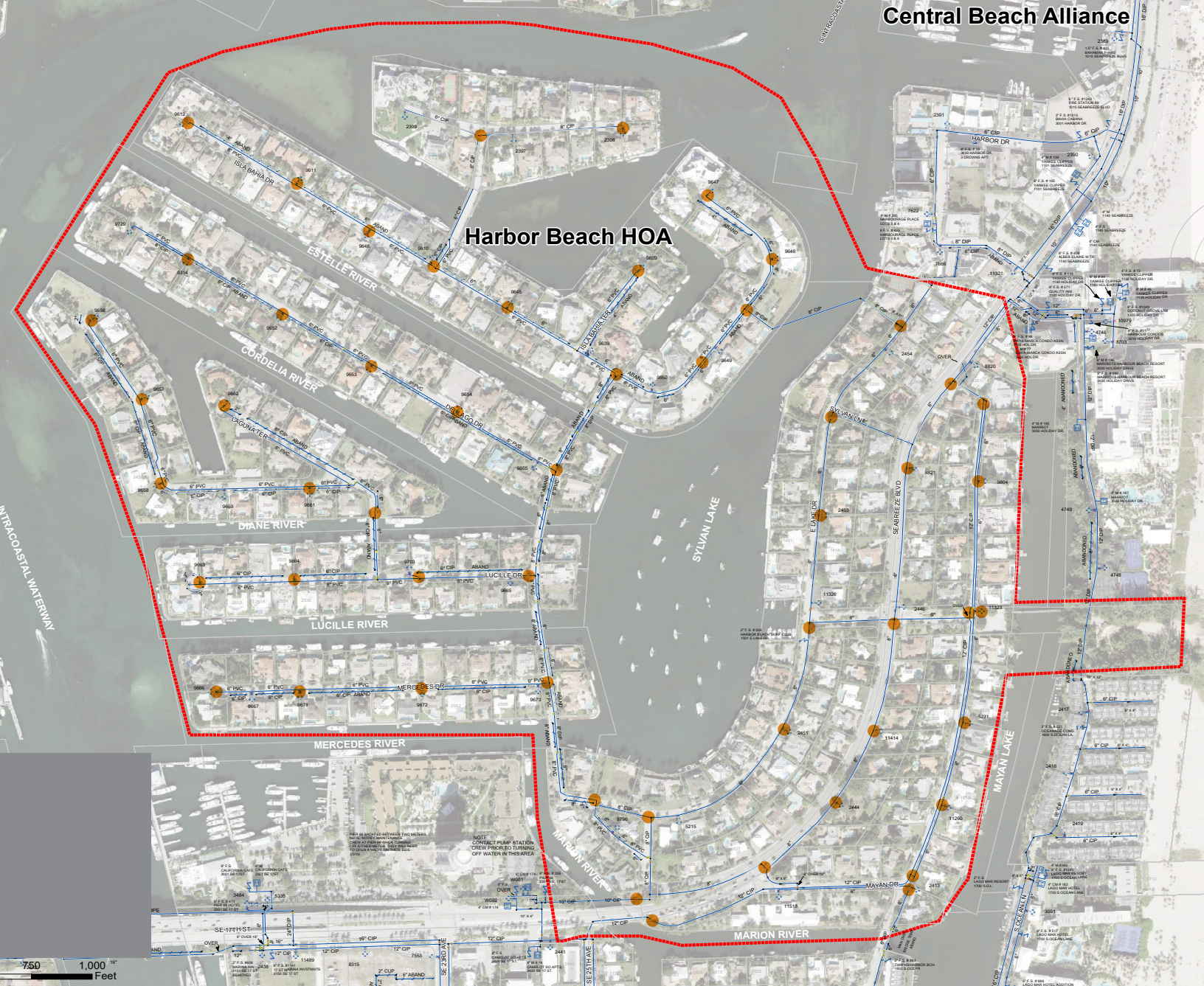
- Logger Location

## LOGGER LOCATIONS: ADDENDUM 1

GRANADA STREET TO CASTILLO STREET

8 loggers





**KEY**

● Logger Location

## LOGGER LOCATIONS: HARBOR BEACH HOA

55 loggers



## GET TO KNOW PERMANET SU

- Capable of detecting leaks daily and recording multiple audio files on command or automatically
- Features an integral Piezo Accelerometer Sensor
- Monitors its own deployment orientation daily and alarms if the deployment orientation has been altered
- GIS maps can be imported to fully automate the process with the system automatically importing required data
- Uses the patented, proven, industry standard noise level and spread algorithm
- Useful in low noise (plastic) networks
- Sound recording is made when a leak is identified, enabling confirmation through audio monitoring, frequency analysis, and noise histogram
- The sound file is also used for the autocorrelation process

The PermaNet SU loggers are capable of detecting leaks daily and recording multiple audio files on command or automatically on detection of a potential leak. The unit features an integral Piezo Accelerometer Sensor which connects to available fittings and detects acoustic noise traveling through the pipe. The ultra-sensitive sensor output is logged internally and the noise signature processed through HWM's unique leak identification algorithm to report Leak/No Leak status alongside noise level /spread and frequency content. In addition to the standard algorithm, plastic or site-specific trigger settings can be set. All modes described can be set remotely through our Datagate/PermaNet Web platform without the need to visit the site to change these settings. The PermaNet SU monitors its own deployment orientation, reporting this back to Datagate daily to report and alarm if the deployment orientation has been altered. Remote correlations can be requested or the fleet can be set to 'auto-correlate' on detection of leaks. PermaNet Web displays and ranks the correlations with a confidence factor. GIS maps can be imported to fully automate this process with the system automatically importing required data. Background noise is eliminated in the initial leak determination through the algorithm which identifies consistent leak noise from interfering transient noise. The correlation process inherently eliminates much transient noise interference, in addition filters are applied and can be manually adjusted with the benefit of frequency and coherence displays. The SU logger uses the patented, proven, industry

standard noise level and spread algorithm, which identifies if the logger can hear a leak with a simple user indication of L for Leak or N for No Leak. The algorithm's success is based not only on the ability to identify noise level but consistency of noise through sample periods, as a clear identifier of a leak's presence. In addition, based on historical site acoustic data, loggers can have their location algorithm altered to lower or higher threshold levels for more precise leak alarming. The system can also show loggers with a % increase on leak intensity away from the normal base level recording, for alerting rather than waiting for the algorithm to trigger the alarm. This feature is particularly useful in low noise (plastic) networks where deviation from a 'usual low noise' state identifies the leak before any simple threshold-based systems. In addition to the initial leak identification a sound recording is made when a leak is identified which enables further confirmation through audio monitoring, frequency analysis and the histogram of noise through time. Operators may have individual preference but all are proven secondary verification activities. The sound file is also used for the autocorrelation process. This function undertakes correlation between adjacent loggers, and these are ranked by confidence factor with the % of the quality of the leak found, typically from 90-100%.





In addition to the HWM PermaNet facilities as detailed, HWM can cooperate with third parties who provide additional information. HWM provides a dedicated API from our systems to facilitate this and are working to integrate systems where end users wish to do so. Our main methods of integration with third party systems are:

1. Customer pulls data via our own API (documentation available upon request).
2. File exports (eg .csv/.sli) which are then delivered via a secure transfer mechanism such as SFTP/FTPS. Other delivery options can be explored. We will continue to develop interfaces as required by our customers.

Should Fort Lauderdale feel that any features are missing that may be found to be useful, HWM will work with you to implement this where possible. We have done this ongoing with customers and will continue to do so.

### **Battery Technology.**

As referenced above, all units include a battery pack incorporating secondary SPC cells to improve battery life and more efficiently manage modem power. HWM has a specific technology group charged with monitoring battery developments (as we do for telemetry communication developments). We have tested numerous potential alternatives to lithium thionyl chloride cells. As yet we have not established a viable alternative for the application given power, life, environmental and safety requirements. We continue to monitor any progress in available technology.

### **Communication.**

The telecommunications landscape is fast evolving with NBIoT and LTE CATM1 providing increasing coverage in the UK and world-wide. All units are now supplied with modems capable of NBIoT/LTE and 2g fall back. HWM continues to work with modem suppliers and telcos to maximize the benefit from the latest technologies. HWM has well over 10,000 units successfully deployed in the US with fleet performance indicating clear benefits from NBIoT/LTE CAT M1. In addition, HWM closely monitors additional developments such as Sigfox, Lora and NBIoT.

## SU INNOVATIONS ALREADY IMPLEMENTED

- Integrated sensor and electronics in single unit
- Bluetooth programming
- Auto Switch-On with magnet swipe and/or connection
- Hydrophone integration
- Deployment App
- Tilt detection
- High-Accuracy Time synchronization
- SPC Battery Pack
- Enhanced correlation accuracy
- Auto-Correlation
- GIS imports
- Leak ranking
- 3rd party integration for leak sizing

## Planned developments in the next 3 years:

Further developments are ongoing and are scheduled every 3 months. Items on the current, development roadmap include; Automatic import of customer GIS data so that PermaNet Web keeps up to date with (for example DMA boundary changes), automatic leak sound recognition based on artificial intelligence (identifying interfering noise sources such as mains hum), automatic identification and reporting of locations that show step changes in noise level, integration of flow and pressure data, Auto validation based on GIS asset data, reporting system integration, and a learning mode to target difficult to find leakage in quiet (plastic) zones.

Many of the above are associated with the completely new Datagate 3 data delivery and viewing platform, incorporating PermaNet Web. This will upgrade all platforms and incorporate state of the art hosting (Azure), language and Database construction to maximize efficiency, reliability and ease of use.



# PermaNET SU

## Correlating Telemetry Noise Logger



PermaNet SU is HWM's next generation telemetry leak noise logger. It combines leak noise sensor processing and telemetry in to a single compact unit.

PermaNet S U works in conjunction with PermaNET web software to provide map based display, GIS interface and full audio and correlation facilities.

### Key Features and Benefits

- **Single compact unit:** combines leak noise sensor and telemetry into a single compact unit
- **Dedicated deployment app:** For fast and accurate site installation
- **Compatible with Bluetooth:** Programming via Bluetooth link to dedicated app or software
- **User friendly:** Ease of use and installation for mass, effective deployment
- **PermaNET web software provides:**
  - Correlation
  - Map View
  - Aualog
  - GIS Interface
- **Cost effective:** For mass deployment projects
- **External antennas:** To improve signal strength
- **Latest technology:** Designed with latest mobile technology to maximize dial in and minimize cost
- **Flexible:** 3G options available



### Applications

Once installed, leak data calculated using the proven Permalog algorithm, and secondary data, is transmitted via low cost GPRS, 3G, or SMS telemetry. This removes the requirement for expensive site visits and "drive by" data retrieval.

PermaNet SU allows leakage teams to monitor the status of each logger deployed from map based host software any internet enabled device.

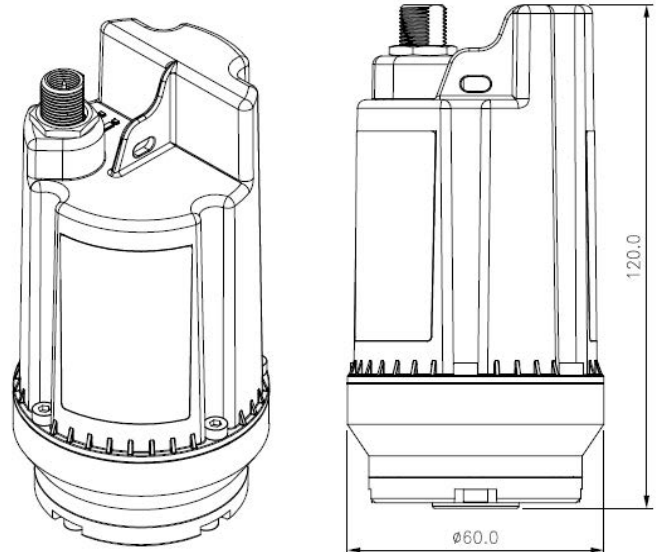
Once the presence of a leak has been identified, secondary measures can be used to check and remove 'false positives' and also to localize the leak position.



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<b>Operating temperature</b>	Logger: -20 to +60°C ( -5 to +140°F) Leak Noise Sensor: -20 to +60°C (-5 to +140°F)
<b>Memory</b>	Primary recording 1 million readings
<b>Dimensions</b>	H = 120mm, W = 60mm, D = 60mm
<b>Weight</b>	Logger = 700g
<b>Ingress protection</b>	IP68 submersible
<b>Clock</b>	On board 24 hour real time clock with date facility. Automated synchronization for correlation.
<b>Antenna</b>	Fixed or multiple external options
<b>Battery Life</b>	Typical 5 years



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# PermaNET Web

## Secure Data Viewing Portal



PermaNET Web is a digital platform created to gather, collate and easily display the leak noise data collected by PermaNET and PCorr+ devices.

Available on any internet-enabled device, PermaNET Web is an easy to use, secure platform with multiple functions that support leak noise interpretation.



### Key Features and Benefits

- Two-way communication: local and remote parameter settings
- Auto processing: interference and external noise filtering
- Dynamic DMA management: full DMA views available
- GIS pipe network: overlay GIS data with Google Maps to provide dynamic location information
- Data security: multiple security features including firewall, individual logins and locational access
- Functionality: can be used to set system and threshold alarms, as well as monitoring signal and battery levels
- Alarm profiles: alarms available via e-mail
- Compatible: supported by most major internet browsers and compatible with PermaNET and PCorr+ devices
- Noise filtering: auto-processing for equalization and frequency correlation display and coherence
- Audio data recording: audio data is sent to the server if a leak is present
- Reassuringly secure: HWM awarded ISO 27001 accreditation for data security
- Stores historic data: ability to compare current data with historic data
- Variable sampling: device sampling times can be changed remotely through PermaNET Web



540 South High Street | PO Box 30  
Selinsgrove, PA 17870

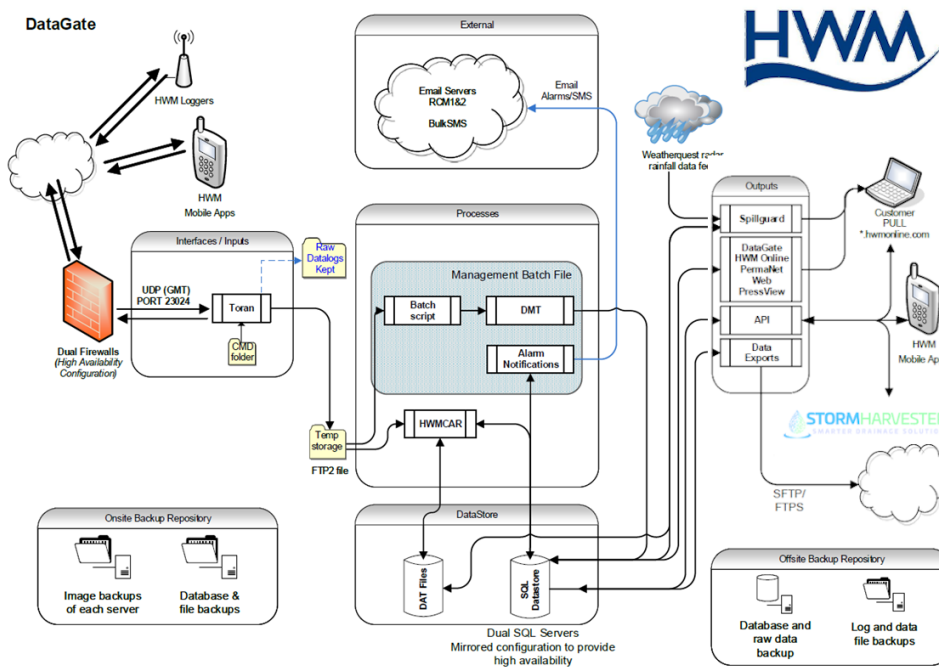
**570-372-8857**  
sales@540Technologies.com

## Overview

HWM provide Datagate fleet management and various visualisation software packages.

## Datagate

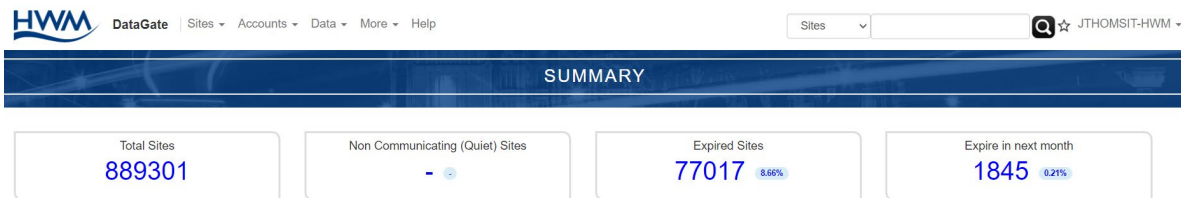
Logger data is accessed through HWM's web portal DataGate. The DataGate background Database holds all logger and site details including an asset database with site references, photographs, comments, and key information for each location. Data can be accessed and viewed in from any internet enabled device. Transfer of data can be setup directly from DataGate to customer systems. The architectural diagram is below:





## Specific Application Portals

In addition to the Datagate Administrative Portal:



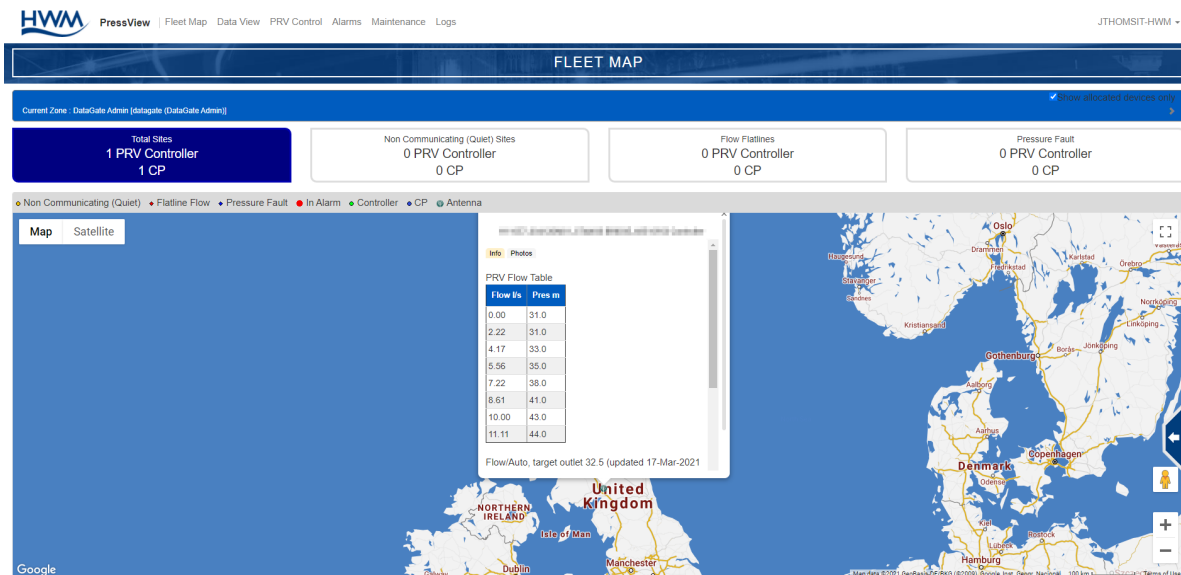
HWM has developed a number of application specific portals that sit on top of the Datagate data service. These allow for application specific features to be built into the data visualization platform.

These Application Portals include:

### PermaNetWeb



## PressView



## HWMOnline



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sales@540Technologies.com





DataGate Web has been designed for user friendly interaction allowing for easy access to data in a highly functional viewing facility.

DataGate allows easy viewing, interrogation, and action even from deployed fleets of many thousands of units. The dashboard and map view give an overview and for mass deployments groups loggers into DMA's for ease of overview, and drill down to DMA level giving the following functionality:

- Map view
- Overlay of several graphs for the same location to establish result consistency.
- Remote programming of logger
- Automated noise recording of loggers triggered into Leak state
- Full Database of the deployment - ability to add and edit comments over time.
- Fleet reports to assist maintenance of large fleets, to run exception.
- Ability to record the history of the location
- Multiple export facilities to download to report and interface with GIS and other 3rd party software.

Fleet reports are automatically generated on a daily basis for all of the above problem areas / DMA's quickly. These reports can also be automatically exported to works management systems, to interface with established work practices. In addition, work packs can be printed off the system to enable further investigation purposes.

In addition, the Database has full site information to ensure the teams are fully aware of site details and as effective as possible when arriving at site. Logger Functionality Overview document attached.

### **Server Hosting Details**

HWM uses a well-known and highly respected UK based cloud service provider, Rackspace <http://www.rackspace.co.uk> Rackspace is a Microsoft Gold Certified partner with a large number of high-profile clients including the Ministry of Defence, Department for Transport, Transport for London, NHS Direct, Vodafone, Renault, Mazda and the Royal Navy.

Key card protocols, biometric scanning protocols, and around-the-clock interior and exterior surveillance Access is limited to authorized data centre personnel; no one else can enter the production area without prior clearance and appropriate escort. Every datacentre employee undergoes multiple and thorough background security checks before hire. In their team they have; 1000+ AWS Technical Certifications, 1,000+ Microsoft Technical Certifications, 150+ VMware Certifications including 83+ VCPs, VCAPs and vExperts, 1 Billion OpenStack



Managed Server Hours with 99.99% API Uptime, 3,000+ Dedicated Hosting Engineers across Linux, Windows, and VMware, 800+ Cisco Certifications, including 400+ CCNAs, and 85+ CCNPs and 15+ CCIEs, 160+ Red Hat Certifications including RHCEs, RHCSAs and RHCAs and 80+ F5 Certifications Including CA and CTS

**Data Ownership**

Data remains the property of the customer.

**Data Storage**

Data is currently stored and archived within our Datagate servers for an unlimited period. We would seek to agree an appropriate Data Storage period with end customers. Historic Data can be retrieved through the Portals provided. Agreed archived data will be provided to customers on request.

**Accessibility**

Data access levels are password coded and protected. HWM will work with Customers to ensure that personnel are provided with appropriate authorised access levels. There is full traceability on password usage.

## Data Security

HWM is committed to maintaining the highest operational standards in systems and processes to protect personal and device data. HWM-Water takes an in-depth approach to protecting its systems and user's data at all times. Multiple layers of security controls protect access to user and device data, as described below.

DataGate - HWM's web hosted data server that provides a comprehensive and secure remote data handling solution. Designed to handle large volumes of SMS/GPRS traffic from commercial data loggers, the system enables rapid transmission of data by sending it in a file format which is converted to secure data stream. This eliminates the problem of ending the data as an email which can be blocked by IT firewalls and SPAM filters. There is also no longer a requirement for a host modem (another traditional weak point of a remote handling system) as all data transfer now takes place via the internet. DataGate is developed with security in mind and transmits data over HTTPS only, ensuring that customer data remains secure whilst being viewed. Data collections and/or deliveries pulled/send via the secure API, SFTP over SSH or FTPS over TLS.

Each user on the DataGate platform is assigned user credentials (username and password).

Administrators can also assign different levels of user rights, adding an extra level of security, only allowing access to authorised users.

All of our data logging devices have a unique serial, SMS number and site identification and use our own proprietary data protocols. These protocols feature data compression, proprietary encryption and integrity checking data (hashing) in order to provide minimal data use, optimal battery life and enhanced security. Depending on the SIM's used, private APN's could be used for additional security by ensuring the data is not sent on the open internet. All of our servers also have encryption at rest enabled. Our servers are hosted by Rackspace, who are ISO27001 accredited, PCI DSS certified, FedRAMP authorised and FISMA compliant.

<https://www.rackspace.com/compliance> for a full list of Rackspace's Compliance Certificates and Security Standards.

HWM are ISO27001 accredited.

All HWM staff undertake monthly third-party security awareness training with Terranova Security

(<https://terrnovasecurity.com>) covering all aspects of cyber and information security. Staff are then tested on each aspect prior to completing the training.

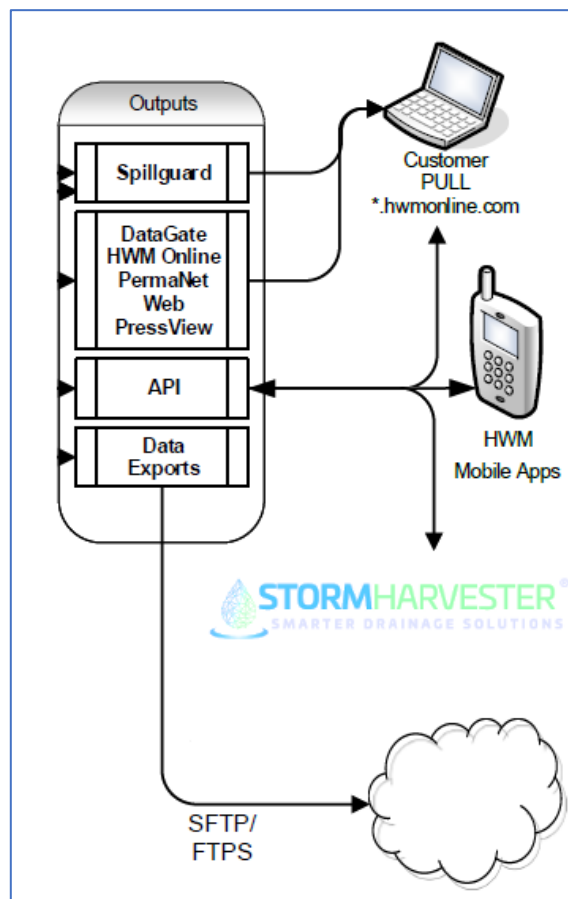


## Interfacing and Integration with 3<sup>rd</sup> Part Systems

HWM already exports to STW via SOAP ODS post and has established exports with many other Water Utilities Companies in the UK and around the world. DataGate, for which we own the source code, allows HWM to be versatile when it comes to supplying customers with data exports.

Datagate supports a number of APIs including the Logger API, which using industry standard XML format and REST options. In addition to these APIs, there are highly flexible, fully configurable \*.csv / \*.sli exports that are able to be delivered via a secure transfer mechanism such as SFTP/FTPS or by email. Other bespoke delivery options can be explored.

DataGate is designed for flexibility of transfer to 3<sup>rd</sup> party systems. This gives the ability to operate multiple viewing platforms. HWM currently exports into more than 50 different third-party systems, in addition to our own dedicated graphing and analytical systems, examples include, but are not limited to:



Netbase, OSD, OSI Pi, Waternet, eSight, WaterLine, WaterSmart, Servelec, Scheider, Zeco Energy, Stark, Honeywell, Scada, Topkapi, IEMS, Utilities Manager, GIS. Topkapi, insight

Some specific company exports are:

- |                      |                                 |
|----------------------|---------------------------------|
| – Yorkshire Water    | – OSI Pi, Netbase               |
| – United Utilities   | – Netbase                       |
| – Severn Trent Water | –SOAP Post to ODS, Netbase pull |
| – Affinity           | – Waternet                      |
| – Stark              | – eSight                        |
| – WaterScan          | – WaterLine/WaterSmart          |

**IT Uptime and System Resilience**

HWM utilizes Rackspace's secure London data centre, which comes with redundant power and network connectivity.

We also operate dual firewalls, dual load balancers, dual database servers, all of which are configured to operate in high availability, and our Rackspace SLA includes a 1-hour hardware replacement guarantee, should new hardware be required.

Software upgrades and patching is done out of hours, with notice being provided on the login screens, in advance of the upgrades/maintenance work. The minimum notice given, will be 1 week.

The data and interface are automatically monitored, and we confirm excess of 99.7% availability. Where problems arise, a resolution will be prioritised, and unscheduled outage will be limited to less than 3 hours per month.

The system is supported by a 24-Hour response line manned on a rotational basis by HWM personnel technically competent to provide immediate response. This is managed by HWM Data Delivery Manager Richard Wallace who will be the main point of contact for any IT related issues. He has fulfilled this role for a number of years, and his teams supports STW currently with data input from 20,000+ units and transfers into STW system for operational and statutory data reporting and alarms. Rackspace, who provide 24-hour support seven days a week.

**HWM Contact**

Richard Wallace - Data Delivery Manager

01633489479

[rwallace@hwm-water.com](mailto:rwallace@hwm-water.com)



**ISO 27001**

HWM hold cyber essentials accreditation and ISO27001. The ISO27001 standard helps organizations keep information assets secure.

Using this standard, we aim to manage the security of assets such as financial information, intellectual property, employee details and/or information entrusted to us by third parties. ISO/IEC 27001 is the best-known standard providing requirements for an information security management system (ISMS).

An ISMS is a systematic approach to managing sensitive company information so that it remains secure. It includes people, processes, and IT systems by applying a risk management process to keep information assets secure.

The success of the product has been previously noted and quantified in this document relative to Pennsylvania American Water Company results. Ongoing monitoring and interpretation of the data for this RFP will be conducted by Sleuth Inc. with Fort Lauderdale staff available to monitor simultaneously if desired. Going forward all installation, monitoring, maintenance, and pinpointing can be offered through Sleuth Inc. as well.

Upon successful award of the bid to 540 Technologies project implementation can begin immediately. All of the proposed materials are stocked by 540 Technologies. We would propose a Zoom meeting immediately after award between Fort Lauderdale, Sleuth Inc., HWM/FCS, and 540 Technologies to agree upon dates for:

- Valve box preparation
- Field installation and field training
- GIS map uploading
- Website training
- Leak report frequency and content



## 4.2.5 REFERENCES

### PENNSYLVANIA AMERICAN WATER COMPANY

852 Wesley Drive  
Mechanicsburg, PA 17055

**David Annarumo**

**412.965.3382**

[David.Annarumo@amwater.com](mailto:David.Annarumo@amwater.com)

- Project is ongoing. They add to fleet every year.
- Yearly cost varies based upon annual budget funds.

### MIAMI-DADE WATER AND SEWER DEPARTMENT

7301 NW 70th St  
Miami, FL 33166

**Hector Marcos**

**305.726.9566**

[Hector.Marcos@miamidade.gov](mailto:Hector.Marcos@miamidade.gov)

- Project is ongoing. They add to fleet every year.
- Yearly cost varies based upon annual budget funds.

### OAKMONT WATER AUTHORITY

721 Allegheny Ave  
Oakmont, PA 15139

**Steve Dapra**

**412.327.0097**

[smd@oakmontwater.com](mailto:smd@oakmontwater.com)

- Project is ongoing. They add to fleet every year.
- Yearly cost varies based upon annual budget funds.

# 4.2.7 SUBVENDORS

540 Technologies intends to employ the services of Sleuth Inc. for the life of this RFP for daily monitoring services. Founded in 1982 by Robert L. Bergs (who stills owns the company) Sleuth Inc. (DBA “Sleuth Leak Detection”) has been in business for 40 years building an outstanding reputation and a name that is synonymous with leak detection. As Florida’s first independent underground leak detection company with a main office centrally located in Bradenton, they have located more than 200,000 leaks across the state of Florida.

They utilize today’s most advanced and innovative leak detection technology, combining proprietary equipment developed and manufactured in-house for their exclusive use with the finest specialized commercial hardware available in the world.

The expertise of their technicians is unsurpassed in the industry, with skills developed through years of field experience following a three-year apprenticeship program. Their 200+ years of combined experience is key to their unmatched accuracy, service, and customer satisfaction. Each technician has a region that they cover throughout the state. Additionally, they have 19 fully trained technicians that can remotely and accurately identify leaks through recorded data from 3rd party hardware & software. Local technician, Bobby Johnston in the Ft. Lauderdale area and their remote offices throughout the state will be servicing this account. Additionally, their field manager, Jay Blizzard (who has been with Sleuth for over 25 years), located in the Tampa Bay area will have active involvement in the daily oversight of the monitoring service. Regarding their monitoring services, they are constantly striving toward the greater goal of water conservation across the state and are actively deploying leak detection devices to monitor water usage on residential, agricultural, commercial, and industrial properties (additionally, hundreds of plumbers rely on Sleuth Inc. to provide reliable, accurate leak detection to throughout Florida for all property types.)

<b>Company:</b>	Sleuth Inc. dba Sleuth Leak Detection
<b>Company address:</b>	3988 Manatee Ave E, Bradenton, FL 34208
<b>Phone number:</b>	1-800-329-5325
<b>Fax number:</b>	1-941-750-8296
<b>Email address:</b>	info@sleuthleakdetection.com
<b>Website:</b>	https://www.sleuthleakdetection.com
<b>Contact person(s):</b>	Colby Siljestrom – C: 941-266-1513 Doug Arnaudin – C: 727-330-4895 (doug@sleuthleakdetection.com)
<b>Relative size:</b>	27 Employees

## EXPERIENCE AND QUALIFICATIONS

Sleuth has offered potable/non-potable leak detection, surveys, and water consumption analysis since 1982. As Florida’s first leak detection company, they have worked on a wide range of property types with various property owners, property management companies, and city municipalities. They continue to strive to be at the forefront of leak detection technology, using the newest and most advanced leak detection techniques and equipment.

**BID/PROPOSAL CERTIFICATION**

**Please Note:** It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through [www.BidSync.com](http://www.BidSync.com) prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration) [FlowNetworx, Inc. dba 540 Technologies](#) EIN (Optional): [81-5369313](#)

Address: [540 S. High Street. PO Box 60](#)

City: [Selinsgrove](#) State: [PA](#) Zip: [17870](#)

Telephone No.: [570-372-8857](#) FAX No.: [570-372-8857](#) Email: [sales@540technologies.com](mailto:sales@540technologies.com)

Delivery: Calendar days after receipt of Purchase Order (section 1.02 of General Conditions): [30 DAYS](#)

Total Bid Discount (section 1.05 of General Conditions): [\\$0.00](#)

Check box if your firm qualifies for MBE / SBE / WBE (section 1.09 of General Conditions): ☐

**ADDENDUM ACKNOWLEDGEMENT** - Proposer acknowledges that the following addenda have been received and are included in the proposal:

<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>
<a href="#">#1</a>	<a href="#">01-28-2022</a>				

**VARIANCES:** If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. **You must also click the "Take Exception" button.**

N/A

//

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal.

I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages,



expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Michael E. Schaeffer

Name (printed)

*Michael E. Schaeffer CFO*

Signature

2-18-2022

Date

CFO

Title

Revised 4/28/2020

**SECTION VI - COST PROPOSAL PAGE**

**Proposer Name:** Flownetworkx dba 540 Technologies

Proposer agrees to supply the products and services at the prices bid/proposed below in accordance with the terms, conditions and specifications contained in this RFP.

Cost to the City: Vendor shall quote firm, fixed, costs for all services/products identified in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

**Notes:**

Attach a breakdown of costs including but not limited to labor, equipment, materials, parts, software licensing fees, and recurring monthly communication charges.

1) LEAK MONITORING Equipment (data logger, antenna, valve covers, adapters, components to make a complete unit)	\$ 1,005/unit = \$88,440
2) LEAK DETECTION MONITORING SERVICES ANNUAL – Vendor to identify service costs basis – i.e., per data logger deployed, lump sum, or other method for calculating an annual software services/licensing fee)	\$220/unit/year \$ = \$19,360
3) Monthly recurring data transmission fees, (per data logger actively deployed) x 12	\$ 110/unit/year = \$9,680
4) Set-Up fee charge to relocate units (per unit)	\$ 60/unit = \$5,280
<b>Total Project Cost</b>	<b>\$ 122,760</b>

**Submitted by:**

Michael E. Schaeffer  
Name (printed)

2-18-2022  
Date

Michael E. Schaeffer  
Signature

Chief Financial Officer  
Title

**NON-COLLUSION STATEMENT:**

By signing this offer, the vendor/contractor certifies that this offer is made independently and free from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

**NAME****RELATIONSHIPS**

n/a


In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

*Michael E. Schaeffer* CFO  
Authorized Signature

CFO  
Title

Michael E. Schaeffer  
Name (Printed)

2-18-2022  
Date



**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH  
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.


Pursuant to City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

  
Authorized Signature

Michael E. Schaeffer, CFO  
Print Name and Title

  
Date

**LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT**

Section 2-186, Code of Ordinances of the City of Fort Lauderdale, (Ordinance No. C-17-26), provides for a local business preference.

In order to be considered for a local business preference, a bidder must include the Local Business Preference Certification Statement of this bid/proposal, as applicable to the local business preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a Local Business Preference, the Bidder shall, within ten (10) calendar days, submit the following documentation for the Local Business Preference Class claimed:

- a) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **and**
- b) List of the names of all employees of the bidder and evidence of employees' residences within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the local business preference.

**THE COMPLETE LOCAL BUSINESS PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE**

**AT THE FOLLOWING LINK:** [https://library.municode.com/fl/fort\\_lauderdale/codes/code\\_of\\_ordinances?](https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR&showChanges=true)

[nodeId=COOR\\_CH2AD\\_ARTVFI\\_DIV2PR\\_S2-186LOBUPR&showChanges=true](https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-186LOBUPR&showChanges=true)

**Definitions:** The term "Business" shall mean a person, firm, corporation or other business entity which is duly licensed and authorized to engage in a particular work in the State of Florida. Business shall be broken down into four (4) types of classes:

1. Class A Business – shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone and staffed with full-time employees within the limits of the City, **and** shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
2. Class B Business - shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, **or** shall maintain a staffing level for the proposed work of at least fifty percent (50%) who are residents of the City of Fort Lauderdale.
3. Class C Business - shall mean any business that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of Broward County.
4. Class D Business – shall mean any Business that does not qualify as either a Class A, Class B, or Class C business.

### LOCAL BUSINESS PREFERENCE CERTIFICATION STATEMENT

The Business identified below certifies that it qualifies for the local business preference classification as indicated herein, and further certifies and agrees that it will re-affirm its local preference classification annually no later than thirty (30) calendar days prior to the anniversary of the date of a contract awarded pursuant to this bid/proposal. Violation of the foregoing provision may result in contract termination.

- |     |     |  |
|-----|-----|--|
| (1) | n/a | is a <b>Class A</b> Business as defined in City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the City of Fort Lauderdale current year Business Tax Receipt <u>and</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City. |
| (2) |     | is a <b>Class B</b> Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Business Tax Receipt <u>or</u> a complete list of full-time employees and evidence of their addresses shall be provided within ten (10) calendar days of a formal request by the City.                                   |
| (3) |     | is a <b>Class C</b> Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186. A copy of the Broward County Business Tax Receipt shall be provided within ten (10) calendar days of a formal request by the City.   |
| (4) |     | is a <b>Class D</b> Business as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec. 2-186, and does not qualify for Local Preference consideration.   |
| (5) |     | requests a <b>Conditional Class A</b> classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City.   |
| (6) |     | requests a <b>Conditional Class B</b> classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City.   |

BIDDER'S COMPANY: Flownetworkx dba 540 Technologies

AUTHORIZED  
COMPANY  
PERSON:

Michael E. Schaeffer, CFO

*Michael E. Schaeffer CFO*

2-18-2022

PRINT NAME

SIGNATURE

DATE



Forms Non-ISO – Revised 7/2/2021



### **DISADVANTAGED BUSINESS ENTERPRISE (DBE) PREFERENCE**

Section 2-185, Code of Ordinances of the City of Fort Lauderdale, provides for a disadvantaged business enterprise preference.

In order to be considered for a DBE Preference, a bidder must include a certification from a government agency, as applicable to the DBE Preference class claimed **at the time of bid submittal**.

Upon formal request of the City, based on the application of a DBE Preference the Bidder shall, within **ten (10)** calendar days, submit the following documentation to the DBE Class claimed:

- a) Copy of City of Fort Lauderdale current year business tax receipt, **or** Broward County current year business tax receipt, **or** State of Florida active registration **and/or**
- b) List of the names of all employees of the bidder and evidence of employees' residences within the geographic bounds of the City of Fort Lauderdale or Broward County, as the case may be, such as current Florida driver license, residential utility bill (water, electric, telephone, cable television), or other type of similar documentation acceptable to the City.

Failure to comply at time of bid submittal shall result in the bidder being found ineligible for the disadvantaged business enterprise preference.

**THE COMPLETE DBE PREFERENCE ORDINANCE MAY BE FOUND ON THE CITY'S WEB SITE AT THE FOLLOWING LINK:** [https://library.municode.com/fl/fort\\_lauderdale/codes/code\\_of\\_ordinances?nodeId=COOR\\_CH2AD\\_ARTVFI\\_DIV2PR\\_S2-185EQOPDIBUEN&showChanges=true](https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-185EQOPDIBUEN&showChanges=true)

#### **Definitions**

- a. The term "disadvantaged class 1 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- b. The term "disadvantaged class 2 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the City with full-time employees and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- c. The term "disadvantaged class 3 enterprise" shall mean any disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.
- d. The term "disadvantaged class 4 enterprise" shall mean any disadvantaged business enterprise that does not qualify as a Class 1, Class 2, or Class 3 business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.

**DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION STATEMENT**

The Business identified below certifies that it qualifies for the disadvantaged business enterprise preference classification as indicated herein, and further certifies and agrees that it will re-affirm its preference classification annually no later than **thirty (30)** calendar days prior to the anniversary of the date of a contract awarded pursuant to this solicitation. Violation of the foregoing provision may result in contract termination.

- |     |     |                 |  |
|-----|-----|-----------------|--|
| (1) | n/a | (Business Name) | is a disadvantaged <b>Class 1</b> enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the City, and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.           |
| (2) |     | (Business Name) | is a disadvantaged <b>Class 2</b> enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business within the limits of the City with full-time employee(s) and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual.   |
| (3) |     | (Business Name) | is a disadvantaged <b>Class 3</b> enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that has established and agrees to maintain a permanent place of business located in a non-residential zone, staffed with full-time employees within the limits of the Tri-County area and provides supporting documentation of its City of Fort Lauderdale business tax and disadvantaged certification as established in the City's Procurement Manual. |
| (4) |     | (Business Name) | is a disadvantaged <b>Class 4</b> enterprise as defined in the City of Fort Lauderdale Ordinance Section 2-185 disadvantaged business enterprise that does not qualify as a Class 1, Class 2, or Class 3 business, but is located in the State of Florida and provides supporting documentation of its disadvantaged certification as established in the City's Procurement Manual.  |
| (5) |     | (Business Name) | requests a <b>Conditional Class 1</b> classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City.   |
| (6) |     | (Business Name) | requests a <b>Conditional Class 2</b> classification as defined in the City of Fort Lauderdale Ordinance No. C-17-26, Sec.2-186. Written certification of intent to meet the requirements shall be provided to the City within three (3) months of entering into a contract with the City.   |

BIDDER'S COMPANY: Flownetworx dba 540 Technologies

AUTHORIZED  
COMPANY  
PERSON:

Michael E. Schaeffer, CFO

*Michael E. Schaeffer CFO*

2-18-2022

PRINT NAME

SIGNATURE

DATE



Forms Non-Iso – revised 7/2/2021

## CONTRACT PAYMENT METHOD

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments fast and safely. No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.

By signing below you agree with these terms.

Please indicate which credit card payment you prefer:

☐ MasterCard

☒ Visa

FlowNetworx, Inc. dba 540 Technologies

Company Name

Michael E. Schaeffer

Name (Printed)

Michael E. Schaeffer CFO

Signature

2-18-2022

Date

CFO

Title

**E-VERIFY AFFIRMATION STATEMENT**

RFP/Bid /Contract No: 12619-125

Project Description: Water Leak Detection and  
Monitoring System //

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

- (a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- (b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: FlowNetworx, Inc. dba 540 Technologies

Authorized Company Person's Signature: Michael E. Schauff / CFO

Authorized Company Person's Title: CFO

Date: 2-18-2022

9/15/2020





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/21/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Gunn-Mowery, LLC P.O. Box 900 Camp Hill PA 17001-0900		<b>CONTACT NAME:</b> Brendalisse Rivera <b>PHONE (A/C, No, Ext):</b> 717-761-4600 x3118 <b>FAX (A/C, No):</b> 717-761-6159 <b>E-MAIL ADDRESS:</b> brivera@gunnmowery.com	
		<b>INSURER(S) AFFORDING COVERAGE</b>	
		<b>INSURER A:</b> PA Manufacturers Indemnity Co.	
		<b>INSURER B:</b> Manufacturers Alliance Ins. Co.	
		<b>INSURER C:</b> Travelers Property Casualty Company of America	
		<b>INSURER D:</b> Fireman's Fund Insurance Co.	
		<b>INSURER E:</b>	
		<b>INSURER F:</b>	

**COVERAGES** **CERTIFICATE NUMBER:** 1500514646 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b>  CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	302201 0485995	2/1/2022	2/1/2023	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> <b>AUTOMOBILE LIABILITY</b>  <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> Comp \$1,000 <input checked="" type="checkbox"/> Coll. \$1,000	Y	Y	152201 0485995	2/1/2022	2/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y	Y	CUP-1T110838-22-NF	2/1/2022	2/1/2023	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
B	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below Y / N <input type="checkbox"/> N / A		Y	202201 0485995	2/1/2022	2/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	Excess Umbrella			USL004604222	2/1/2022	2/1/2023	Limit \$15M XS of \$10M

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

## CERTIFICATE HOLDER

## CANCELLATION

For Informational Purposes

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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# Request for Taxpayer Identification Number and Certification

Give Form to the  
requester. Do not  
send to the IRS.

► Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Print or type.  
See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

FlowNetworkx, Inc.

2 Business name/disregarded entity name, if different from above

dba 540 Technologies

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC

☐ C Corporation

☒ S Corporation

☐ Partnership

☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ►

**Note:** Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) \_\_\_\_\_

Exemption from FATCA reporting code (if any) \_\_\_\_\_

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

540 S. High Street

6 City, state, and ZIP code

Selinsgrove, PA 17870

7 List account number(s) here (optional)

Requester's name and address (optional)

City of Fort Lauderdale

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

\_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

or

Employer identification number

8 1 - 5 3 6 9 3 1 3

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign  
Here

Signature of  
U.S. person ►

*Michael E. Schaeffer CFO*

Date ► 2-18-2022

## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

## Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
  - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
  - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
  - Form 1099-S (proceeds from real estate transactions)
  - Form 1099-K (merchant card and third party network transactions)
  - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
  - Form 1099-C (canceled debt)
  - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.



[Department of State](#) / [Division of Corporations](#) / [Search Records](#) / [Search by FEI/EIN Number](#) /

## Detail by FEI/EIN Number

Foreign Profit Corporation  
FLOWNETWORX, INC.

### Filing Information

**Document Number** F17000001270  
**FEI/EIN Number** 81-5369313  
**Date Filed** 03/17/2017  
**State** PA  
**Status** ACTIVE

### Principal Address

540 S High St.  
Selinsgrove, PA 17870-9473

Changed: 01/29/2019

### Mailing Address

540 S High St.  
Selinsgrove, PA 17870-9473

Changed: 01/29/2019

### Registered Agent Name & Address

CORPORATION SERVICE COMPANY  
1201 HAYS STREET  
TALLAHASSEE, FL 32301-2525

### Officer/Director Detail

#### **Name & Address**

Title CEO, President

PULFORD, SHAWN  
540 S High St.  
Selinsgrove, PA 17870

Title Secretary

Reichenbach, Gwendolyn  
540 S High St.  
Selinsgrove, PA 17870



Title CFO, Treasurer

SCHAEFFER, MICHAEL  
540 S High St.  
Selinsgrove, PA 17870

Title Director

APP, JAMES  
540 S High St.  
Selinsgrove, PA 17870-9473

Title Director

VanNuys, Walter  
540 S High St.  
Selinsgrove, PA 17870-9473

Title Director

Pulaski, Mark  
540 S High St.  
Selinsgrove, PA 17870-9473

Title Director

Markunas, Matthew  
540 S High St.  
Selinsgrove, PA 17870-9473

Title Director

Everly, William T.  
540 S High St.  
Selinsgrove, PA 17870

#### Annual Reports

Report Year	Filed Date
2019	01/29/2019
2020	04/10/2020
2021	04/27/2021

#### Document Images

<a href="#">04/27/2021 -- ANNUAL REPORT</a>	<a href="#">View image in PDF format</a>
<a href="#">04/10/2020 -- ANNUAL REPORT</a>	<a href="#">View image in PDF format</a>
<a href="#">01/29/2019 -- ANNUAL REPORT</a>	<a href="#">View image in PDF format</a>
<a href="#">02/05/2018 -- ANNUAL REPORT</a>	<a href="#">View image in PDF format</a>
<a href="#">03/17/2017 -- Foreign Profit</a>	<a href="#">View image in PDF format</a>



# MICROSOFT AZURE

SCAN FOR THE MOST RECENT SOC 3 REPORT

<https://servicetrust.microsoft.com/ViewPage/MSComplianceGuide>



# RACKSPACE

SCAN FOR THE MOST RECENT SOC 3 REPORT

<https://www.rackspace.com/resources/rackspace-soc-3-report>

## CENTRAL BEACH ALLIANCE: WATER SERVICES

### LEGEND

Sanitary Main	Valve	Emergency Overflow Point
Private Sanitary Main	Water	Relocated
Force Main	Air Release Mainline	Fitting
Private Force Main	Plant	Cleanout
Effluent Line	Manhole	Plug
Air Line	Pump Station	Caking
Emergency Overflow Line	Private Pump Station	Detail
Bridge Line	Well	Wayward County Water Service
Abandoned	GPS Captured Main (Revised)	Tampered Water Service
	GPS Captured Main (2019)	Sewer Areas Eligible for Conversion



245

## *Certificate of Registration*

This is to certify that the  
Information Security Management System  
of

**HWM-Water Limited**

Ty Coch House  
Llantarnam Park Way  
Cwmbran  
NP44 3AW

has been independently assessed and is  
compliant with the requirements of:

**ISO 27001:2013**

For the following scope of activities:

Design, manufacture and supply of equipment including intrinsically safe  
devices for water conservation, energy management, environmental  
monitoring, data collection/logging and communication.

Certificate Number: 191341

Date of initial registration	03 <sup>rd</sup> March 2019
Date of this certificate	04 <sup>th</sup> March 2019
Certificate expiry (subject to the company maintaining its system to the required standard)	02 <sup>nd</sup> March 2022

**Authorised Signatory**



This certificate is the property of ACM Limited and shall be returned immediately on request.

ACM Limited, Unit 5 Merus Court, Meridian Business Park, Leicester, LE19 1RJ

+44 (0)116 240 5255 info@acmcert.com



**BID BOND**

**Travelers Casualty and Surety Company of America  
Hartford, CT 06183**

KNOWN ALL BY THESE PRESENTS, That we, FlowNetworkx, Inc. dba 540 Technologies, 540 S. High Street, Selinsgrove, PA. 17870, as Principal, and Travelers Casualty and Surety Company of America, as Surety, are held and firmly bound unto City of Fort Lauderdale, 100 N. Andrews Ave., Fort Lauderdale, FL 33301, as Obligee, in the sum of Five Percent (5%) of the Total Amount Bid Dollars ( xxxxxxxxxxxxxxxxxxxxxxxxxxxx ) for the payment of which we bind ourselves, and our successors and assigns, jointly and severally, as provided herein.

WHEREAS, Principal has submitted or is about to submit a bid to the Obligee on a contract for Water Leak Detection and Monitoring System  
Bid 12619-125 Fort Lauderdale, Florida ("Project").

NOW, THEREFORE, the condition of this bond is that if Obligee accepts Principal's bid, and Principal enters into a contract with Obligee in conformance with the terms of the bid and provides such bond or bonds as may be specified in the bidding or contract documents, then this obligation shall be void; otherwise Principal and Surety will pay to Obligee the difference between the amount of Principal's bid and the amount for which Obligee shall in good faith contract with another person or entity to perform the work covered by Principal's bid, but in no event shall Surety's and Principal's liability exceed the penal sum of this bond.

Signed this 23rd day of February, 2022.

FlowNetworkx, Inc. dba 540 Technologies  
(Principal)

By: Michael E. Schaeffer CEO

Travelers Casualty and Surety Company of America

By: Mark M. Duckett, Attorney-in-Fact



**Travelers Casualty and Surety Company of America  
Travelers Casualty and Surety Company  
St. Paul Fire and Marine Insurance Company**

**POWER OF ATTORNEY**

**KNOW ALL MEN BY THESE PRESENTS:** That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Mark M Duckett** of **CAMP HILL, Pennsylvania**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st day of April, 2021**.



State of Connecticut

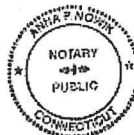
City of Hartford ss.

By:   
Robert L. Raney, Senior Vice President

On this the **21st day of April, 2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

**IN WITNESS WHEREOF**, I hereunto set my hand and official seal.

My Commission expires the **30th day of June, 2026**



  
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **23rd** day of **February**, 2022



  
Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.  
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.**



City of Fort Lauderdale • Procurement Services Division  
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301  
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[purchase@fortlauderdale.gov](mailto:purchase@fortlauderdale.gov)

**RFP NO. 12619-125**  
**Water Leak Detection and Monitoring System**

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**ADDENDUM NO. 1**

ISSUED: January 28, 2022

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This Addendum is being issued to provide the following information. It is hereby made a part of the Plans and Specifications and shall be included with all contract documents.

Acknowledge receipt of this Addendum by inserting its number and date on the CITB Construction Bid Certification Page.

**Map Section Missing from Exhibit A (up to Castillo Street)**

All other terms, conditions, and specifications remain unchanged.

**Fausto Vargas**  
Senior Procurement Specialist

Company Name: FlowNetworx, Inc. dba 540 Technologies

(please print)

Bidder's Signature: Michael E. Schaeffer CFO

Date: 2-18-2022







## Question and Answers for Bid #12619-125 - Water Leak Detection And Monitoring System

### Overall Bid Questions

#### Question 1

Hello,

I have a question to Exhibit A. In the maps Harbor Beach HOA is clearly outlined but the Central beach Alliance seems to be cut off at the North and South side. Will this be the area that is to be covered in the trial or will we get an new map covering the missing areas?

Will both of these areas be included in the proposal or just one?

Thank you for your time. (Submitted: Jan 24, 2022 7:31:08 AM EST)