

Enhancing Natural Gas Safety: Gas Alarm Technology

Staff Subcommittee on Gas



NARUC  Summer
Policy Summit

July 27-30, 2025
Boston, Massachusetts

Natural Gas Detectors – Research and Technology Overview

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Enhancing Safety Through Adoption of Natural Gas Detectors

- NGDs are commercially available; however, there is low customer adoption
- GTI performed extensive laboratory testing of commercially available NGDs
- National pilot study was conducted to collect performance data in various residential settings



Recent NTSB findings have recommended the use of natural gas detectors

Improve Accuracy and Reliability

- Work collaboratively with manufacturers to ensure commercial products deliver enhanced safety for the gas industry

Enhancement of Codes and Standards

- NFPA code for NGD use and installation
- Modify existing UL 1484 standard with emphasis on lower detection limit (from 25% LEL to 10% LEL)

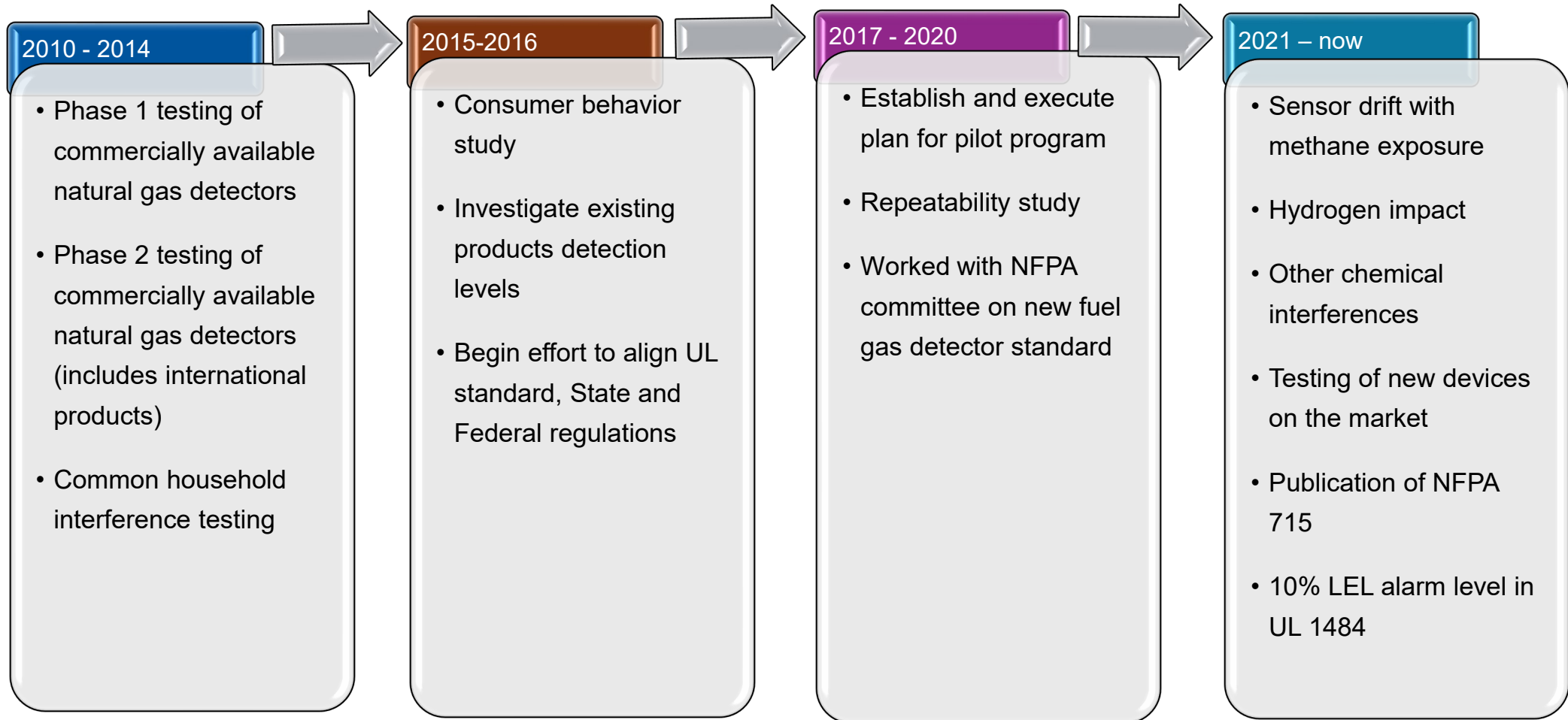
Enhanced Awareness and Education

- Continue stakeholder education and outreach and develop formal advocacy plans

Product Advancement

- Determine optimal placement of detectors based on U.S. building construction practices and typical ventilation effects

Natural Gas Detector Testing Program and Timeline

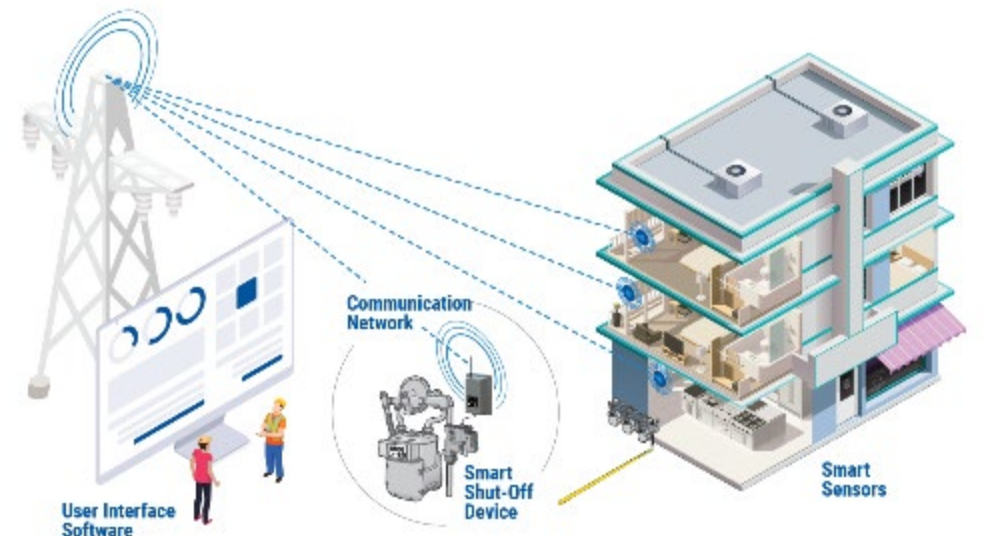
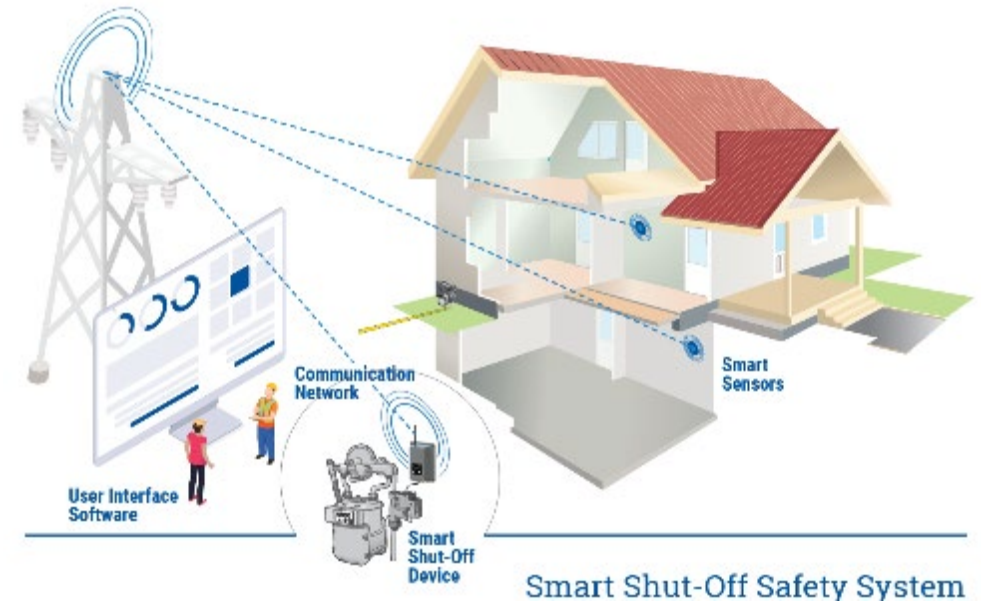


Natural Gas Detectors offer an opportunity to augment existing safety programs and add another layer of protection for leak detection.

Smart Safety Systems

Work with stakeholders, manufacturers, and vendors to determine the best products for use for the four main components of a Natural Gas Smart Shutoff Safety System (residential and commercial building):

1. **Smart Sensors:** methane detector (RMD), temperature (fire) sensor, water sensor, etc.
2. **Smart Shutoff Valve:** stand-alone valve and/or integrated meter valve, etc.
3. **Communication:** Cellular, AMI, LPWAN (LoRaWAN), e.g.
4. **User Interface Software:** allows the gas utility to view hazards and take corrective actions, including the shutting off of the natural gas supply to the building.



Smart Development System Development & Pilots

Safety System Equipment

- Lorax Smart Valve & Honeywell Smart Meter
- DeNova Detect NGD
- eLichens NGD
- Embedded Works Fire Detector
- LoRaWAN Tektelic Gateway
- Web Browser Based: ThingsBoard User Interface Software



LORAX
SYSTEMS INC.



Honeywell | Smart Energy



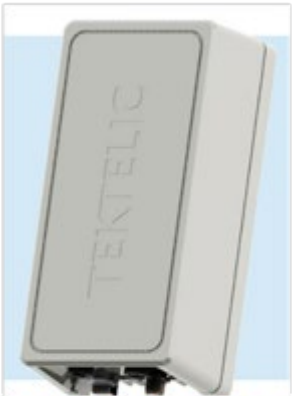
DeNova Detect
Smarter Gas Leak Safety



eLICHENS



EMBEDDED WORKS
Embedded in IoT



TEKTELIC
communications



Summary – Voice of the Customer

1

Strong Appeal and Interest

Unique, provides peace of mind

2

Worth paying for

Willing to pay for device and monthly monitoring fee.

Commercial Owners willing to pay more

3

Gas Utility Company's Responsibility

Customers expect the gas utility company to install and maintain the system.

4

Benefits the Gas Utility Company

Positive impact on perceptions

5

Commercial Owners are Best Prospects

Most interested and willing to pay the most



GTI ENERGY

solutions that transform

Questions / Comments

GTI Energy develops innovative solutions that transform lives, economies, and the environment

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Enhancing Natural Gas Safety Gas Alarm Technology Panel Discussion

Tools That Enable Adoption

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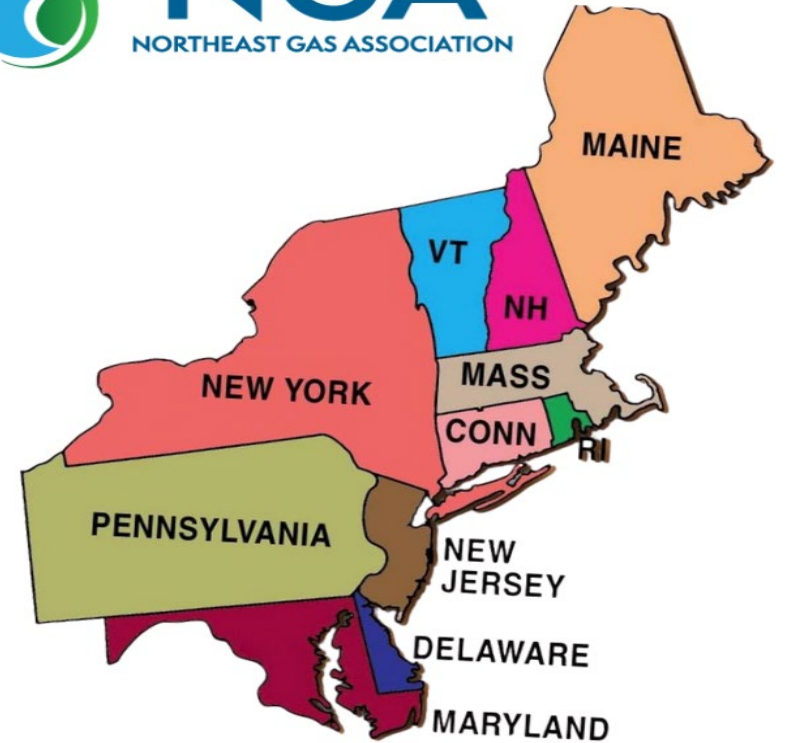


Regional Trade Association Representing

- Local Distribution Companies
- Transmission Companies
- LNG Importers
- 250+ Associate Members
- +13 Million Customers



NGA
NORTHEAST GAS ASSOCIATION



Tools Enabling Adoption



Comprehensive Industry Adoption Approach

- Evaluation of device response to varying levels of methane.
- Effects of common household chemicals on “false positive” detection and alarms including contaminants such as, hairspray, bleach and disinfectant spray.
- Impacts on performance from common household environmental changes such as temperature and humidity.
- Evaluation of proper placement to ensure detection if a release occurs - **NFPA 715 Developed !!**
- Evaluation of existing UL Standards and recommendations for improvements including lowering the detection threshold from 25%LEL to 10% LEL - **UL 1484 Updated !!**
- Consumer behavior studies and public awareness improvements.

NGA, NYSEARCH, Con Ed, GTI Energy, NFPA Fire Research Foundation, GEXCON & Fire & Risk Alliance LLC – ***Putting “science” around placement and detection thresholds***

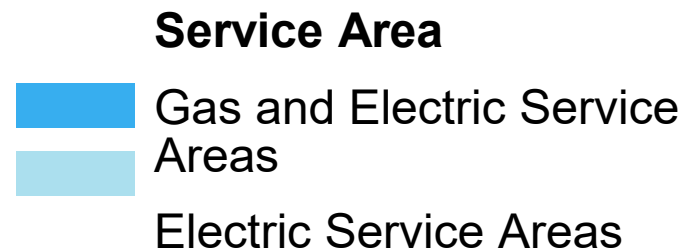
Con Edison AMI Enabled Natural Gas Detector Program

Rick Trieste
Department Manager
Research, Development & Demonstration



Consolidated Edison Company of NY

- Serve 3.6 million electric and 1.2 million gas customers
- Gas System:
 - 4,600 miles distribution main & service pipe
 - 380,000 gas services



East Harlem Catalyst Event

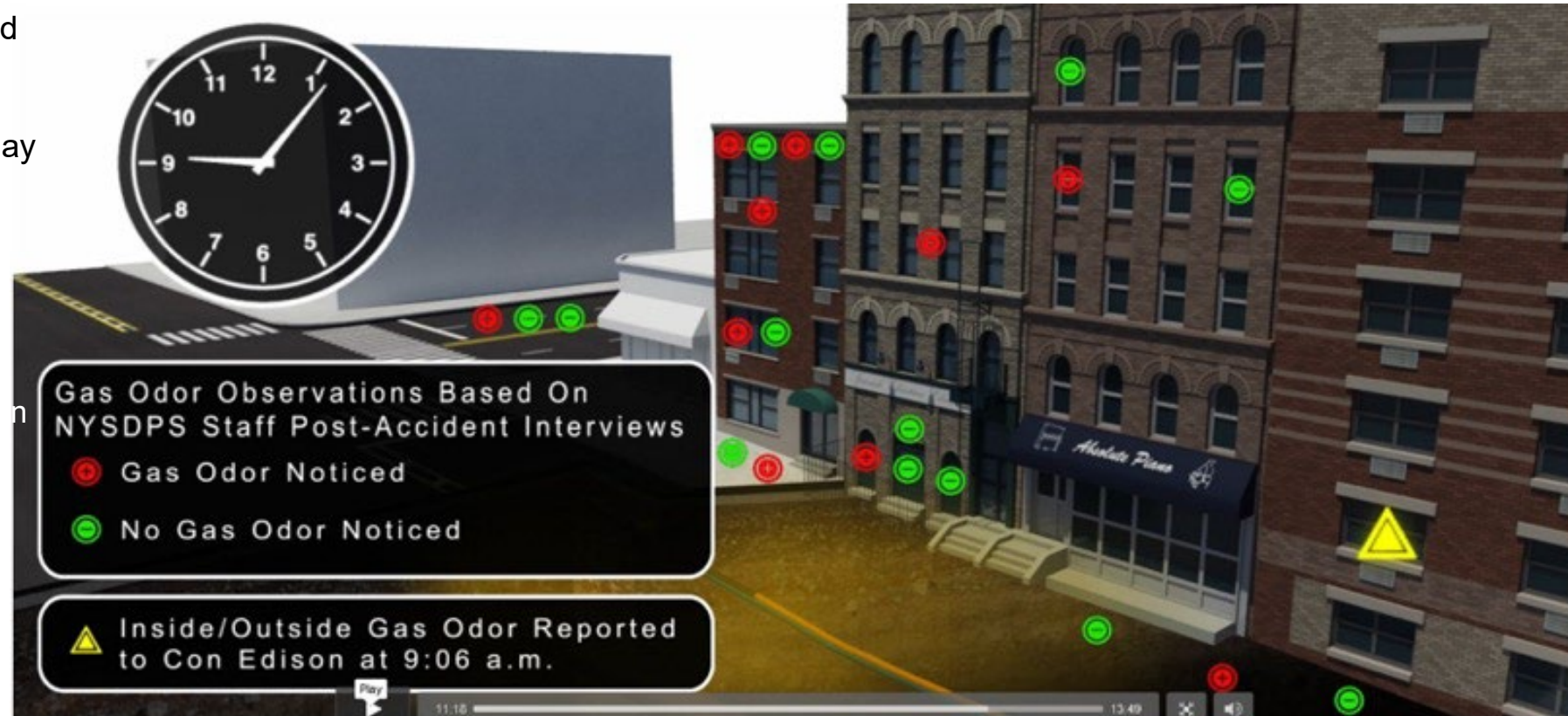
Numerous residents noticed a gas odor and failed to report it.



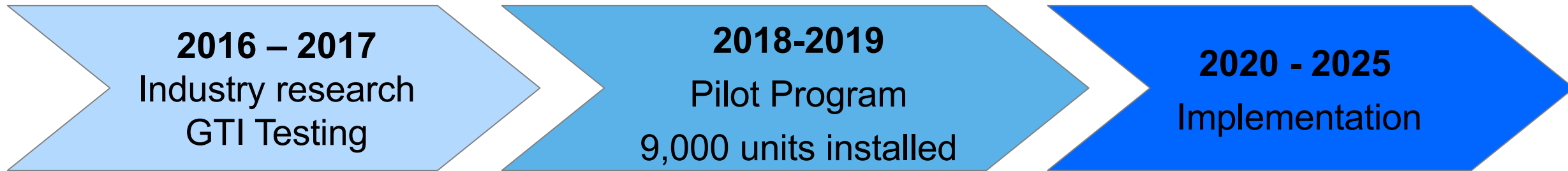
10 consumers smelling gas and **did not** react



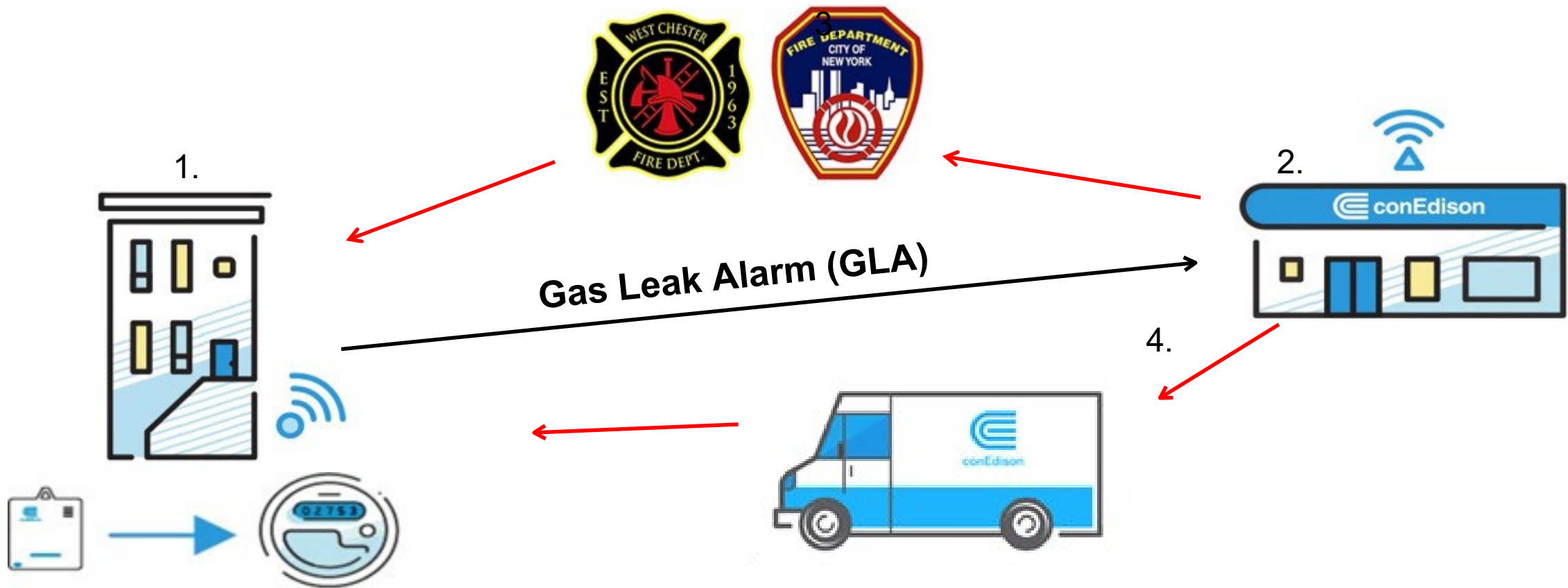
1 consumer smelling gas the day before called Con Ed ~25 min prior to incident



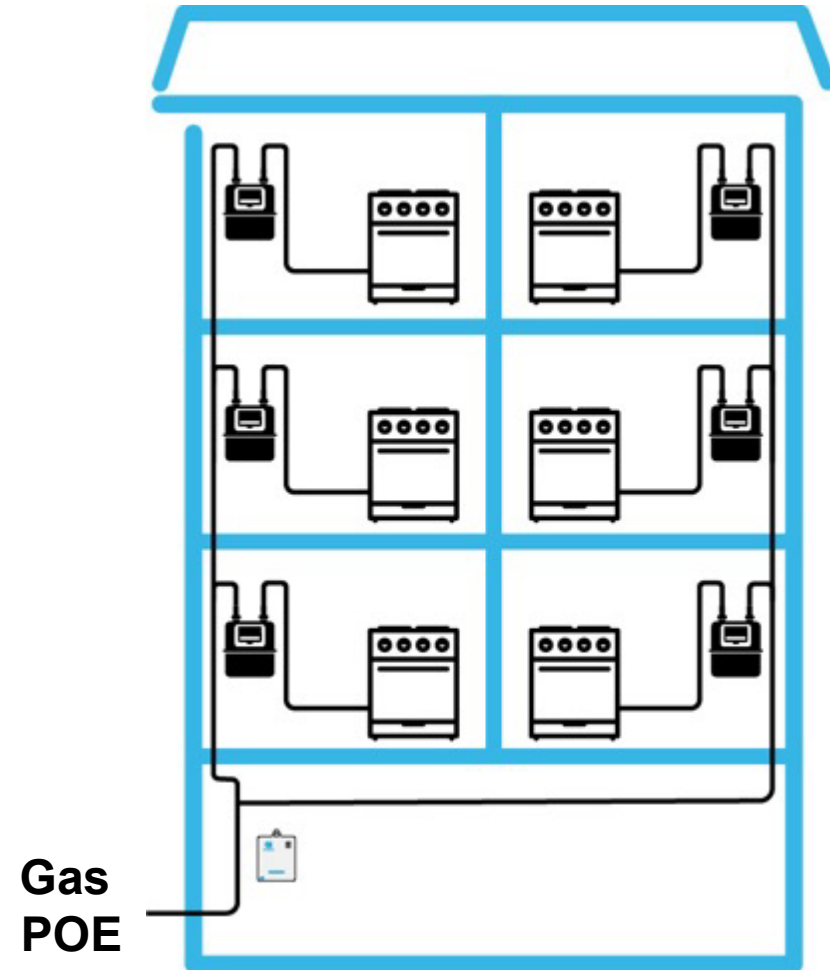
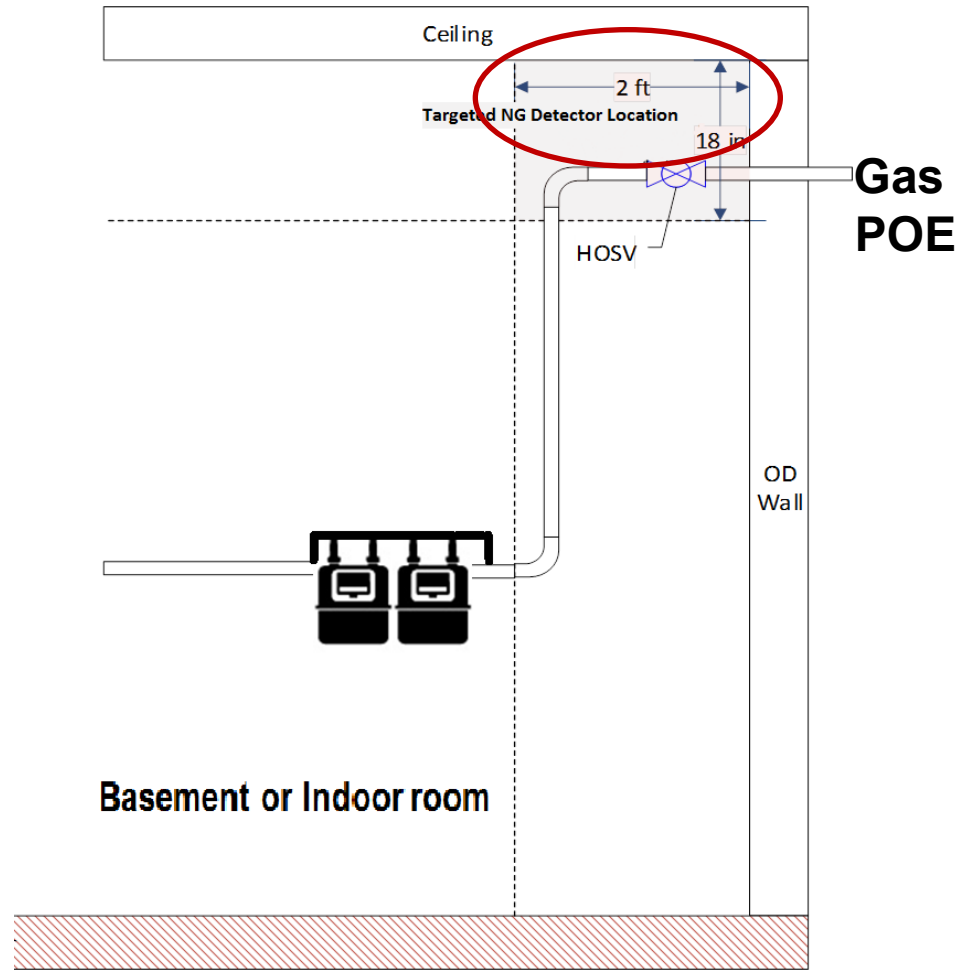
Program Overview



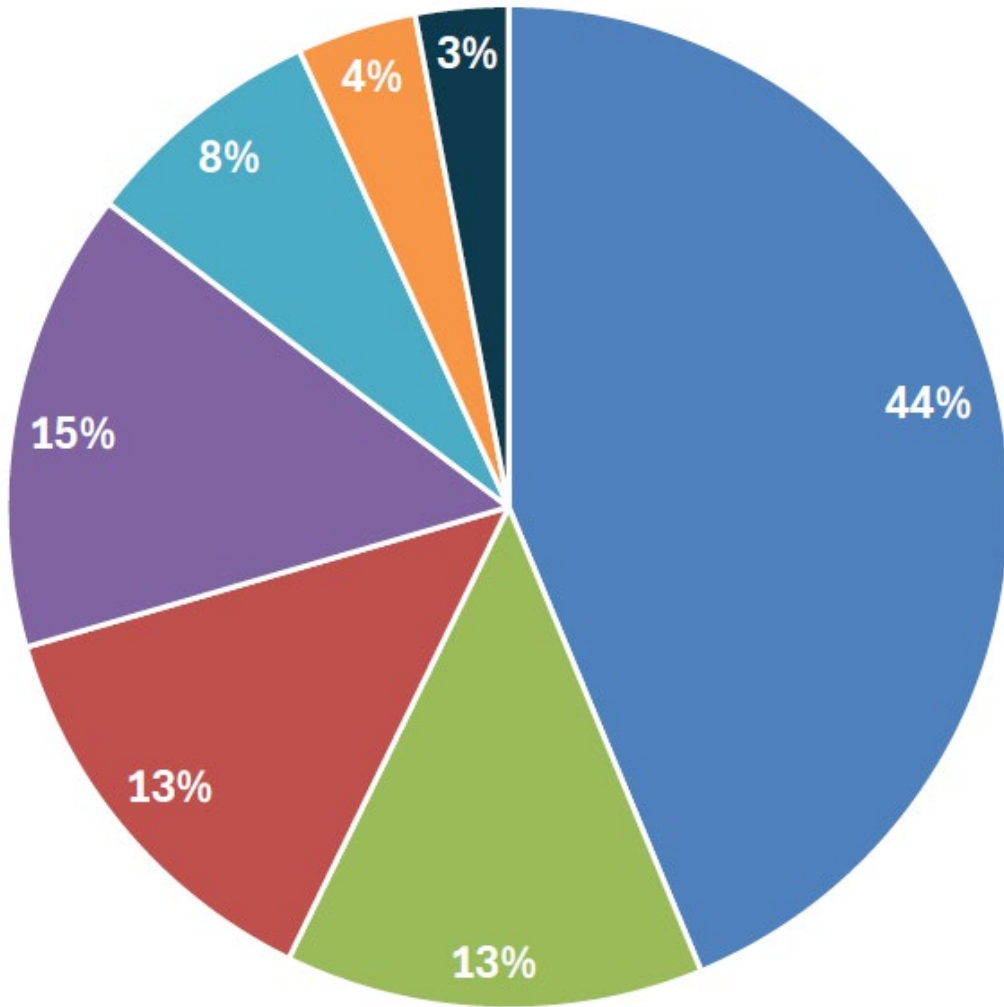
Response & Coordination



Installation



Gas Leak Alarm (GLA) Summary



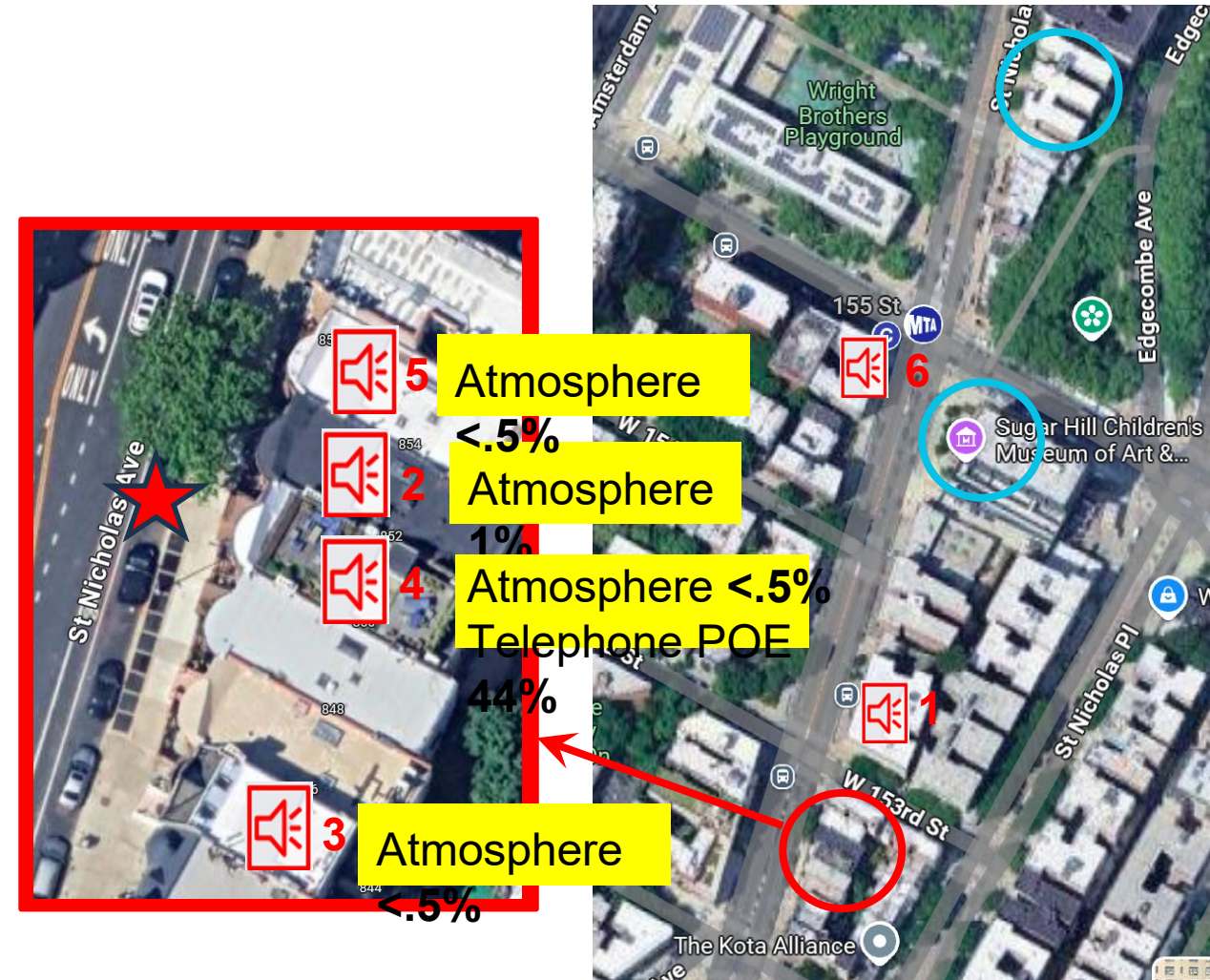
- 5,946 GLAs since program inception



Main Leak Detection

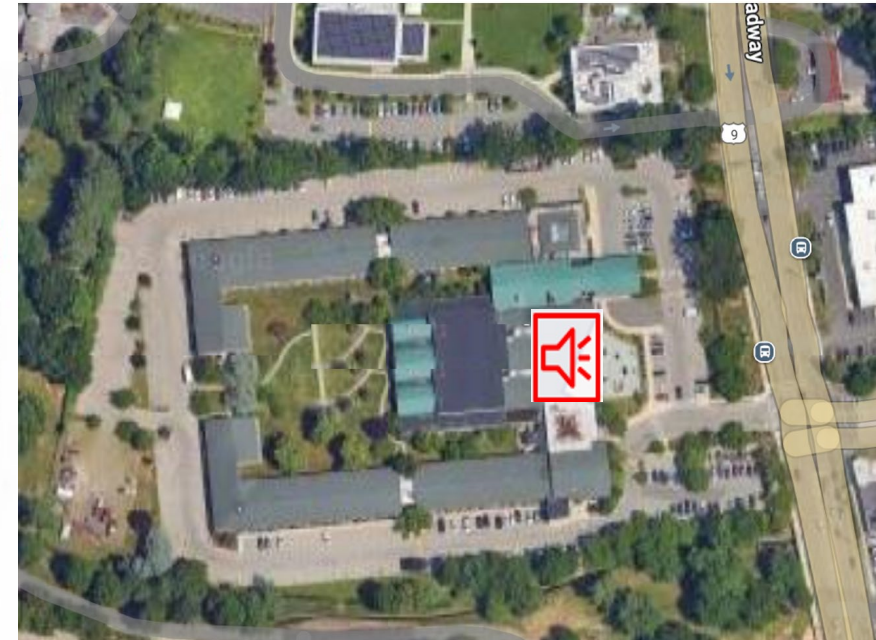
- January 2025, Manhattan
- ★ leak location
- 6 GLAs
 - 1st 20:55
 - 2nd +4 mins
 - 3rd – 6th +13 to 43 mins
- 00:17: atmospheric readings
- 01:29: atmospheric readings
- 02:51: identified leak
- 03:59: repair complete

 = GLA



Building Leak Detection

- July 2024 Hotel, Westchester County
- 6% *gas-in-air* basement
- Boiler explosion broke fuel gas pipe
- 75 occupants evacuated



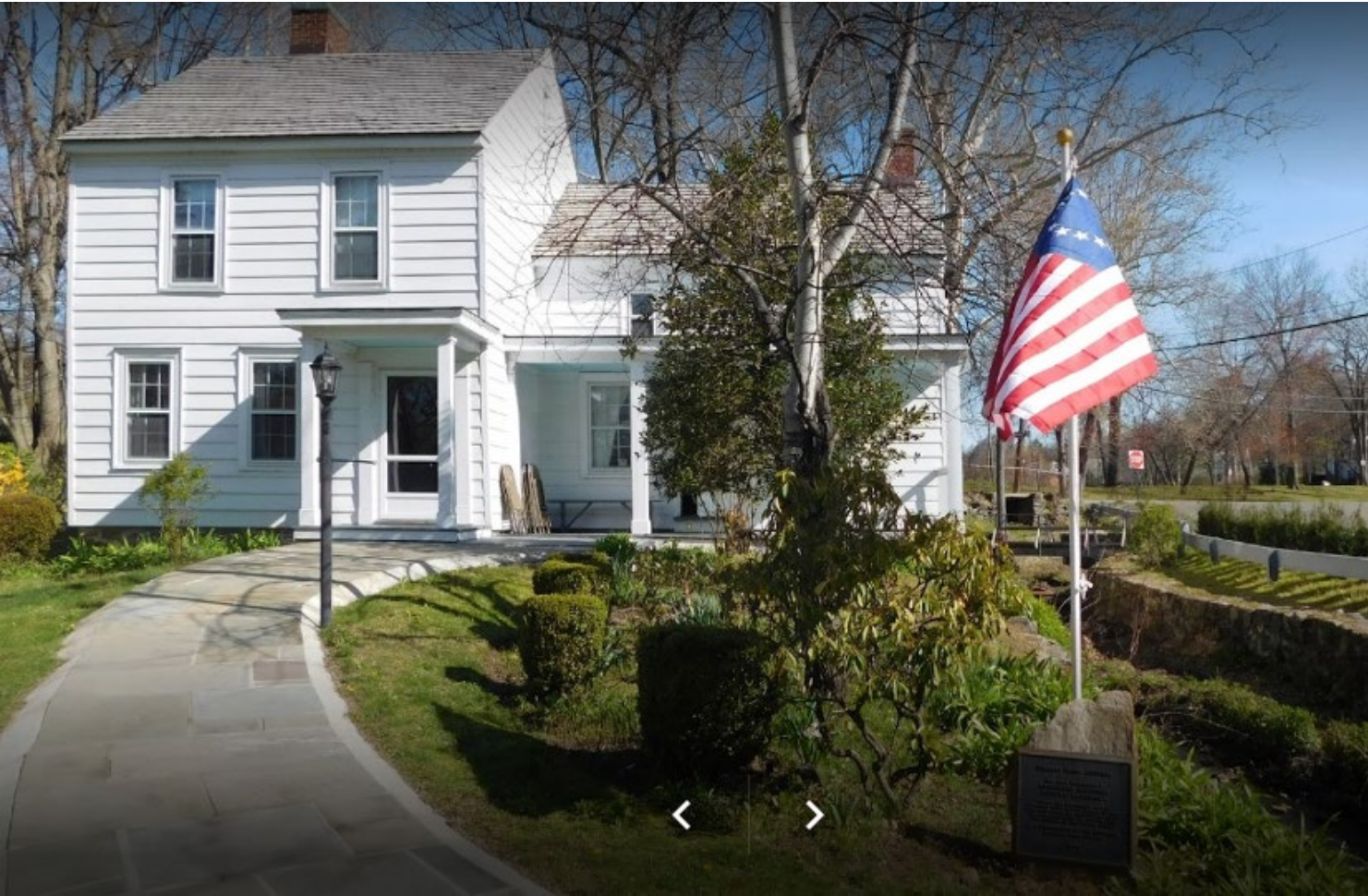
 = GLA

Building Leak Detection

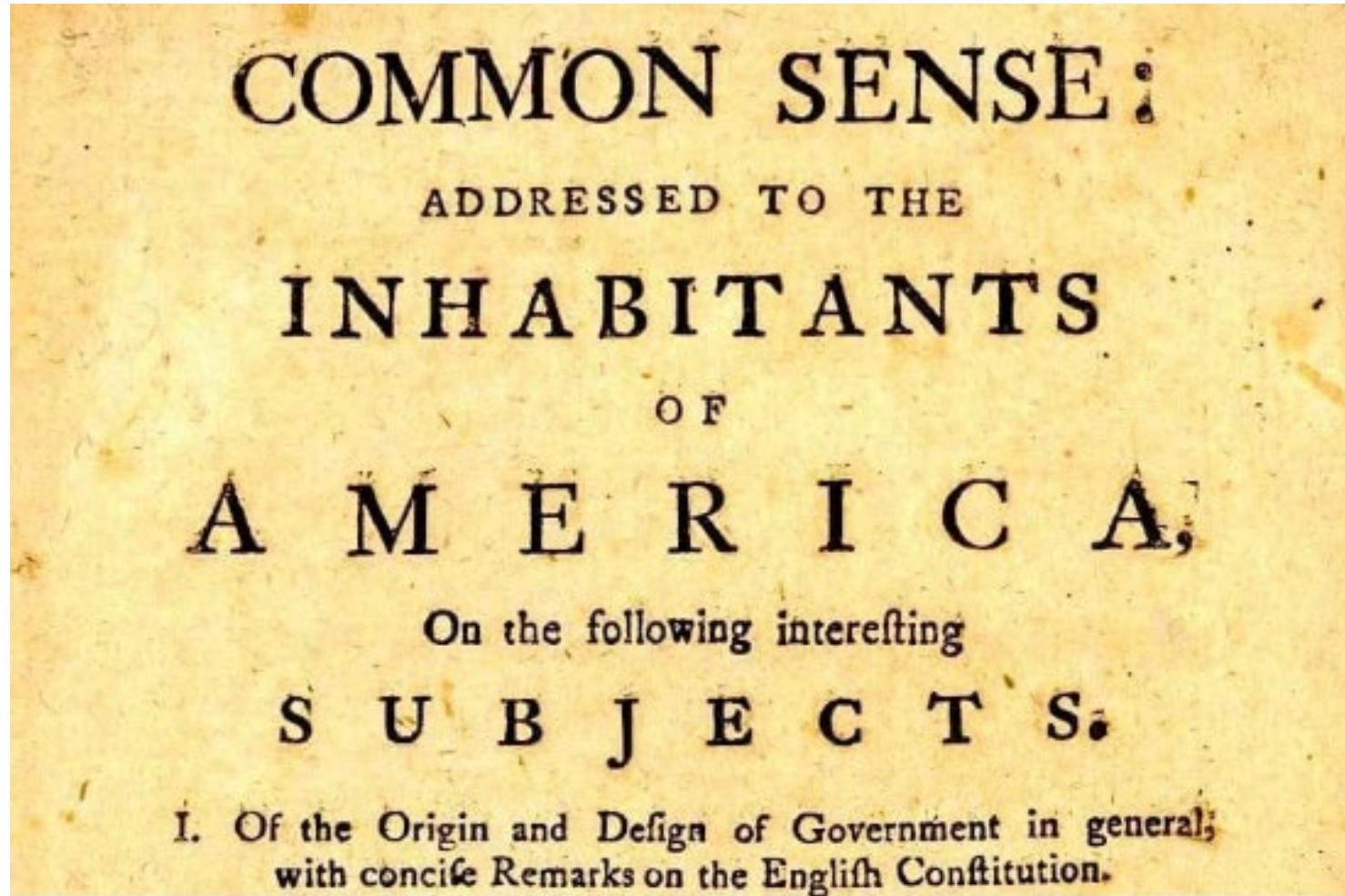
- January 2022, Westchester home
- Floor collapsed breaking house pipe
- FD evacuated consumers who were on the 2nd floor
- FD - 2.5% gas-in-air
- CE - .3% gas-in-air



9th GLA – Thomas Paine’s Cottage, New Rochelle NY



Residential Natural Gas Detectors are simply



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