Natural Gas Leak Detection and Prevention

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CECONY Gas Franchise

- 1.1 M customers
- ~4,400 miles of distribution mains
- ~375,000 services
- 94 miles of transmission mains
Application of Technology In Urban Environments Pose Challenges
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Project Goals and Objectives Need to be Realistic
Gas Leak Management Requires Multi-Faceted Approach

**Prevention**
- **Efforts:**
  - Main replacement program leak prone pipe
  - One-call, Dig safe
  - Work coordination with city utilities

**Detection**
- **Efforts:**
  - *Monthly* mobile leak survey
  - Public awareness campaigns
  - Residential methane detectors development and deployment

**Response**
- **Efforts:**
  - Code MuRRE
  - Isolation valve installation program
  - Repair Type 3 leaks
Response: Gas Leak Backlog Management

![Graph showing the number of leaks from 1992 to 2017, with a significant reduction in the early 2000s.](Image)
Prevention: Main Replacement Program

- Cast Iron: 23.6% (1,039 Miles)
- Unprotected Steel: 21.8% (958 Miles)
- Protected Steel: 8.1% (357 Miles)
- Plastic: 46.4% (2,038 Miles)
- Other: 0.0% (2 Miles)
Prevention: Service Replacement Program

- U/P Steel: 64,235 (17.12%)
- Prot. steel: 25,525 (6.80%)
- Copper: 15,811 (4.21%)
- Other: 131 (0.03%)
- Total: 269,493 (71.83%)
Detection: Public Awareness Campaigns

Don't assume someone else will make the call.


Gas leaks can create fires and explosions.

Learn More
Detection: Residential Natural Gas Detector – New Cosmos

- Battery powered - 5 yrs.
- Tested by GTI
- UL 1484 certified
- 10% LEL alarm (0.5% gas-in-air)
- Device Company owned
Detection: Residential Natural Gas Detector – Sparrow Detect

THE FUTURE OF GAS DETECTION
for
Every Home, Every Building, Everywhere

Natural Gas Detection

6”x6”x1½”

Applications
## Detection: Residential Natural Gas Detectors – Sparrow Detect

![Image](image.png)

### ONLY Sparrow Provides:

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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<tr>
<td><strong>The Earliest Warning</strong></td>
<td>Rate of Change and Time Trending Detection</td>
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<td>Ability to detect gas at very low levels</td>
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<td>Unparalleled performance</td>
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<td><strong>No False Positives</strong></td>
<td>Intelligent Risk Assessment</td>
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<td>Ability to detect common contaminants</td>
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<td>Molecular specificity</td>
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<td><strong>“Known” Device Status</strong></td>
<td>Built in diagnostics</td>
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<td>Status available on demand</td>
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<td><strong>Free Running</strong></td>
<td>Self monitoring and correcting</td>
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<td><strong>Largest Coverage Area</strong></td>
<td>1 Sparrow protects single story home</td>
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<td><strong>Preventative</strong></td>
<td>Early identification of leaks</td>
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<td>More reliable than “odor calls”</td>
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<td>Ability to turn off gas at smart meter</td>
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Detection: Leak Survey Enhancement Project with Colorado State University

- Mobile leak survey performed with Heath DP-IR
- Objective is to evaluate tools and process to seek improvements of mobile leak survey
  - Evaluate application of an anemometer
  - Operate an LGR in parallel to:
    - Optimize alarm set-point of DP-IR
    - Minimize false positives
- Evaluate leak investigation process once an indication warrants
- Evaluate use of hand-held devices to zero in on leak location
Detection: Advanced Leak Detection Technologies

• Picarro Surveyor
  – Areas clear of urban canyons
  – Pre-pave surveys
  – New construction quality control
  – Written procedures

• Project begun to evaluate ABB MobileGuard™
Methane Emissions Avoidance – ZEVAC, TPE Midstream
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