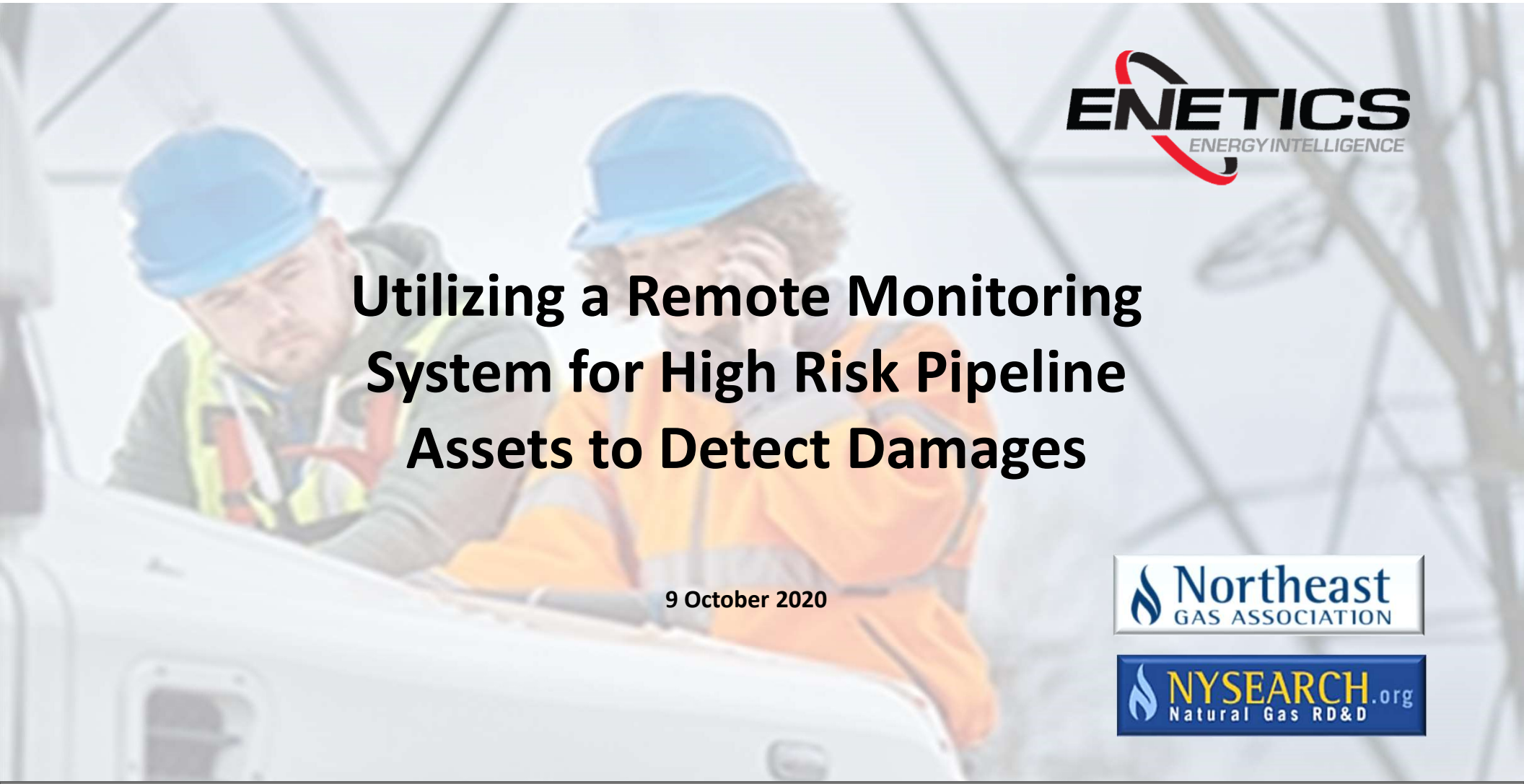


Utilizing a Remote Monitoring System for High Risk Pipeline Assets to Detect Damages

9 October 2020

ENETICS
ENERGY INTELLIGENCE

GAS COMM

Northeast GAS ASSOCIATION

NYSEARCH
Natural Gas RD&D

GasComm® - *The* Analytic Safety Monitor

- Continuous Alarm Monitoring – Fast Alarm Notifications
- No Power or Communications Required
- Secure Web-based User Interface
- Simple 3” to 12” Hot-Tap Pipe Installation
- Analytics, Reports, Dashboard, GIS
- SCADA Compatible or Standalone
- **II 1 G Ex ia IIB T4 Ga, Class1, Division 1**

Pressure
Flow
Temperature
Water Content
Vibration

Single Instrument

The GasComm System

Includes:

- The GasComm Node

  II 1 G Ex ia IIB T4 Ga, Class1, Division 1

- Battery Powered Remote Telemetry Unit (RTU)
- Cellular LTE Modem
- EneticsEdge™ User Interface

** *Affordable alternative to SCADA monitoring in remote locations* **

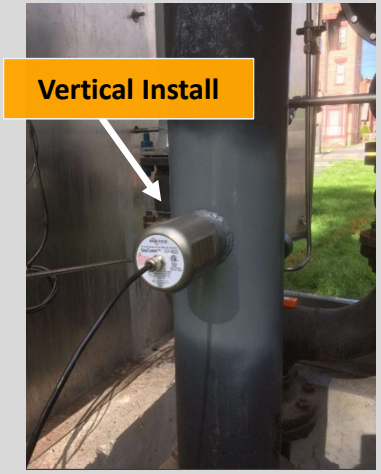
Measured Attributes

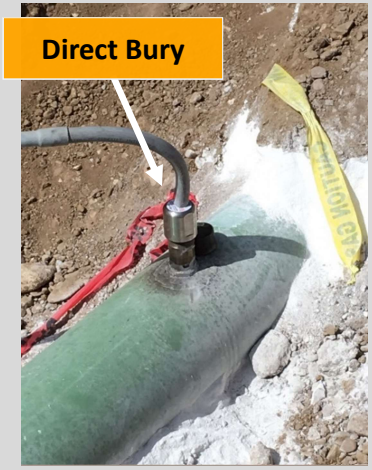
- Static Pressure → (0 to 125 PSIG)
- Flow Velocity → (1 to 200 ft/s)
- Flow Volume → (MSCFH)
- Temperature → (-30C to +60C)
- Humidity/Water Content → (0 to 90% RH)
- Vibration → (3 axis, 0 to 6g)

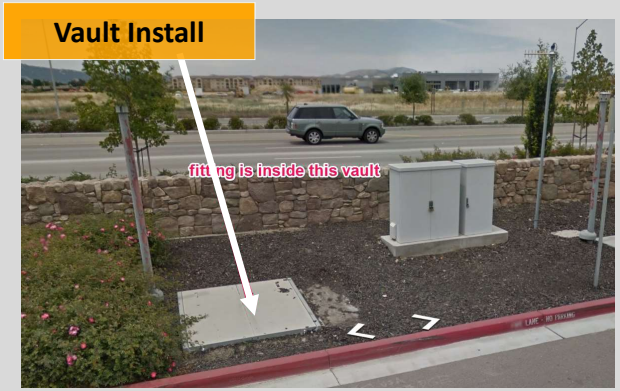
Benefits

- **Economical** method of improving Distribution Integrity Management Programs (DIMP)
- **Fast Alarm Notifications** of safety related field issues
- **No Power Drops Required**; 3-5 year user replaceable battery lifetime
- **Single Instrument**; five parameters monitored
- **Class1, Division1, Zone0** IS Certified, Groups C&D, T4
- **Simple Installation** using existing utility hot tap toolsets and procedures
- **Secure Wireless Telemetry** utilizing existing 4G LTE cellular networks
- **Secure Web-based User Interface** with analytics and report generation
- **No Site Visits Required**; more efficient manpower deployment

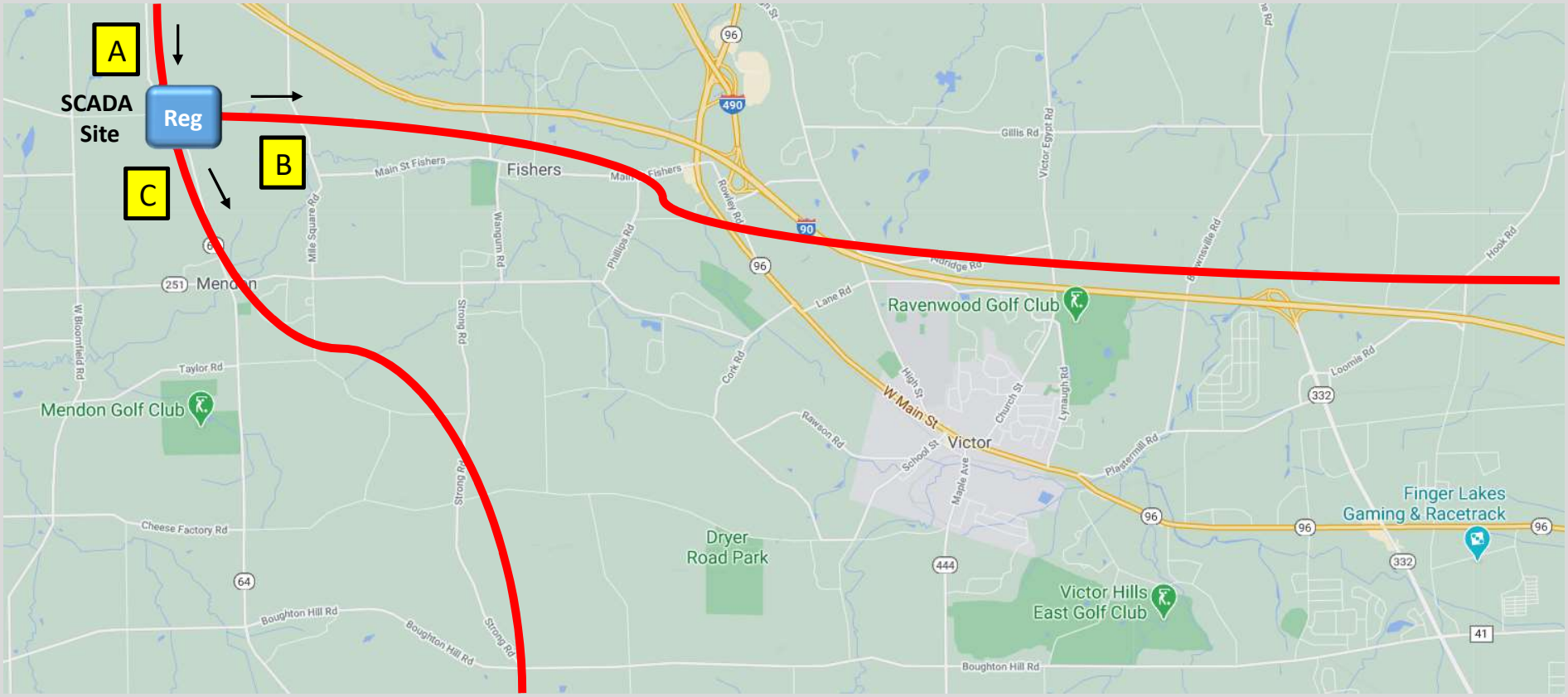
Installation Site Images



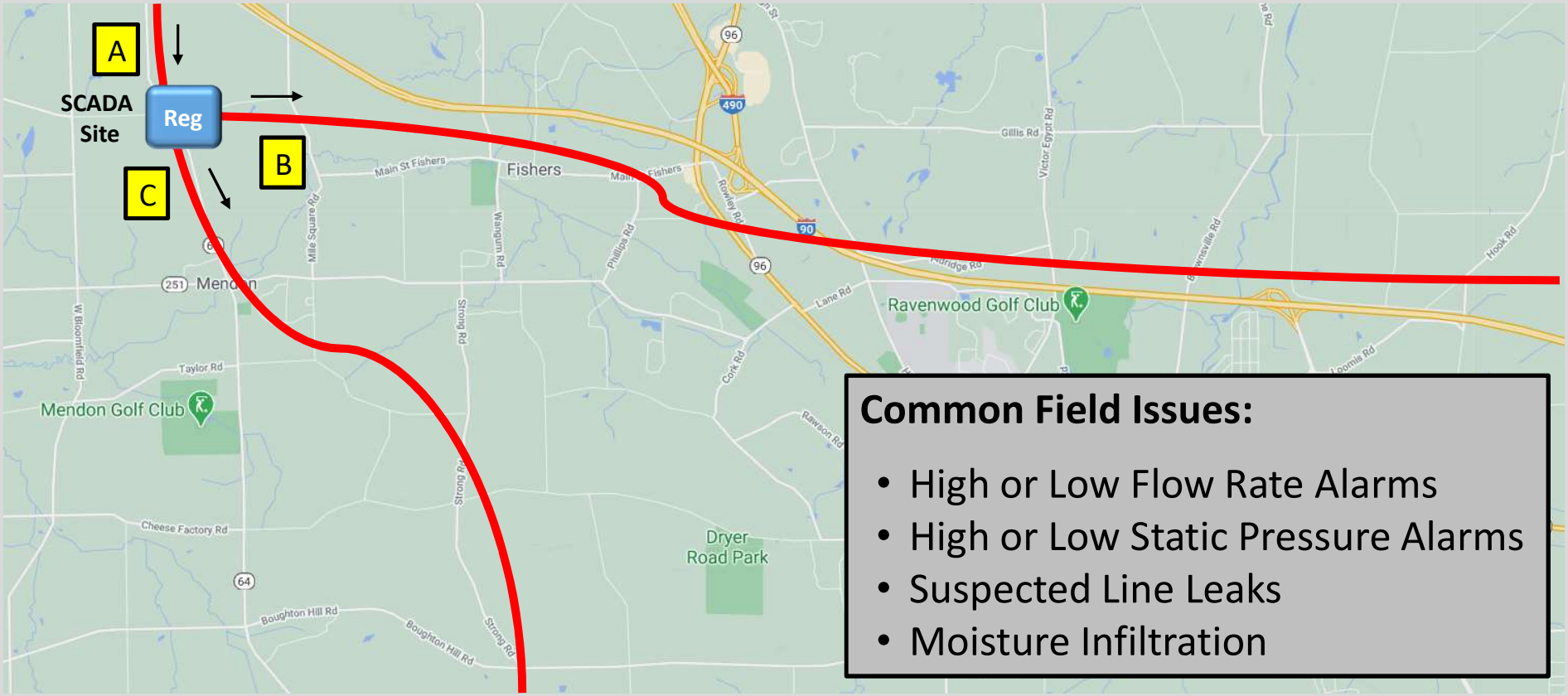




Natural Gas Reg Station Main Distribution Feeder Lines



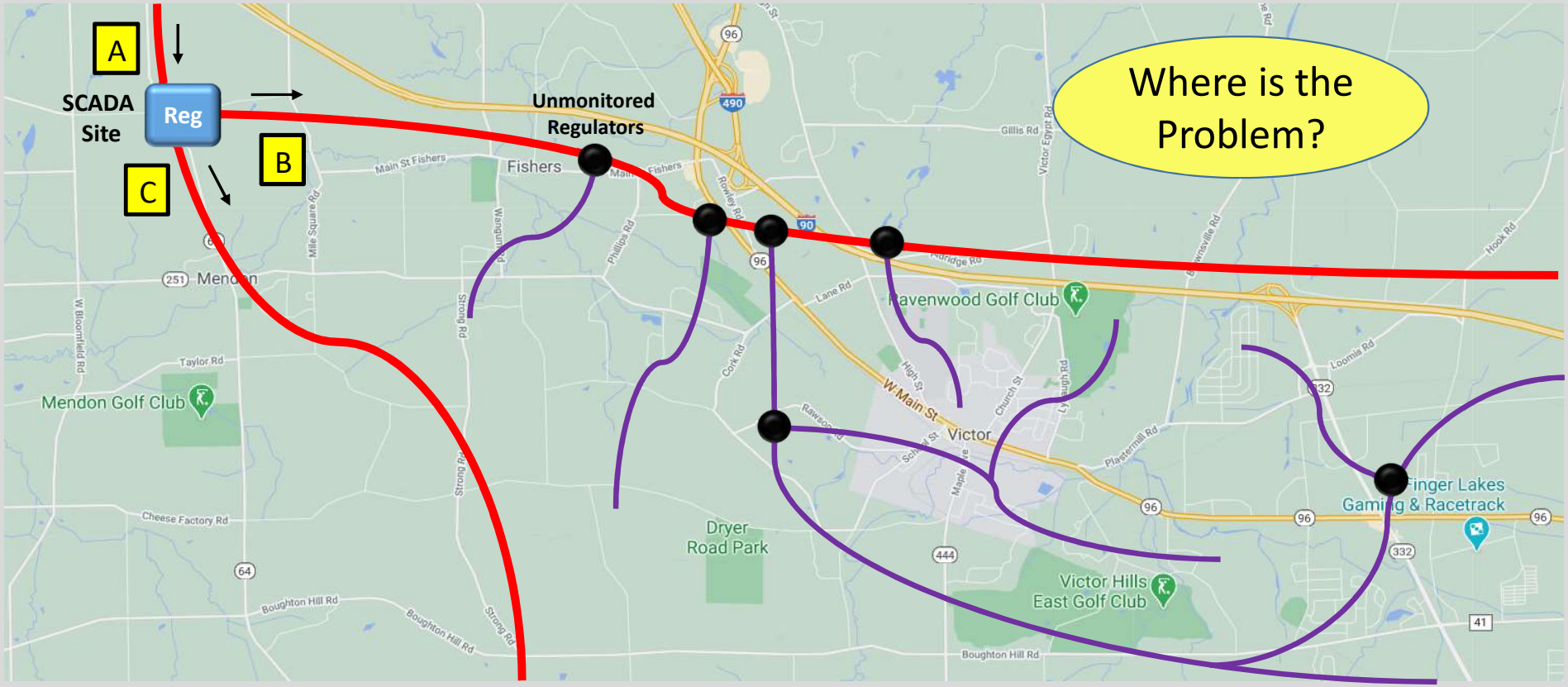
Natural Gas Reg Station Main Distribution Feeder Lines



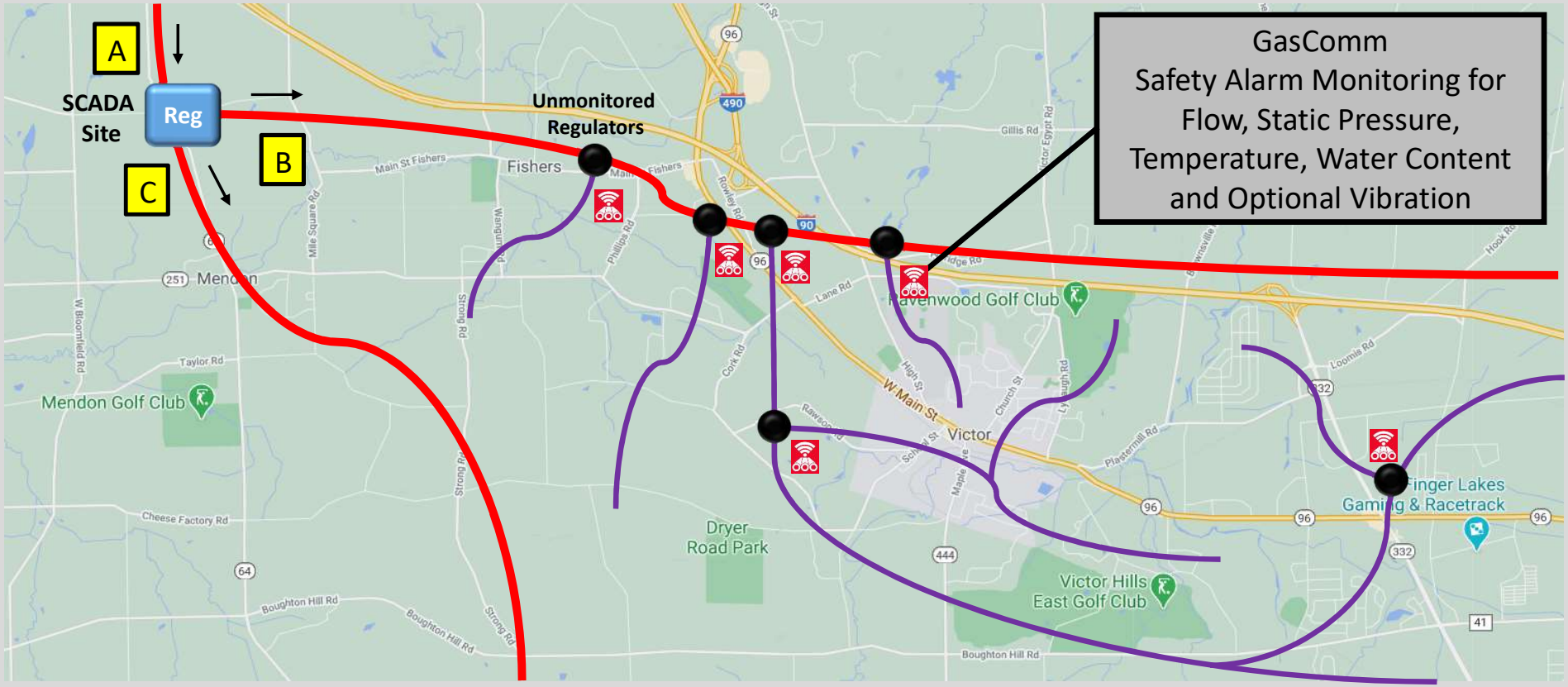
Common Field Issues:

- High or Low Flow Rate Alarms
- High or Low Static Pressure Alarms
- Suspected Line Leaks
- Moisture Infiltration

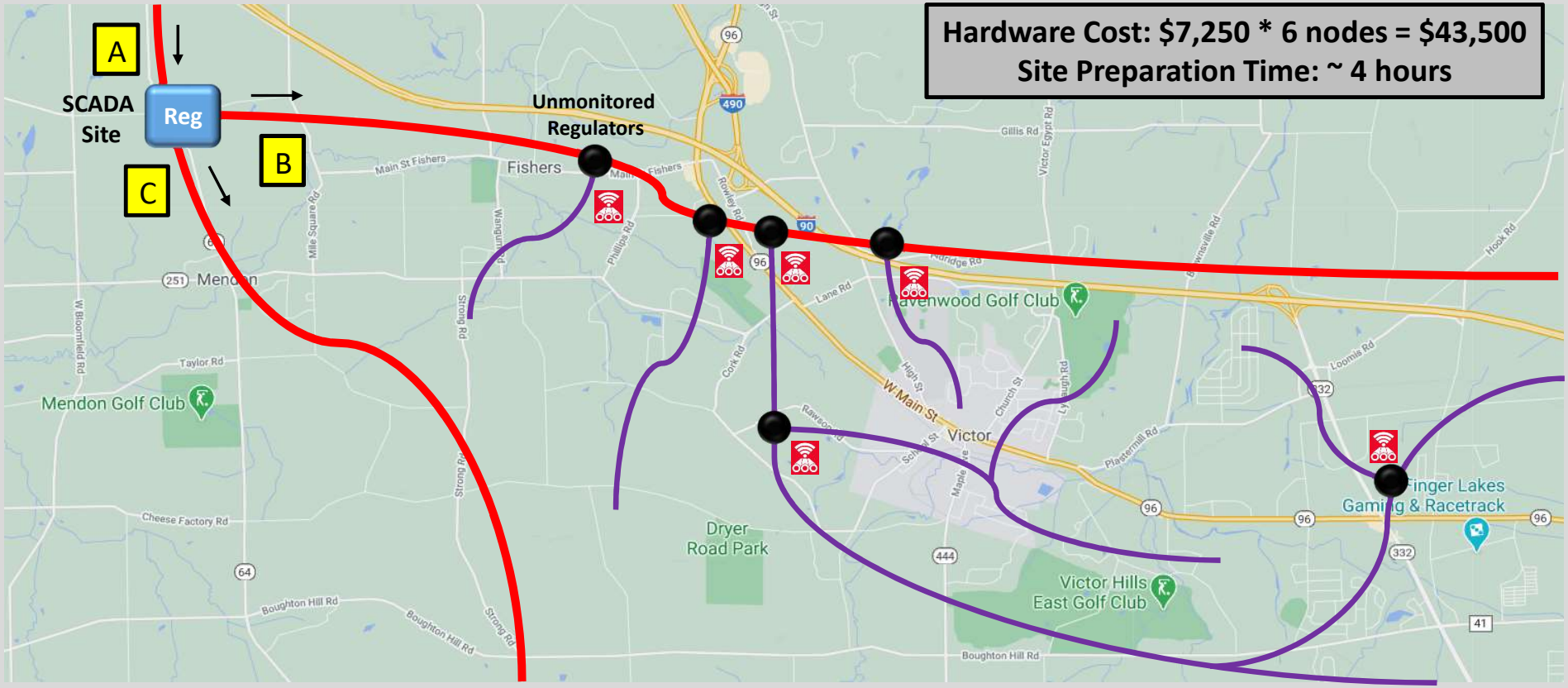
Issue: High Flow Rate SCADA Alarm Reported at B



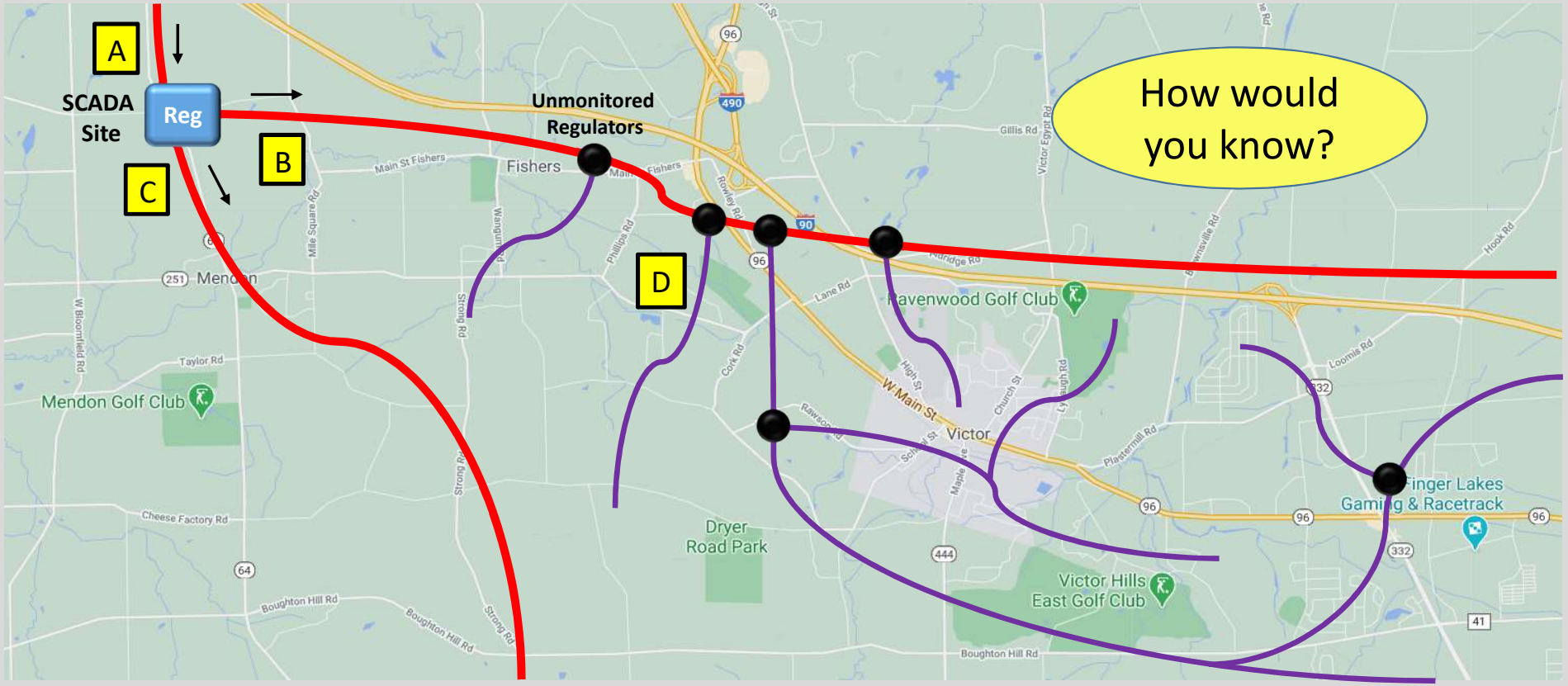
Solution: GasComm Node Installed at 6 Feeder Points



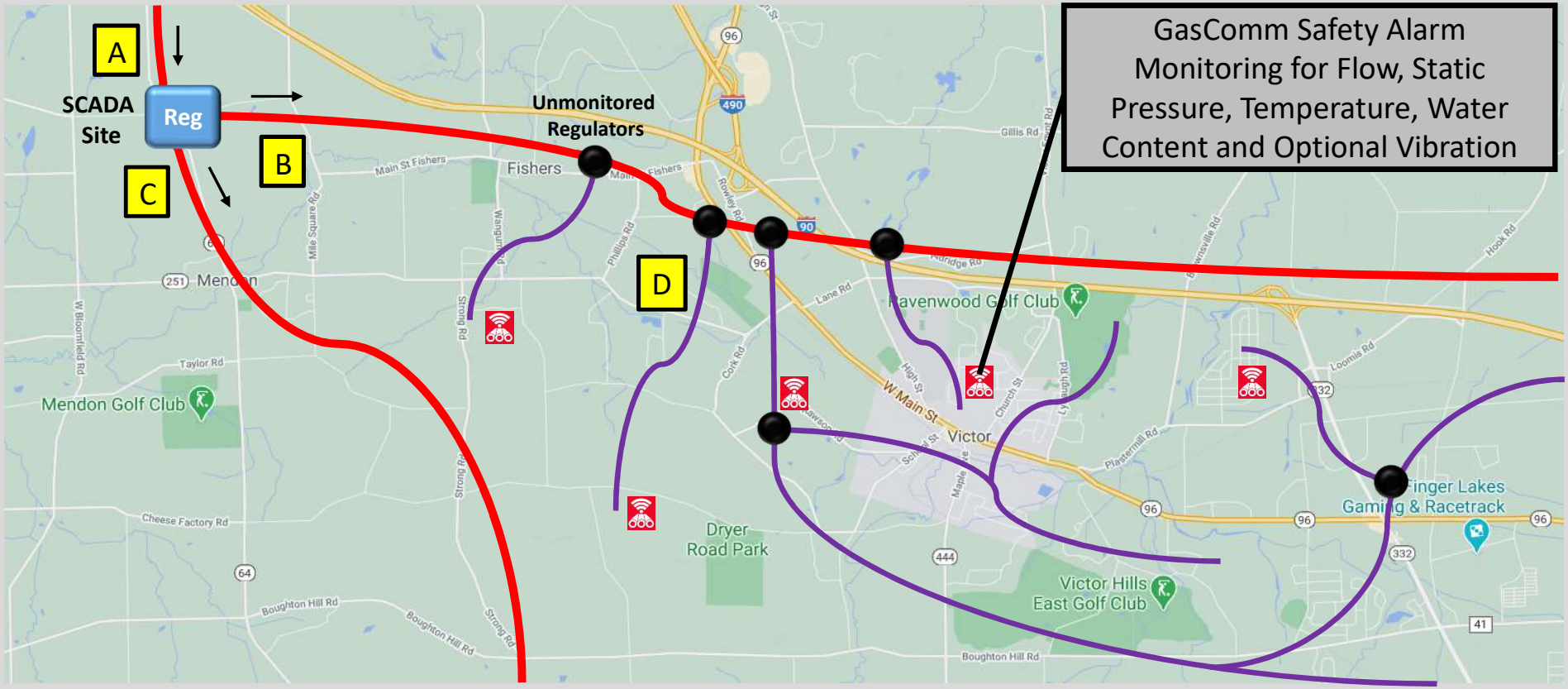
Solution: Affordable and Maintenance Free



Issue: High Pressure Occurs at D (not monitored)



Solution: GasComm Node at 5 Feeder Line End Points



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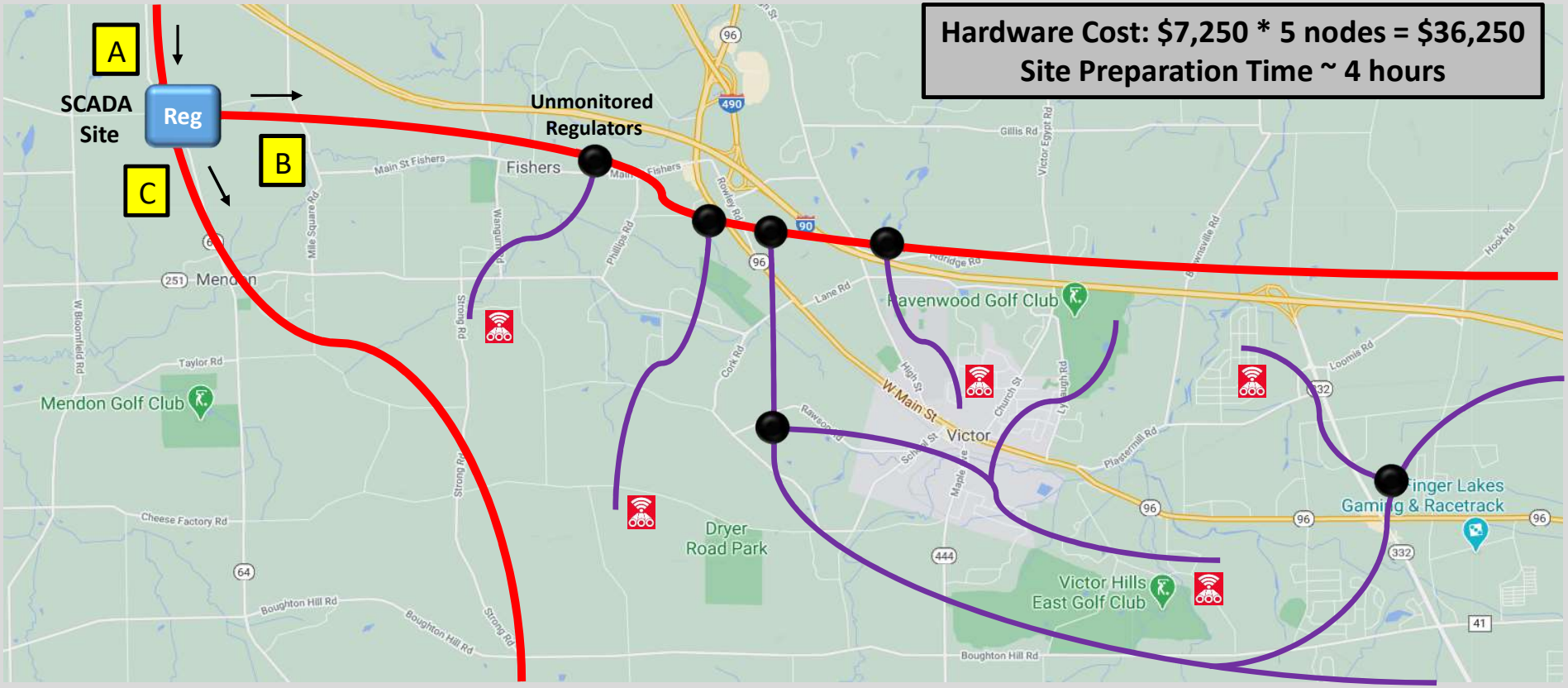
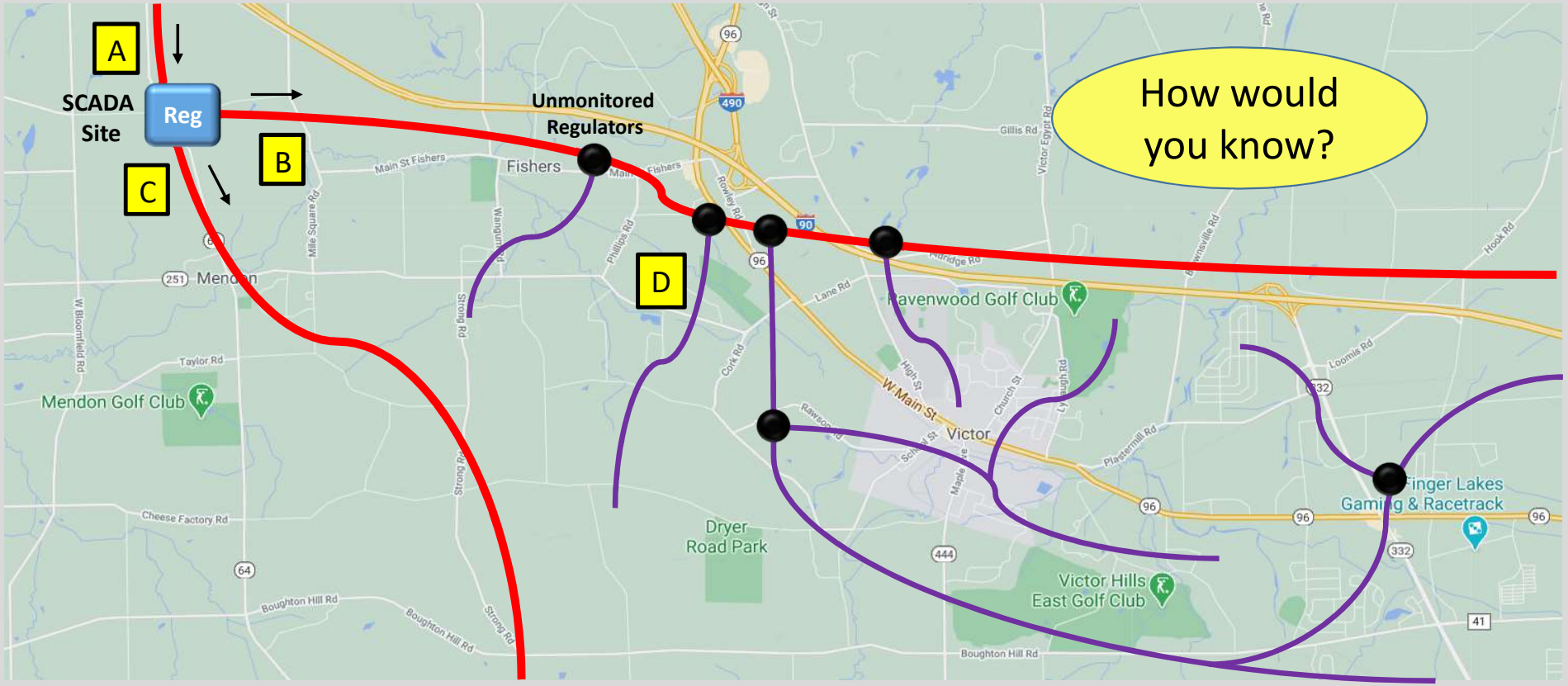


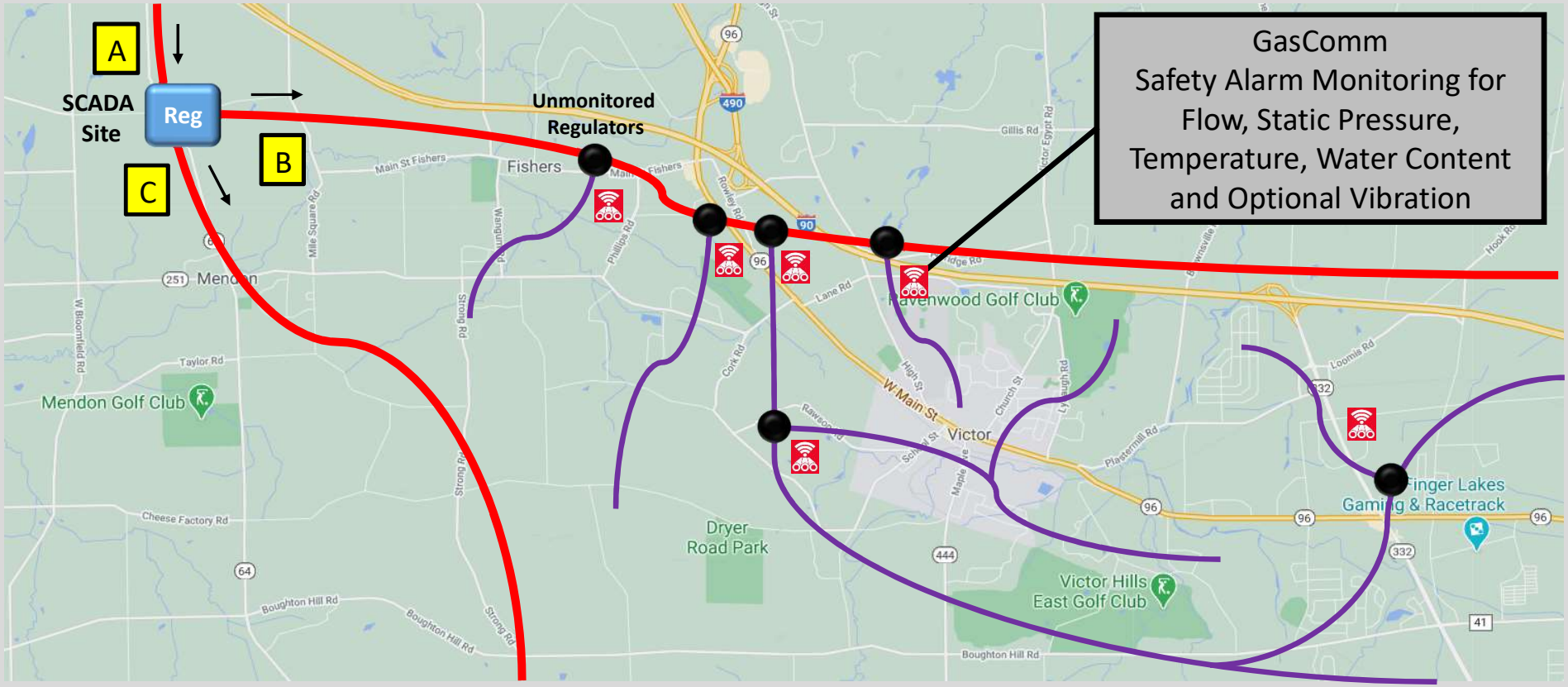
Issue: Pipe impact causes fracture and leakage at D



Pipe Impact or Seismic Event

- Pipe impact event could cause three different alarm states:
  - ✓ *High G force impact or seismic event initiates a vibration alarm*
  - ✓ *Damaged pipe segment allows moisture to enter the gas flow initiating a high water content alarm*
  - ✓ *Regulators compensate for drop in pressure by increasing flow, initiating a high flow rate alarm*

Solution: GasComm Node Installed at 6 Feeder Points



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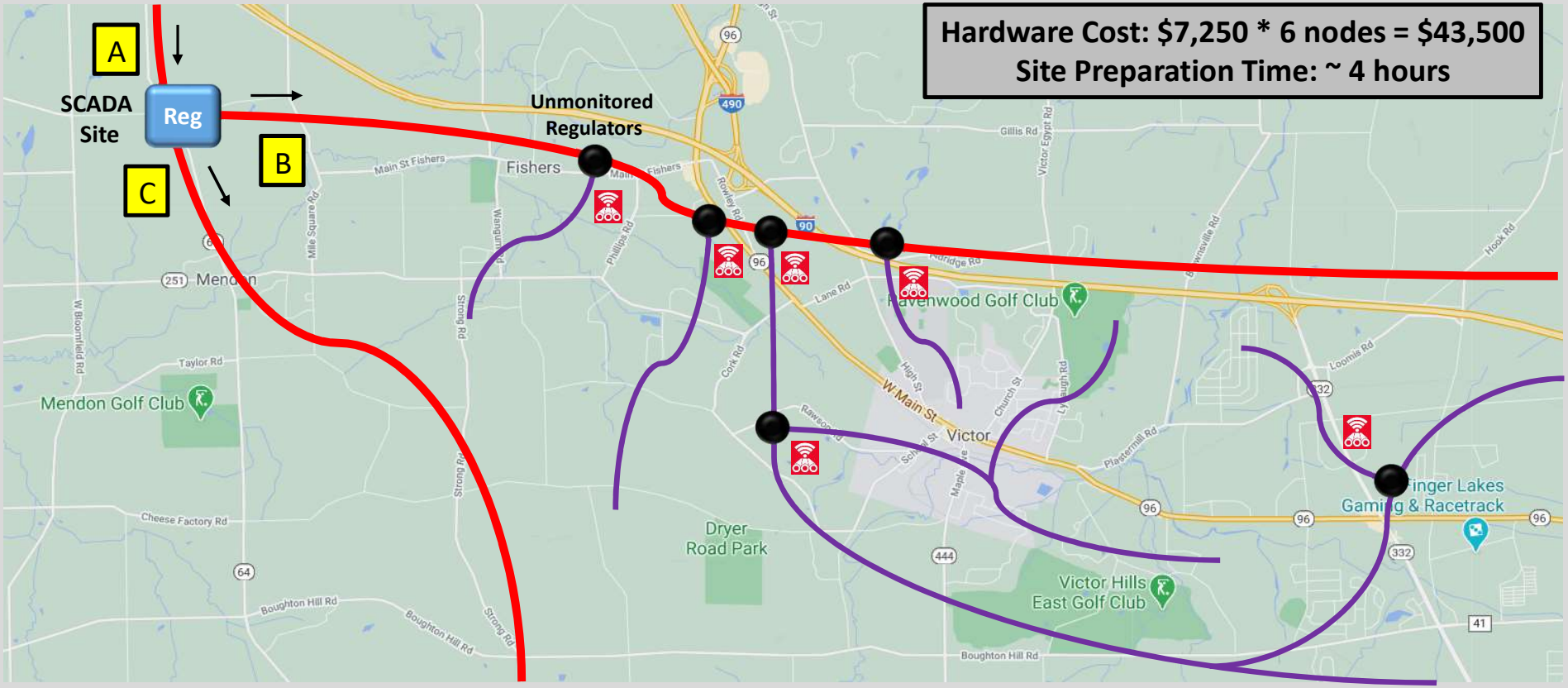

Summary

- Affordable alternative to SCADA monitoring in remote locations
- No power or communication required
- GasComm monitors remote asset integrity including:
  - ✓ *High or low pressure events (pressure alarming)*
  - ✓ *High or low flow events (flow alarming)*
  - ✓ *Fractures or leaks (moisture and flow alarming)*
  - ✓ *Icing (temperature alarming)*
  - ✓ *Impact and seismic events (vibration, moisture, or flow alarming)*

Want More Information?

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- Victor, NY, 14546
- 585 924 5010
- www.enetics.com

Thank you!