



# Ajax Analytics

with

Colorado  
State  
University



2025 TOWN OF ERIE PROGRAM REVIEW

# TOPICS

## CONTENTS

01 AIR MONITORING OVERVIEW

02 ERIE'S CONTINUOUS MONITORING CONCEPTS

03 PROGRAM HIGHLIGHTS AND IMPACTS

GOAL

# measure the air

## minimize assumptions

“When you have facts, you don’t need statistics”  
- Cassie Kozyrkov

no knowledge

perfect knowledge  
*every: compound, m<sup>3</sup>, second*



0 metrics

*53,579,664,000,000,000,000 metrics per year (53 quintillion)*  
*Globally, assuming 100 metrics and 100m high boundary*

### Factors

- spatial coverage
- time coverage
- measurement accuracy
- pollutants measured

- pollutant proxies
- source tracers
- daily cycles
- seasonal cycles



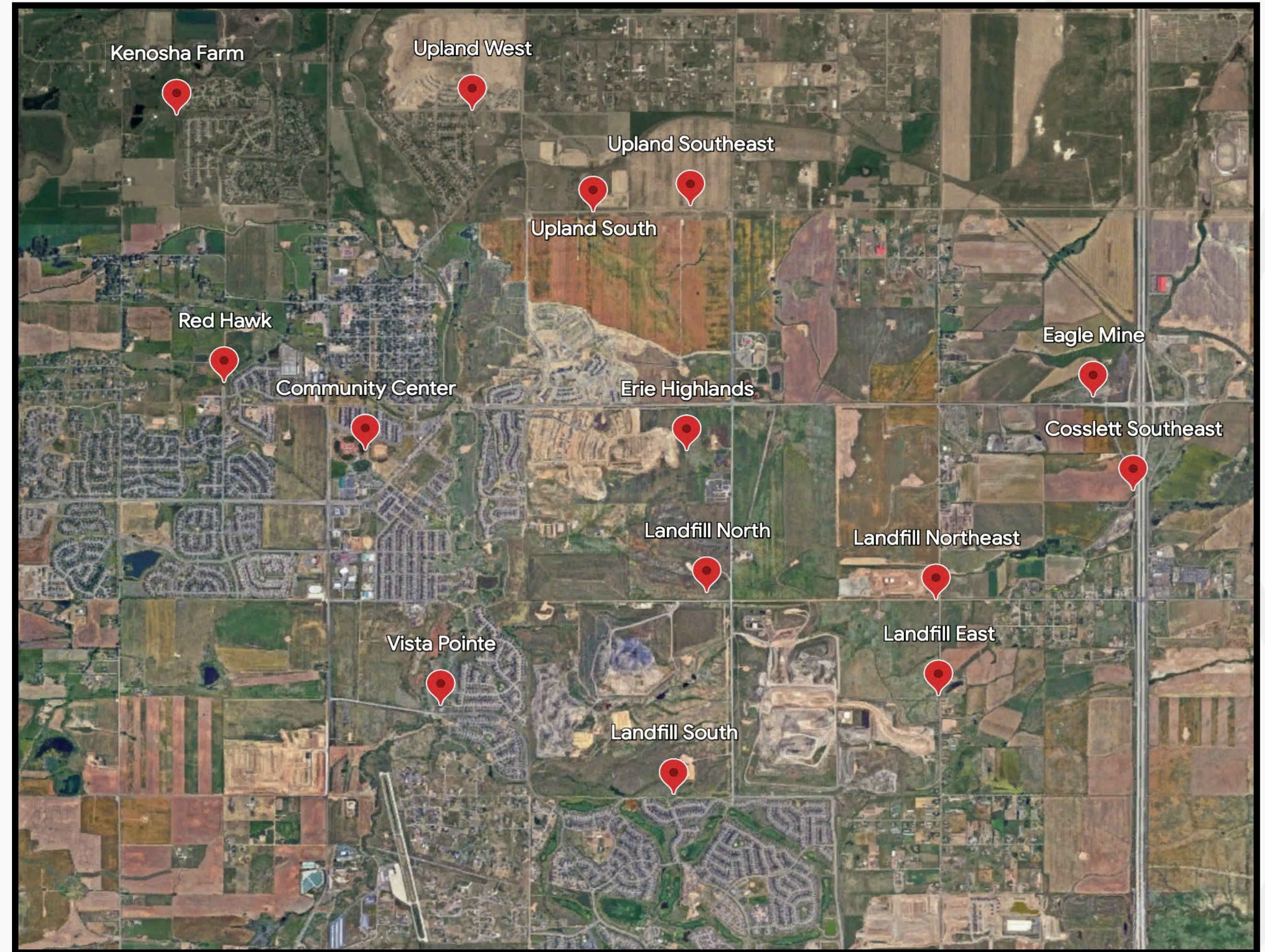
## Erie's Air Monitoring Program Goals

Characterize and quantify Erie's air quality patterns

Compare air quality with standardized health guidelines

Monitor, track, and report air quality disturbances

Discover areas of potential air quality improvement



*Map of all monitoring station locations across Erie throughout program history*



## 3 Types of Measured Data

Real-time PID data shows VOC disturbances from baseline averages.

Weekly Canister data shows regional and localized VOC patterns.

Triggered Canister data shows snapshot concentrations of a VOC plume as it passes over a monitoring station.

Variations from baseline averages are linked to specific emissions events, landfill emissions, and seasonality.



*Ajax real-time monitoring station. All data is publicly available and can be found at our website:*

<https://app.ajax-analytics.com/p/program-overview#program=Erie>

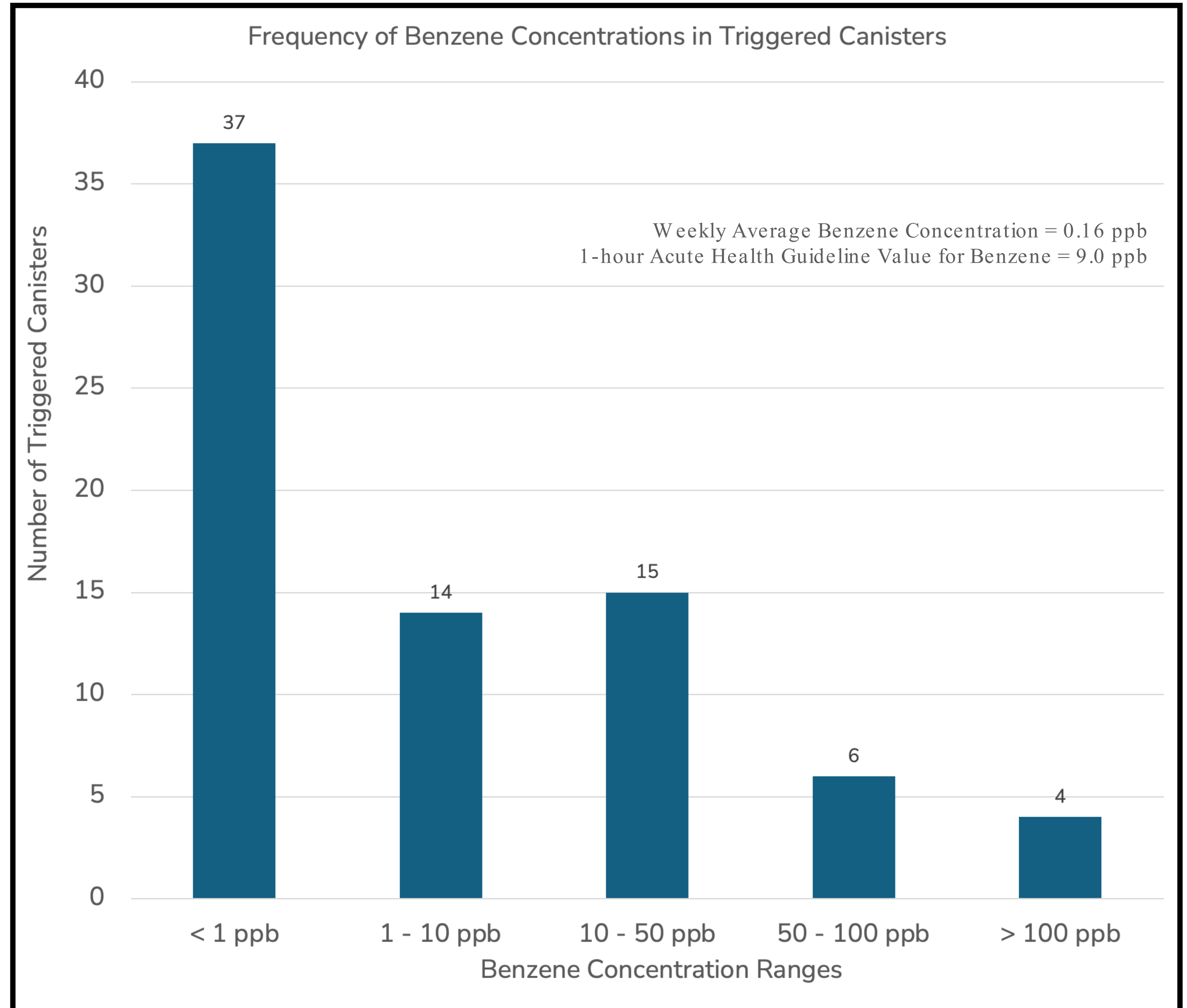


# Elevated Benzene in Triggered Canister Data

Why This Matters: Benzene is a known carcinogen, and exposure can impact residents' health.

Impact to Erie: Benzene exposure can lead to concerns regarding public health, environmental quality, and property devaluation.

Industry Accountability: Continuous monitoring promotes responsible operators to limit emissions without the need for overregulation.





## PROGRAM HIGHLIGHTS AND IMPACTS

# Instantaneously Addressing Community Air Quality Concerns

Why This Matters: The mobility of our systems provides data-driven assurance about neighborhood air quality during O&G activity as operations migrate around Erie's pad sites,

Impact to Erie: Transparency and access to real-time local data builds community trust and gauges industrial activity impacts on homeowners.

Local Control: With independent monitoring, Erie does not need to rely on potentially biased operator-reported data.



*Aug 2023- Development of the Erie Highlands community was paused due to the discovery of methane detected in soil samples above a P&A'd well. A monitoring station was placed above the saturated soil to ensure that the methane was not permeating to the surface as evidence that there was no danger to the public. The well was adopted into the orphaned well program and subsequently re-plugged in June 2024.*

*Dec 2024- Erie staff received noise complaints from O&G maintenance activities in the Flatiron Meadows neighborhood. Air quality was an immediate concern due to the proximity of the pads to the community. This prompted a station relocation to monitor air quality near the pad sites as maintenance moved around the 4 pads within the neighborhood.*



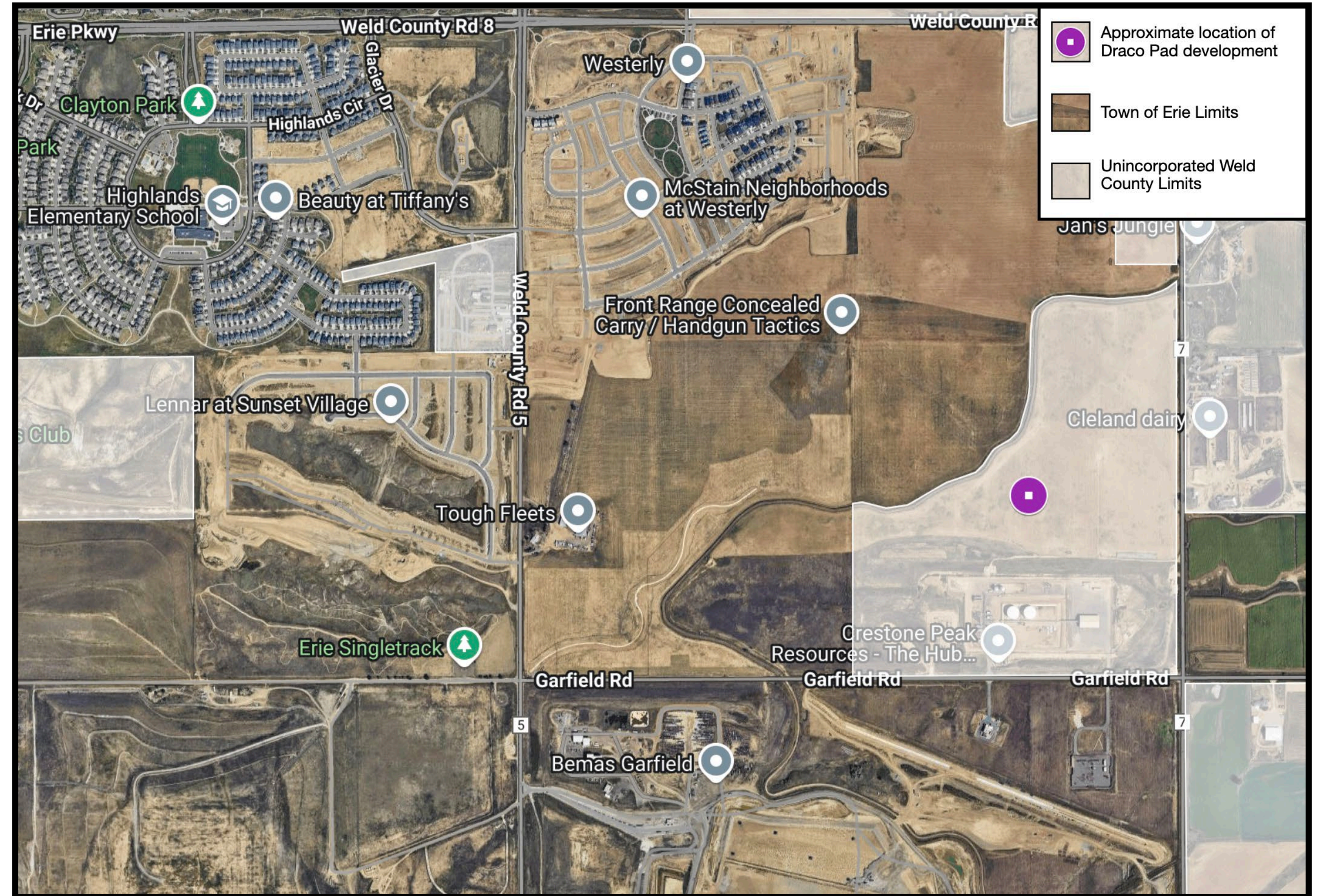


# Instantaneously Addressing Community Air Quality Concerns Continued...

Why This Matters: The mobility of our systems provides data-driven assurance about neighborhood air quality during O&G activity as operations migrate around Erie's pad sites,

Impact to Erie: Transparency and access to real-time local data builds community trust and gauges industrial activity impacts on homeowners.

Local Control: With independent monitoring, Erie does not need to rely on potentially biased operator-reported data.



*March 2025- ECMC approves new O&G development, the Draco Pad, on the outskirts of Erie town limits. Situated southeast of active community building, air quality disturbances are expected during various pre-production processes. Pre-production is expected to be completed by October 2027.*

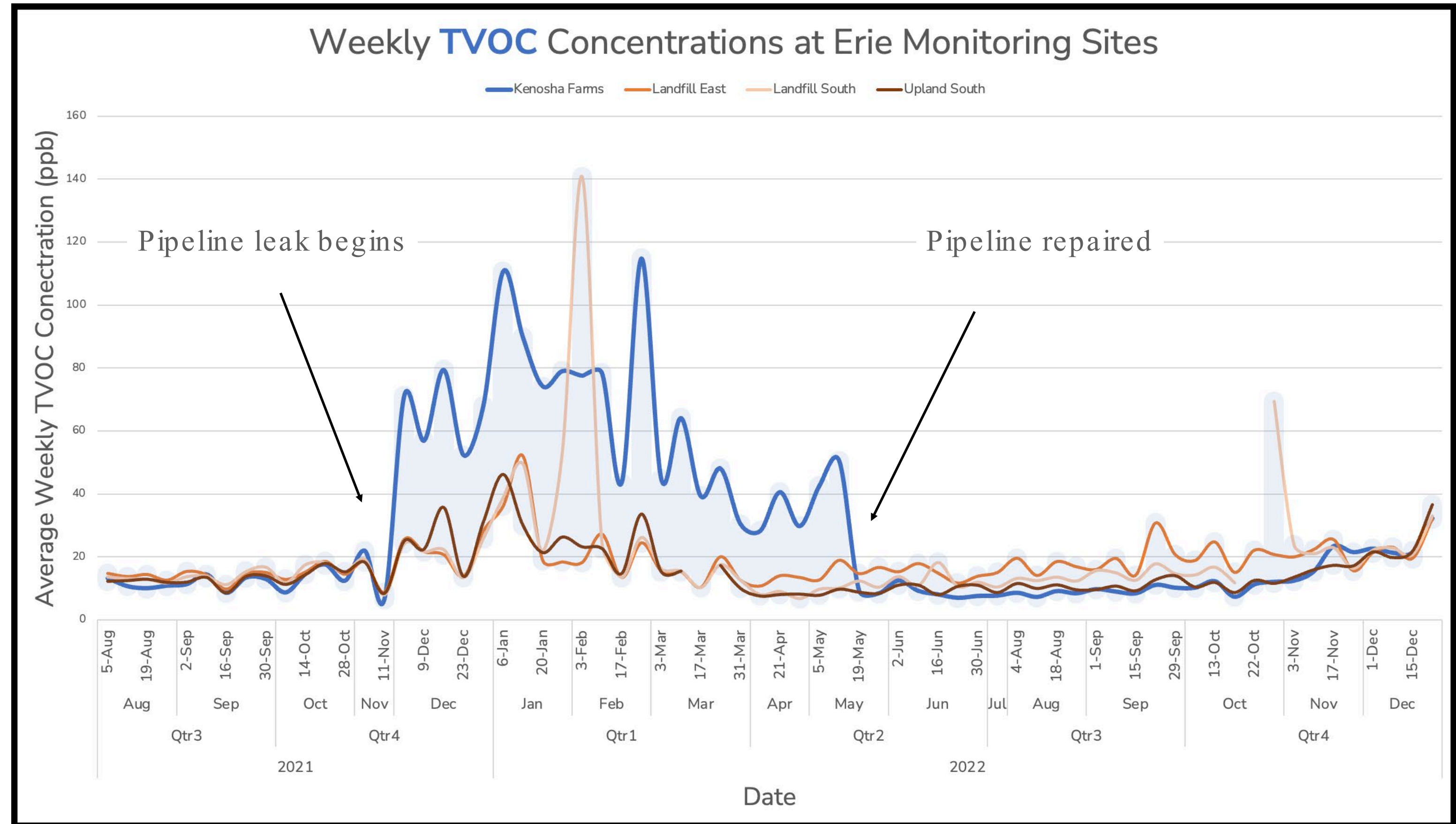


# Preventative Pipeline Leak Detection

Why This Matters: Early leak detection can help to prevent catastrophic events like the 2017 Firestone explosion.

Impact to Erie: Homes, business, and citizens are protected from costly and/or life-threatening hazardous leaks and emissions.

Proactive Financial Responsibility: Proactive monitoring helps to catch potential emergency situations.



*In 2022, elevated TVOC concentrations at the Kenosha Farms station in the Kenosha Farms community detected a gathering line leak ~900 ft from the station. Upon discovery, the pipeline was repaired.*

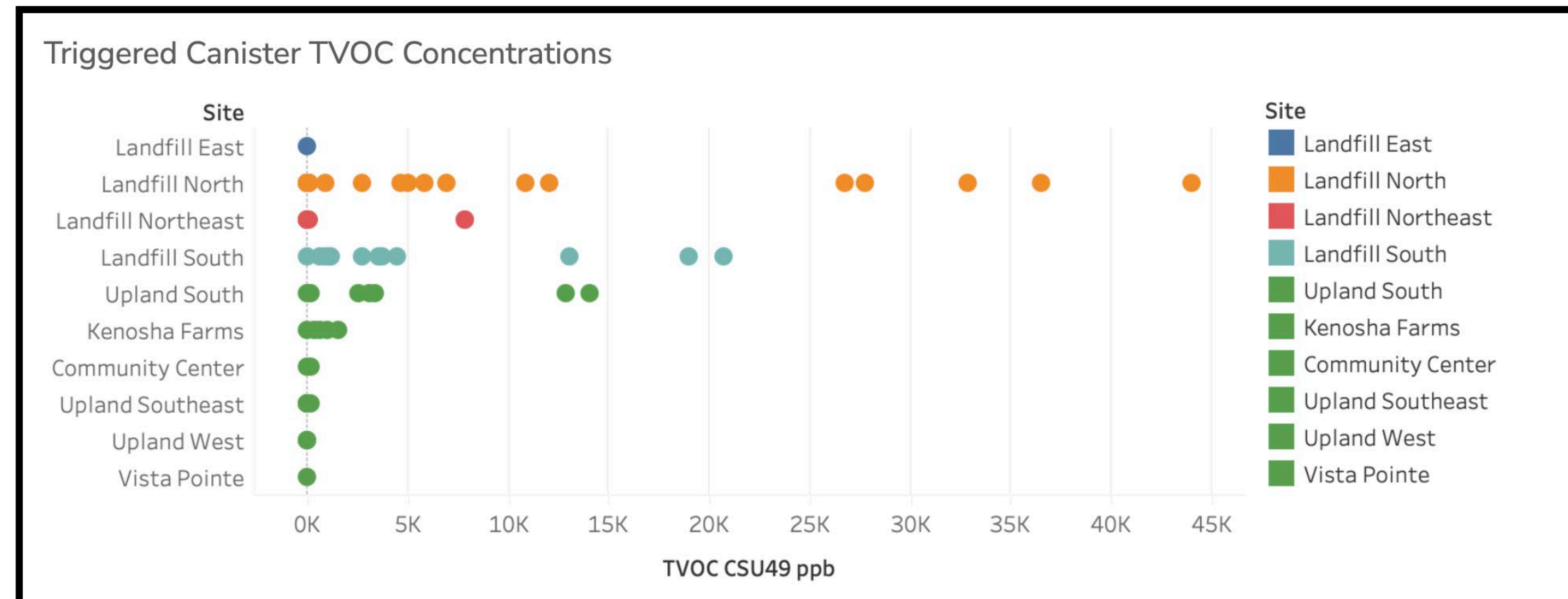
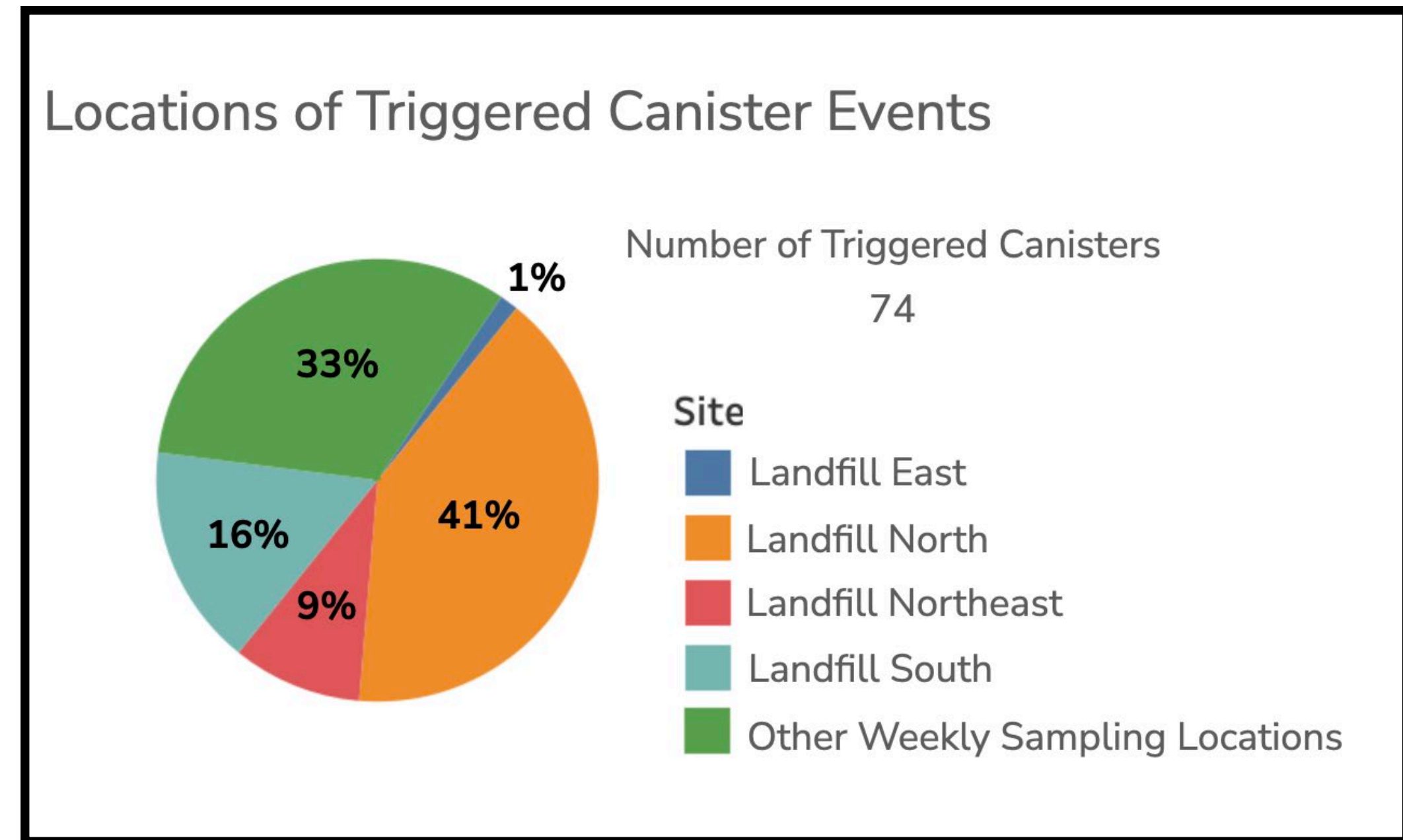


# Prominent Landfill VOC Elevations

Why This Matters: Landfills release methane and VOCs, affecting air quality and climate. O&G pads are situated within the landfill area, mixing air toxics and hindering differentiation. Camouflaged O&G emissions could be a result of operational bad-practice.

Impact to Erie: Identifies areas of improvement and promotes operationally-safe practices benefiting the environment and quality of life in Erie.

Cost-Effective Solutions: Investigation and detection allow for targeted mediations, reducing long-term environmental and community damage.



*67% of triggered canister events occur at the Landfill stations with consistently elevated VOC concentrations.*

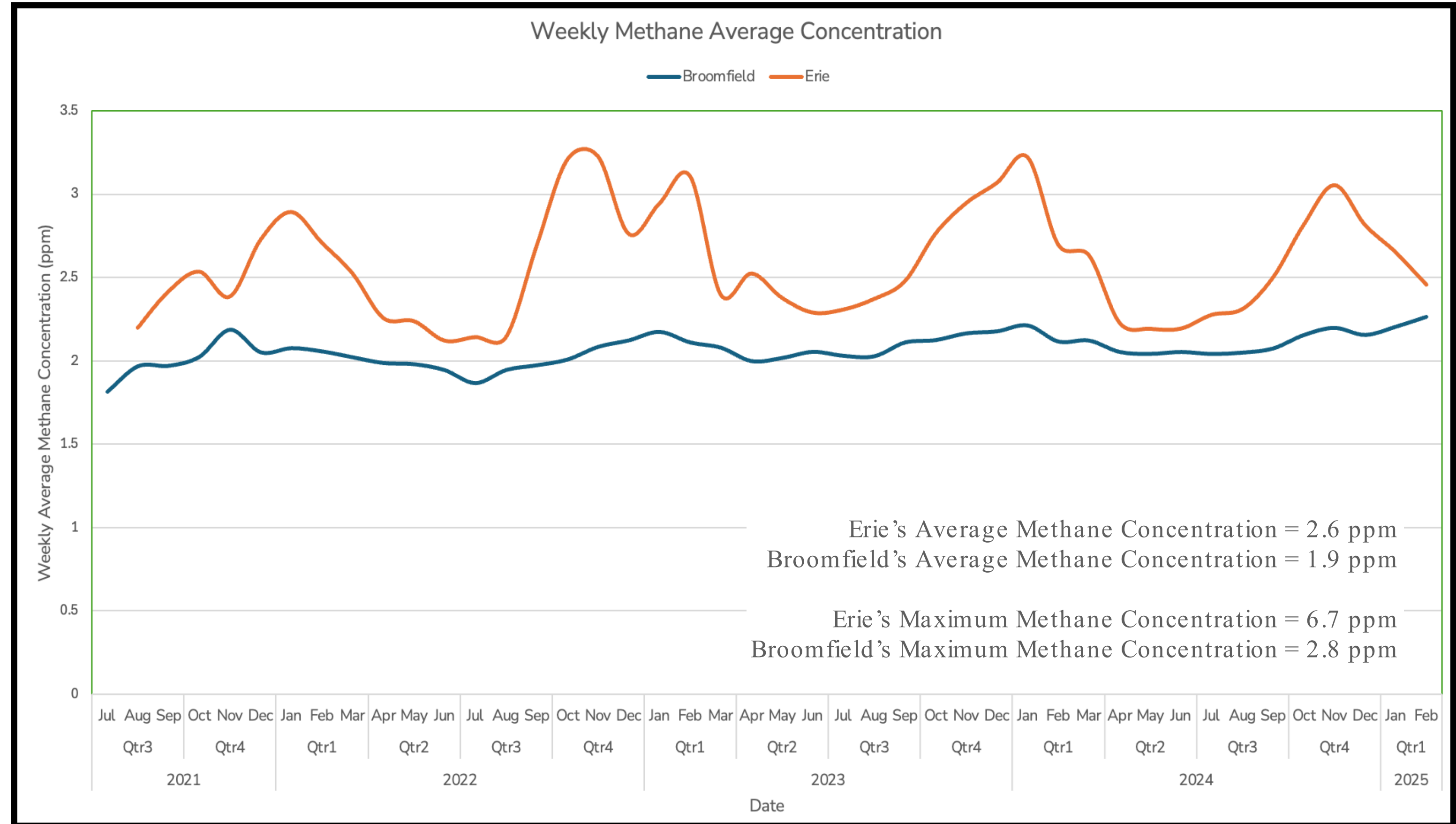


# Methane Levels: Erie vs. Broomfield

Why This Matters: Data comparison shows how regional and local emissions vary, highlighting the influence of Erie’s Front Range Landfill.

Impact to Erie: Identifies areas where emission reductions can improve public health, ensuring community-driven data oversight. The data also helps to drive policy decisions such as APCD’s 2025 proposal to enforce new greenhouse gas reporting requirements from municipal solid waste landfills

Balanced Regulation: Monitoring promotes and enables action based on facts, not assumptions, benefiting both industry and the environment.



*Average weekly methane concentrations since Q3 2021 from weekly canister samples in Broomfield and Erie.*



## Air Monitoring Program Summary

**Public Safety:** Reassuring residents, and proactively protecting health.

**Proactive Financial Responsibility:** Helping to prevent emergency situations and environmental disturbances.

**Industry Accountability:** Promotes responsible operations, encouraging smooth relationships between operators, staff, and public.

**Local Control:** Erie makes its own air quality decisions instead of relying on external agencies.

**Transparency and Community Trust:** Providing clear, accessible, and unbiased data for all Erie residents.

