



Odor Explore App and VOC Measurements

Topic Area: Air Toxics – Ambient Measurements and Methods

Highlighted Project

Community Participation in Classifying Odors from Air Pollution Emissions

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Collaborators:

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Louisville Metropolitan Sewer District (MSD) – Robin Burch, Daymond Talley



ACE BOSC Subcommittee Meeting
Meet the Scientists – Session #1
October 12, 2021

Overview of Research Efforts

Rubbertown Next Generation Emissions Measurement (NGEM) Project

Team: EPA ORD, EPA Region 4, LMAPCD, MSD

Objective: Deploy and evaluate NGEM systems around chemical facilities and within the surrounding community to understand levels of select volatile organic compounds (VOCs) and hazardous air pollutants (HAPs)



Multi-component VOC Sensor System for Fugitive Emissions and Odor Identification

Team: EPA ORD, EPA Region 4, LMAPCD

Objective: Develop a sensor-based VOC system combining several NGEM approaches to detect and identify fugitive odor emissions



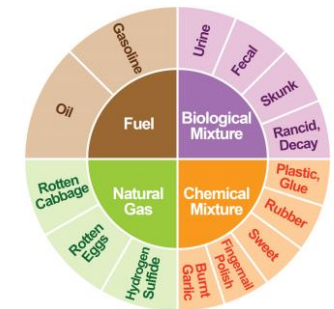
Community Participation in Classifying Odors from Air Pollution Emissions

Team: EPA ORD, EPA Region 4, LMAPCD, MSD

Objective: Develop a cell phone app (Android and iPhone) for communities to easily report odors and view odor reports in their area



Building on the initial NGEM project, we are exploring complementary approaches to better understand air toxic and odorous emissions



Louisville Odor Wheel

Impact

Many communities are impacted by odorous and air toxic VOC emissions that contribute to odor issues and poor air quality

- ORD is developing approaches and tools to better understand these emissions

Existing odor monitoring approaches are limited and do not provide quantitative measurements

- ORD is adapting existing VOC measurement approaches to quantify specific odorous air toxic VOCs

Multiple approaches on different spatial and temporal scales are needed to improve understanding of emissions

- ORD is demonstrating the utility of combining different measurements with community/citizen science

Persistent odors can be a nuisance and may cause health concerns for impacted communities

- Odor Explore app will help engage, empower, and educate communities

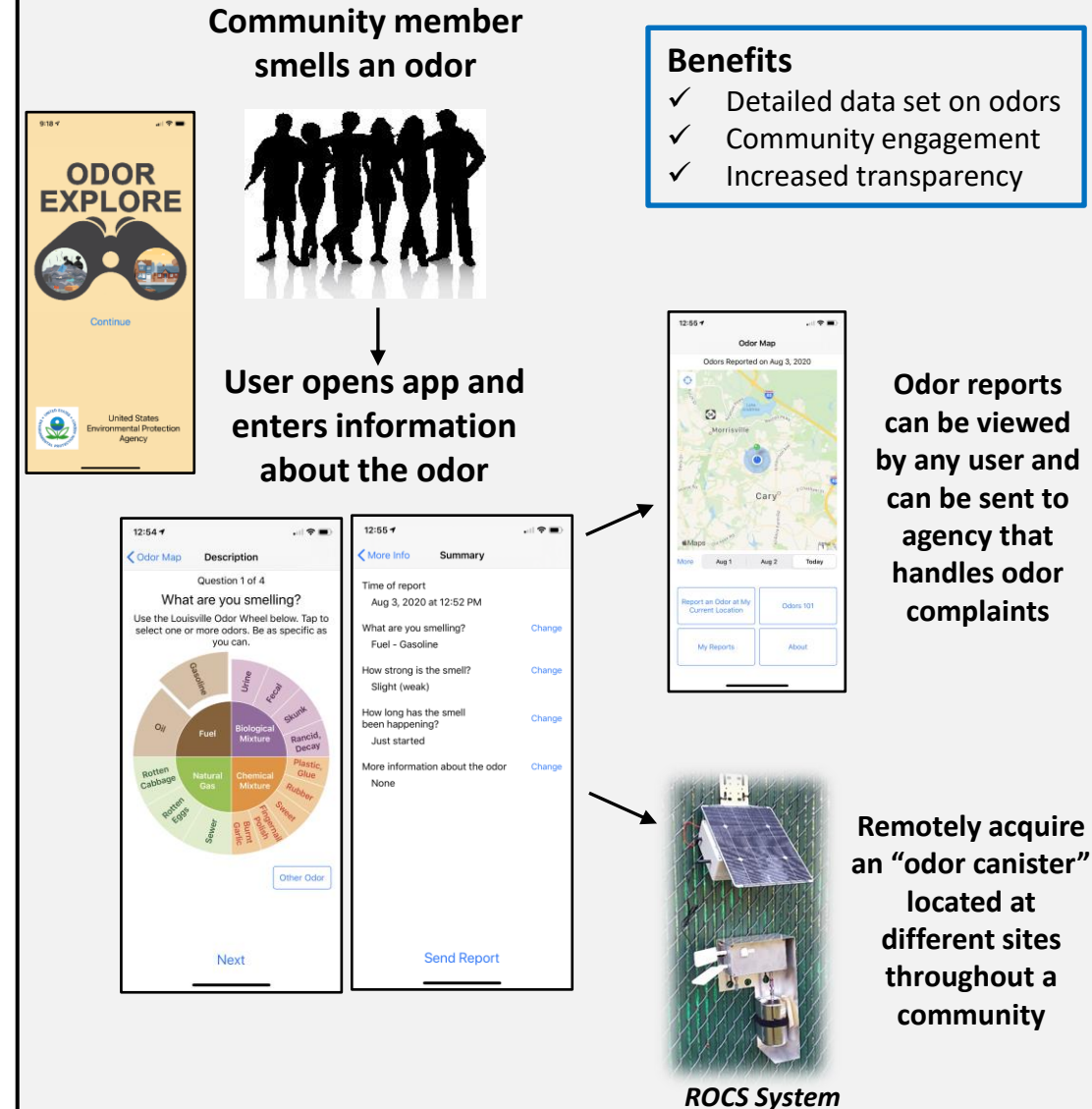
Odors are challenging to respond to, investigate, and resolve

- Odor Explore app data can be used to:
 - Expand the ability of agencies to respond to odor complaints
 - Inform agencies and industry in developing strategies to mitigate air pollution and odors

Next Steps

- **Further test and enhance the Odor Explore app** for launch nationwide
 - Pilot test the app in partnership with community members in Rubbertown industrial area
 - Add a generic odor wheel and more city-specific odor wheels
- **Deploy remotely operated canister sampler (ROCS) systems** that can be triggered based on odor app data
 - Measurements may be able to provide a chemical snapshot of what is in the air for a given odor report
 - Work is exploratory
- **Explore and/or develop other measurement methods** that can be used to characterize odorous VOC emissions

How could different approaches be used together?



Additional Resources

- **Odor Explore App Webpage:** <https://www.epa.gov/air-research/odor-explore-citizen-science-project-using-mobile-app-and-new-measurement-approaches>
- **Select Presentations on the Odor Explore App**
 - “Rubbertown NGEM Demonstration Project and Odor App Project – Update Meeting #7”, West Jefferson County Community Task Force, 4/20/2021
https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=351623
 - “Next Generation Emissions Measurement and Odor Projects in the Rubbertown Area (Louisville, KY)”, EPA and Federal Community of Practice for Crowdsourcing and Citizen Science Webinar, 2/27/2020
https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=CEMM&dirEntryId=348486
- **Next Generation Emission Measurement (NGEM) Research for Fugitive Air Pollution Webpage:** <https://www.epa.gov/air-research/next-generation-emission-measurement-ngem-research-fugitive-air-pollution>

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