Empowering communities through data dashboards

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Outline

- Our goal to make data useful

- Two Colorado case studies

    - Community context

    - Questions we were trying to answer

    - Dashboard we built

    - Opportunities for continuous improvement

- Questions

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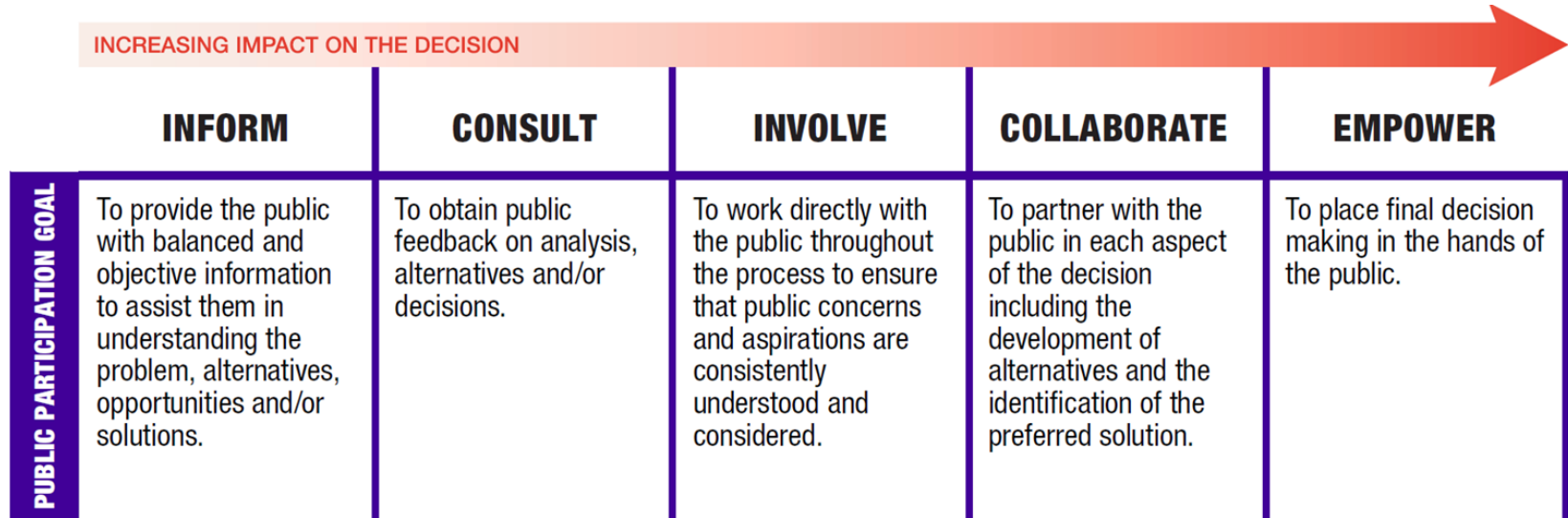Department of Public
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Community engagement is part of Colorado's efforts to advance environment justice

- 2021 - Environmental Justice Act
  - To right past wrongs, we must focus on, listen to, and learn from disproportionately impacted community voices.

- 2021 - Air Toxics Act
  - Community monitoring with emergency notifications.
  - Data to be made available in real time to affected communities.

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Goal: data dashboards to support communities

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.

Source: International Association of Public Participation

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Oil and gas case study: Informing people living near oil and gas operations

Oil and gas case study: Questions about measurements and interpretation

- What's in my air?

- What does this mean for my health?

Small sensors

Trailer that measures community exposure to >30 volatile organics

Mobile plume tracker

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Oil and gas case study: Dashboard for multiple audiences

These dashboards can tell you:
- What measurements we have collected at a site.
- What the measurements can tell us about potential health impacts.

These dashboards cannot tell you:
- The source(s) of the chemicals we measure.
- About chemicals that we do not measure.
- About chemicals without toxicity information.
- If you will experience specific health impacts.

Background
Summary by site
Site data
Data details & downloads

https://cdphe.colorado.gov/health/oil-and-gas-and-your-health

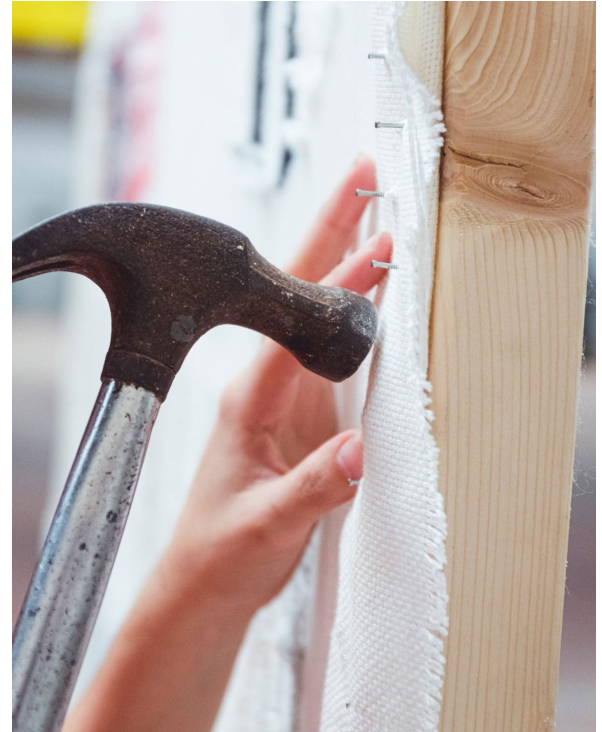**COLORADO**
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Oil and gas case study: Exploring all the data collected and what it means for health

Long-term non-cancer comparison of Benzene
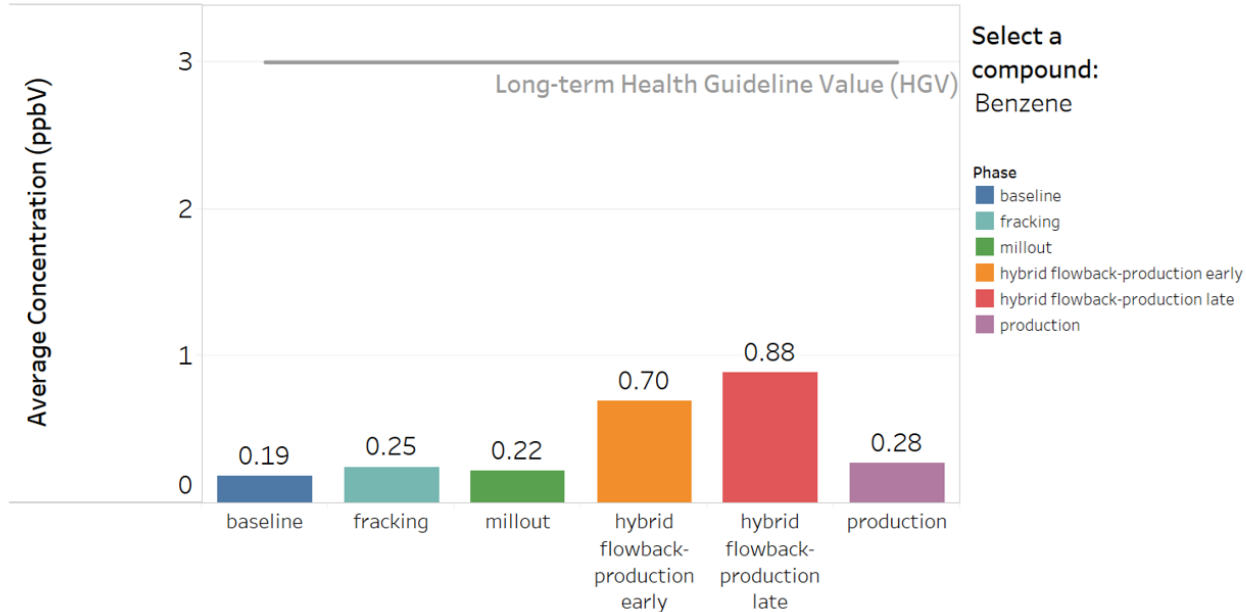
Oil and gas study: Ongoing improvements

- Continue to talk with people.

- Understand use and frustrations.

- Balance data availability with interpretation.
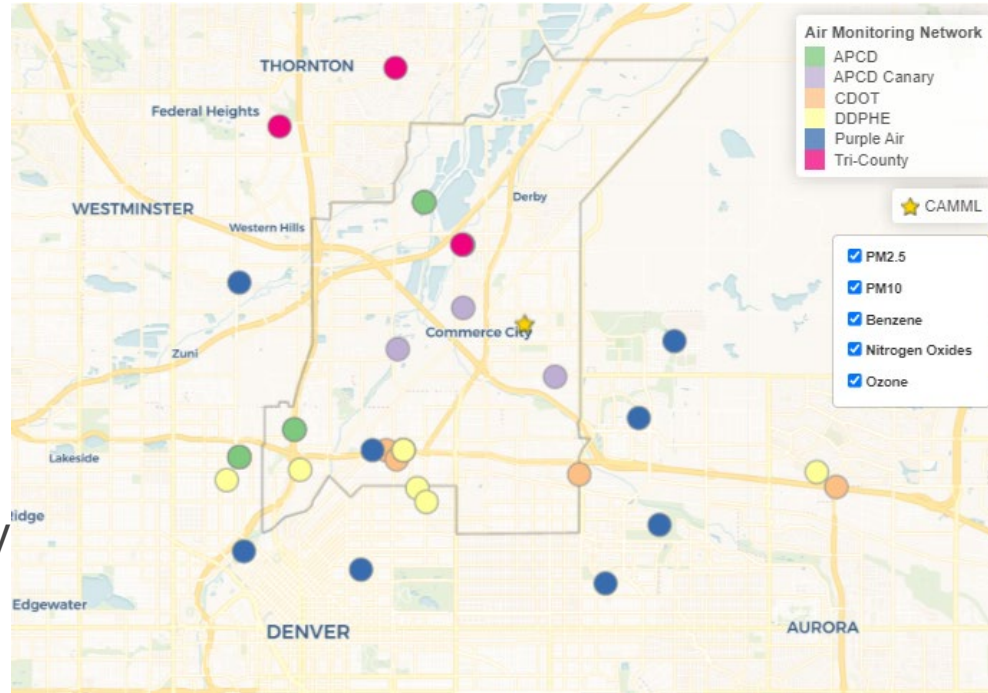
- Mobile friendly options.

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Commerce City North Denver case study: Community facing disproportionate impacts

Commerce City North Denver case study: Disparate data - what is already known?

- Multiple agencies
- Multiple projects:
  - Superfund sites
  - Voluntary clean-ups
  - Water sampling
  - Health data
- Dashboard goal: to centralize available data with a community lens

Commerce City North Denver case study: Storyboard to walk through main findings

Commerce City - North Denver has higher than average levels of fine particle pollution in the air.
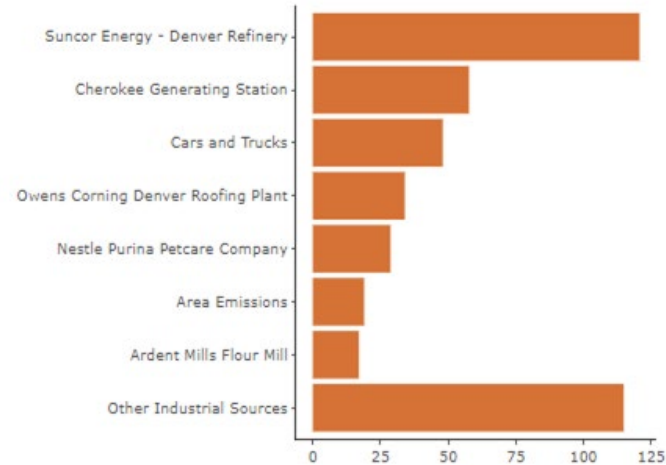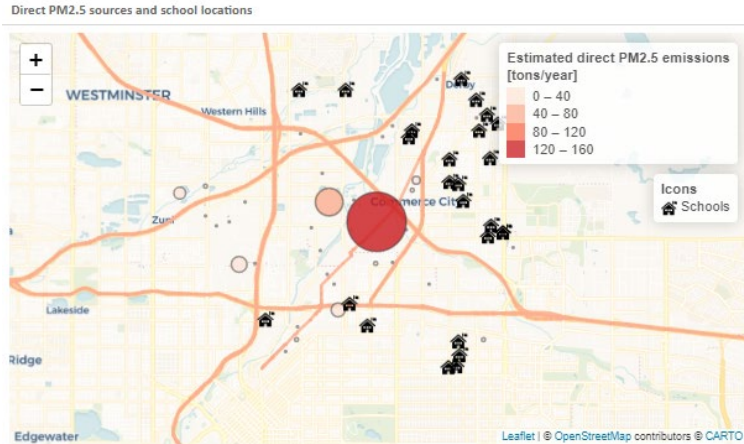

Average levels of fine particle pollution 2013-2017
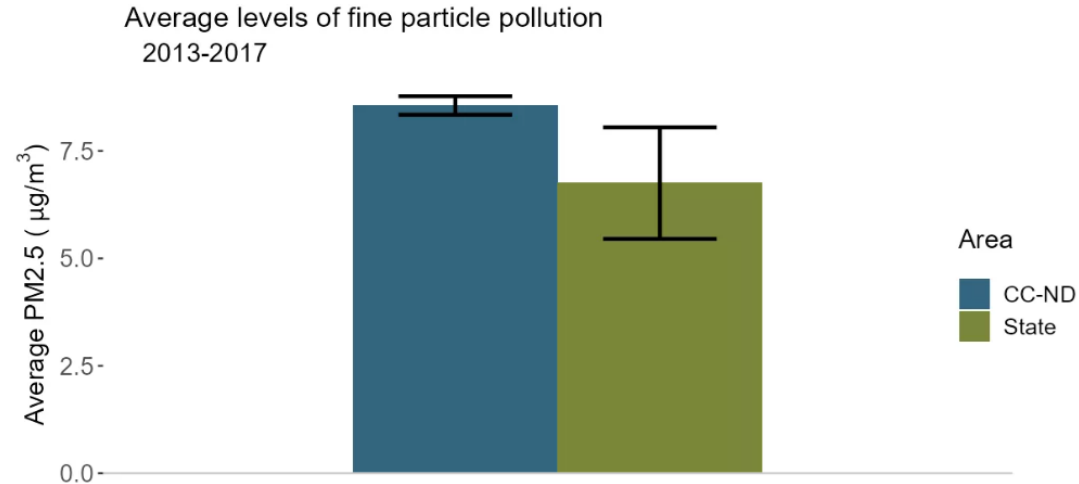
Area
CC-ND
State

These bars show the average level of fine particle pollution in the CC-ND area compared to the state. Click the graphic to learn more about fine particle pollution (PM2.5) emitters, school locations, and estimated emissions (tons/year).

https://coepht.colorado.gov/ccnd

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Commerce City North Denver case study: Dashboard to dive into the details

Direct PM2.5 sources and school locations

Estimated direct PM2.5 emissions [tons/year]
- 0 – 40
- 40 – 80
- 80 – 120
- 120 – 160

Icons
- Schools

Estimated direct PM2.5 emissions (tons/year)

https://cdphe-teeo.shinyapps.io/CCND_data_dashboard/

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Commerce City North Denver case study: Continuing to listen and bring data together

- Community members say this is an example to build on

- Has been useful in communicating pollutants of concern

- Informing ongoing community projects and CDPHE's involvement

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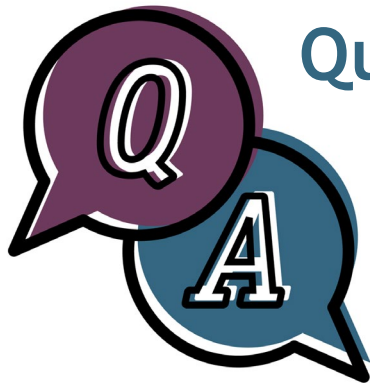
Questions?

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Oil and Gas Health Information and Response Program (OGHIR)
https://cdphe.colorado.gov/health/oil-and-gas-and-your-health

Commerce City North Denver dashboard
https://coepht.colorado.gov/ccnd

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Session Q&A Discussion

Please submit your questions for the session speakers through Whova – on your mobile device or laptop.

Make sure to note WHOM your question should be addressed to.

ASIC

Thank you for joining this session.

Remember to join the breakout meeting – located in Ballroom H - to connect and brainstorm about free and open source software (FOSS) for Air Sensor Data.

We also encourage you to attend the Plenary Presentation, **Personalizing Exposure and Advancing Precision Environmental Health Using Air Sensors,** taking place in Ballroom DE at 4:45 PM.

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