

The UCLA logo consists of the letters "UCLA" in white, bold, sans-serif font, centered within a solid blue rectangular box.

**Aliso Canyon Disaster
Health Research Study**

Community meeting #2

Affected and Comparison Community Workshop

Agenda

- **Welcome, Agenda Review**
- **Study Overview and Affected Community (Impact Zone)**
 - Presentation
 - Discussion
- **Comparison Communities**
 - Presentation
 - Discussion

Zoom Meeting Discussion Tools

Q & A

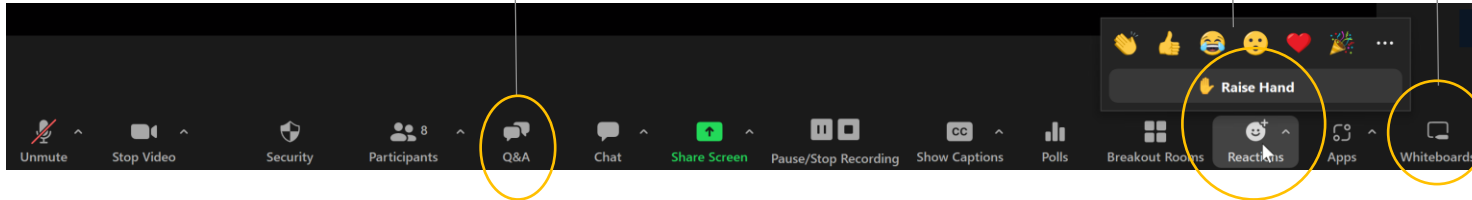
- *Ask questions*
- *Leave comments*
- *Upvote*

Raise Hand

Request to give a verbal question or comment

Whiteboard

Share comments on geographic areas



Meeting Guidelines

- **Treat all meeting participants, comments, and questions with respect**
- **All ideas and points of view have value. Challenge ideas, not the person voicing the ideas**
- **Use common conversational courtesy. Inappropriate language will not be permitted**
- **Stay focused on today's agenda**
- **Honor time**

Brief Study Overview

Key Research Questions

- **Did exposures to the Aliso Canyon Disaster adversely affect people's health in the past and currently?**
- **Do ongoing emissions from the facility adversely affect people's health?**
- **Can we link the health outcomes to specific exposures from the Aliso Canyon facility?**

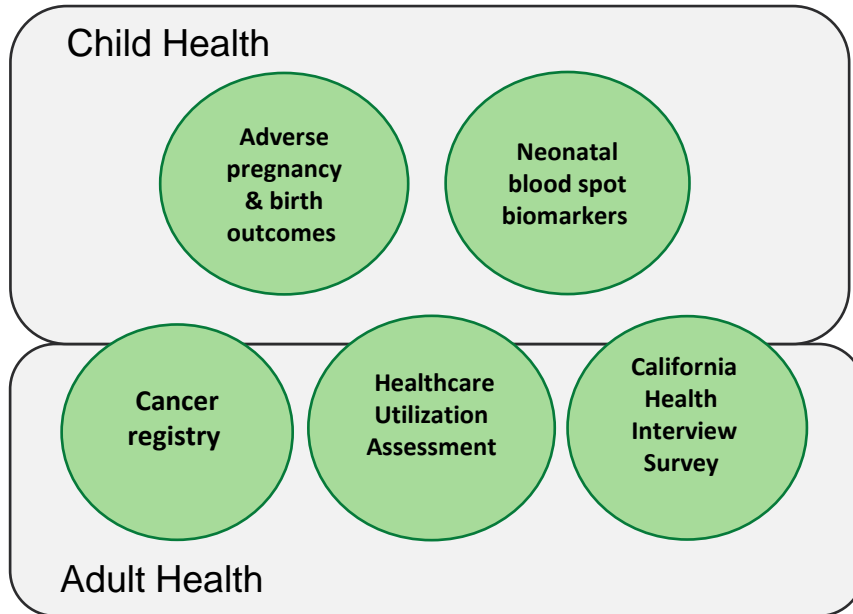
Health and Well-Being

- Search for evidence of exposure in blood samples of babies and adults
- Ask residents about their physical and mental health experiences and well-being
- Conduct clinical examination of residents
- Examine changes in health and mental health status
- Examine changes in patterns of health care use
- Study prevalence and incidence of cancer

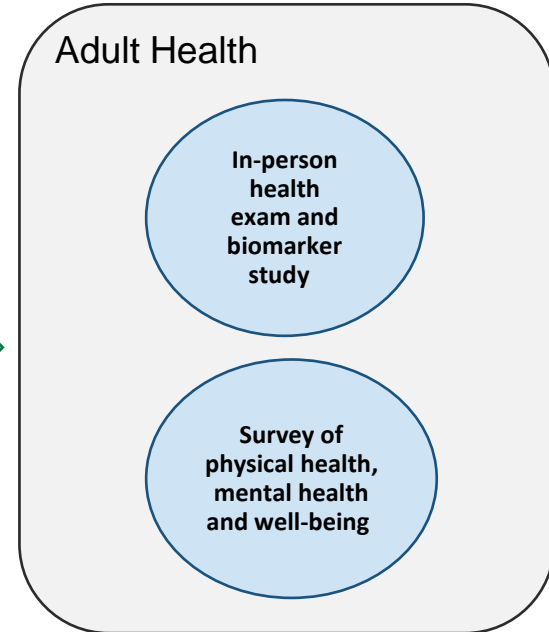


We will compare health in the affected community to other similar places

Existing Data



Newly Collected Data

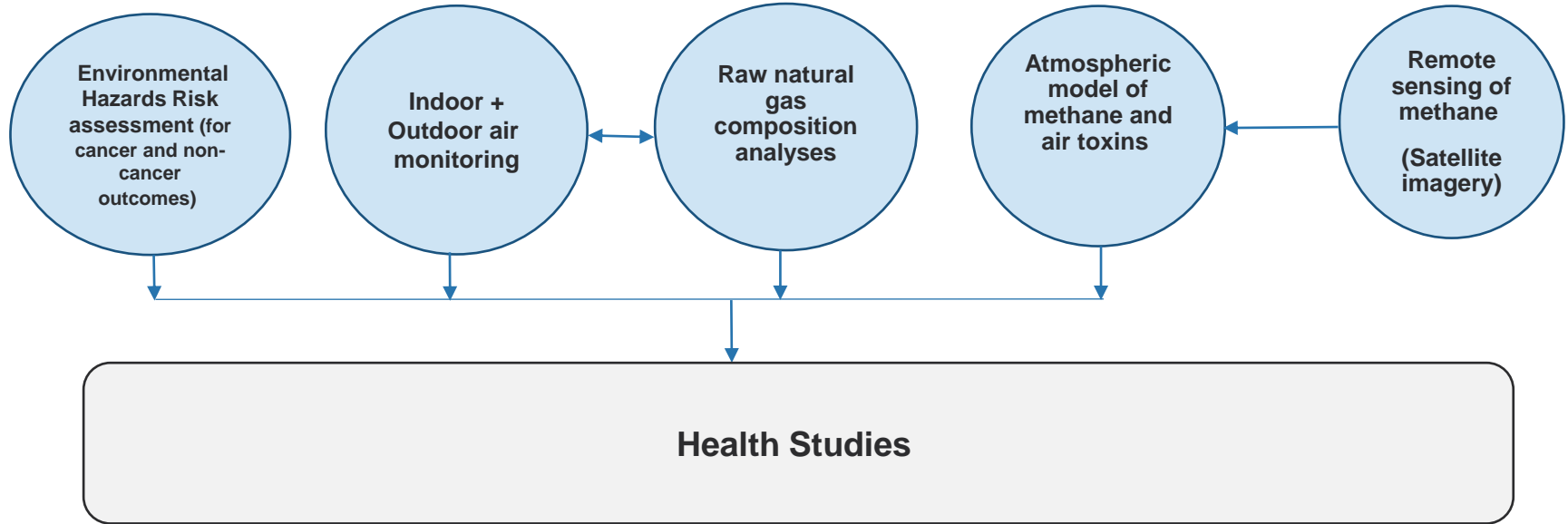


Environmental Exposures

- Assess the composition and amount of emissions released from the facility
- Examine how emissions traveled through the air
- Understand where emissions landed and who may have been exposed



Exposure Assessment Components



Health Study Overview: Progress to Date



Year 1 – 2023

- Set up needed data and research infrastructure.
- Gather and begin analyzing existing survey and environmental data.
- Begin engaging the community.
- Collect new environmental data.
- Recruit households for community air quality monitoring.
- Begin assessment of birth outcomes.
- Solicit technical expertise and guidance from the SOC during regular meetings.



Year 2 – 2024

- Recruit residents and conduct clinical exams.
- Begin survey of residents on health and well-being.
- Continue analysis of existing health and environmental data.
- Solicit technical expertise and guidance from the SOC during regular meetings.

Full timeline available at <https://alisostudy.ucla.edu/study-overview/>

Affected Community (Impact zone)

- **Presentation**
- **Discussion**

Affected Community (Impact Zone)

Affected Community

- Likely to have experienced exposures before, during and after the event – i.e., affected by the plume from the disaster leak and by routine emissions from the facility

Trade-offs: Exposure Specificity vs. Health Study Sample Size

- Larger areas could dilute exposures by combining unexposed and exposed = diminished health effects assessment
- Smaller areas could lead to sample sizes of health data that are too small to find differences between affected areas and other comparison communities

Affected Community (Impact Zone)

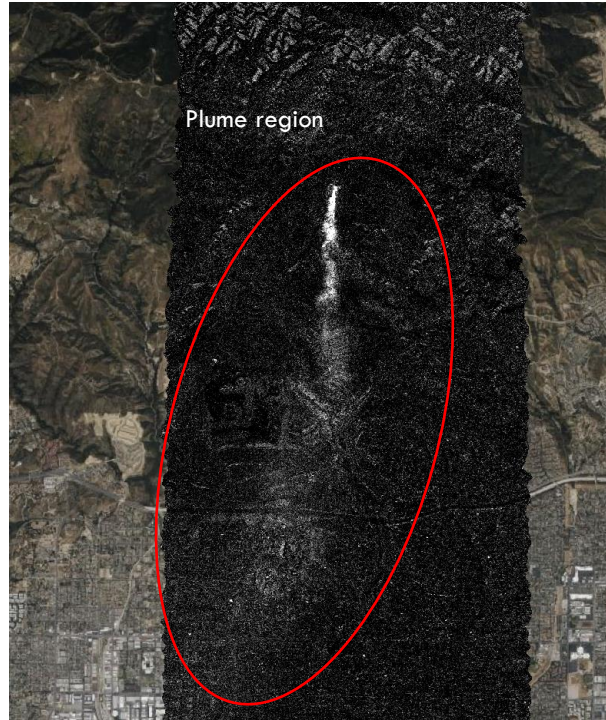
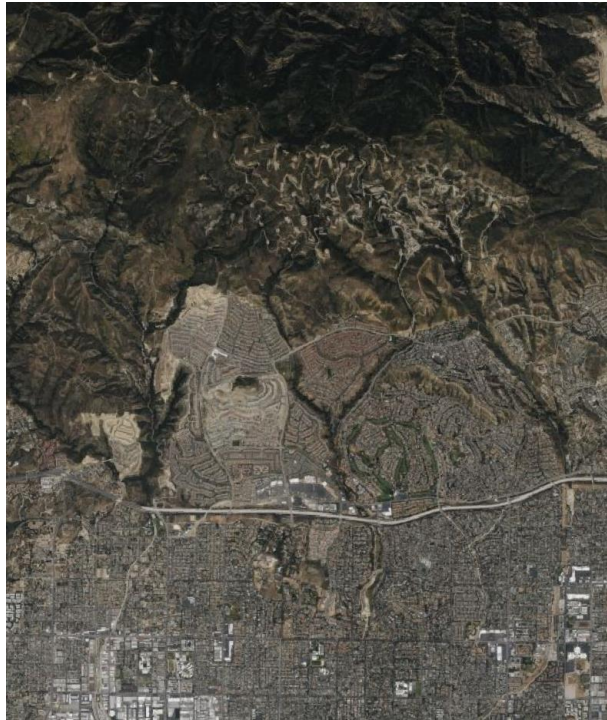
- **Satellite imagery of methane plume**
- **Atmospheric Chemical Transport Model**
- **Reports of health concerns**
- **Initial birth outcome analyses**

Characterizing blowout + ongoing releases of methane

	Methane Remote Sensing				
Dataset	AVIRIS Classic	Sentinel-2	EO-1 Hyperion	AVIRIS-NG	Global Airborne Observatory
Source	NASA JPL	EU	NASA/USGS	NASA JPL (via Carbon Mapper)	ASU (via Carbon Mapper)
Date range	2006-present	2015-present	2000-2017	2015-present	2015-present
Resolution	6m	10-60m	10-30m	3-5m	3-5m

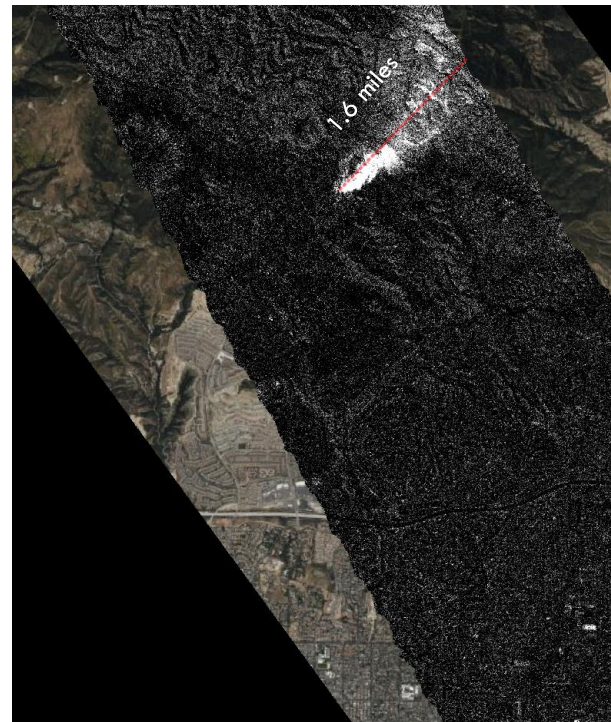
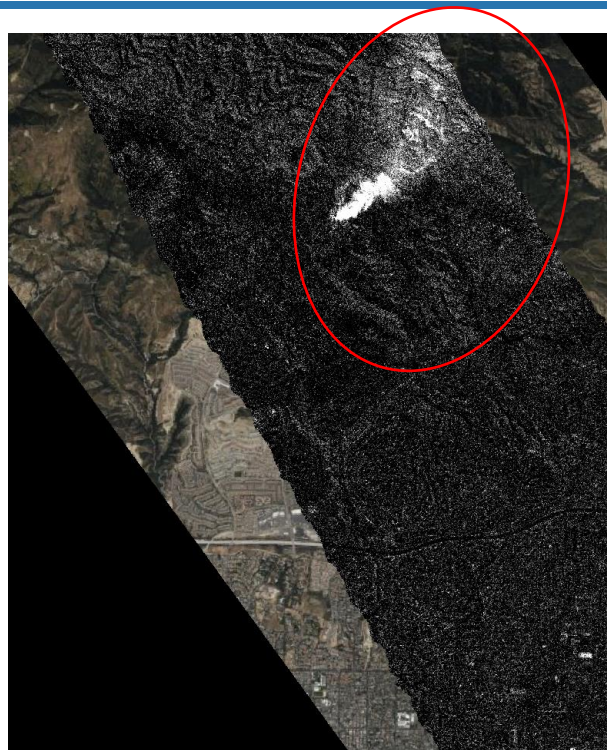
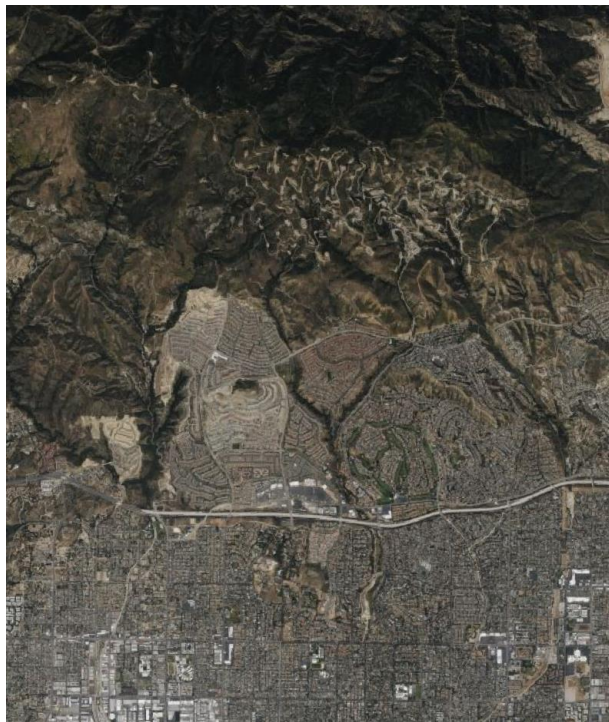


AVIRIS-C: 1/12/16
White pixels indicate plume detection



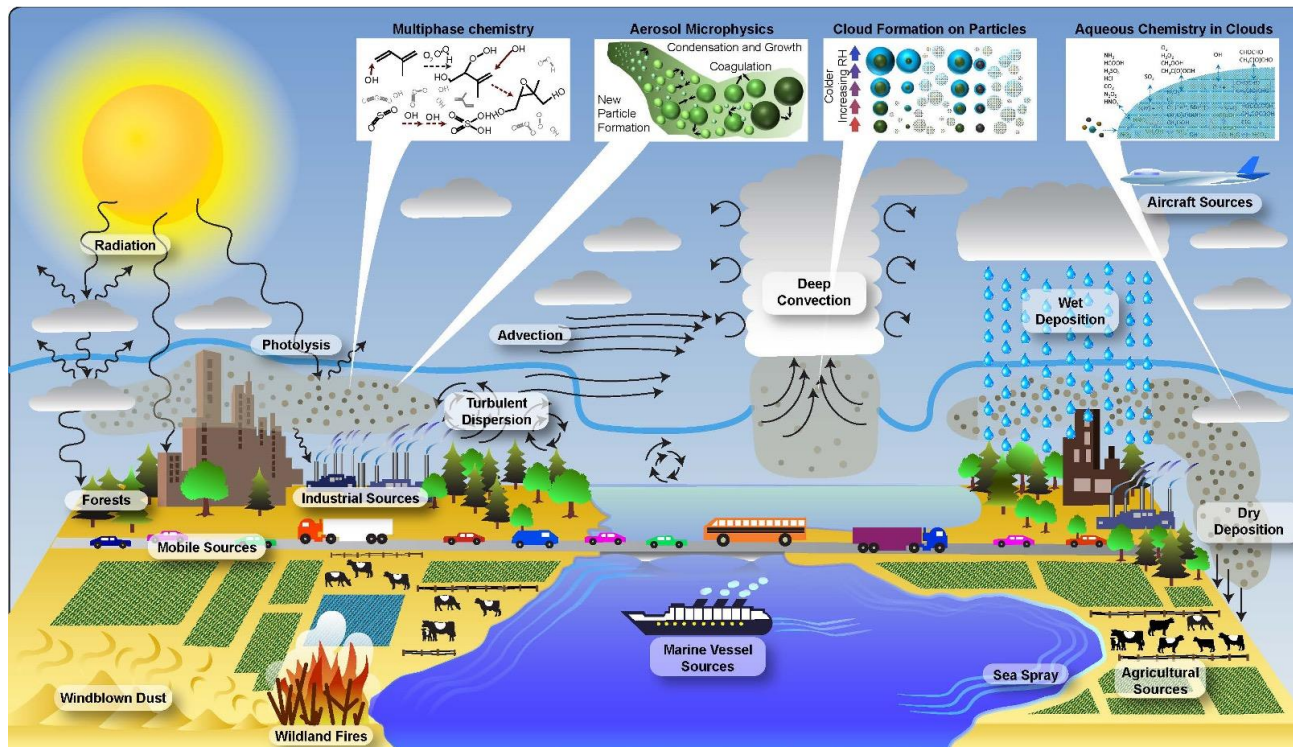
Much larger plume extent seen by AVIRIS-C, months after initiation of event.

AVIRIS-C: Jan 14, 2016



Wind changed direction by Jan 14 -> plume not blowing into community.

Atmospheric Chemical Transport Model Inputs



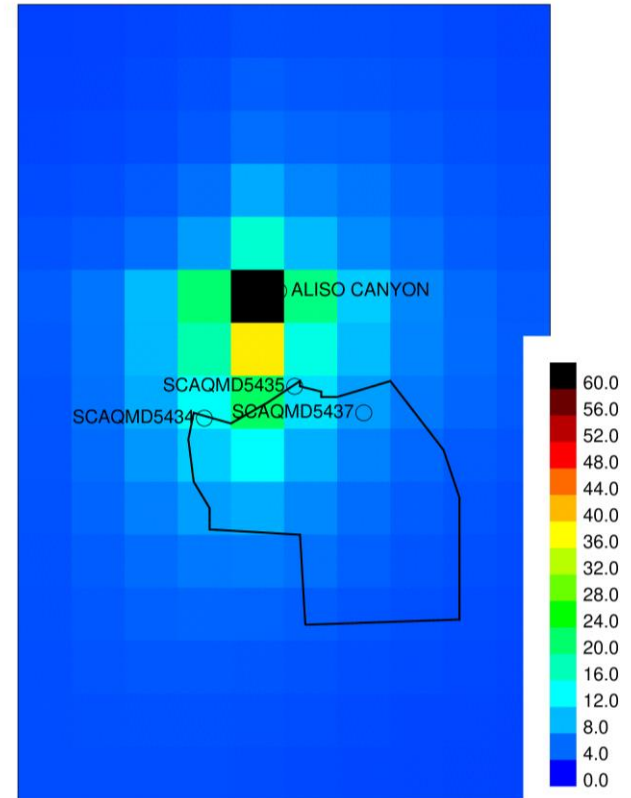
Source: <https://www.epa.gov/cmaq/overview-science-processes-cmaq>

Average methane concentration

Outlined Region is Porter Ranch.

SCAQMD sites indicate measurement locations.

Average from Oct 14, 2015 –
Feb 16, 2016.



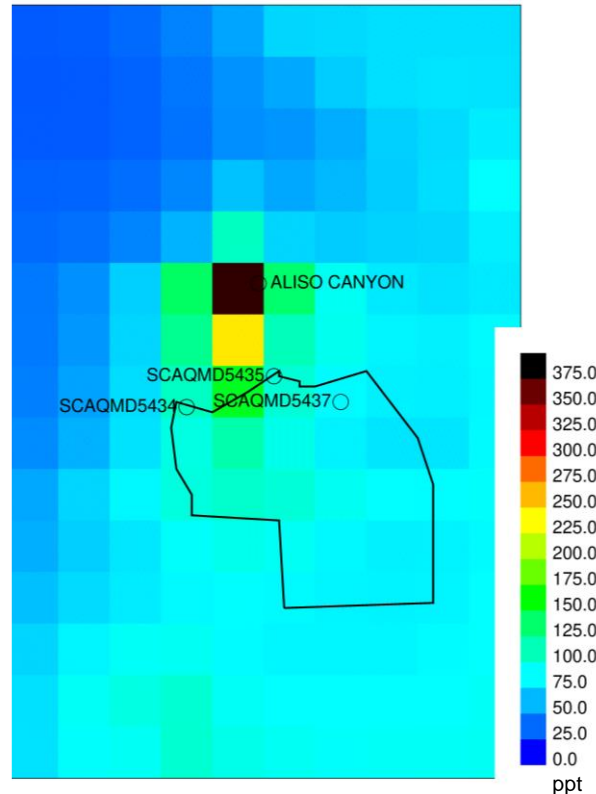
Methane released by Aliso Canyon

Average benzene concentration

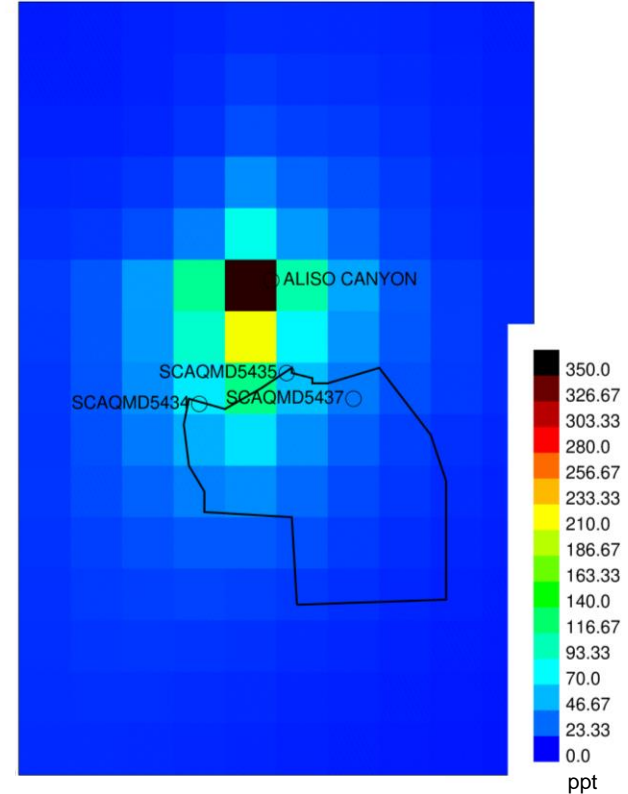
Outlined Region is Porter Ranch.

SCAQMD sites indicate measurement locations.

Average from Oct 14, 2015 – Feb 16, 2016.



(a) Total benzene



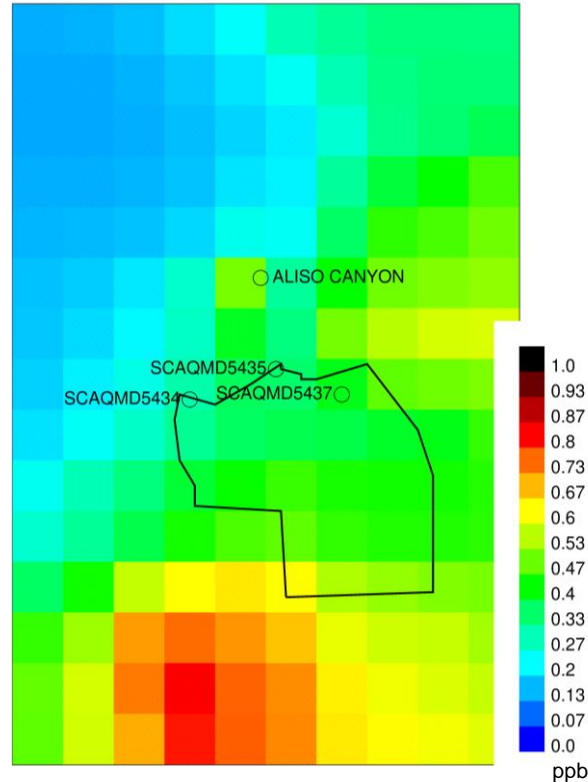
(b) Benzene released by Aliso Canyon

Average toluene concentration

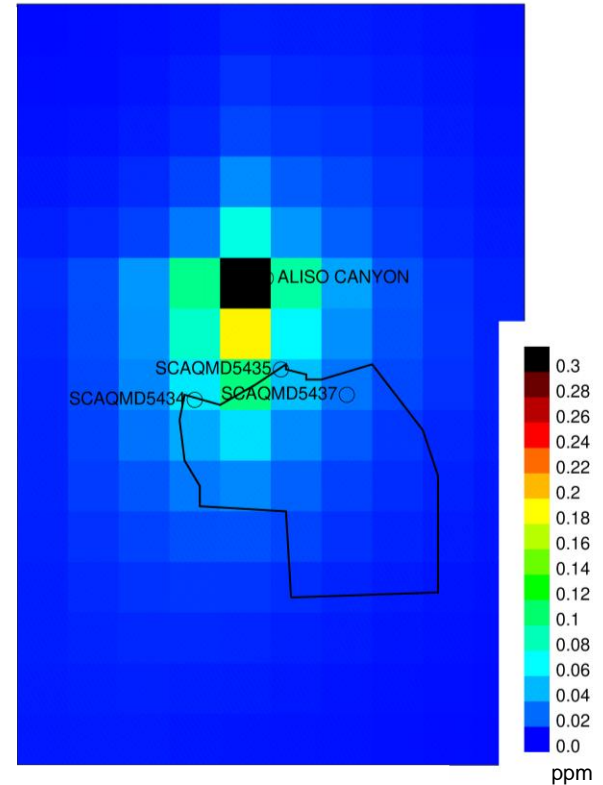
Outlined Region is
Porter Ranch.

SCAQMD sites
indicate
measurement
locations.

Average from
Oct 14, 2015 –
Feb 16, 2016.



(a) Total toluene



(b) Toluene released by Aliso Canyon

Affected Community (Impact Zone)

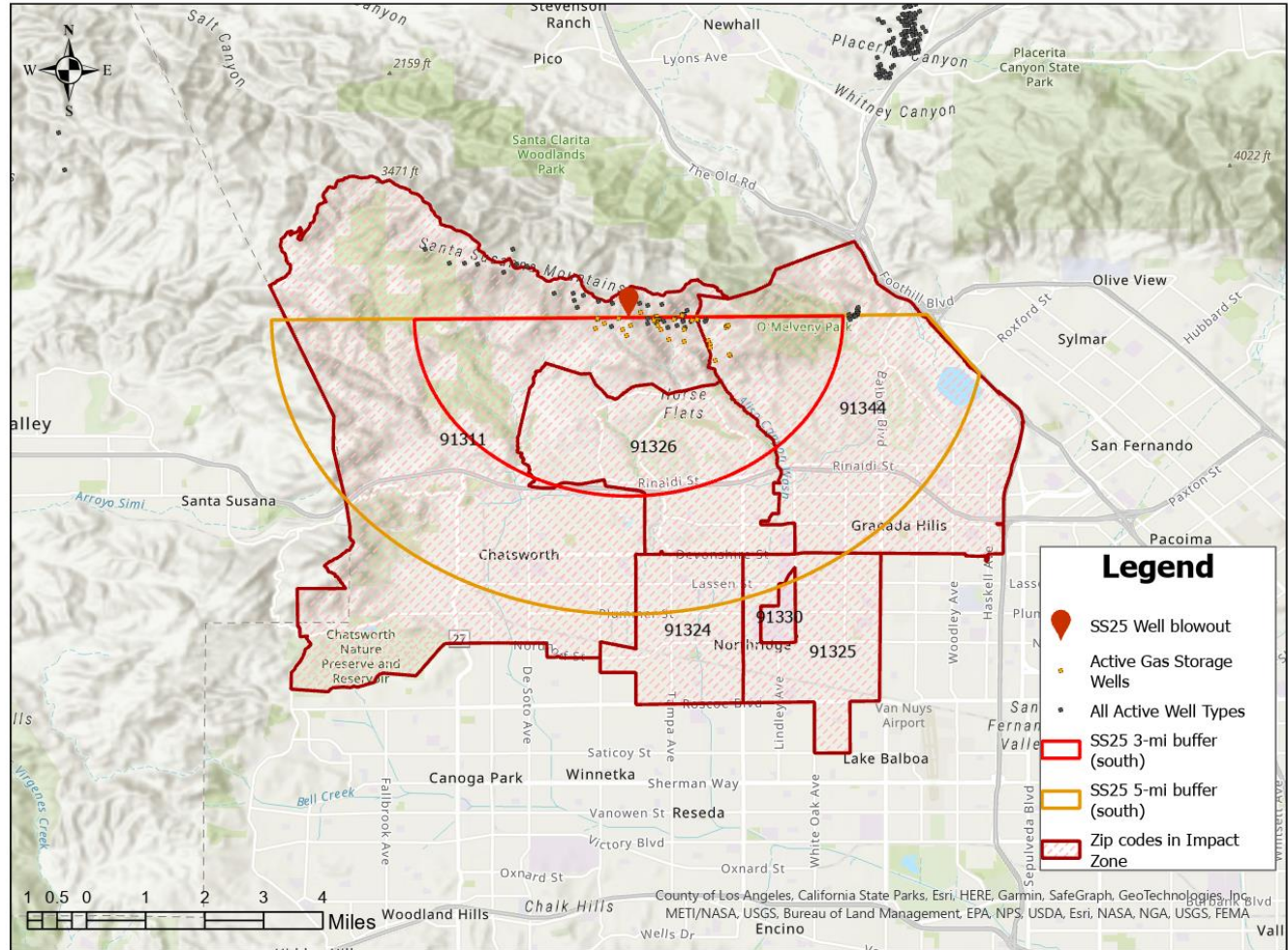
Summary

- Exposure data from satellites, chemical transport models, and field measurements show effects of 4-5 miles
- Reports of health concerns during disaster (about 83% within 5 miles)
- Initial birth outcome data showing much smaller counts at distances less than 5 miles
- Objective exposure data, health concern data, plus initial analyses of birth outcome data shows impact area extends to about 5 miles to the south

Affected community (Impact zone)

Feedback prompts:

- Do you feel certain areas should be included or excluded?
- Are there other things about the area you want us to know?
- Are there specific concerns about this impact zone and specific recommendations for how to change it?



Zoom Whiteboard

SELECT TOOL: PLACES CURSOR IN SELECT MODE SO YOU CAN CLICK OBJECTS AND CHANGE THEIR PROPERTIES.

PEN TOOL: PLACES CURSOR INTO DRAWING MODE TO PERFORM FREEHAND SKETCHING.

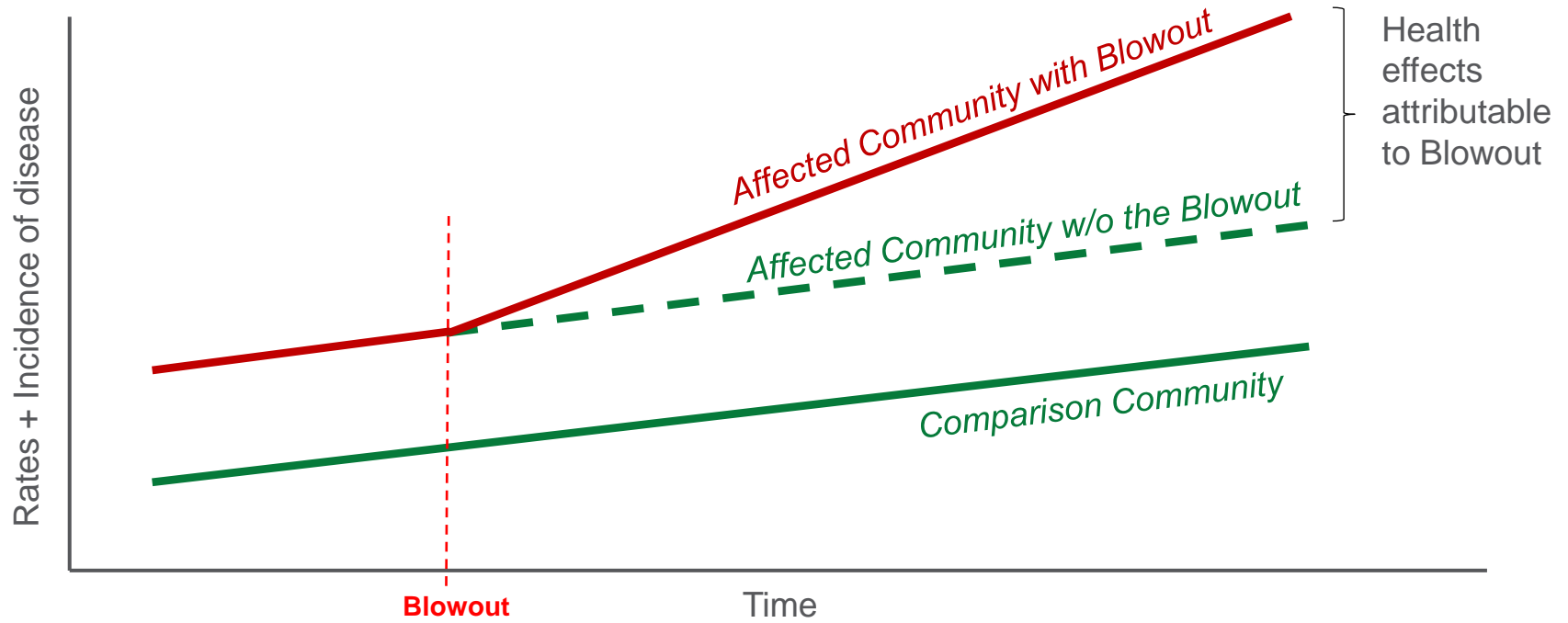
COMMENT: ALLOWS USERS TO ADD COMMENTS TO SPECIFIC ELEMENTS OR AREAS ON THE WHITEBOARD CANVAS.



Comparison Communities

- **Definition:** Comparison communities are those that are closely matched demographically, socially, economically, and environmentally to the affected community
- **BUT**, these communities are outside of the affected community and are unlikely to be directly affected by the pollutants released during the blowout or from ongoing emissions
- This enables us to assess whether the affected community differs from the comparison communities in key health outcome trends

Purpose of Comparison Community



Factors involved in selecting comparison communities

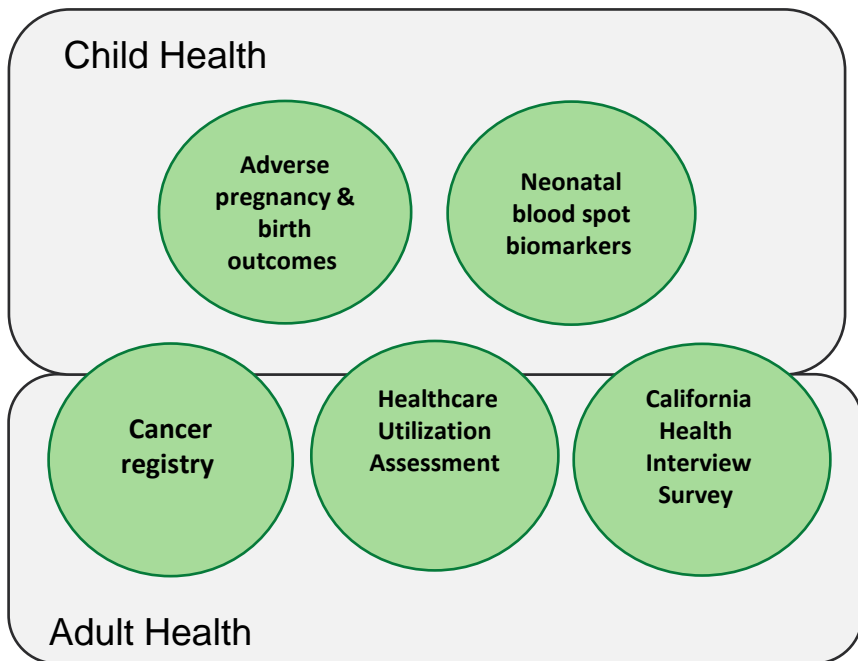
- **Similar characteristics necessary for comparative analysis**

Demographic	Socioeconomic	Environmental	Health
Race	Income	Air pollution	Trends in health outcomes
Ethnicity	Percent homeowners vs renters	Climate	
Age			

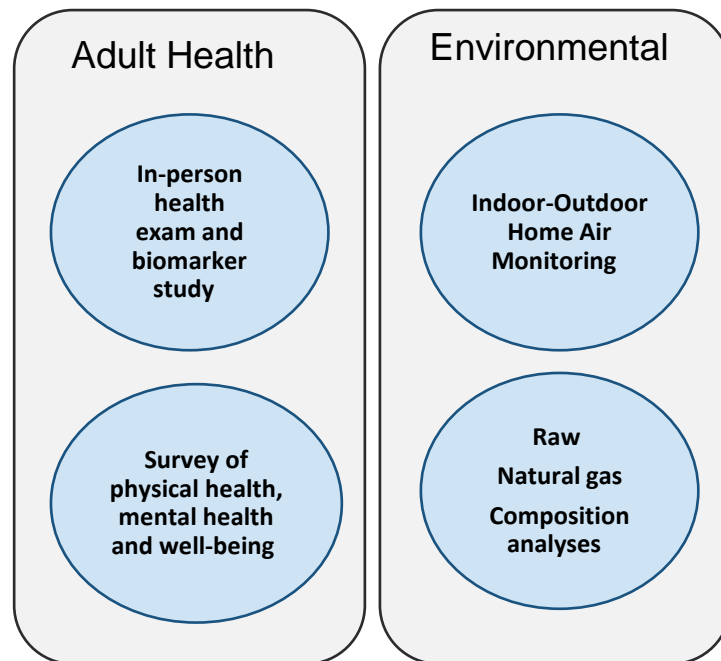
- **Practical considerations** – feasibility, cost constraints, logistics, statistical validity
- **Study questions and data** determine selection of comparisons

Two Categories of Comparison Communities

Existing Data



Newly Collected Field Data



Comparison Selection Process: Demographics, Socioeconomics



Population



Income



Race

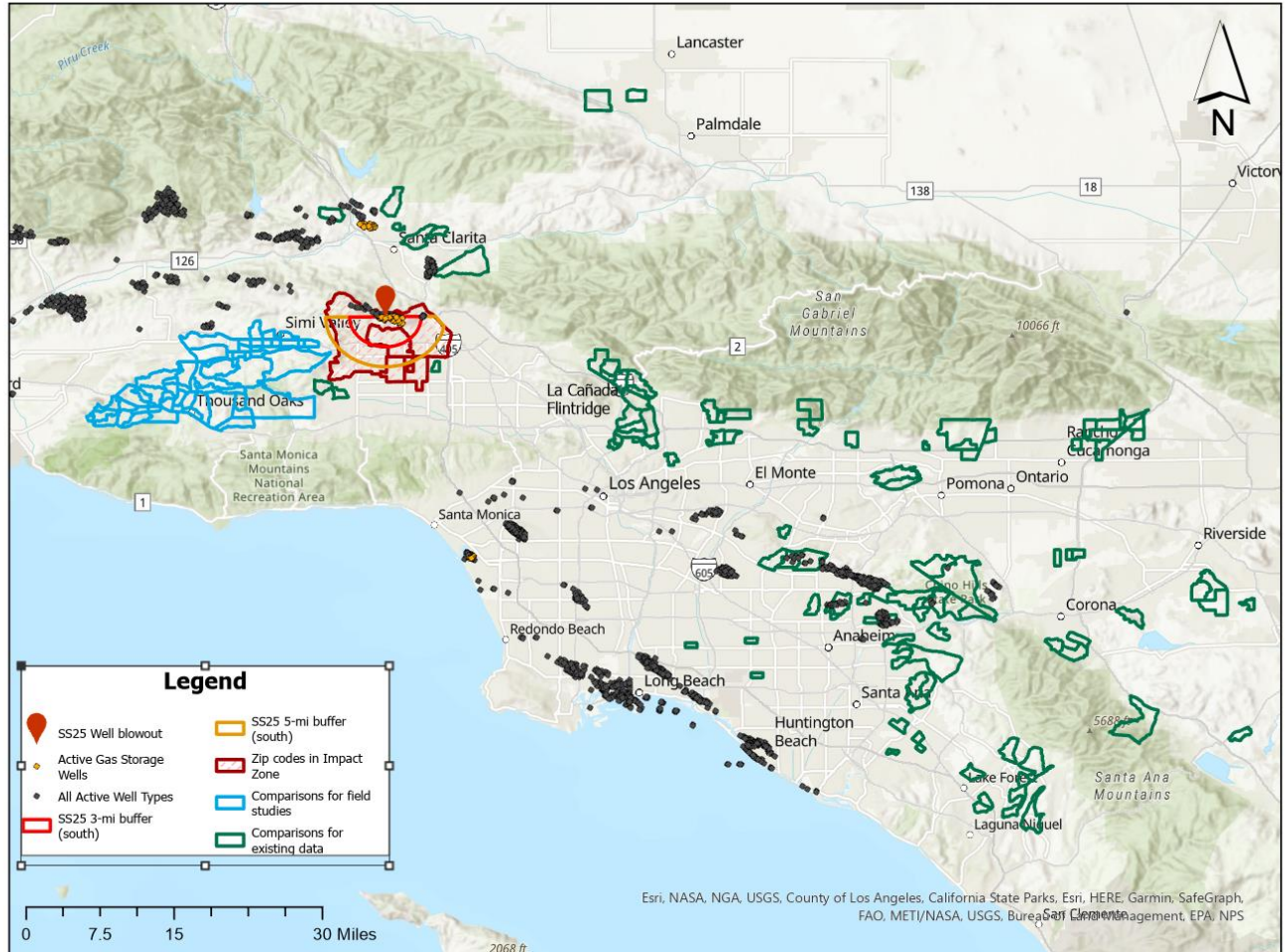


Housing



Source: ESRI Community Analyst, ACS 2020, US Census 2010

Comparison areas with air pollution and climate included



Blue indicates good comparisons for newly collected data

Blue and green indicate areas to compare for existing data

Comparison Community for studies using existing data

Flexibility in comparisons for most administrative data

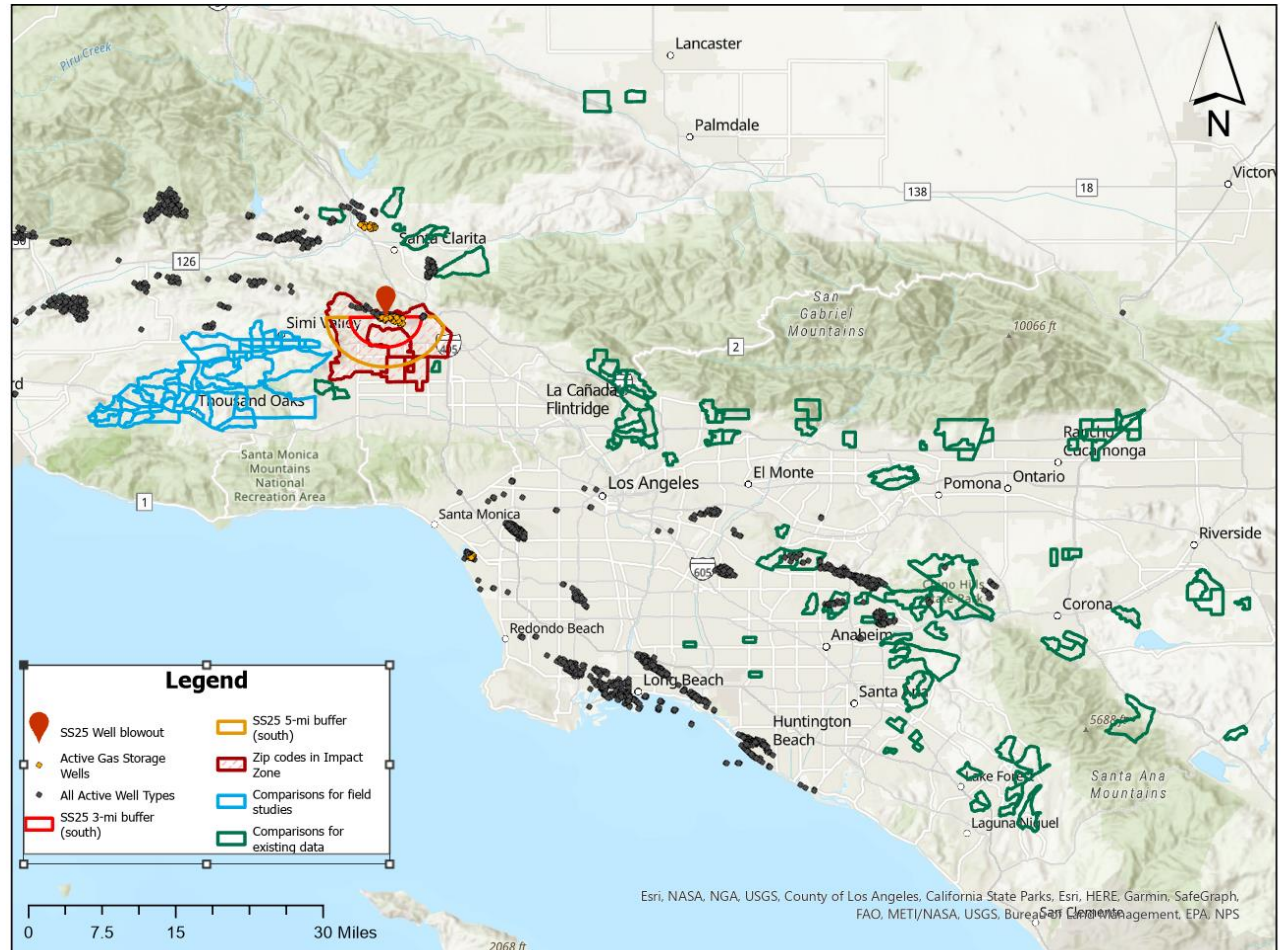
Still important to match affected and comparison communities by their demographic, socioeconomic and environmental conditions

Can have a lot of different comparisons – matched communities in the LA Metro, communities outside of LA

Comparison areas

Feedback prompts:

- What are your thoughts on Simi Valley to Thousand Oaks (blue) as comparison community for field studies?
- Do you see any issues with the comparison areas for existing data (green)?
- Are there other criteria that you think are important to consider when selecting comparisons?
- Anything else we should know?



Zoom Whiteboard

SELECT TOOL: PLACES CURSOR IN SELECT MODE SO YOU CAN CLICK OBJECTS AND CHANGE THEIR PROPERTIES.

PEN TOOL: PLACES CURSOR INTO DRAWING MODE TO PERFORM FREEHAND SKETCHING.

COMMENT: ALLOWS USERS TO ADD COMMENTS TO SPECIFIC ELEMENTS OR AREAS ON THE WHITEBOARD CANVAS.



Thank You for Your Participation

- Please sign up for the Study email list at: <https://alisostudy.ucla.edu/contact/>
- Meeting Evaluation
 - Link: <https://bit.ly/46pWnJx>
 - Evaluation QR code:



Community Engagement

- Website: <https://alisostudy.ucla.edu/>
- Facebook: <https://www.facebook.com/profile.php?id=61550564015502>
- Emails sign-up: <https://lp.constantcontactpages.com/su/cewB1xE/alisostudy>
- Feedback link here: <https://bit.ly/46pWnJx>

Thank You
