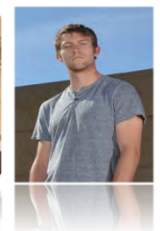


# Supraregulatory Agreements and Public Perceptions of Unconventional Energy Development in Colorado



*Dr. Jessica Smith (Assistant Professor  
of Energy Policy & Anthropology)  
Skylar Zilliox (Masters student in Civil &  
Environmental Engineering)  
Austin Shaffer (Undergraduate student  
in Petroleum Engineering)*



**“The greatest challenge for the industry in the 21<sup>st</sup> century will be *compatibility*.”**

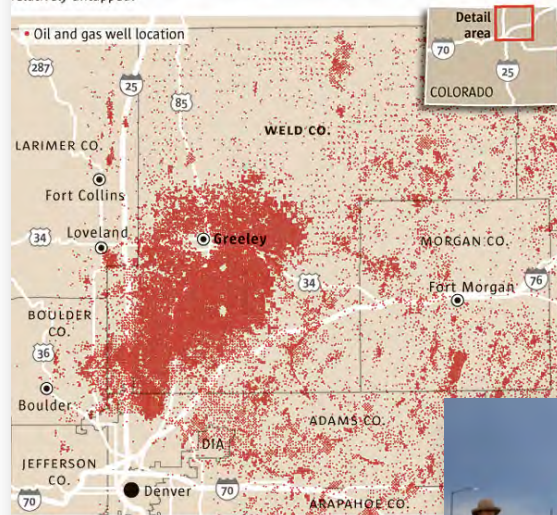


# STATE VS LOCAL CONTROL

COLORADO SCHOOL OF MINES

## Well density

As opportunity to drill for oil and gas in unincorporated areas of the Front Range, companies are drilling closer to cities. In Weld County, the city of Greeley remains relatively untapped.



Source: Colorado Oil and Gas Conservation Commission

<http://www.commondreams.org/news/2014/08/05/outrage-colorado-over-fracking-betrayal-top-democrats>



## BUSINESS

## Colorado Supreme Court rules state law trumps local bans on fracking



## THE DENVER POST



# MOUs and PUBLIC PERCEPTIONS OF OIL AND GAS

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*Colorado is home to the first national experiments in MOUs as a strategy to overcome political stalemates*

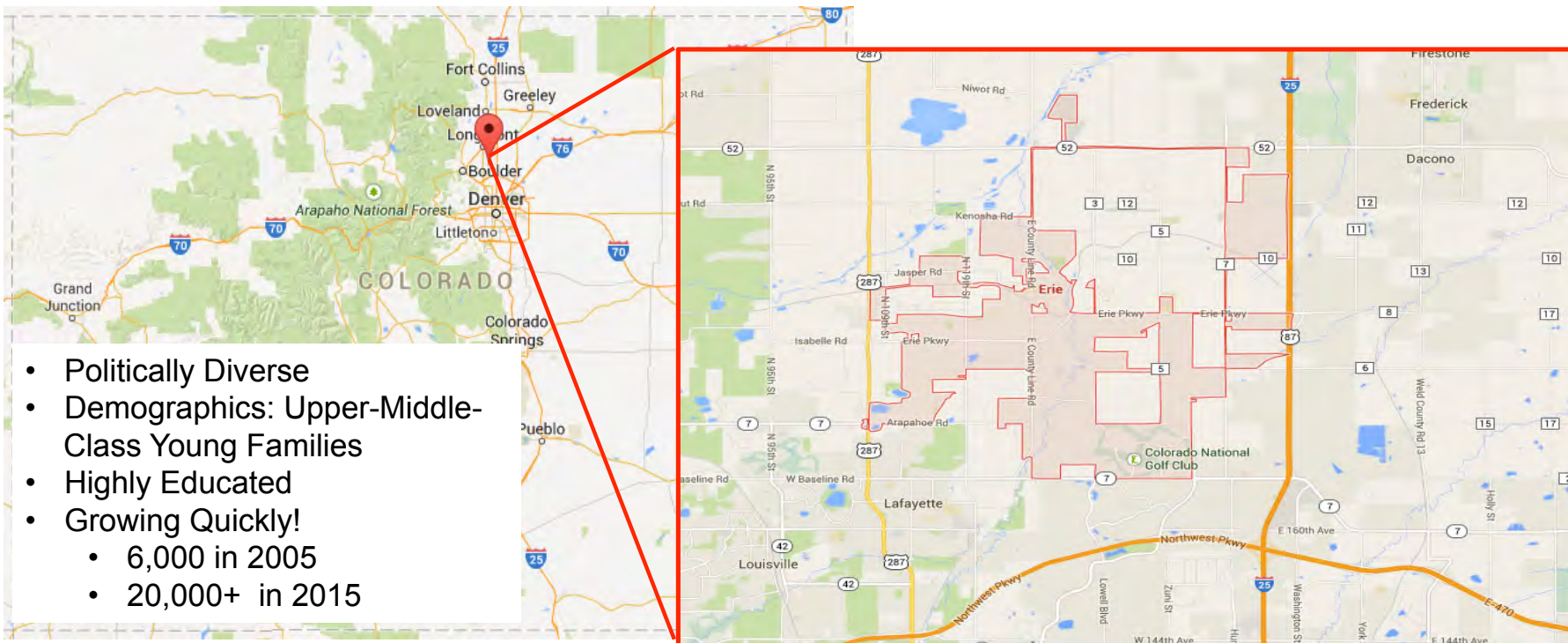
- Offer **industry** a permitting process that is quicker and more certain
- Offer **communities** more control in establishing best practices for issues that concern them, such as environmental management and setbacks
- Over a dozen on the books, might become more common after Supreme Court ruling





# Politics in Erie

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- Politically Diverse
- Demographics: Upper-Middle-Class Young Families
- Highly Educated
- Growing Quickly!
  - 6,000 in 2005
  - 20,000+ in 2015

# RESEARCH QUESTIONS AND METHODS

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In Erie, a relatively affluent, well-educated and politically heterogeneous suburb:

*Do MOUs increase public trust in industry and local government?*

*What features increase effectiveness in addressing community concerns and resolving conflict?*

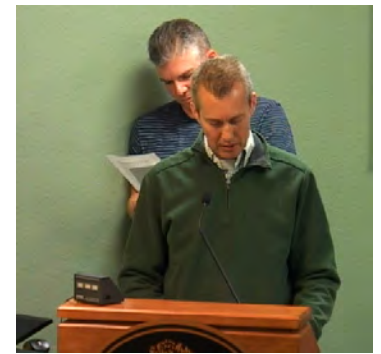
*What political and social environments are most conducive to effective agreements?*

Qualitative and Quantitative methods:

*Transcription and coding of town hall meetings*

*Semi-structured interviews with key players*

*Content analysis of signed agreements*



# A TALE OF TWO WELLS

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Canyon Creek, 2011-2012  
(proposed 1500 feet from two elementary schools)



Image source: "Air Emissions Case Study Related to Oil and Gas Development in Erie, Colorado", CDPHE, December 2012

Pratt, 2014-2015  
(everything that can go wrong, does)



Image source: [frackingnexttome.wordpress.com](http://frackingnexttome.wordpress.com)



## A Few New Questions

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- How did public opinion change during these two periods?
- How did these events change relationships between the local government and the community?
- How did the MOU process change between these two wells?
- Is the MOU process effective in addressing community concerns during both periods?

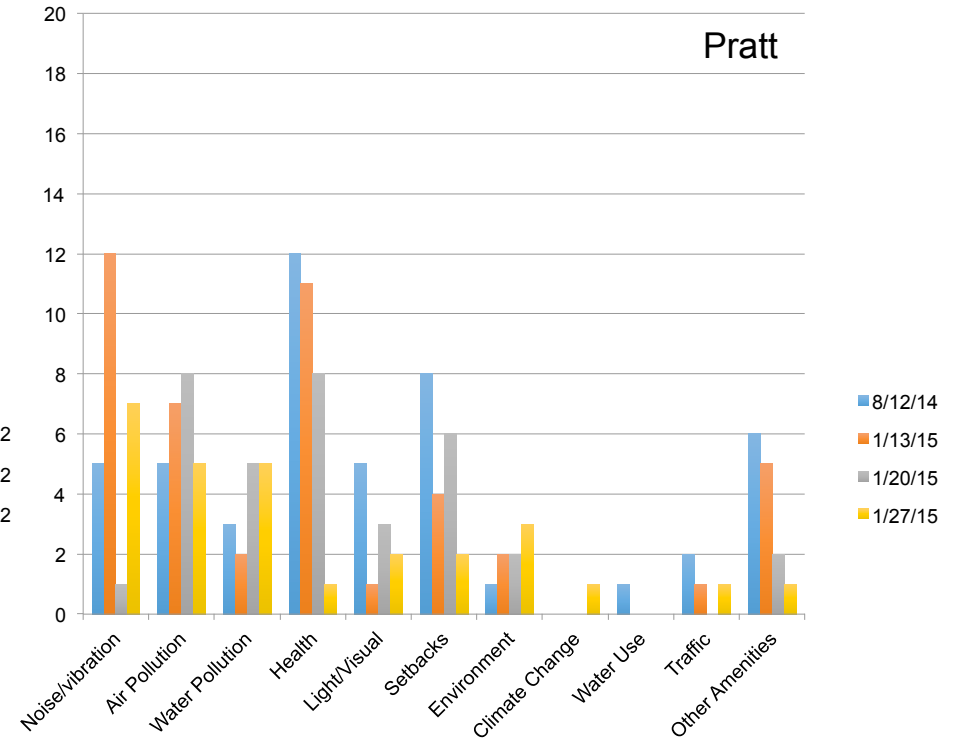
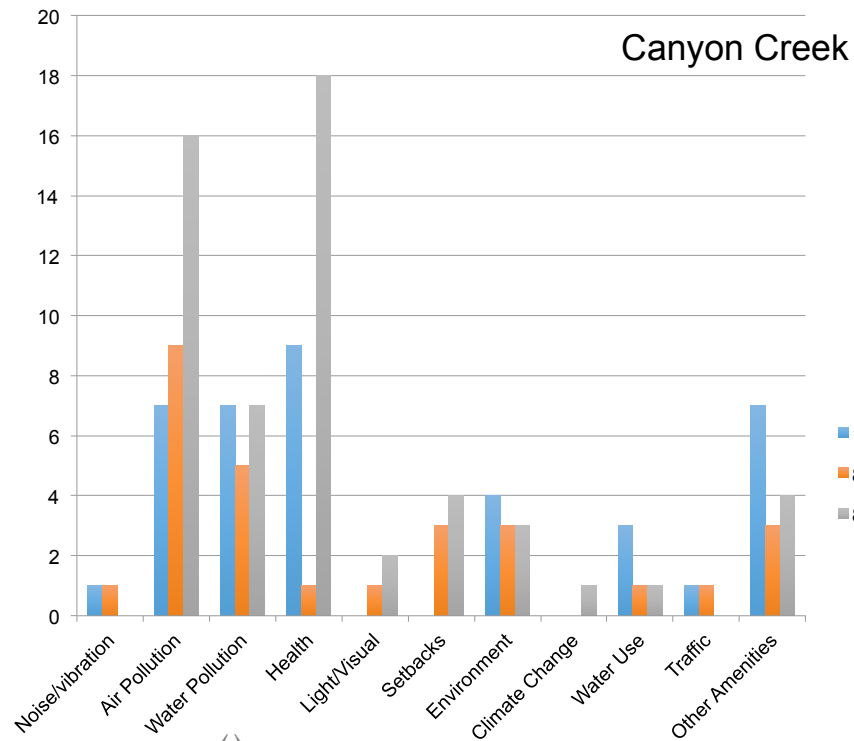




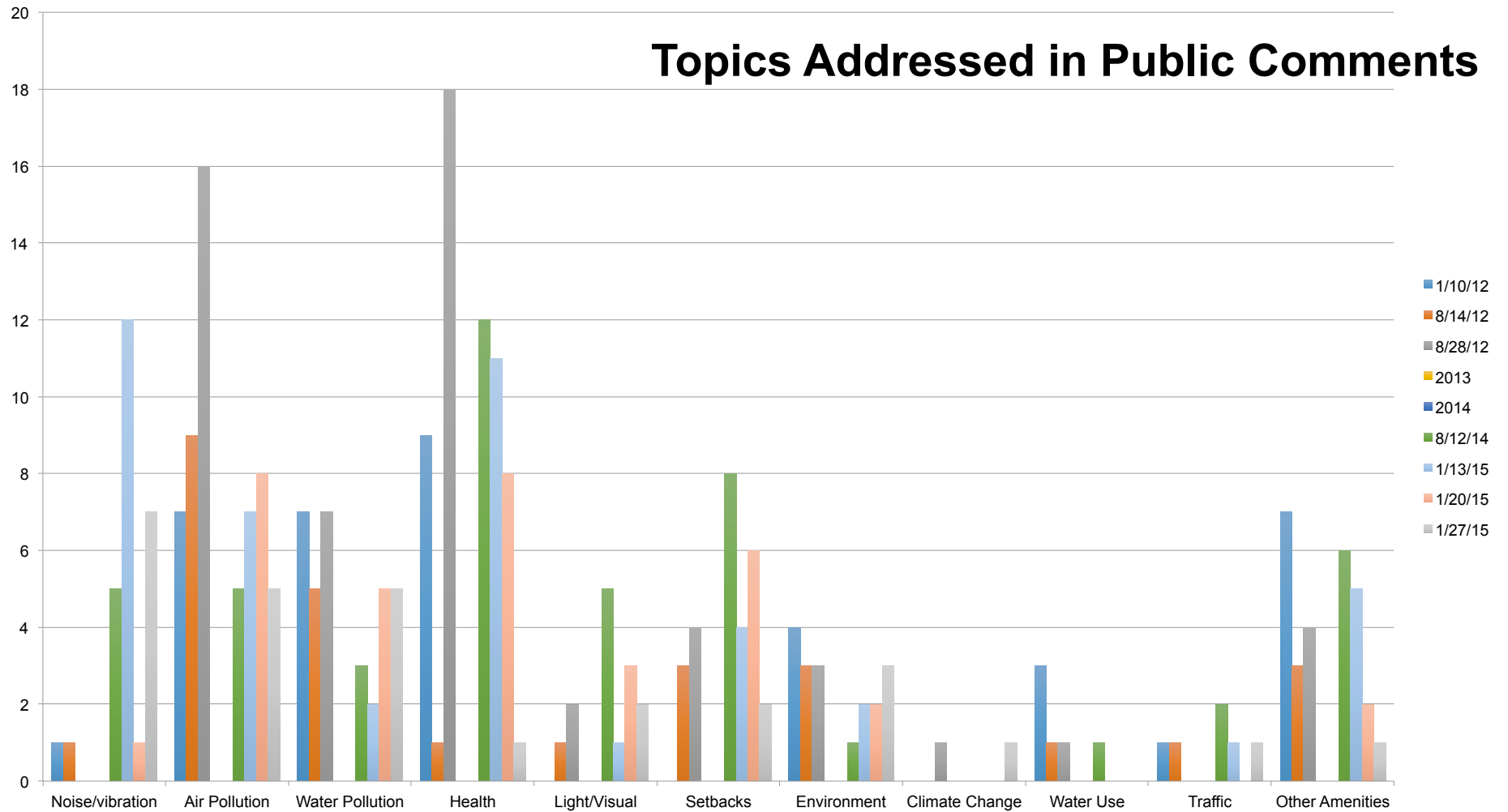
**How did the community react to these different “crises”?**

# COMPARISON OF PUBLIC COMMENT CONTENT

COLORADO SCHOOL OF MINES



# Topics Addressed in Public Comments



# COMPARISON OF PUBLIC COMMENT CONTENT

COLORADO SCHOOL OF MINES

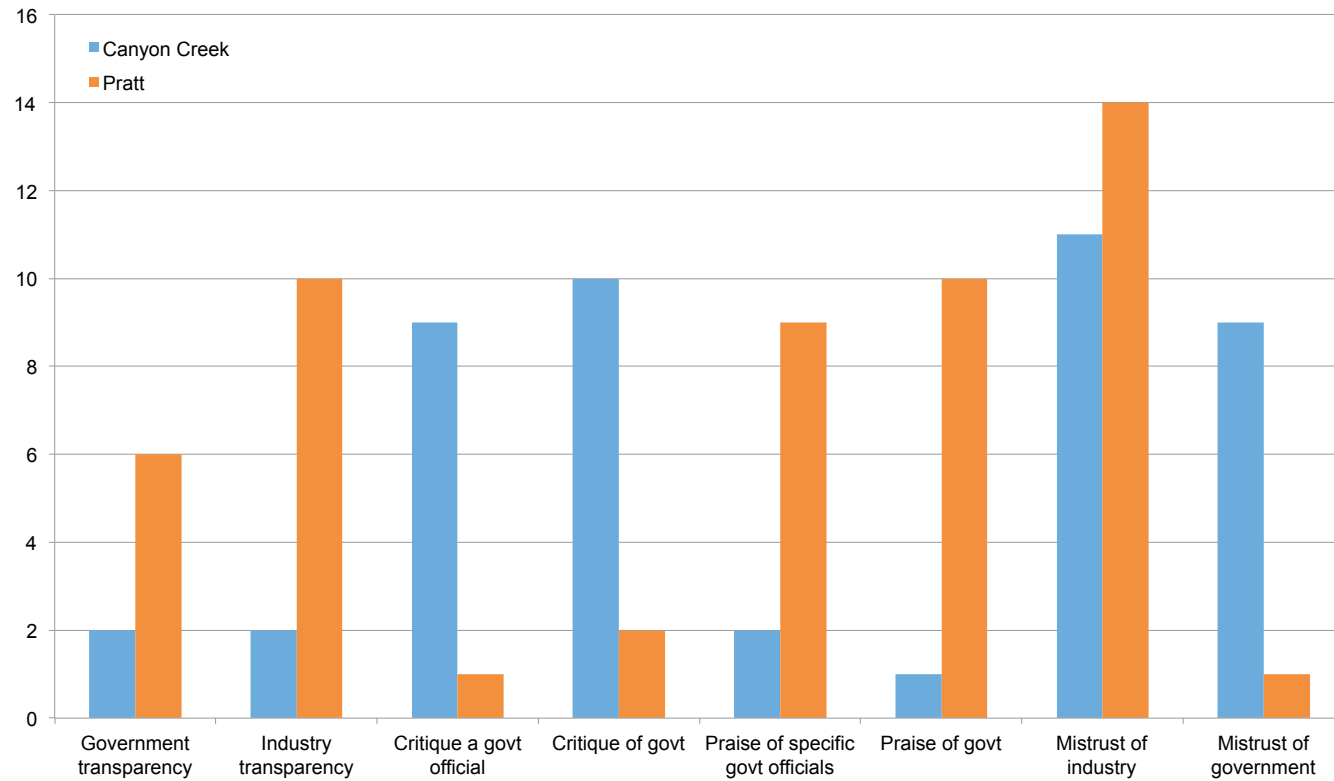
## Why did public comments shift?

- Two sites raised different concerns
  - Canyon Creek well was not operational, meaning that noise wouldn't be an immediate experience
- Original MOU addressed many of the concerns raised by the community
  - Air and water pollution, human health
  - But it wasn't sufficient to prevent the initial outrage over the Pratt well disaster



# FINDINGS: INCREASED TRUST IN GOVERNMENT

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# Trust & Scientism

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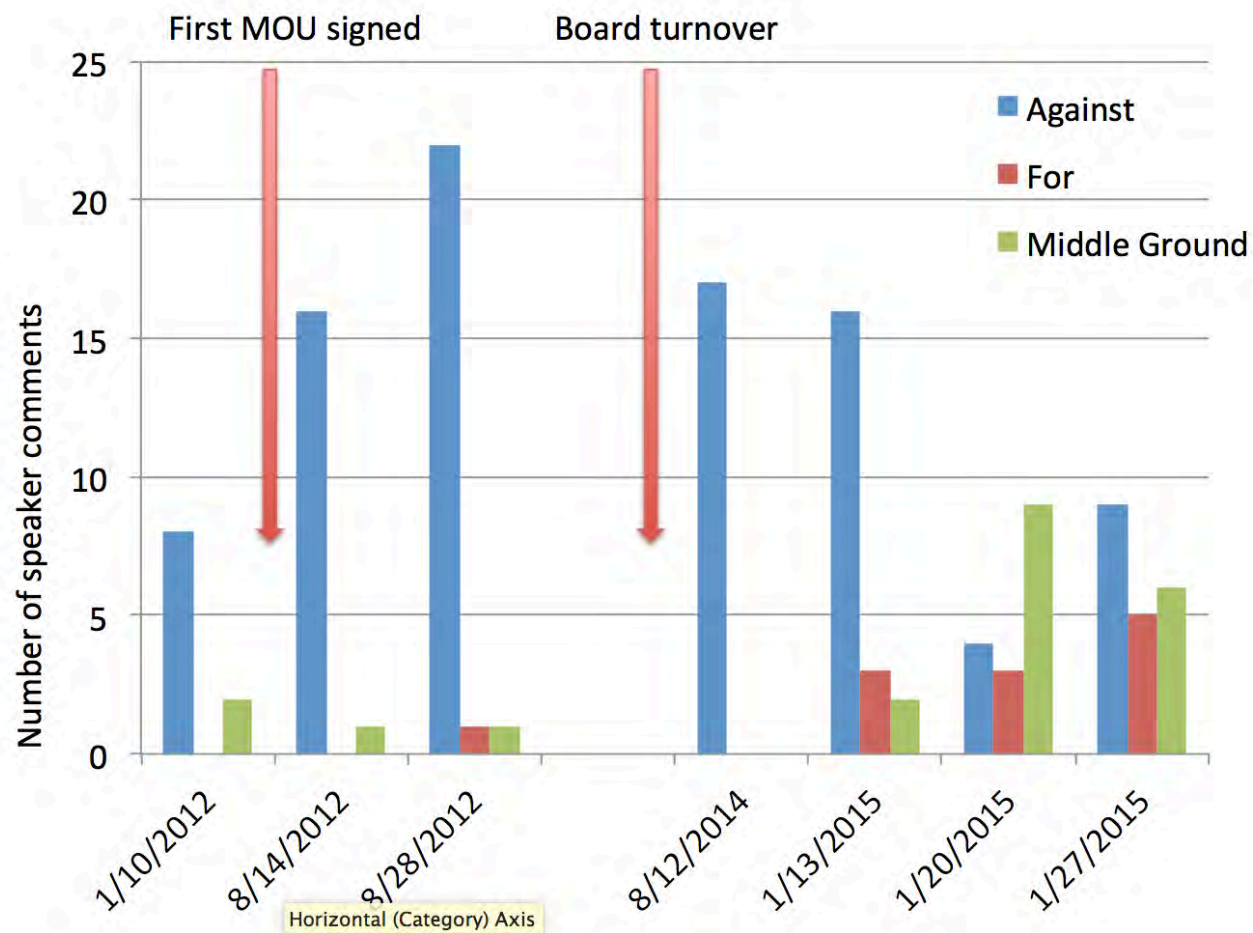
## Canyon Creek well

- Board of Trustees and community rely on science to guide policy
  - NOAA, CDPHE, industry experts
  - Bucket Brigade
- Antagonism and Conflict:
  - “Don’t engage them.”
  - “You are...a feckless coward. I hope your children are proud of you.”



## Election & Board turnover

- “Our trustees now, at least some of them, are way more responsive than back then. Back then, I would send emails, and nobody would respond for a week, not a single one of the seven. I’d send another email, and then one person responds. Now, when you send an email to the trustees, there are usually two or three people that respond immediately.”



Changes in public opinion of unconventional energy over time

COLORADO SCHOOL OF MINES

Even though public commenters did not express increased trust in industry, they did express more favorable opinions about oil and gas development.

But this improvement is not associated with the MOU itself, but with the Board turnover

Evolution of public comment over the Pratt well seems to reflect a process of learning.

## What makes for a “good” agreement?

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From studies of voluntary agreements between mines and communities, an effective agreement:

1. Addresses community concerns
2. Is enforceable
3. Meaningfully engages the community



# What makes for a “good” agreement?



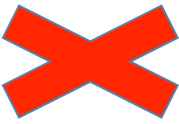

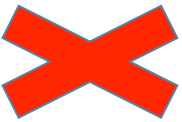
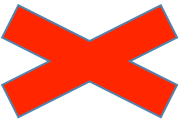
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## Community engagement standards:

1. Goals, purposes, and mandates: The stated goals of the agreement focus on encouraging and enhancing community participation.
2. Structures and decision-making: The structures created for decision-making and management support effective participation.
3. Resources: The agreement provides resources (financial or otherwise) to foster community involvement.
4. Expertise and knowledge: The agreement creates structures and programs assisting community members in gaining access to the scientific knowledge needed to understand and challenge industry actions.
5. Processes: The agreement establishes processes that foster community involvement.
6. Recognition and standing: The agreement recognizes the validity of the town’s interests and concerns.

## A better agreement?

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|                              | 2012 MOU   | 2015 OA   |
|------------------------------|--|---|
| Addresses Community Concerns |    |    |
| Enforceable                  |    |    |
| Engages Community            |  |  |

## Conclusions and Connections

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- Public opinion did change over time to be less polarized and more positive about oil & gas activity and local government
- The agreements themselves were not primarily responsible for this shift in opinion
- The most significant factor was the election of a Board
  - Committed to transparency and efforts to engage the community
  - Explicitly respectful of citizens' opinions
- The effectiveness of these agreements will rest on more meaningfully engaging community members.

# AGREEMENTS & COMPLAINTS

COLORADO SCHOOL OF MINES

Can the effect of MOUs be tracked in filed complaints and drilling activity?

Do MOUs increase public use of the COGCC complaint system?

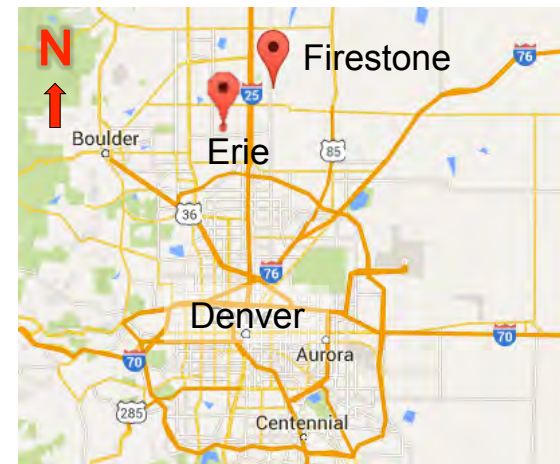
How do public concerns change after agreements are established?

## Methods:

*Analysis of COGCC complaint database*

*Analysis of COGCC well file database*

*Transcription and coding of town hall meetings*

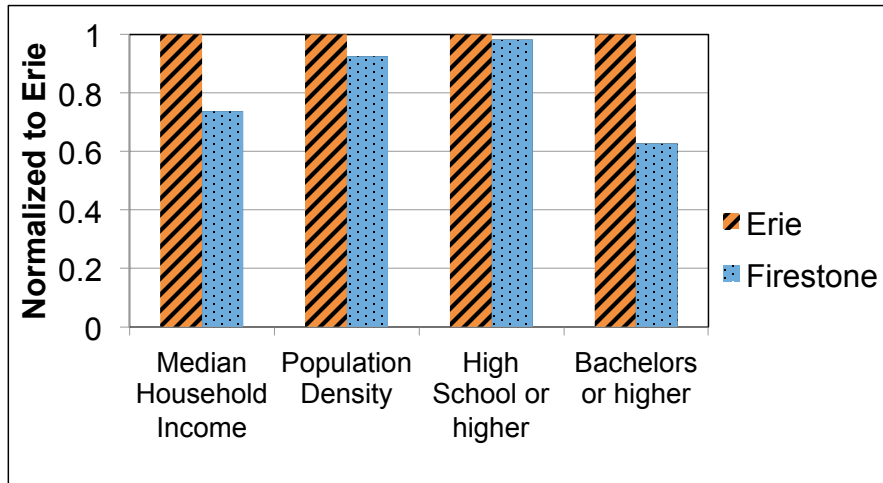




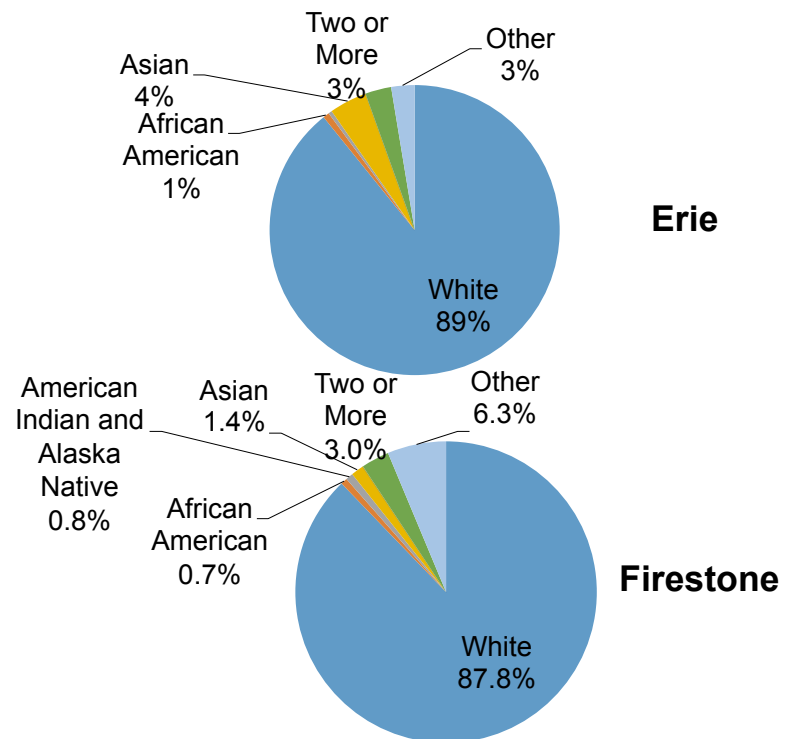
# Towns With Similar Demographics

COLORADO SCHOOL OF MINES

Education and Income Comparison



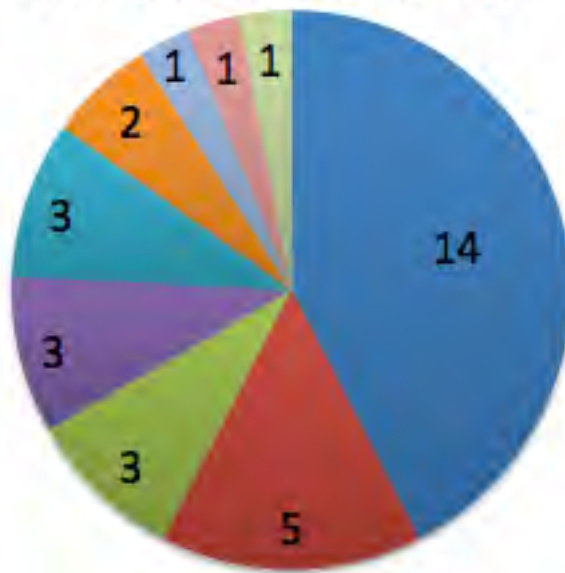
Ethnicity Distribution



# All Concerns 2010-2014

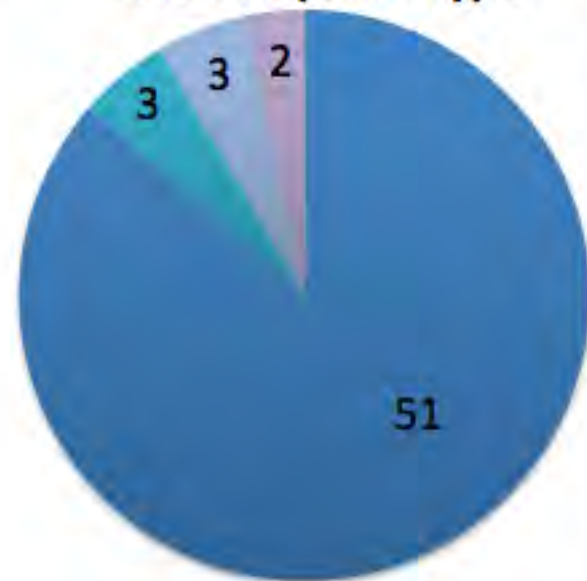
COLORADO SCHOOL OF MINES

## Firestone Complaint Type



33 Total Complaints

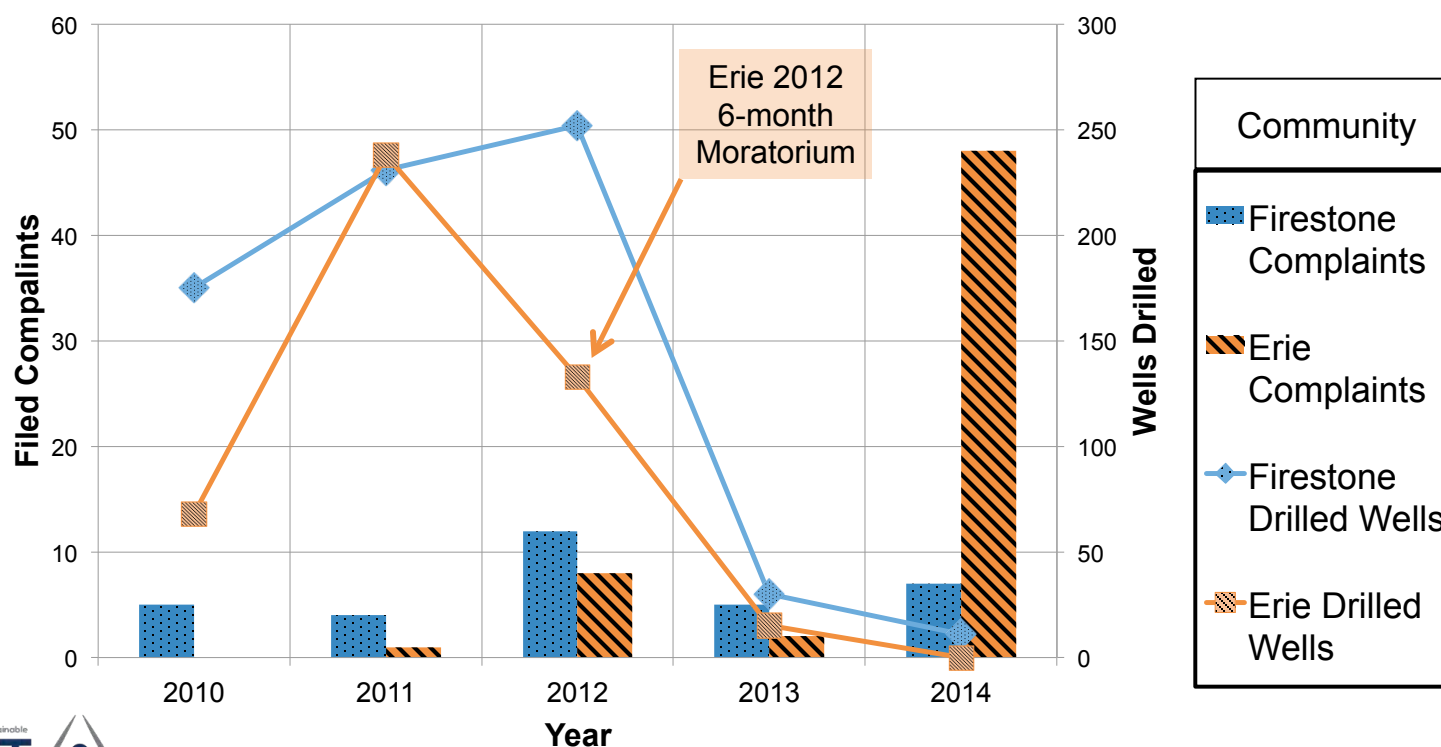
## Erie Complaint Type



59 Total Complaints  
47 Pratt Complaints

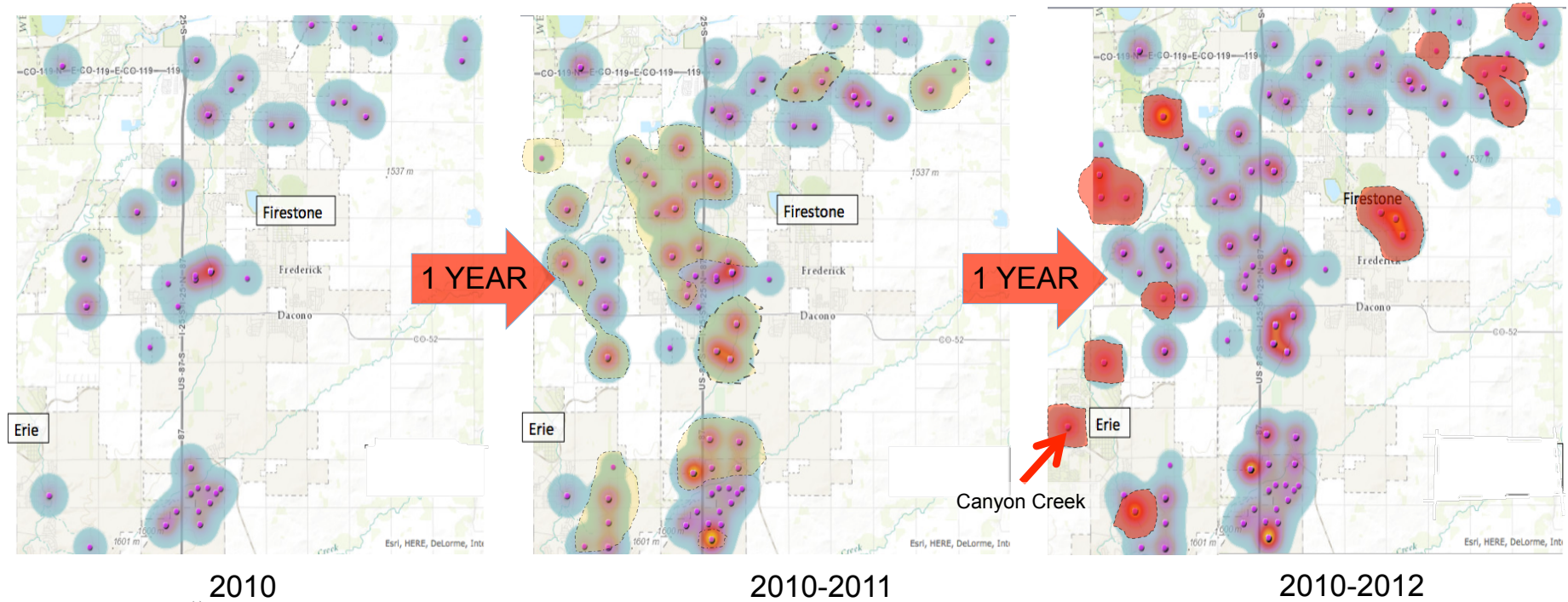
# COMPARISON OF COMPLAINTS AND DRILLING ACTIVITY

COLORADO SCHOOL OF MINES



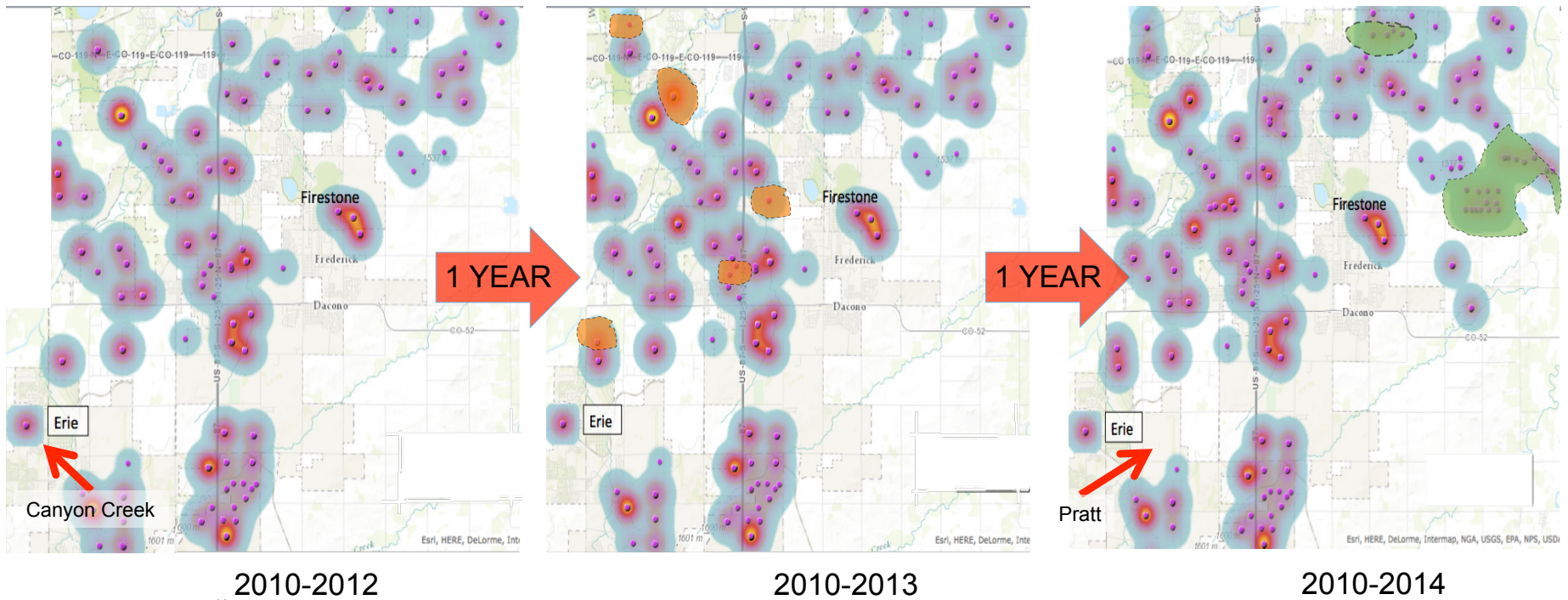
## Drilling Activity 2010-2014

**COLORADO SCHOOL OF MINES**



# Drilling Activity 2010-2014

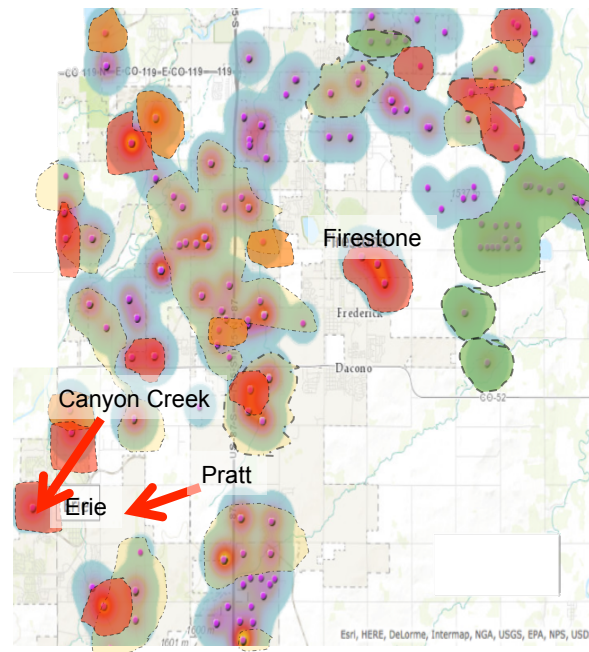
COLORADO SCHOOL OF MINES





# Drilling Activity 2010-2014

COLORADO SCHOOL OF MINES



| Wells Drilled Per Year |  |
|------------------------|--|
| 2010                   |  |
| 2011                   |  |
| 2012                   |  |
| 2013                   |  |
| 2014                   |  |

2010-2014



## KEY TAKEAWAYS

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- Complaints were more homogenous in topic and less frequent in the MOU context
  - Do citizens prefer to engage local rather than state government?
- Citizens with the MOU used the complaint process when controversy arose
  - Did citizens have less trust in their local government initially? Did they recognize the limits of local governmental authority?

## FUTURE RESEARCH

COLORADO SCHOOL OF MINES

- Comparison with less privileged communities
  - Unincorporated Adams County, Commerce City
- How do members of the public use science-based arguments in public comments?
- How can community engagement be made more meaningful?

# Thank you!

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## Questions?

[jmsmith@mines.edu](mailto:jmsmith@mines.edu)

Zilliox, Skylar and Jessica M. Smith.  
Supreregulatory Agreements and Unconventional  
Energy Development: Learning from Citizen  
Concerns, Enforceability and Participation in  
Colorado. *Extractive Industries & Society* [http://  
dx.doi.org/10.1016/j.exis.2016.11.008](http://dx.doi.org/10.1016/j.exis.2016.11.008)

Shaffer, Austin, Skylar Zilliox and Jessica M. Smith.  
2017. Memorandums of Understanding and the  
Social License to Operate in Colorado's  
Unconventional Energy Industry. *Journal of Energy  
& Natural Resources Law* 35 (1): 69-85. [http://  
dx.doi.org/10.1080/02646811.2016.1216696](http://dx.doi.org/10.1080/02646811.2016.1216696)