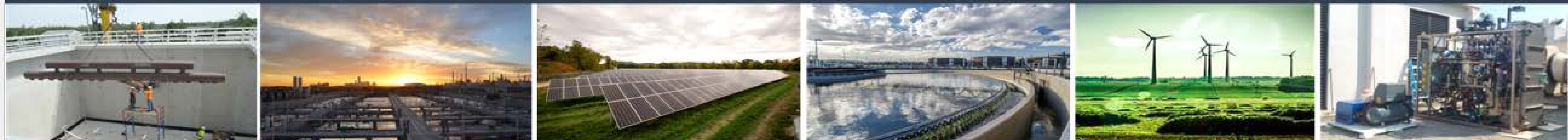


# Thank you to our Patrons



We will begin our presentation in a few minutes...



Leadership and Excellence in Environmental Engineering and Science

05.18.2023



RESILIENT  
ANALYTICS

# SOCIAL EQUITY IN DISASTER RECOVERY AND FUTURE RESILIENCY PLANNING: THE MARSHALL FIRE CASE STUDY

Paul Chinowsky



# Session Goals

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- **Introduce a New Element of Disaster Recovery**
- **Understand Importance of Micro-Localization**
- **Introduce Opportunities of Analytics**

# Resilient Analytics

## The New York Times

### With More Storms and Rising Seas, Which U.S. Cities Should Be Saved First?

By 2040, simply providing basic storm-surge protection in the form of sea walls for all coastal cities with more than 25,000 residents will require at least \$42 billion.



Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment

Climate change-driven changes in temperature and precipitation are projected to result in significant impacts to U.S. roads. Discounted, reactive adaptation costs (rehabilitation measures) are estimated at \$230 billion through 2100 under RCP 8.5 and \$150 billion under RCP 4.5, on average.

## The Washington Post

*Democracy Dies in Darkness*

### Climate change is forcing schools to close early for 'heat days'

With no air conditioning and no money to install it, districts are sending students home

The study estimated that by 2025, more than 13,700 schools will need to install air conditioning, and an additional 13,500 will need to upgrade existing systems. Nationally, that amounts to about 1 in 4 public schools.

DAILY COMMENT

### A SUPREME COURT RULING THE FOSSIL-FUEL INDUSTRY DOESN'T LIKE

*Communities can now sue in state courts for compensation for the costs of climate change—something oil companies have fought against for years.*



By Bill McKibben

May 10, 2023



*Planning for the Climate Transition*  
Long-term, forward-looking planning that anticipates coming climate change is necessary to avoid unnecessary losses and destabilizing effects.

THE  
NEW YORKER

# Starting Point

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# Starting Point

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# The Goals

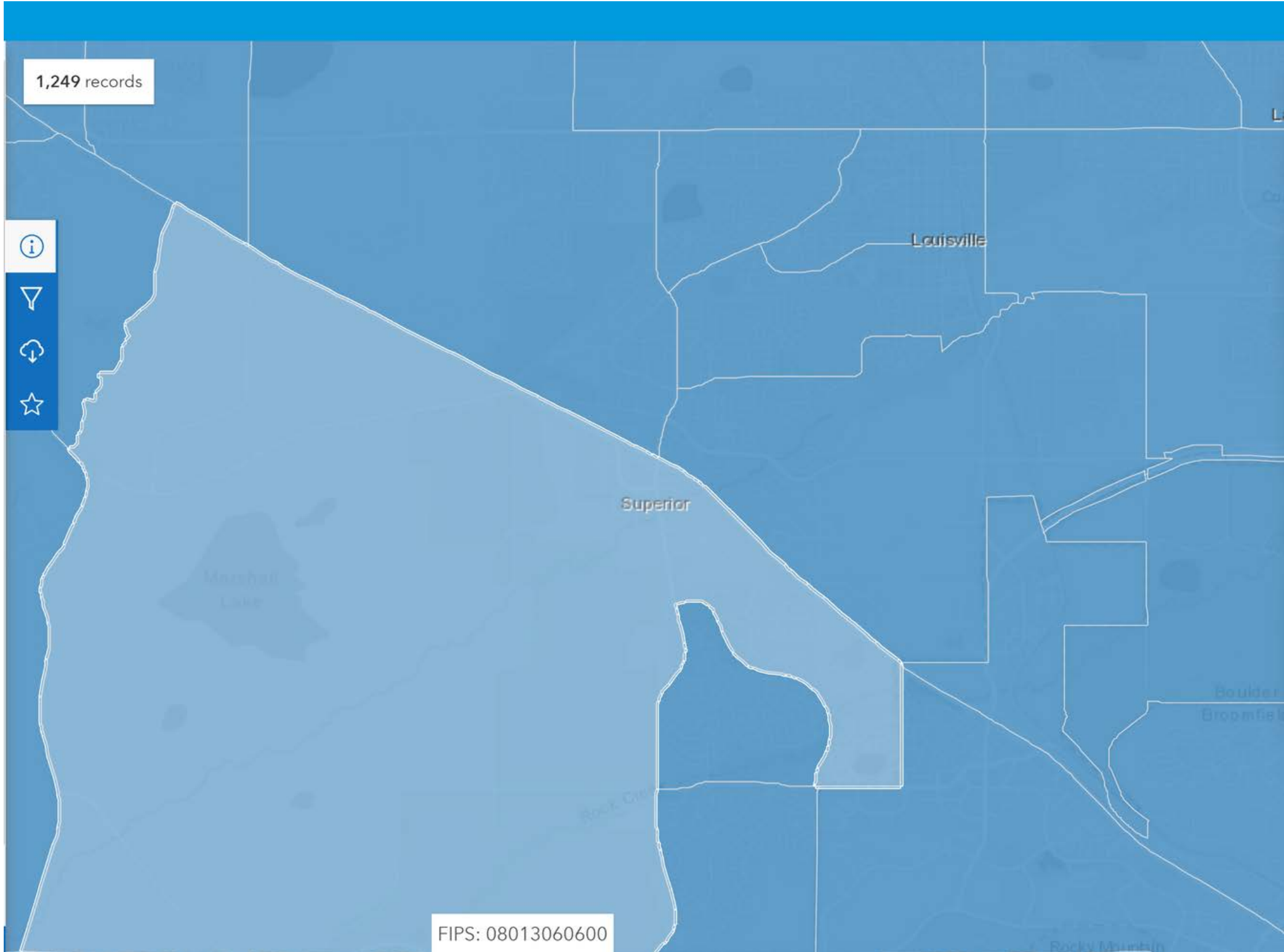
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- **Identify Physical Damage and Severity**
- **Identify Greatest Assistance Need**
- **Isolate Based on Social Factors**
- **Identify Damage Patterns for Recovery Policies**



# The Challenge

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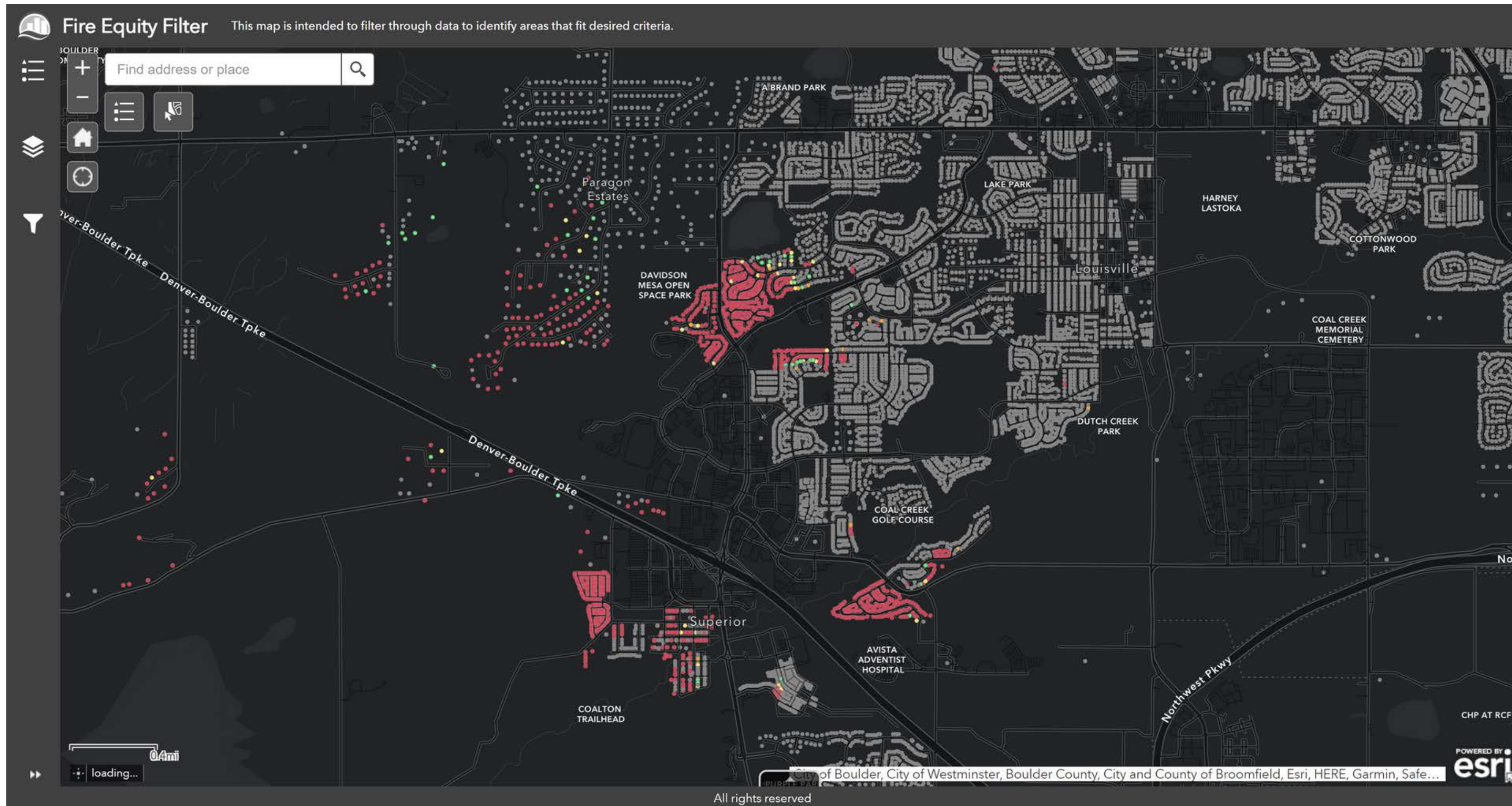
# The Platform

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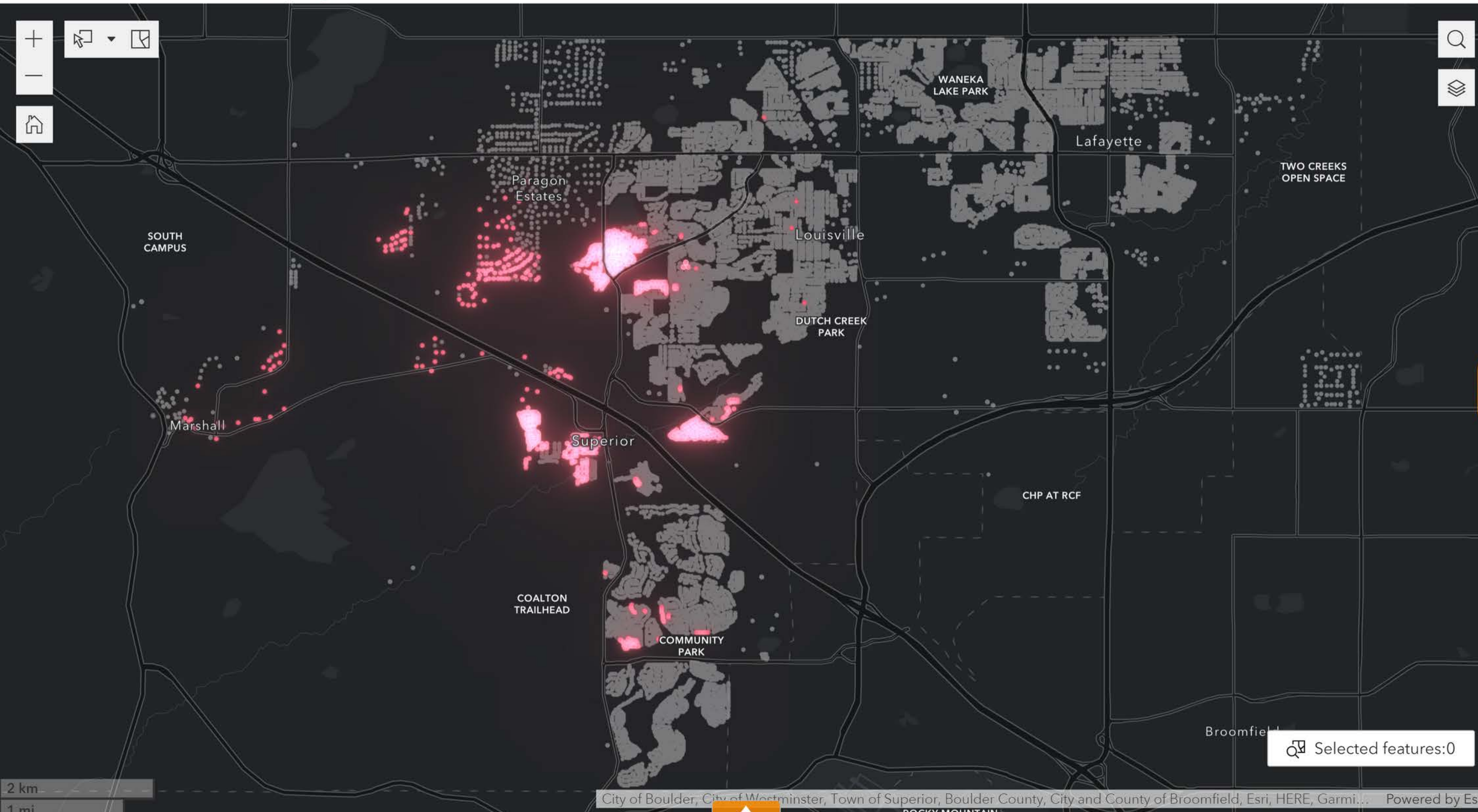
**A GIS-based platform to provide decision makers with the information required to determine assistance prioritization**



# The Challenge



## Historic Disaster - Fire Equity



Details		
<input type="checkbox"/>	Official Damage	...
<input type="checkbox"/>	Official Damage	...
<input type="checkbox"/>	Destroyed	...
<input type="checkbox"/>	Major Damage	...
<input type="checkbox"/>	Minor Damage	...
<input type="checkbox"/>	Affected	...
<input type="checkbox"/>	No Damage	...

- Official Damage**
- Destroyed**
- Destroyed
  - Affected
  - Major
  - Minor
  - No Damage

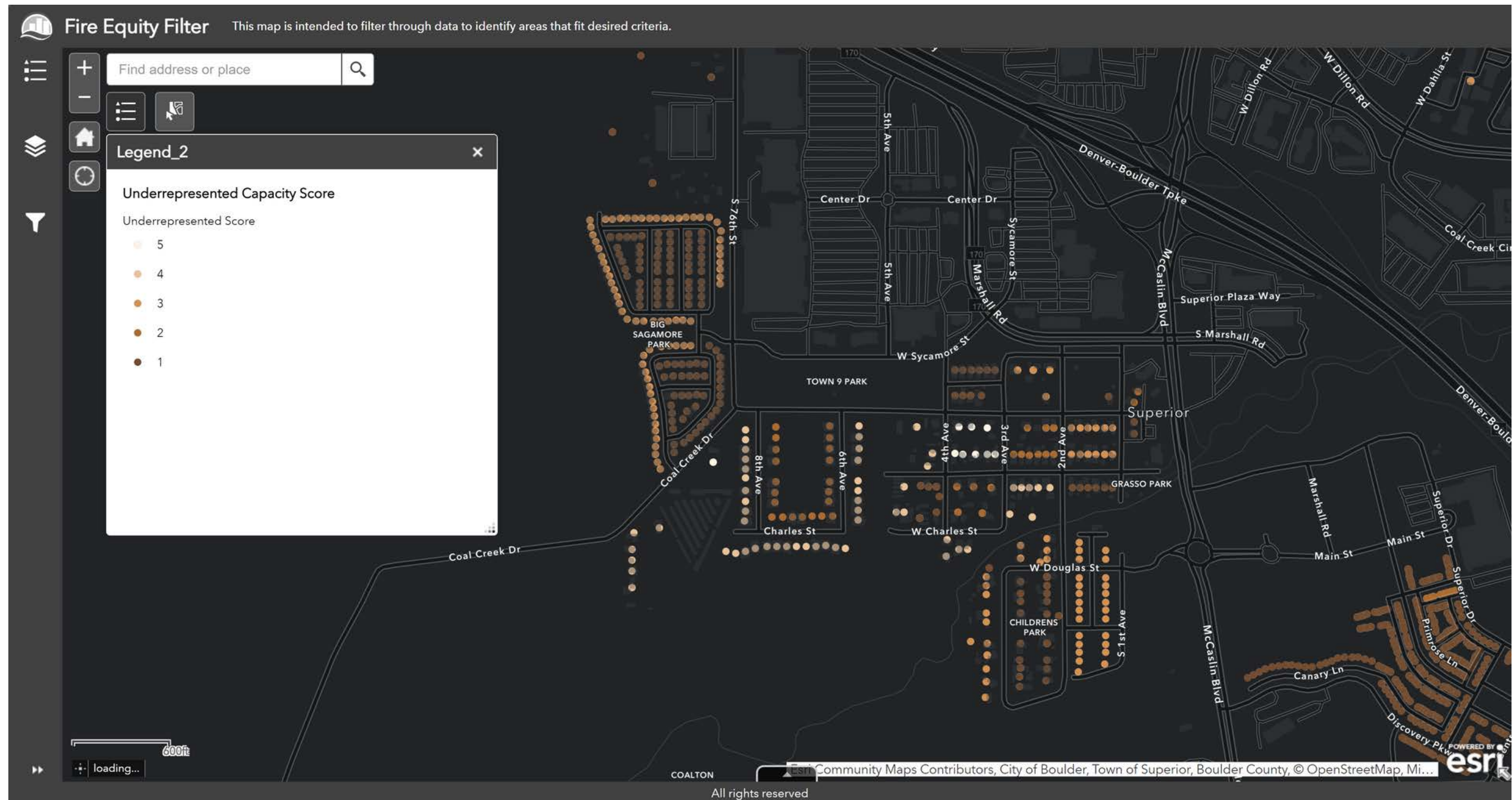
Selected features:0

2 km  
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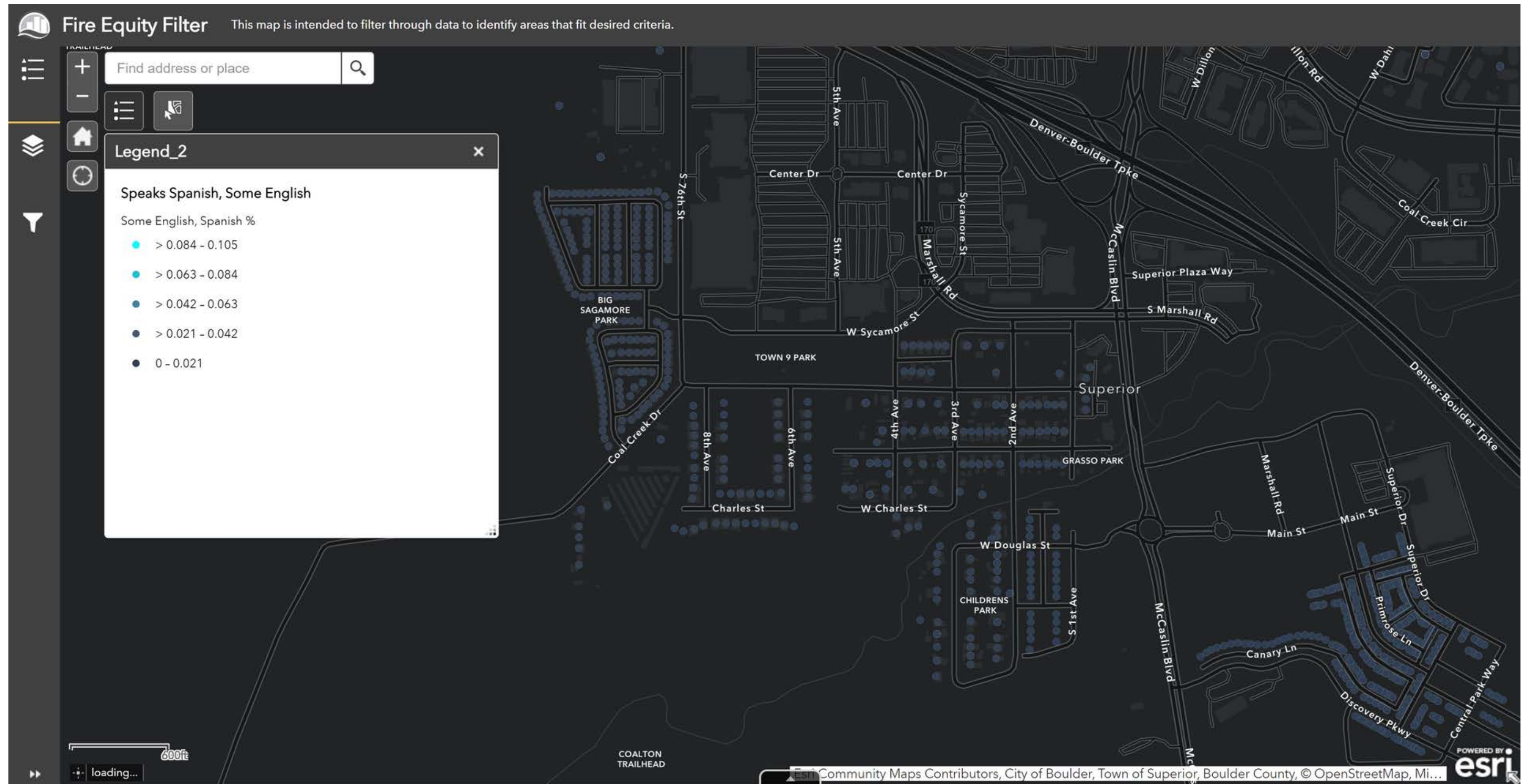




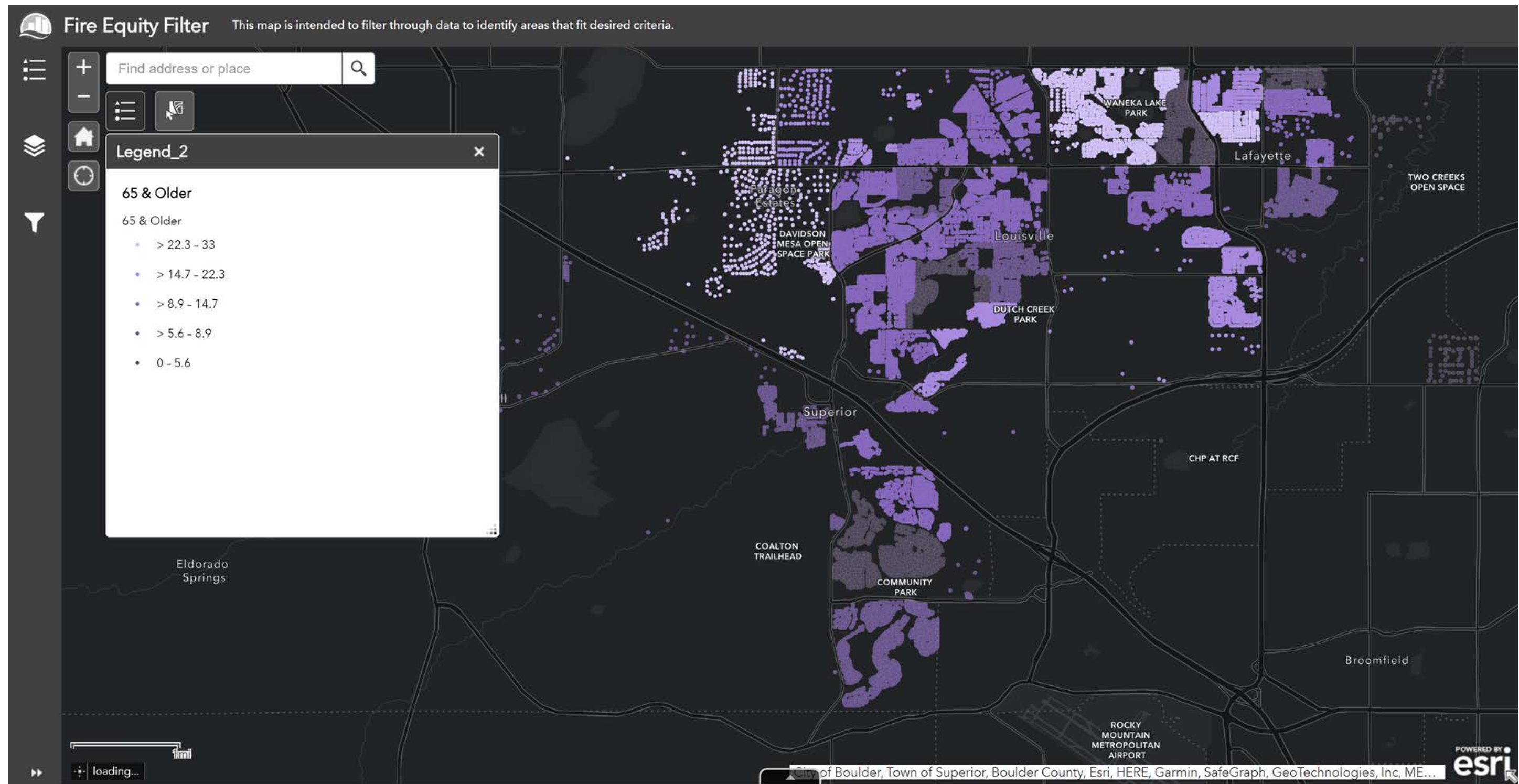
# Underrepresented



# Language

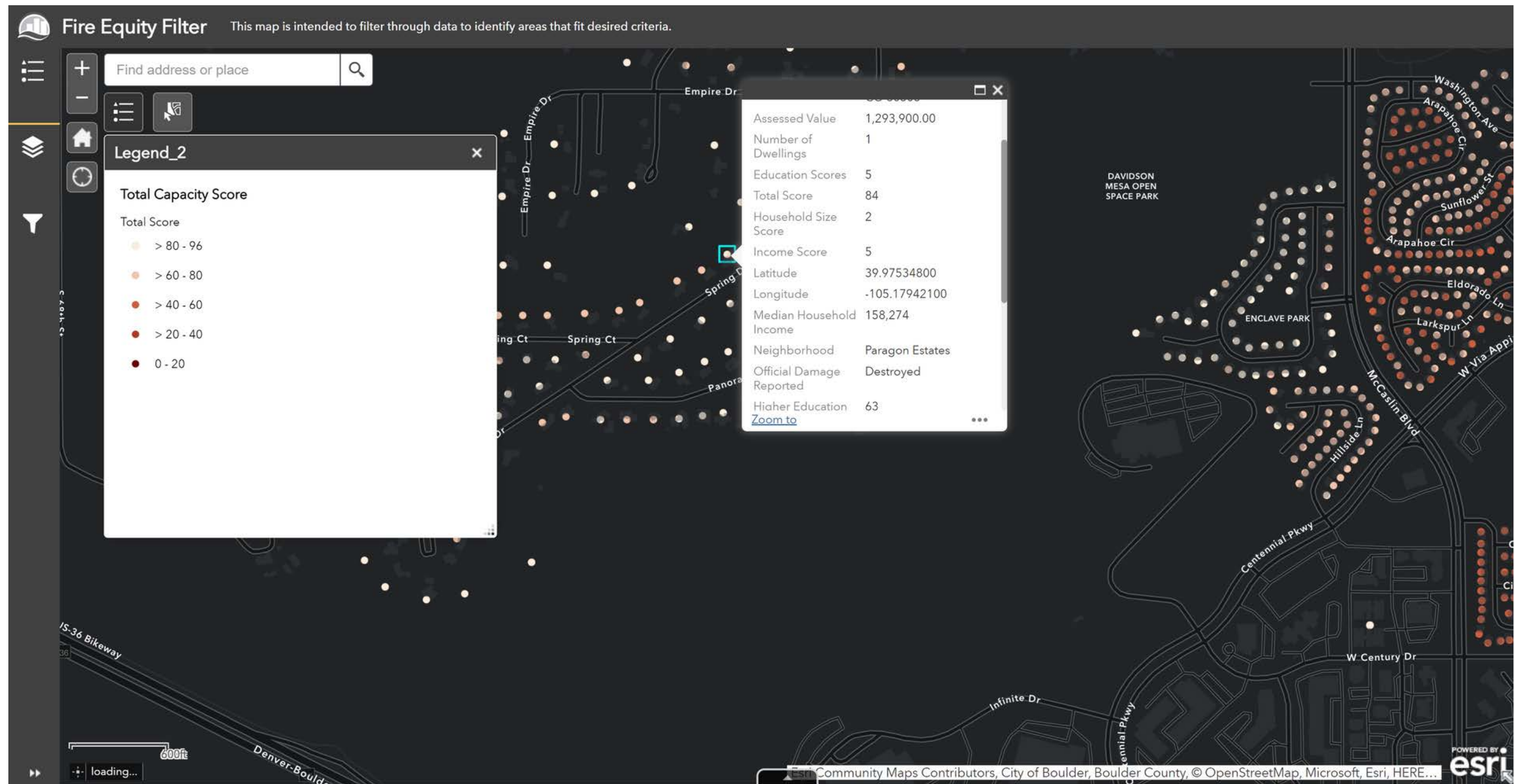


# Elderly Populations

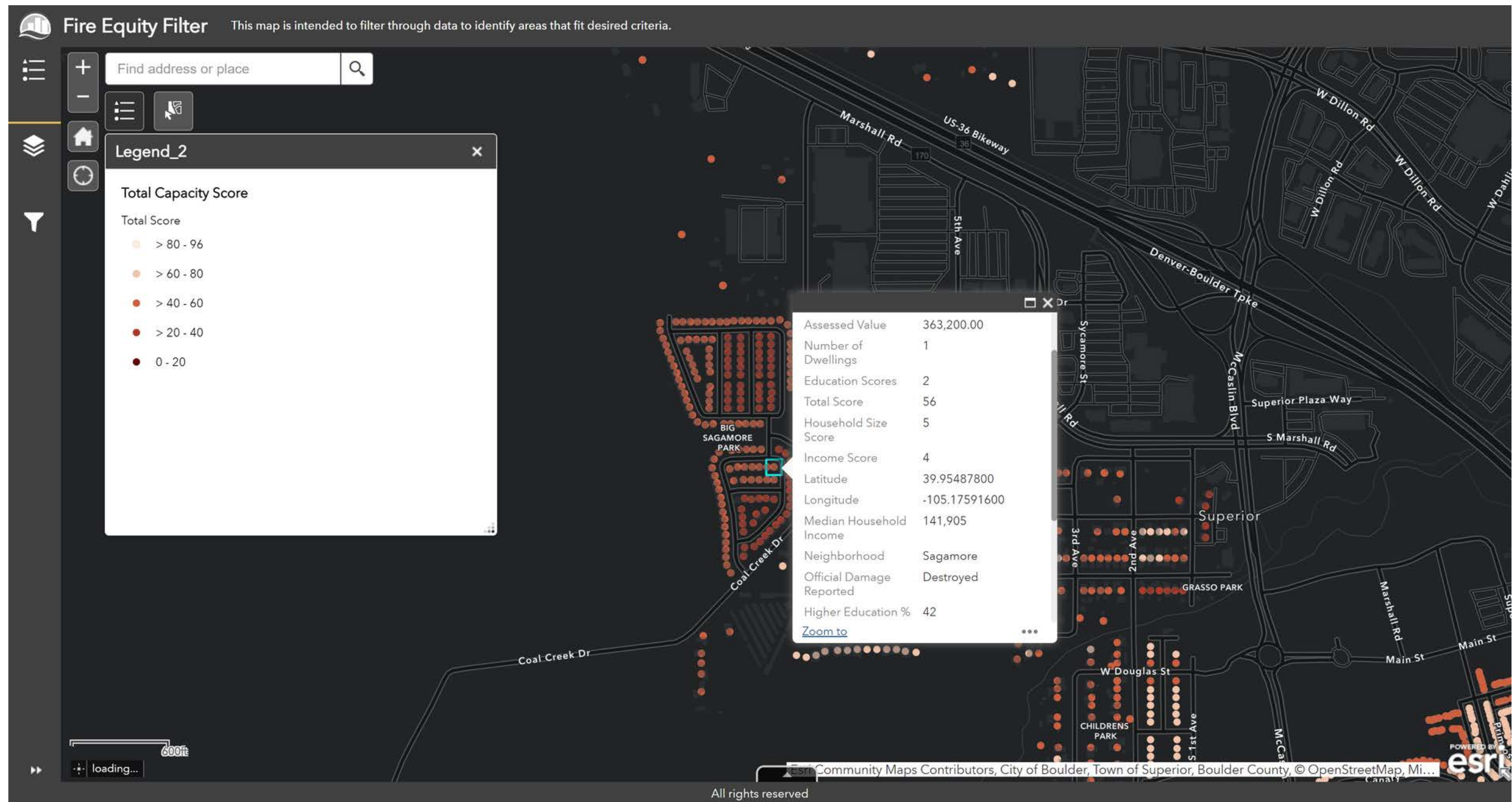




# Household Level

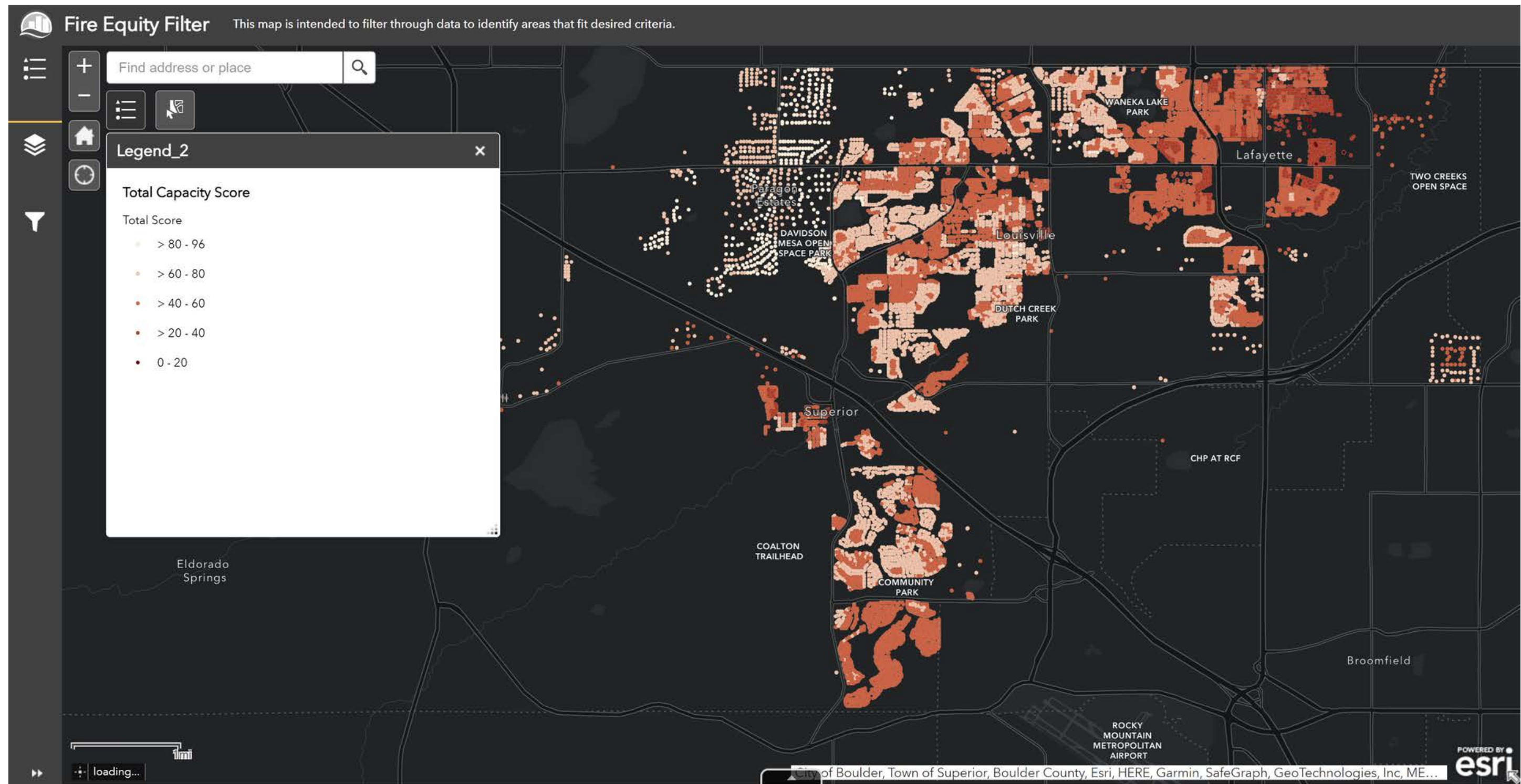


# Household Level

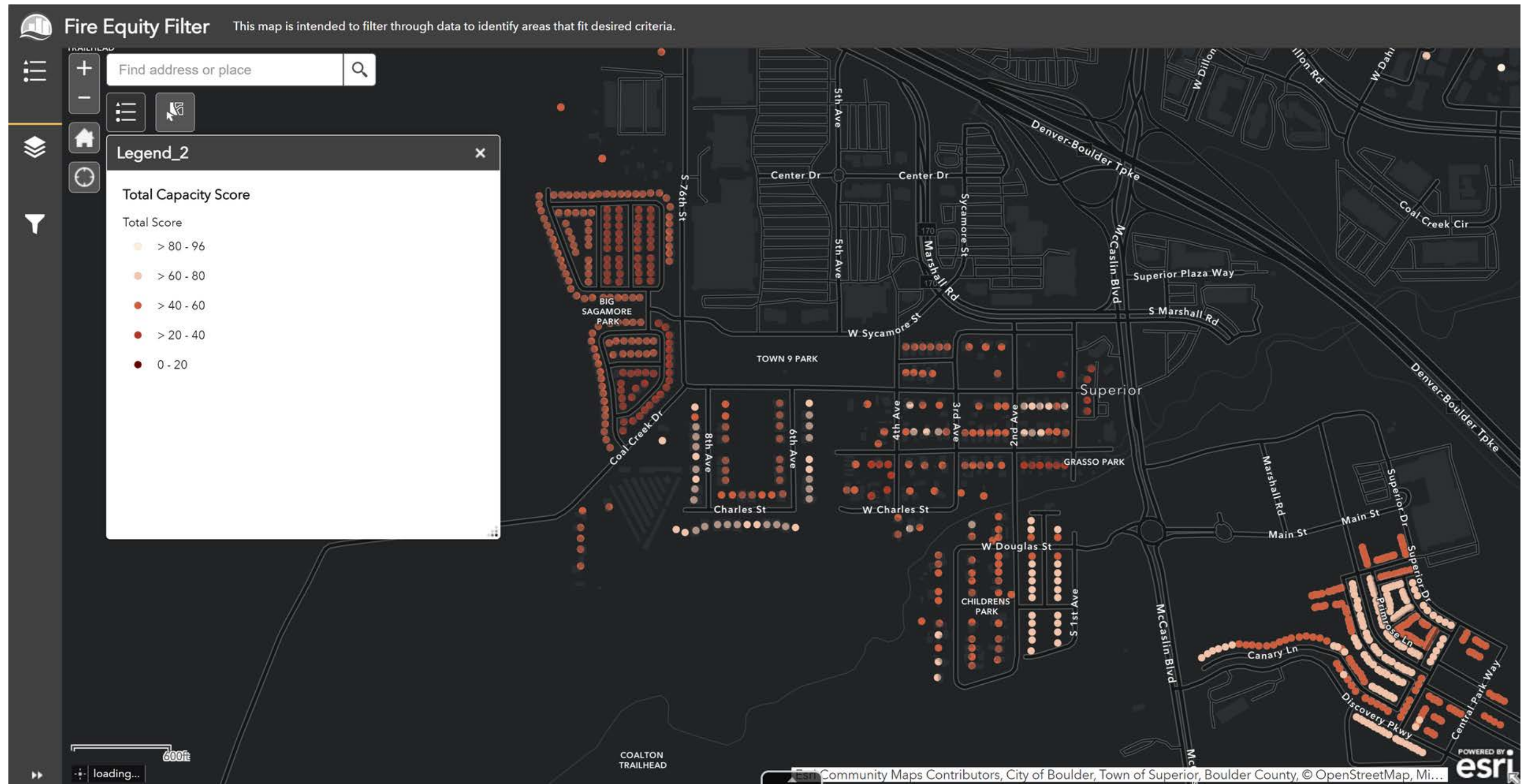


**SO WHAT?**

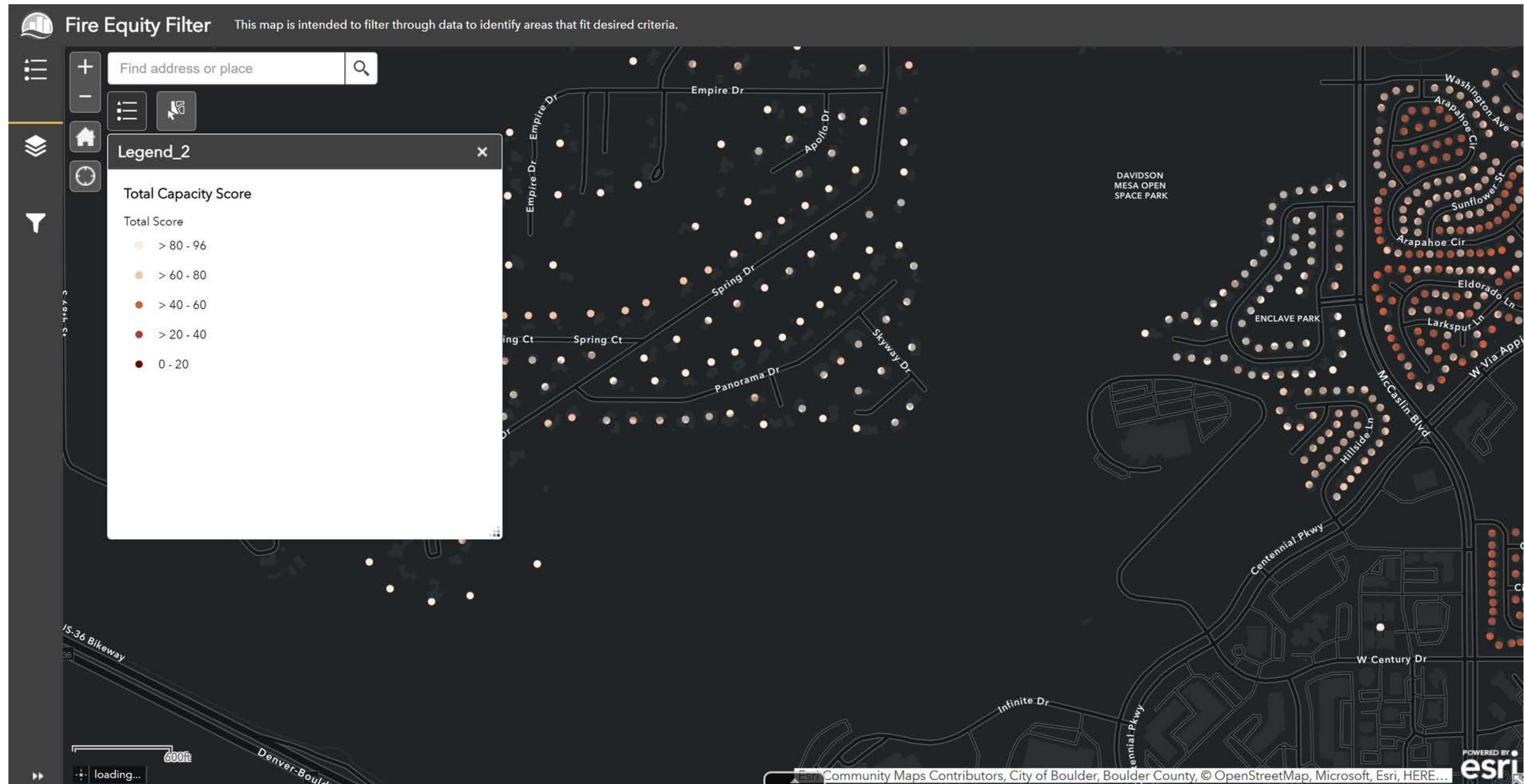
# Total Capacity



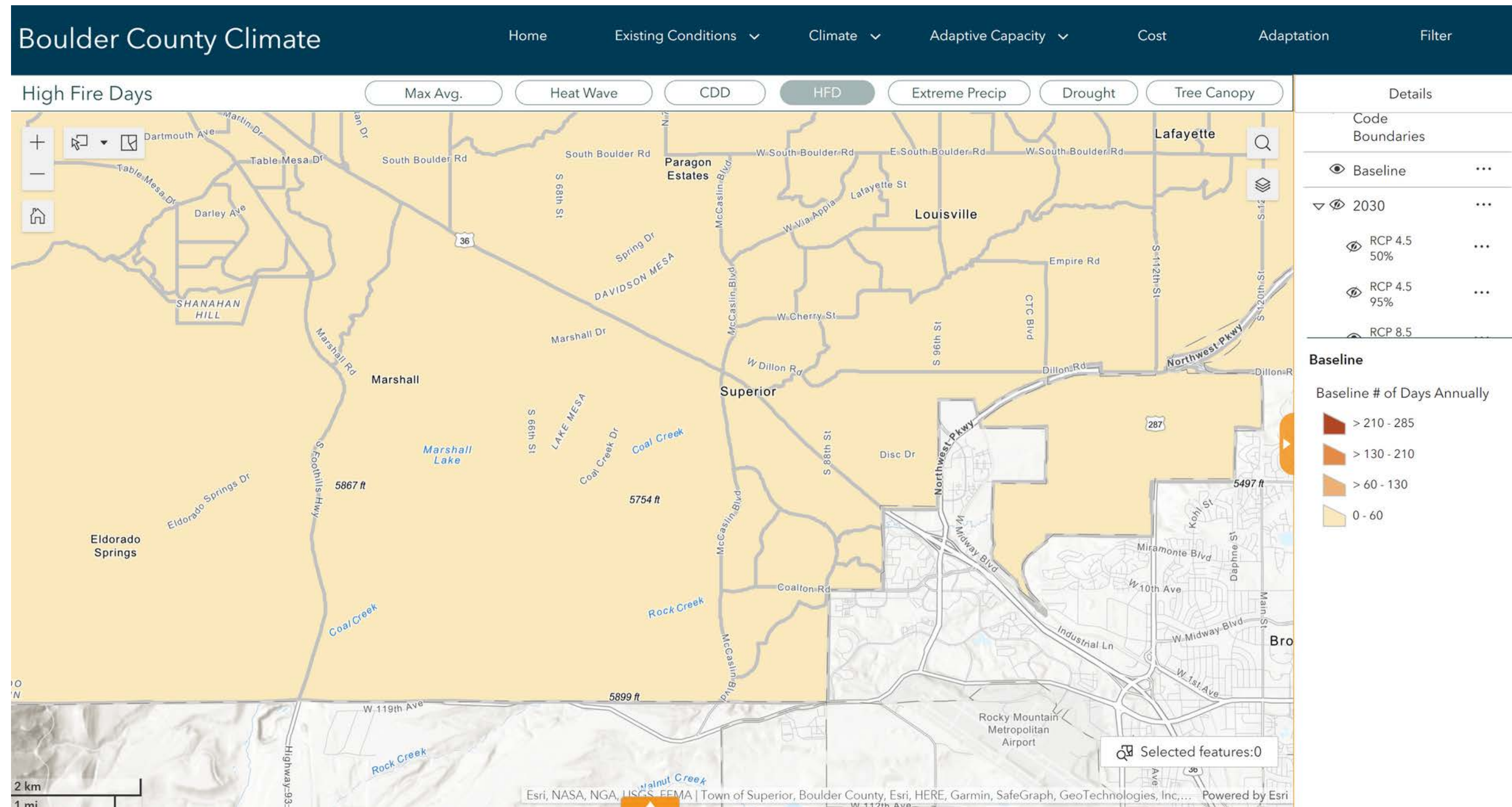
# Total Capacity



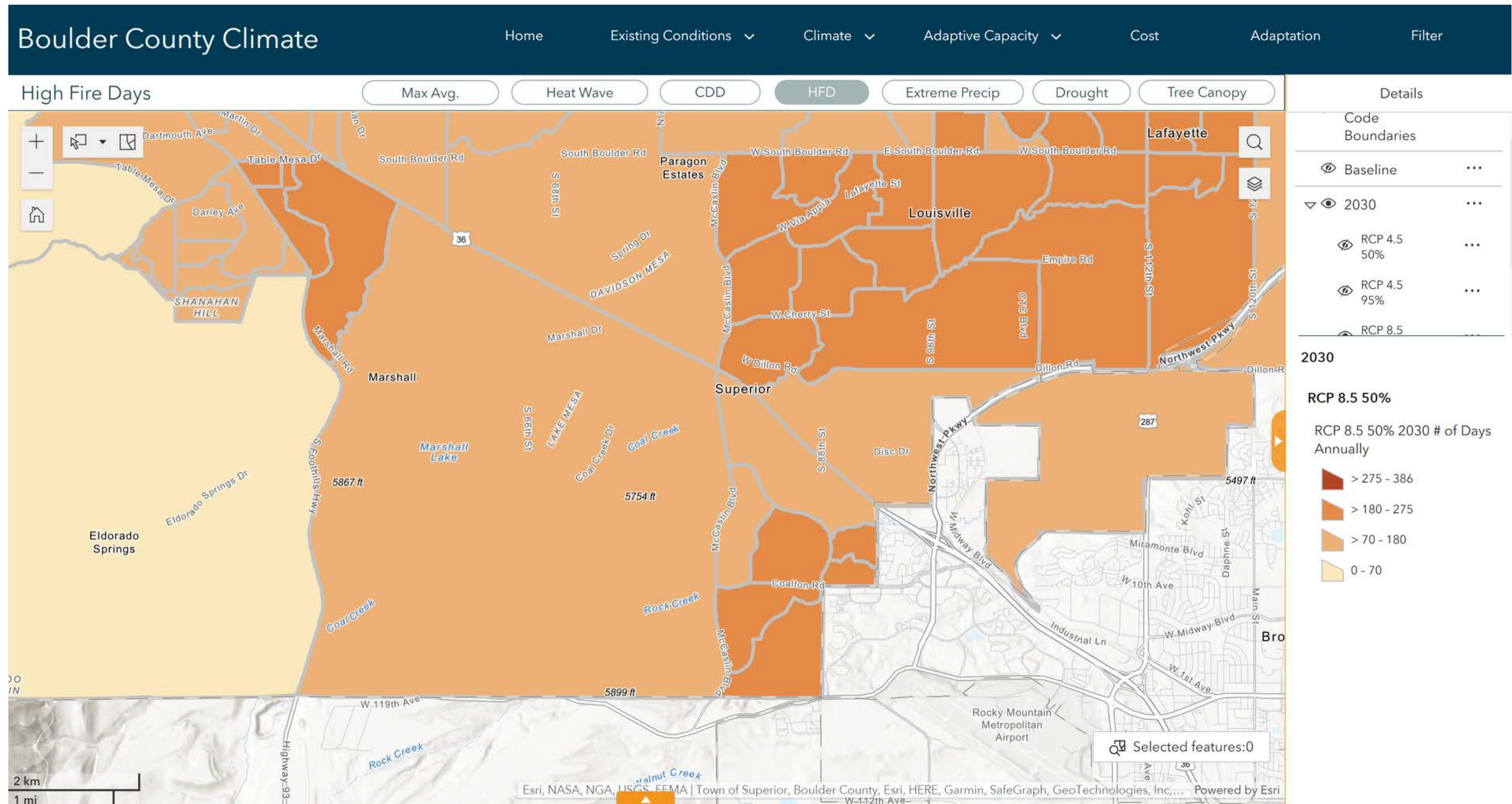
# Total Capacity



# Going Forward - Fire Baseline

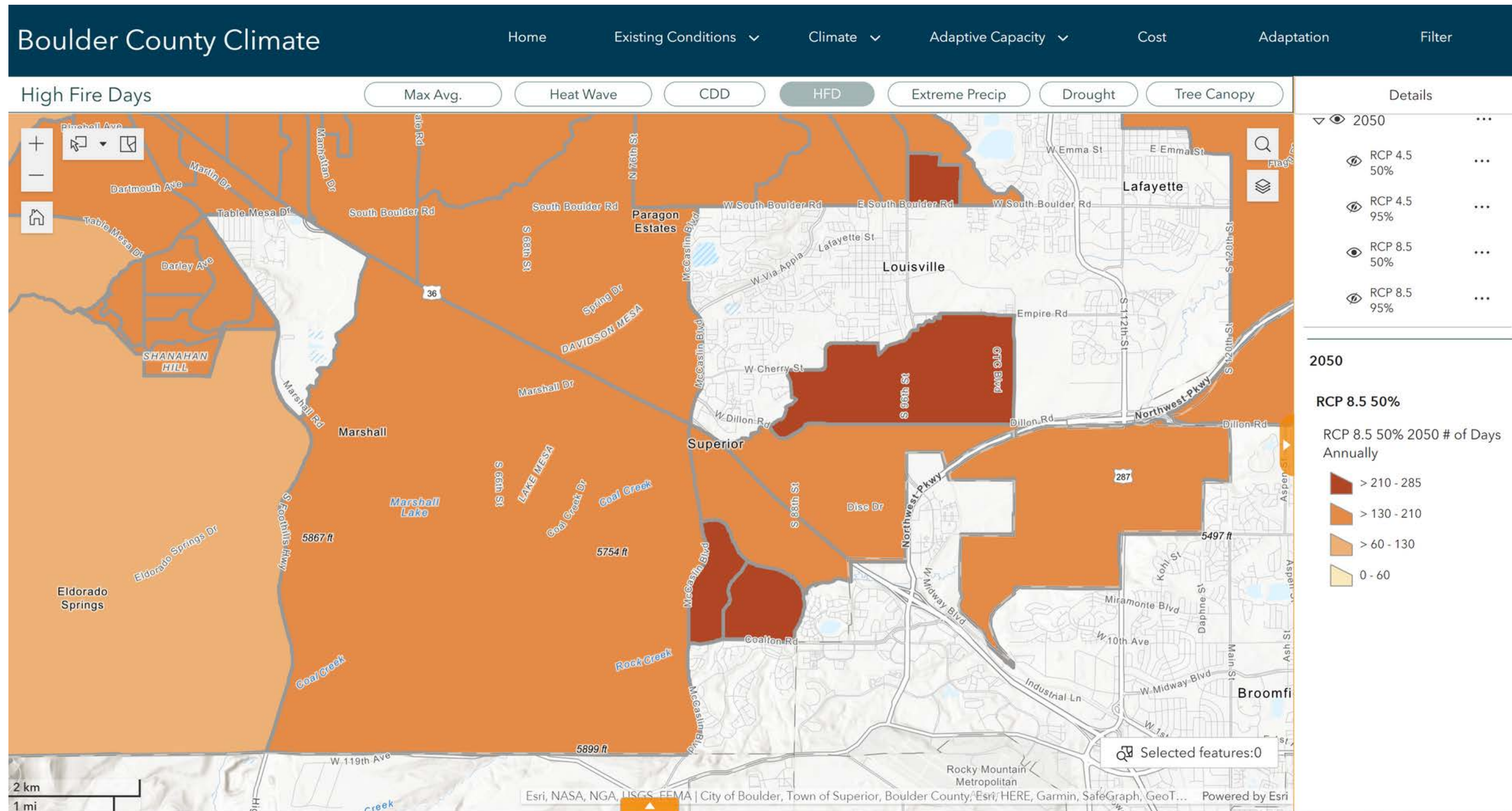


# Going Forward - Fire 2030





# Going Forward - Fire 2050



# The Result

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- **Rebuild Assistance Including Sustainability**
- **Changes in Building Codes**
- **Changes in Risk Maps**
- **Regional Collaboration through Data**



# Connect With Us

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Website

**[resilient-analytics.com](https://resilient-analytics.com)**

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Broomfield, Colorado 80021**



**RESILIENT**  
ANALYTICS

# Thank you for attending our webinar today.



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We have several webinars happening in the near future. Go to <https://www.aaees.org/events> to reserve your spot.

## Would you like to watch this webinar again?

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To determine which type of AAEEES membership is the best fit for you, please go to AAEEES.org or email Marisa Waterman at [mwaterman@aaees.org](mailto:mwaterman@aaees.org).

## Need a PDH Certificate?

You will be emailed a PDH Certificate for attending this webinar within the next week.

## Questions?

Email Marisa Waterman at [mwaterman@aaees.org](mailto:mwaterman@aaees.org) with any questions you may have.



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