

AltGeoViz

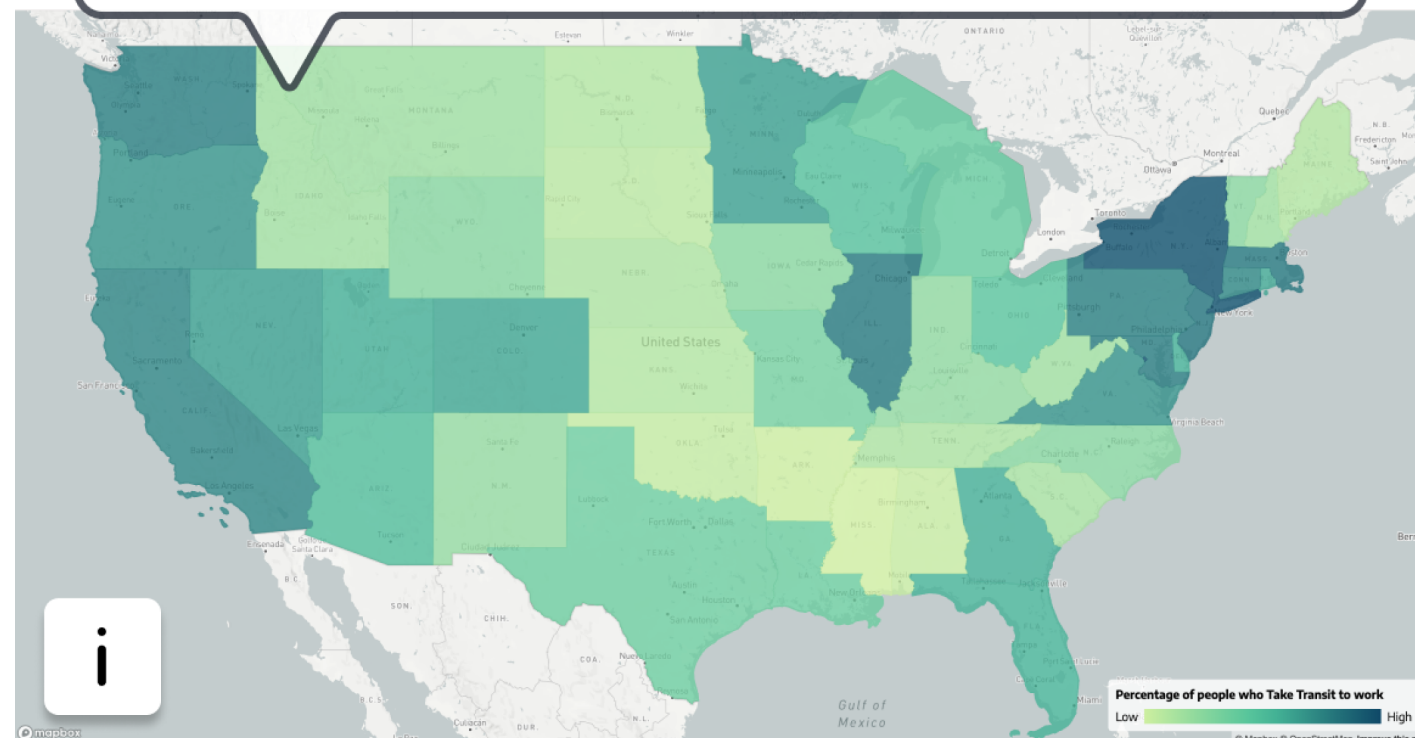
Facilitating Accessible Geovisualization

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University of Washington

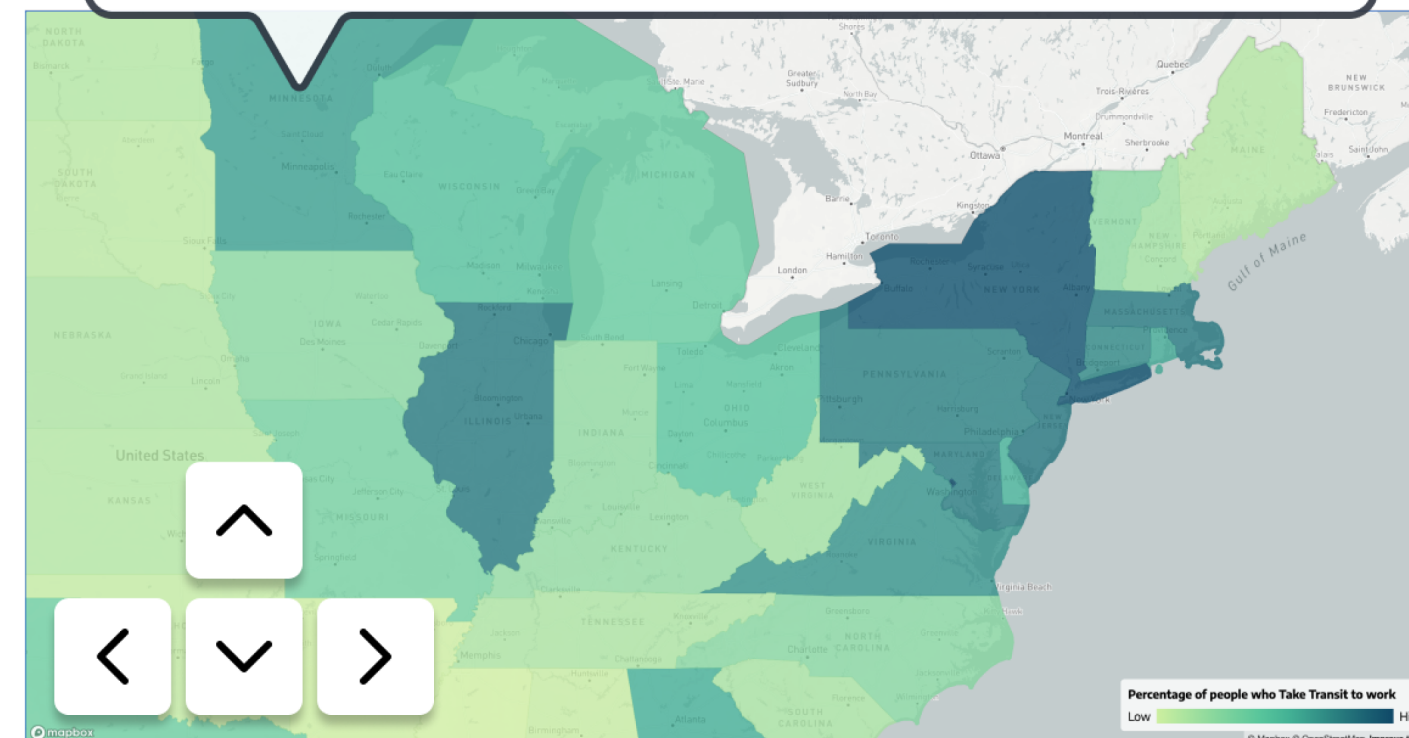
TITLE: Map of percentage of people who take transit to work in the US.

PATTERN: Percentage of transit commuters is high in the top-right and low vertically through the center.



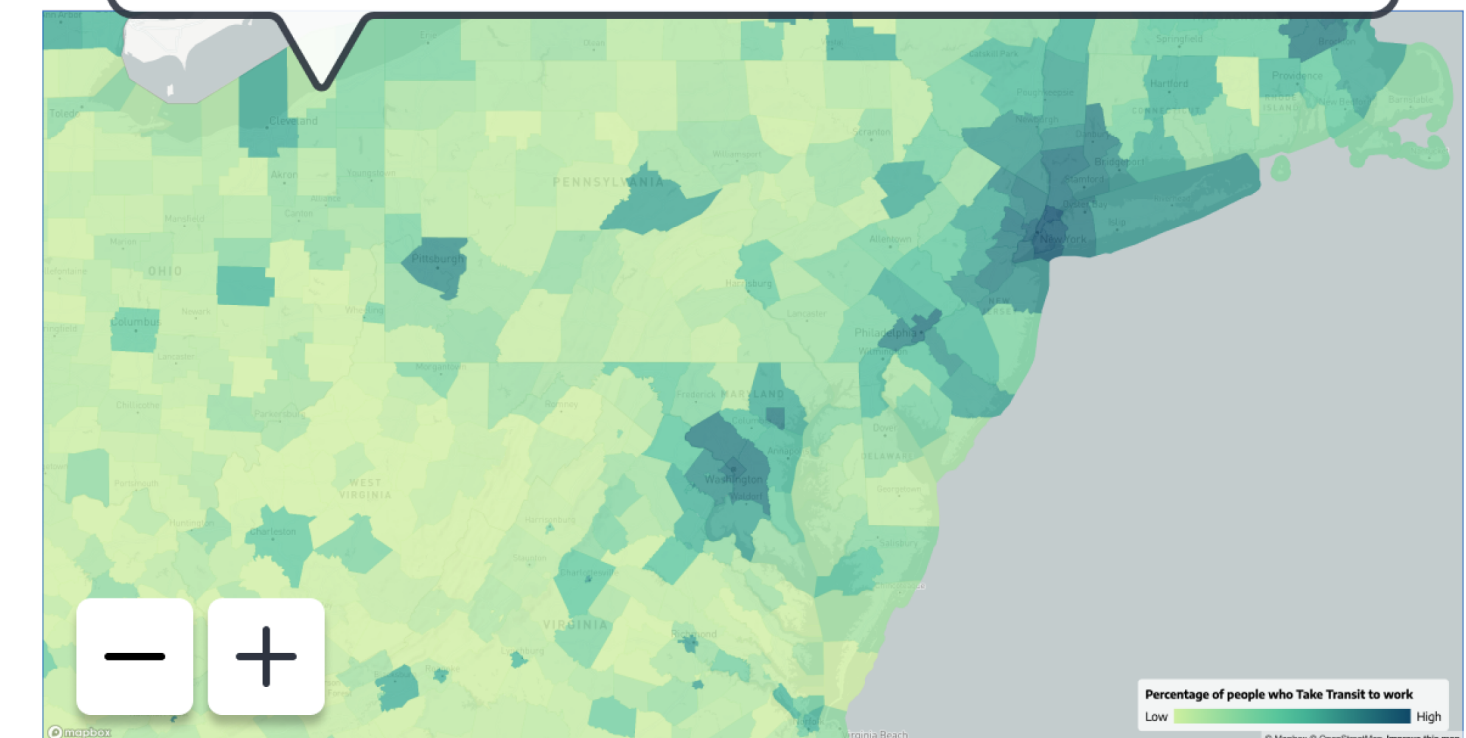
MOVE: Moved right, now centered on Ohio.

BOUNDARY: The current view is bounded by Montana on the top-left, New York on the top-right, North Carolina on the bottom-right, and New Mexico on the bottom-left.



ZOOM: Zoomed in, now at county level.

EXTREMUM: The county with the highest percentage of transit commuters is Bronx, New York, with 56.3% of people who take transit to work.



How Has Gun Violence Changed in Your Neighborhood?

Shootings Change Race

New York, N.Y.

ABOUT AVERAGE GUN HOMICIDE RATE

There were at least **1,081 fatal shootings** in New York from 2020-23. This map shows how many shootings were within a quarter mile of each block. About 50 percent of people lived near a shooting.

Location data was not available for 3 shootings.

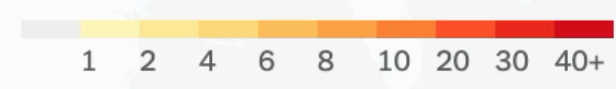
Look up a city

- Somerville
- New York**
- Los Angeles
- Chicago
- Houston
- Phoenix
- Philadelphia
- Columbus
- Jacksonville
- Nashville
- Boston

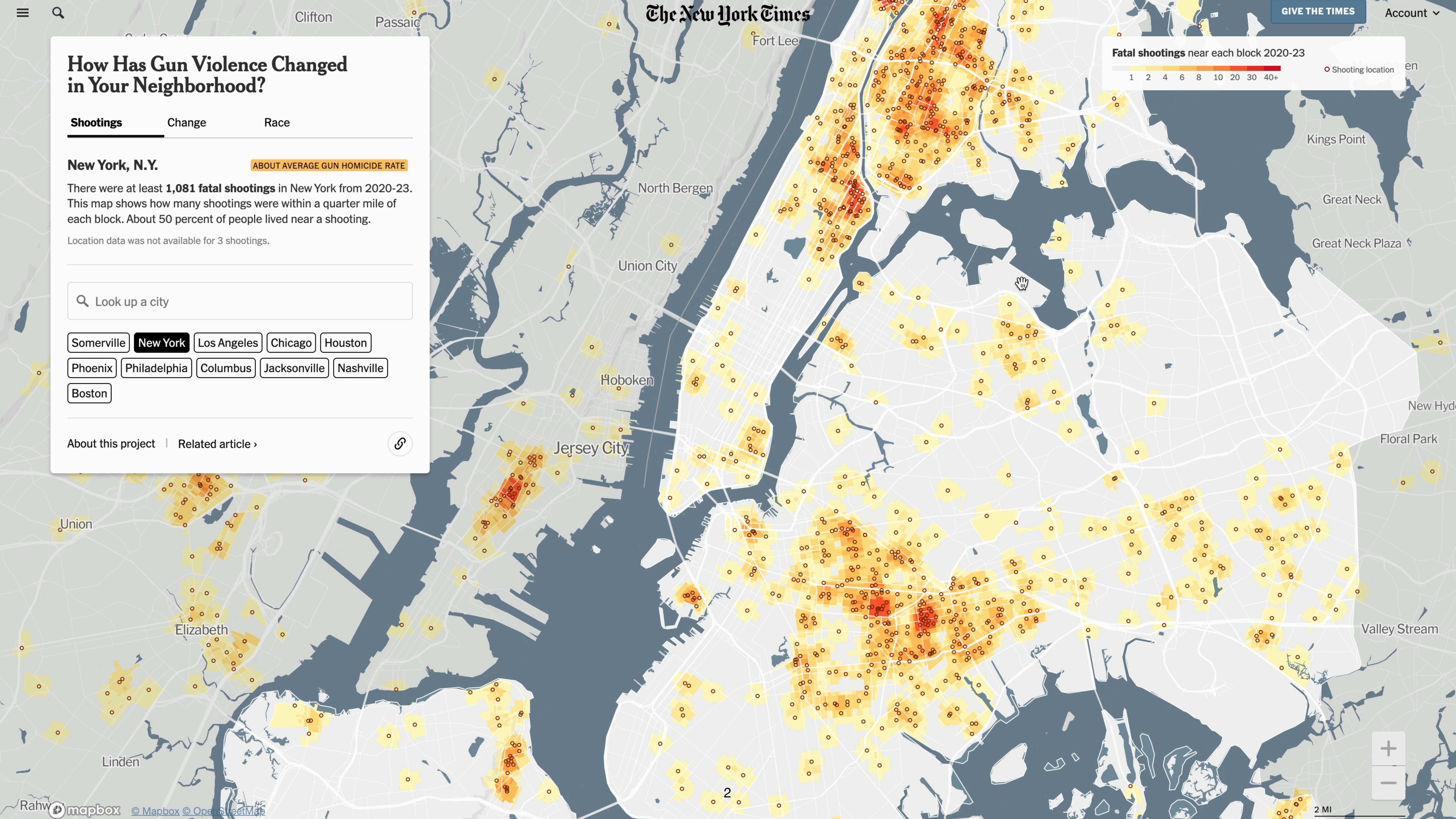
About this project | Related article >



Fatal shootings near each block 2020-23



Shooting location



2 MI

Screen-reader users

use assistive technology to interact with digital content,
typically people who are blind or have low vision.

AltGeoViz

an open-source system that auto-generates summaries of interactive and dynamic geovisualizations.

Map of Population Density in the United States

Heading

Press h to hear short-cut keys.

Spatial Pattern

Descriptive Stats



Information is loading.

Exploratory User Study (N=5)

“ One of the classes I wanted to take in grad school was geographic information systems. But I had to forego taking that class **because there was nothing like this [AltGeoViz].** ”

-P2

Approach

Heading What this map visualization is about

Boundary The four corners of the view

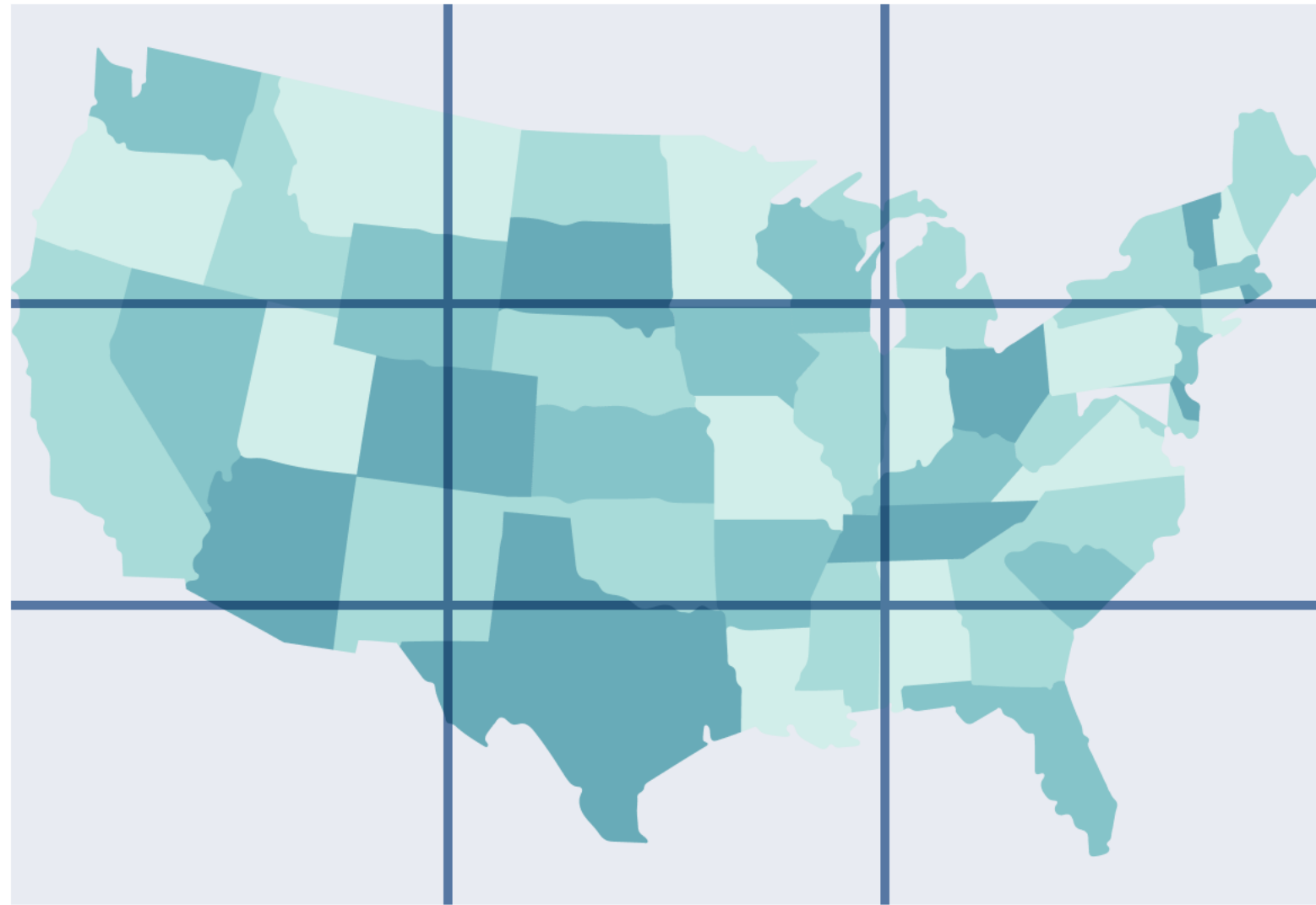
Zoom Level Geographic units at display

Descriptive Stats Minimum, maximum and mean

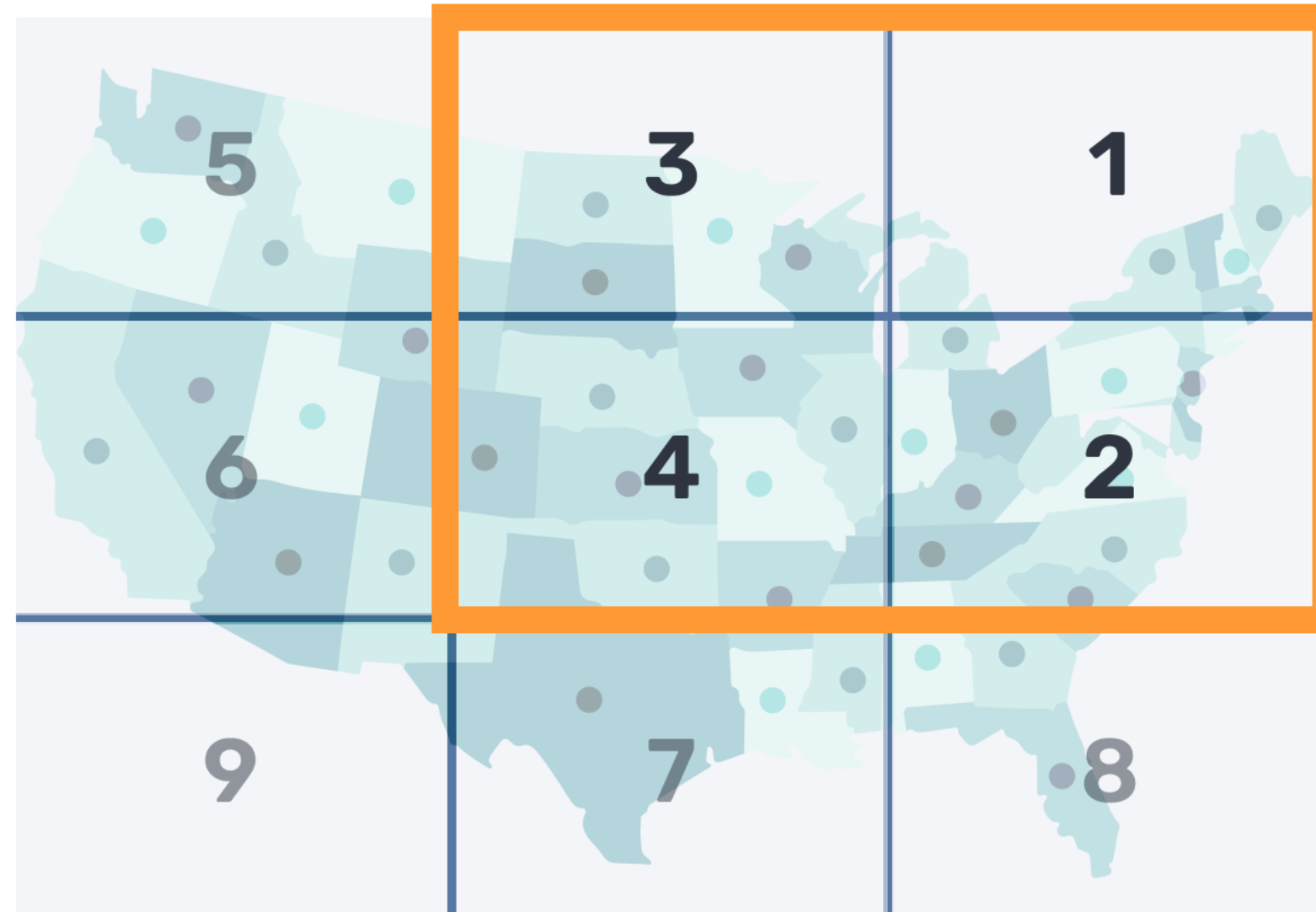
Spatial Pattern How data is spatially distributed in the view

Approach

1. Subdivided into a 3x3 grid



Approach



How do users ***interact*** with the system?

Map of Population Density in the United States

Press h to hear short-cut keys.



Center Location +
Zoom Level

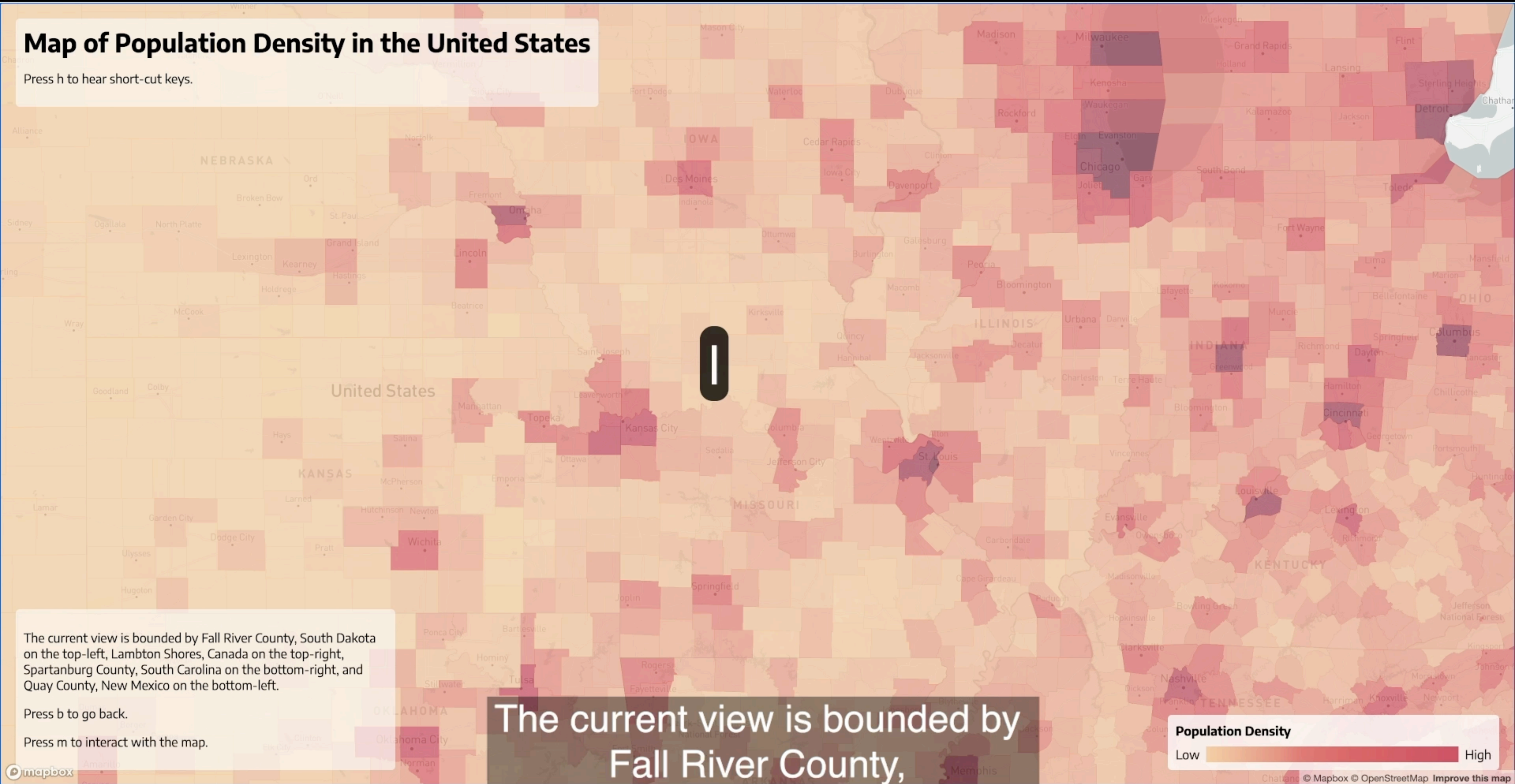
Now interacting with the map.



How do users know ***where they are?***

Map of Population Density in the United States

Press h to hear short-cut keys.

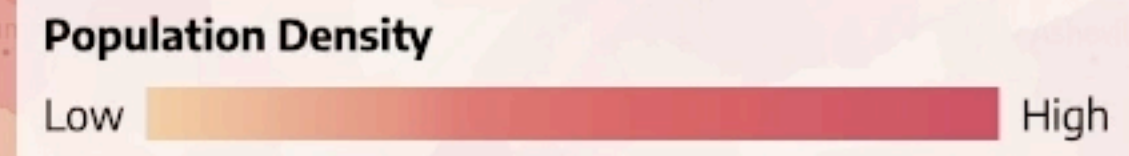


The current view is bounded by Fall River County, South Dakota on the top-left, Lambton Shores, Canada on the top-right, Spartanburg County, South Carolina on the bottom-right, and Quay County, New Mexico on the bottom-left.

Press b to go back.

Press m to interact with the map.

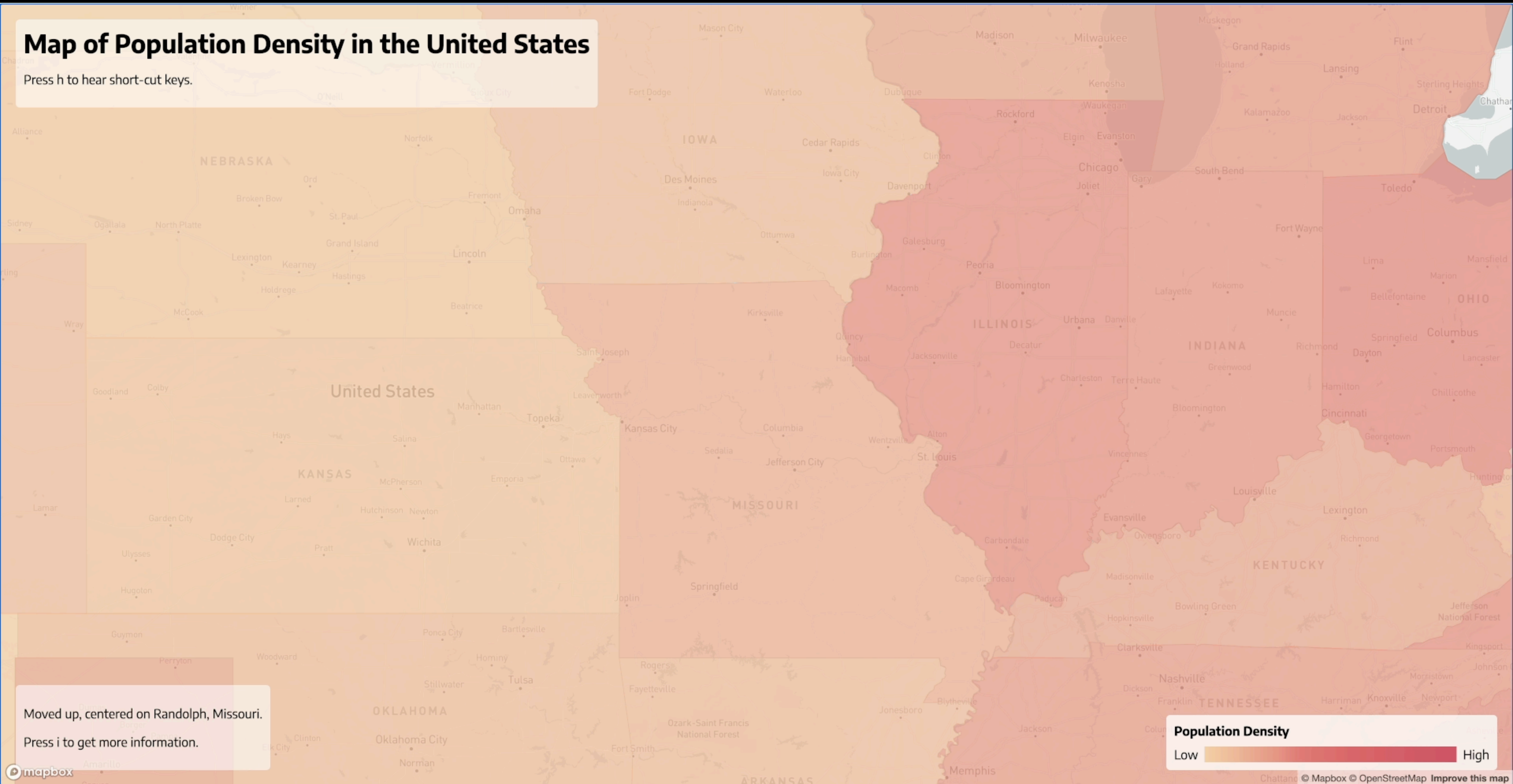
The current view is bounded by
Fall River County,



How does information ***update*** when the view changes?

Map of Population Density in the United States

Press h to hear short-cut keys.



Moved up, centered on Randolph, Missouri.

Press i to get more information.

Exploratory User Study (N=5)

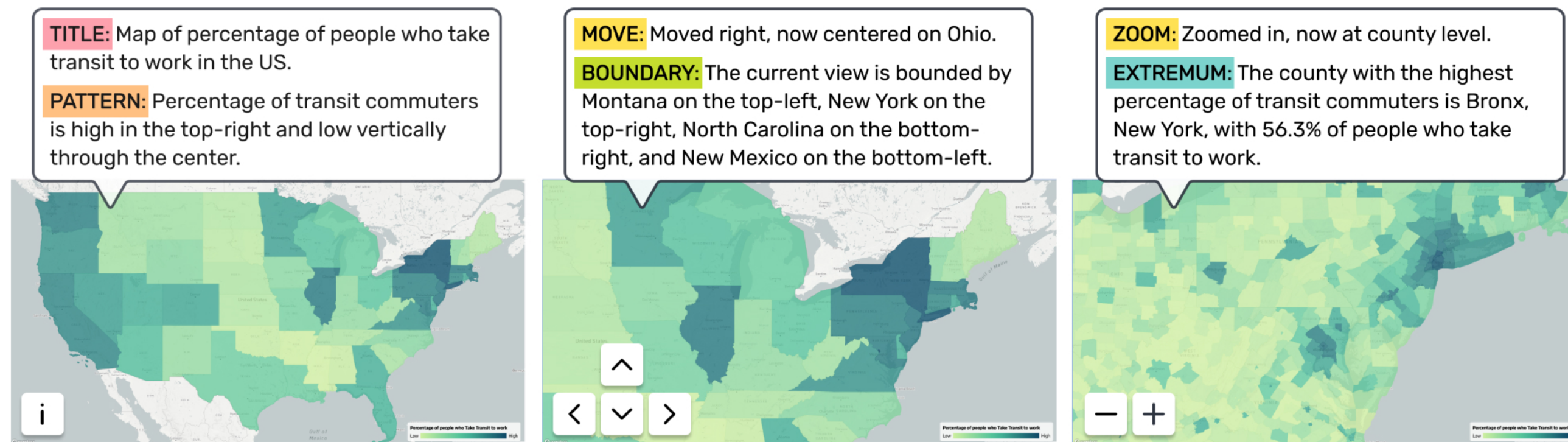
“ I really enjoyed being able to navigate and get additional data from a **graphical perspective...**
It gives me that kind of **spatial awareness...**
whereas I would not be able to figure out that
with a drop-down box.”

-P1

AltGeoViz

Facilitating Accessible Geovisualization

- opportunities for screen-reader users to interact with and understand geovisualizations
- a step forward in making geovisualization more inclusive and accessible to all



Github: github.com/makeabilitylab/altgeoviz

Paper pre-print: arxiv.org/pdf/2406.13853

Live-demo: tinyurl.com/dynamicalttext

Video: youtu.be/EE1w8Ynm1dk