

Incorporating Margins of Error in Maps

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Living Atlas Policy Maps

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Coauthors:

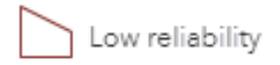
Steven Aviles, Lisa Berry, Jim Herries

MOEs in Symbology

- Outlines
- Transparency
- “Donut” with symbols for upper & lower bounds
- Polygons behind points

ACS Population Variables -
Boundaries - Tract - Reliability

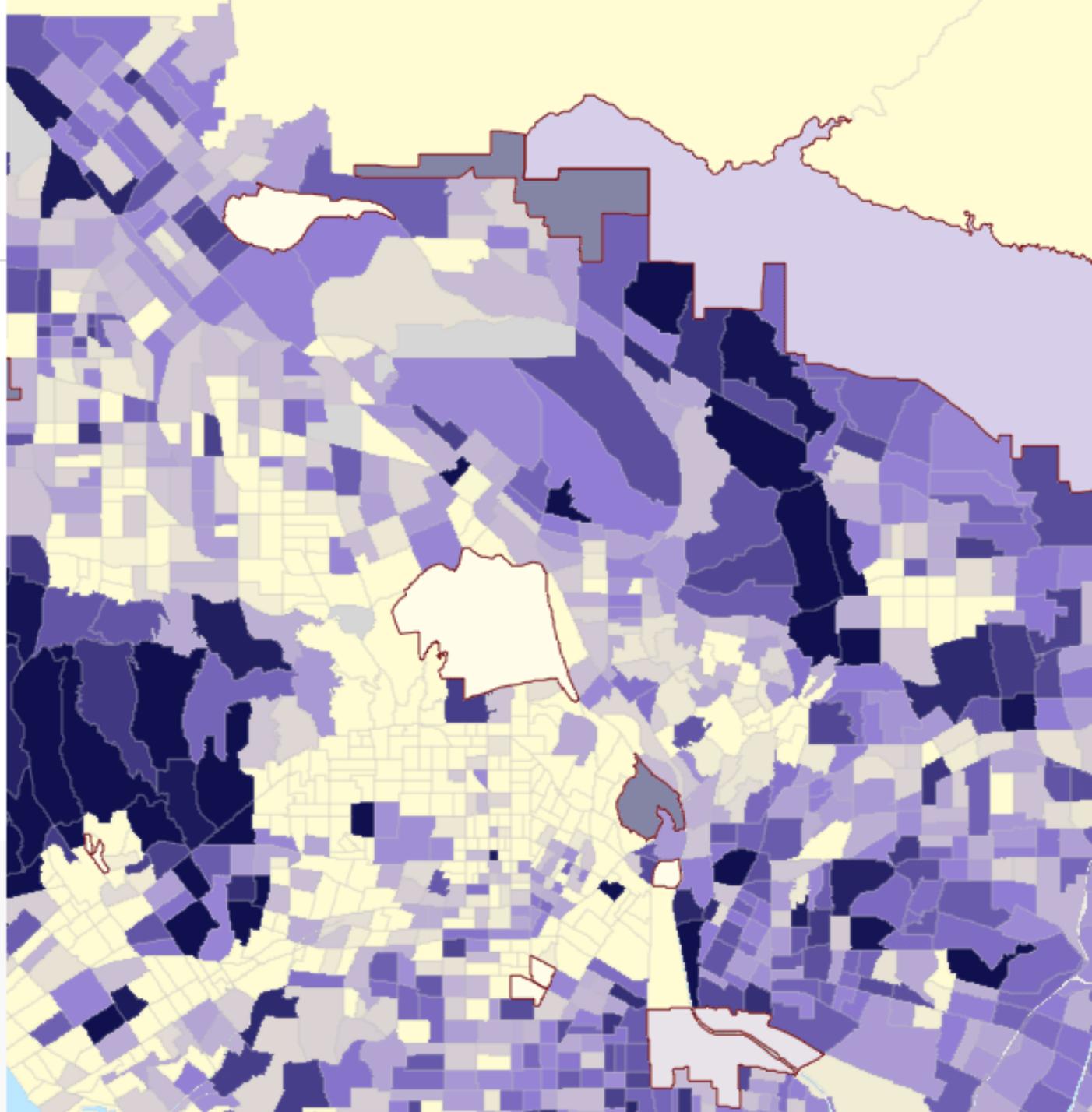
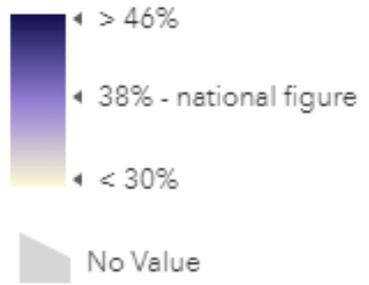
Reliability



ACS Population Variables -
Boundaries - Tract

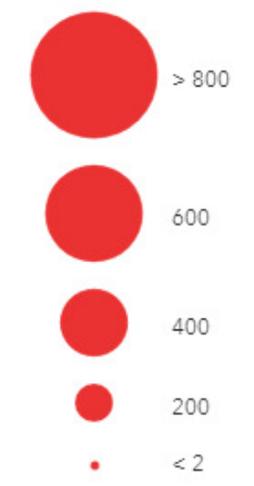


Percent of Population in
Dependent Age Groups (under
18 and 65+)

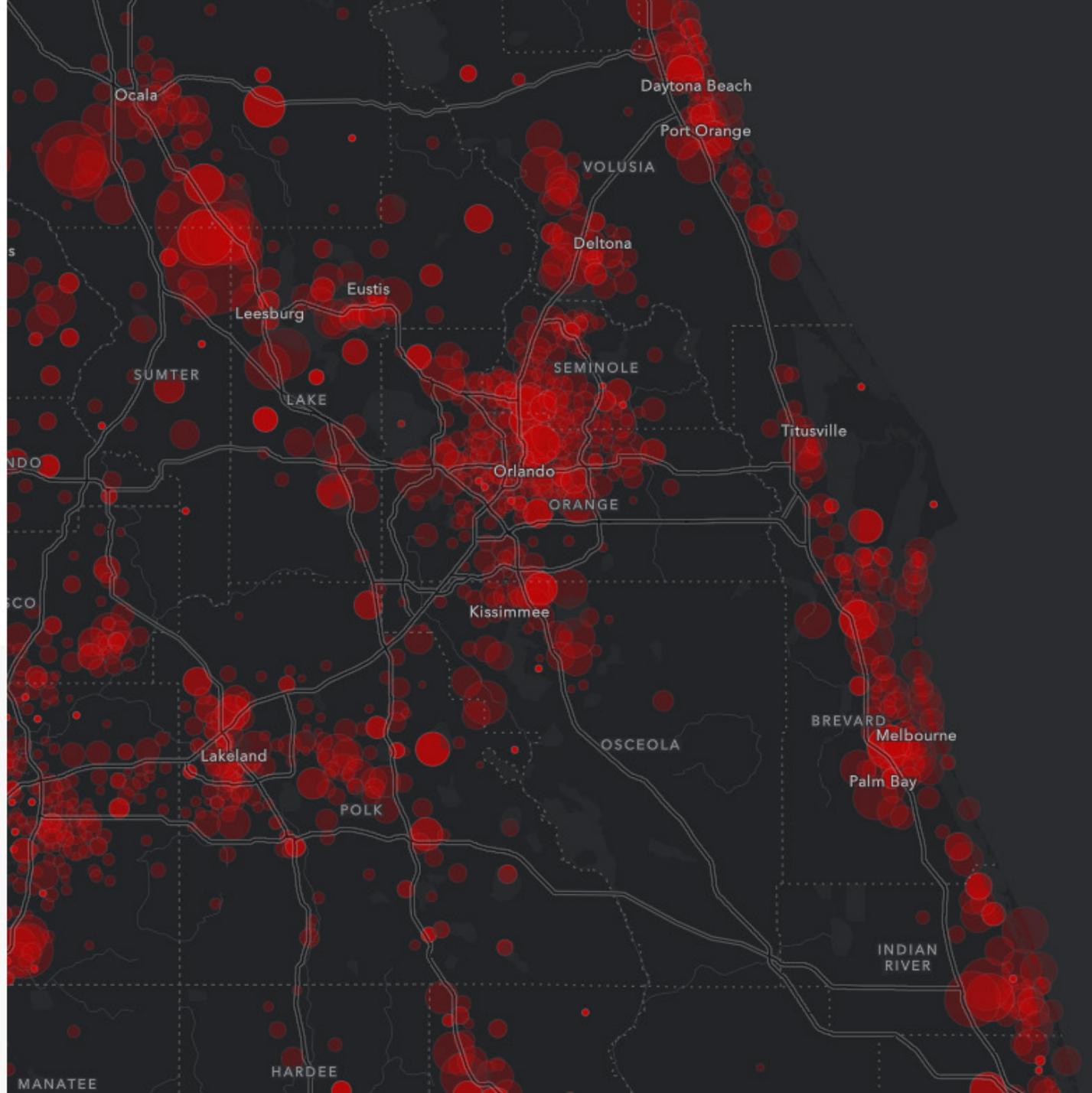
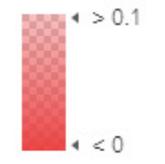


Outlines
show tracts
with low
reliability

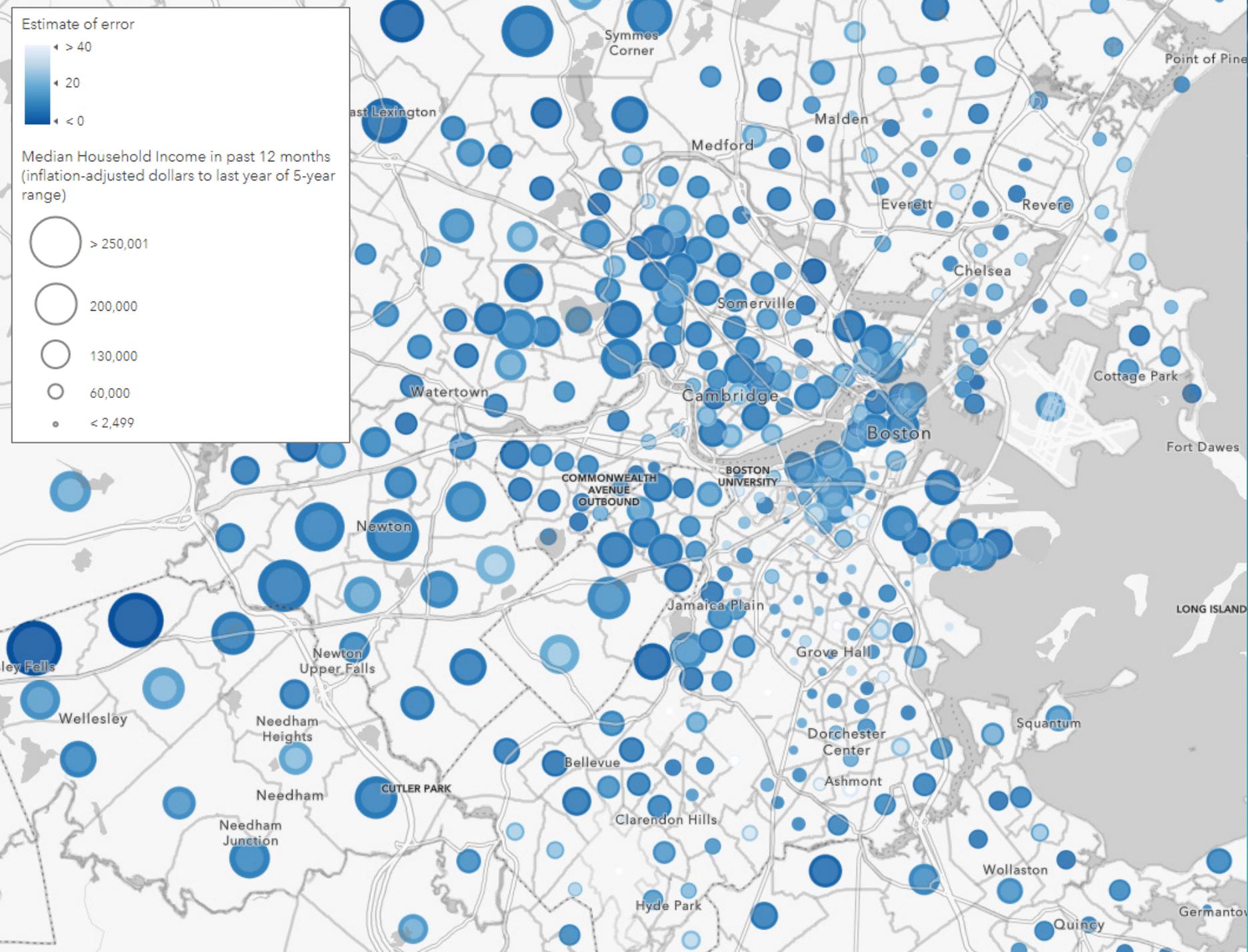
Female 75 years and over with a disability



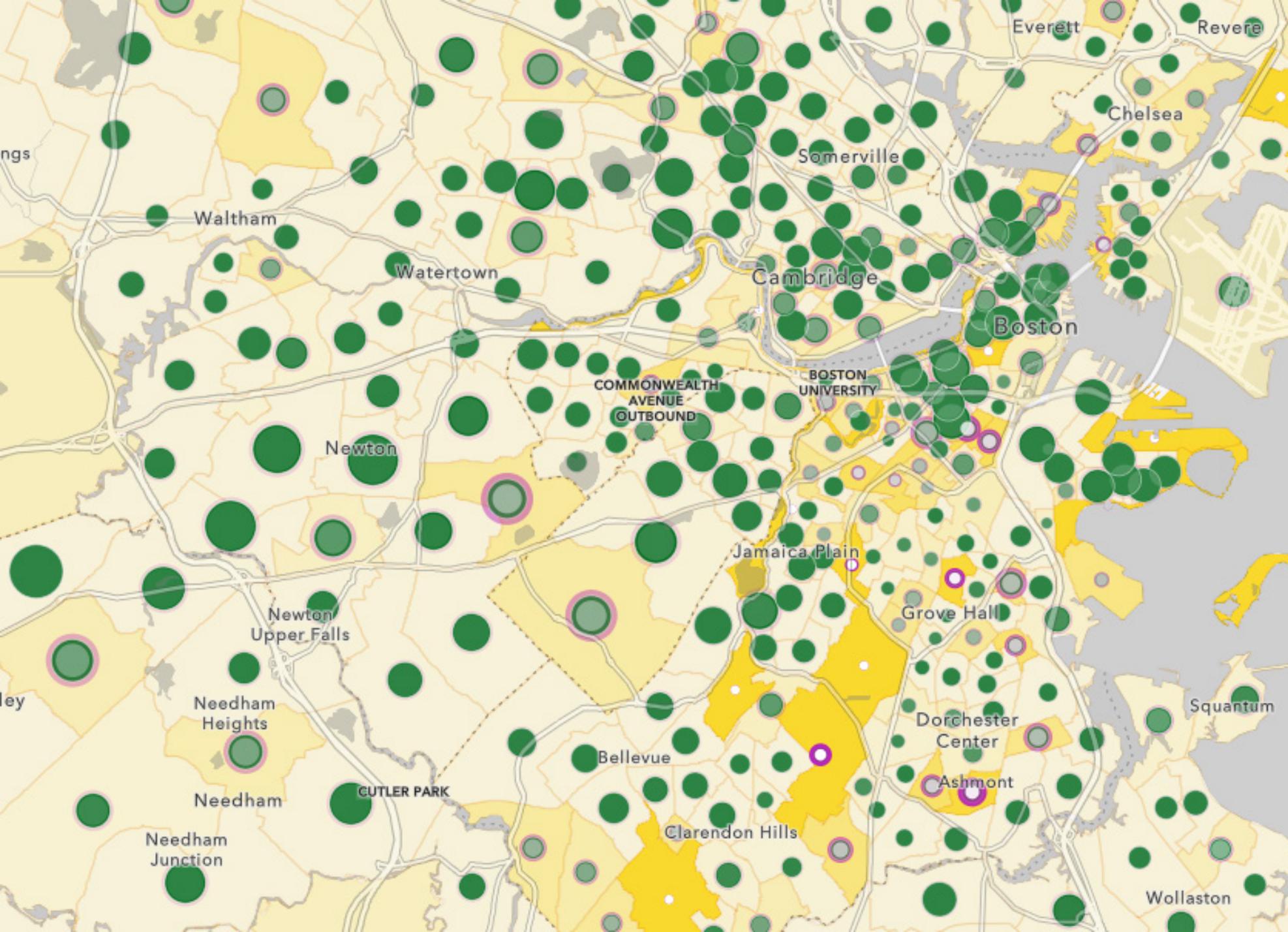
MOE as a percentage of estimate



Estimates with low reliability are more transparent



Map both upper and lower bounds to create a donut symbol



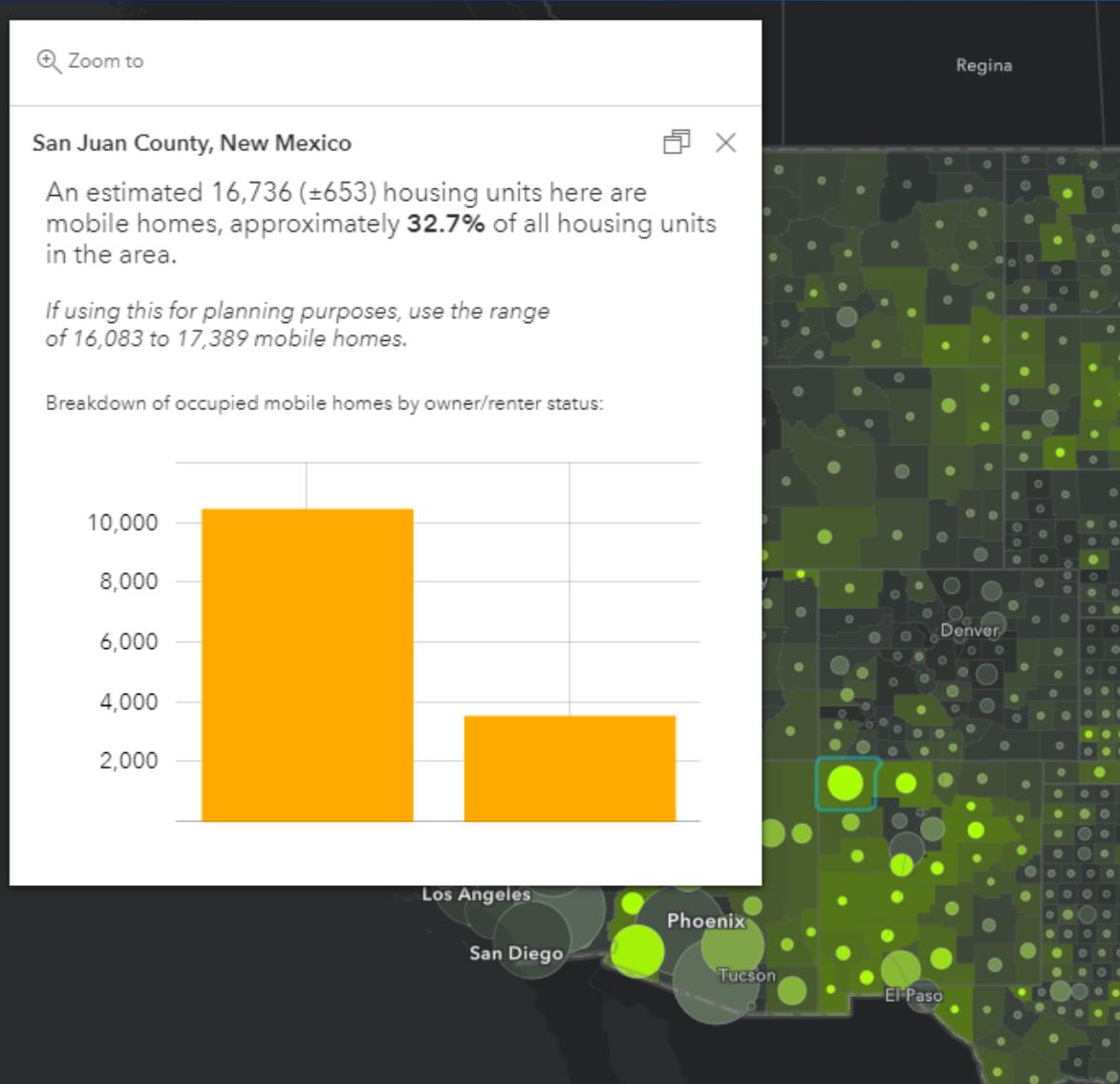
**Polygons
behind point
symbols
show
reliability**

Brighter yellow =
higher concern

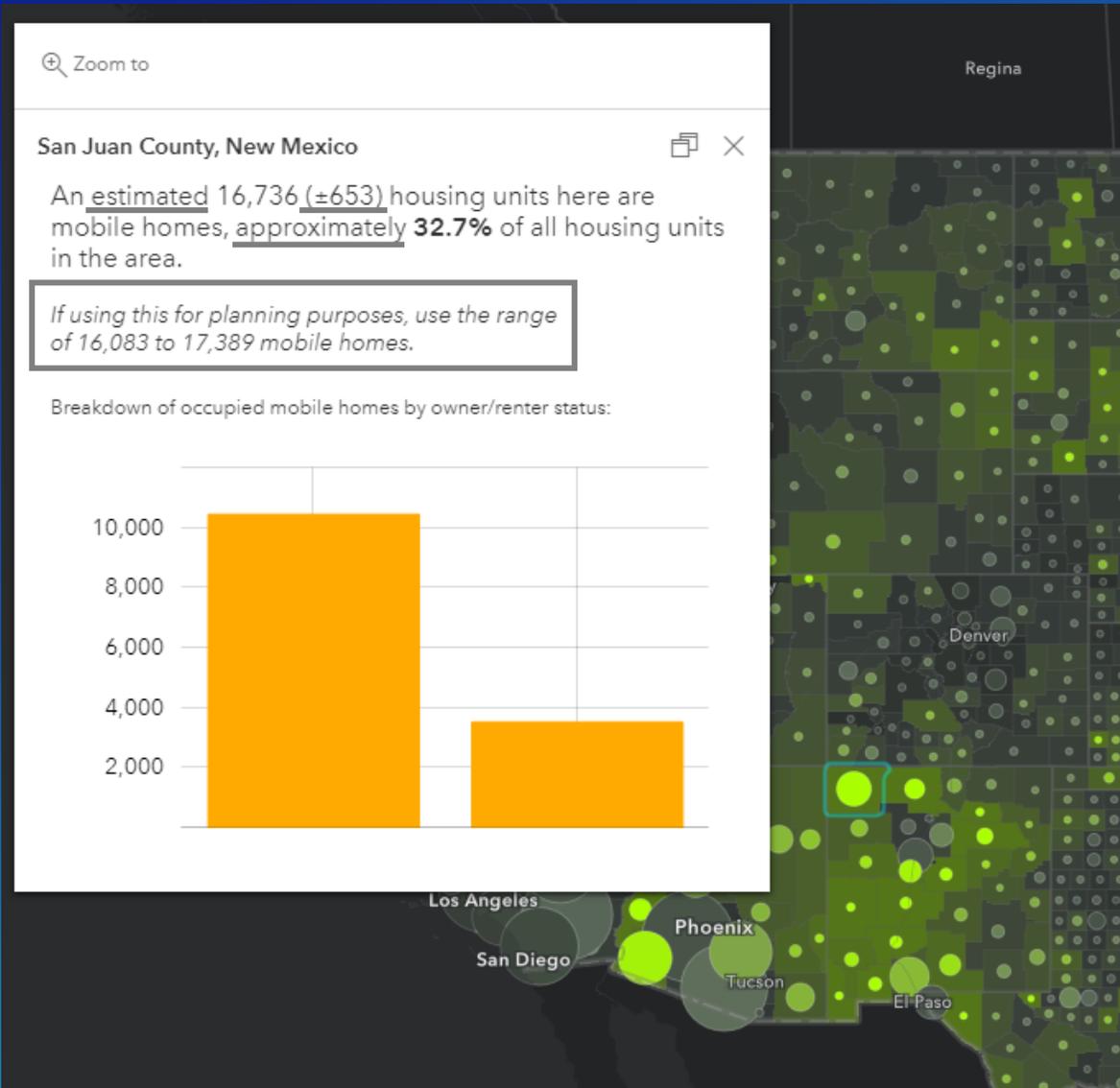
MOEs in Pop-ups

- Language such as “estimated” or “approximately”
- State the MOE
- State the full range

MOEs in Pop-ups

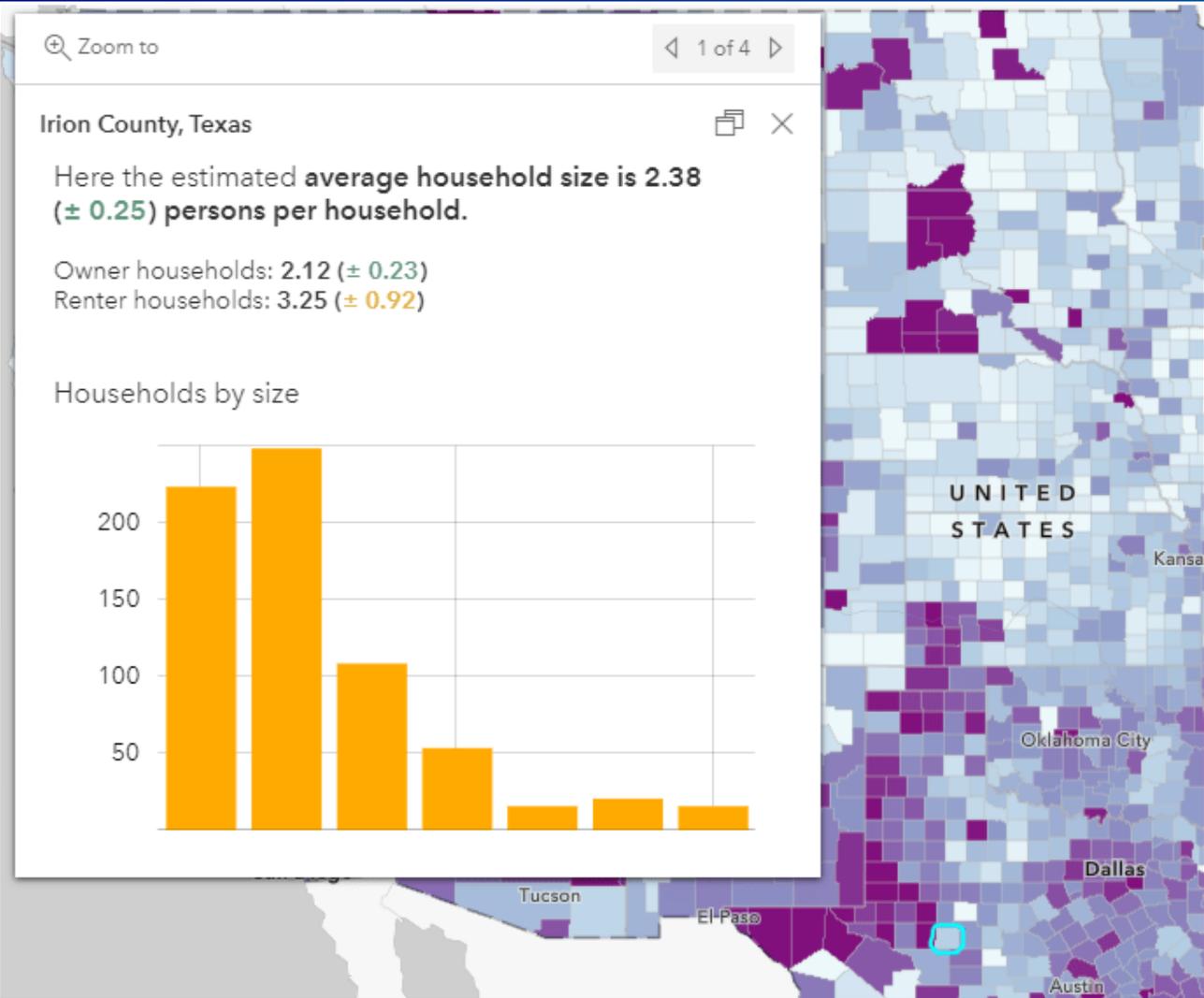


MOEs in Pop-ups

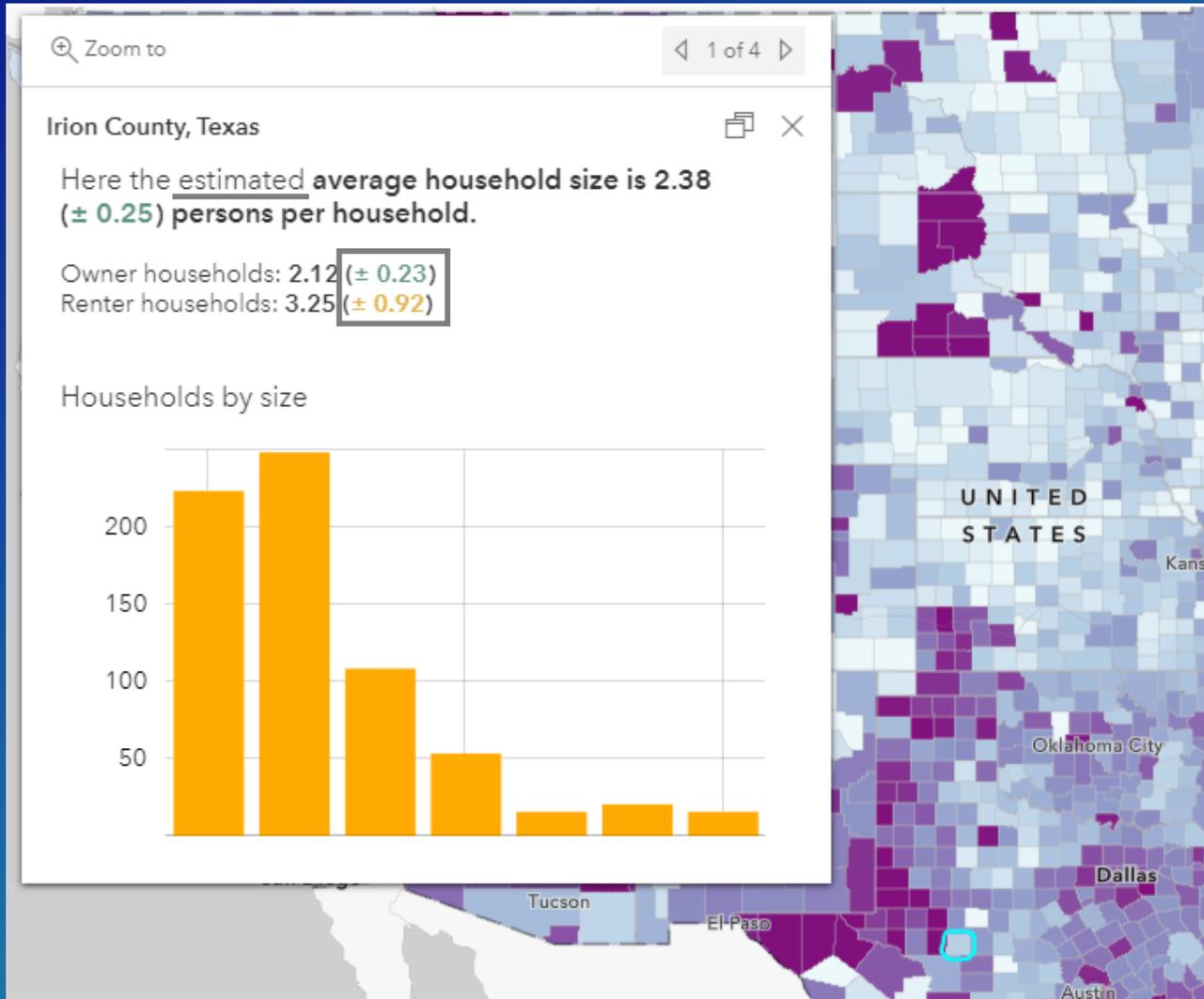


- *Estimated & Approximately*
- Present the MOE
- Presents the full range

MOEs in Pop-ups



MOEs in Pop-ups



- *Estimated*
- Present the MOEs
- Use text color to show reliability:
 - High ($CV \leq 12$)
 - Medium ($12 < CV \leq 40$)
 - Low ($40 < CV$)

MOEs in Labels

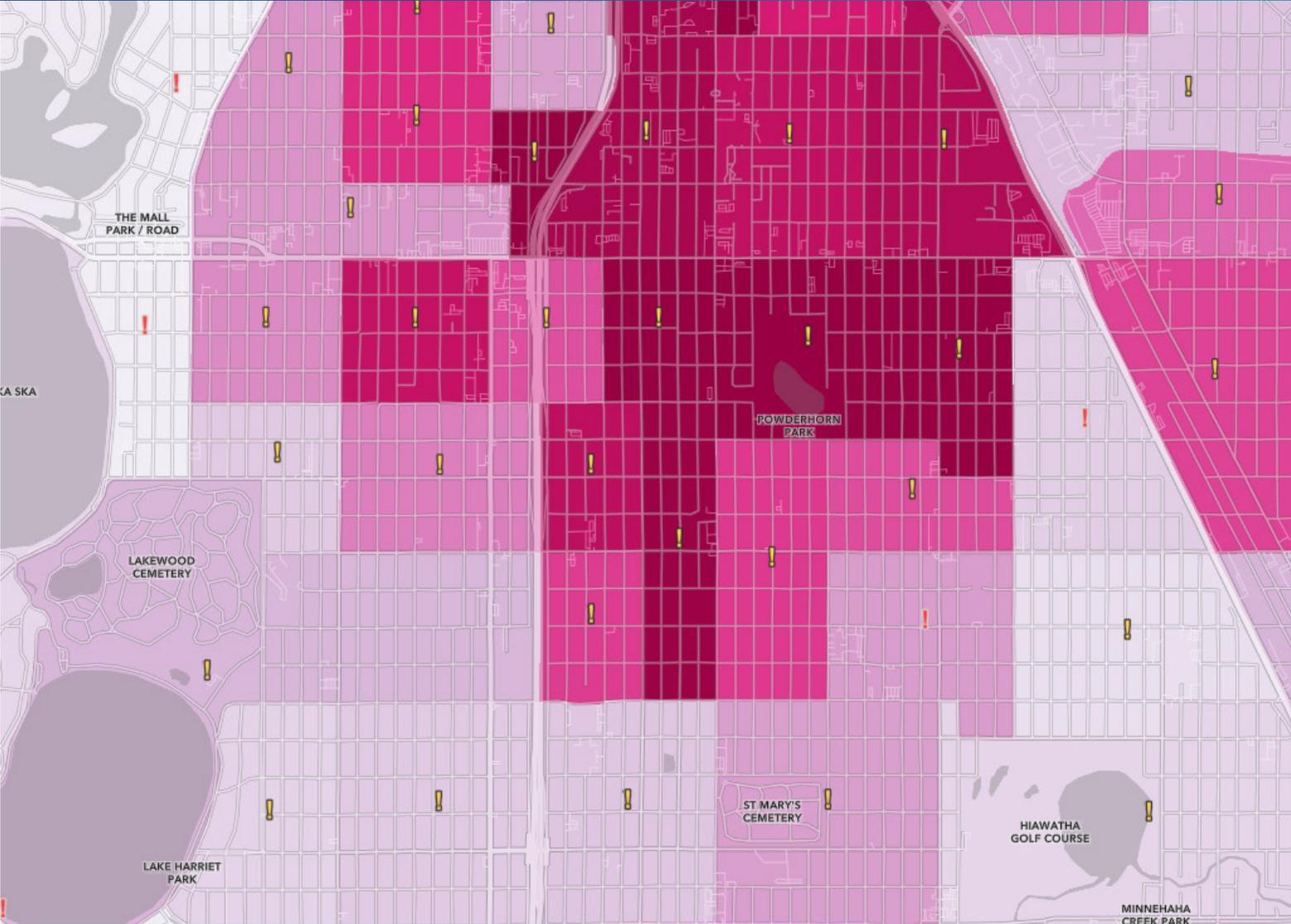
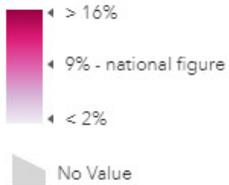
- Reliability
- Warning symbols only if it's unreliable
- State the MOE

MOEs in Labels – Reliability

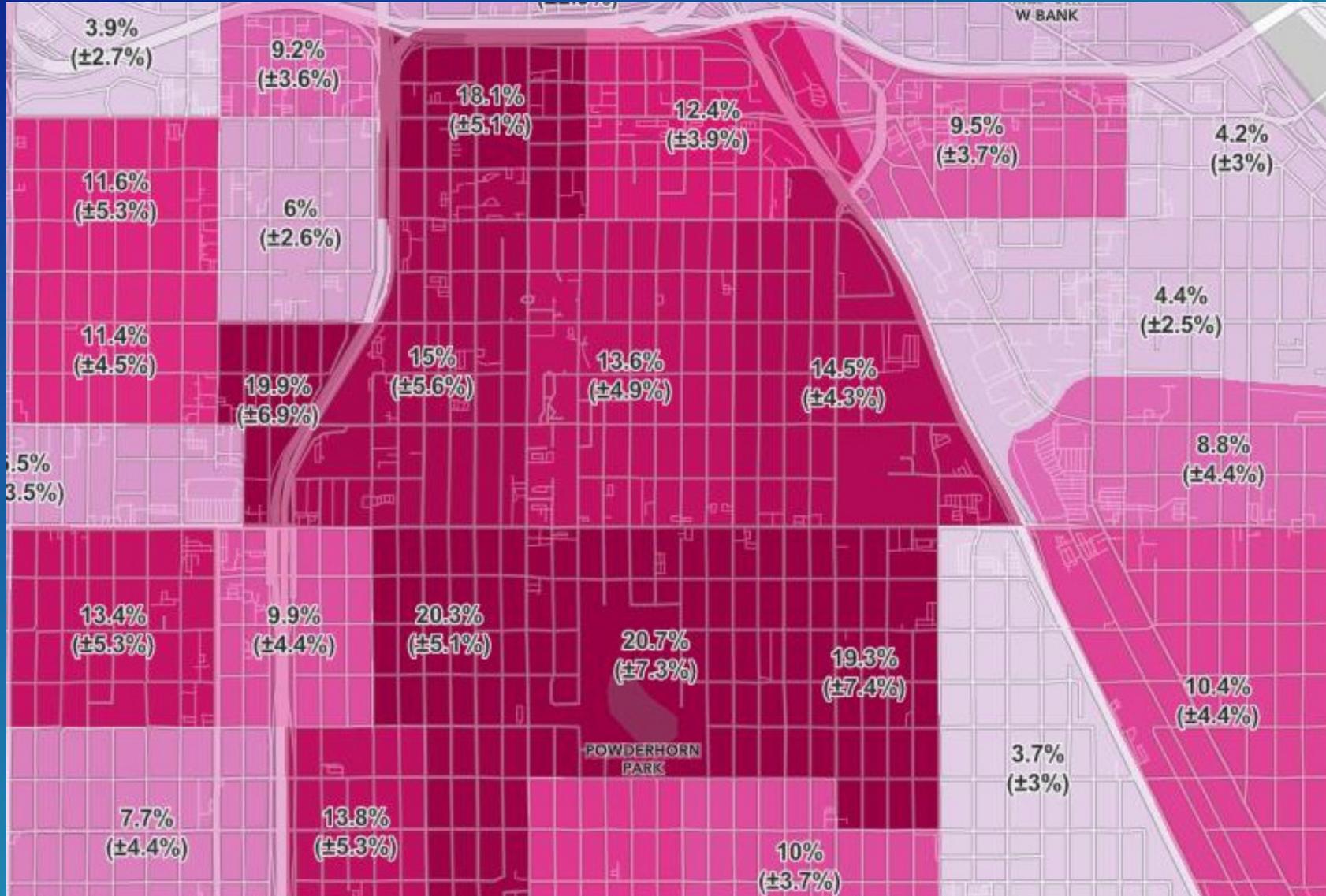


MOEs in Labels – Warning Symbols

Percent of Population with No Health Insurance Coverage



MOEs in Labels – State the MOE



More Resources for Incorporating MOEs in Maps

<https://esriurl.com/MOEsInMaps>



ArcGIS Living Atlas

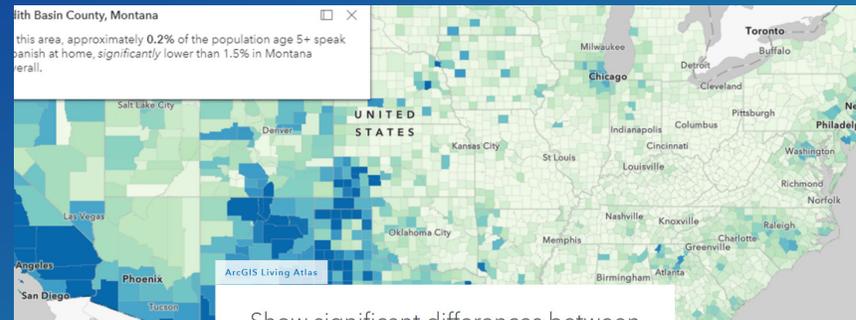
The Importance of Margins of Error and Mapping

Mapping
March 29, 2021

Lisa Berry
Diana Lavery

Almost all quantifications in life are estimates. Your speedometer, your scale in your bathroom, the thermometer in your oven, the thermometer in your medicine cabinet, etc. Unless you've had those instruments calibrated recently, they are

[Importance of Margins of Error and Mapping](#)



Lith Basin County, Montana

this area, approximately 0.2% of the population age 5+ speak panish at home, significantly lower than 1.5% in Montana erall.

ArcGIS Living Atlas

Show significant differences between two American Community Survey estimates

Decision Support
March 19, 2021

Diana Lavery
Steven Aviles

Comparing two numbers is often the first step of analysis. Informative maps are foundational to decision-support briefings and discussions, particularly ones that compare and contrast two values. ArcGIS Living Atlas of the World contains more than 100 layers of

[Significant Differences between Two Estimates](#)



ArcGIS Living Atlas

Effective ways to communicate margins of error through pop-ups

Mapping
May 12, 2021

Lisa Berry

In Part 1 of this blog series, we learned about the importance of using Margins of Error (MOEs) within our mapping projects. Since surveyed data such as the American Community

[Communicate MOEs Through Pop-ups](#)

Check the [ArcGIS Blog](#) for more posts to come!



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