

A STUDY IN MAP PRESENTATION:

Our Experience Creating “How Vulnerable Are American Communities to Automation, Trade, & Urbanization?”

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Outline of Presentation

1. *Spreadsheet to Presentation: Considerations When Portraying Data for Policy Makers*
2. *Talking Shop: Best Practices in Map Making*
3. *Data Presentation: Lessons Learned*

SPREADSHEET TO PRESENTATION:

Considerations When Portraying Data for Policy Makers

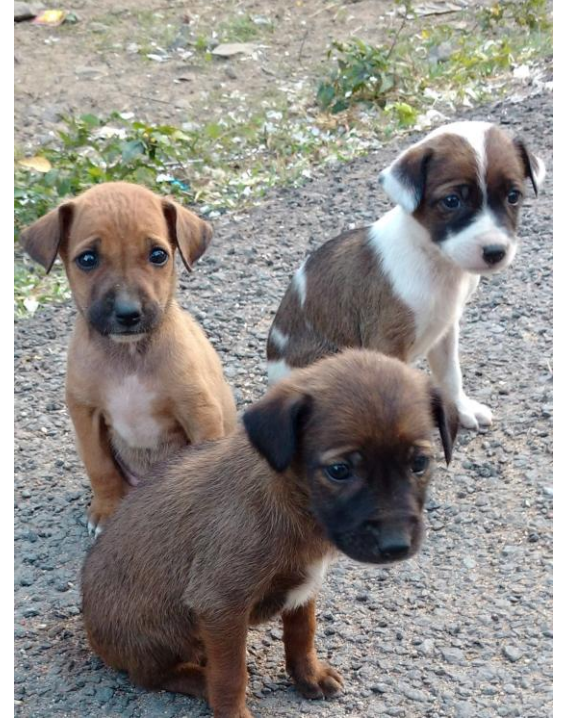
Data Visualization in Policy

- Data presentation method can affect audience interpretation
 - “An 80 percent reduction in fatalities”
versus “20 percent of deaths will still occur”
- **When the audience interpreting your data is an audience of policy makers, this interpretation can have far reaching effects**



Talking Data Visualization

- Consider the following in your discussion:
 - Who is the target audience?
 - What does this visualization really add?
 - What level of detail needs to be included?
- You may not have the answer to all of these questions, but be ready to talk them out with your visual expert

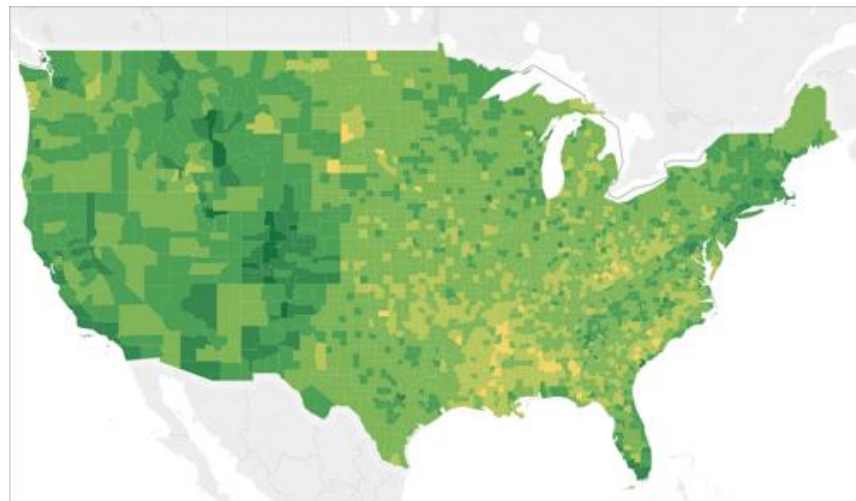
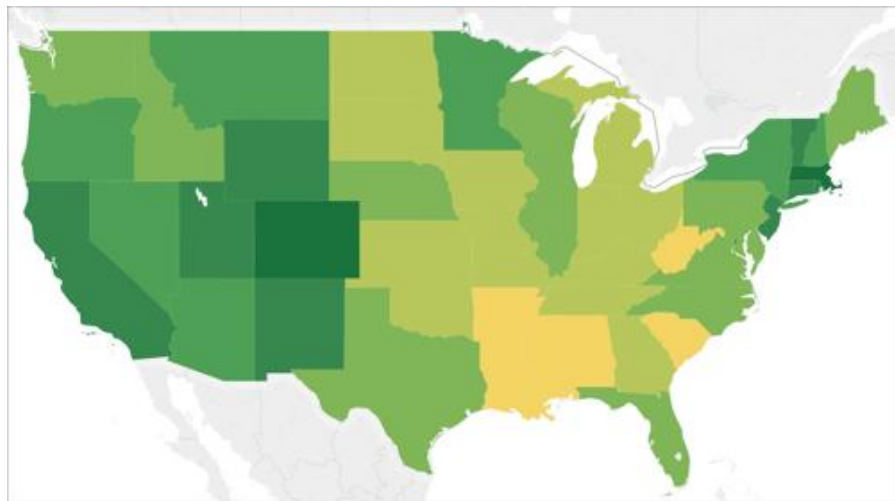


Understand the Target Audience

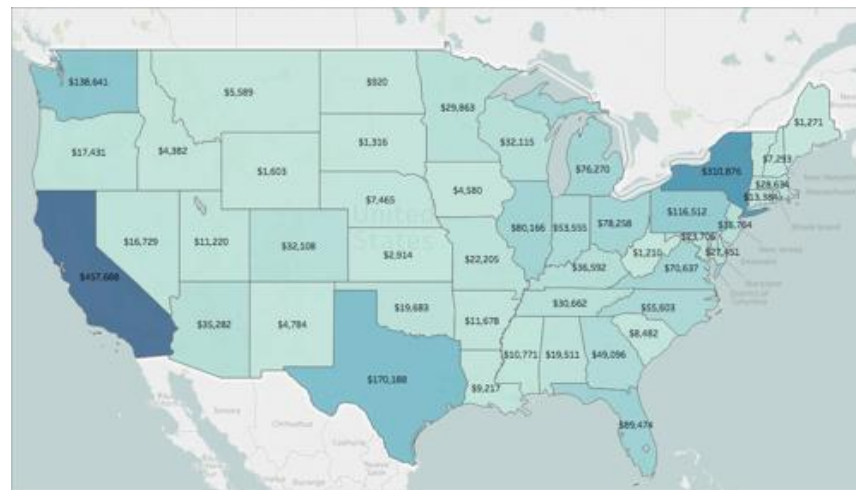
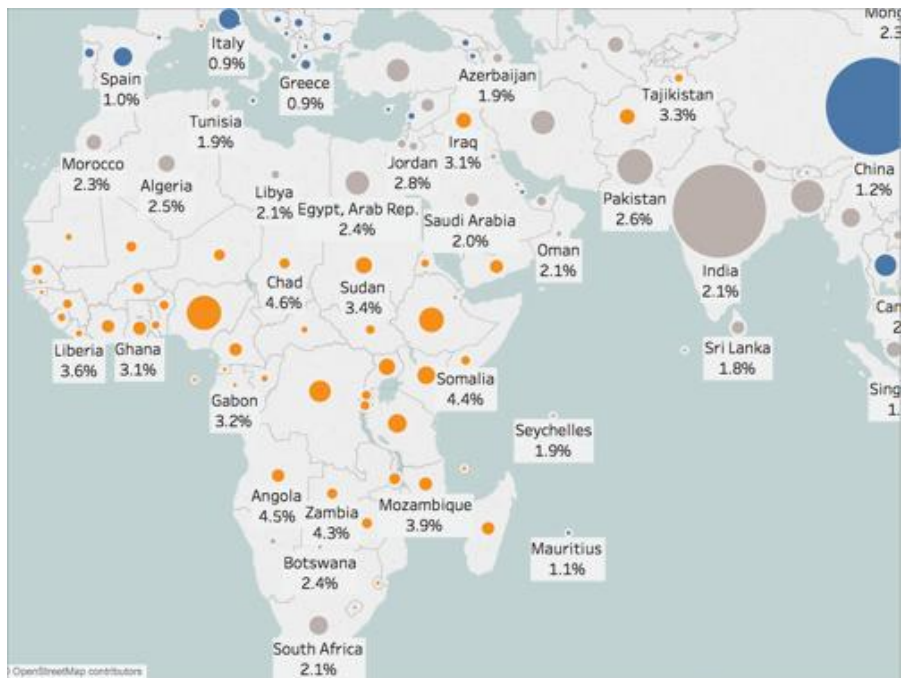
- *Who?* Typically the most important question
- Understanding the target audience can help inform the answer to other questions
 - Level of scale
 - Level of detail



Examples of Scale



Examples of Detail



Internal Considerations

When giving information to your visual expert...

- Verify data format
 - (Excel, CSV, etc)
- Additional data needed?
- For publication *or* used internally to aid analysis?
- Agree on an internal timeline
 - Graphics are usually needed before the project deadline

TALKING SHOP:

Best Practices in Map Making

Options for Mapping Data

Options vary depending on base maps, level of manipulation

- **Graphic designers use...**
 - Google Maps, Bing Maps
 - PDF vector maps - NationalAtlas.gov, GIS output (PDF, AI)
 - Adobe Illustrator
- **Other experts use...**
 - GIS software - ArcGIS, ESRI, others
 - Data viz software - Google Charts, Highsoft, Tableau, R Project
 - *Automate for Census tracts, school districts, 100+ data points*

Tips for Polished Maps

Limit number of colors

- Digital - tone down bright colors
- Print - more contrast okay
- Colorblindness

Outlines

- White outlines look more modern
- Make black outlines very thin

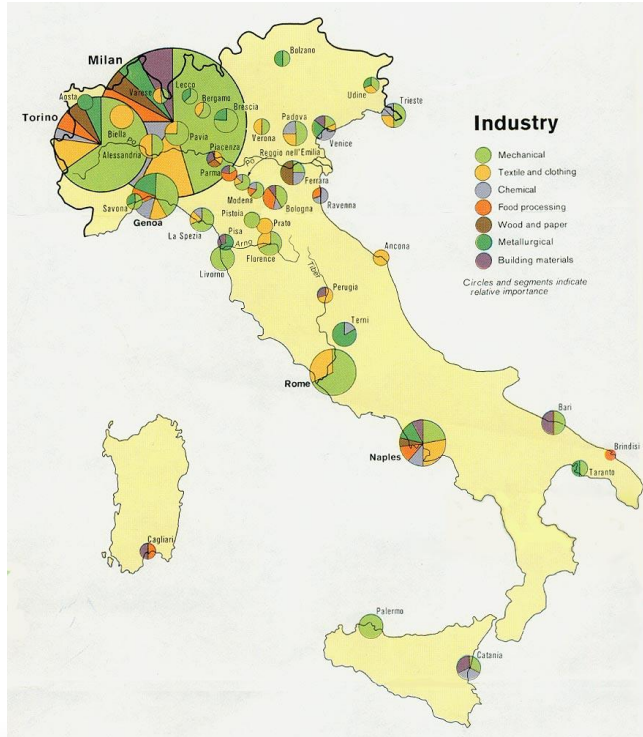
Label necessary elements

- Make labels legible - size, bold, shadow/outline



[Examples: GeoAwesomeness.com](http://GeoAwesomeness.com)

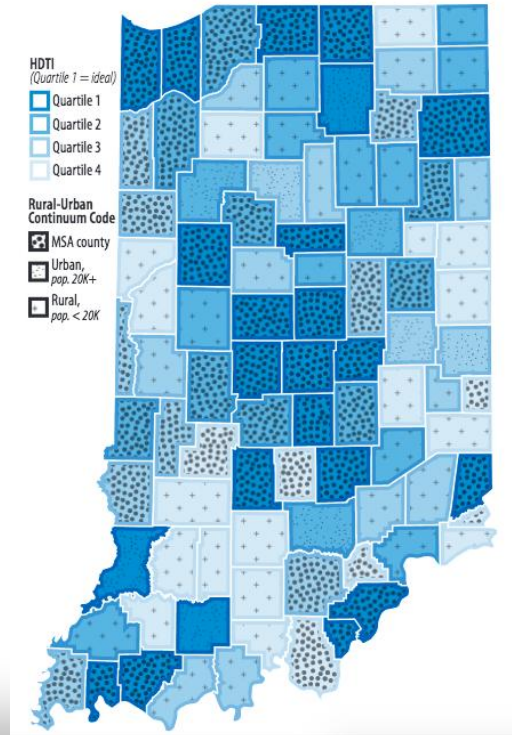
More Variables = More Problems



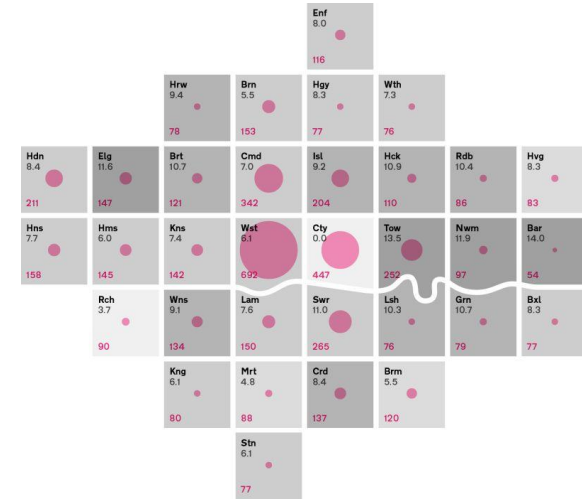
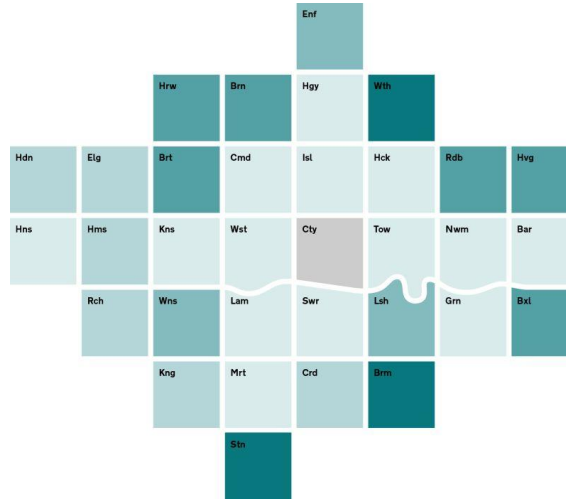
« Bad: Bubble chart has overlapping bubbles, pie charts have too many slices, too much data all around

Good: Two variables displayed through color/texture layers »

Figure 8. HDI with Rural-Urban Code



Equal Representation, Relative Location



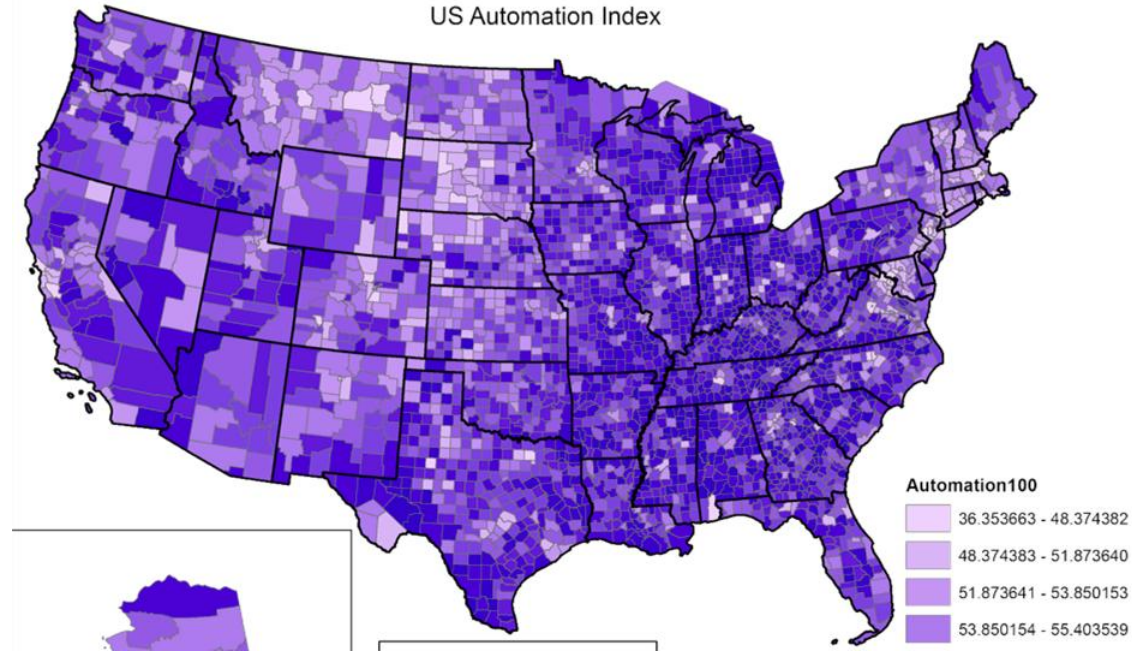
Custom map of London boroughs, [project by After the Flood](#) (UK design firm)

For Vulnerability Study...

Myriad data points = requires GIS expertise

- Base map already loaded in ArcGIS
- GIS output = fewer human errors
- Ability for bulk revisions

View vulnerability study at projects.cberdata.org



DATA PRESENTATION:
Lessons Learned

Media Response

A follow-up to “The Myth & the Reality of Manufacturing in America” ([CBER 2015](#))

Story on [vulnerability study](#) considered by some big names...

- *The Atlantic, Wall Street Journal*

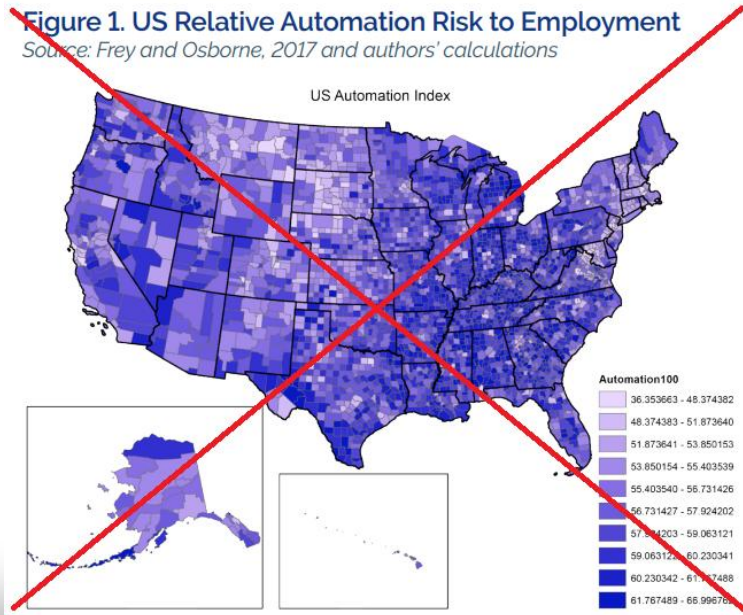
Actually published in...

- *Media* - Forbes, Vanity Fair, Washington Post, CBS This Morning, CBS MoneyWatch, Entrepreneur.com, various newspapers, political blogs
- *Niche* - Rural Policy Research Institute, Gen Re, The Fabricator
- 7,450 unique pageviews on [projects.cberdata.org](#)

Professional Feedback

Robert Allison, graph technical expert @ SAS

blogs.sas.com/content/sastraining/2017/07/20/risks-to-us-employment-automation-and-offshoring/



Critique Points

Flip the legend - biggest values at top

Use % because these are percents

Reduce decimal places in division labels

Condense number of divisions

Use a diverging color scale

Rephrase legend title

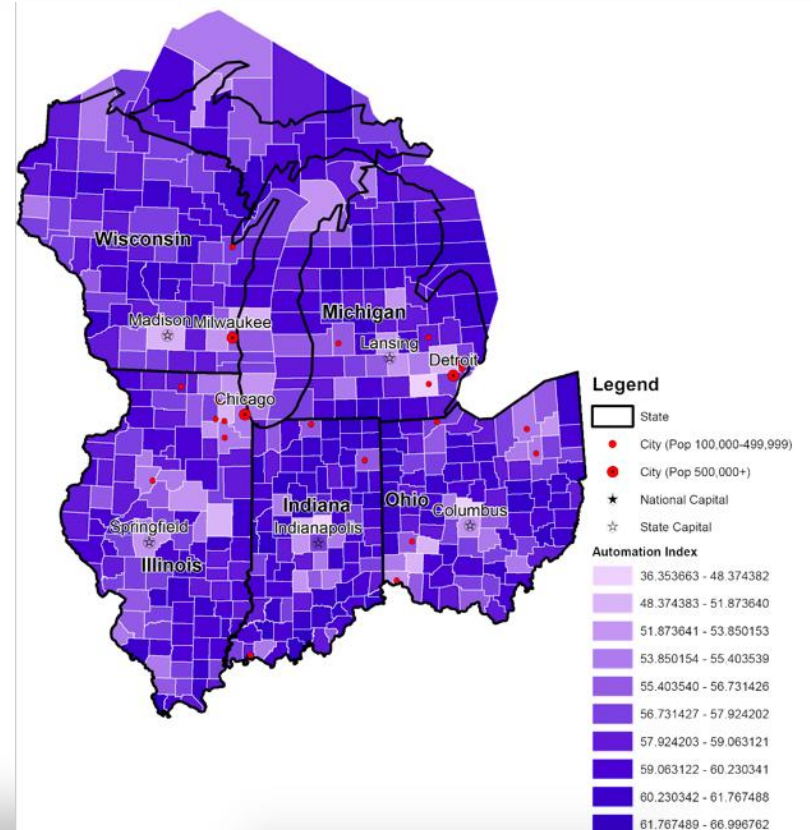
Behind the Scenes

In our defense...

- Easily show one variable
- Accessibility (color-blind, low vision)
- Black & white printing

Also...

- Simplest, fastest output from ArcGIS for this scale/volume of data points

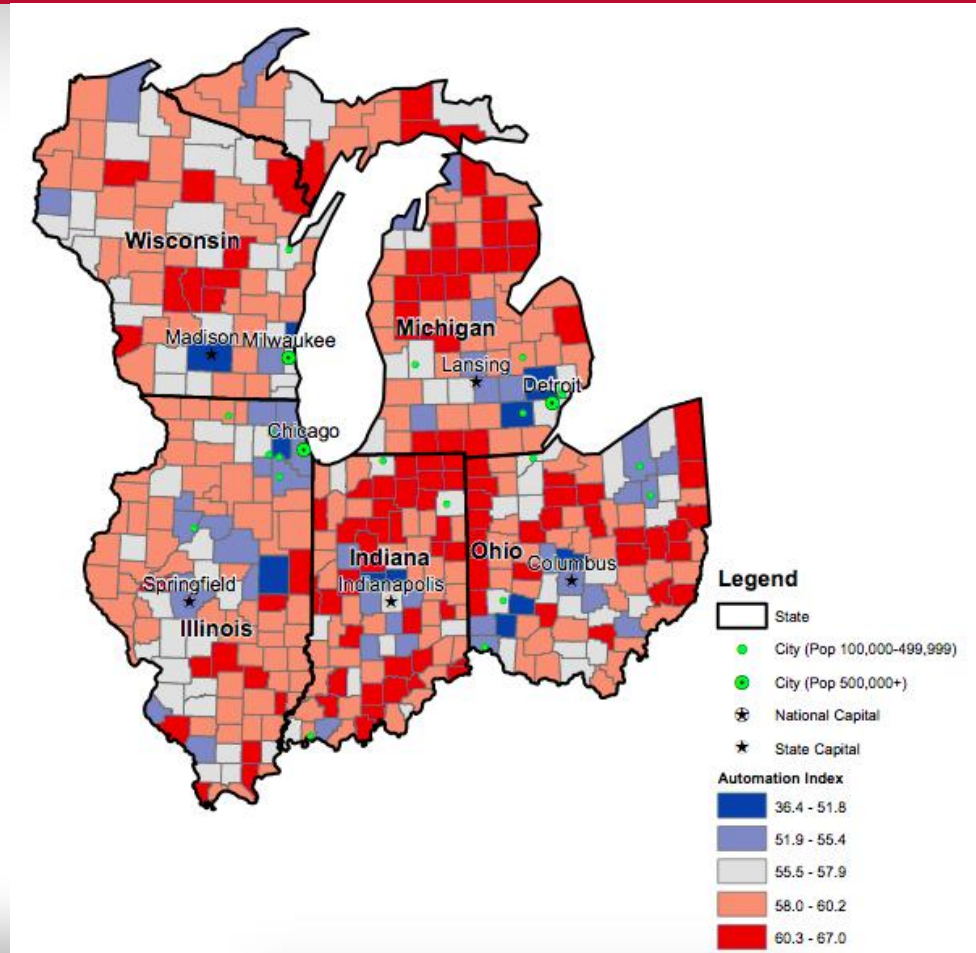


Alternate Approach

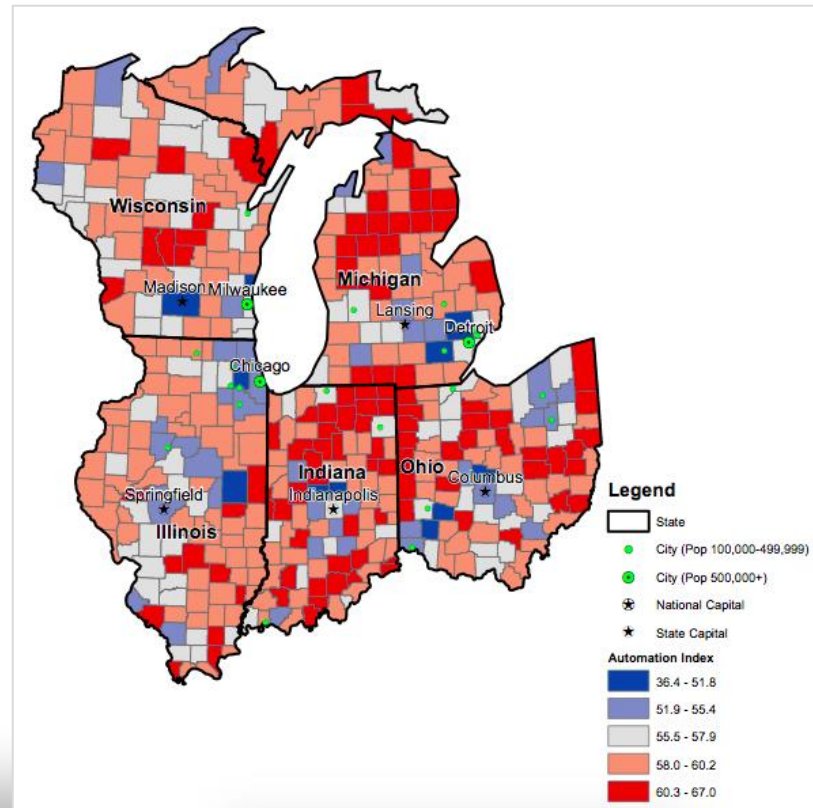
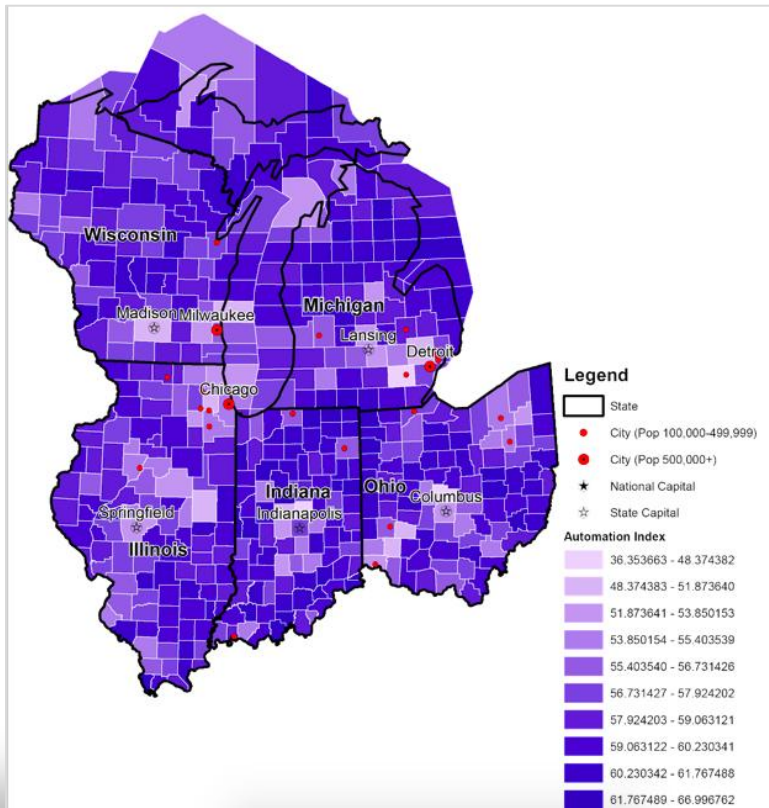
Hot/cold scale in new Appendix 2 »

But, consider the following when using multiple colors...

- *Color intensity* - muted hues versus default bold hues
- Number of colors/divisions
- Increase general visibility with thickness of lines, size of labels



Side-by-Side Comparison



Last Thoughts

- Discuss your needs and available options with your team or peers
- Set internal deadlines for sample/final
- Keep visuals simple; move comprehensive data to appendix
- Consider audience familiarity w/ topic
- Use plain language on labels, legibility
- Clearly differentiate color scale
- Ask how visuals can be misinterpreted

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