Data Mapping Tools: Excel and Beyond

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Agenda

- **Simple Excel mapping tools and how they are used**
  - Making simple maps more effective: poverty rates
  - Overview of simple excel mapping tools

- **More complex maps and tools**
  - Mapping child care providers and poverty
  - Mapping Transportation and Capital Projects

Making simple maps more effective: poverty rates

Scenario

- Member X has an idea for a new program that supports low income populations. He/she wants to create a pilot program that serves three counties on the Eastside of the state and three counties on the Westside of the state.
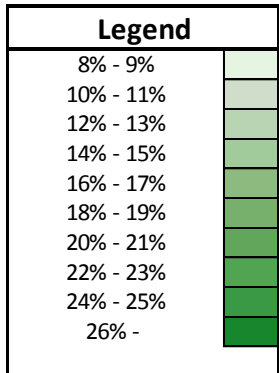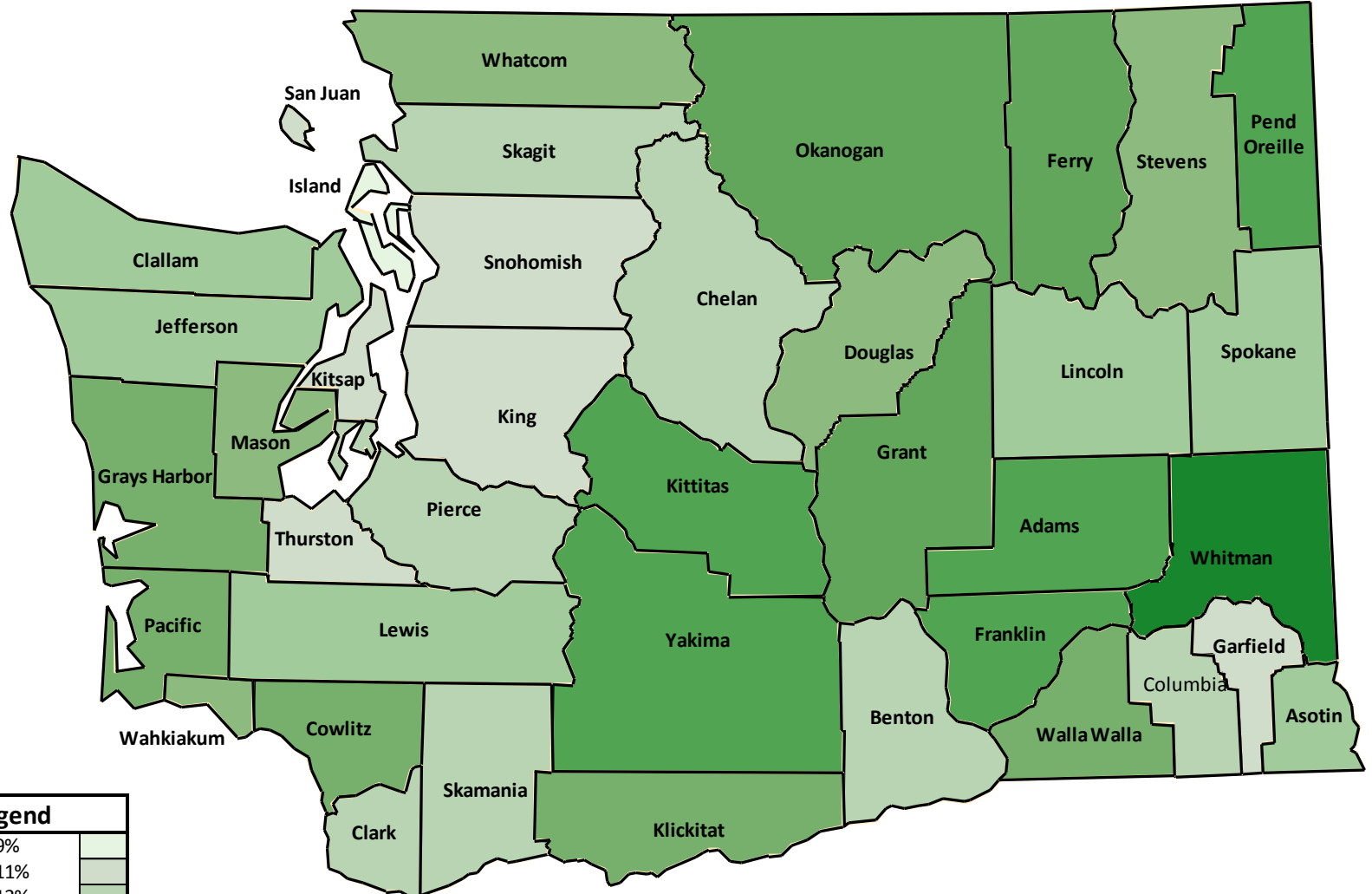
- Member X wants to know:
  - How do counties compare in terms of poverty rates?
  - What counties have the highest poverty rates?
  - Is there a difference between East and West side counties?

This table answers all of Member X's questions.

But, could it be presented in a more useful and understandable way?

Geographic Area	Percent	Margin of Error
Washington	12.9	+/-0.2
Adams County	23.1	+/-4.4
Asotin County	13.7	+/-2.4
Benton County	12.9	+/-1.0
Chelan County	12.8	+/-2.1
Clallam County	13.5	+/-1.4
Clark County	12	+/-0.7
Columbia County	13.2	+/-3.5
Cowlitz County	17.9	+/-1.3
Douglas County	16.5	+/-2.3
Ferry County	20.5	+/-3.6
Franklin County	21.5	+/-2.0
Garfield County	9.7	+/-5.0
Grant County	20.1	+/-1.7
Grays Harbor County	18.6	+/-1.2
Island County	8.8	+/-1.0
Jefferson County	13.7	+/-1.9
King County	10.9	+/-0.3
Kitsap County	10.4	+/-0.8
Kittitas County	21.8	+/-2.0
Klickitat County	19.1	+/-2.9
Lewis County	13.9	+/-1.5
Lincoln County	14.4	+/-3.0
Mason County	17.4	+/-2.0
Okanogan County	20.6	+/-2.3
Pacific County	18.1	+/-2.0
Pend Oreille County	22.2	+/-2.8
Pierce County	11.9	+/-0.5
San Juan County	11.2	+/-1.3
Skagit County	12.6	+/-1.3
Skamania County	12.4	+/-2.6
Snohomish County	9.8	+/-0.5
Spokane County	14.8	+/-0.6
Stevens County	16.6	+/-1.7
Thurston County	11.1	+/-0.8
Wahkiakum County	16	+/-6.5
Walla Walla County	17.8	+/-2.0
Whatcom County	15.8	+/-1.0
Whitman County	32.3	+/-1.9
Yakima County	22.3	+/-1.2

Source: U.S. Census Bureau, 2008-2012 American Community Survey

Washington State: Percent of the Population at or Below Poverty

Legend

8% - 9%	
10% - 11%	
12% - 13%	
14% - 15%	
16% - 17%	
18% - 19%	
20% - 21%	
22% - 23%	
24% - 25%	
26% -	

Answers the member's questions about how poverty rates compare across counties but: 1) does not indicate high vs low poverty counties; 2) the colors are too similar to quickly differentiate between counties; 3) the poverty bands are too narrow to say anything useful.

Source: U.S. Census Bureau, 2008-2012 American Community Survey

Washington State: Percent of the Population at or Below Poverty

Legend

8% - 9%	
10% - 11%	
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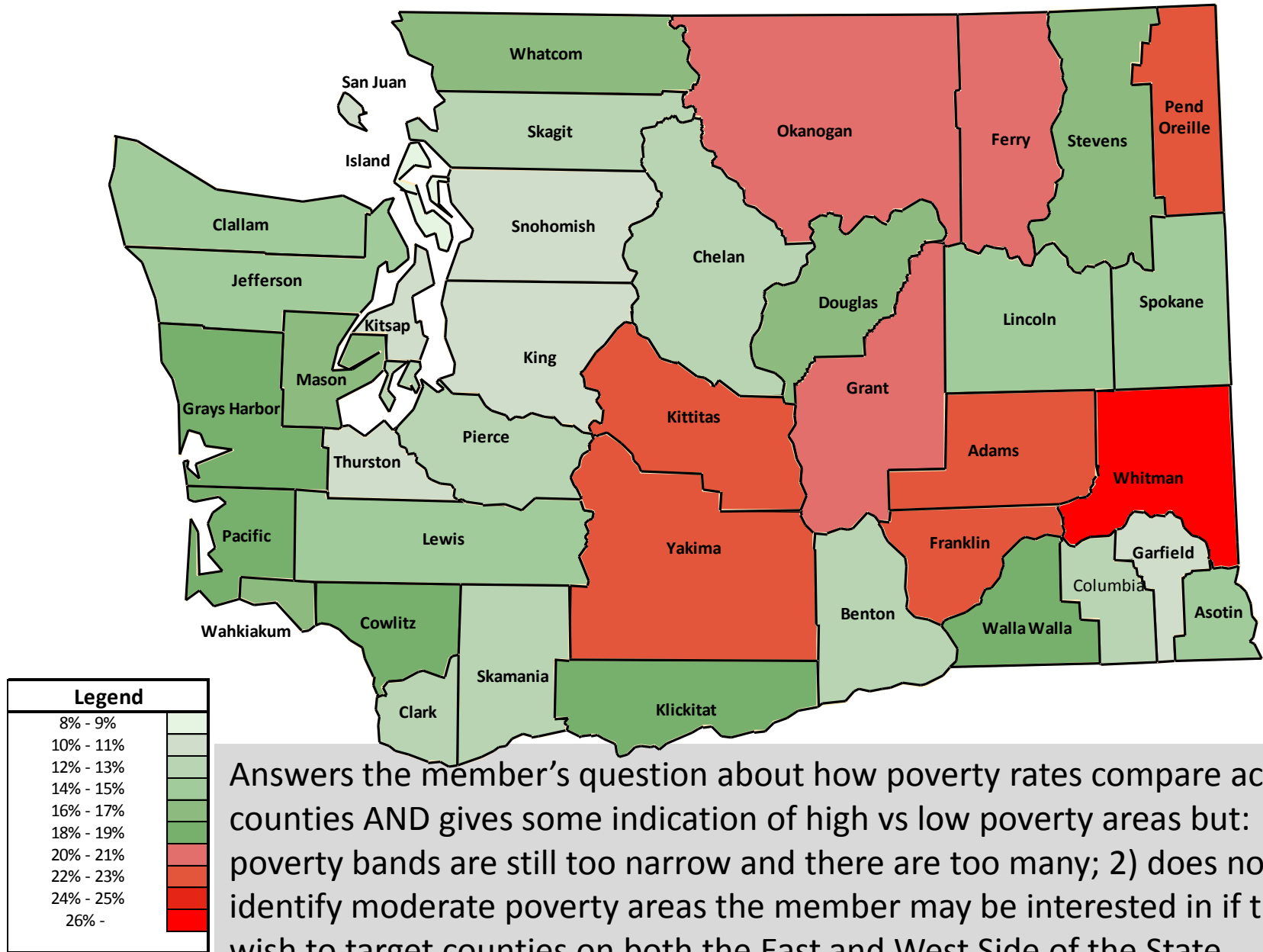
Answers the member's question about how poverty rates compare across counties AND gives some indication of high vs low poverty areas but: 1) the poverty bands are still too narrow and there are too many; 2) does not identify moderate poverty areas the member may be interested in if they wish to target counties on both the East and West Side of the State.

Washington State: Percent of the Population at or Below Poverty

Legend

Average (12%-15.9%)	(green)
Moderate (16%-19.9%)	(orange)
High (20%+)	(red)
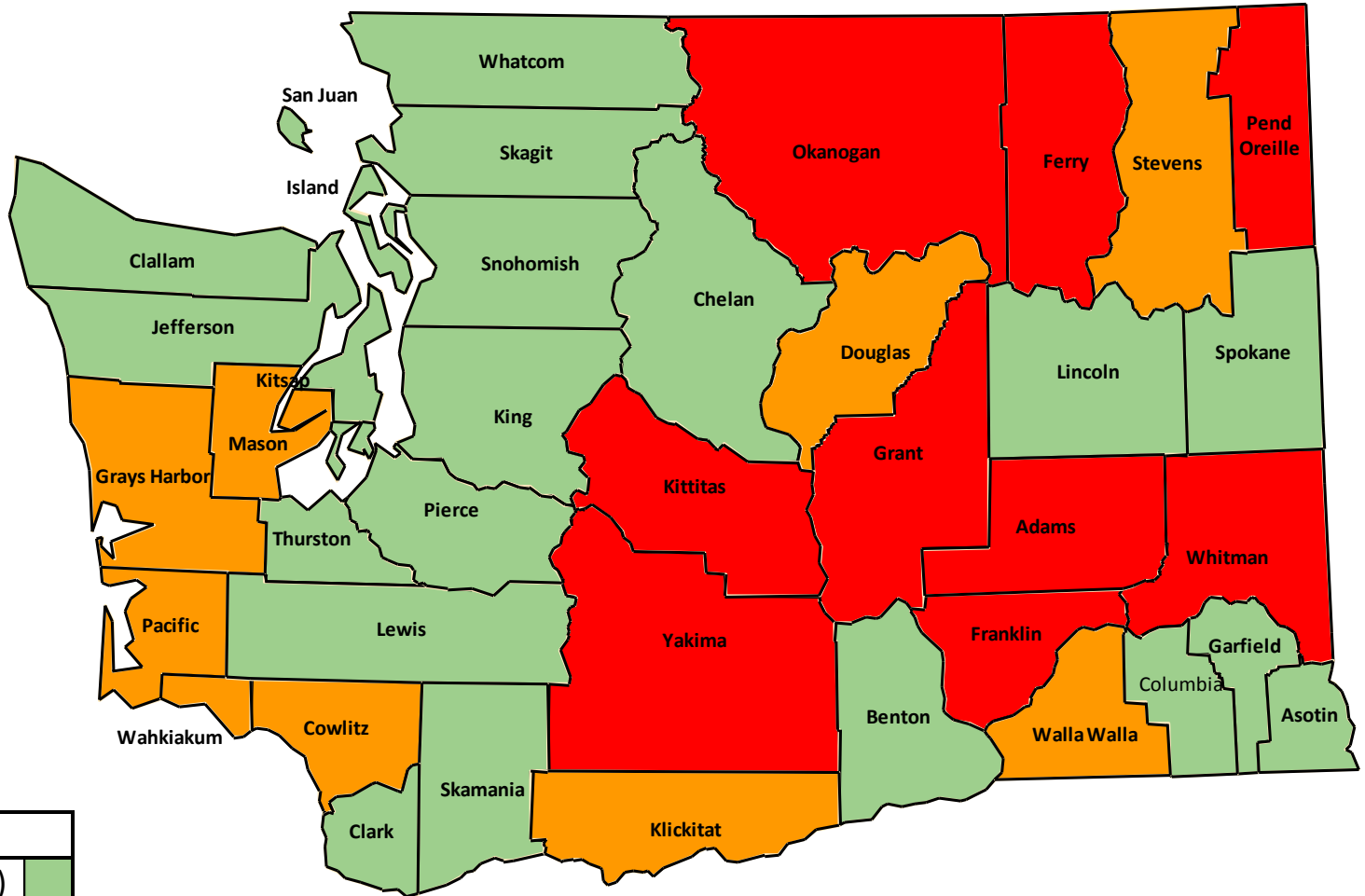
Answers member's question about poverty rates across counties; shows high and low poverty areas; widens the poverty bands to be more meaningful; identifies moderate poverty areas the member could target to support both East and West side counties.

Tips for creating maps to display data

- Make sure a map is the right tool for your data. Make sure it answers the question you have been asked.

- Use colors that help to focus attention and give the data additional meaning.

- Group (using colors, shades, etc…) information in a meaningful way.

- Try to minimize noise and business.

- Provide some context for your legend. Is 5.6 high, low, or something else?

Mapping Child Care and Poverty

Scenario

- Member X has a bill that would require child care providers accepting children receiving a state subsidy (child care voucher) to enroll in a quality ratings and improvement system.

- Member X wants to know:

  - Will this disproportionately affect child care providers located in low-income areas?
  - Do child care providers accepting subsidized children tend to be in higher or lower income areas?
  - What is the geographic distribution of child care providers by type (family home, center, school) and payment status (private pay vs state subsidy)?

Child Care and Poverty Map

State wide http://fiscal.wa.gov/FRViewer.aspx?Rpt=WCCbyPoverty

by County http://fiscal.wa.gov/FRViewer.aspx?Rpt=WCCbyPovertyCounty

Examples of Specific Questions Answered by the Map

- In King County, are there child care providers located in <u>high income areas that take subsidized children</u>?
  - Family Homes?
  - Centers?

- In King County are there child care providers located in <u>low income areas that do not take subsidized children</u>?
  - Family Homes?
  - Centers?

Member Reaction

- The maps are interactive. He could ask a question, explore, and answer his own question or come up with a new question.

- Staff did not have to create a new static chart or table to respond to each question the member had. This was faster and more efficient.

- He was able to share the maps with other members.

- Other members could drill down into their district to see how the data might affect their constituents.

- The maps provided answers to a number of key questions during bill development AND informed later iterations of the bill.

Advantages of using maps to display data

- Can make large data sets easily digestible.

- Allows the producer/consumer to focus attention on areas of particular interest.

- Allows the consumer to ask more focused follow-up questions.

- Makes anomalies (either real or data problems) more obvious.

- Helps answer questions about geographic coverage or differences.

- May require less explanation about how to "read" the data.

Mapping Transportation and Capitol Projects

Washington State Transparency website: http://fiscal.wa.gov