Carl Vinson Institute of Government
UNIVERSITY OF GEORGIA

Georgia Data Innovation Hub: Telling a Better Story

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Storytelling elements

1. Theme/Purpose – (Why) What the story is about? What is the quest? The moral of the story is…
2. Setting – Time and location (Where and When)
3. Characters – (Who)
    1. Protagonist is the central character and has a clear goal or conflict to overcome
    2. Antagonist (Villon) – the opposition or conflict – person, place, thing or situation
4. Plot – sequence of events (How)
5. Conflict – the problem or "issue" that has to be overcome
    1. What's at stake?
    2. Why does it matter?
    3. What are the consequences?
6. Story Arc – Set up → Rising Tension → Climax → Resolution

TURN THE CURVE

- → Budget or policy issue
- → State policy and historical context
- → Lead agency and partners
- → Historical trend and story
- → Forecast (if keep the status quo)

Budget Analysis: Turning the Curve

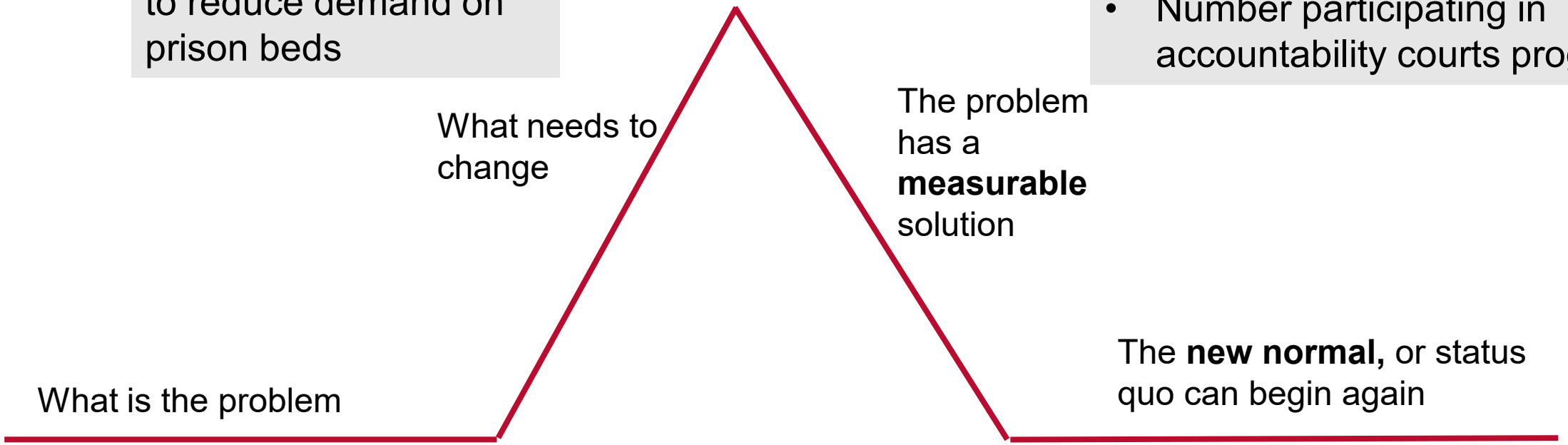
1. Draw a trendline – history and forecast
    - If we do nothing what does the future look like?
    - Are we ok with the trendline and the forecast?
2. Story: What does the trendline tell us? Explain any major shifts in the history.
3. Analysis: What interventions can we make to turn the curve? (Alternatives, consequences)
4. Partners and what is my role?
5. Action Plan

Source: www.resultsaccountability.com Mark Friedman, Used with Permission

How to tell a DATA story

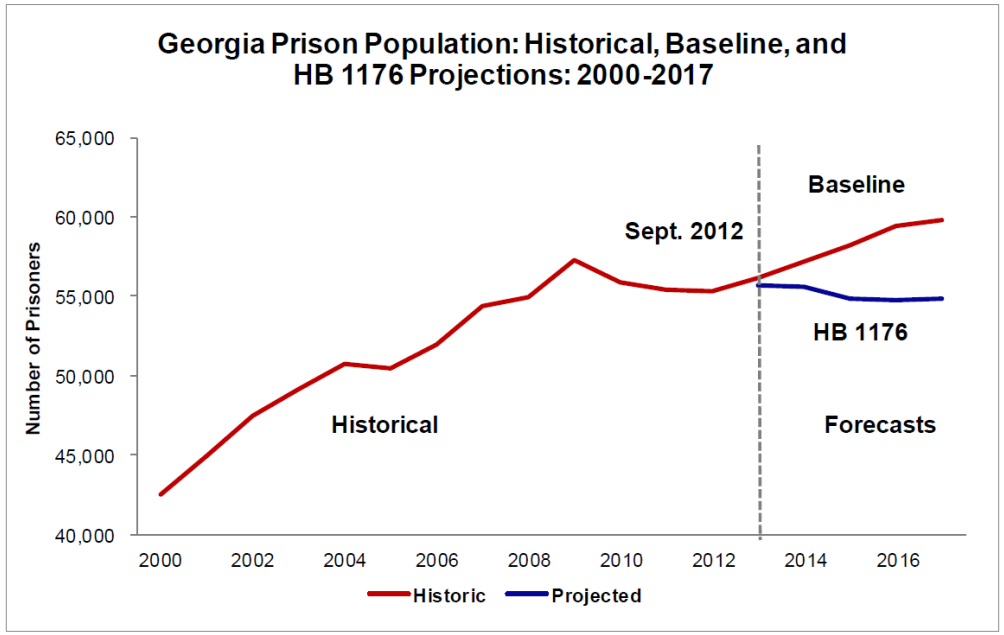
Enact policy changes to reduce demand on prison beds

- Number of beds used
- Number of alternative sentences
- Number participating in accountability courts programs



Demand for prison beds is raising and funds are limited

Data Storytelling - EXAMPLE



1. **Theme/Purpose** – Funding for prisons
2. **Setting** – 2012 - middle of the Great Recession
3. **Characters** – Governor, Legislature, Budget, Advocates, People Incarcerated, Department of Corrections, Georgia Council on Criminal Justice Reform
4. **Plot** – Criminal justice policy in Georgia
5. **Conflict** – limited funding and growing demand for prison beds

6. Story Arc
    1. **Set up** → Historical policy decisions and effects of the policy
    2. **Rising Tension** → Demand vs supply of prison beds
    3. **Climax** → Georgia Council on Criminal Justice Reform
    4. **Resolution** → HB1176

Data storytelling

- Facts are not as memorable as a story
- Present the facts, or data, in a logical and captivating way that will be memorable
- Writing to **prove a point** may not get the **persuasive point** across
- Knowing **who** you are presenting **to** matters

Know your audience

Who you are presenting to will dictate how the presentation looks

Peers
- Ok to use shorthand
- Complex charts are appropriate
- Typical to work through big ideas

Managers/ Supervisors
- **Be exhaustive**, explain everything
- The presentation/ brief should be crisp

Executive/ Director
- **Be brief**
- Logical recommendations
- Easily skim-able
- Prepare for questions

Begin with the end

- Decide what you want the audience to learn from the presentation
- Focus on that and keep that at the center of the presentation
- WHAT'S IN IT FOR ME? (WIFM)
  - Think about the decision maker, their motivations and their decision environment.

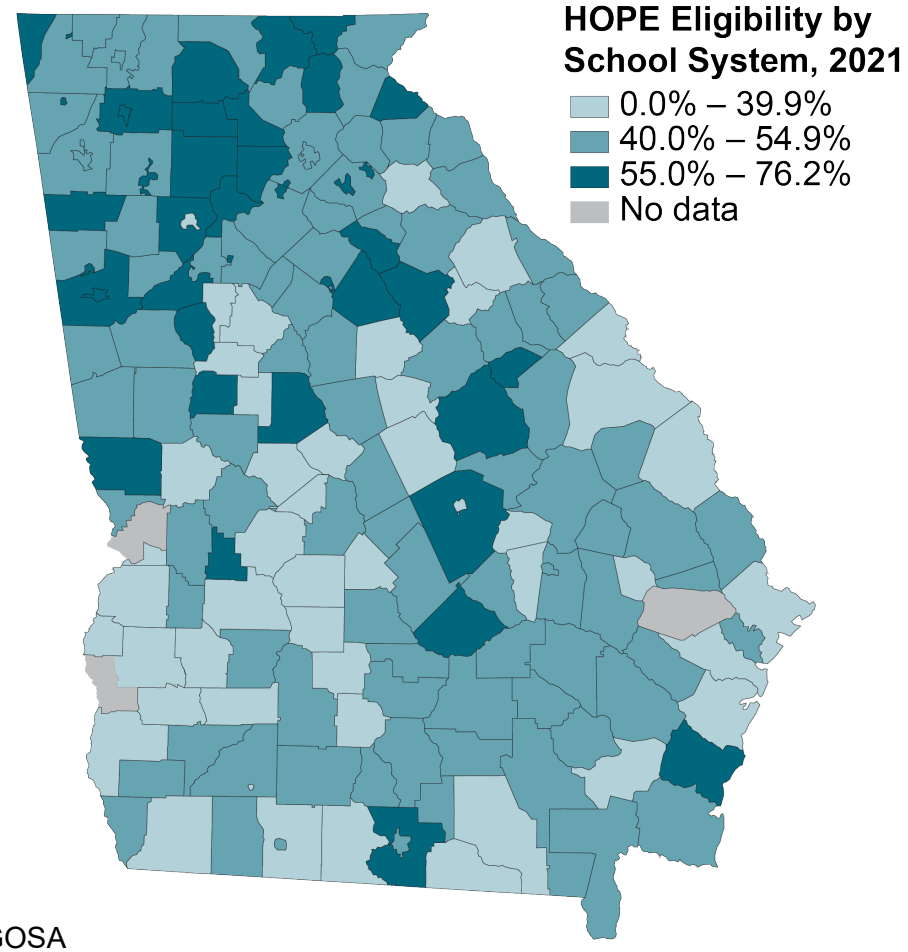
Psychology of Color

- Color can have cultural influence
  - White: purity and mourning
- Color can have societal connotations too
  - Red= bad
  - Green= good
- Be aware of implicit correlations with color combinations
  - Pink and Blue
  - Red and Black
  - Red and Blue

Using Color

- Be consistent in the usage
- Use color to bring attention to parts of the visualization
  - Too much can be a distraction
- Depending on what the visualization is showing using different palettes
  - Sequential
  - Divergent
  - Categorical

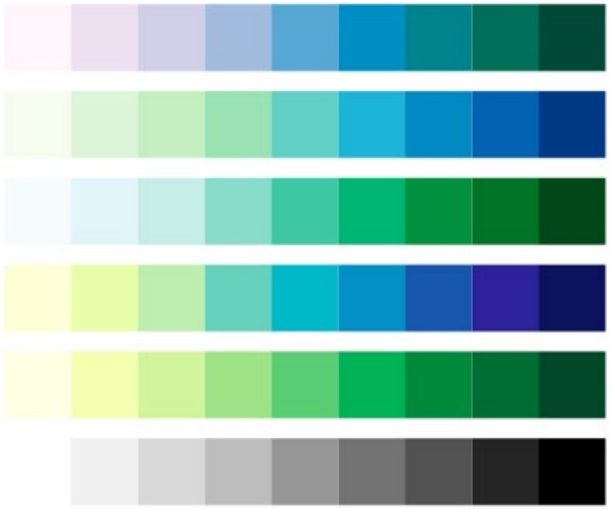
Using Color



Source: GOSA

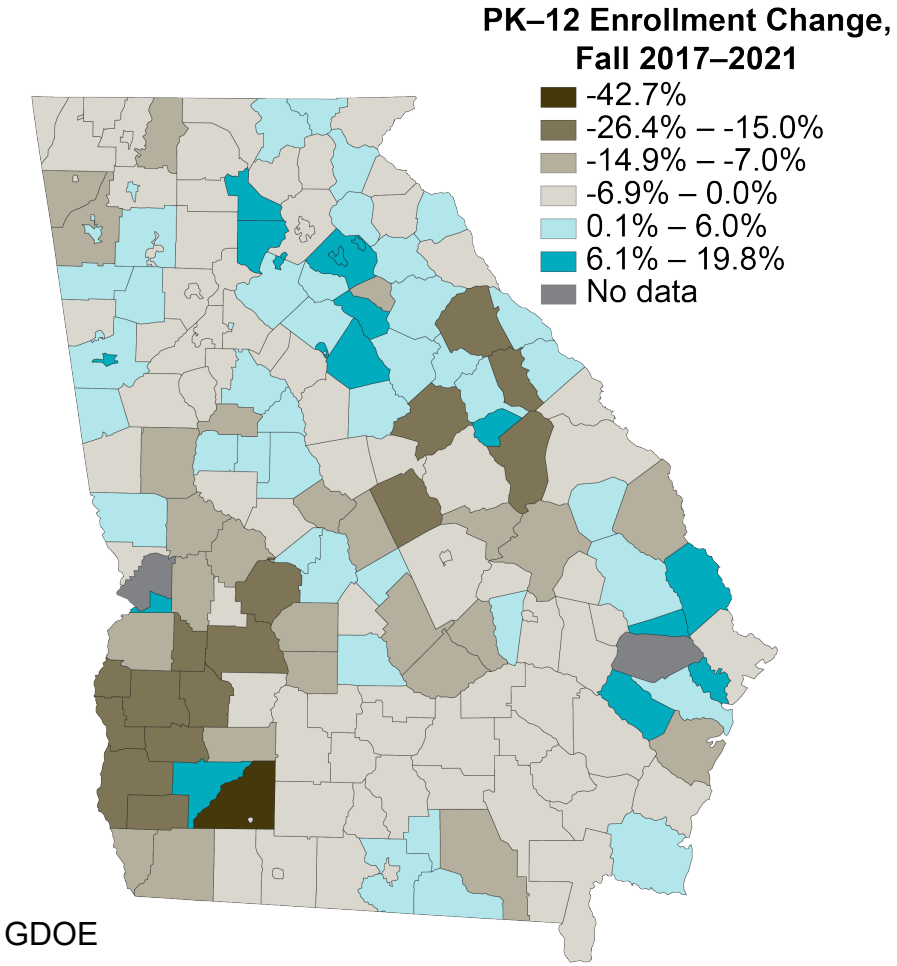
Sequential color palettes

- Use when showing intensity



Towardsdatascience.com

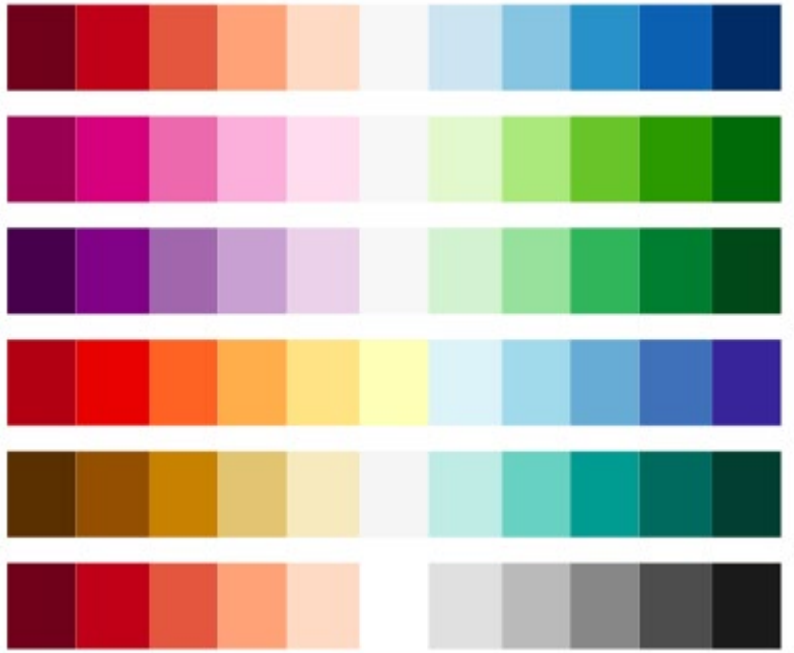
Using Color



Source: GDOE

Divergent color palettes

- Use when showing data of opposing directions



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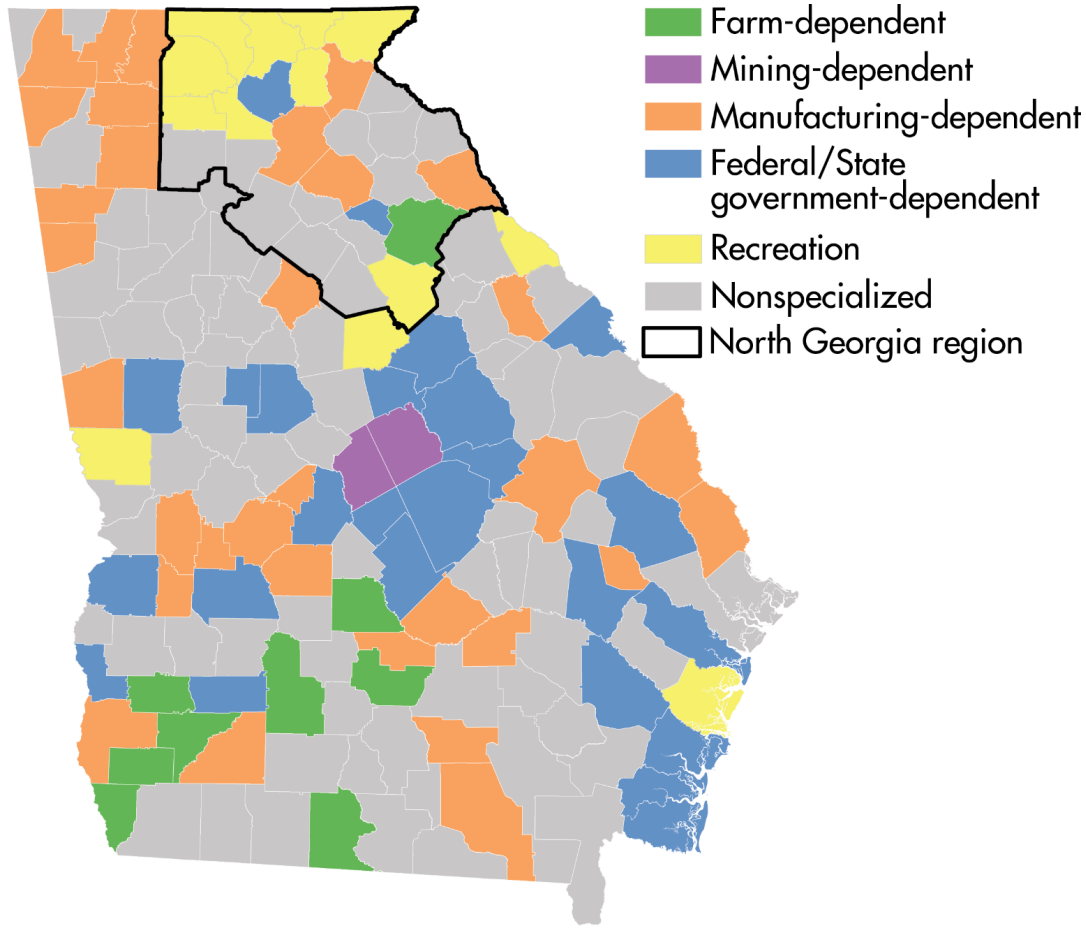
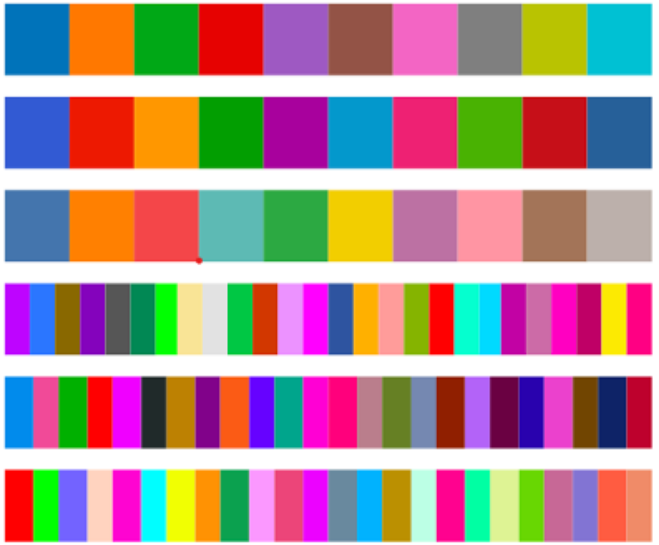
Using Color



Source: USDA Economic Research Services, 2015

Categorical color palettes

- Use for ordinal data (need a simple definition)
- Too many categories can be overwhelming



Towardsdatascience.com

Using Color

- Assume a participant is colorblind, it is more common than one would think
- Test color combinations using ColorBrewer or ColourCode
- Print visualizations in black and white to ensure it still is visible

When using color

- It makes the important parts of data easier to read
- Don’t over use color, as it can become too complicated
- Test color combinations in black and white printing
- Remember, some readers may be colorblind

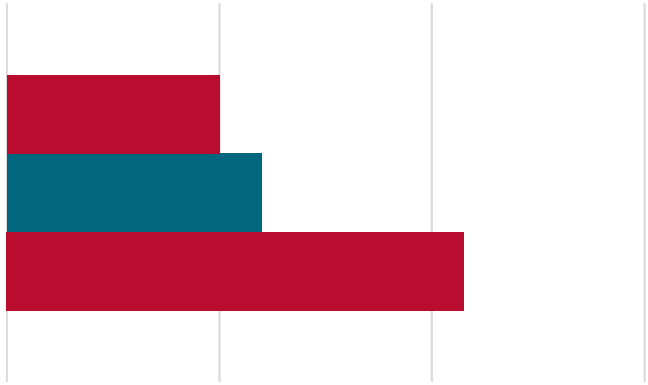
Do’s and Don’ts of Chart Making

Pointers for a clean presentation

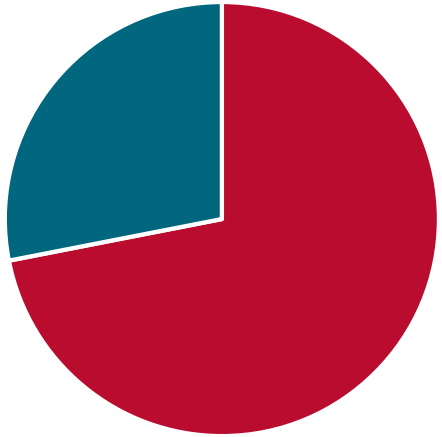
What chart to use when…
A single number is important

95%

Big number



Bar/ Column

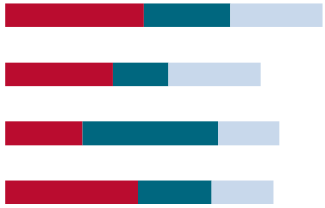


Pie/ Donut

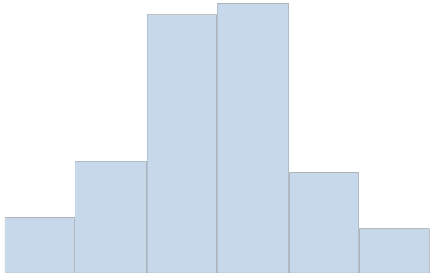
Source: Quantitative Chart Chooser 4.1 Stephanie Evergreen.

What chart to use when…
comparing parts of a whole

Don’t Visualize

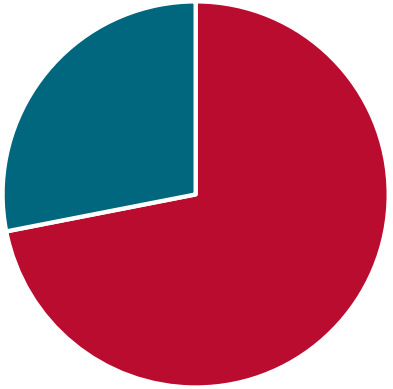


Stacked Bar



Histogram

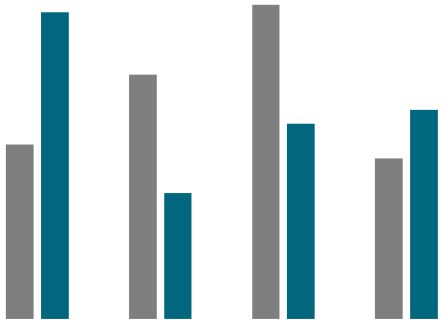
Tree Map



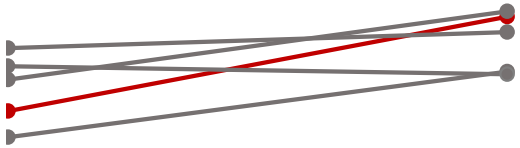
Pie/ Donut

Source: Quantitative Chart Chooser 4.1 Stephanie Evergreen.

What chart to use when…
comparing 2 or more numbers



Side by side



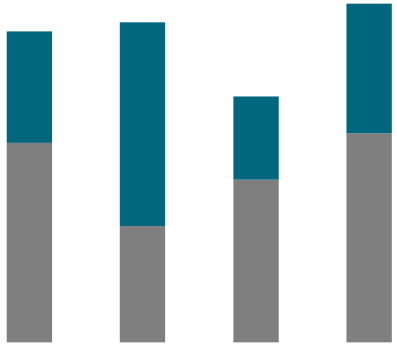
Slope Graph

Side by side

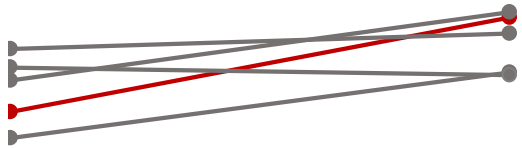
Source: Quantitative Chart Chooser 4.1 Stephanie Evergreen.

What chart to use when…
showing how things changed over time

Line



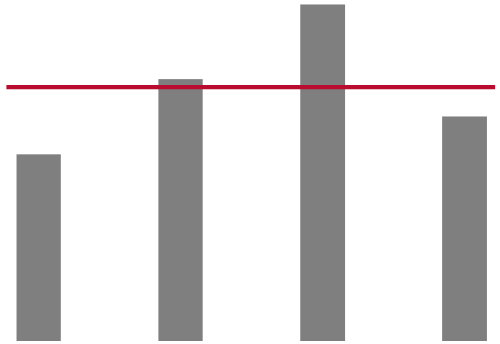
Stacked Column



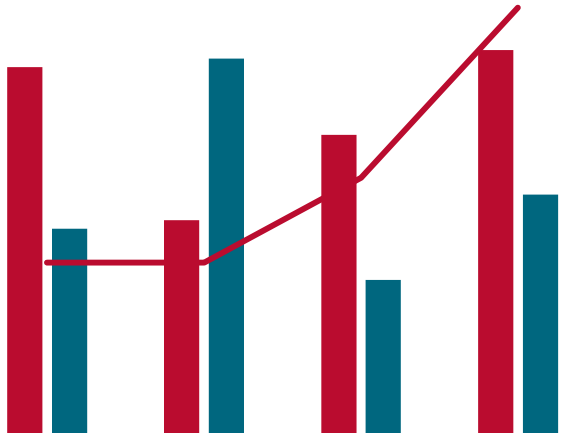
Slope Graph

Source: Quantitative Chart Chooser 4.1 Stephanie Evergreen.

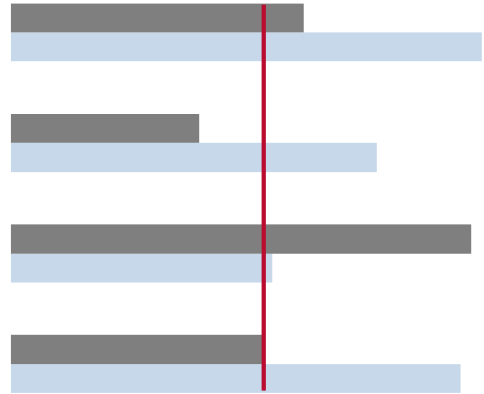
What chart to use when… **showing a benchmark**



Benchmark line- Column



Combo chart



Benchmark line- Bar

Source: Quantitative Chart Chooser 4.1 Stephanie Evergreen.

When making charts

DO

- Keep the audience in mind
- Use colors deliberately
- Use any visuals to support the story
- Select the correct chart for the comparison you need

DON'T

- Make overly complex charts
- Use colors inconstantly, or without thought
- REMEMBER - just because you can make it, doesn't mean you should

Data Analysis Certificate Portfolio – 4 Tracks

Data Literacy in Government	targets participants looking for a basic understanding of how to find, interpret, and understand date inform policy and operations discussions
Data Analysis and Decision Making for Government	targets participants looking to expand their knowledge of the fundamentals of analysis and how to interpret and package data for a group of decision makers
Advanced Data Visualizations for Government	targets participants looking to learn how to combine data for context and comparison and creating data visualizations with an industry leading Business Intelligence tool
Data Science Innovations for Government	targets participants looking to grow their skills with machine learning and predictive analytics, learning python, R, and other programing languages

Additional Resources:

https://www.youtube.com/c/JonSchwabish
Tutorials, design ideas, chart critiques by Jon Schwabish of the Urban Institute.
Also see - https://policyviz.com/

https://stephanieevergreen.com/how-to/
A selection of charts leading to Stephanie Evergreen's blog posts about when to use them and how to make them in excel.

http://mkweb.bcgsc.ca/colorblind/
A detailed source of information about colorblindness, including palettes.

https://www.datavisualizationsociety.org/resources
The Data Visualization Society maintains a comprehensive list of resources in a google spreadsheet

https://flowingdata.com/chart-types/
Flowing Data provides a helpful chart selection guide

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