

Data for All: Missouri's Tableau Story

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Agenda

The Why

The What

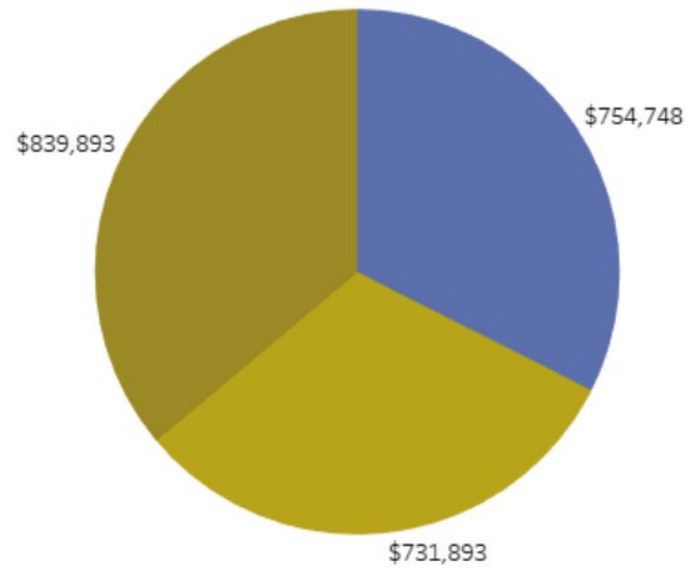
The How

Call for Action

The Why?

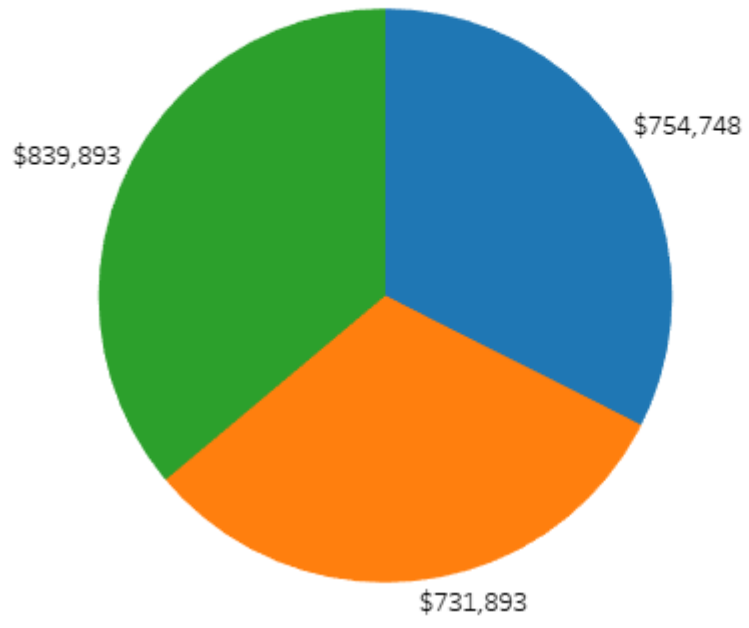
Sales by Category

- Category
- Furniture
- Office Supplies
- Technology



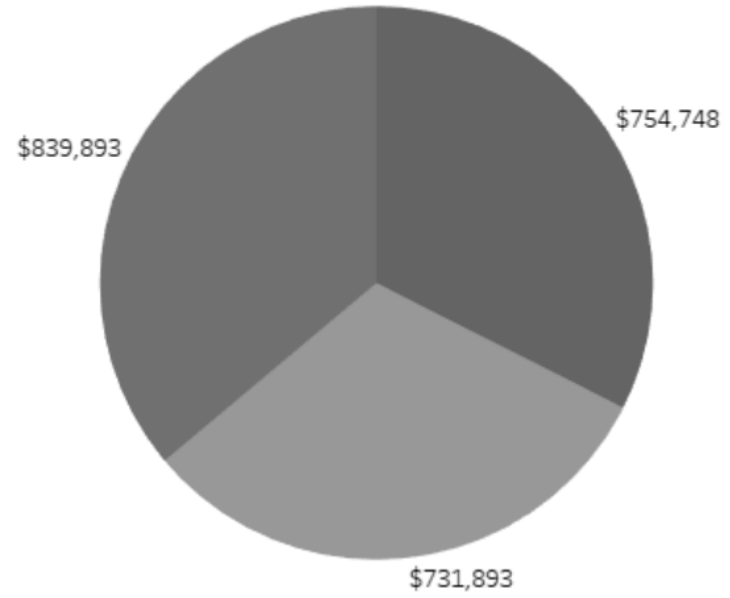
Sales by Category

- Category
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Sales by Category

- Category
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- Technology



Why Data for All?

Lack of understanding and clear standards.



Show Me Challenge
Opportunity

Provide
insight on
issues

Highlight
importance

Describe
method

Gain
support from
State
Leadership

The What

Casting a Wide Net for Training

Deadline – April
2026 (Now Delayed
to 2027)

- MOTUGs
- Emails
- Special Sessions:
 - Data For All
 - Accessibility
Tableau User
Group
 - DHSS Tableau
Accessibility
- Office Hours

- Checklists



What's
Wrong With
This
Dashboard?

What makes this
inaccessible?

Why are those
inaccessible elements a
problem?

How to fix
these problems?



Jefferson City Zoo Data



Visit Date

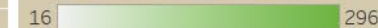
6/1/2023 6:04:46 AM 5/31/2024 9:09:18 AM



Attraction Name

- Crawdad Circus
- EcoTalks
- Extreme Petting Zoo
- Hippy Hub
- Horse Tornado
- Kid-a-pult
- Missouri Birds of Prey
- Mountain Lion Feeding
- Prairie Trail
- River View
- Snapping Turtle Dunk Tank
- Turkeys - Indigenous and Delicious

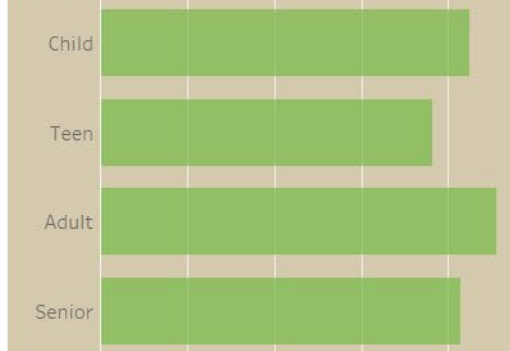
Visit Count



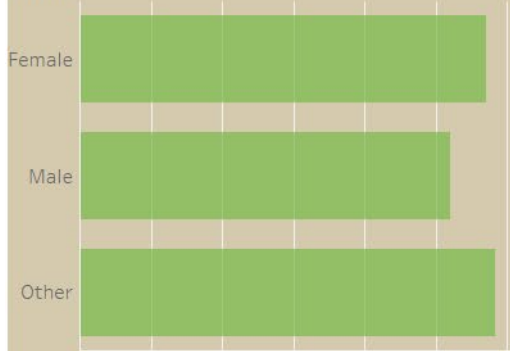
Visit Count

- 16
- 100
- 200
- 296

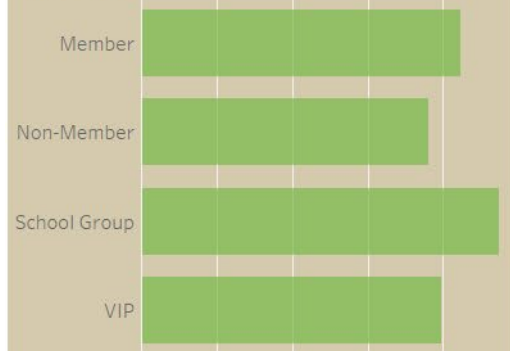
Age Gro..



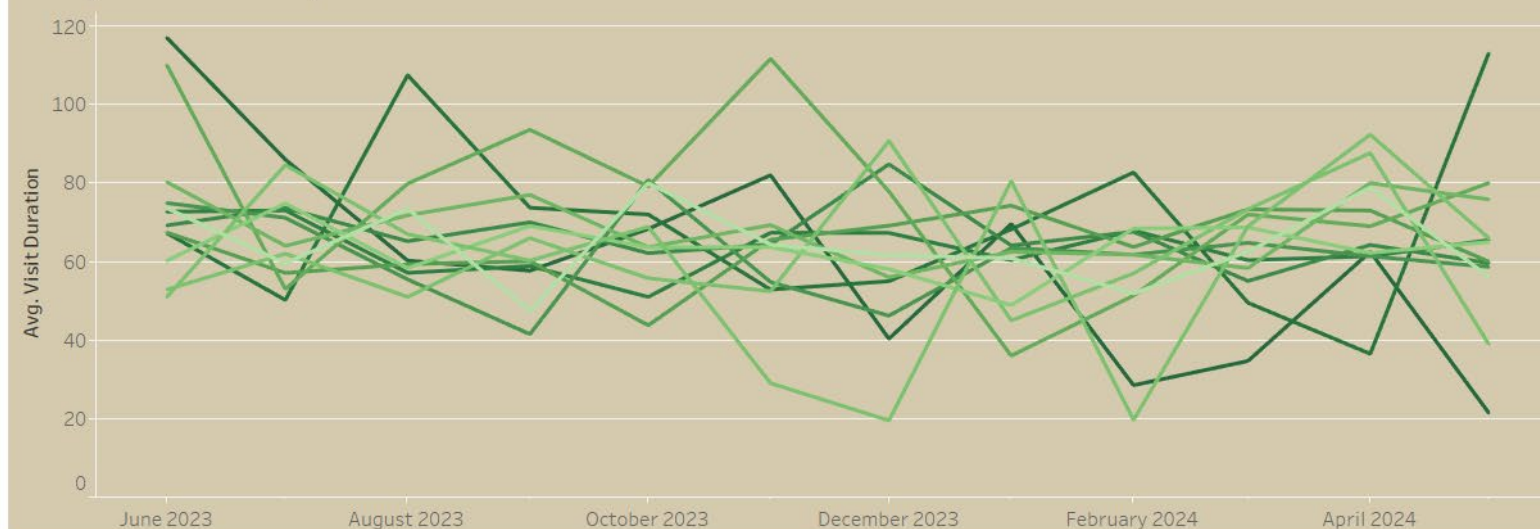
Gender



Visitor Type



Average Visit Duration by Attraction



Attraction Visits



Commonly
Found
Errors


Color

Contrast

No Alternative Text

Difficult Navigation

Too Many Elements



Fix A
Dashboard

What do you
want to
show?

What is the
key
takeaway?

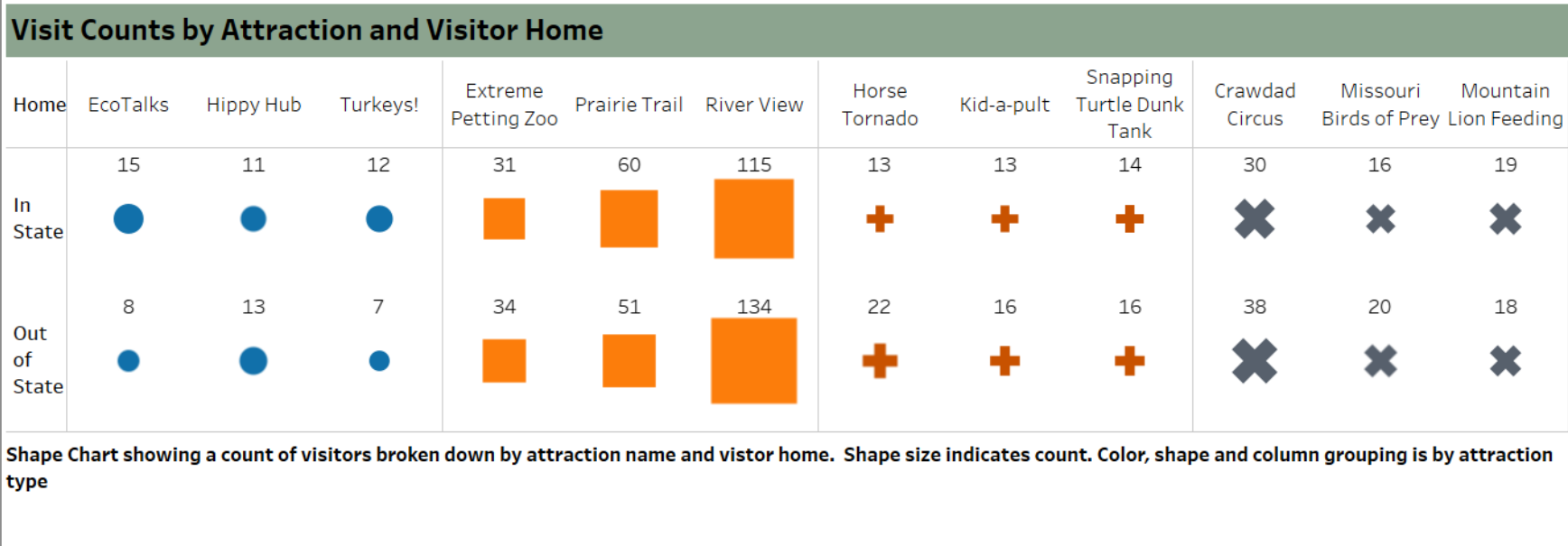
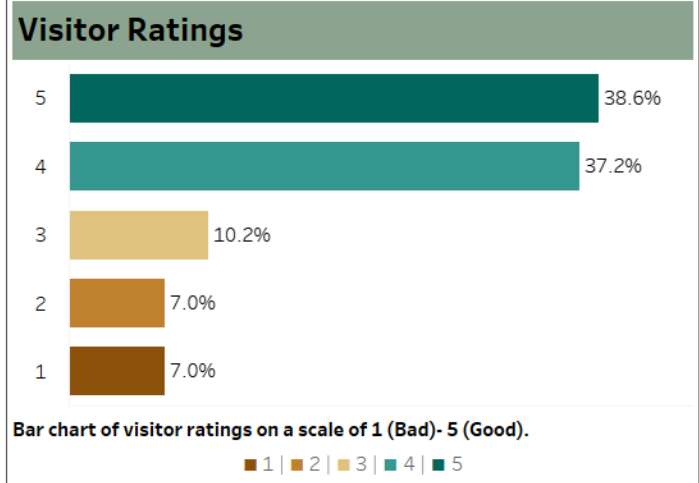
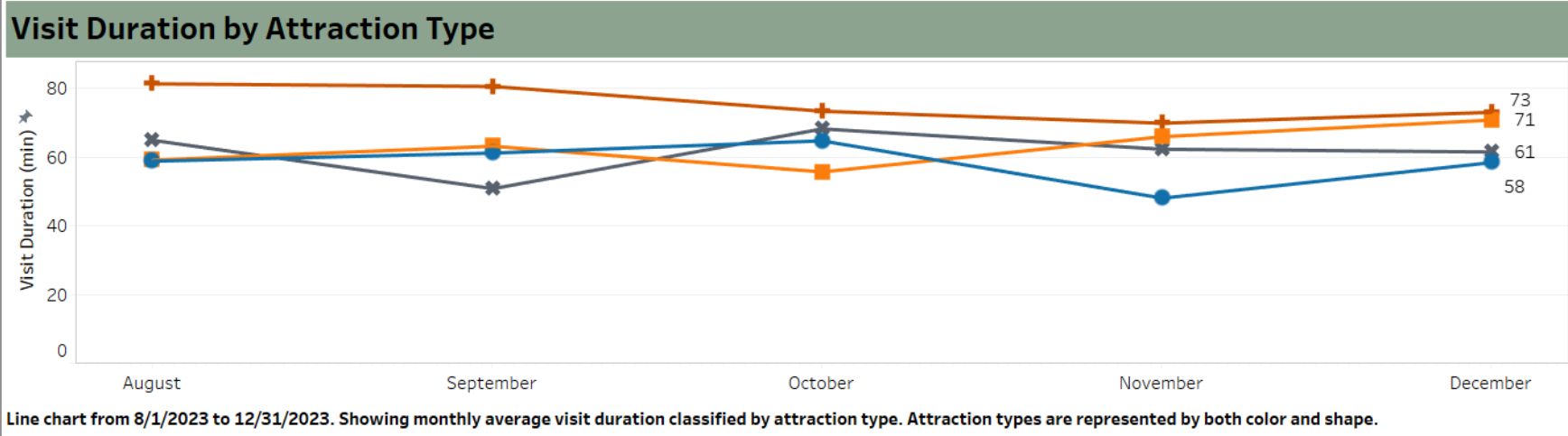
Zoo Attraction Metrics and Visitor Breakdowns

An overview of important zoo visitor metrics from June 2023 to May 2024

Enter Start Date: Enter End Date:

Age Group: Gender:
 Home: Visitor Type:

Educational: Exhibit: Ride: Show:



Visitor Demographic Details

	Female	Male	Other	Grand Total
Senior	50	54	63	167
Adult	48	71	71	190
Teen	57	42	55	154
Child	76	71	68	215
Grand Total	231	238	257	726

Text table with a breakdown of all individual Visitor Age and Gender combinations

A large yellow circle is positioned on the left side of the slide, partially overlapping the text.

Retrofit or Rebuild?

Retrofit

- Immediate
- Targeted
- Portion of Visualization

Rebuild

- Complicated
- Poorly Documented
- Whole Visualization



The How

When Theory Meets Practice

- The Department of Health and Senior Services maintains a lot of dashboards both internally and externally.

Accessibility

- My visuals have fewer than 1,000 marks
- My visuals use simple graphic elements like bar charts, line charts, and pie/donut charts
- My visuals have descriptive titles that use simple and easy-to-understand language
- My visuals have captions and alternative text
- My visuals have labels where appropriate
- My visuals use no more than 7 colors
- My text meets color contrast rules (4.5:1 regular text, 3:1 large text)
- My non-text visual elements meet contrast rules (3:1)
- My filters have descriptive headings
- My dashboards DO NOT use the slider option for a filter
- My dashboards are not overcrowded
- My dashboards have download buttons where appropriate
- Any hyperlink text is either descriptive text or a short URL
- Redundant coding has been added to my visuals where appropriate to avoid relying on color alone to communicate information (like shapes to line graphs)

- Implementing these guidelines across those dashboards took a concerted effort from their creators.

Contrasting Colors

- Color contrast is supposed to achieve the 3:1 ratio for interactive graphic elements, and 4.5:1 for text.
- However, in addition to working toward accessibility, brand standards need to be taken into consideration.
- Incorporating color palettes into Tableau desktop can be a serious time saver.



Custom Colors

```
Preferences.tps
File Edit View
<color>#fffacd</color>
<color>#ffc3c3</color>
</color-palette>

<color-palette name="BlackonBlack" type="ordered-sequential">
<color>#000000</color>
<color>#000000</color>
</color-palette>

<color-palette name="DHSS Orange Gradient-detail" type="ordered-sequential">
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<color>#E67e22</color>
<color>#F89406</color>
<color>#F5ab35</color>
<color>#f4b350</color>
<color>#fde3a7</color>
</color-palette>

<color-palette name="DHSS Orange Gradient" type="ordered-sequential">
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<color-palette name="DHSS Purple Gradient" type="ordered-sequential">
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<color-palette name="DHSS Green Gradient" type="ordered-sequential">
<color>#c8f7c5</color>
<color>#4a7729</color>
</color-palette>

Ln 59, Col 17 | 2,467 characters | 100% | Windows (CRLF) | UTF-8
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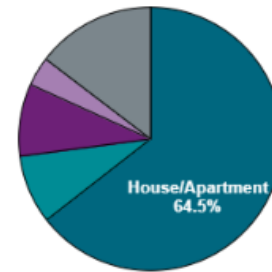
Contrast vs Aesthetics

- Working within a defined set of colors for branding can be limiting.
 - Then we have to work to ensure the colors meet accessibility requirements.
 - And on occasion, colors have to meet programmatic requirements as well.
- The MOVDRS program met all three of these challenges.



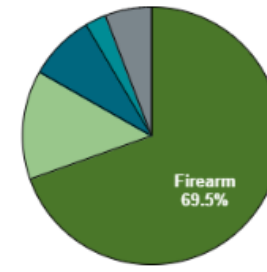
Contrast vs Aesthetics

Fatal Injury Location for the Listed Selections



House/Apartment
Motor Vehicle
Street or Sidewalk
Natural Area
Other/Unknown

Method of Death for the Listed Selections



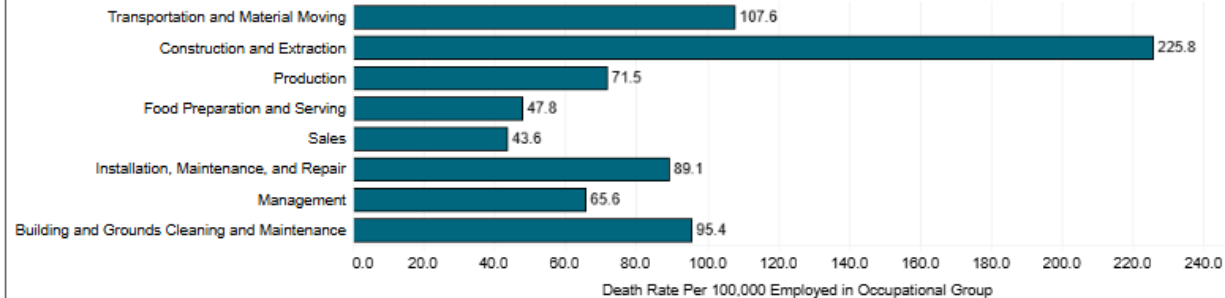
Firearm
Hanging*
Sharp instrument
Poisoning
Other/Unknown

*Includes hanging, strangulation, and suffocation

55% of selected fatal violent injuries occurred at the decedent's own residence.

67% of all violent deaths in children under age 19 involved a firearm.

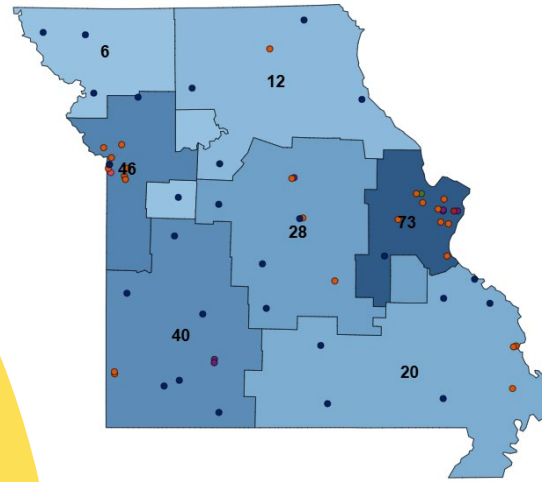
Top 8 Violent Death Rates by Occupational Group[^]



- They overcame them by focusing on the key takeaways and double-encoding.



Contrast vs Aesthetics



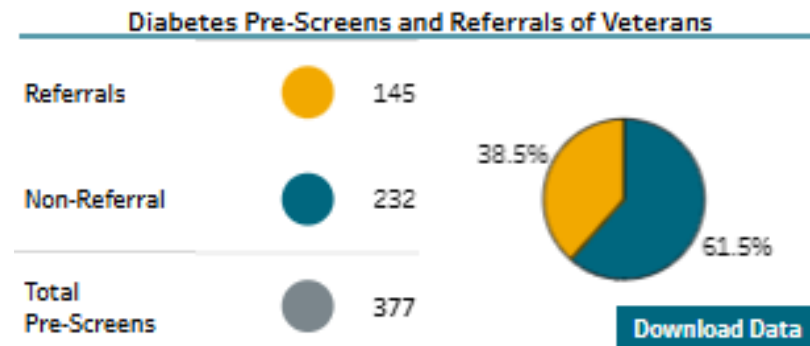
Map of pregnancy-associated deaths based on selected Timeframe. Map data are not filtered by pregnancy-related status, counties are grouped into Behavioral Risk Factor Surveillance System regions. Pins represent maternal care facilities and pin colors indicate level of maternal care based on the 2021 LOCATe survey.

- Addressing color-blindness is just the beginning.
- In addition, we needed to expand our effort by developing meaningful alt-text.
- This helped us focus our thoughts on what we were communicating even more sharply.



Data for All vs Data Stewardship

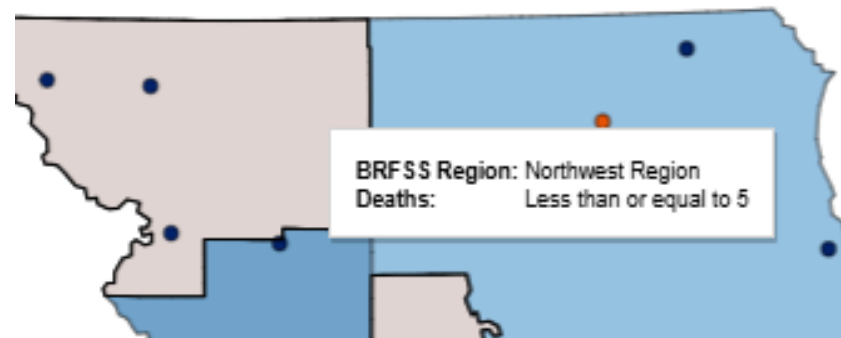
- Data Download vs Data Suppression
- For many dashboards, the addition of a Download Data button was sufficient to meet minimum accessibility standards.



- However, this simple fix brought to light some potential hazards.

Data for All vs Data Stewardship

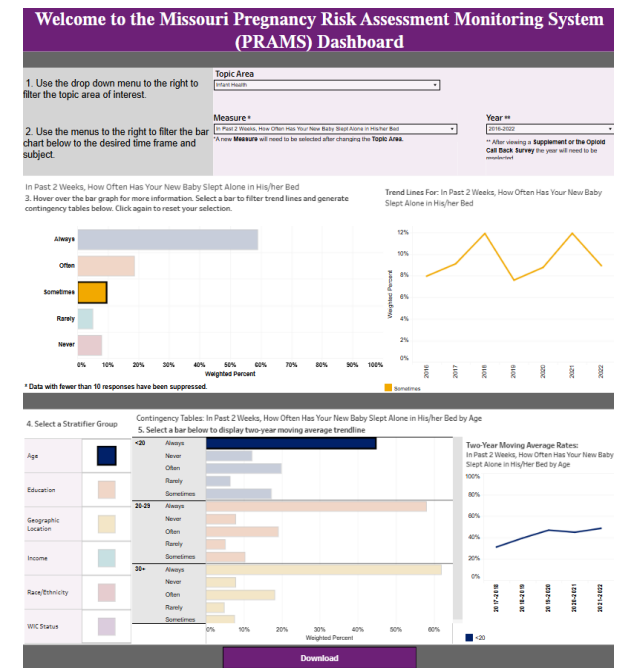
- During testing, we found the data download function unmasked data that had previously been redacted for privacy. This issue could have potentially shared confidential data from multiple dashboards if not fixed.



- Team members across the DHSS Tableau community worked together to find a solution to this challenge.

Keyboard navigation needs solid building

- Different dashboards required different fixes.
- To remediate the PRAMS dashboard for improved keyboard navigation, it had to be shifted from a floating dashboard to one built on containers.
- Before this was done, tabbing through would start you at the bottom.



Improved
Accessibility
=
Improved
User
Experience

- As we implemented the guidelines, we also found opportunities to improve our dashboards.
- New opportunities were highlighted to improve the user experience.
- Improving the user experience was also a driving factor in working to improve the mobile experience for some dashboards.

Missouri Maternal and Child Health Data Platform

Note: When switching population domain, a new measure will need to be selected

Download Data

Population Domain

Adolescent Health

Measure

Adolescent Mortality Rate, Ages 10 through 19, per 100,000 ...

Year

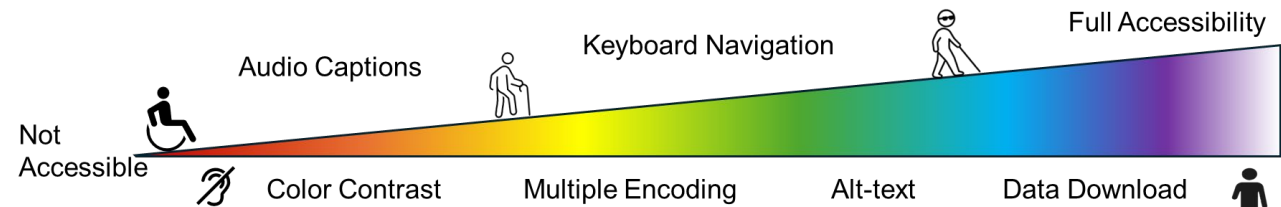
(All)

Adolescent Mortality Rate, Ages 10 through 19, per 100,000 Adolescents



Building a culture of accessibility

- This work doesn't end with the deadline.
- Accessibility is a spectrum that improves our dashboards by viewing them through multiple lenses.



- The work to make dashboards more accessible and enhance the user experience is now just a part of how we build dashboards.

Call for Action
