RITIS Causes of Congestion - Identifying & Quantifying the Causes of Congestion for States & Counties

Data-driven mobility insights from the CATT Lab

Rick Ayers
703.989.3221
rayers@umd.edu
cattlab.umd.edu

Today's Topics

- Motivation & Objectives
- Data & Methodology
- Use Cases, Results and Demo
- New Release – Causes of Congestion Graphs (for corridor analysis)

Web App Link

- National, State and County App: https://go.umd.edu/congestion

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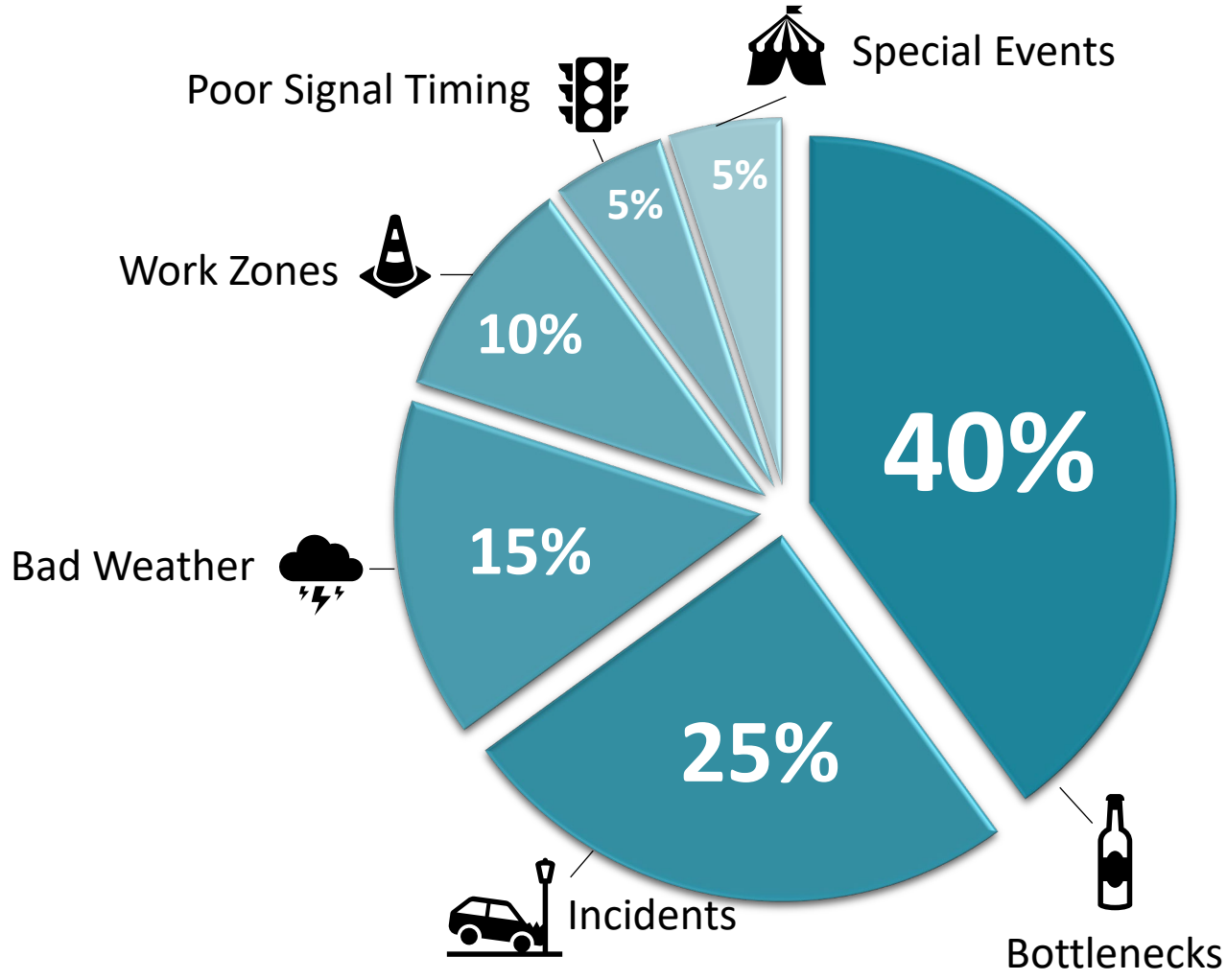
CATT Lab (Who we are)

- The CATT Lab operates the world's largest mobility-driven data archive and analytics platform
- We are the industry leader of applied big-data analytics for transportation applications (operations, planning & research)
  - Mobility big data analytics
  - Information/data visualization
  - Mobility research
  - Data science
  - Performance management

Moving Past Old Assumptions

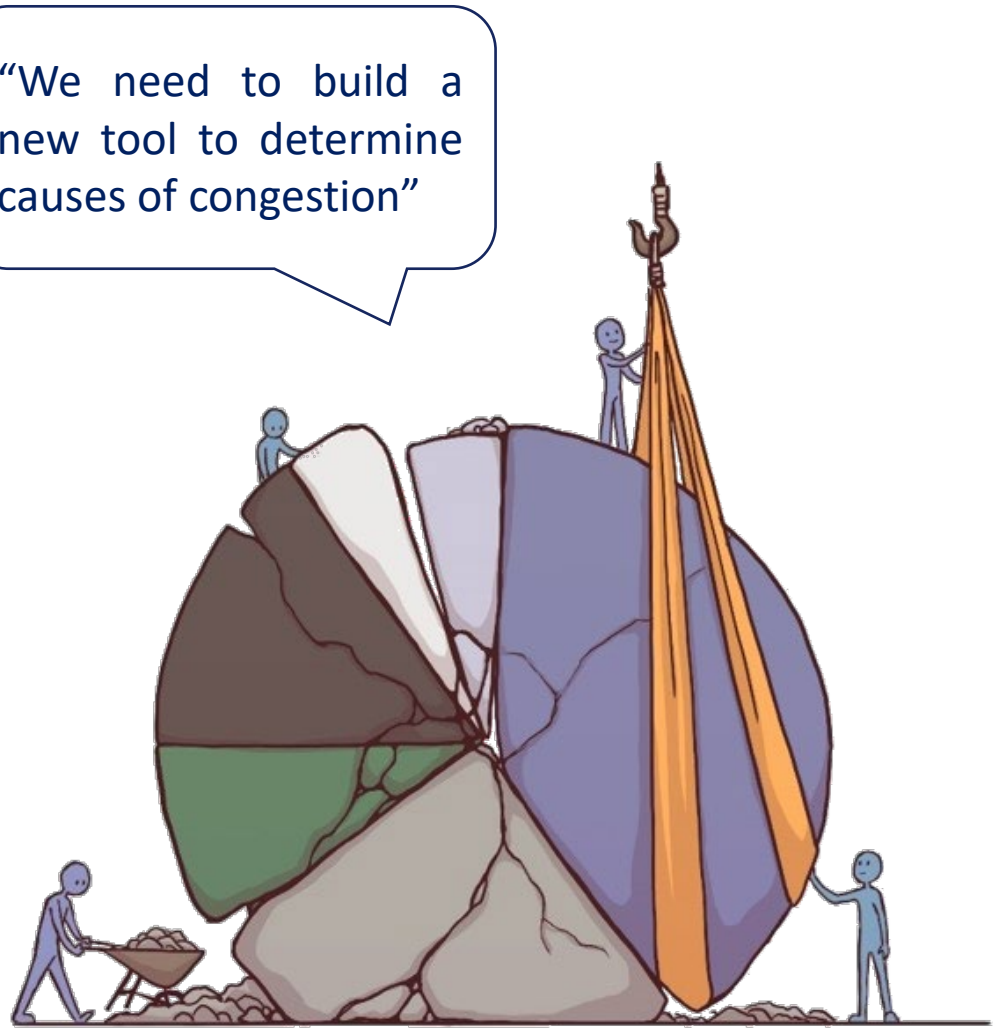
The congestion pie chart was:

- A national statistic
- 17+ years old
- Largely modeled
- In a nutshell… outdated

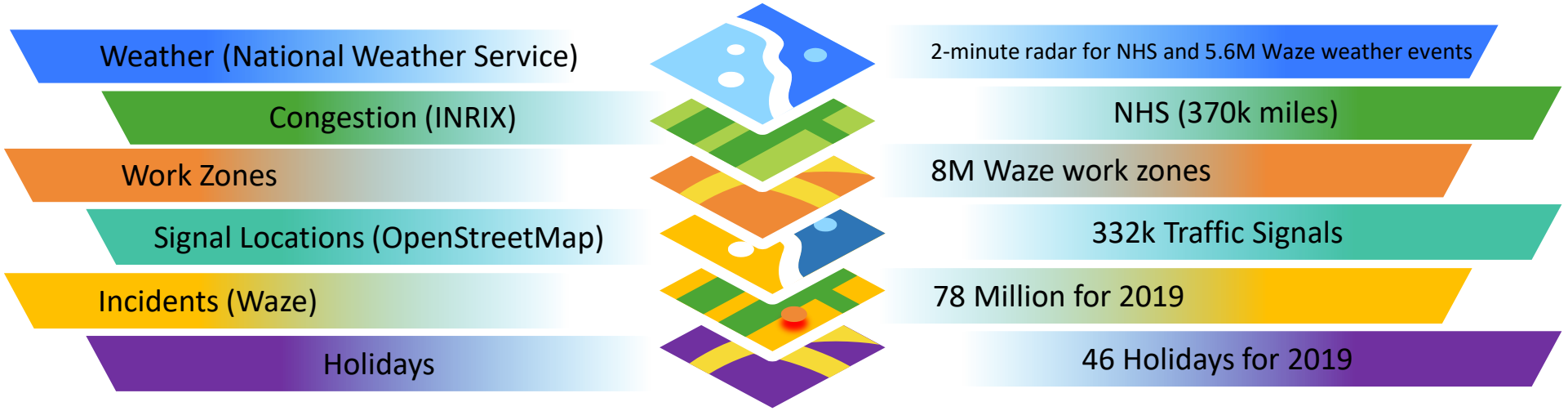


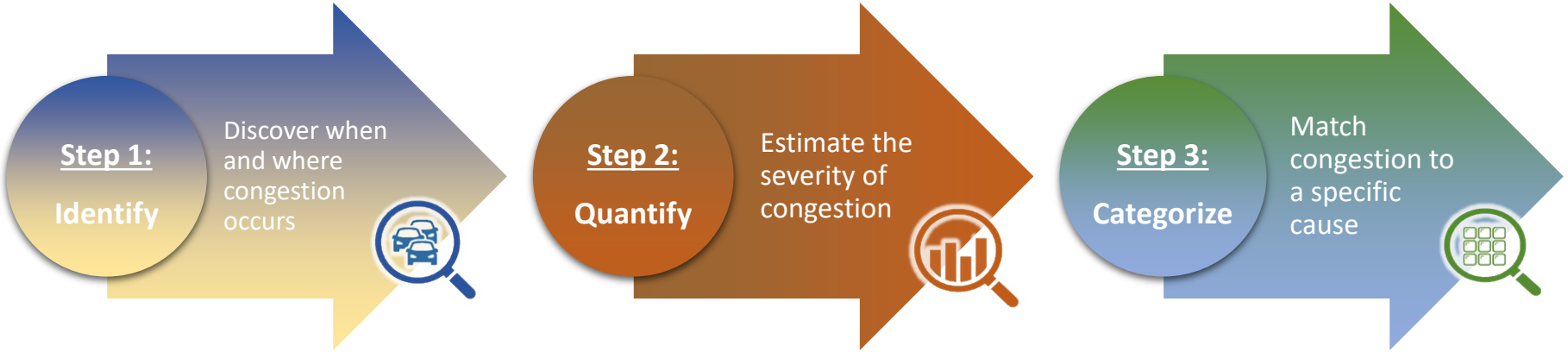
Objectives

1. Upgrade the outdated “pie chart”
   - Across entire NHS
   - Use consistent data sources
   - Develop research-backed methodology
2. Evaluate congestion causes
3. Create interactive, easily-accessible tool for decision makers
4. Open web-based solution

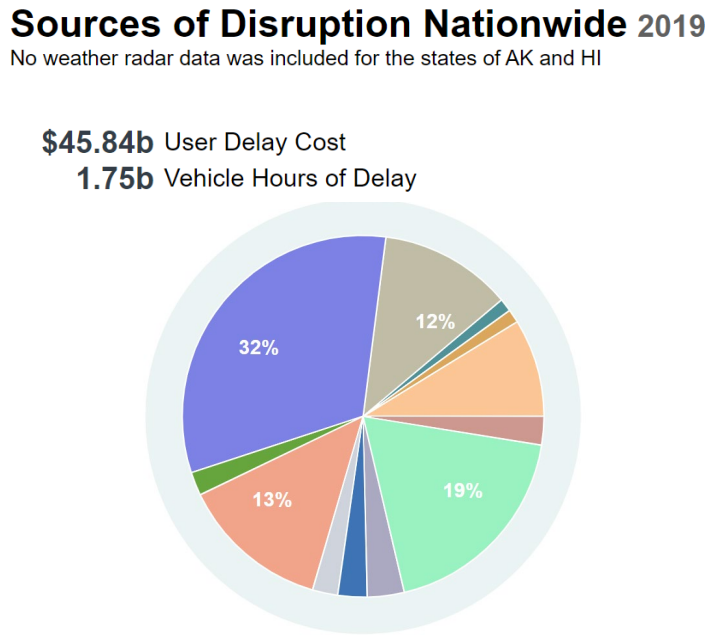


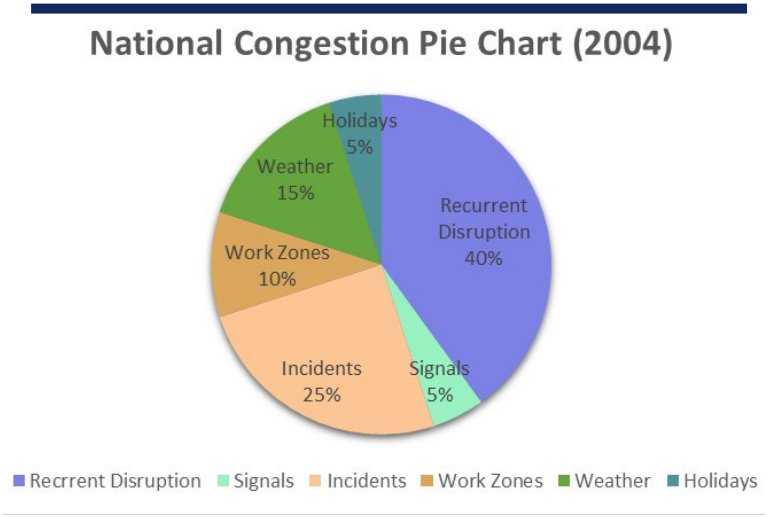
Data and Methodology Summary

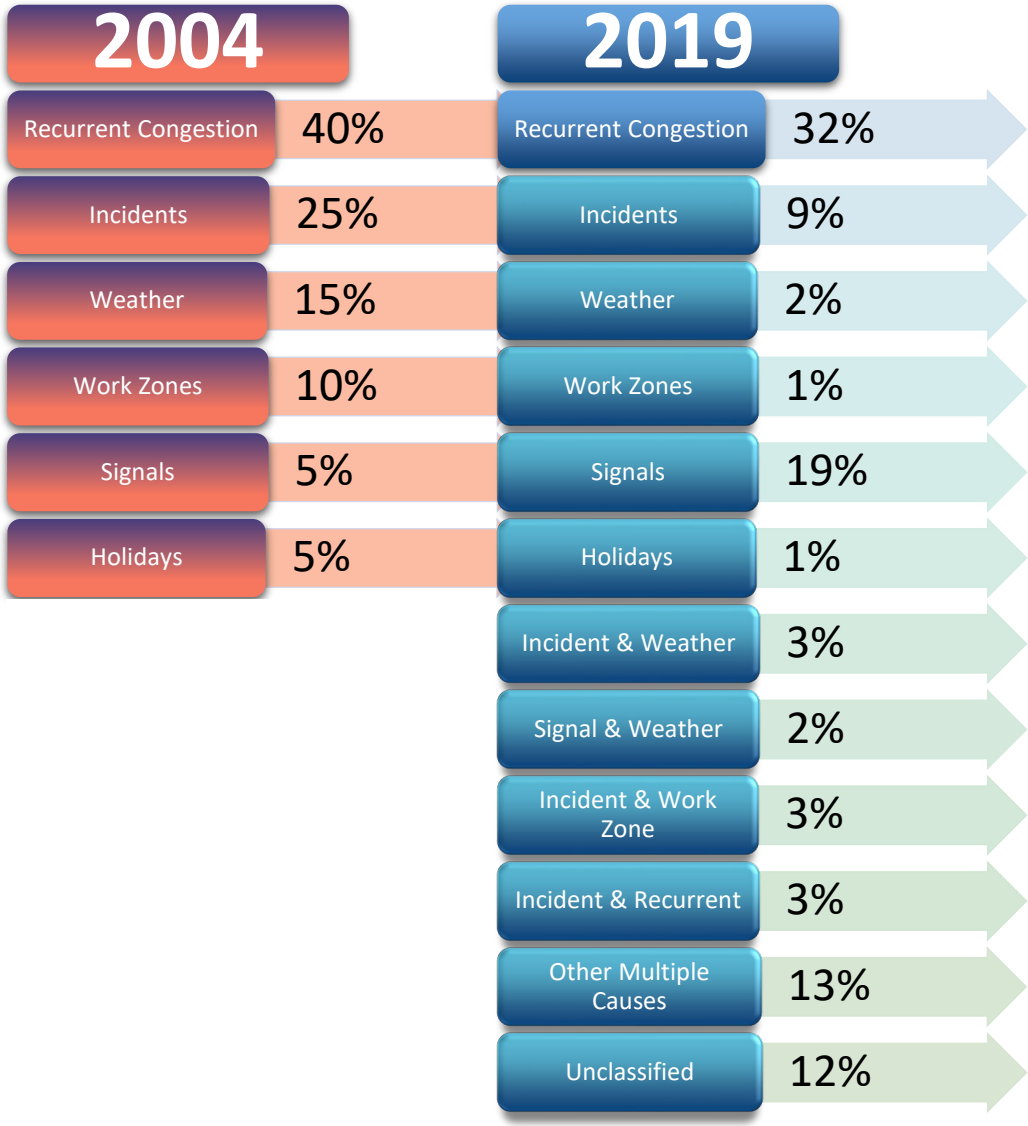




Results –2019 National vs 2004 National

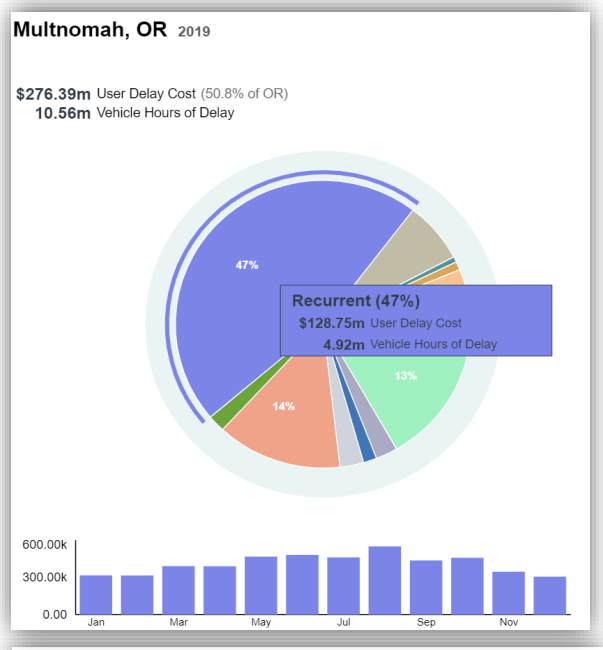


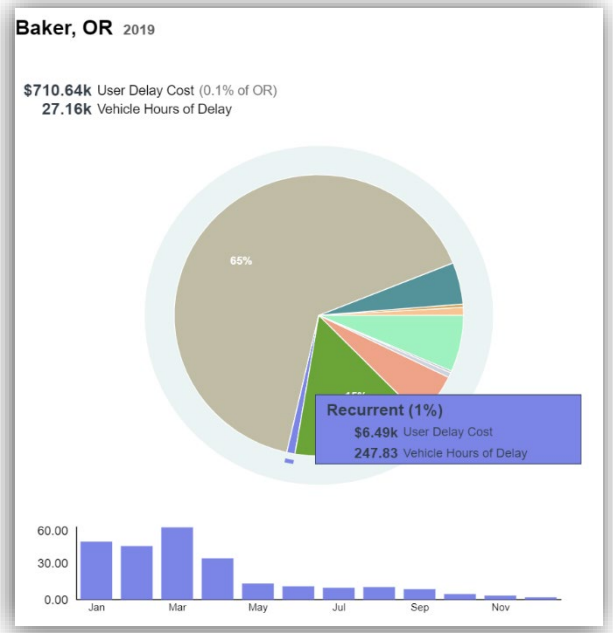


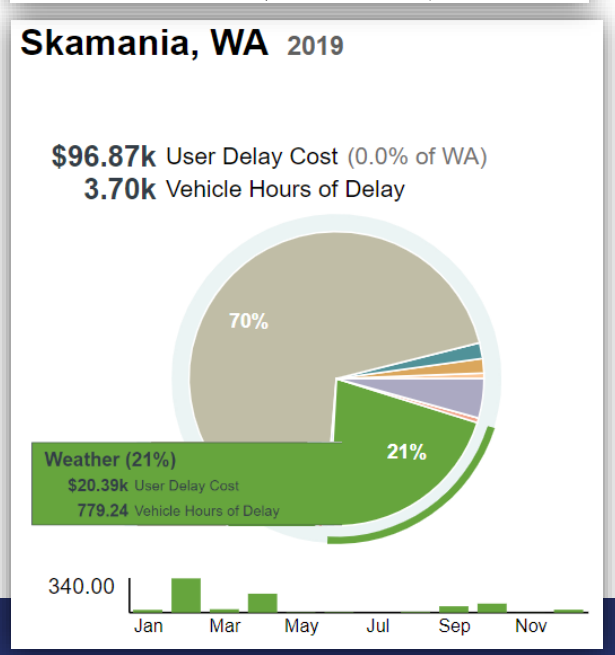


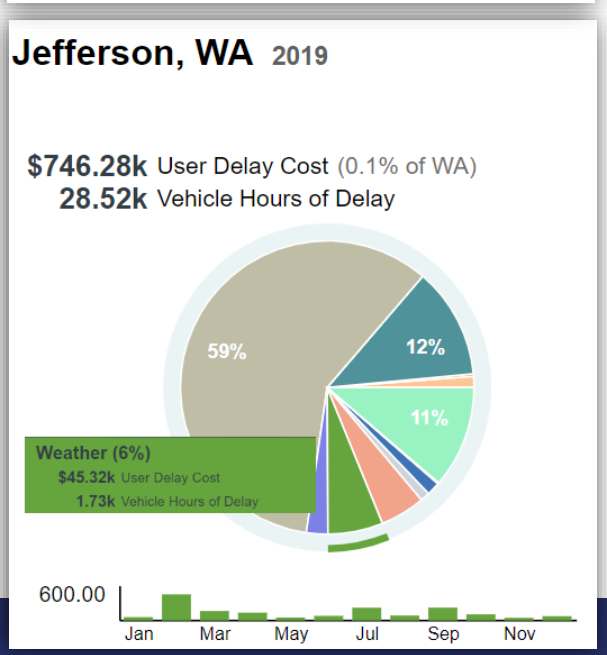
Causes of Congestion – Use Cases

- **Causal variations in congestion between urban and rural areas**
  - Multnomah County, Oregon vs.
  - Baker County, Oregon
- **Illustrate how weather impacts traffic flow**
  - Skamania County, Washington vs.
  - Jefferson County, Washington





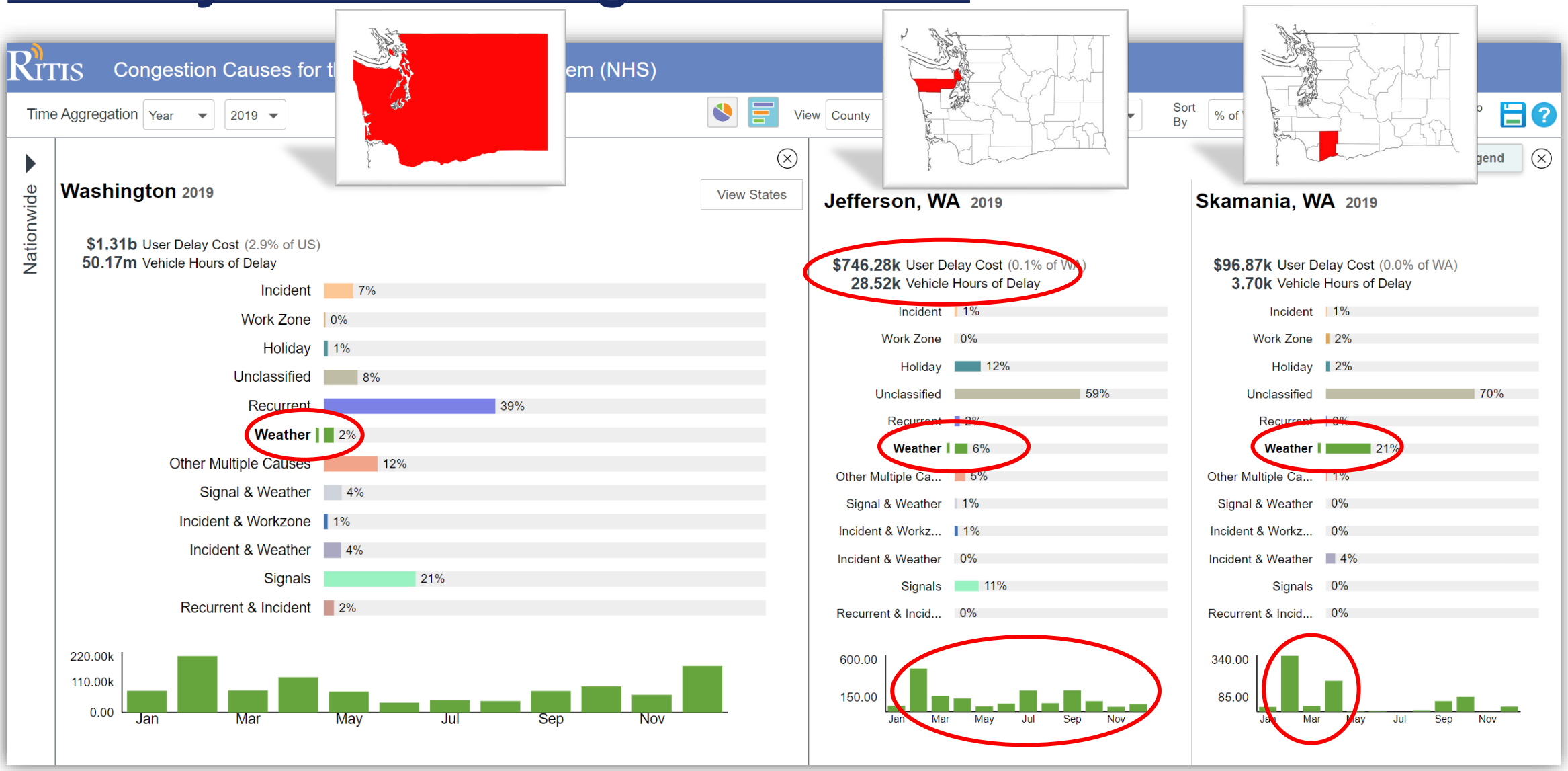




OREGON - Annual Pie Charts with Monthly Recurrent Congestion Trend

- Recurrent
- Incident
- Weather
- Work Zone
- Signals
- Holiday
- Incident & Weather
- Signal & Weather
- Incident & Workzone
- Recurrent & Incident
- Other Multiple Causes
- Unclassified

WASHINGTON - Annual Bar Charts with Monthly Weather Congestion Trend



Demo of National Web App

Other Potential Use Cases

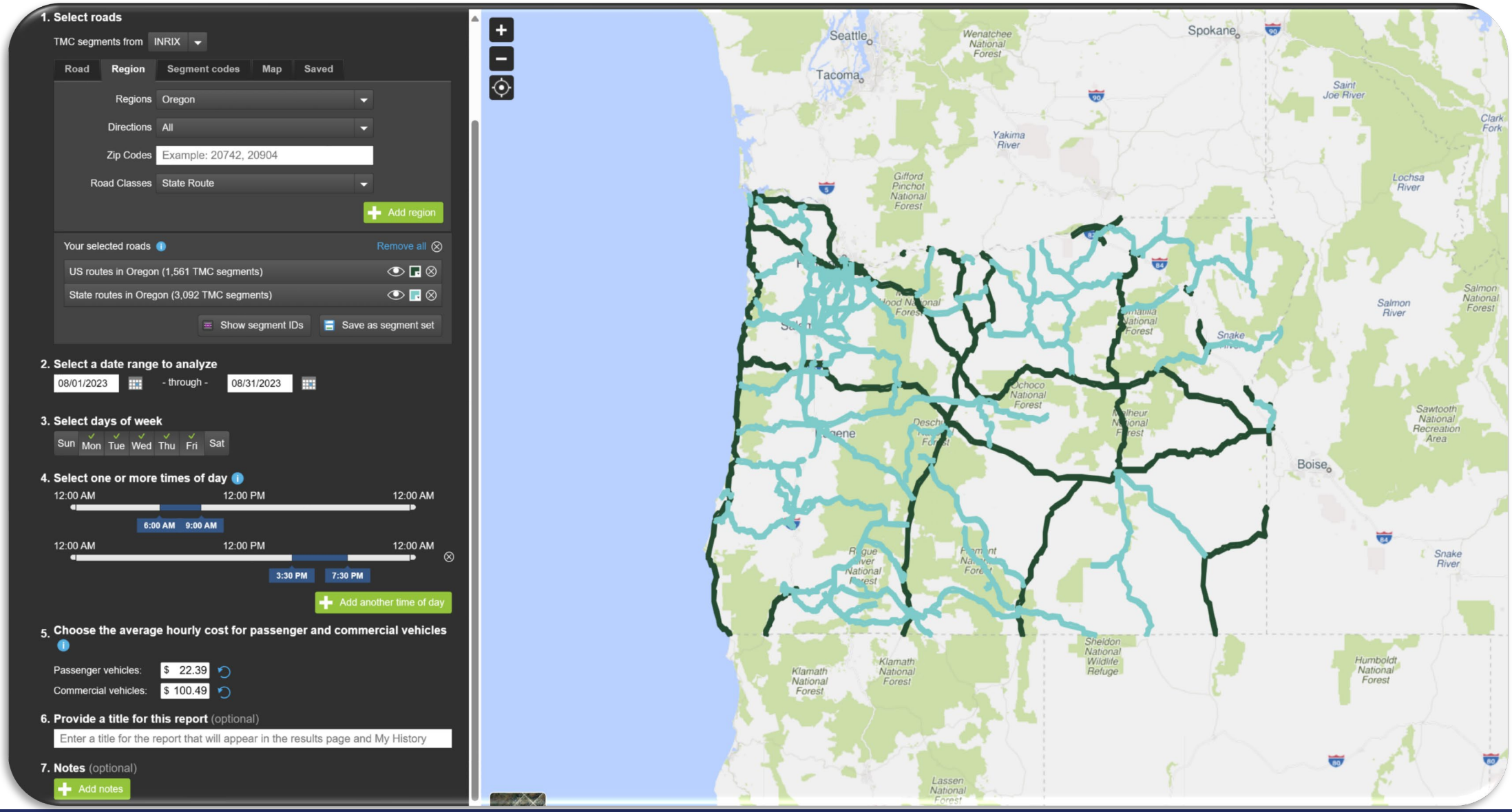
- Justification of continued funding for various operational strategies and/or requesting additional funding for new countermeasures related to a "Cause"
- Did the new transit line reduce recurrent congestion?
- Did the increased road plowing decrease delay during seasonal snow events?
- Did Safety Service Patrol (SSP) staging reduce incident induced delay?
- How much delay occurs at signalized intersections in rural regions?
- Does inclement weather make work zone delays more severe? If so, by how much?

CORRIDOR ANALYSIS NOW AVAILABLE

in *RITIS Probe Data Analytics*

Causes of Congestion Graphs

CORRIDOR SPECIFIC Analysis (Oregon)



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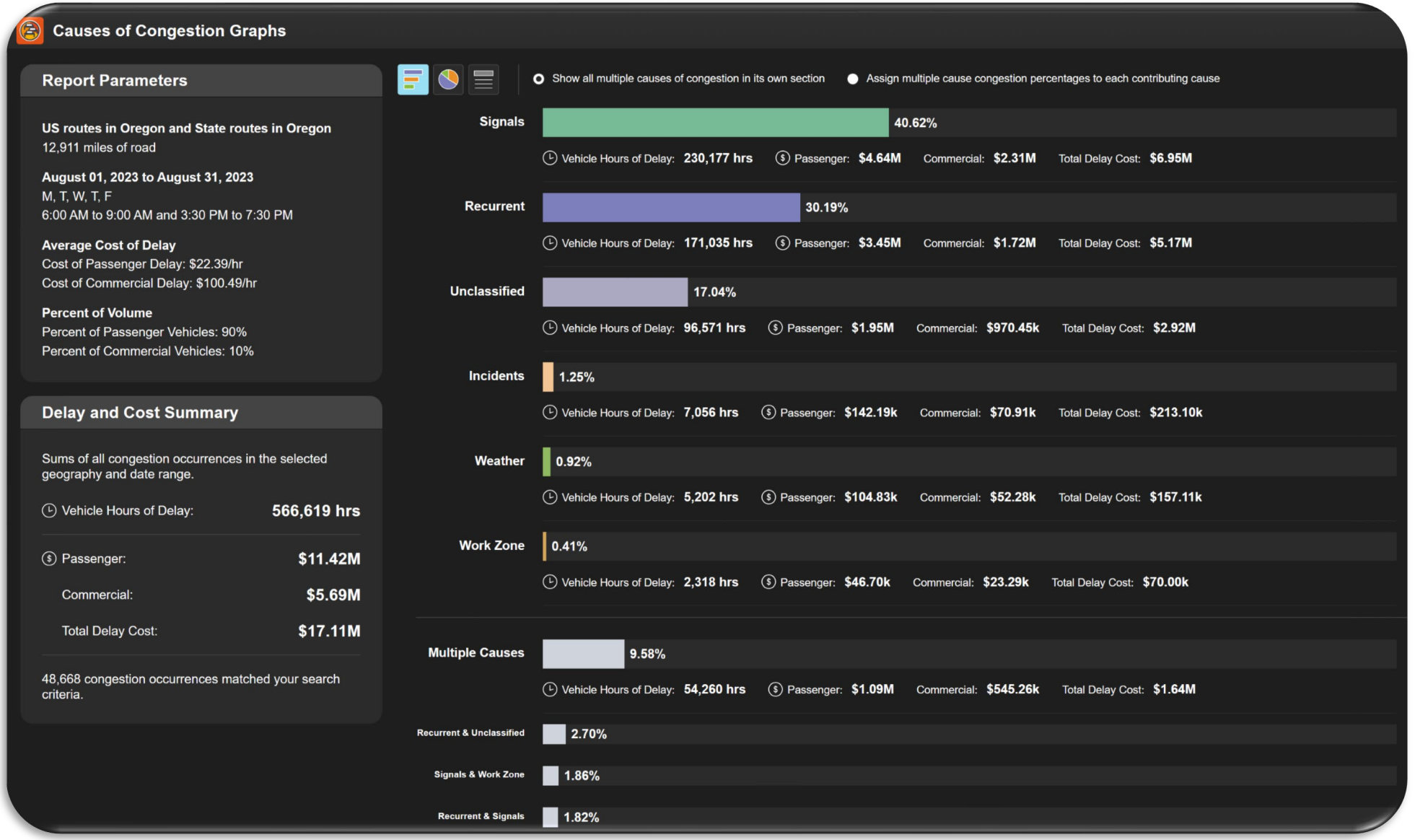
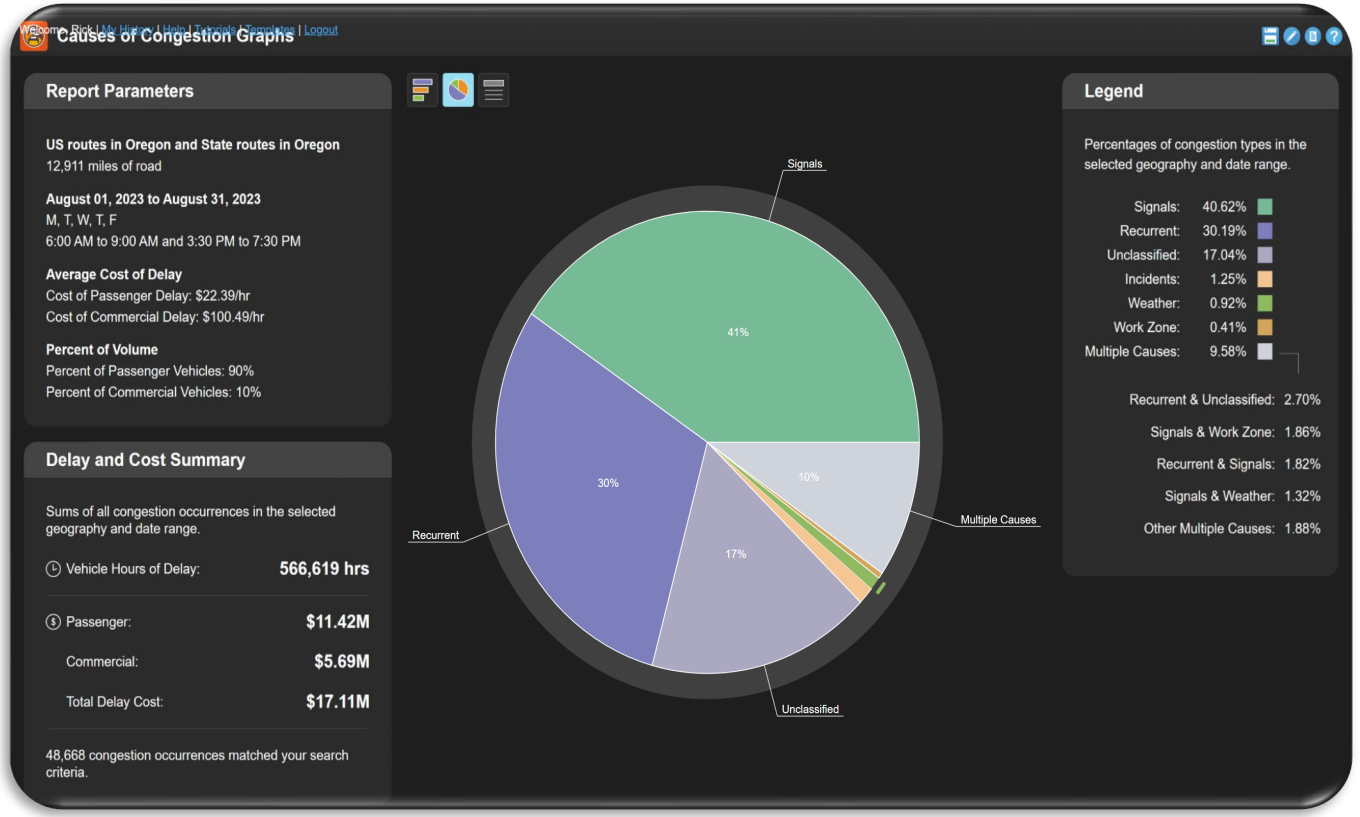


CORRIDOR SPECIFIC Analysis (Oregon)

CORRIDOR SPECIFIC Analysis - Demo

Conclusions

- New Connected Vehicle probe data and crowd sourced content is delivering new insights to what factors impact congestion
- Open, web solution to explore national, state and local causes of congestion
- RITIS users have industry exclusive access to corridor-specific causes of congestion graphs
- Questions are welcome



Thank You!

Resource Links

- National, State and County App: https://go.umd.edu/congestion
- PDA Causes of Congestion Tool: https://pda.ritis.org
- Tutorial: https://ritis.org/tutorials/videos/634641555
- Help Page: https://congestion-causes.ritis.org/help

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