Pictures of Crashes Tool

Jenny Guarino

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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ANALYSIS, RESEARCH, & TECHNOLOGY FORUM

VIRTUAL EVENT

Project Overview

What is the Picture of Crashes?

Interactive, data-driven tool that provides a view to commercial motor vehicle (CMV) crashes

Interactive, Data-driven tool

Uses data from multiple sources representative of time of day, geography, vehicle type, weather, and other areas

Data from Multiple Sources

Tool developed in ESRI's ArcGIS, a mapping and analytics software and service where users can extract answers from data

ArcGIS Mapping and Analytics

Project Overview

Picture of Crashes supports roadway safety to help us better visualize circumstances around crashes…

- Safety is the U.S. DOT's top priority
- The National Roadway Safety Strategy (NRSS) is a Department-wide adoption of the Safe System Approach that focuses on:
  - Safer people, safer roads, safer vehicles, safer speeds, and post-crash care
- FMCSA can analyze data in the tool to understand what happens before, during and around CMV crashes, and therefore identify and address safety issues

Approach and Objectives

The Picture of Crashes is ongoing and continues to evolve…

Refine Tool
Ongoing refinement of the tool to identify trends and root causes of crashes

Augment Existing data
Identify additional data sources to integrate to the tool to augment existing data

Explore Analyses
Explore how to use data and insights gathered from the tool to make data-driven analyses around large truck and bus crashes

Leverage the Tool
Understand how the DOT, FMCSA, State partners, and others could leverage the tool/data to improve safety on our roads in the future

Integrated Data Sources

Datasets are extracted from external Agency sources to augment and complement existing FMCSA data…

- Three States' data integrated into the tool: Maryland, Texas, Virginia (years 2018-2020)
- Data sources currently include:

NHTSA
National Highway Traffic Safety Administration (NHTSA) crash data

MCMIS
FMCSA Motor Carrier Management Information System (MCMIS) crash, inspection and enforcement data

FHWA HPMS
Federal Highway Administration (FHWA) Highway Performance Monitoring System (HPMS) roadway infrastructure data

NOAA
National Oceanic and Atmospheric Administration (NOAA) historical weather data

Tool Features

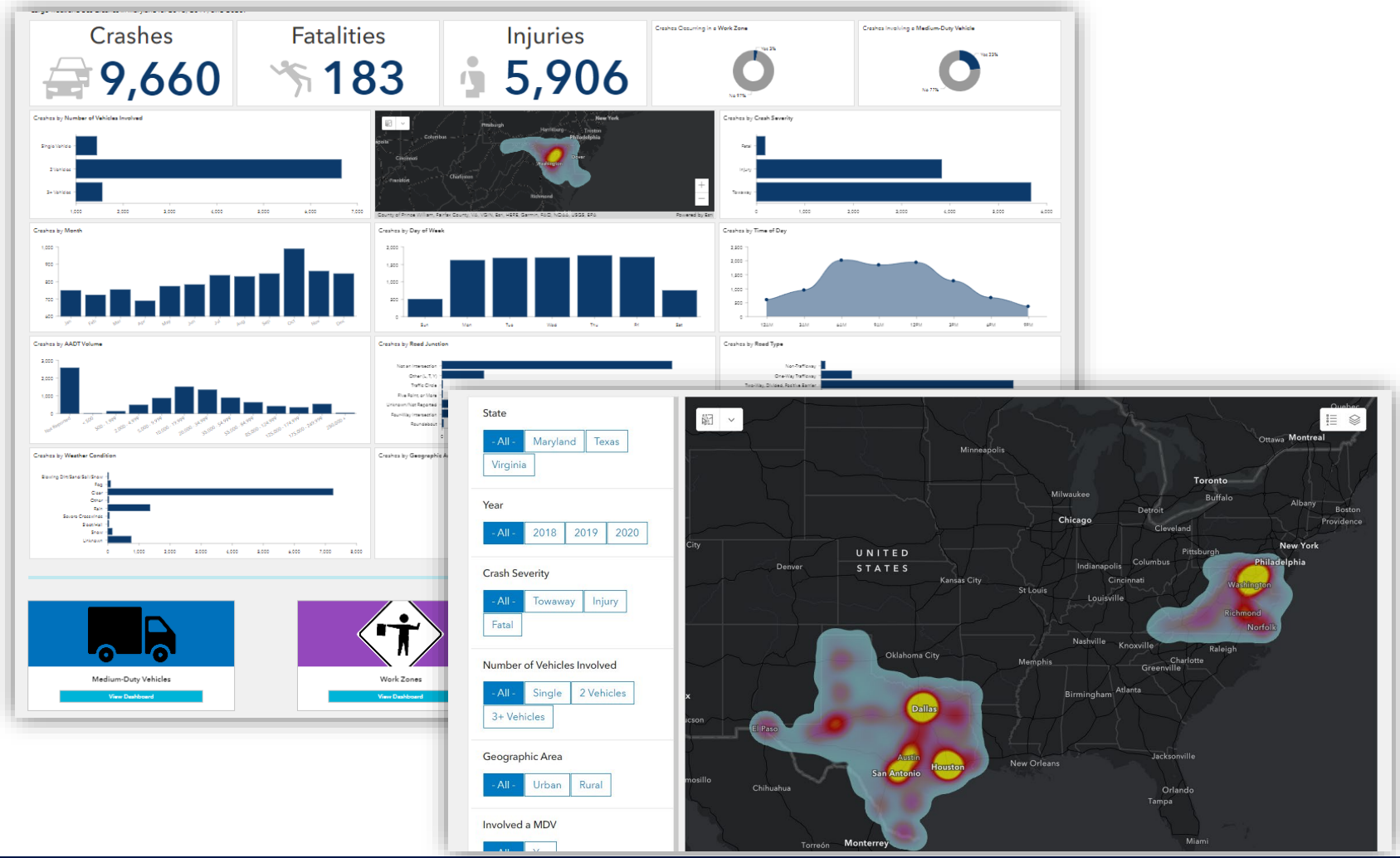
Dashboard views and filters help narrow in on subsets of large truck and bus crashes…

Interactive Dashboards:

- Medium-Duty Vehicles
- Work Zones
- Single vs. Multi-Vehicle
- Vulnerable Road Users (VRUs)

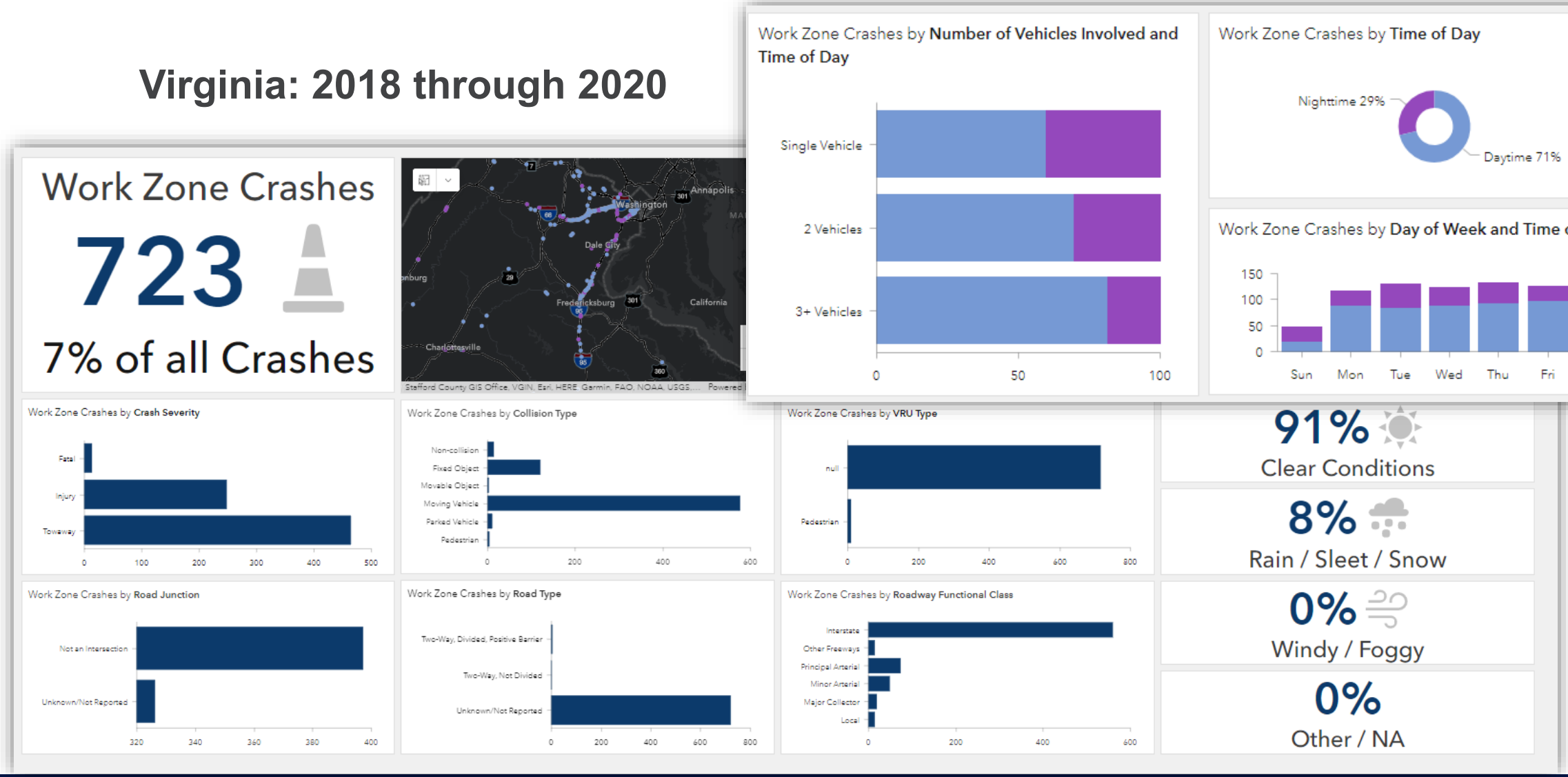
Crash Overview Data:

- Hot Spot Analysis
- Time of Day, Day of Week, Month
- # of vehicles involved
- Weather, Geographic location
- Crash type, Road type
- Road junction, Average Annual Daily Traffic (AADT) volume



Example: Work Zone Crash Dashboard

Virginia: 2018 through 2020

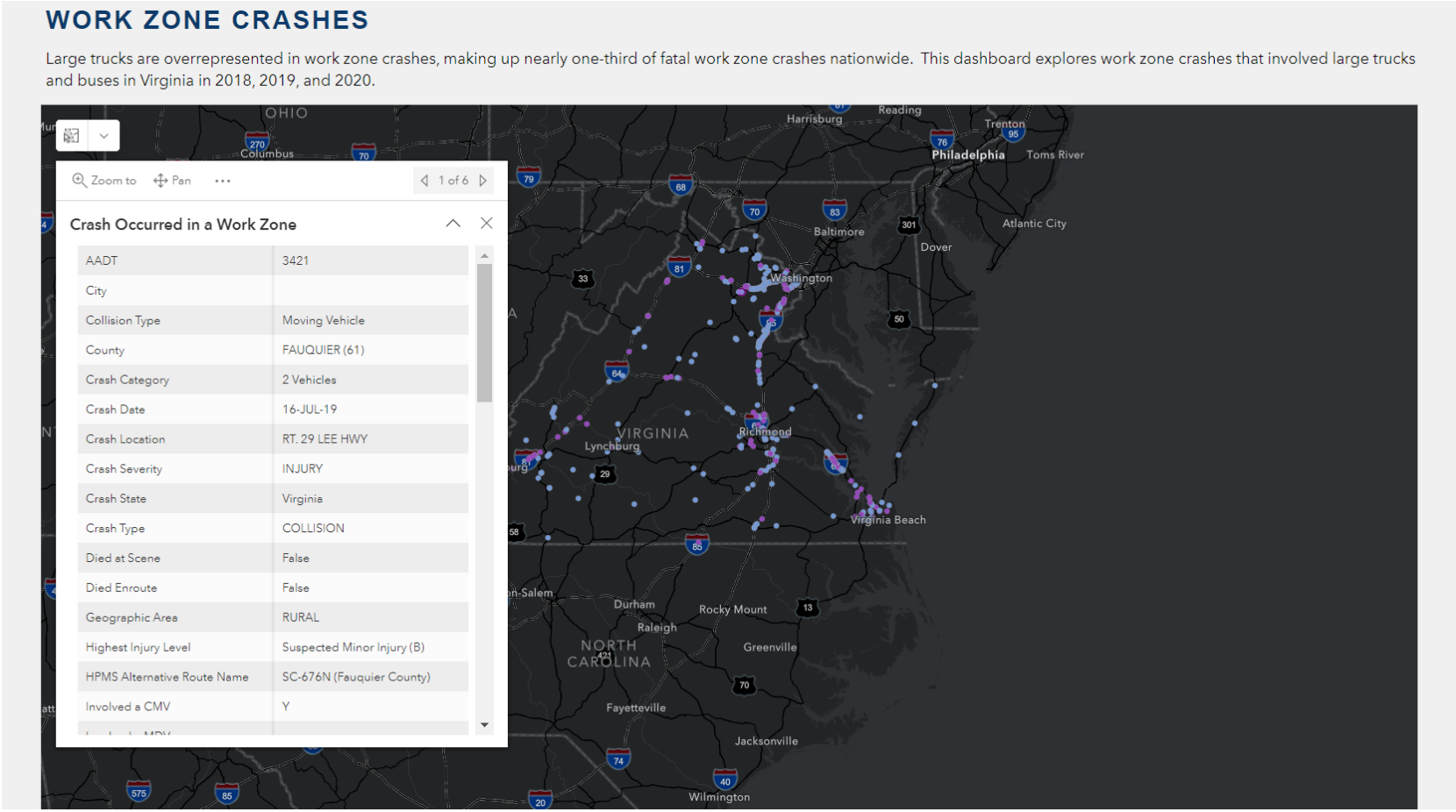


Example: Work Zone Crash Dashboard

Virginia: 2018 through 2020
Zooming In

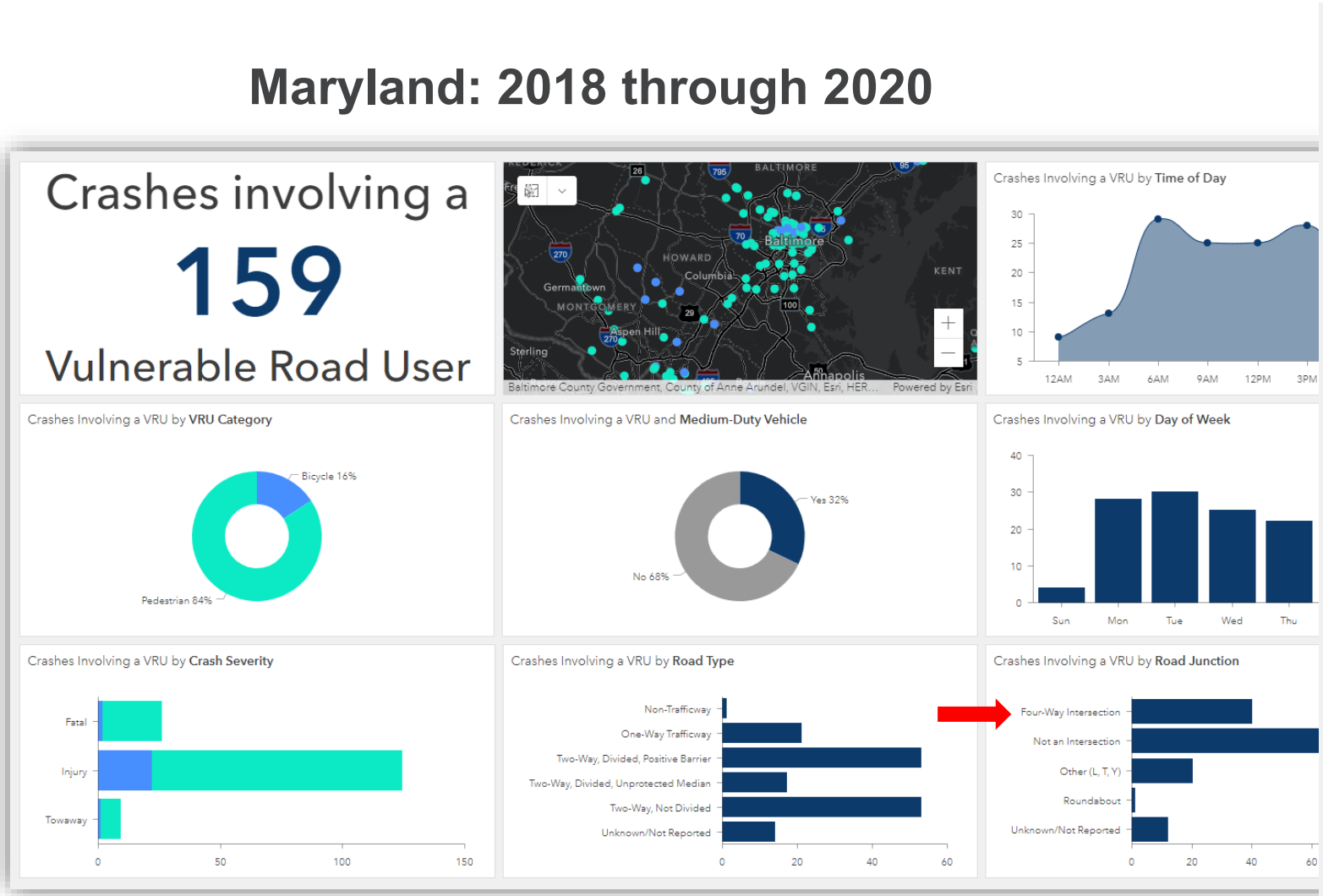
“Zooming In” on Individual Crashes:

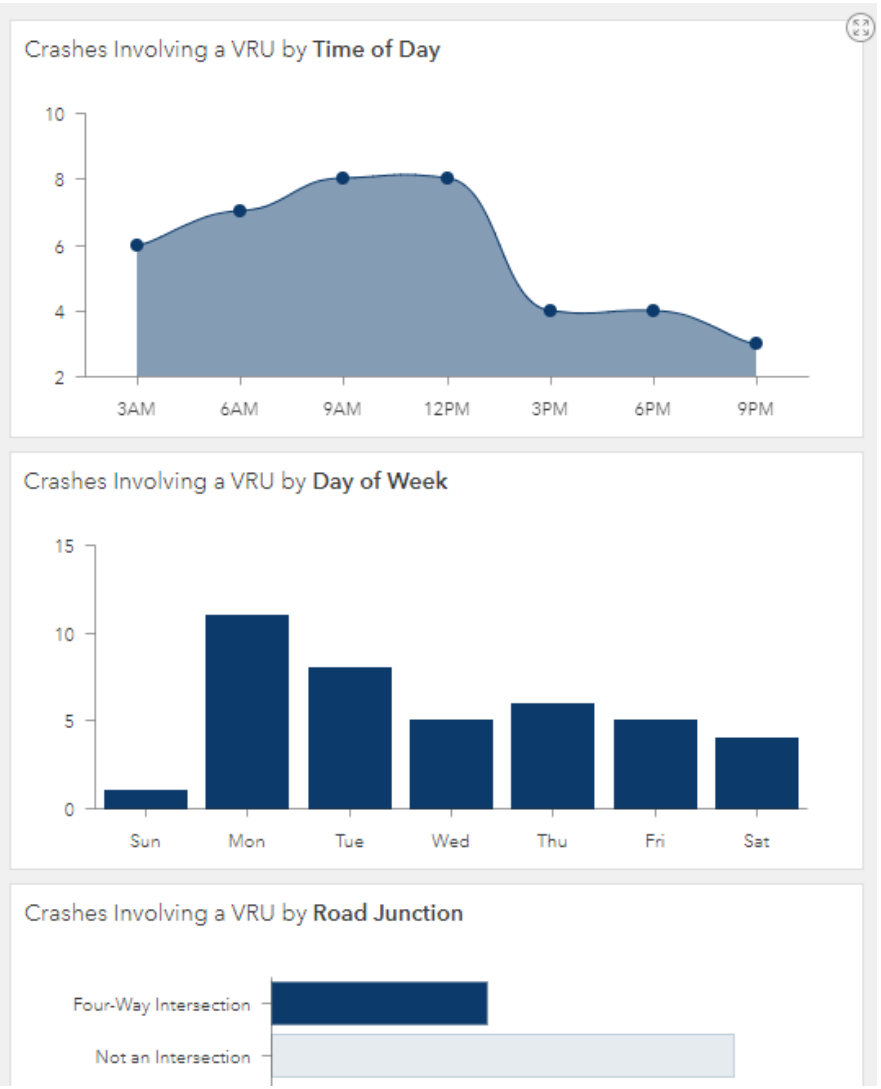
- Data will denote collision type, county, category, type, date, severity, etc.
- The different colors of the dots (blue, purple) indicate daytime and nighttime crashes.



Example: Vulnerable Road Users (VRUs) Dashboard

Maryland: 2018 through 2020





Contact Information

Jenny Guarino

Statistician, Analysis Division

Jenny.Guarino@dot.gov