Arizona

Arizona Department of Transportation sponsored statewide pedestrian and bicycle safety action plans that identified prevalent crash types by location to help prioritize appropriate safety improvements on the State-owned network.

Florida

The University of Florida used PBCAT-derived crash-type logic to develop a crash analysis tool to type and analyze pedestrian and bicyclist crashes. The tool is embedded in the State's data system, Signal Four Analytics. Authorized users can easily access the crash report for typing their jurisdiction's pedestrian and bicyclist crashes, and crash-type variables are automatically linked to other variables in the database. Broward County, Florida; St. Petersburg, Florida; and the Orlando metropolitan region are among jurisdictions that have used the tool. A demonstration can be viewed in a webinar that FHWA hosted in April 2018.

Delaware

The Delaware Valley Regional Planning Commission conducted a large pedestrian crash study on a 4-mile stretch of Philadelphia's North Broad Street, the pedestrian crash epicenter of Pennsylvania. Using the tool, the study identified a type of crash and a time of day that were highly over-represented, which led to identifying a very specific countermeasure for those crashes.

Colorado

The City of Boulder exports PBCAT data into a geographic information system (GIS) accident database to link crash typing, traffic control, and facility type data with standardized data captured on Colorado State accident reports. After data are linked, the records are exported to a spreadsheet and then imported into a statistical software platform to conduct cross-tabulations. Key findings are produced in a technical memorandum or final report. Jurisdictions use the findings to support site-specific safety improvements as well as policy changes that can be applied, systemwide, to locations that share similar issues.

North Carolina

The University of North Carolina Highway Safety Research Center developed multiyear, crash-typed, geocoded pedestrian and bicycle crash databases. The data are used to analyze local and statewide safety problems, including through online query tools and model analysis reports, and aid in the State's process of prioritizing safety projects. An interactive map with downloadable spatial pedestrian and bicycle crash data can be viewed online.

What's Next?

To gather deeper insights about how to make the tool most useful to States and local jurisdictions, an in-person stakeholder meeting was convened in December 2019. The meeting included State, local, and Federal experts on crash typing, as well as crash data collection and analysis to solve safety problems. The contract team is currently updating the crash-typing decision logic and variable definitions according to stakeholder input.

Planned improvements include enabling users to develop crash-type variables for crashes involving micromobility modes and motor vehicles. Other goals are to reduce confusion about crash types by creating a coding framework that will develop a unique crash type for each crash, and to reduce the number of distinct crash types to make it easier to identify treatable patterns. As part of the strategy, a related goal is to align crash type inputs with the crash reporting elements recommended by the Model Minimum Uniform Crash Criteria (MMUCC), to the extent possible. This strategy should make it easier for more States to develop crash types for vulnerable road users.

A draft version of the new logic will be produced by the project end date of May 2020. It is envisioned that States will test the crash-typing logic before it is finalized. Stakeholders have advocated for a browser-based tool that will not be limited by users' computer operating systems. Subsequent efforts will consider updating the software by implementing the revised logic and graphic updates.

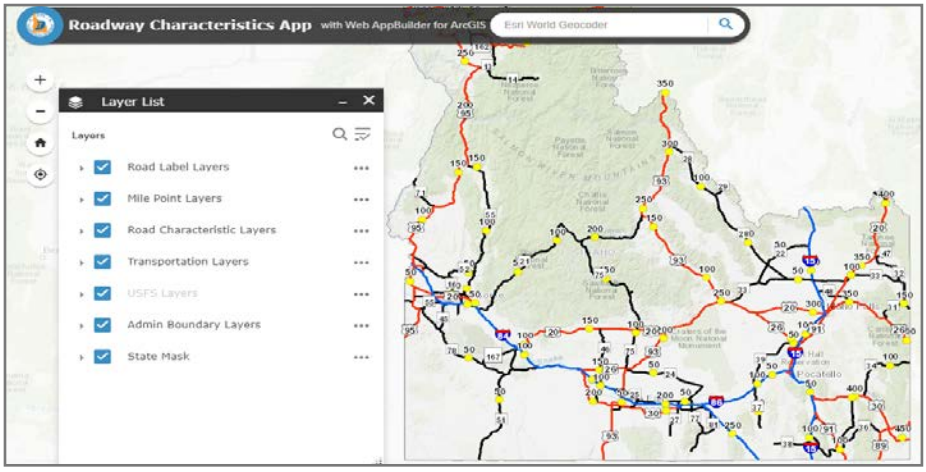
For more information, contact Tamara Redmon at tamara.redmon@dot.gov.

Data Visualization in Safety Transportation Planning

By Chimai Ngo, FHWA, Subasish Das, TTI, and Eric Tang, VHB

If you work in planning processes, you understand the significant role of

data in these processes. Data allow planners to develop goals, objectives, performance measures, and targets, and to prioritize programs and projects. Collecting and analyzing accurate data are the initial steps in the right direction. But how do we communicate the data to identify where and what the needs are? Visualizing through mapping opens a door to a host of possibilities, as it tells stories more effectively than other types of communication. This article presents several examples of transportation agencies using mapping to communicate information for transportation safety planning purposes.



StoryMaps screenshot. (Source: ITD)

Mapping for Public Involvement Process in Idaho

In an effort to communicate with transportation stakeholders and the public, the Idaho Transportation Department (ITD) uses StoryMaps. This tool allows ITD to combine project maps with narrative text, images, and multimedia to communicate with stakeholders and the public about project planning activities.

ITD uses StoryMaps for long-range, corridor, and modal project outreach efforts. These maps can display safety issues along a corridor and allow users to understand issues in relation to other transportation needs in a specific corridor.

ITD created a series of interactive web-based applications using StoryMaps to support data visualization. For example, the Highway Safety Corridor Analysis app incorporated several drop-down panels and hovering and zooming options. The app allowed users to weigh in on proposed safety improvements. Other ITD web-based StoryMap apps focused on many aspects such as crashes, transportation investments, roadway characteristics, intelligent transportation system devices, and construction locations.

A key advantage of these online GIS tools is that users do not need to have any GIS or coding experience.

StoryMaps are available on the IPlan site, a collaborative site used by ITD to collect and distribute information on the system network.

For more information, contact Sonna Lynn Fernandez at Sonnalynn.fernandez@itd.idaho.gov or (208) 334–8209.

Quick and Easy Crash Data Visualization in New Jersey

The New Jersey Department of Transportation's (NJDOT) data-driven software tool, Safety Voyager, provides a quick and easy visual perspective of crash data in a map-based interface. Safety Voyager can quickly show a comparative 2D or 3D view of crashes in a defined area, municipality, or county.

Safety Voyager updates crash data biweekly and ensures that users have access to the most current data available. The tool's interactive visualization platform provides end users a reactive impression to help them cut through the clutter of complex data dynamics. This tool has the following functions:

- Crash Cluster selection tool: this tool isolates the selected crashes in the Detailed Crash Information window and highlights them on the map.
- Crash reports: users can download crash reports in PDF format from the crash map application. The tool redacts personal identifying information to protect an individual's privacy.

NJDOT regularly updates and enhances Safety Voyager with new features based on user feedback. The application was recently updated with a pedestrian and cyclist heat map. Tutorials (e.g., crash map tutorial, emphasis areas tutorial) are

New Jersey data visualization. (Source: NJDOT)

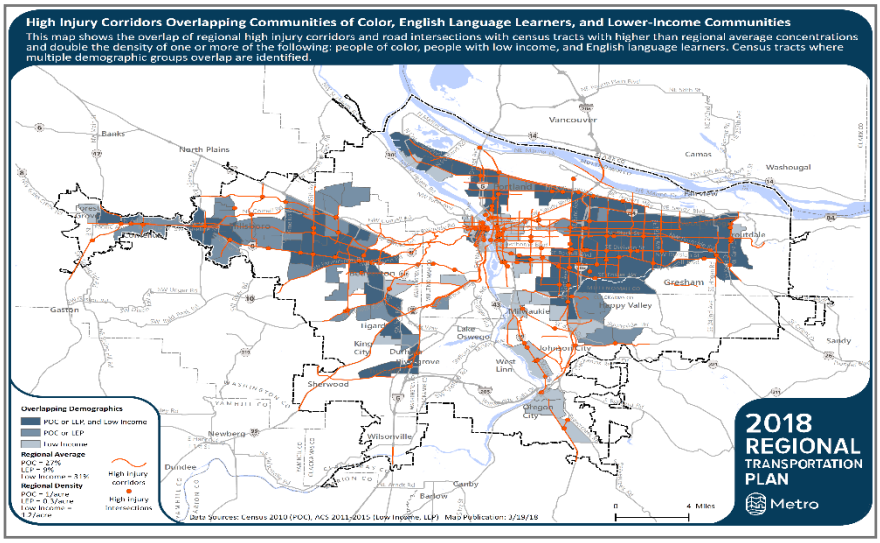
also regularly uploaded to improve usability.

For more information, contact Chris Zajac at chris.zajac@dot.nj.gov or (609) 963–1893.

Metro Map for Equity

Oregon Metro (Metro), the metropolitan planning organization (MPO) for the greater Portland area in Oregon, focused on ways to address disparities and improve racial and social equity in the implementation of Vision Zero projects in the region. Metro identified equity focus areas within the region to provide a framework for evaluating where transportation safety projects could be prioritized to reduce disparities for three demographic groups (which are not mutually exclusive): people of color, people with lower income, and people with limited English proficiency.

Metro found that a majority of high-injury corridors are in communities with higher concentrations of these three demographic groups, and mapped this overlap as part of its regional transportation plan update. Regional high-injury corridors are stretches of roadways in the Portland metropolitan area where the highest concentrations of serious crashes involving a motor vehicle occur on the regional transportation network. Regional high-injury intersections are roadway intersections with the highest concentration of fatal and serious crashes. The regional high-injury corridors and intersections are identified to help prioritize near-term safety investments. Metro will update these corridors and intersections approximately every 5 years. In the interim, other safety investments may be identified that warrant priority based on other data and analysis.



Metro Map for Equity. (Source: Metro)

For more information, contact Lake Strongheart McTighe at Lake.McTighe@oregonmetro.gov or (503) 797–1660.

Model Inventory of Roadway Elements Fundamental Data Elements...the Clock Is Ticking

By Robert Pollack, FHWA Office of Safety

The clock is ticking for States to meet the Fixing America's Surface Transportation (FAST) Act requirement to have access to the Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements (FDE) for all public roads. On March 5, 2020, FHWA Office of Safety conducted a public webinar to convey information about MIRE FDEs, States' progress in acquiring