Kentucky's Approach to Transportation Safety Planning

TSP Workshop Project Overview

The Federal Highway Administration (FHWA) Offices of Safety and Planning, in coordination with FHWA Division Offices and several Departments of Transportation (DOT), conducted a series of workshops to assist state DOTs, regional planning organizations, and local representatives in integrating safety into the transportation planning process. The purpose of these events was to discuss the basic elements of transportation planning and strategies to integrate safety into this process; learn about national and state-specific tools and resources; share practices and identify challenges; and identify key takeaways (strategies) that organizations could use to make improvements and help achieve a zero deaths goal. The effort involved a pre-workshop webinar to identify each state's safety planning priorities, workshops, follow-up technical assistance webinars, and finally a peer exchange with all the participating states to share successful practices among the states and broaden collaboration.

In Kentucky, the Kentucky Transportation Cabinet (KYTC) was joined by over 45 safety stakeholders from the Metropolitan Planning Organizations (MPOs), Regional Planning Agencies (RPAs), Area Development Districts (ADDs), the Local Technical Assistance Program (LTAP), and others at a virtual workshop in May 2021. The group discussed ways to improve safety integration into Kentucky's transportation planning process. The effort, sponsored by FHWA through its Kentucky Division Office, involved a pre-workshop webinar, a workshop, and a follow-up technical assistance webinar. Due to the pandemic, all events were held virtually.

Kentucky's Transportation Safety Planning Highlights

Kentucky's workshop was another step toward fostering a safety-focused community of practice among KYTC, MPOs, ADDs, RPAs, and FHWA. This community will continue working together to increase Kentucky's safety expertise at the state, regional, and local levels. Following is a brief synopsis of the presentations and information that was shared during the workshop:

- Linking Kentucky, the Kentucky Statewide Corridor Plan, examines key arterials in the state to identify ways to improve regional and statewide connectivity and identifies corridors with the greatest potential to improve safety.

- The KYTC Division of Planning maintains a Planning Highway Information (HIS) database that includes information on planning and roadway attributes and publicly available crash data can be found on the Kentucky State Police web site http://crashinformationky.org/. The KYTC also has a dashboard for their Strategic Highway Safety Plan (SHSP).

- A Crash Analysis Data Tool (CDAT) integrates crash and roadway data. Users can query a segment or intersection to obtain a safety score and compare it to other segments or intersections, employing techniques from the Highway Safety Manual.

- The Louisville Vision Zero Plan uses a Safe System approach which recognizes that people make mistakes and designs and builds roadways that take that into consideration. It is a proactive systemic approach that involves different factors and the implementation of proven countermeasures.

- Local Road Safety Plans (LRSP) are being developed in three counties. The Local Technical Assistance program (LTAP) is performing crash and hazard analysis and looking at systemic approaches to address high frequency crash types and hazards, which allows them to provide resources, guidance, and assistance to the counties developing the LRSPs and helps them apply for Highway Safety Improvement Program

(HSIP) funds. It is expected an additional six to ten counties may develop a LRSP; and in spring 2022, the LTAP will host a peer exchange for counties that have participated previously to share their successes.

- Safety is considered in the project prioritization process through Strategic Highway Investment Formula for Tomorrow (SHIFT), a data driven process the KYTC uses to make decisions regarding Kentucky's six-year highway plan. For safety, SHIFT evaluates a project's previous five-year crash information along with the roadway characteristics in the project area.

Kentucky's Notable Practices in Transportation Safety Planning

Kentucky Safety Performance Functions (SPF) Development Tool

Kentucky's SPF Development Tool (SPF-R) is based on models that make predictions for safety, which can help with planning decisions, design, and maintenance. The model uses linear regression and a negative binomial that is compared with crash data and exposure or traffic volume. In the past the tool was not used much because it required use of computer code. The KYTC worked with FHWA and other organizations to develop a web-based version that does the same thing. The web tool needs a lot less training and is more intuitive.

Data is loaded on the server and then filtered by the dependent and independent variables for each crash. Adjustment factors are also available and up to 10 variables can be added. Everything including the selection of crash modification factors (CMFs) is now incorporated into the web-based tool. With the online tool, it is possible to click on the CMF and it will take the person to the CMF Clearinghouse for more information.

LTAP Use of GIS Applications

The Kentucky LTAP provided information on the GIS applications that have been used through the LRSPs and the Safety Circuit Rider program. There is a great deal of available data including crash data, roadway, and sign inventory data, in addition to information from road safety audits. Rather than having data in different places, the LTAP made it available through online mapping, which allows overlaying of the crash data with safety audit results and comparing audit results with sign inventory data to find missing signs. It also allows for visualizing the data and getting it on a map, which makes it easier to disseminate information. The data is integrated with apps for smartphones and smart devices; this arrangement allows someone in the field to go directly to the location with an issue. The LTAP is pushing the data out and putting crash data summaries in the hands of local agencies so they can learn their safety issues. For road safety audits, it is possible to tag a picture or video on a smartphone camera and map it through an app. This allows the LTAP to send the video or photos and alert the county government to the safety issue. This was particularly advantageous during COVID-19. It means locals get the answers to their questions a lot faster.

Next Steps for Transportation Safety Planning in Kentucky

Participants in the Kentucky workshop identified several opportunities to pursue in the future. Following is a list of high-level next steps the state is planning on conducting as they work toward greater safety integration into the transportation planning process.

- **Data** - Obtain additional data (i.e., contributing factor overlaps, land use, hot spots by functional class) to tell more of the safety story and improve access to data and coordination between agencies. Also obtain insights in various ways when no data is available, such as through road safety audits, geotagging photos, and meeting with locals.
- **Partnerships** - Expand partnerships with locals, safety stakeholders, and others to re-focus safety priorities.
- **Equity** - Consider equity in transportation.
- **Approaches** - Consider different approaches such as systemic safety in addition to hotspot analysis.
- **Communications** - Communicate safety message that zero is possible.

U.S. Department of Transportation
Federal Highway Administration