

# TAP IT!

Technical Assistance Program, Information Transfer  
KY Local Technical Assistance Program

## Safety Analysis Process

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The Safety Analysis Process is a seven-step process used to evaluate safety and safety improvements on our roads. This process was designed as part of the FHWA *Improving Safety on Rural Local and Tribal Roads* toolkit<sup>1</sup> and provides plain language to improve roadway safety, including specific tools and examples.

#### EVALUATE NETWORK

##### ① Compile Data

Examine crash, traffic volume, roadway, and anecdotal data. Use sources such as statewide crash databases, NHTSA FARS, MCMIS, and STSI to gather data.

##### ② Conduct Network Screening

Use this methodological examination of potential sites to determine which site to analyze. This ranks entities by priority.

Conventional screening identifies locations with safety issues based off crash history, including frequency, rate, and equivalent property damage. Systemic screening evaluates the entire system based on aggregate crash history to identify high-risk roadways.

Use the FHWA DDSA Crash Tree Generator to begin your crash systemic screening process.<sup>2</sup>

Conventional screening is reactive and uses site-specific crashes to analyze data. Conversely, systemic screening is proactive and uses surrogates to assess risk. Systemic screening presents a broader picture and is preferred, though both have value.

##### ③ Select Sites for Investigation

Consider the data collected in the screening process to evaluate highly-ranked sites. Site selection should be based on available grant funding, upcoming maintenance in the vicinity, and consistency with other plans.



### SELECT IMPROVEMENTS

#### ④ Diagnose Site Conditions and Identify Countermeasures

##### Diagnose Site Conditions:

- Look at individual crash reports to determine contributing factors
- Prepare a crash diagram to understand crash circumstances
- Complete a site visit to observe traffic
- Prepare a condition diagram to consider sight distance issues, traffic control devices, and roadside features
- Complete a Road Safety Assessment to locate potential safety issues

##### Identify Countermeasures:

- Understand underlying factors that contribute to the safety issue and determine how to address the concerns
- Assess Crash Modification Factor
- Determine most applicable countermeasures, from Safety Edge to Longitudinal Rumble Strips, as well as maintenance countermeasures like patching potholes, cleaning drainage structures, and blading ditches

#### ⑤ Prioritize Countermeasures for Implementation

If you are considering more than one countermeasure, prioritize the countermeasures to determine the best path forward. Evaluate economic benefit (cost ratio), available ROW, environmental considerations, and public demand. Use a systemic approach to selecting appropriate countermeasures to implement.

### IMPLEMENT AND MONITOR

#### ⑥ Implement Countermeasures

Implement or install the chosen countermeasures based on available funding.

#### ⑦ Evaluate Effectiveness

After you implement the chosen countermeasures, you can evaluate the effectiveness with various methods.

Economic analysis

Crash study

Survey

1. Improving Safety on Rural Local and Tribal Roads Safety Toolkit, Federal Highway Administration. 2014. [https://safety.fhwa.dot.gov/local\\_rural/training/fhwasa14072/isrltrst.pdf](https://safety.fhwa.dot.gov/local_rural/training/fhwasa14072/isrltrst.pdf)
2. Data-Driven Safety Analysis (DDSA) Crash Tree Diagram Tool, Federal Highway Administration. 2016. <https://www.youtube.com/watch?v=Lx7sJkfkFVA>

