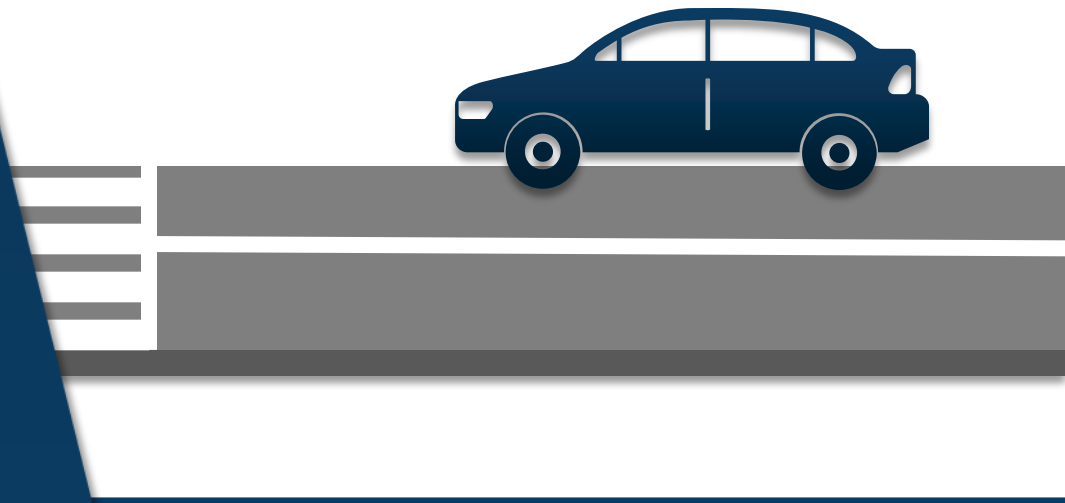
Safe Streets and Roads for All

Technical Assistance Center

The Safe System Approach and Your Action Plan Workshop:

Safety Analysis



www.ss4aclearinghouse.org

What is:

Safety Analysis

Analysis of existing conditions and historical trends that provides a baseline level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region.

Thought Starter Framework

1

Collect

Collect qualitative and quantitative data sources to identify trends and high-risk locations.

Collect data that can inform your understanding of road safety.

- Data can be readily available without much additional (costly) collection.
- Focus collection on data that will support your needs.
- Use quantitative data and qualitative data.

1

Collect

Collect qualitative and quantitative data sources to identify trends and high-risk locations.

Crash Data

Police-reported crash data provide insight into the location of crashes, who is involved (for example, pedestrians, cyclists, motorists), time of day, and other circumstances.

Roadway Attributes

These include roadway geometry (curves, lane widths), pavement conditions, and the presence of safety features such as guardrails or lighting.

Exposure

Crashes are more likely to occur where users and modes interact. Be sure to consider other indicators of travel demand, such as the presence of bicycle and pedestrian traffic generators, in addition to traffic volumes.

Intersection Data

Characteristics like traffic control types (signalized, unsignalized), intersection geometry, and proximity to schools or other high-activity zones are important.

Qualitative Data

Road safety audits (RSAs), local and historical knowledge, and interviews with community members can provide context for how to interpret quantitative data. This can build trust and momentum for successful implementation.

Community Characteristics

Other sources of data, such as census or health data, can tell us a lot about community characteristics, while qualitative data from public engagement efforts can highlight areas of concern that might not show up in the crash records.

Address challenges in collecting data.

1

Collect

Collect qualitative and quantitative data sources to identify trends and high-risk locations.

Potential Challenges

- Inconsistent or incomplete data.
- Lack of granular or detailed data.
- Outdated data sources.
- Fragmented data across organizations.
- Difficulty accessing specialized data.
- Limited resources for data collection.

Potential Solutions

- Start with what you have.
- Start with low-cost solutions.
- Engage stakeholders that can provide data to fill gaps.
- Crowdsource qualitative feedback from the public.
- Conduct observation studies.
- Explore open/free data options.

Sources to address those challenges.

1

Collect

Collect qualitative and quantitative data sources to identify trends and high-risk locations.

Creative Sources

- **Your State's DOT, local public works department, or local police department.**
  - Crashes
  - Citations
  - Roadway characteristics
  - Traffic volumes
  - Intersection traffic control
- **Your community members and their observations.**
  - First responders
  - EMS
  - Teachers
  - Postal workers
  - Bus drivers
- **For community health and characteristics.**
  - Census Bureau
  - USGS

2

Identify

Identify crash types, roadway users, crash risk factors, and area/roadway types to focus on specific safety issues.

Identify focus crash types.

- When looking a focus crash types, it's important to consider:

01 More than crash frequency (e.g., High Injury Network).

02 Crash types that often result in a fatality or serious injury (e.g., risk).

03 Crash types listed in your State's Strategic Highway Safety Plan (SHSP).

04 Focus crash types common in your region that align with broader goals.

2

Identify

Identify crash types, roadway users, crash risk factors, and area/roadway types to focus on specific safety issues.

Identify focus facilities and groups that are most at risk.

For example:

01 ROADWAY TYPES

- Two lane rural roads
- Mutli-lane suburban roads

02 LOCATIONS WITH KNOWN RISK FACTORS

- Intersections with poor visibility
- Roads with substandard pedestrian infrastructure

03 HIGH-RISK GROUPS AND COMMUNITIES

- Elderly
- Youth
- People with disabilities

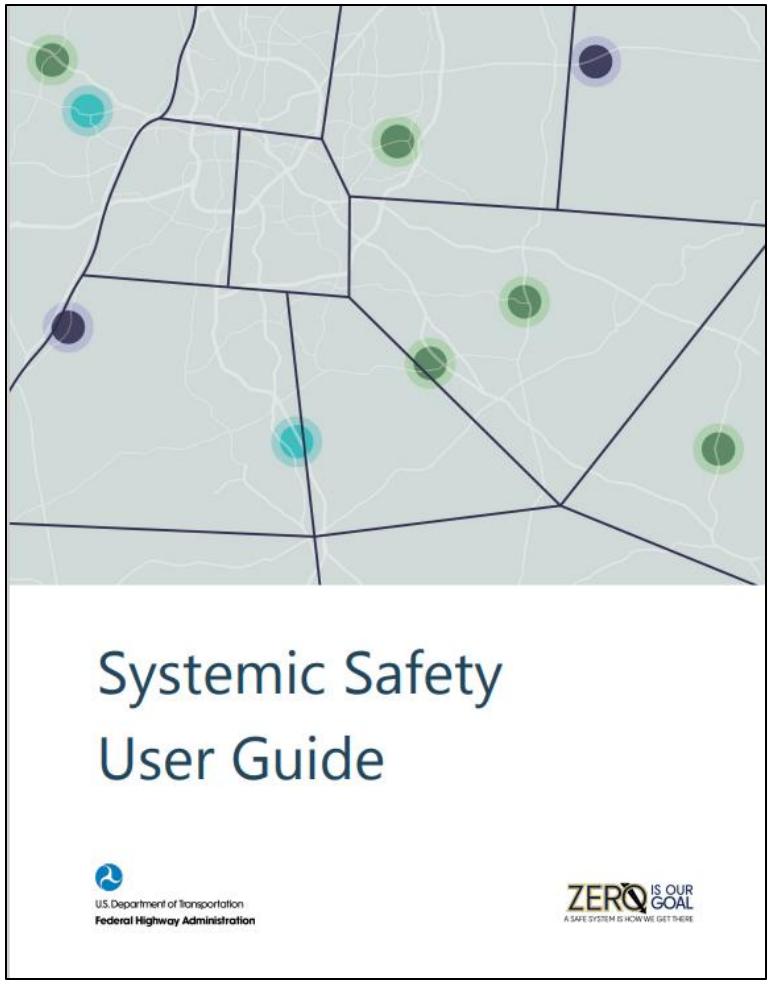
2

Identify

Identify crash types, roadway users, crash risk factors, and area/roadway types to focus on specific safety issues.

Assess risk factors systemically.

- What are the elements that contribute to these crash types at these locations?
- FHWA's Systemic Safety User Guide is an excellent resource to help identify risk factors that may not be immediately obvious but could contribute significantly to future crashes.



3 Approaches to Safety

Site-Specific
Systematic
Systemic

U.S. Department of Transportation
Federal Highway Administration

Watch the 3 Approaches to Address Severe Roadway Crashes video:
https://www.youtube.com/watch?v=1Gtz0qjPx0M

3

Screen

Screen and prioritize the locations that are most in need of safety improvements.

Use data to make decisions for Strategy and Project Selection.

Consider factors such as:

- How reliable are my crash locations?
- Do I want to treat multiple locations or a single location?
- What is my potential benefit against my costs? Can I bundle projects to spread potential benefits and management costs more widely?
- Are there countermeasures that apply to our community's needs (based on our data review)?

3

Screen

Screen and prioritize the locations that are most in need of safety improvements.

Use data to tell your safety story and make the analysis accessible.

- Use visuals—maps, graphs, charts—to illustrate key findings.

Example Data Visualizations from Philadelphia, PA's Vision Zero Action Plan 2025