



The Role of Data Analysis and Research in Rulemaking

Larry W. Minor
Associate Administrator for Policy
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Analysis/Research: Framing the Safety Issues

- What are the safety issues we should address?
- How often do these issues occur?
- What are the factors that contribute to the crashes or incidents?
- What are the most practical options to address the issues and their respective costs?
- What is the efficacy for each of the options?

Data sources for identifying safety issues:

- Fatality Analysis Reporting System (FARS)
- General Estimates System (GES)
- Motor Carrier Management Information System (MCMIS)
- Trucks Involved in Fatal Accidents (TIFA)
- State crash databases

What are the factors associated with the crashes or incidents?

- Driver
 - Training
 - Experience
 - Actions/Failure to take action
- Time of day
- Weather conditions
- Roadway conditions
- Vehicle equipment

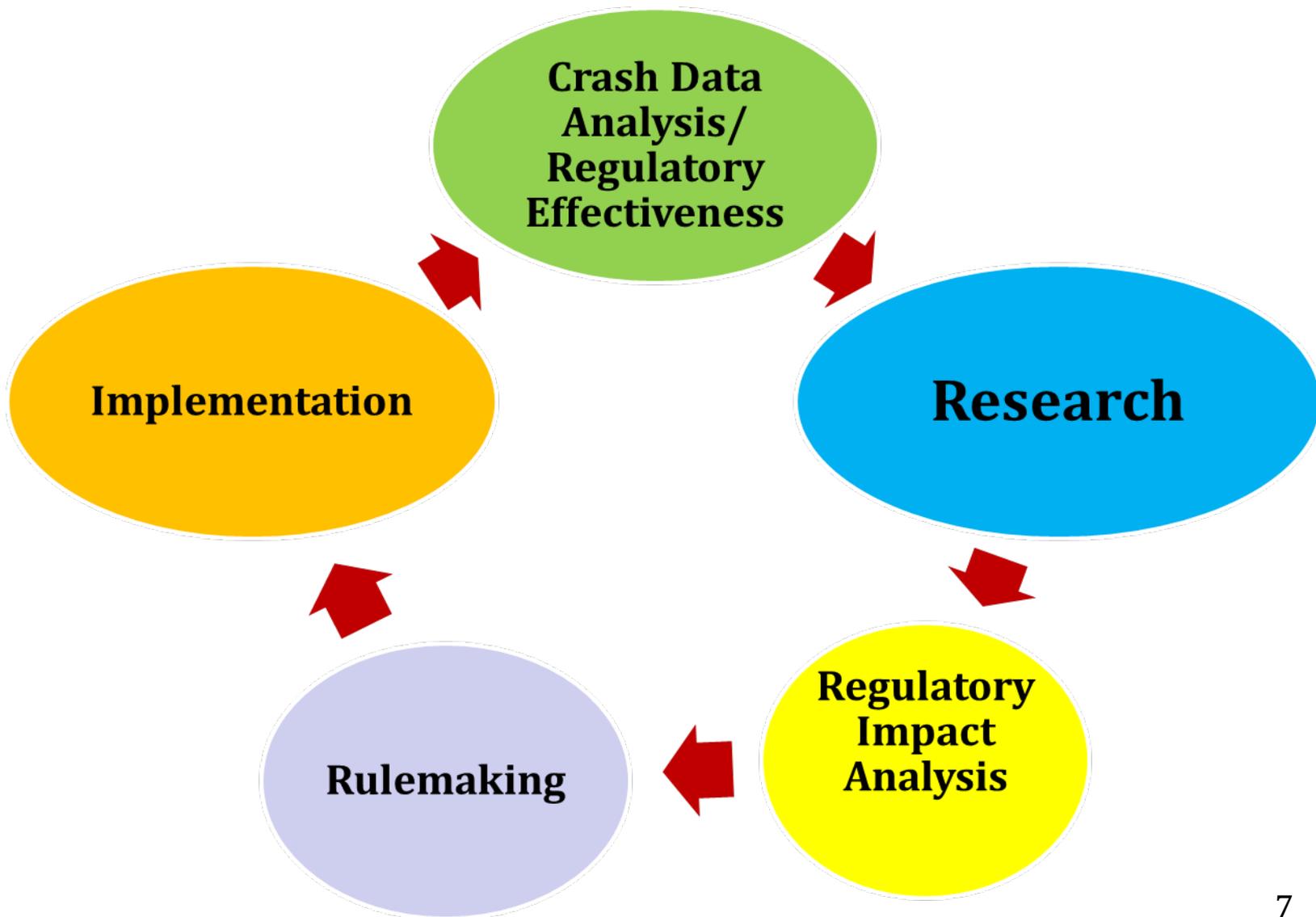
What are the options to address the crashes or incidents?

- Driver
 - New qualifications (e.g., medical)
 - Training
 - Prohibited actions (e.g., texting, speeding)
 - Technology (compensate for unsafe practices)
- Vehicle
 - New equipment/technology

How effective would the options covered by the research be at preventing the crashes or incidents?

- Number of crashes attributable to the factors on an annual basis;
- Effectiveness of the options covered by the research;
- Estimates of the number of crashes that could be avoided if the option is applied to the target population of carriers/drivers/vehicles.

Analysis-Research-Rulemaking Cycle



Real World Example: Trailer Conspicuity

- **Data analysis** – large number of cars striking the sides and rear of trailers, annually.
- **Research** – collisions were happening at night and under other conditions of reduced visibility.
- **Research** – Improved conspicuity via retroreflective materials.
- **Regulatory Evaluation** – cost beneficial.
- **Rulemaking** – Require retroreflective tape on the sides and rear of trailers; rear of truck tractors.
- **Regulatory Effectiveness** – More effective than originally estimated.

Trailer Conspicuity



Summary

