



U.S. Department of Transportation
Federal Highway Administration



Safe Roads for a Safer Future
Investment in roadway safety saves lives

Intersection Safety



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Intersection Safety



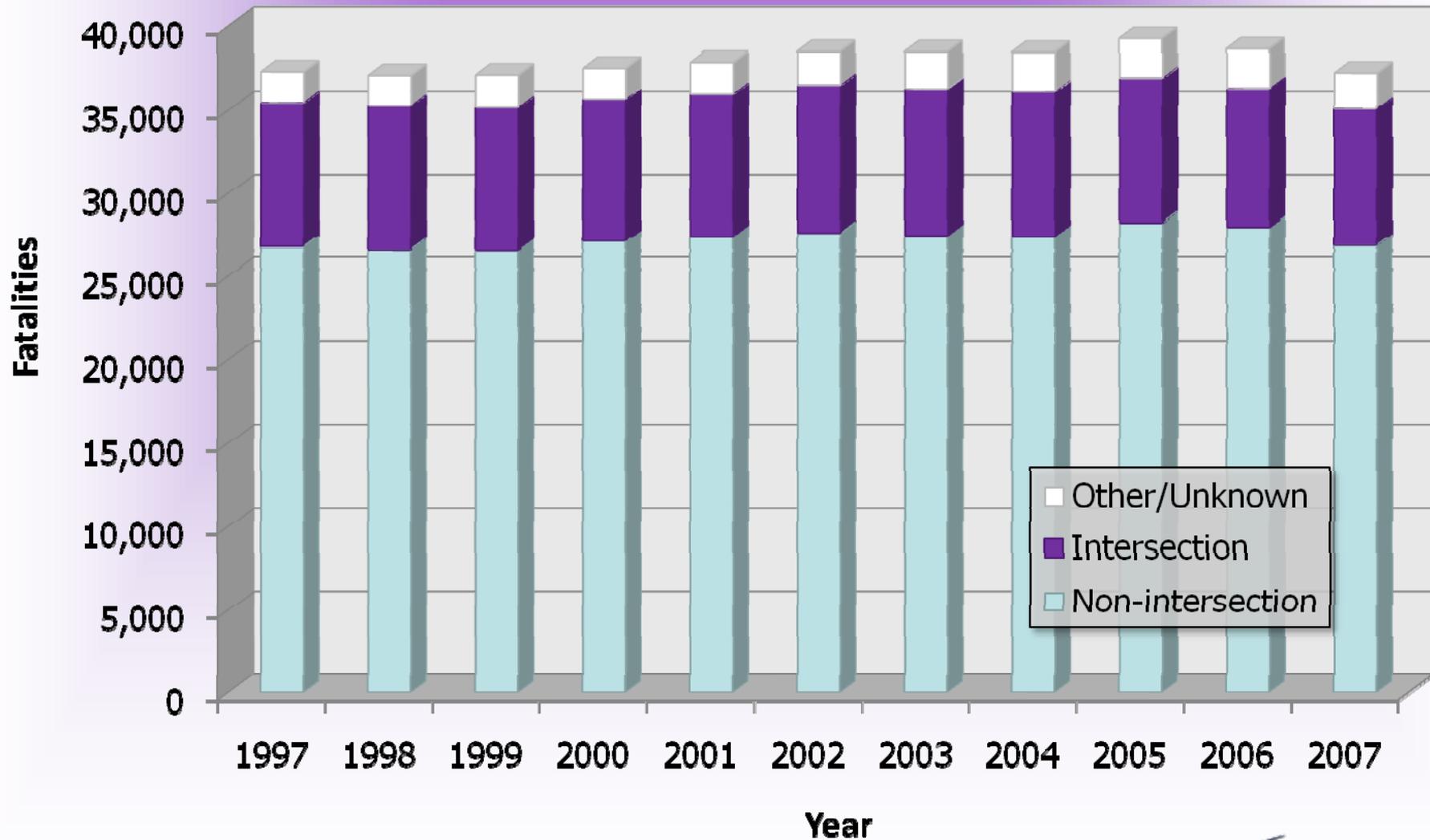
Safe Roads for a Safer Future
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Intersections

- Among the most hazardous components of the highway system for all users (planned points of conflict)
- Complex speed-distance judgments under time constraints
- Interstates (full access control) have fatality rates less than half of other highway types

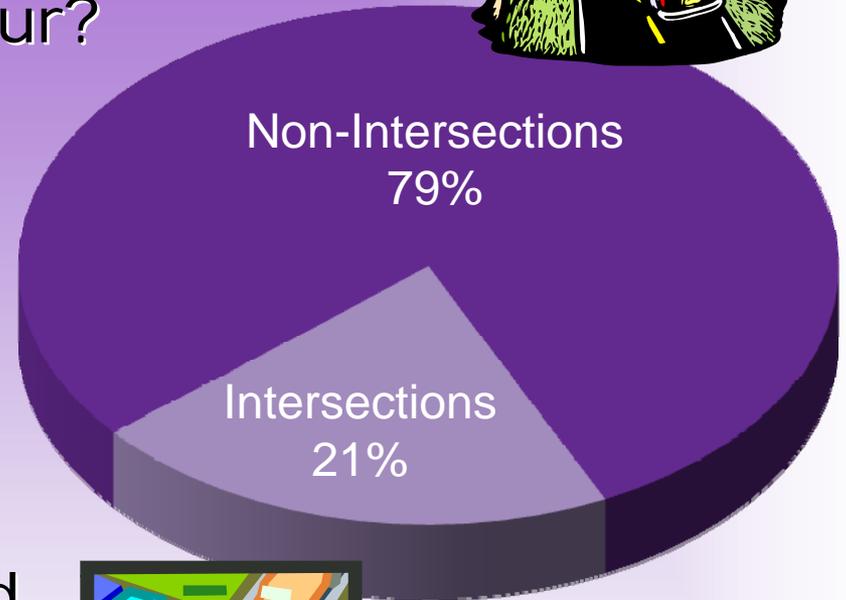


National Statistics



National Statistics

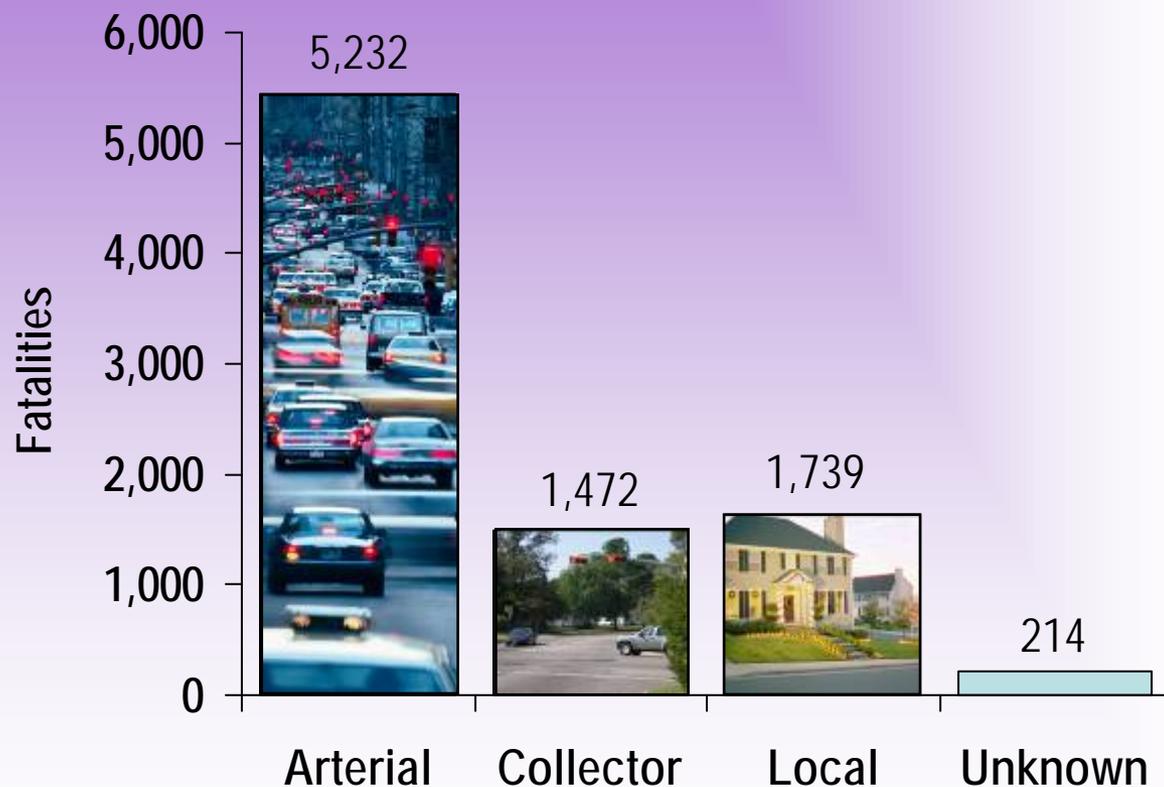
There were 41,059 highway fatalities in 2007. Where did they occur?



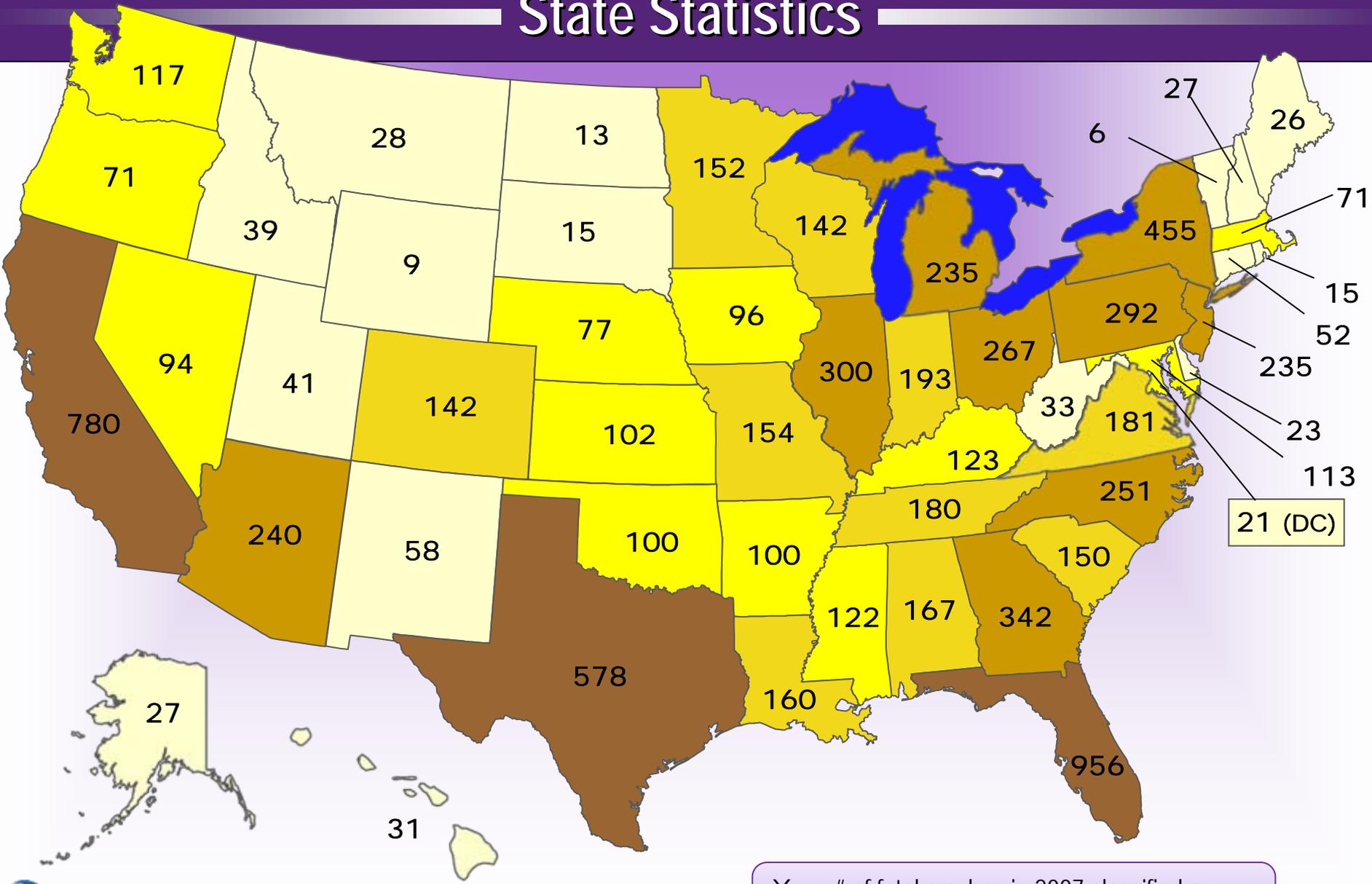
About half of all crashes and half of all injury crashes occur at intersections.

Intersection Fatalities

There were 8,657 intersection fatalities in 2007.
Where did they occur?



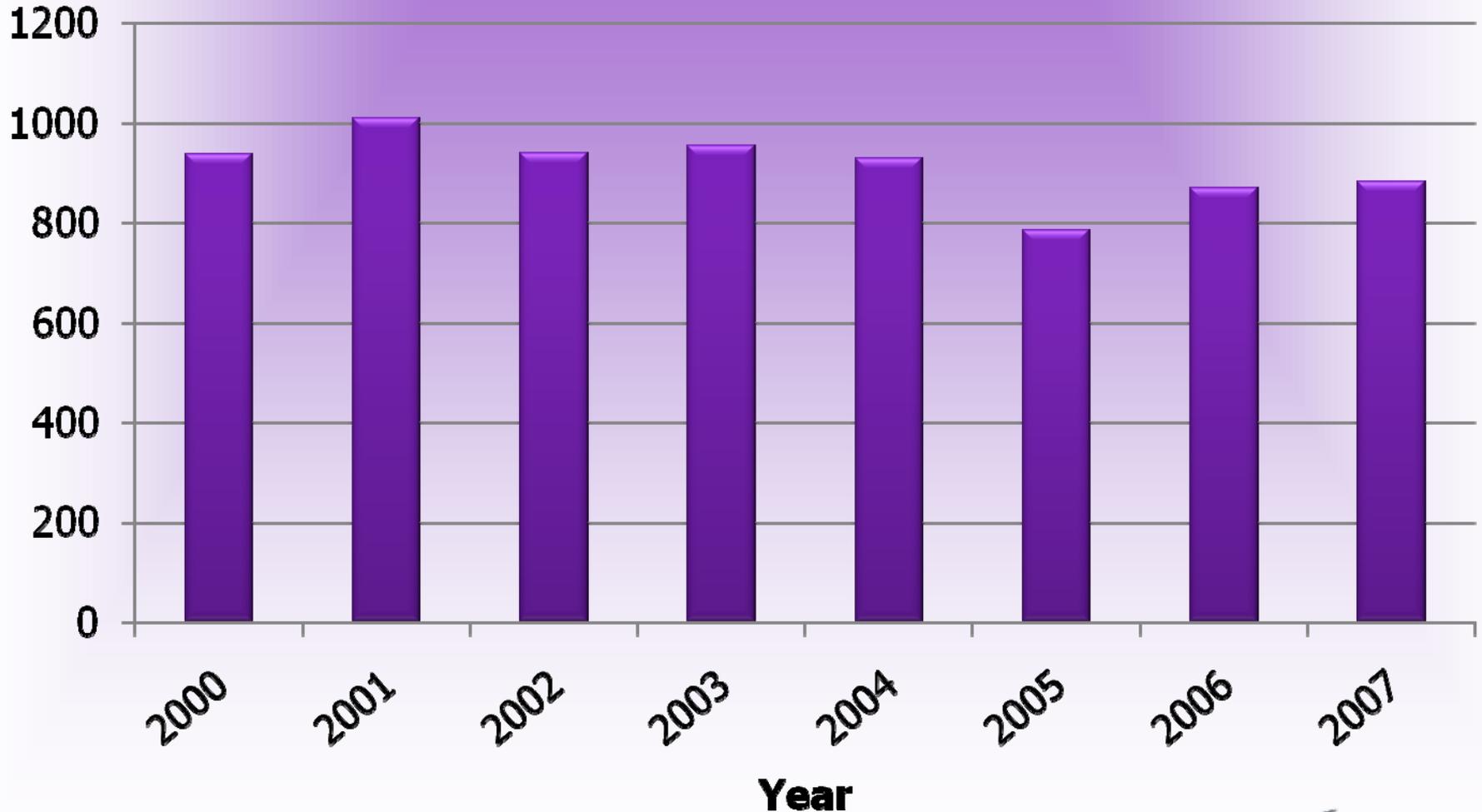
State Statistics



X = # of fatal crashes in 2007 classified as intersection or intersection-related

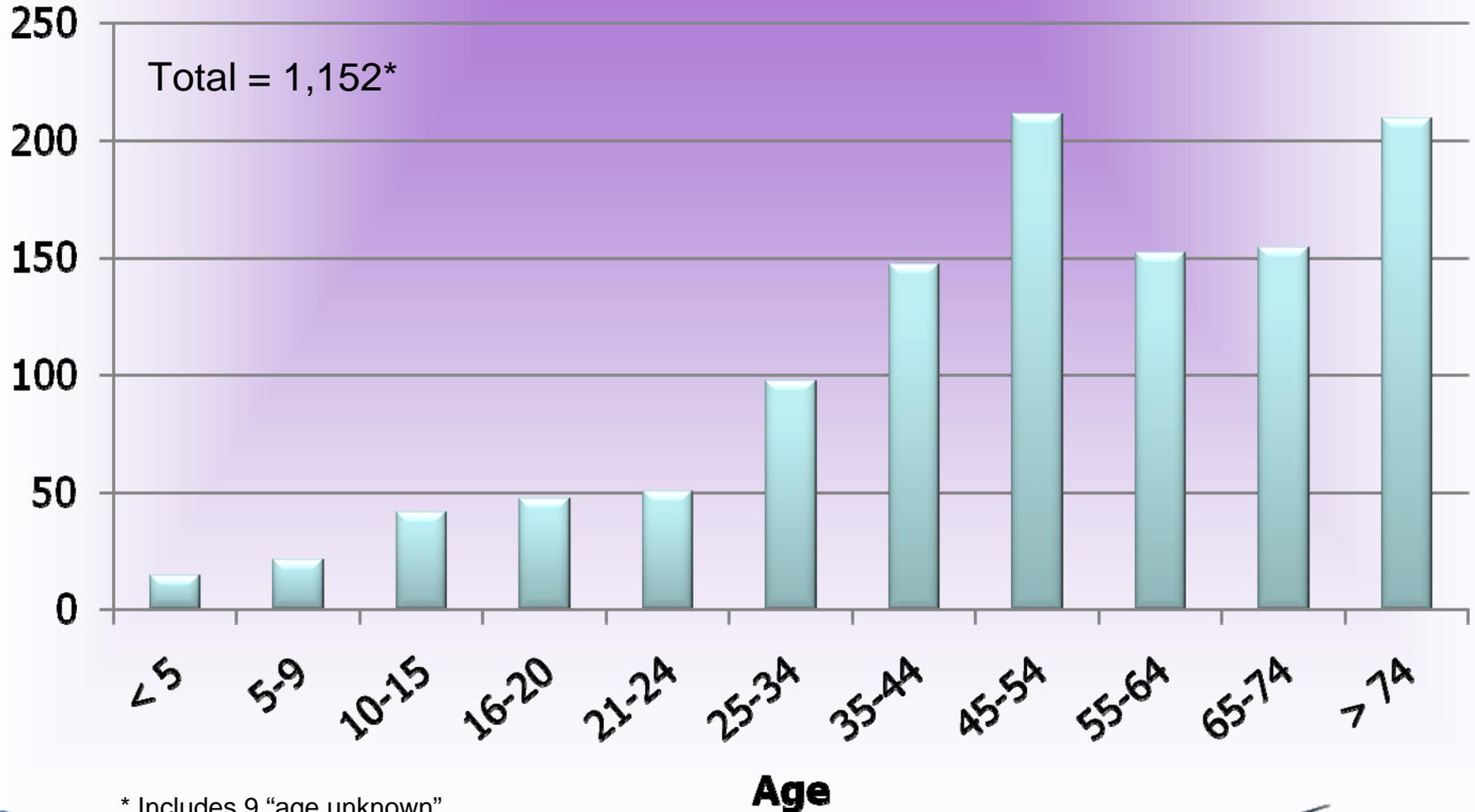
Red Light Running

Fatalities Attributed to Red Light Running



Pedestrians

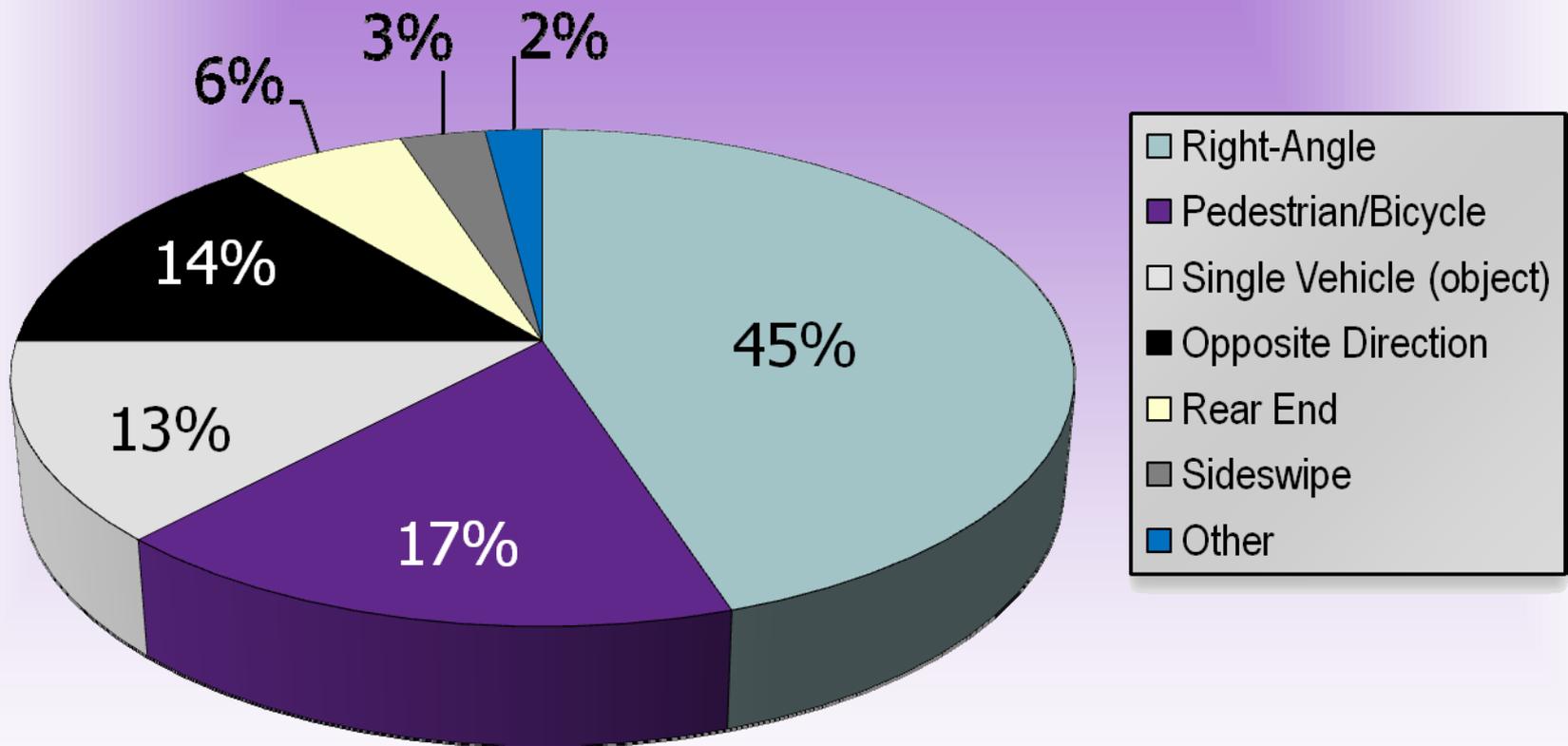
2007 Pedestrian Fatalities at Intersections



* Includes 9 "age unknown"



Crash Type Distribution



- Right-Angle
- Pedestrian/Bicycle
- Single Vehicle (object)
- Opposite Direction
- Rear End
- Sideswipe
- Other

Crash Reduction Factors

- <http://safety.fhwa.dot.gov/tools/crf/>

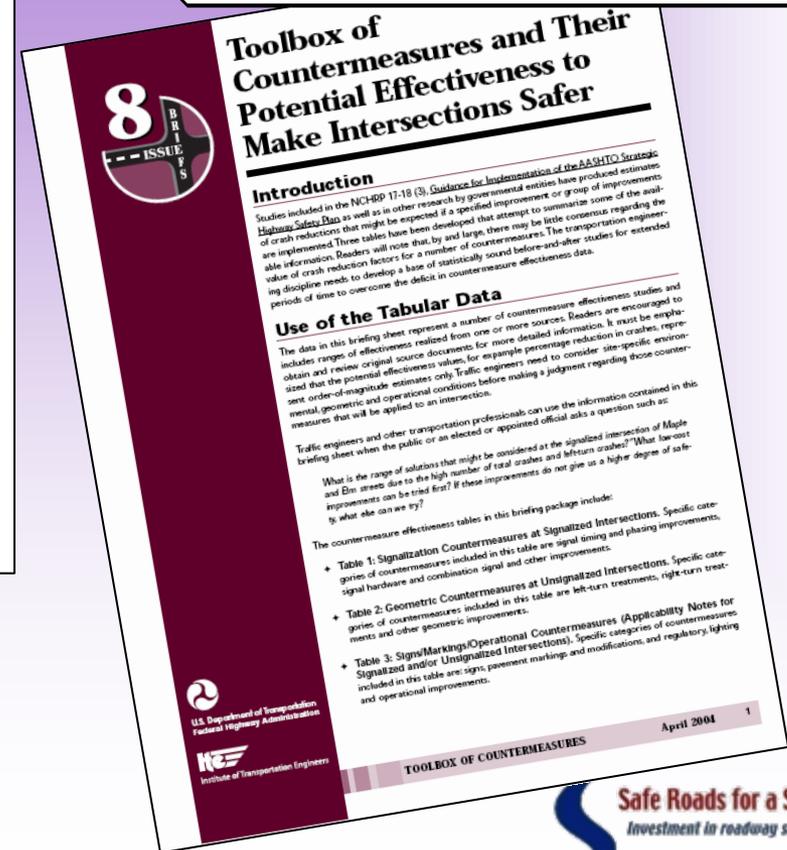
Desktop Reference for Crash Reduction Factors



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FHWA Report Center:
report.center@dot.gov



Techniques for Improving Safety

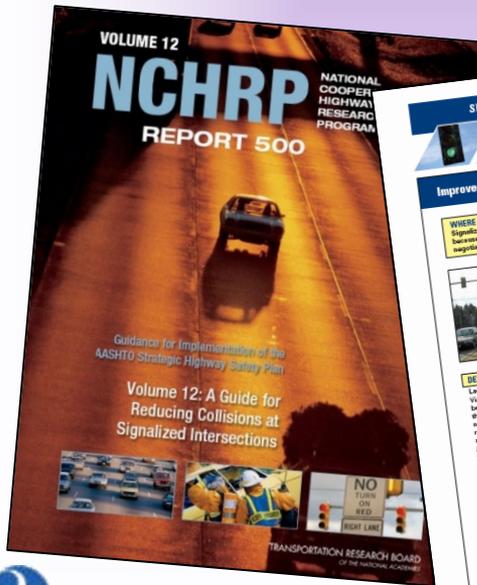
- Increase **visibility** of intersections and traffic control devices
- Increase **awareness** of intersections
- Improve the **design** of intersections to reduce conflicts
- Improve driver **comprehension** to reduce confusion
- Improve the **operations** of intersections
- Improve **sight distance** at intersections
- Improve driver **compliance** with traffic control devices

Increasing Visibility

One signal head per lane



12" Lenses

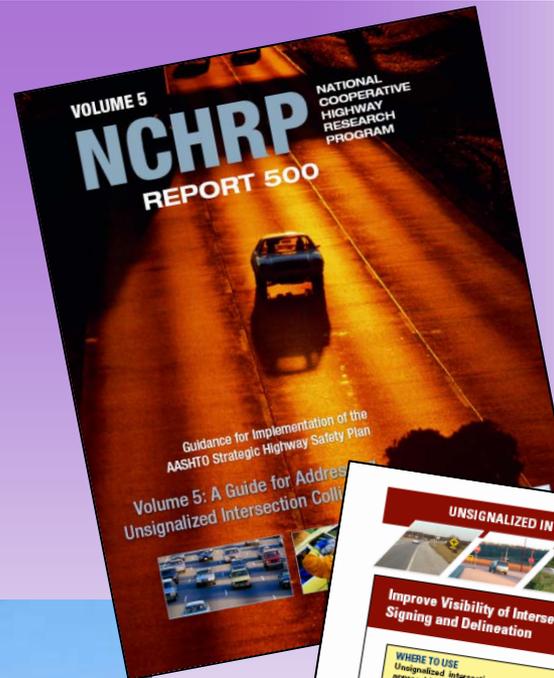


Backplates

Increasing Visibility



Oversized Signs

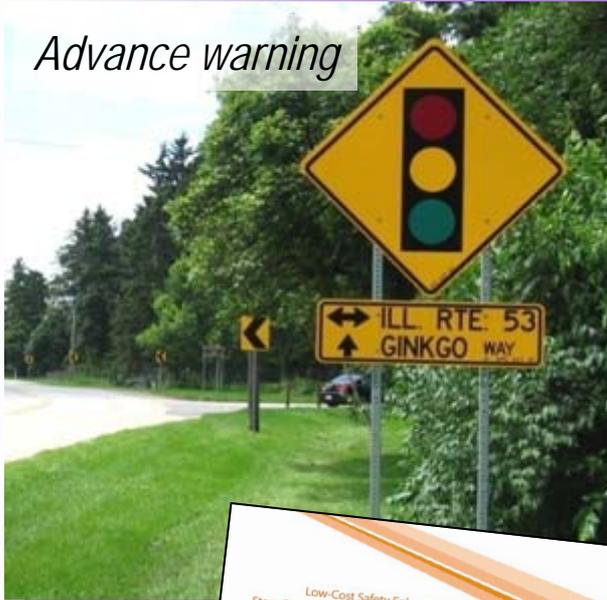


Street lights



Increasing Awareness

Advance warning



Splitter islands

Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections

New!



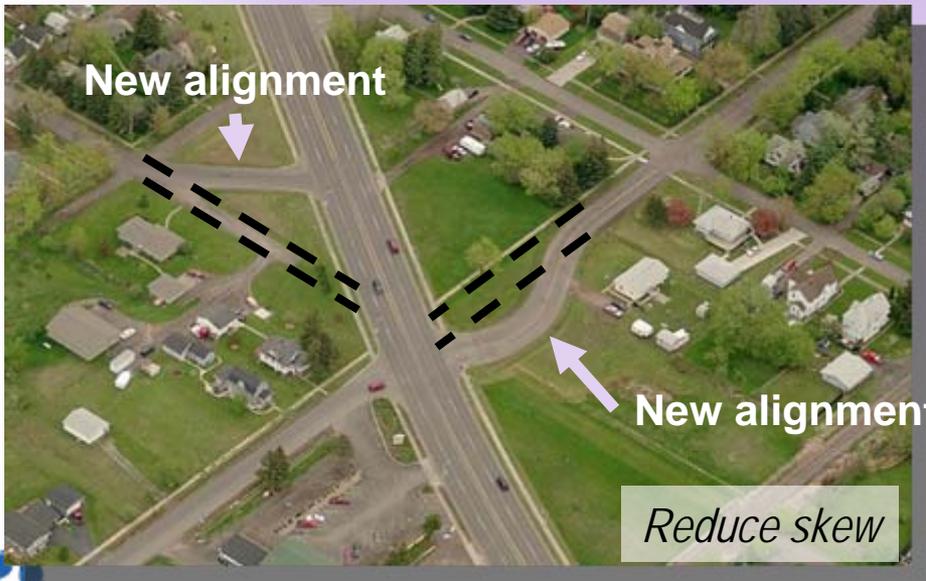
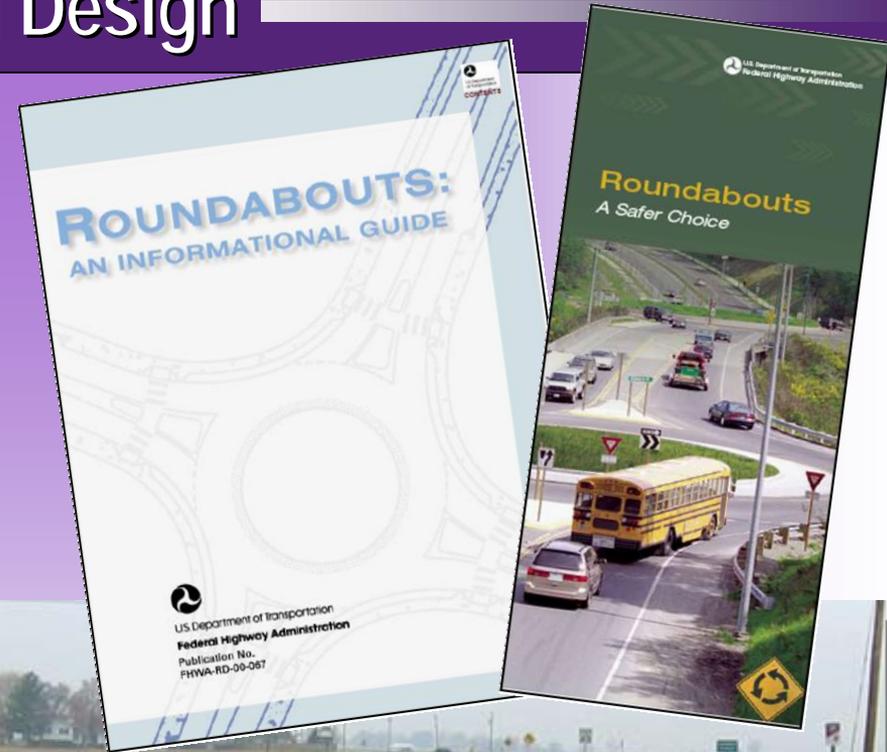
Pavement markings



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Improving Design



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Improving Design



Access management



Close driveways

Improving Comprehension



Overhead signing

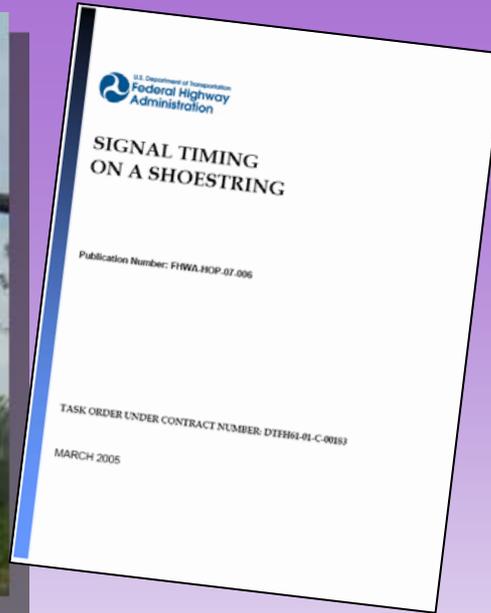


Turn markings

Improving Operations



Phasing



Change intervals



Coordination



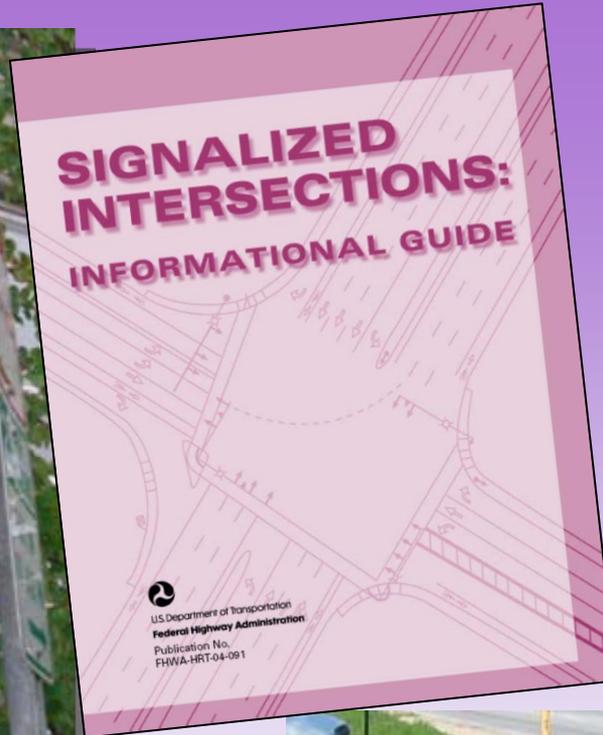
New!

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Improving Operations



Countdown signals



Turn restrictions



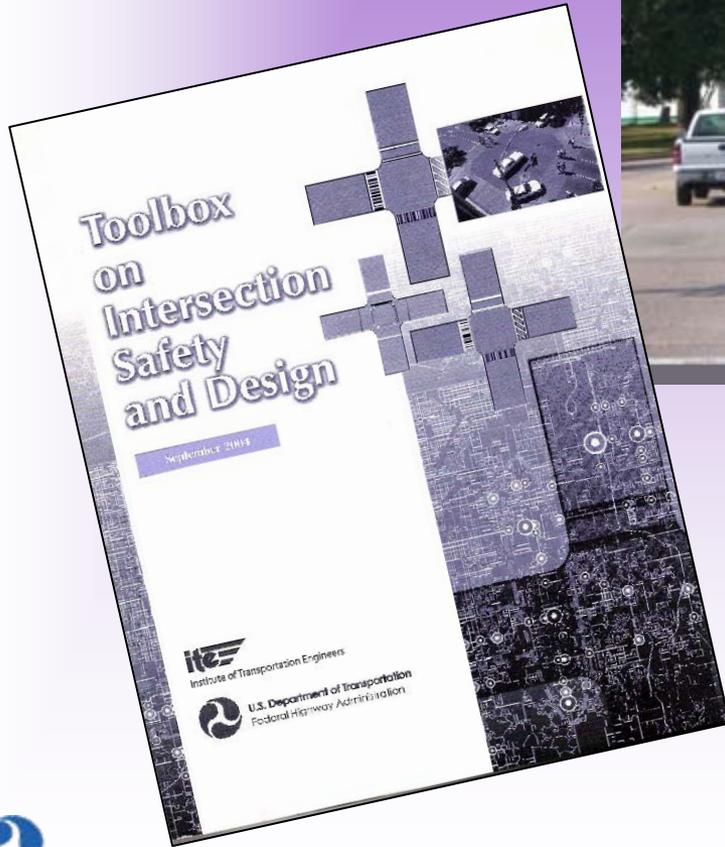
Signal removal

Improving Sight Distance

Clear sight triangles



Offset turn lanes



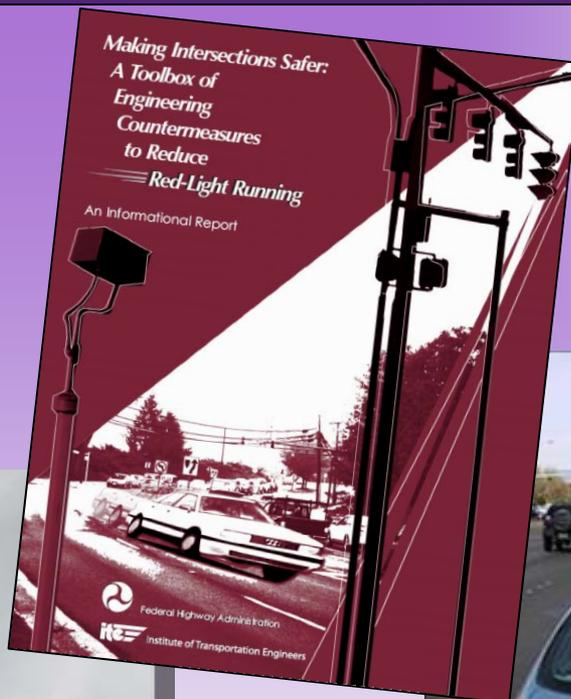
2016 Roadway for a Safer Future
Investment in roadway safety saves lives



Improving Compliance



Enforcement lights



Automated



Traditional

Information and Education

Web sites

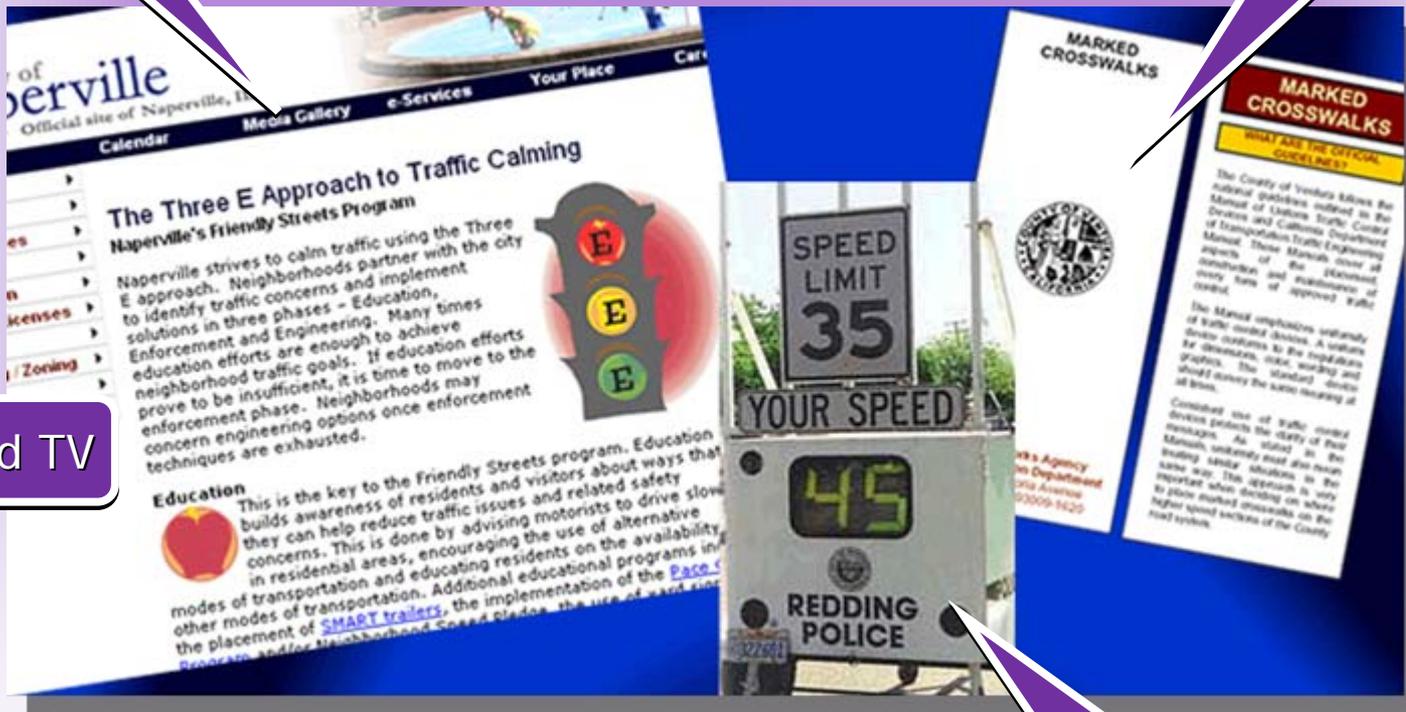
In school programs

Printed material

Radio and TV

Community outreach

Speed trailers



Training Opportunities



<http://nhi.fhwa.dot.gov/>

- Signalized Intersection Guidebook Workshop
- Intersection Safety Workshop
- Designing and Operating Intersections for Safety
- Interactive Highway Safety Design Model
- Roundabout Workshop
- Low-Cost Safety Improvements Workshop
- Low-Cost Safety Improvements (Blended Approach)
- Planning and Designing for Pedestrian Safety
- Application of Crash Reduction Factors (CRF)
- Science of Crash Reduction Factors



For More Information

- FHWA Office of Safety
 - <http://safety.fhwa.dot.gov/>
- NCHRP Report 500 Series
 - <http://safety.transportation.org/>
- Manual on Uniform Traffic Control Devices
 - <http://mutcd.fhwa.dot.gov/>
- Toolbox on Intersection Safety and Design
 - <http://www.ite.org/>