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Road Safety Fundamentals

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Transportation

ROAD SAFETY SEMINAR
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Overview

Solving Traffic Safety Problems

Traffic Control Devices

Roadway Design Criteria

Improving Roadside Safety

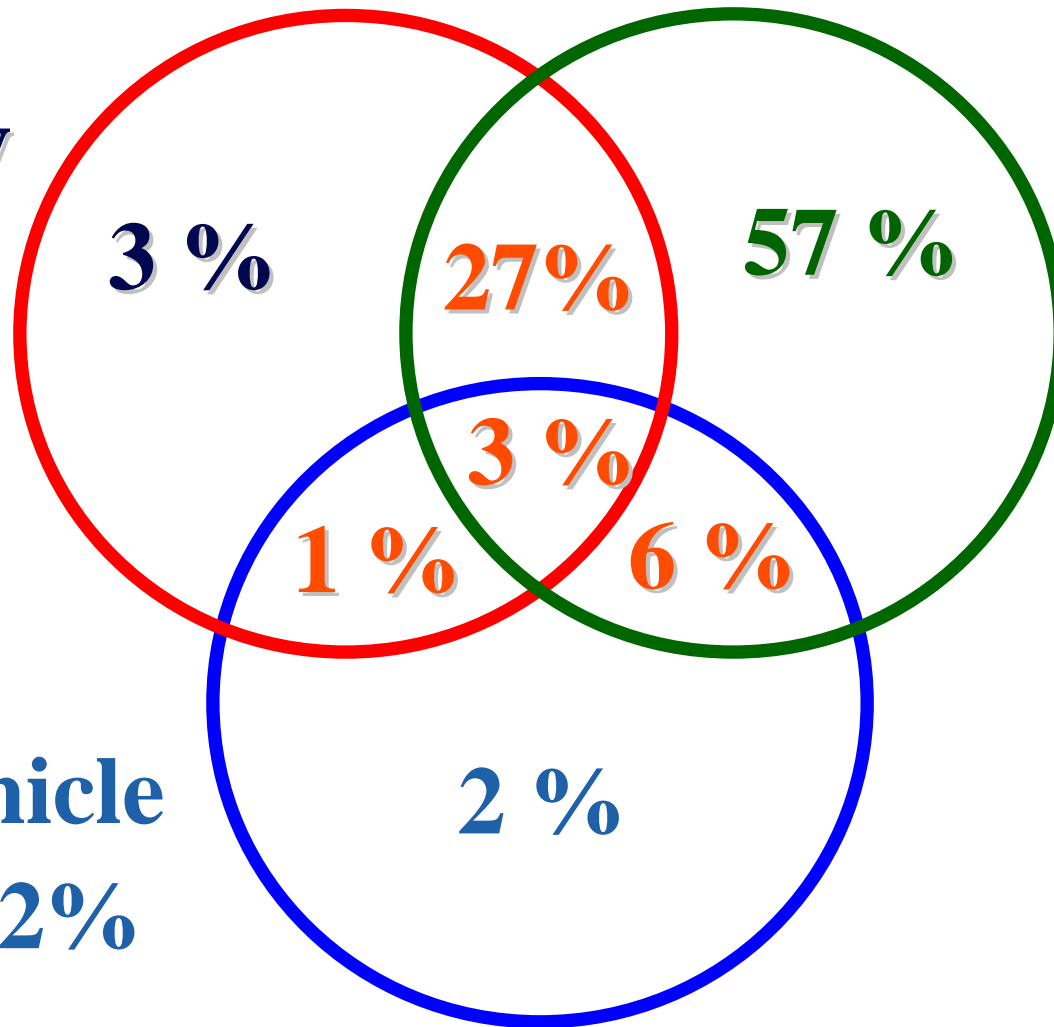
Intersection Safety

Crash Causes

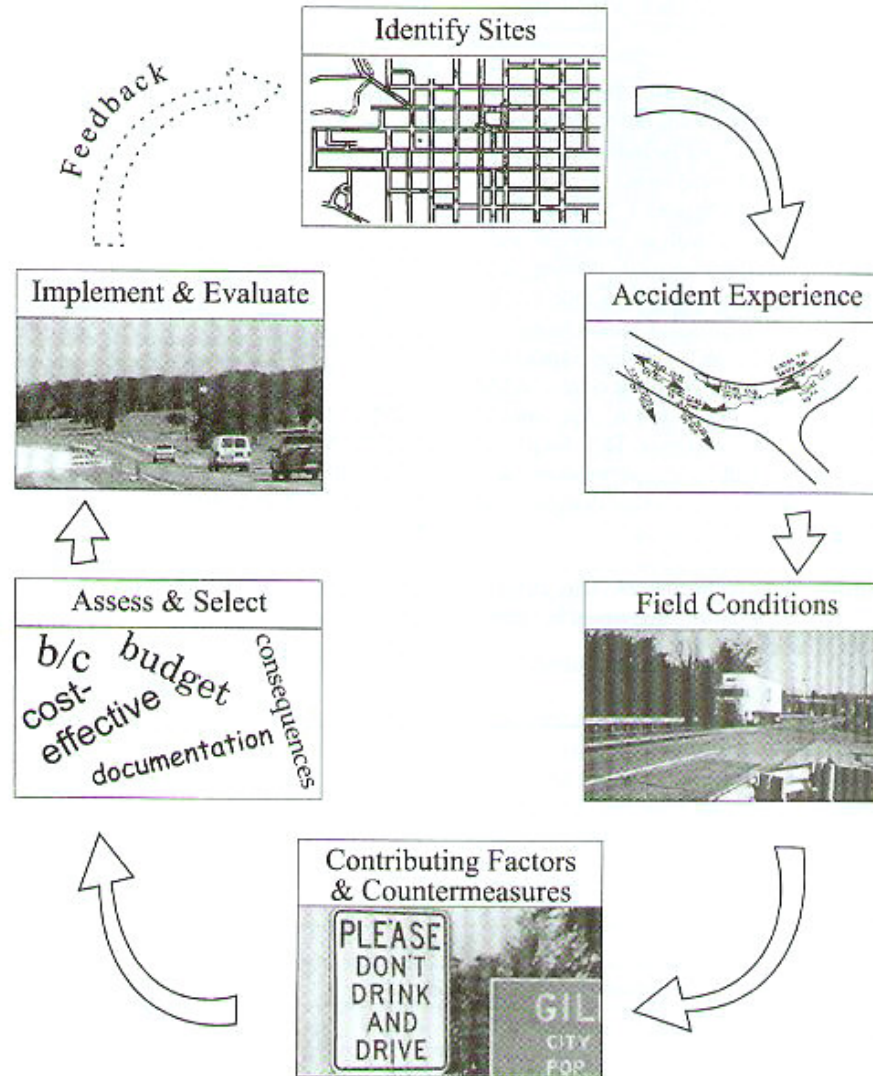
Roadway
34%

Driver
93%

Vehicle
12%



Solving Traffic Safety Problems





Traffic Control Devices: Principles

Fulfill a need

Command attention

Command respect

Have a simple, clear meaning

Allow adequate time for response

Traffic Control Devices: Edgelines



Traffic Control Devices: Raised Pavement Markers

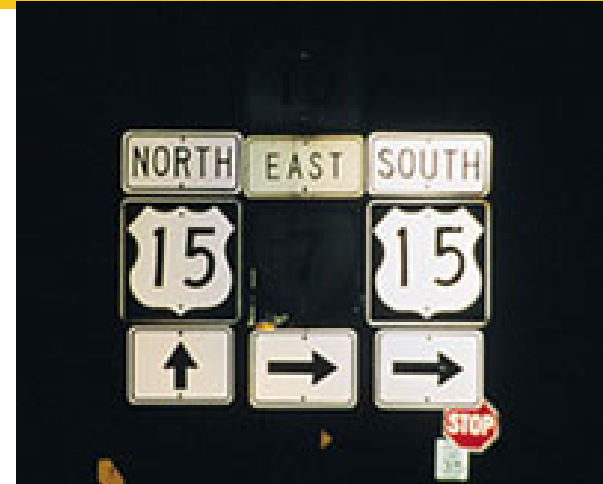


Traffic Control Devices: Post Mounted Delineators



Traffic Control Devices: Inspection & Maintenance

- Retroreflectivity
- Bent signs or posts
- Proper placement
- Fading, weathering
- Vegetation



Roadway Design: Cross Section Elements

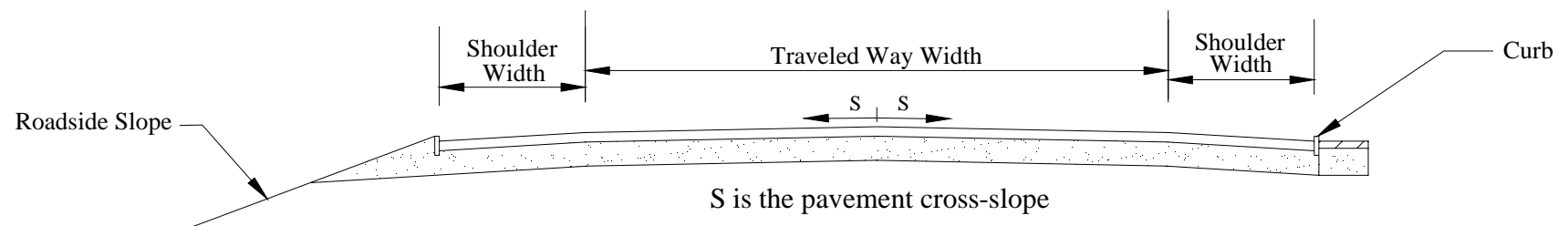
Stopping Sight Distance

Cross section elements

Lane width & surface

Shoulders, curbs, pavement drop offs

Roadside slopes



Roadway Design: Curve Signing

Chevrons – How NOT to place them





Roadside Safety: Overview

Types of Hazards

Clear zones

Treatment options

Guardrail



Roadside Safety: Clear Zone

A roadside area free of dangerous fixed objects, slopes, etc

Available for safe use by errant vehicles



Roadside Safety: Order of Treatment

***Remove* the obstacle**

***Relocate* the obstacle**

***Redesign* the obstacle**

***Reduce* impact severity**

***Shield* with guardrail**

***Delineate* to guide drivers around it**

Roadside Safety: Rumble Strips



Roadside Safety: Rumble Stripes





Roadside Maintenance

Mow clear areas

Mow deflection areas

Ditch cleaning

Encroachments



Intersections: Overview

Intersection type and risk

Geometric issues

Traffic control devices

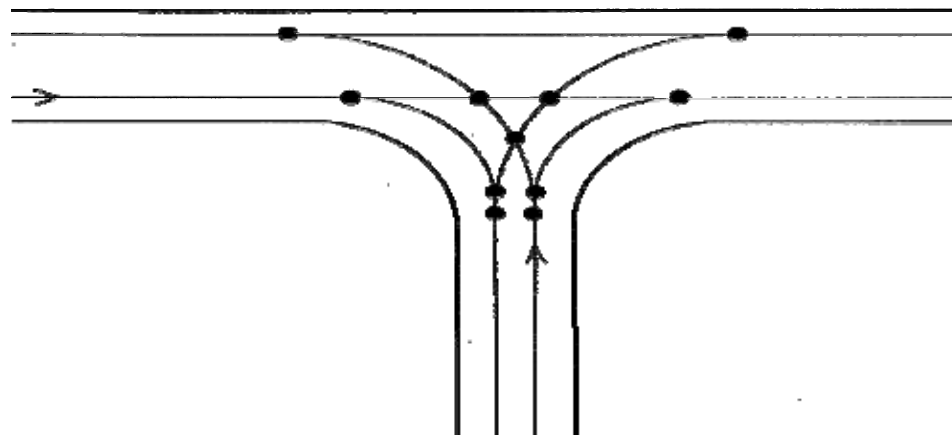
Sight distances

Access management

Intersections: Conflict Points

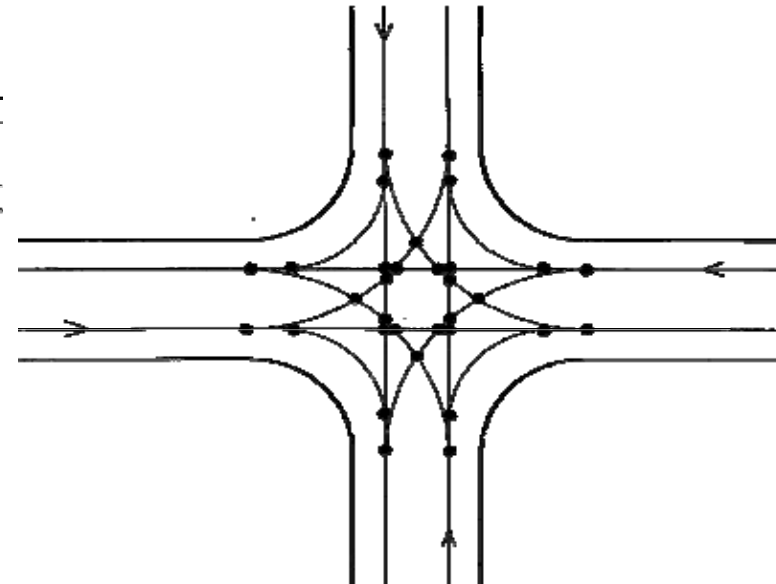
Three leg intersection

9 conflict points



4 leg intersection

32 conflict points



Intersections: closing one approach





Additional Resources

Low Cost Local Road Safety Solutions (American Traffic Safety Services Association)

<http://www.atssa.com/galleries/default-file/LowCostLocalRoads.pdf>

AASHTO Strategic Highway Safety Plan Implementation Guides (National Cooperative Highway Research Program)

<http://safety.transportation.org/guides.aspx>



Summary

Remember the human needs

Take time to think about the cause of the problem

Consider solutions beyond engineering

Consistency provides predictability



Thank you

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