

Intersection Safety in Michigan

The Next Great Idea

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1

STOP AHEAD pavement markings

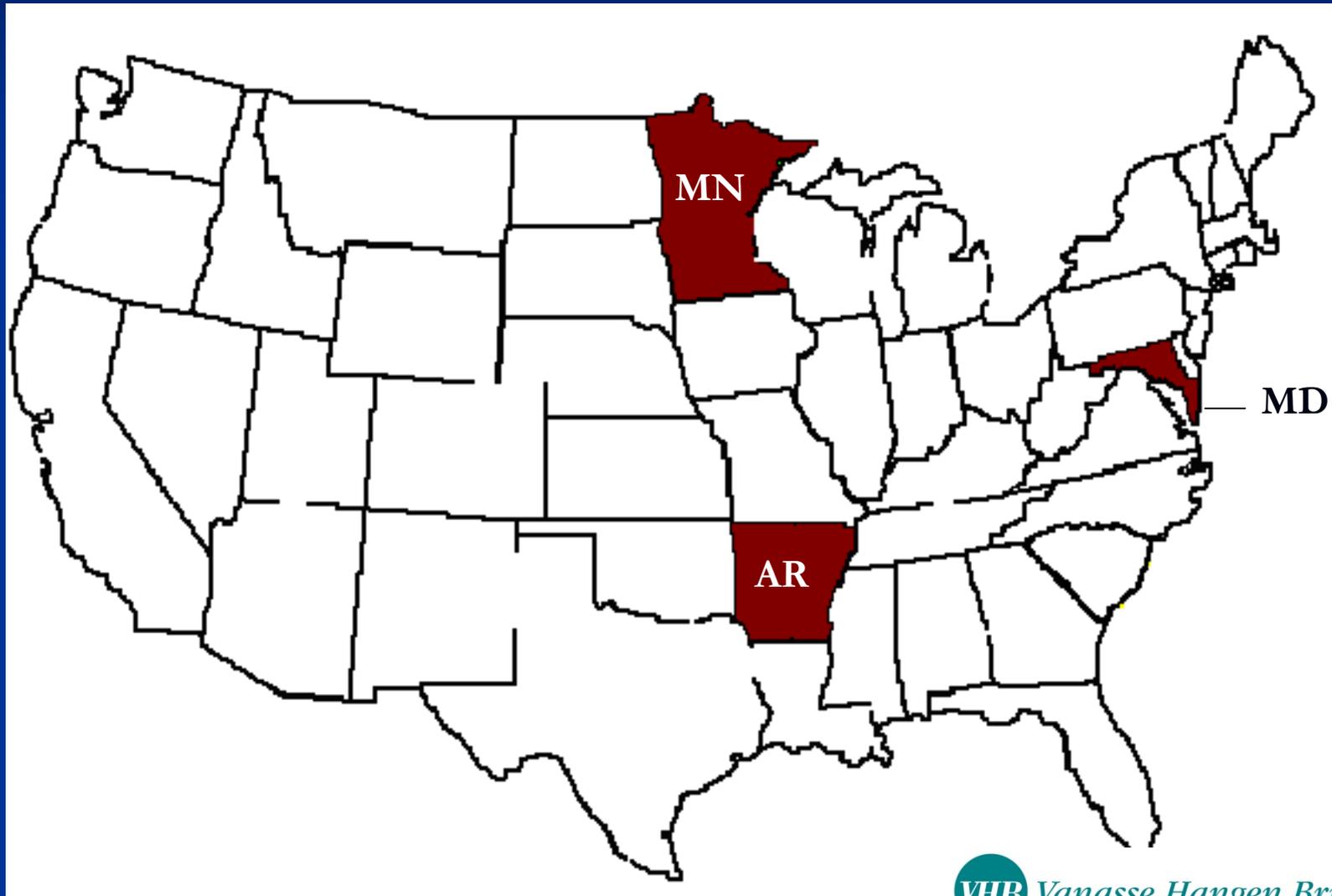


Low Cost Safety Improvements Pooled Funds Study

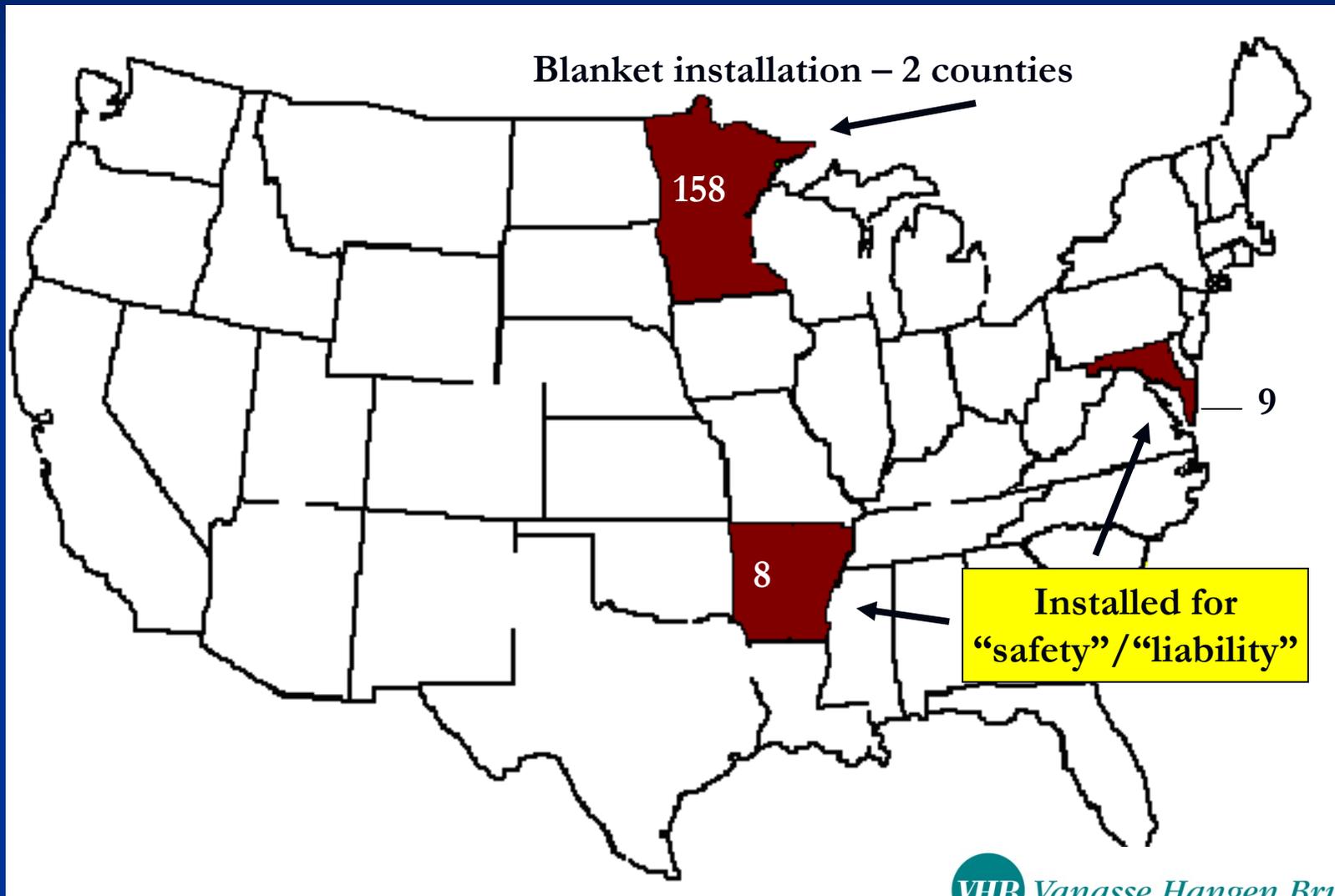
Safety Evaluation of STOP AHEAD Pavement Markings

Dr. Frank Gross, Vanasse Hangen Brustlin (VHB), Inc

Research - MN, AR, MD



Intersections - MN, AR, MD



Research - ~~MN~~, AR, MD

17 intersections

Total crashes ↓ 31%



At five 3-legged intersections: total crashes ↓ 60%

2

Intersection Flashing Beacons



on
ground-mount signs





Flashing overhead beacon

Minnesota DOT

Flashers moved from overhead
to ground-mount



Approx 30 intersections, since 2000

Minnesota DOT

Back plate



Beacon
mounted
separately



Low Cost Safety Improvements Pooled Funds Study

Safety Evaluation of Flashing Beacons at Stop-controlled Intersections

Raghavan Srinivasan, UNC Highway Research Center

Research - NC, SC



Overhead flashers – 84 sites



Total crashes ↓ 12%

Research - NC, SC

Ground-mount flashers – 5 sites



Total crashes ↓ 60%

3

Roundabouts at rural, high-speed intersections

A High-speed crash:



Dayton, OH

Kansas DOT

K-68 @ Old KC Road



3260 ADT
18% trucks

Kansas DOT

K-68



2-way stop: 17 crashes (25 injuries) in 42 months

4-way stop: 2 crashes (0 injuries) in 31 months

roundabout: 8 crashes (0 injuries) in 6 years

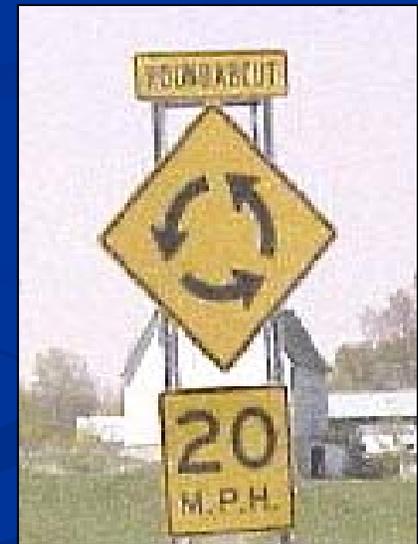
Minnesota DOT

State Highway 13 and County Rd 2

55 mph →
2000 ADT



↑
55 mph
5000 ADT



Minnesota DOT



2-way stop: 2 K, 50 injury crashes in 5 yrs

roundabout: 1 crash, 0 injury in 12 months

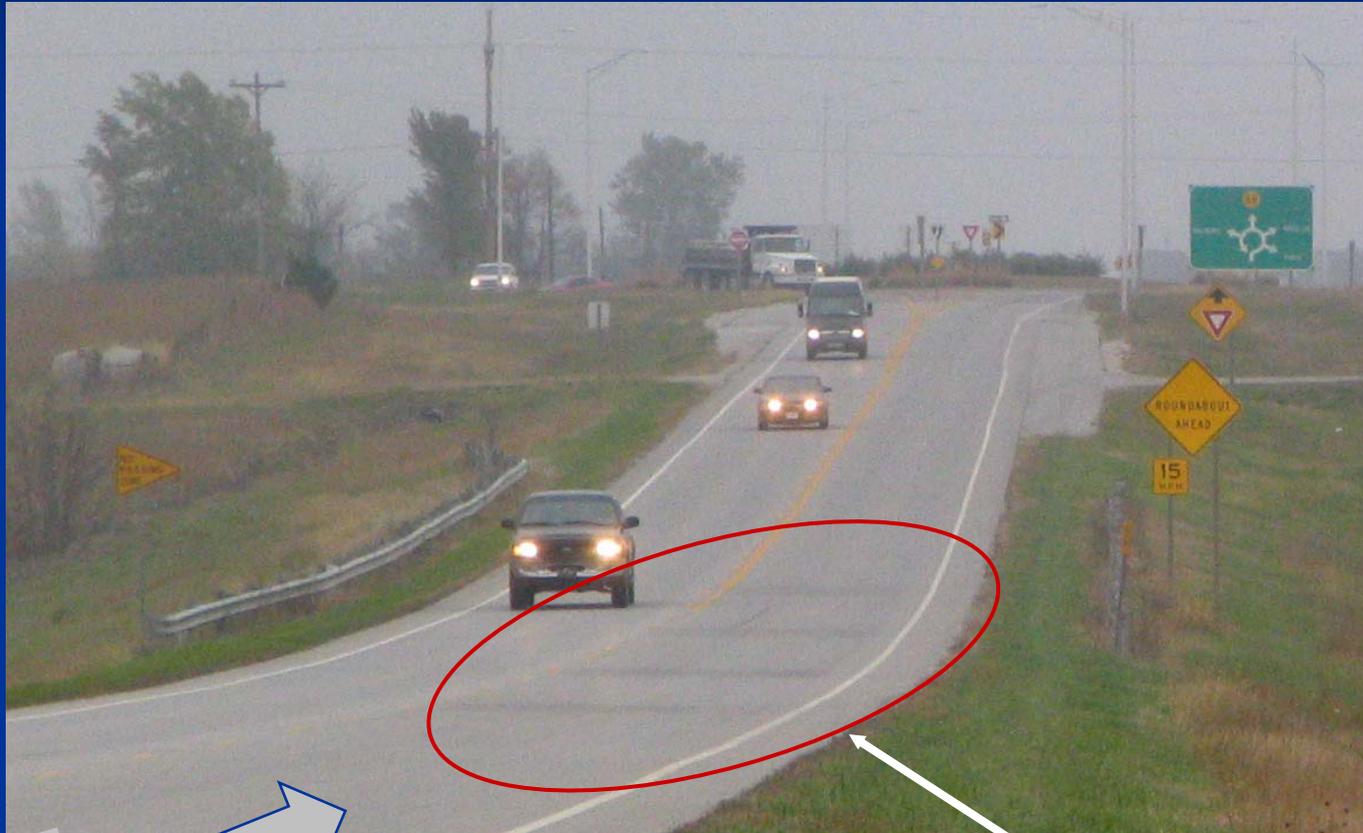
The Kansas story



2-way stop: 17 crashes (25 injuries) in 42 months

4-way stop: 2 crashes (0 injuries) in 31 months

The Kansas story



65 mph
approach

4 sets of cut-in rumble strips

4

Prepare to Stop When Flashing



Illinois

The arguments...

Purpose:

- inform drivers to help them prepare for upcoming change in signal

Concern:

- some drivers mis-use the information, speeding up to “make” the signal



Illinois

The compromise...

Common design criteria:

- 55-mph
- isolated or unexpected intersection
- limited sight distance



Do the signs affect driver behavior?



Minnesota

- Red Light violations ↓ 29%
- Truck violations ↓ 63%

Do the signs affect crash frequency?



Maryland

- Right angle crashes ↓ 62%
- Rear end crashes ↓ 36%



Common use: MN, OH, KY, NV, NE, IL, NJ, MO, PA,
VA, IA, IN, MD, CA, AK, MT, GA, UT, PR

5

Offset Right Turn Lanes



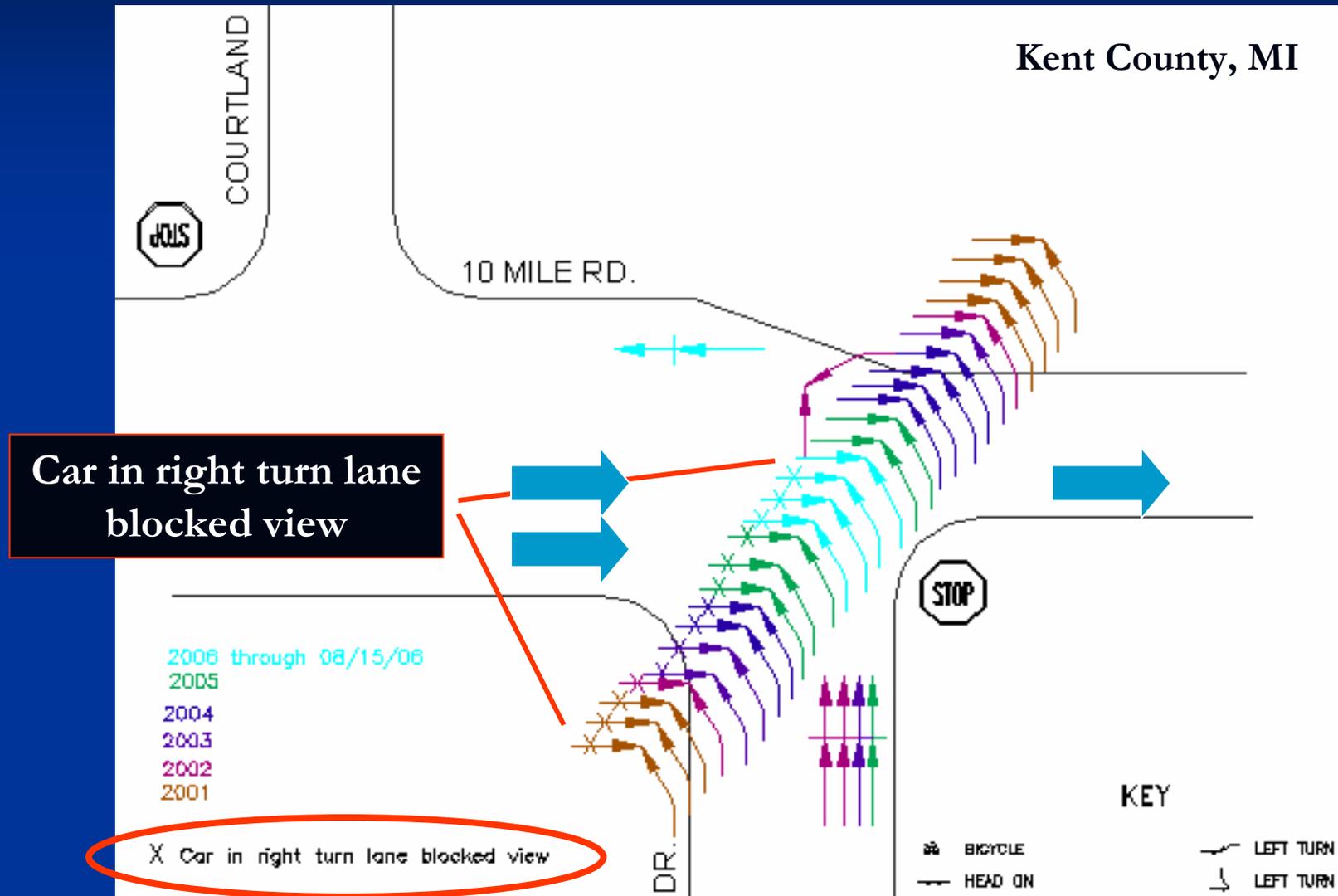
Demonstrating the problem:



Benefits to crossroad LT traffic:

- sight distance to trailing vehicles
- commitment from turning vehicle

What crash pattern are we looking for?



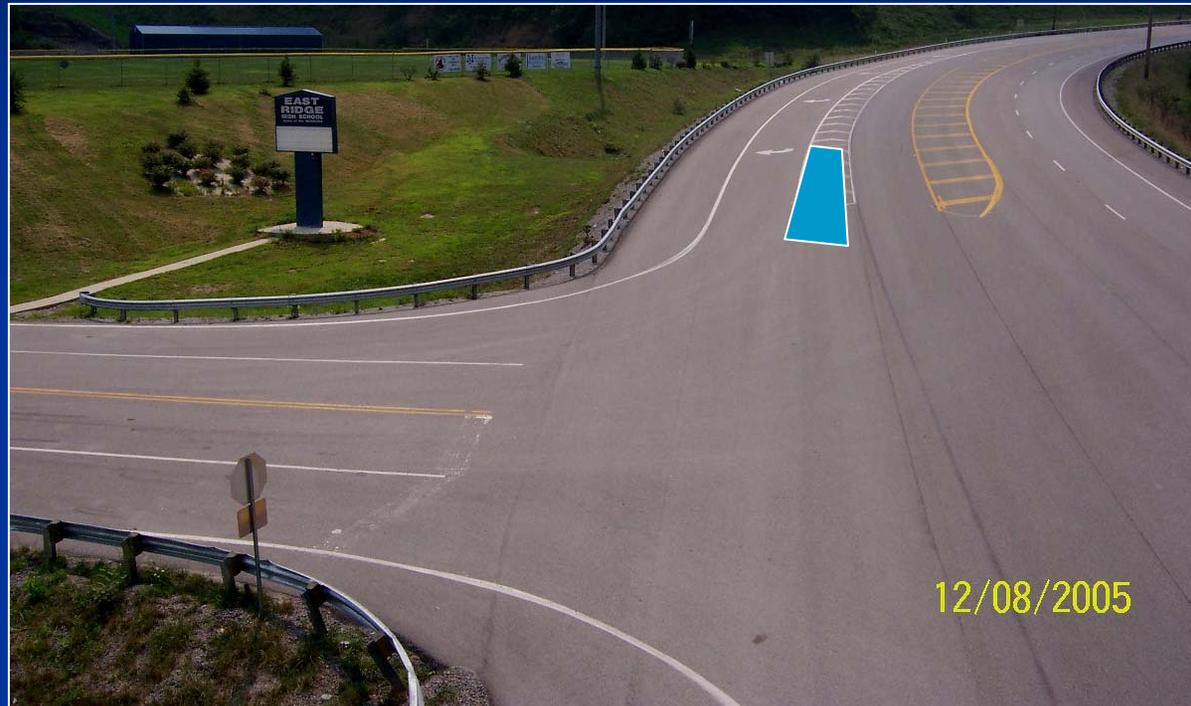
Kent County

10-Mile Rd. at Courtland Dr.



Iowa

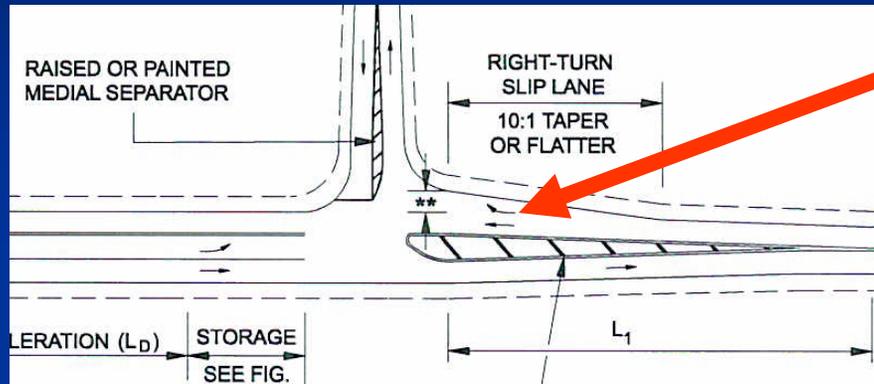
Kentucky DOT



KY District 12:

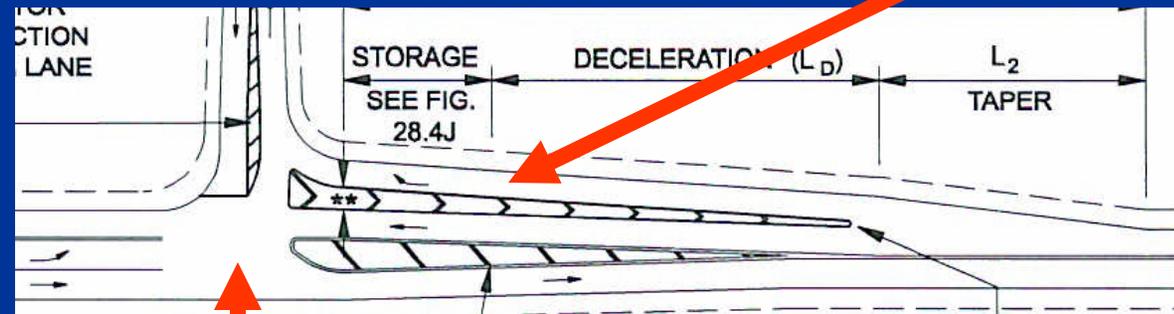
- anytime a new school goes in
- minimum 8' offset

Montana DOT



small slip lane

OR



offset right turn

Stop bar

Questions ?

Objections ?

Ridicule ?

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