Safety Corridors a Synthesis

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Background: Safety Corridors Study

- Need grew from a four State Safety Summit
- Funding from Iowa, Kansas, Missouri DOTs and Midwest Transportation Consortium
- Goal: identify the most promising practices and programs to share among the four states
- States serve as a steering committee
- IADOT w/ Iowa State U. to do pilots
Approach:
Safety Corridors Study

- Identified 12 states w/ some sort of SC
- Not an engineering focus
  - Legal aspects
  - Enforcement
  - Community involvement
- Selection Criteria /Measures of Effectiveness
- Rural - 2 lane highway focus
The 12 States

Alaska
California
Florida
Kentucky
Minnesota
New Jersey
Ohio
New Mexico
Oregon
Pennsylvania
Virginia
Washington
Alaska

Full Program:
- “safety zones” like school or work zones
- 4Es; 2 lanes; rural; 10 miles long
- Road Safety Audits; incident response
- Signing; legislation; double fines
- Media campaigns; “light” on engineering
Alaska’s criteria for designating a Safety Corridor are as follows:

- Roadway with 2000 ADT or more.
- 3-5 year fatal + major injury crash rate exceeding 110% of statewide average.
- The DOT must agree on a coordinated traffic control/patrol plan.
- Agreed that plan will be effective in reducing crashes.
- The local police define the amount of enforcement needed to increase safe driving and to provide ongoing enforcement.
- No more than 10 safety zones at one time in Alaska.
- The Safety Corridor should be no shorter than five miles long.
- The Safety Corridor is decommissioned when the fatal + major injury crash rate falls below statewide average for three years.
California

- Lead by the CHP
  - w/Task Force: CalTrans, Planning groups, EMS, legislative and citizen members
- < 50 miles long
- High 3 year crash/injury record
- Funding for six corridors per year
- Goal is a 10% reduction in crashes
- Must implement 2 solutions (enforcement & education)
Community Traffic Safety Teams
- 60 statewide
- Facilitated by FDOT
- 20 local members each
- focusing on the driver behaviors and pedestrians
- Statewide CTST Coalition to share information
Kentucky

- One Safety Corridor per District
  - more than one county in that district.
  - It must be of sufficient length for a corridor (> 50 miles).
  - It must have a relatively high traffic volume.
  - It must not be a full control of access highway.
  - It must have a higher number of crashes (total and injury/fatal).
  - It must have a high crash rate (total and injury/fatal).
  - It must be above a collector functional classification.

- Road Safety Audit Conducted (video taped)

- Low-cost engineering solutions and enforcement strategies for locations along the SC.
Toward Zero Death (TZD) initiative

- 4E approach
- Corridor safety coalitions (like FL)
- low-cost alternatives to traditional engineering solutions

27 counties w/$2M from MnDOT
New Jersey

- 13 Urban corridors / 10 miles in length
- Selection is a three step process
  - Scan for six or more fatal crashes is performed
  - Roadways with six or more fatal crashes are analyzed in 10 mile segments for 1,000 or more total crashes over the previous three years
  - Crash rate is calculated by roadway cross-sectional type
- Conduct a Road Safety Audit
- Safety Corridors carry double fines
New Mexico

- The six basics of the program are:
  - 5 year crash history on a moving 5 mile stretch
  - Crash investigation
  - Review of the engineering and law enforcement initiative so as not to overlap efforts
  - Approval from the district engineer
  - A public awareness campaign
  - A review of the equipment and signage.

- Safety Corridor eligible for doubled fines
Most statistically rigorous MOE’s: analyze the most recent five-year crash data over two-mile sections of similar roadways using these four statewide statistics:

- Crash rate per million vehicle miles traveled (MVMT)
- Five-year average crash density per mile
- Fatal crash rate per 100 MVMT
- Five-year average fatal crash density per mile

Analyze countermeasure effectiveness

- simple before and after crash count comparison
- combined with an Empirical Bayesian approach
Oregon

- Leader in Safety Corridors (since 1989)
- Corridor Citizen Advisory Commission
- ODOT S-C Program Manager
  - Headquarters: guidelines, approves plans
  - Districts: engineering, local coordination
- Intermediate step in more permanent safety infrastructure improvements
To designate a Safety Corridor:

- 3 year avg. fatal + serious injury crash rate at or above 110% of the latest statewide 3 year avg. for similar roads.
- The state and/or local law enforcement will commit to making the corridor a patrol priority.
- The initial designation team agrees that the length of roadway is manageable from an enforcement and education standpoint. Rural sections may be longer than urban sections.
The decommissioning process is handled by the initial designation team and is considered if any one of the following criteria is met:

- 3 year average fatal plus serious injury crash rate is at or below 100% compared to the three year average for similar roadways.
- Any of the remaining designation criteria are not met.
- Minimum requirements within Safety Corridor program guidelines are not being performed.
- A continued lack of activity or investment in the Safety Corridor.

However, a local stakeholder group may ‘adopt’ the Safety Corridor once it is decommissioned assuming that the group provides meaningful local investment into improving the safety of the roadway.
Pennsylvania

- Legislation for “double fines”
- 6 pilot locations
- Speeding reduced by 2-14%
- Enforcement critical as “warning signs do not change motorist behavior”
Virginia

- Implemented for the Interstate System
- Selection criteria are as follows:
  - The crash rate must exceed 125% of the regional average
  - The Equivalent Property Damage Only frequency must exceed 150% of the regional avg. (PDO=1, injury=8, fatal=20).
  - The truck-involved crash rate exceeds overall regional rate.
  - The rate and EPDO frequency are then normalized by dividing by the maximum rate or EPDO in the region, and then the measures are added to rank / establish priorities
- Speed & crash reduction are the MOEs
Washington

- Established full program
- Statewide Champion for the Safety Corridors is LTAP coordinator
- DOT and Gov. Hwy. Safety Office
- 402 funds set aside (enforcement/education)
- Very active local Safety Corridor team
- Decommissioned after 2 years
Conclusions / Characteristics

- Multi-disciplined
  - *most states also included Emergency medical providers (the 4th E).*

- Limited Number
  - *limit the number of corridors*
  - *pilot corridors should be developed first*

- Crash Data
  - *should be consistently used for selection and evaluation*
Conclusions / Characteristics

- **Champion**
  - *key to the success of a program*

- **Safety Action Plan**
  - *use a multi-disciplined task force*
  - *meets regularly for continual review of the plan and strategies*

- **Legislation**
  - *establish corridor limits*
  - *permits increased fines*
Conclusions / Characteristics

- Special Signage
  - *fines doubled, special speed limits, lights on for safety*

- Road Safety Audit
  - *ensures a multi-disciplined effort*

- Minimal Engineering
  - *signage, center-line and edge-line rumble stripes/strips*
Conclusions / Characteristics

- **Length**
  - *not important*
  - *homogenous characteristics throughout*

- **Decommissioning**
  - *is important*

- **Selection Criteria and MOEs**
  - *should be more statistically rigorous*
Conclusions / Characteristics

- After Data
  - important, but ……

- General Characteristics
  - funding
  - pedestrians
  - other
    - “Safety Corridor” stamp
    - a special program for the high schools
    - motorcycle enforcement on urban safety corridors.
    - include traffic court judges on the SC team
    - bumper stickers on the back of large trucks
Interesting Safety Corridor

- Pennsylvania’s Roosevelt Boulevard Safety Corridor
Philadelphia’s Roosevelt Boulevard Safety Corridor

- Managed by DVRPC and PPA
- Corridor is approximately 8 miles in length
- 12 lane facility with 6 local and 6 express lanes
- Approximately 181,000 people live within 1/2 mile of the Boulevard
- AADT of approximately 80,000
Philadelphia’s Roosevelt Boulevard Safety Corridor

- 133 pedestrian crashes occurred over the 5-Year period 2001-2005
  - Of these, 120 were injuries, and 13 were fatalities

- 11 mid-block crosswalks, 40 traffic signals in corridor

- Red light running problem
Roosevelt Blvd.
Roosevelt Blvd.
Roosevelt Blvd.
Roosevelt Blvd.
Solutions to problems?
- “Complete Streets” Design
- Pedestrian Safety Improvements
- Signal Timing Adjustment
- Speed Reduction
- Public Education
- Enforcement
- Legislation
Roosevelt Blvd: Red Light Running Cameras

- Since installation, one intersection has seen a 2/3 reduction in red light running violations
  - From 1500 to 500 violations per month
Roosevelt Blvd.
Next is Part 2

- Pilot Project in Iowa
  - Tom McDonald w/ CTRE