

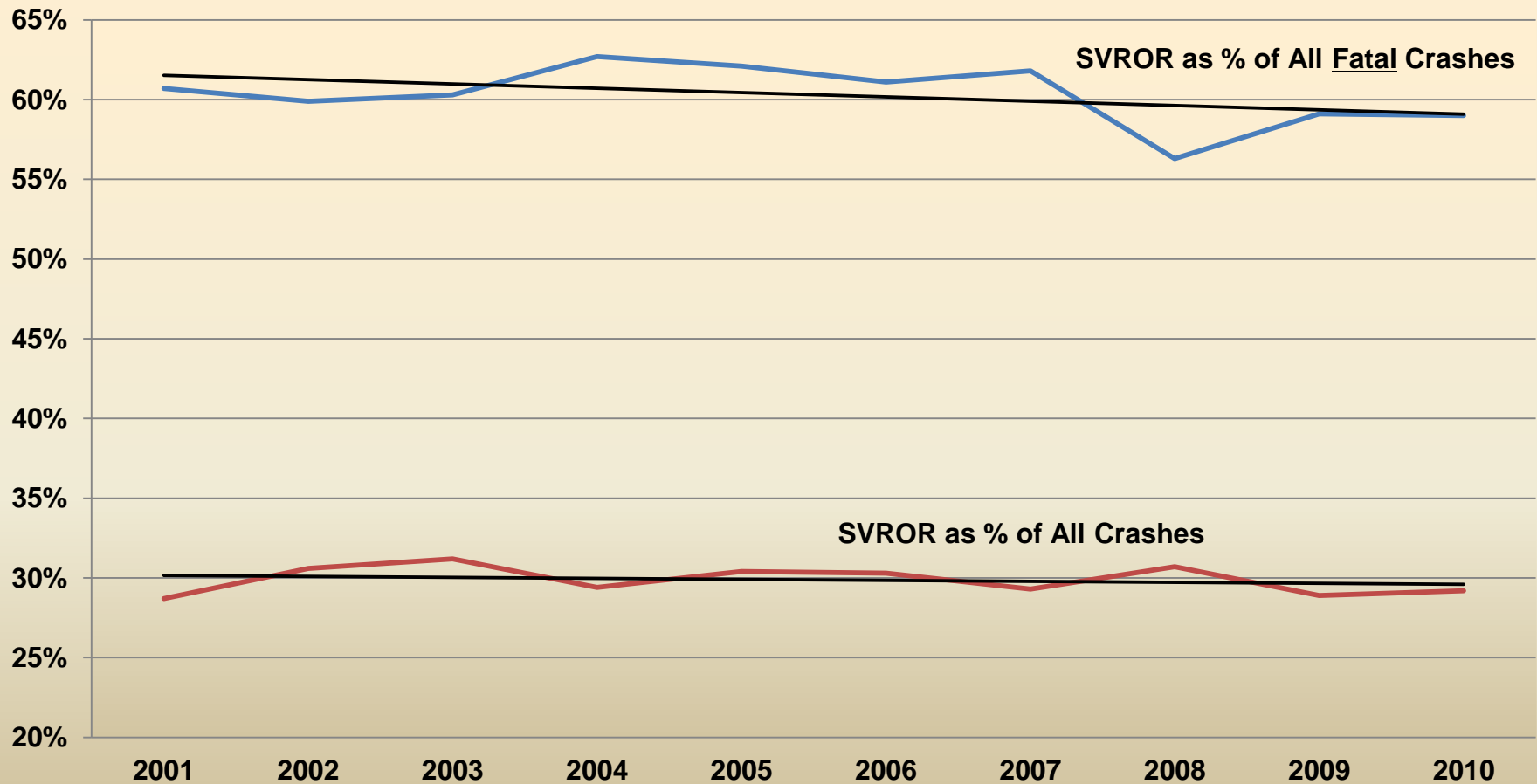


Single Vehicle Run-Off-the Road Crashes & High Crash Corridors

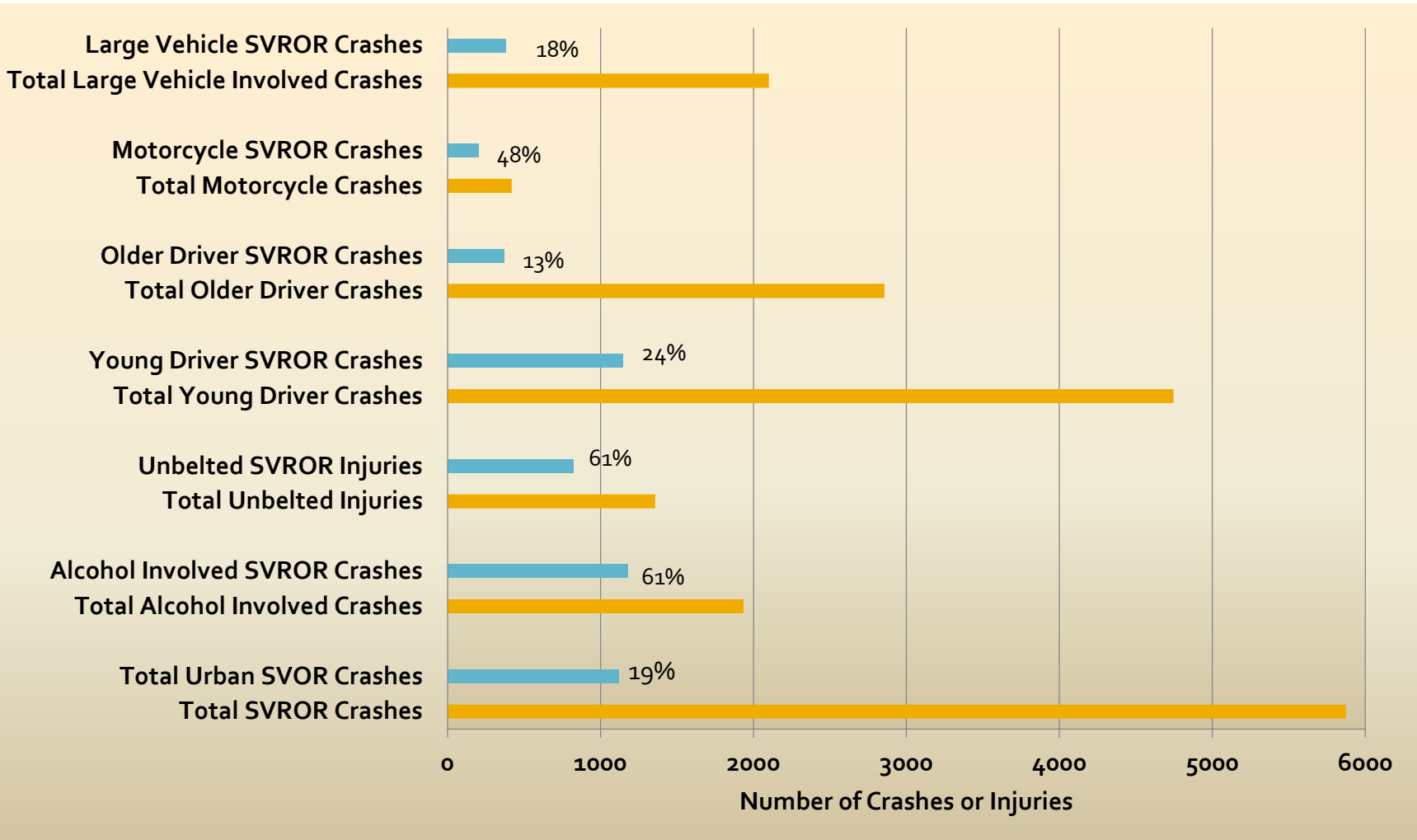
Kraig McLeod
Safety Engineer
June 9, 2011

Single Vehicle ROR Crashes (2010)

Single Vehicle ROR Crashes, 2001-2010



Single Vehicle ROR Crashes (2010)



SVROR Strategies

- ROR-1: Review of Best Practices
- ROR-2: Educational Opportunities for SVROR
- ROR-3: Cable Median Barriers
- ROR-4: Cell Phone Pullouts
- ROR-5: Safety Management Software Upgrade



SVROR Emphasis Area

Questions / Comments /
Status

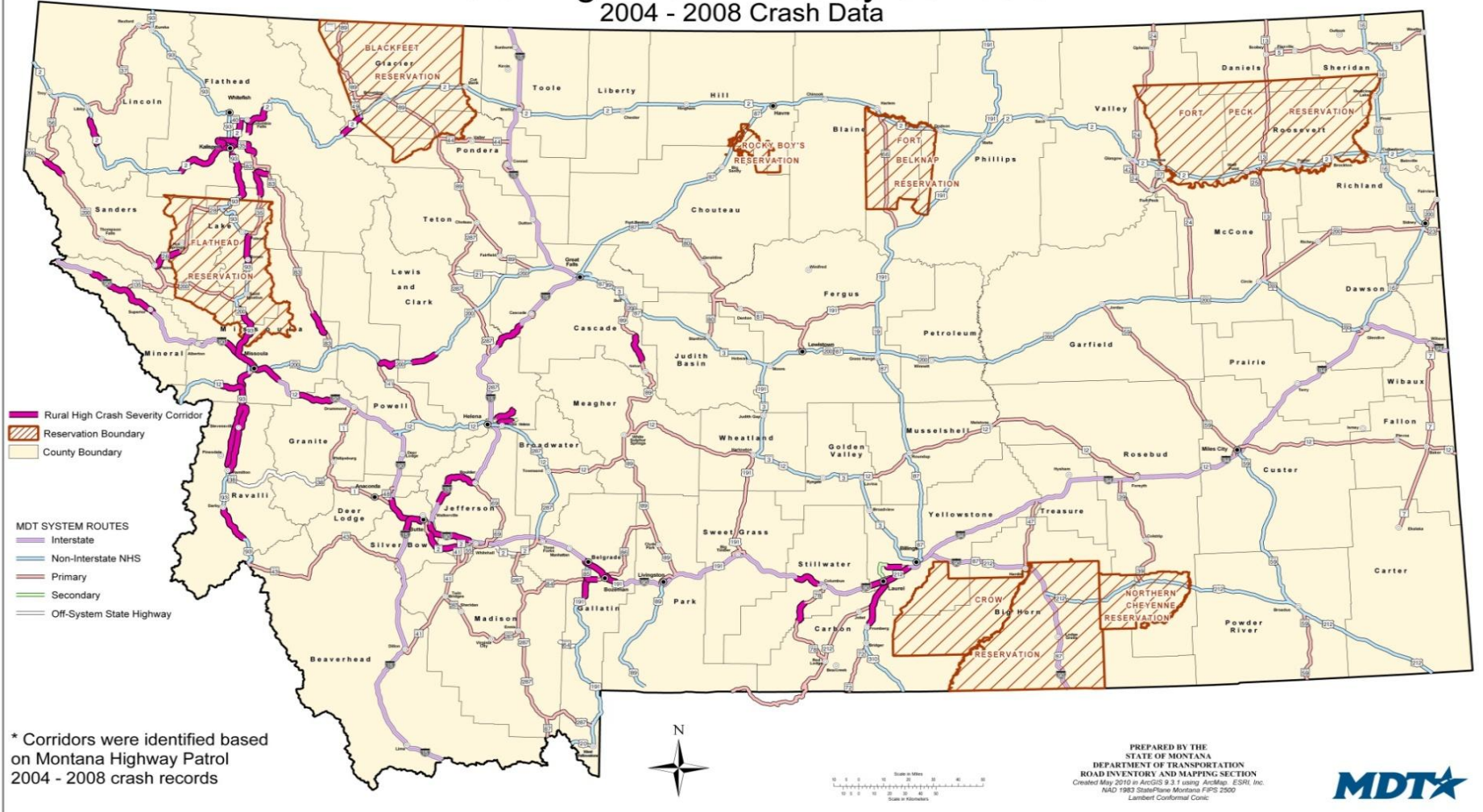
High Crash Severity Corridors

<u>High Crash Severity Corridors</u>			
2004 - 2008			
Highway System	Base Segment Length	Minimum # of Severe Crashes (Fatal and Incapacitating Injury crashes)	Minimum Crash Severity Rate
Interstate	10 Mile	20	3.75 (minimum 99 crashes)
NINHS	10 Mile	20	5.75 (minimum 60 crashes)
P	10 Mile	12	8.00 (minimum 40 crashes)
S	5 Mile	10	10.00 (minimum 30 crashes)

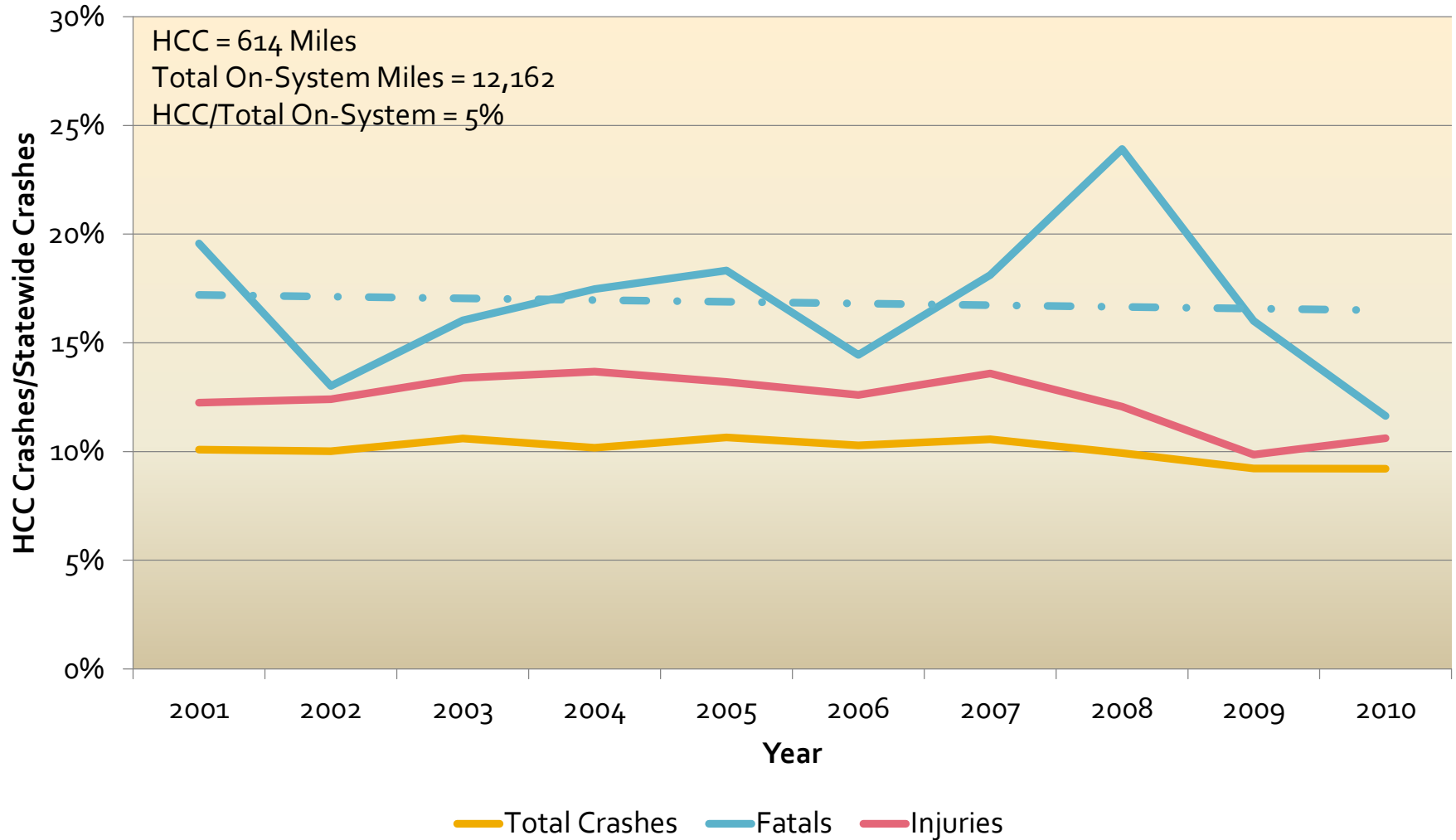
High Crash Severity Corridor = Severe Injuries/Mile + Crash Severity Rate

High Crash Corridors (2004-2008)

Rural High Crash Severity Corridors
2004 - 2008 Crash Data



HCC Crashes as % of All Crashes (2001-2010)

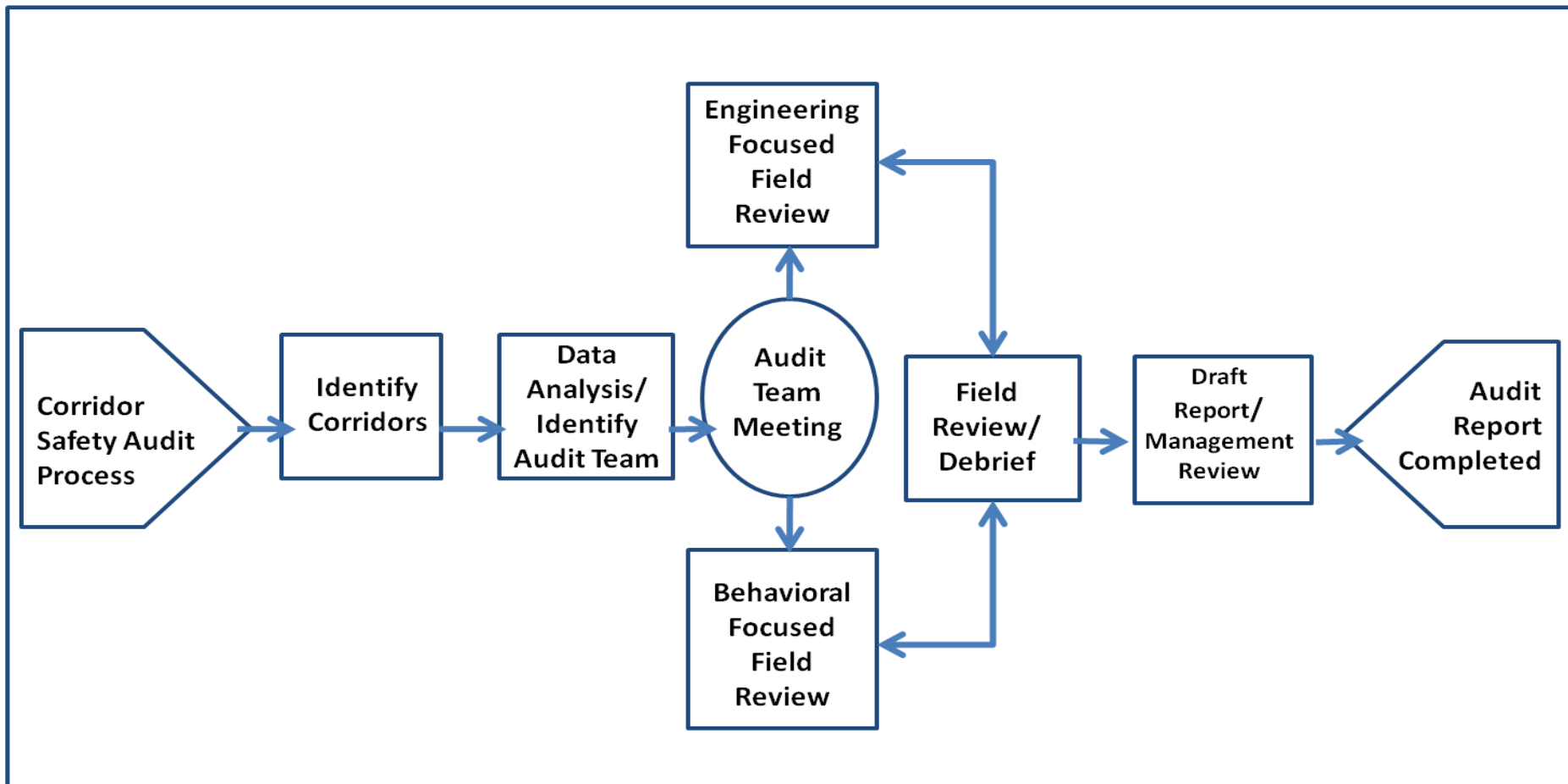


High Crash Severity Corridor Strategies

- HC-1: Develop LOSS for all MDT Roads
- HC-2: Review of Best Practices
- HC-3: HCC Sign Evaluations
- HC-4: Incorporate New Technology
- HC-5: Corridor Safety Audit

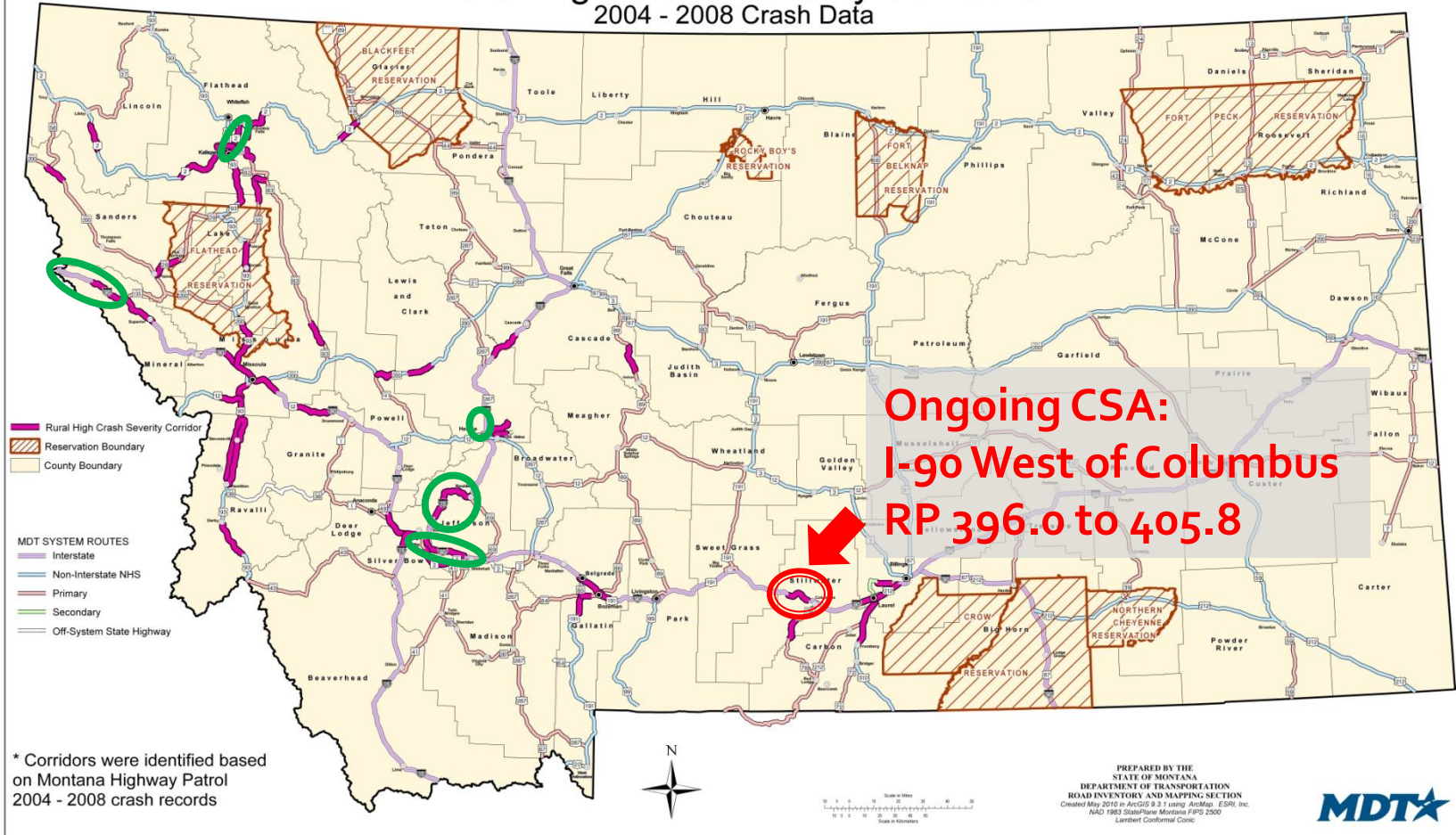
What is the process for a CSA?

Corridor Safety Audits



Historical and Ongoing CSA's:

Rural High Crash Severity Corridors
2004 - 2008 Crash Data



Safety Audit

I-90 RP 396.0 - 405.8

2005 - 2009

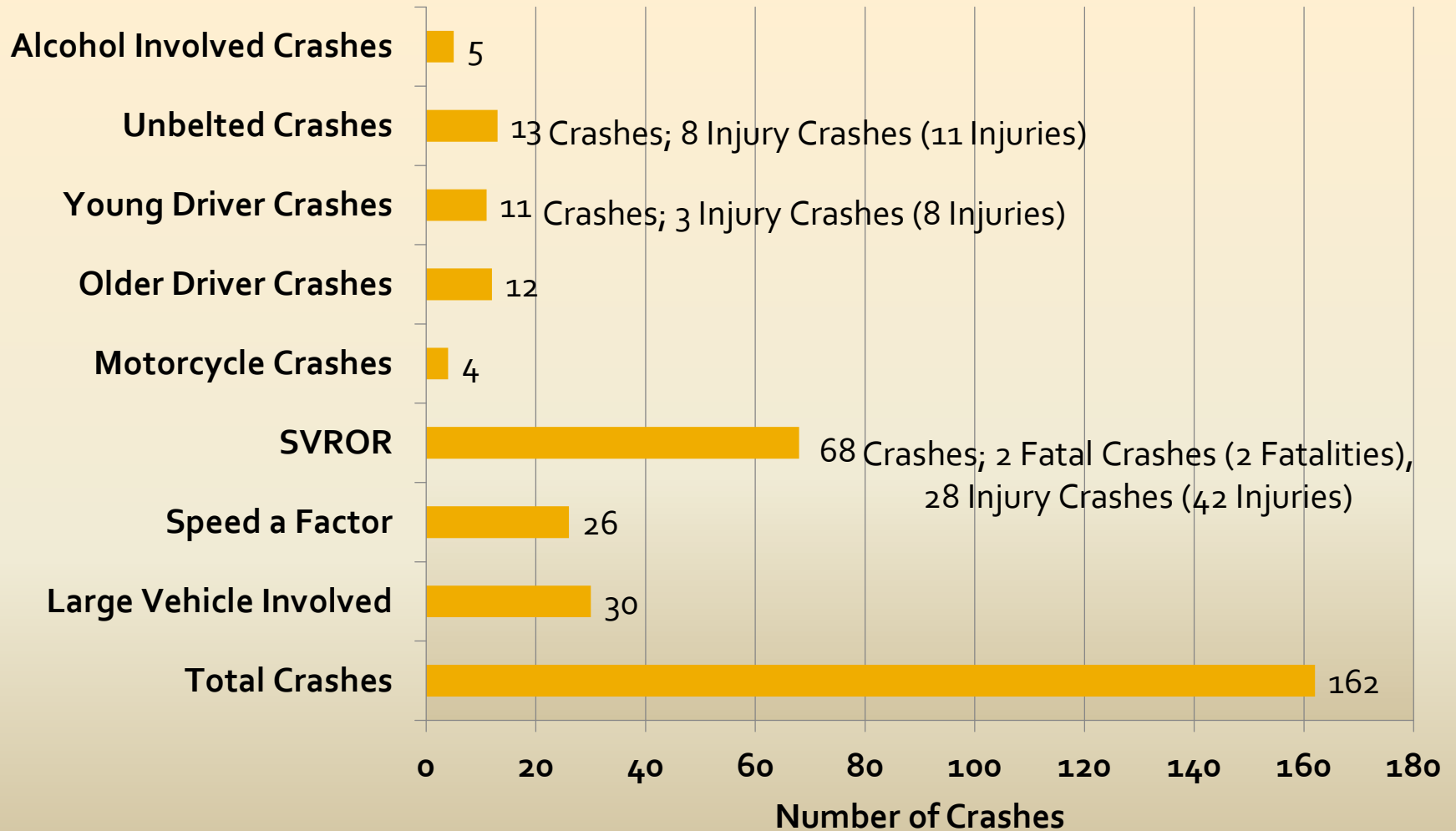


Columbus CSA – Data Analysis (2005-2009):

Crash Severity	Number of Crashes	Percent of Crashes
Property Damage Only (PDO)	127	78.4%
Injury	33	20.4%
Fatal	2	1.20%
Total	162	

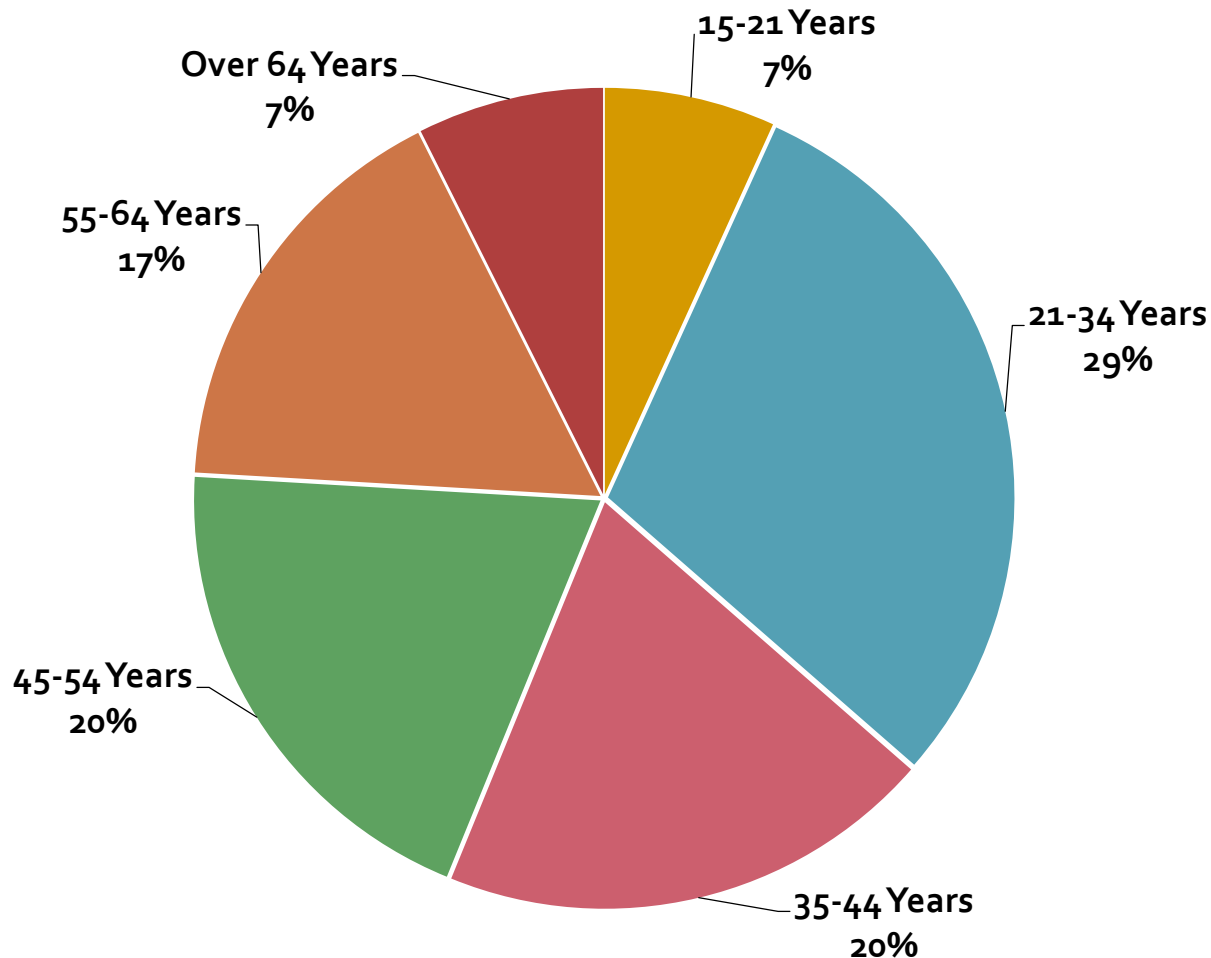
Vehicle Type	Number of Crashes	Percent of Total Crashes
Passenger Car Only (including Pickups & SUVs)	147	90.7%
Motorcycles	4	2.5%
Truck/Truck Trailer	26	16.0%
Total	177	

Columbus CSA – Data Analysis (2005-2009):



Columbus CSA – Data Analysis (2005-2009):

Age Group of Drivers in Crashes (2005-2009)



Safety Audit

I-90 RP 396.0 - 405.8

2005 - 2009

Collision with Fixed Object, Rollover and Wild Animal

Wild Animal

Both Fatalities & 39% of Injuries

Legend

190(388-406)06-09

Type of Collision

- Collision with Fixed Object (EB) [17]
- Collision with Fixed Object (WB) [13]
- Collision with Non-Fixed Object (EB) [2]
- Collision with Parked Vehicle (EB) [1]
- Collision with Parked Vehicle (WB) [1]
- Jack-Knife (EB) [1]
- Jack-Knife (WB) [3]
- Loss Control (EB) [4]
- Loss Control (WB) [1]
- Rear-End [4]
- Roll Over (EB) [10]
- Roll Over (WB) [13]
- Slide/wipe, Same Direction [5]
- Wild Animal Collision (EB) [5]
- Wild Animal Collision (WB) [25]

Reference Markers

ON_SYSTEM_ROUTES

SYSTEM

HIW INTERSTATE

HIW NON-INTERSTATE

PRIMARY

SECONDARY

URBAN

Columbus CSA – Draft Recommendations

- Install Variable Message Sign to communicate conditions w/ in corridor.
- Also used to influence driver behavior.

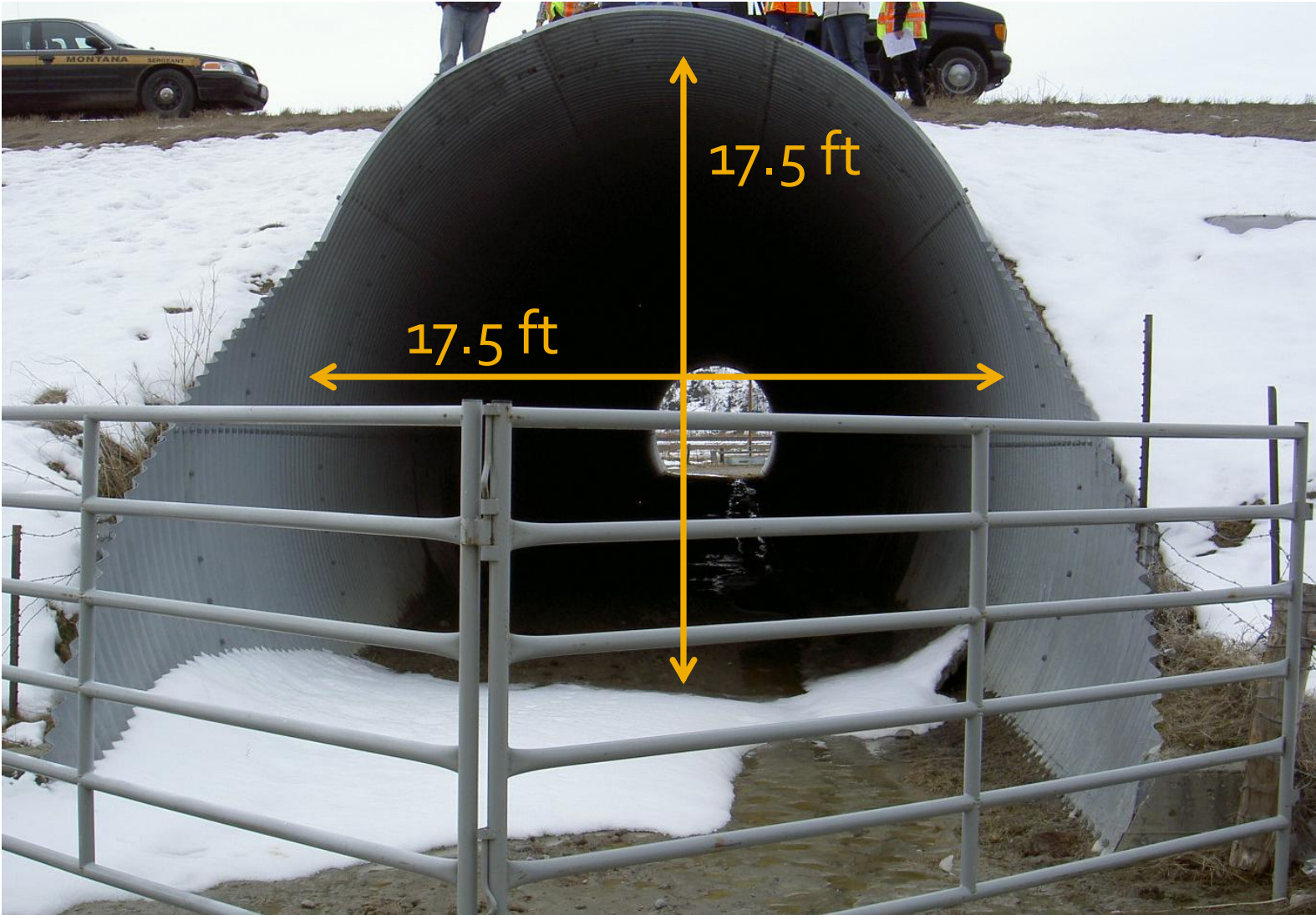


Columbus CSA – Draft Recommendations

- Evaluate the potential to utilize the existing underpasses as wildlife crossings.



Columbus CSA – Draft Recommendations



Columbus CSA – Draft Recommendations

- Install “Icy Bridge” warning signs equipped with a solar flasher.
- Investigate the feasibility of tying the flasher operation with a temperature sensor.



Columbus CSA – Draft Recommendations



Columbus CSA – Draft Recommendations



Columbus CSA – Draft Recommendations



Columbus CSA – Draft Recommendations



Columbus CSA – Draft Recommendations

- Cut trees within the right-of way and/or clearzone.
- Full mowing of median and shoulders.
- Improve corridor delineation:
 - Replace w-beam tabs
 - Install lineal delineation on bridge guardrail sections.

Columbus CSA – Draft Recommendations

- Extend guardrail from RP 402.967 to RP 403.056 to better delineate curve.
- Install high friction/anti-icing overlay on bridge decks.

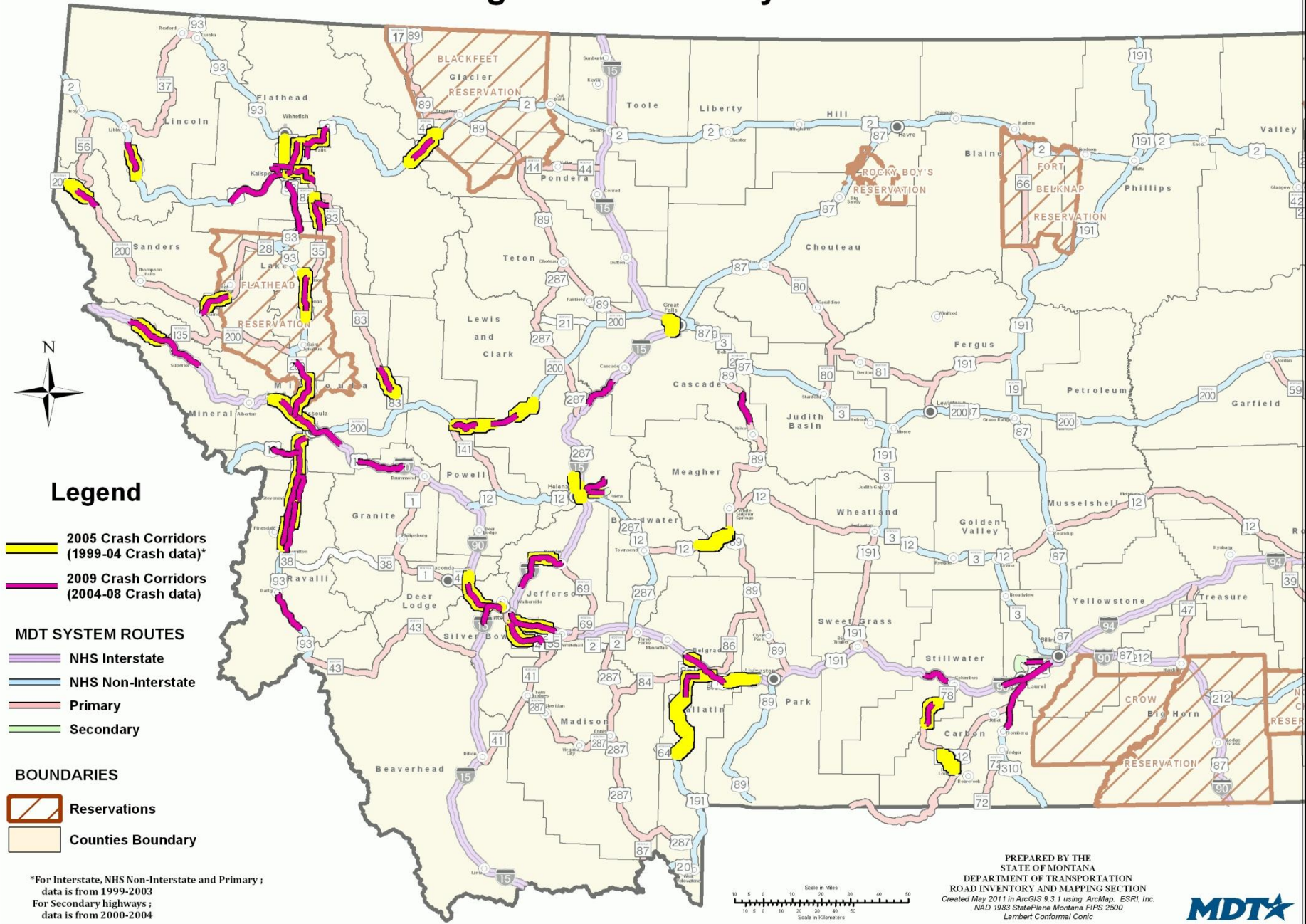
Columbus CSA – Next Steps

- Provide final draft report to Management for approval.
- Finalize report and provide results to Audit Team, District and Management.
- Begin implementation and/or evaluation of recommendations.

High Crash Severity Corridors Emphasis Area

Questions / Comments /
Status

Rural High Crash Severity Corridors



Legend

- 2005 Crash Corridors (1999-04 Crash data)*
- 2009 Crash Corridors (2004-08 Crash data)

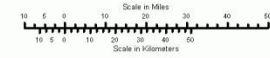
MDT SYSTEM ROUTES

- NHS Interstate
- NHS Non-Interstate
- Primary
- Secondary

BOUNDARIES

- Reservations
- Counties Boundary

*For Interstate, NHS Non-Interstate and Primary; data is from 1999-2003
 For Secondary highways; data is from 2000-2004



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