



CAMBRIDGE
SYSTEMATICS

Think  Forward

Planning Towards Zero

How Transportation Planners Can Engage in Safety

presented to

Transportation Safety Subcommittee

presented by

Cambridge Systematics, Inc.

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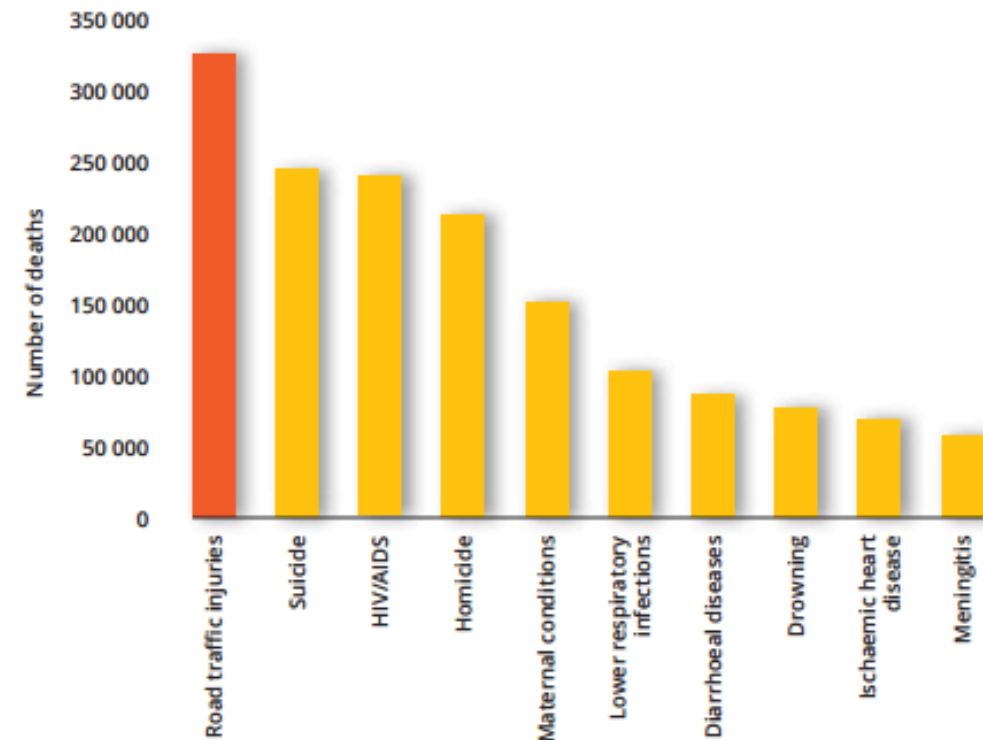
Agenda

- The Safety Epidemic
- The Roles to Be Played in Transportation Safety Planning
- Strategies to Engage in Driving Down Fatalities and Serious Injuries
 - » Statewide Safety Planning
 - » Public Involvement
 - » Vision, Goals, Objectives
 - » Data Analysis
 - » Performance Management
- Types of Transportation Safety Plans
- Possible Next Steps

National Epidemic

- In 2014, motor vehicle fatalities (33,736) outnumbered deaths from homicides (15,809), leukemia (23,448), Parkinson's disease (26,150), HIV (8,081)
- In 2012, motor vehicle fatalities was the single largest cause of death for persons aged 15-29. This was 32% higher than the next leading cause of death.
- Over the last decade, motor vehicle deaths are the largest cause of unintentional injury (not disease related) death in the US.
- Motor vehicle fatalities have leveled out for the last five years and are projected to rise in the coming years.

Top ten causes of death among people aged 15–29 years, 2012



Challenges in the Metropolitan Region

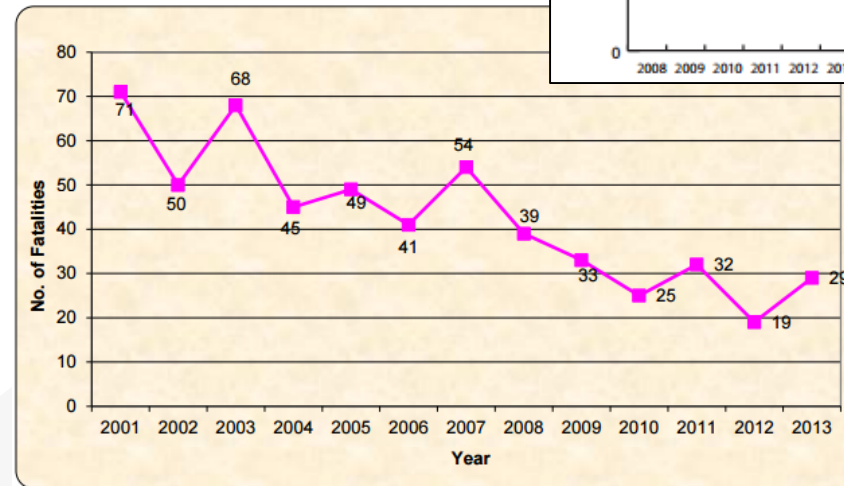
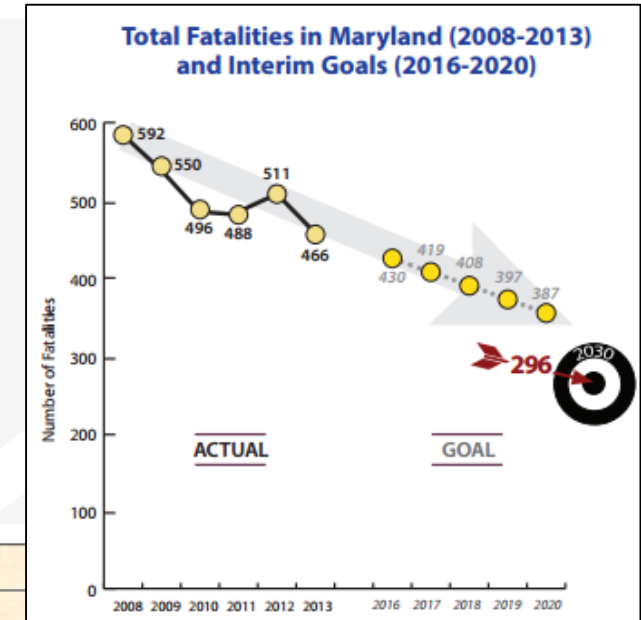
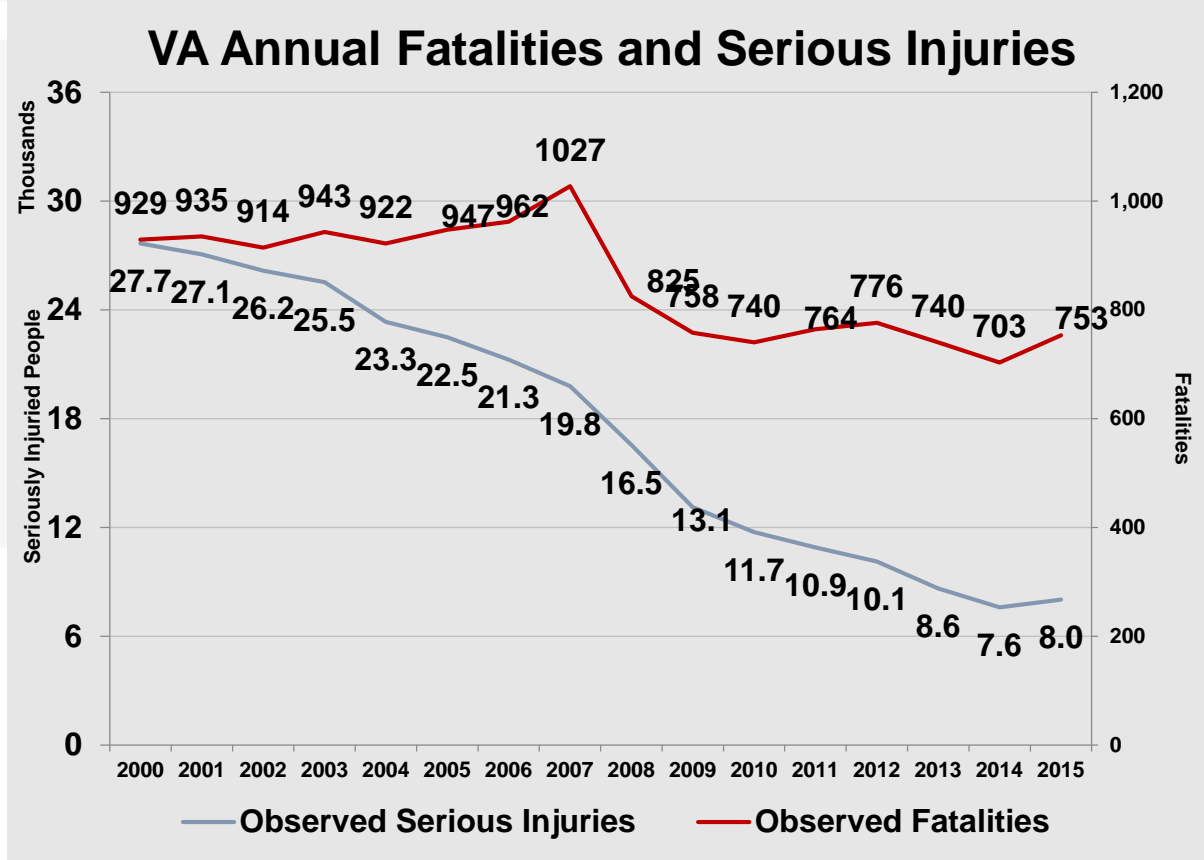


Figure 3.3: Number of Fatalities for 2001-2013

Opportunities to Engage in Safety

- Engage in the planning and implementation of statewide safety plans
- Establish safety goals and objectives for your planning area
- Connect with your elected officials
- Further analyze safety data in your planning area
- Identify safety programs and projects to achieve the statewide/regional vision and goal
- Consider safety in all your transportation planning documents
- Track your progress and share the results

Transportation Safety Planning– Techniques and Strategies

Statewide Planning

Type of Plan

- Strategic Highway Safety Plan
 - » Five year plan, identifying strategies and actions to address most pressing infrastructure and behavioral needs
- Highway Safety Plan
 - » Annual plan, identifying programs and projects to address behavioral needs

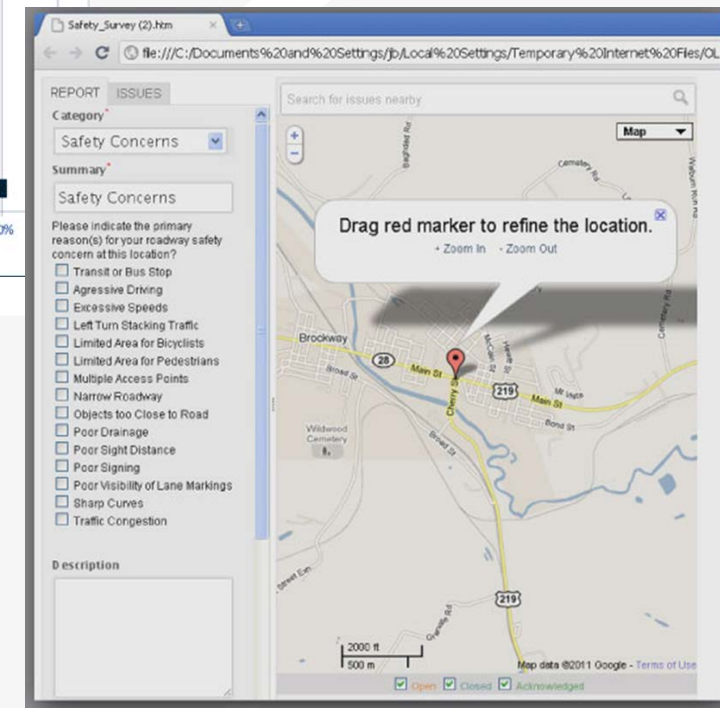
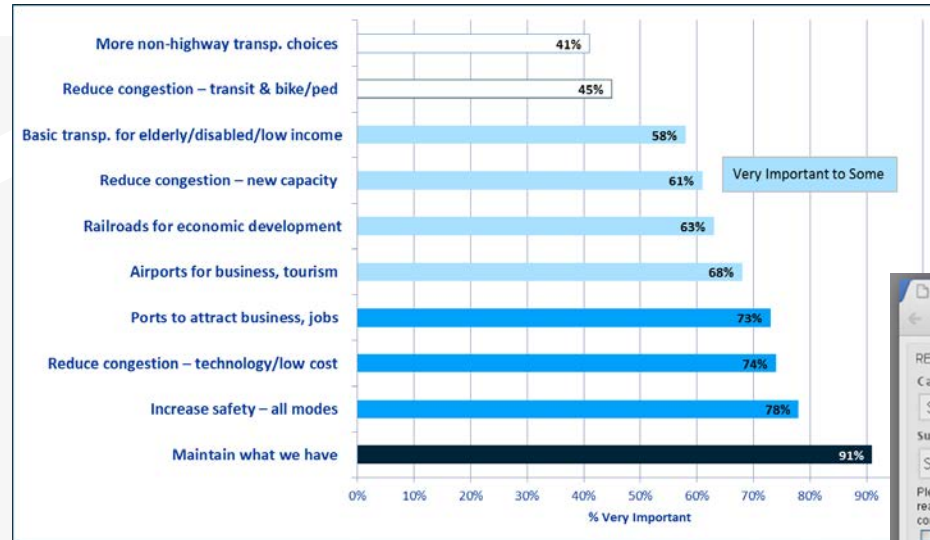
How It Can Help

- Understanding of a safety planning process
- Access to/understanding of crash data and analysis
- Connection to safety stakeholders
- Insights into safety emphasis areas and proven strategies
- Understanding of HSIP funding and prioritization process

Public Involvement



- Surveys and comment cards
- Open houses
- Safety summits
- Outreach materials
 - » Web sites
 - » Social Media
 - » Newsletters
- Online Feedback Tools

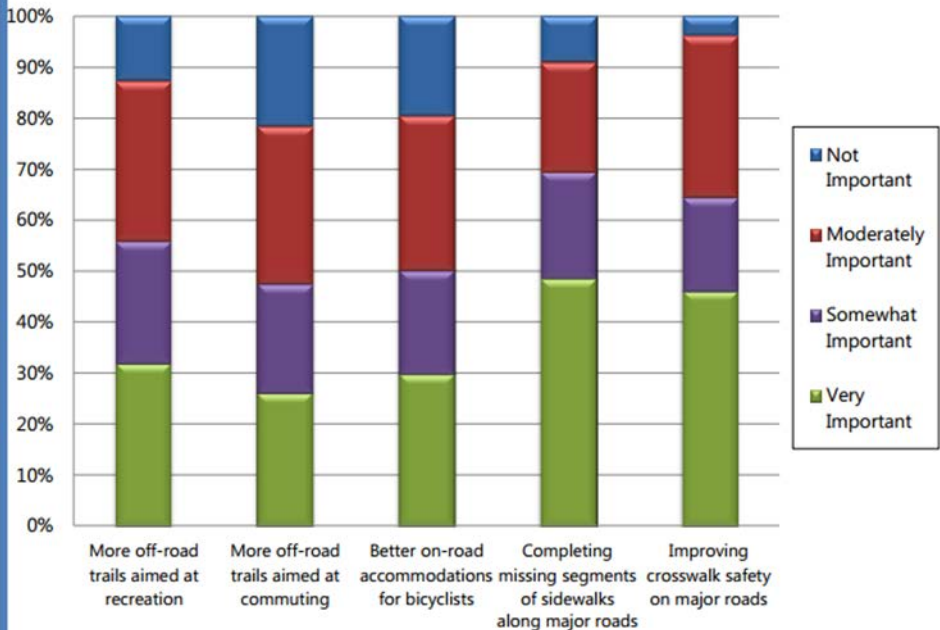


Goals and Objectives

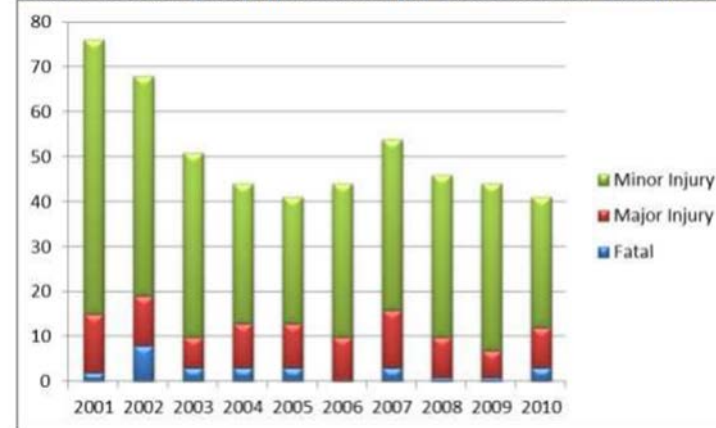
- Should be developed for any transportation planning document
 - Provide direction for what your agency wants to achieve and how to achieve it
 - At a minimum, these help establish safety as a priority in your plan
 - At a maximum, these guide investment decisions
- Options to develop a safety vision, goal(s), and objective(s)
 - » Federal input (planning factor, performance goals)
 - » Public or stakeholder input
 - » Adopt from other plans (SHSP)
 - » Customize information from other plans based on data/other knowledge
 - » Data driven

Goals and Objectives

Question 5

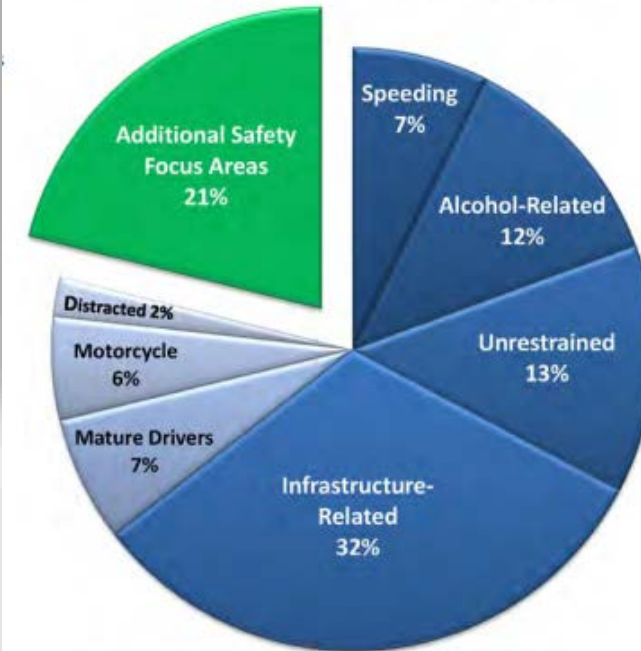


Number of Fatal, Major Injury, and Minor Injury Crashes in Bremer County, 2001-2010



Goal – Reduce fatalities and serious injuries that result from motor vehicle crashes

Vital Seven Safety Focus Areas*



*Based on historic 5-year average (2007-2011)

Goal – Reduce infrastructure related fatalities and serious injuries

Goal – Improve Pedestrian Safety

Objective –
Complete missing segments of sidewalks along major roads

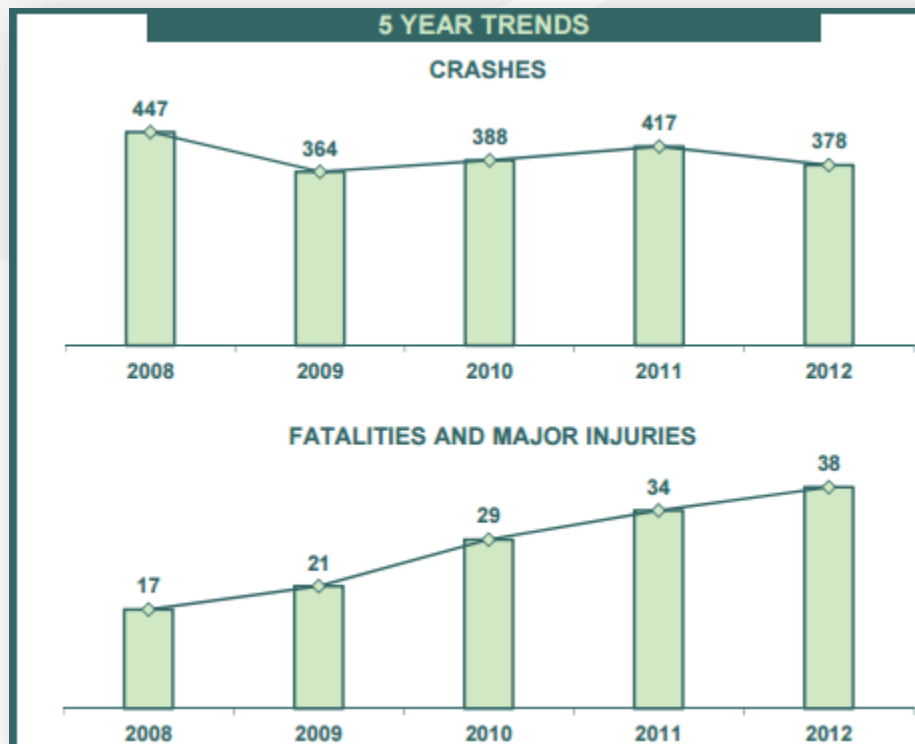
Data Analysis

➤ Analysis Type

- » Benchmarking

➤ What it Does

- » Establishes a baseline for performance
- » Tracks performance



Crash Severity	Year									Total
	2005	2006	2007	2008	2009	2010	2011	2012	2013	
(K) Fatal	27	32	31	25	24	18	22	23	26	228
(A) Serious Injury	89	85	104	105	93	49	50	59	65	699
(B) Non-Incapacitating	188	219	206	175	154	141	153	133	123	1,492
(C) Possible Injury	147	146	161	178	100	111	114	100	99	1,156
(O) Property Damage Only	863	879	1,041	872	726	658	695	639	712	7,085
Total Crash Count	1,314	1,361	1,543	1,355	1,097	977	1,034	954	1,025	10,660
Total Percent Change	NA	4%	13%	-12%	-19%	-11%	6%	-8%	7%	-22%

Data Analysis

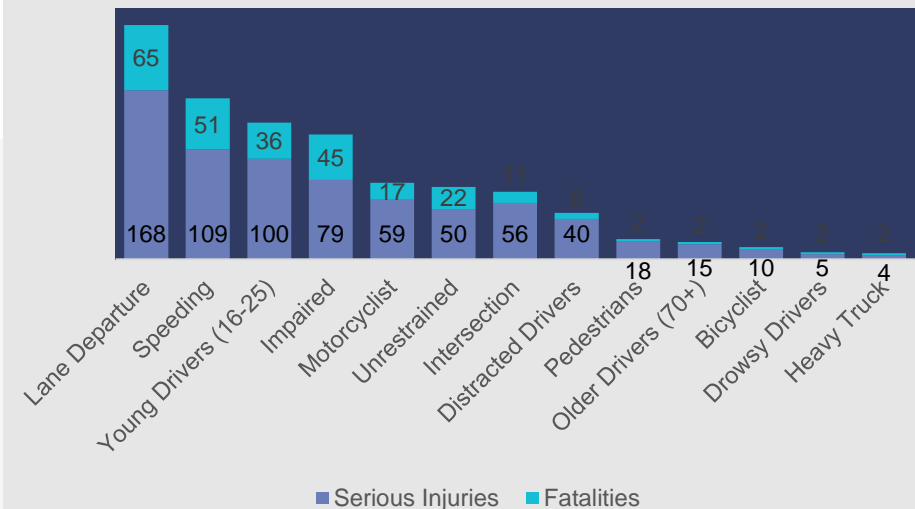
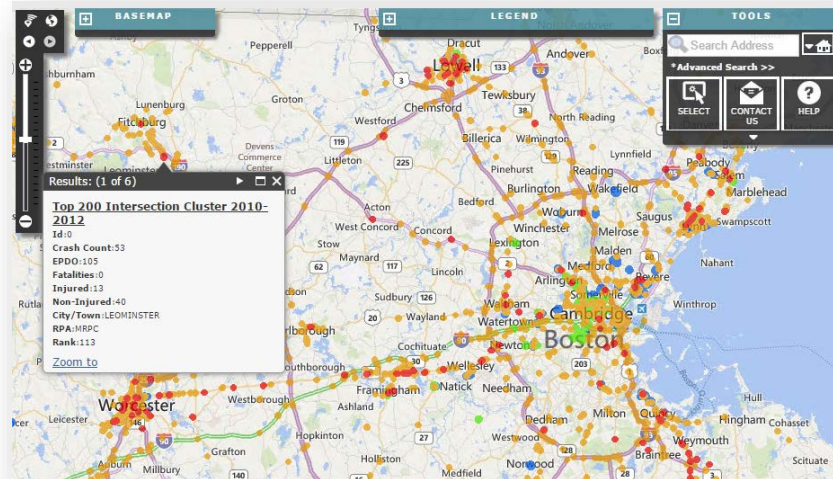
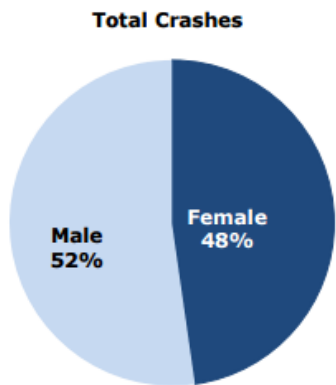
➤ Analysis Type

» Contributing Factors

- Who is involved
- What is involved
- When the crash occurred
- Where the crash occurred
- Why a crash occurs

➤ What it Does

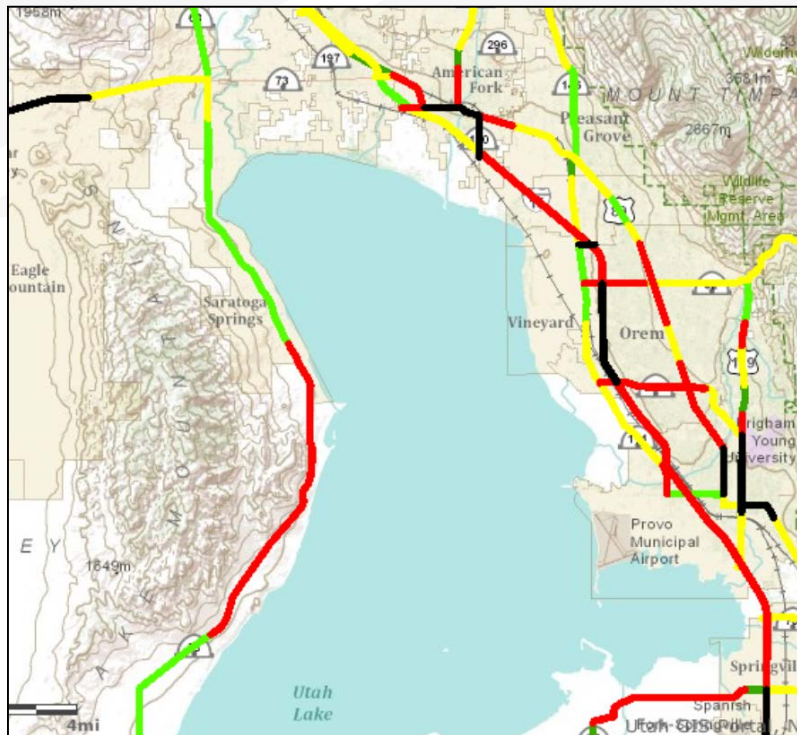
- » Provides high level information on crash characteristics
- » Identifies areas of concern
- » Establishes emphasis areas



Data Analysis

➤ Analysis Type

- » Network Screening
- » Systemic

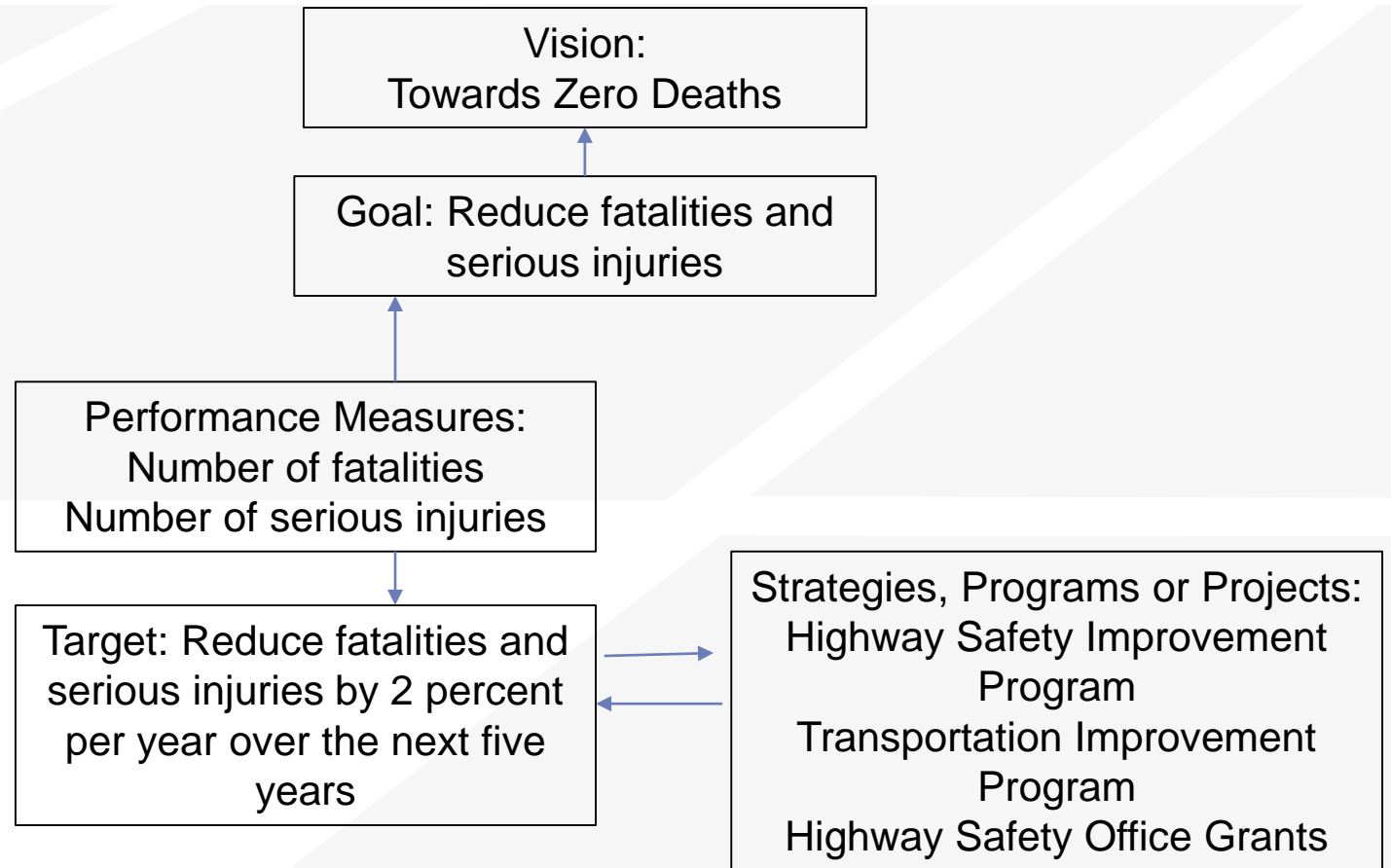


➤ What it Does

- » Identifies segment and intersections with the most potential for safety improvements
 - Road Safety Audits/Field Investigations
- » Identifies high risk roadway features, correlated with severe crash types
 - Low Cost Safety Improvements

Performance Measures and Targets

- Should be included in any transportation planning document
- Provide a tracking mechanism and target for achieving safety vision, goal(s), and objective(s)
- Provide context for investment decisions



Performance Measures and Targets

SAFETY AND SECURITY

MAP 21 National Goal

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users

Illinois State Transportation Policy Factors

- Safety for all transportation users.
- Security to protect the State's valuable assets and ensure the continued operation of the system.

Sustainable Choices 2040 Goal

- The Champaign-Urbana area will maintain, preserve and operate its existing transportation system in a safe and secure usable state to provide safe, efficient and reliable movement of people, goods, services in the short term, and in the long term, achieve the state's goal of zero deaths and disabling injuries.

TABLE 9.1 SAFETY AND SECURITY

Objectives	Performance Measures	Data Sources
Reduce the number of fatalities in Champaign-Urbana by 20% by 2020	Total Fatalities (5 year rolling average)	IDOT Crash Data, SCIL Report
Reduce the number of fatalities per 100 MVT in Champaign-Urbana by 20% by 2020	Total Fatalities per 100M VMT (5 year rolling average)	IDOT Crash Data, SCIL Report
Reduce the number of severe injuries in Champaign-Urbana by 15% by 2020	Total Severe Injuries (5 year rolling average)	IDOT Crash Data, SCIL Report
Reduce the number of severe injuries per 100 MVT in Champaign-Urbana by 15% by 2020	Total Severe Injuries per 100M VMT (5 year rolling average)	IDOT Crash Data, SCIL Report
Reduce the total number of crashes involving bicyclists in Champaign-Urbana by 15% by 2020	Total bicycle crashes	IDOT Crash Data, SCIL Report
Reduce the total number of crashes involving pedestrians in Champaign-Urbana by 15% by 2020	Total pedestrian crashes	IDOT Crash Data, SCIL Report
Reduce the number of hazardous materials and potential exposure incidents in the urbanized area by 5% by 2020 by tracking and understanding regional commodity flows	Frequency of incidents related to hazmat spills on the regional transportation system	CUUATS staff, Cities and Villages, LEPC, law enforcement, C-U MTD, University of Illinois
Create an evacuation plan for the region by 2020 that would set the regional transportation system to be ready for efficiently performing evacuation in case of a natural or man-made disaster	Existence of regional evacuation plan	CUUATS staff, Cities and Villages, LEPC, school districts, law enforcement, C-U MTD
Equip important regional transportation infrastructure with proper security features against any possible man made hazard by 2020	Number of new security features installed at Illinois Terminal, Willard Airport, etc.	C-U MTD, UIUC
Partner with at least 2 law enforcement agencies to promote safety and security of existing and proposed transportation system by 2020	Police reports related to personal safety and vandalism in transportation system	Crime data

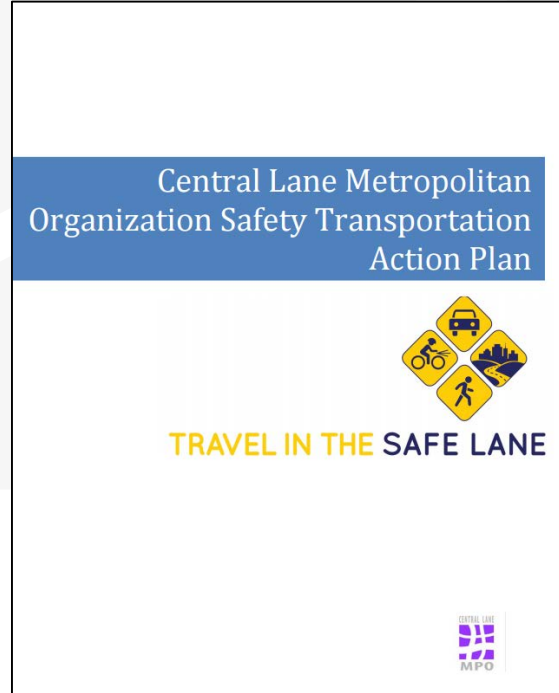
Performance Measures and Targets

Strategies						Responsible Parties	
CUUATS will produce a traffic crash analysis report for the Urbanized Area every two years.	Evaluate intersections that have problematic or crash-inducing patterns and identify solutions.	Improve visibility for all roadway users through improved lighting, striping, signage, visibility triangles, and access control.	Work with municipalities and transportation study groups to evaluate existing speed limits on the local roadway network.	Continue educational programs for CUUATS member agencies as well as law enforcement officers about safety issues in the urbanized area.	Continue educational programs for grades K-12 including driver's education and safety programs.	Continue educational safety programs for the community including drivers, bicyclists and pedestrians.	CUUATS Staff, Cities and Villages, law enforcement, C-U MTD, CU-SRTS Project, University of Illinois
Perform Road Safety Audit (RSA) at request of local agencies, maintain list of trained volunteers to help conduct RSAs.	Prepare applications and provide input to local agencies regarding Highway Safety Improvement Program (HSIP) funds.	Complete applications for available Federal safety funding.	Work with municipalities and transportation study groups to evaluate existing speed limits on the local roadway network.	Conduct post-construction crash analysis required for federally-funded safety improvements.	Evaluate HSIP projects (before and after studies).	Continue educational safety programs for the community including drivers, bicyclists and pedestrians.	CUUATS Staff, Cities and Villages, law enforcement, C-U MTD, CU-SRTS Project, University of Illinois
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Close gaps in bicycle networks along roadways and in existing neighborhoods.	Continue to implement scheduled improvements to bicycle infrastructure proposed in the Urbana Bicycle Master Plan and Champaign County Greenways and Trails within the MPA.		Work with municipalities and transportation study groups to evaluate existing speed limits on the local roadway network.	Continue educational safety programs for the community including drivers, bicyclists and pedestrians.	Revise, complete and distribute Safe Walking Route Maps for public elementary and middle schools in Champaign-Urbana every two years and continue the Safe Routes to School program.		CUUATS Staff, Cities and Villages, Developers, CU-SRTS Project, University of Illinois
Continue to enforce codes requiring new development to provide sidewalks along roadway frontages and safe crossings at intersections.	Retrofit existing ramps and crosswalk entrances to meet ADA standards.	Install Accessible Pedestrian Signal (APS) systems at intersections with high traffic volumes and/or high pedestrian crossing volumes.	Work with municipalities and transportation study groups to evaluate existing speed limits on the local roadway network.	Revise, complete, and distribute Safe Walking Route Maps for public elementary and middle schools in Champaign-Urbana every two years and continue Safe Routes to School project.		Continue educational safety programs for the community including drivers, bicyclists and pedestrians.	CUUATS Staff, Cities and Villages, CU-SRTS Project, University of Illinois
Identify hazardous materials most frequently transported through Champaign County.	Identify the routes most frequently used, and the modes of transportation that hazardous commodities are shipped.	Identify major highways, railroads, and pipelines and survey the amounts of hazardous commodities transported.	Assess the regional transportation network for safe routing of hazardous materials and designate the most appropriate routes for hazmat transportation.		Identify existing routes which are designated as hazmat routes.	Recommend appropriate routes for hazmat transportation through Champaign County.	CUUATS staff, Cities and Villages, Champaign County Emergency Management Agency (EMA), Developers, LEPC, law enforcement, C-U MTD, University of Illinois
Coordinate with agencies in charge of emergency vehicle access and evacuation plans.		Update the regional Intelligent Transportation System (ITS) architecture and install Vehicle Management Systems (VMS) at major roadways and intersections.			Perform periodic emergency evacuation drills at different agencies including local school districts.		CUUATS staff, Cities and Villages, Champaign County EMA, LEPC, school districts, law enforcement, C-U MTD
Conduct monthly inspections of security features at the Illinois Terminal, Willard Airport, etc.			Coordinate with IDOT, Department of Homeland Security (DHS), and local agencies to ensure that up to date security features are installed at regional transportation infrastructure.				CUUATS staff, DHS, IDOT, law enforcement, Cities and Villages, C-U MTD, University of Illinois
Continue educational safety programs for the community including drivers, bicyclists and pedestrians.			Include updated information regarding the regional Intelligent Transportation System (ITS) architecture and install Vehicle Management Systems (VMS) in safety education programs.				All local police departments and municipalities

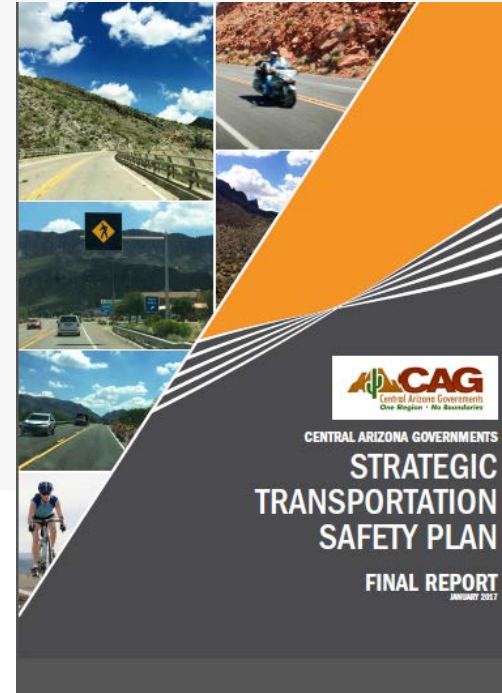
Types of Transportation Safety Plans



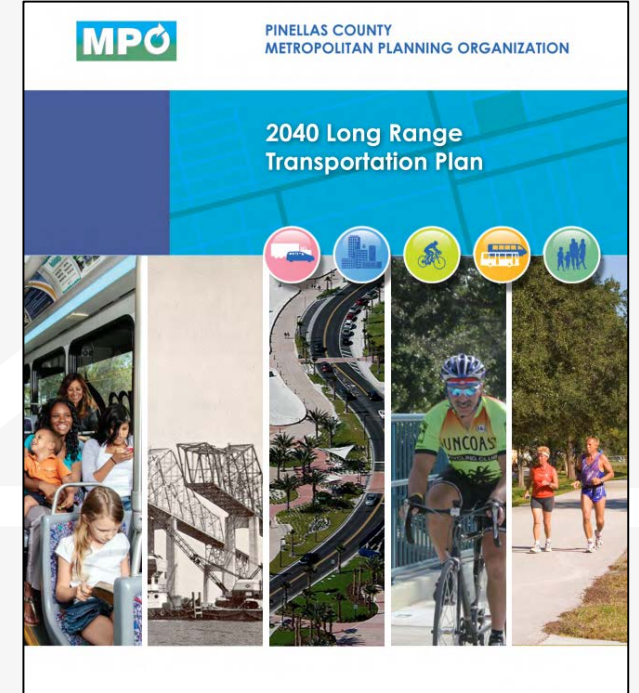
Emphasis Areas and Strategies



Long Range Transportation Safety Priorities



Field Investigation Results and Projects



Safety Chapter

Opportunities to Coordinate – MWCOCG, Local Jurisdictions, Regional Safety Partners

- Share safety information (transportation plans, safety plans, programs)
- Continue safety subcommittee meetings
- Identify analysis approach to identify programs or projects
 - » Contributing Factors
 - » Systemic Analysis
 - » Other
- Prioritize and address crash locations that are “off-list” (that is, not on the DOT annual priority list)
 - » Conduct safety studies (larger in nature) at these locations/corridors
 - » Implement a road safety audit program (for smaller efforts) to identify lower cost countermeasures at spot locations

Questions??

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