

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
2.1	DRIVERS								
2.1.1	Occupant Protection								
A	Maximize use of occupant restraints by all vehicle occupants								
A.1	Conduct highly publicized enforcement campaigns to maximize restraint use (e.g. "Click It Or Ticket", "Buckle Up, Acadiana").	State PD	City PDs LPSO	Minimal Existing OT Media	Proven \$	3	No	No	Yes
A.2	Provide enhanced public education to population groups with lower than average restraint use rates.	MPO	Clergy DPS	Low	Proven \$	3	No	No	Yes
A.3	Encourage the enactment of local laws that will permit standard enforcement of restraint laws.	MPO	City Court 15th JDC	Low	Tried	2	Yes	Yes	No
B	Insure that restraints, especially child and infant restraints, are properly used								
B.1	Conduct high-profile "child restraint inspection" events at multiple community locations.	DHH	Law Enf. Auto Dlrs.		Proven \$	2	No	No	Yes
3.1.1.2.2	Provide locations for instruction in	DHH	LPSS		Tried	3	No	No	Yes

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	proper child restraint use, including both public safety agencies and health care providers.		AMA						
B.2	Train law enforcement personnel to check for proper child restraint use in all motorist encounters.	Law Enf.	DHH		Tried	1	No	Yes	No
C	Provide access to appropriate information, materials, and guidelines for those implementing programs to increase occupant restraint use	MPO	DHH Clergy LPSS Auto Dtrs.						
C.1	Create parish clearing house for materials that offer guidance in implementing programs to increase restraint use.	MPO	DHH Clergy LPSS Auto Dtrs.		Experimental	2	No	No	Yes
C.2	Provide technical assistance to local, parish, and state agencies and organizations to conduct occupant protection programs	MPO	DHH		Experimental	1	No	No	Yes
C.3	Provide educational materials to the public on the proper use of occupant protection devices and enforcement practices	DHH	Law Enf. Clergy Auto Dtrs.		Experimental	2	No	No	Yes
C.4	Encourage legislative changes to safety belt law to include higher penalties; require citations be recorded in driver history file; extend requirements to	15th JDC	City Court MPO St. Deleg.		Experimental	1	Yes	No	No
2.1.2	Impaired Drivers								

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		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
D	Reduce Excessive Drinking and Underage Drinking								
D.1	Require Responsible Beverage Service Policies for Alcohol Servers and Retailers (P)	ATAC	LPSS Br Own As		Proven	3	Yes	No\	No
D.2	Increase/Establish Local Sales Tax on Beer	Muni. Govt.	LPSO		Tried	2	Yes	No	No
D.3	Prohibit anyone under the age of 21 from entering lounges or bars who have the sale of alcohol as their primary service.	Muni. Govt.	Br Own As		Experimental	3	Yes	No	No
D.4	Conduct Well-Publicized Compliance Checks of Alcohol Retailers to Reduce Sales to Underage Persons	ATAC	State PD LPSO Muni Pol		Tried	3	No	No	Yes
D.5	Employ Screening and Brief Interventions in Health Care Settings (T)	DHH	AMA		Tried	1	No	Yes	No
E	Enforce DWI Laws								

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E.1	Conduct Regular, Well-Publicized DWI Checkpoints	Law Enf.	State PD		Proven \$	3	No	No	Yes
E.2	Publicize and Enforce Zero Tolerance Laws for Drivers Under Age 21 (P)	Law Enf.	State PD		Proven	3	No	No	Yes
E.3	Enhance DWI Detection Through Special DWI Patrols and Related Traffic Enforcement (T)	Law Enf.	State PD		Tried	3	No	No	No
E.4	Implement parishwide impaired driving prevention public information campaign	MPO	LPSS DHH		\$	2	No	No	Yes
F	Prosecute, Impose Sanctions On, and Treat DWI Offenders								
F.1	Suspend Driver's License Administratively Upon Arrest (P)	15th JDC	City Ct.		Proven	1	Yes	No	No
F.2	Screen All Convicted DWI Offenders for Alcohol Problems and Require Treatment When Appropriate (P)	DHH	15th JDC City Ct.		Proven	2	No	Yes	No

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F.3	Establish Stronger Penalties for BAC Test Refusal Than for Test Failure (T)	State	15th JDC City Ct.		Tried	3	Yes	Yes	No
F.4	Implement a DWI court pilot project.	15th JDC	City Ct.		Tried	2	No	No	No
F.5	Develop Diversion Programs and Plea Bargains to Non-Alcohol Offenses (T)								
F.6	Install ignition interlock device (IID)	15th JDC	City Ct. ATAC		Proven	3	Yes	No	No
F.7	Identify and exam all local ordinances and state legislation pertaining to impaired driving and how these are applied.	MPO			Experimental	3	No	No	No
F.8	Conduct research and develop a plan to improve prosecution and judicial practices that limit the consequences for impaired driving.	MPO	15th JDC City Ct.		Experimental	2	No	Yes	No
F.9	Support legislation creating an impaired driving tracking system.	State Legis.	15th JDC City Ct.		Experimental	2	Yes	Yes	No

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F.10	Pre-trial Diversionary Program for DUI offenses.				\$				
G	Control High-BAC and Repeat Offenders	15th JDC	City Ct.						
G.1	Seize Vehicles or Vehicle License Plates Administratively Upon Arrest (P)	Law Enf.	State PD		Proven	3	Yes	No	No
G.2	Require Ignition Interlocks as a Condition for License Reinstatement (P)	15th JDC	City Ct.		Proven	3	Yes	No	No
G.3	Monitor All Convicted DWI Offenders Closely (P)	15th JDC	City Ct.		Proven	3	No	Yes	No
G.4	Incarcerate Offenders (P)	15th JDC	City Ct.		Proven \$	3	No	No	No
2.1.3	Address Novice Drivers								
H.	Enhance Current GDL System Required								

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	by The State of Louisiana								
H.1	Enhance and strength current Graduated Licensing Program required by the State of Louisiana.	OMV	LPSS		Proven	2	Yes	Yes	Yes
H.2	Require at Least 6 Months of Supervised Driving for Beginners Starting at Age 16	OMV	Muni. Gov.		Proven	2	Yes	Yes	No
H.3	Implement Nighttime Driving Restrictions for Drivers Under the Age of 18	OMV	Muni. Gov.		Proven	2	Yes	No	No
H.4	Implement Passenger Restrictions Regulating, Limiting, or Prohibiting Passengers	OMV	Muni. Gov.		Tried	3	Yes	Yes	No
H.5	Prohibit Cell Phone Use by Drivers with a GDL License	OMV	Muni. Gov.		Tried	3	Yes	No	No
I	Publicize, Enforce, and Adjudicate Laws Pertaining to Young Drivers								
I.1	Publicize and Enforce Laws Pertaining to	Law Enf.	State PD		Proven	3	No	No	Yes

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	Underage Drinking and Driving		MPO		\$				
I.2	Publicize and Enforce Safety Belt Laws	Law Enf.	State PD MPO		Proven \$	2	No	No	Yes
I.3	Publicize and Enforce GDL Restrictions	Law Enf.	State PD MPO		Experimental	2	No	No	Yes
J	Assist Parents in Managing Teens' Driving	MPO							
J.1	Facilitate Parental Supervision of Learners				Tried	2	No	Yes	Yes
J.2	Facilitate Parental Management of Intermediate Drivers	MPO	Drive. Ed.		Experimental	2	No	Yes	Yes
J.4	Organize annual meetings and presentation with Mothers Against Drunk Driving (MADD)	MPO	MADD City PDs		Unknown	2	No	No	Yes
K	Improve Young Driver Training	MPO							

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K.1	Work with local driver's education academies to develop parish curriculum standards and raise the standards of schools and instructors	MPO	Drive. Ed.		Experimental	2	No	Yes	Yes
K.2	Examine and coordinate the multiple community and school-based education and prevention programs	MPO	Drive. Ed. LPSS		Experimental \$	2	No	No	Yes
L	Employ School-Based Strategies								
L.1	Eliminate Early High School Start Times (i.e., before 8:30 a.m.)	LPSS	15th JDC City Ct. MPO		Tried	1	No	Yes	No
L.2	Review Transportation/Land Use Plans for New/Expanded High School Sites	PZC	MPO LPSS		Experimental	2	No	Yes	No
L.3	Encourage Selection of Safer Vehicles for Young Drivers	MPO	Auto Dlrs.		Experimental	3	No	Yes	Yes
L.4	Educate parents on the available	MPO	LPSS		Experimental	3	No	No	Yes

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	impaired driving program activities focused on youth during high school events, e.g., proms and graduation		Drive. Ed.						
2.1.4	Older Drivers								
M	Plan For an Aging Population				N/A				
M.1	Establish a broad-based coalition to plan to address older adults' transportation needs	MPO	DHH AMA			1	No	No	Yes
M.2	Identify older drivers at increased risk of crashing and intervene	OMV	DHH AMA			1	No	Yes	No
M.3	Strengthen the role of medical advisory boards	AMA	DHH ATSC			2	No	No	Yes
M.4	Update procedures for assessing medical fitness to drive	OMV	AMA DHH			1	Yes	Yes	No
M.5	Encourage external reporting of at-risk drivers to licensing authorities	ATSC	State PD Law Enf.			1	Yes	Yes	Yes

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M.6	Provide remedial assistance to help functionally impaired older drivers lower their crash risk	DHH	OMV State PD			1	No	Yes	Yes
M.7	Improve the driving competency of older adults in the general driving population	OMV	State PD			2	No	Yes	Yes
M.8	Establish resource centers within communities to promote safe mobility choices	ATSC	OMV DHH AMA			2	No	No	Yes
M.9	Provide educational and training opportunities to the general older driver population	ATSC	OMV DHH AMA			2	No	No	Yes
N	Improve the roadway and driving environment to better accommodate the special needs of older drivers								
N.1	Provide advance warning signs	DOTD	LCG T&T			2	No	No	No
N.2	Increase the size and letter height of roadway signs	DOTD	LCG T&T			3	No	Yes	No

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N.3	Back plates on traffic signals	DOTD	LCG T&T		\$	3	No	No	No
N.4	Provide all-red clearance intervals at signalized intersections	DOTD	LCG T&T			2	No	No	No
N.5	Improve lighting at intersections, horizontal curves, and railroad grade crossings	DOTD	LCG T&T			3	No	No	No
N.6	Improve roadway delineation	DOTD	LCG T&T		\$	3	No	No	No
N.7	Reduce intersection skew angle	DOTD	LCG T&T			2	No	No	No
N.8	Wider lane line traffic striping.	DOTD	LCG T&T		\$	3	No	No	No
2.1.5	Aggressive Drivers								
O	Develop and implement a comprehensive				N/A				

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		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	enforcement and public education program to address aggressive driving behaviors								
O.1	Develop a local consensus on the definition of "Aggressive Driving."	MPO	15th JDC City Ct. Law Enf.			2	Yes	Yes	No
O.2	Identify local and state legislation regarding "Aggressive Driving."	MPO	15th JDC City Ct. Law Enf.			3	No	Yes	No
O.3	Deter aggressive driving in specific populations, including those with a history of such behavior, and at specific locations	Law Enf.	State PD AMA Auto Dlr.			2	No	No	Yes
O.4	Conduct educational and public information campaigns relating to aggressive driving	MPO	DHH Drive. Ed. LPSS AMA			2	No	No	Yes
P	Develop and implement a comprehensive enforcement to address aggressive driving behaviors								
P.1	Conduct parish enforcement manpower allocation study to provide support for local agencies and identify strategies to fill administrative positions with	MPO	Law Enf.			2	No	Yes	No
P.2	Assess academy practices as they relate	MPO	Law Enf.			3	No	Yes	No

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		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	to speeding and aggressive driving enforcement training.		State PD						
P.3	Provide overtime law enforcement grants to LE agencies for conducting red light running and speed enforcement campaigns	LHSC	Law Enf. State PD		\$	3	No	No	No
P.4	<i>Conduct high-profile</i> Selective Traffic Enforcement Programs (STEP) involving police departments, LPSO, and State Troop I	Law Enf.	State PD			2	No	No	No
P.5	Educate and impose sanctions against repeat offenders	15th JDC	City Ct.		\$	3	No	Yes	Yes
Q	Improve the driving environment to eliminate or minimize the external "triggers" of aggressive driving								
Q.1	Change or mitigate the effects of identified elements in the environment	MPO	DOTD LCG T&T			1	No	Yes	No
Q.2	Reduce nonrecurring delays and provide better information about these delays	MPO	DOTD LCG T&T			1	No	Yes	Yes
2.1.6	Distracted Driving								

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		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
R	Increase Driver Awareness Of The Risks Of Distracted Driving And Promote Driver Focus				N/A			No	
R.1	Identify Sources Which May Contribute to Driver Distraction	MPO	LPSS Drive. Ed.			2	No	Yes	No
R.2	Develop and implement a comprehensive public education program to address distracted driving behaviors	MPO	DHH Drive. Ed. AMA			2	No	No	Yes
R.3	Implement Programs That Target Populations At Increased Risk Of Distracted Driving Crashes	MPO	AMA Drive. Ed.			2	No	Yes	Yes
R.4	Incorporate information on distracted driving into education programs and materials for young drivers	ATSC	Drive. Ed. LPSS		\$	3	No	No	Yes
S	Develop and implement a comprehensive enforcement program to address distracted driving behaviors								
S.1	Visibly enforce existing statutes to determine distracted driving	Law Enf.	State PD		\$	3	No	No	No

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S.2	Strengthen local ordinances regarding prohibitions and restrictions on cell phone use and texting.	MPO	Muni. Gov.		\$	3	Yes	Yes	No
S.3	Define distracted driving and encourage revision to state code to include the new definition	ATSC	OMV 15th JDC Law Enf.			3	Yes	Yes	No

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2.2	ALTERNATIVE USERS								
2.2.1	Pedestrians								
T	Reduce Pedestrian Exposure to Vehicular Traffic	MPO	Pub. Works LA DOTD						
T.1	Provide Sidewalks/Walkways and Curb Ramps	Pub. Works	LA DOTD	Moderate		3	No	No	No
T.2	Construct Pedestrian Refuge Islands and Raised Medians	Pub. Works	LA DOTD	Moderate		2	No	No	No
T.3	Provide Vehicle Restriction/Diversion Measures	Pub. Works	LA DOTD	Moderate		1	No	No	No
T.5	Install Overpasses/Underpasses	Pub. Works	LA DOTD	High		1	No	No	No
U	Reduce Frequency and Severity of Pedestrian/Automobile Conflicts through Traffic Control and	T & T	LA DOTD						

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	Operational Improvements								
U.1	Install or Upgrade Traffic and Pedestrian Signals. 3-second advance for pedestrians at signalized intersections.	T & T	LA DOTD	Moderate		2	No	No	No
U.2	Improve Sight Distance and/or Visibility Between Motor Vehicles and Pedestrians	Pub. Works	LA DOTD	Low		3	No	No	No
U.3	Provide Crosswalk Enhancements	T & T	LA DOTD	Low		2	No	No	No
U.4	Implement Lighting/Crosswalk Illumination Measures	Pub. Works	LA DOTD	Moderate		3	No	No	No
U.5	Eliminate Screening by Physical Objects	Pub. Works	LA DOTD	Low		3	No	No	No
U.6	Install Signals To Alert Motorists That Pedestrians Are Crossing	T & T	LA DOTD	Moderate		3	No	No	No
U.7	Improve Reflectorization/Conspicuity of Pedestrians	T & T	LA DOTD	Low \$		3	No	No	No

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U.8	Reduce Vehicle Speed	T & T	LA DOTD	Low		3	No	Yes	No
U.9	Implement Road Narrowing Measures	Pub. Works	LA DOTD	Moderate		2	No	No	No
U.10	Install Traffic Calming at Road Sections as Well as Intersections	Pub. Works	LA DOTD	Moderate		1	No	No	No
U.11	Provide School Route Improvements	Pub. Works	LPSS LA DOTD ULL	Moderate		2	No	No	No
V	Improve Pedestrian and Motorist Safety Awareness and Behavior								
V.1	Provide Education, Outreach, and Training	MPO	LPSS AMA DHH	Low		3	No	No	Yes
V.2	Implement Enforcement Campaigns	LPD	LPSO	Low		2	No	No	No

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			State PD						
V.3	Provide pedestrian & bicycle safety educational materials to local officials, safety advocates, and educators.	MPO	LPSS LA DOTD	Low		2	No	No	Yes
V.4	Fully implement the Safe Routes to School Program (SRTS)	MPO	LPSS Pub. Works LA DOTD	Moderate \$		2	No	No	Yes
V.5	Increase penalties for drivers at fault when striking a pedestrian.	15th JDC	City Court Loc. Govt.	Low		1	Yes	No	Yes
2.2.2	Bicycles								
W	Reduce Bicycle Exposure to Vehicular Traffic	MPO	Pub. Works LA DOTD						
W.1	Incorporate Bicycle Facilities into local Capital Improvement Programs	Pub. Works	LA DOTD	Moderate		3	Yes	Yes	No
W.2	Modify/Adopt road construction cross-sections and Parish Transportation Plans	MPO	Pub. Works LA DOTD	Moderate		3	Yes	Yes	No

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	to include bicycle paths								
W.3	Retrofit existing transportation system network to include bicycle path	Pub. Works	LA DOTD	Moderate		2	No	Yes	No
W.4	Utilize existing public space to develop bicycle path network	Pub. Works	LA DOTD	Moderate		2	No	No	No
W.5	SPACE AVAILABLE FOR NEW STRATEGY								
W.6	Fully implement Atakapas-Ishak Trail	MPO	Rec. Trails LA DOTD Pub. Works	Moderate \$		1	No	No	No
X	Establish comprehensive bicycle safety program designed to develop a biking population capable of incorporating itself into typical roadway traffic.	MPO	LPSS DHH			2			
X.1	Introductory level course for children	MPO	LPSS DHH	Low		2	No	Yes	Yes
X.2	Basic course for children	MPO	LPSS	Low		2	No	Yes	Yes

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			DHH						
X.3	Adult Beginner Course	MPO	LPSS DHH	Low		2	No	Yes	Yes
X.4	Adult Intermediate Course	MPO	LPSS DHH	Low		2	No	Yes	Yes
X.5	Adult Advanced Course	MPO	LPSS DHH	Low		2	No	Yes	Yes
X.6	Adult advance course	MPO	LPSS DHH	Low		2	No	Yes	Yes
X.7	Provide safety educational materials to local officials, safety advocates, and educators with the ability to effect behavioral changes in the community.	MPO	Loc. Govt. DHH	Low \$		2	No	Yes	Yes
X.8	Increase penalties for drivers at fault when striking a bicyclist.	15th JDC	City Court Loc. Govt.	Low		2	Yes	Yes	Yes

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2.2.3	Motorcycles								
Y	Develop a community-based motorcycle safety program								
Y.1	Work with established motorcycle education programs to develop a new rider program	MPO	LPSO	Low		1	No	Yes	Yes
Y.2	Aggressively pursue the involvement of motorcycle clubs in education and outreach efforts.	MPO	LPSO	Low \$		1	No	No	Yes
Y.3	Conduct high-visibility enforcement of motorcycle safety laws, particularly helmet laws	LPD	LPSO State PD	Low		1	No	No	No
Y.4	Collect and analyze more data to properly identify the problems and solutions associated with motorcycle safety.	MPO	LA DOTD	Low \$		1	No	No	No
Y.5	Fully participate in "Share The Road" programs sponsored by the National Highway Transportation Safety Administration	MPO	LPSO	Low \$		1	No	No	Yes

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2.3	HIGHWAY/ROADS								
2.3.1	Intersection Safety - Signalized Intersections								
Z	Reduce Frequency and Severity of Intersection Conflicts through Traffic Control and Operational Improvements								
Z.1	Employ multiphase signal operation (P, T) ¹	T & T	LA DOTD	Low ?	TRIED/PROVEN	3	No	No	No
Z.2	Optimize clearance intervals (P) ²	T & T	LA DOTD	Low	PROVEN	3	No	No	No
Z.3	Employ signal coordination (P) ³	T & T	LA DOTD	Low ?	PROVEN	3	No	No	No
Z.4	Employ emergency vehicle preemption (P) ⁴	T & T	LA DOTD	Low	PROVEN	2	No	No	No
Z.5	Improve operation of pedestrian and bicycle facilities at signalized intersections (P, T) ⁵	T & T	LA DOTD	Low	TRIED/PROVEN	1	No	No	No

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Z.6	Remove unwarranted signals (P) ⁶	T & T	LA DOTD	Low	PROVEN	1	No	Yes	No
Z.7	Restrict or eliminate turning maneuvers (including right turns on red) (T) ⁷	Pub. Works	LA DOTD	Low	TRIED	1	No	No	No
AA	Reduce frequency and severity of intersection conflicts through geometric improvements								
AA.1	Provide/improved left-turn channelization (P) ⁸	Pub. Works	LA DOTD	Moderate	TRIED/PROVEN	2	No	No	No
AA.2	Provide/improved right-turn channelization (P)	Pub. Works	LA DOTD	Moderate		2	No	No	No
AA.3	Improve Geometry of Pedestrian and Bicycle Facilities ⁹	Pub. Works	LA DOTD	Moderate	TRIED/PROVEN	1	No	No	No
AA.4	Revise Geometry of Complex Intersections ¹⁰	Pub. Works	LA DOTD	High	TRIED/PROVEN	2	No	No	No

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BB	Improve sight distance at signalized intersections								No
BB.1	Redesign Intersection Approaches ¹¹	T & T	Pub. Works LA DOTD	Moderate	PROVEN	1	No	Yes	No
BB.2	Clear sight triangles (T) ¹²	Pub. Works	LA DOTD PZC	Low	TRIED	3	No	No	No
CC	Improve driver awareness of intersections and signal control						No		
CC.1	Improve Visibility of Intersections on Approach(es) ¹³	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
CC.2	Improve visibility of signals and signs at intersections (T) ¹⁴	T & T	LA DOTD Pub. Works	Moderate	TRIED	3	No	No	No
DD	Improve driver compliance and modify driver behavior and with traffic control devices and public information						No		

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		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
DD.1	Implement automated enforcement of red-light running (cameras) (P) ¹⁵	City PD	T & T LPSO LA DOTD	Low	PROVEN	3		No	No
DD.2	Provide public information and education (T) ¹⁶	MPO	DMV LPSS LPSO	Low \$	TRIED	3	No	No	Yes
DD.3	Provide targeted conventional enforcement of traffic laws (T) ¹⁷	City PD	LPSO State PD	Low	TRIED	3	No	No	No
DD.4	Implement automated enforcement of approach speeds (cameras) (T) ¹⁸	City PD	T & T	Low	PROVEN	3		No	No
DD.5	Control speed on approaches (E) ¹⁹	T & T	LA DOTD	Low	EXPERIMENTAL	2	No	No	No
EE	Improve access management near signalized intersections								
EE.1	Restrict access to properties using driveway closures or turn restrictions (T) ²⁰	T & T	LA DOTD Pub. Works	Low	TRIED	3		No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
EE.2	Restrict cross-median access near intersections (T) ²¹	T & T	LA DOTD Pub. Works	Low	TRIED	3	No	No	No
FF	Improve Safety Through Other Infrastructure Treatments								
FF.1	Restrict or Eliminate Parking on Intersection Approaches ²²	T & T	PZC Pub. Works LA DOTD	Low	PROVEN	3		No	No
FF.2	Improve Drainage in Intersection and on Approaches ²³	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
FF.3	Provide Skid Resistance in Intersection and on Approaches ²⁴	Pub. Works	LA DOTD	Moderate	TRIED	3	No	No	No
FF.4	Relocate Signal Hardware Out of Clear Zone ²⁵	T & T	LA DOTD	Moderate	TRIED	1	No	No	No
FF.5	Coordinate Closely Spaced Signals near At-Grade Railroad Crossings ²⁶	LA DOTD	Pub. Works	Low	TRIED	1	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
2.3.2	Intersection Safety - Unsignalized Intersections								
GG	Improve management of access near unsignalized intersections								
GG.1	Implement driveway closures/relocations (T)* ²⁷	T & T	LA DOTD PZC	Low	TRIED	3		Yes	No
GG.2	Implement driveway turn restrictions (T) ²⁸	T & T	LA DOTD PZC	Low	TRIED	3	No	Yes	No
HH	Reduce the frequency and severity of intersection conflicts through geometric design improvements²⁹				PROVEN				
HH.1	Provide left-turn lanes at intersections (P) ³⁰	Pub. Works	LA DOTD	Moderate	TRIED	3	No	No	No
HH.2	Provide right-turn lanes at intersections (P) ³¹	Pub. Works	LA DOTD	Moderate		3	No	No	No
HH.3	Realign intersection approaches to reduce or eliminate intersection skew	Pub. Works	LA DOTD	High	PROVEN	1	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	(P) ³²								
HH.4	Provide longer left-turn lanes at intersections (T) ³³	Pub. Works	LA DOTD	Moderate	TRIED	1	No	No	No
HH.5	Provide offset left-turn lanes at intersections (T) ³⁴	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
HH.6	Provide bypass lanes on shoulders at T-intersections (T) ³⁵	Pub. Works	LA DOTD	Moderate	TRIED	3	No	No	No
HH.7	Provide left-turn acceleration lanes at divided highway intersections (T) ³⁶	Pub. Works	LA DOTD	Moderate	TRIED	1	No	No	No
HH.8	Provide longer right-turn lanes at intersections (T) ³⁷	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
HH.9	Provide offset right-turn lanes at intersections (T) ³⁸	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
HH.10	Provide right-turn acceleration lanes at intersections (T) ³⁹	Pub. Works	LA DOTD	Moderate	TRIED	1	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
HH.11	Provide full-width paved shoulders in intersection areas (T) ⁴⁰	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
HH.12	Restrict or eliminate turning maneuvers by signing (T) ⁴¹	T & T	LA DOTD	Low	TRIED	3	No	No	No
HH.13	Restrict or eliminate turning maneuvers by providing channelization or closing median openings (T) ⁴²	Pub. Works	LA DOTD	Low	TRIED	2	No	No	No
HH.14	Close or relocate "high-risk" intersections (T) ⁴³	Pub. Works	LA DOTD	High	TRIED	1	No	Yes	No
HH.15	Convert four-legged intersections to two T-intersections (T) ⁴⁴	Pub. Works	LA DOTD	High	TRIED	1	No	No	No
HH.16	Convert offset T-intersections to four-legged intersections (T) ⁴⁵	Pub. Works	LA DOTD	High	TRIED	1	No	No	No
HH.17	Use indirect left-turn treatments to minimize conflicts at divided highway	Pub. Works	LA DOTD	Moderate	TRIED	1	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	intersections (T) ⁴⁶								
HH.18	Improve pedestrian and bicycle facilities to reduce conflicts between motorists and nonmotorists (varies) ⁴⁷	Pub. Works	LA DOTD	Moderate	VARIABLES	2	No	No	No
II	Improve sight distance at unsignalized intersections								
II.1	Clear sight triangles on stop- or yield-controlled approaches to intersections (T) ⁴⁸	Pub. Works	PZC LA DOTD	Low \$	TRIED	3	No	No	No
II.2	Clear sight triangles in the medians of divided highways near intersections (T) ⁴⁹	Pub. Works	LA DOTD	Low/Mod	TRIED	3	No	No	No
II.3	Change horizontal and/or vertical alignment of approaches to provide more sight distance (T) ⁵⁰	Pub. Works	LA DOTD	Moderate	TRIED	2	No	No	No
II.4	Eliminate parking that restricts sight distance (T) ⁵¹	T & T	PZC LA DOTD	Low	TRIED	3		No	No
JJ	Improve availability of gaps in traffic and assist drivers in judging gap								

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	sizes at unsignalized intersections								
JJ.1	Retime adjacent signals to create gaps at stop-controlled intersections (T) ⁵²	T & T	LA DOTD	Low	TRIED	2	No	No	No
JJ.2	Provide an automated real-time system to inform drivers of the suitability of available gaps for making turning and crossing maneuvers (E) ⁵³	T & T	LA DOTD	Low	EXPERIMENTAL	1	No	No	No
JJ.3	Provide roadside markers or pavement markings to assist drivers in judging the suitability of available gaps for making turning and crossing maneuvers (E)	T & T	LA DOTD	Low		2	No	No	No
KK	Improve driver awareness of intersections as viewed from the intersection approach								
KK.1	Improve visibility of the intersection by providing lighting (P) ⁵⁴	T & T	LA DOTD	Low/Mod	PROVEN	3	No	No	No
KK.2	Improve visibility of intersections by providing enhanced signing and delineation (T) ⁵⁵	T & T	LA DOTD	Low/Mod	TRIED	3	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
KK.3	Install splitter islands on the minor-road approach to an intersection (T) ⁵⁶	Pub. Works	LA DOTD	Moderate	TRIED	1	No	No	No
KK.4	Provide a stop bar (or provide a wider stop bar) on minor-road approaches (T) ⁵⁷	T & T	LA DOTD	Low	TRIED	2	No	No	No
KK.5	Install larger regulatory and warning signs at intersections (T) ⁵⁸	T & T	LA DOTD	Low \$	TRIED	3	No	No	No
KK.6	Call attention to the intersection by installing rumble strips on intersection approaches (T) ⁵⁹	T & T	LA DOTD	Low \$	TRIED	3	No	No	No
KK.7	Provide dashed markings (extended left edgelines) for major-road continuity across the median opening at divided highway intersections (T) ⁶⁰	T & T	LA DOTD	Low	TRIED	2	No	No	No
KK.8	Provide supplementary stop signs mounted over the roadway (T) ⁶¹	T & T	LA DOTD	Low/Mod	TRIED	3	No	No	No
KK.9	Provide pavement markings with	T & T	LA DOTD	Low	TRIED	3	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	supplementary messages, such as STOP AHEAD (T) ⁶²			\$					
KK.10	Provide improved maintenance of stop signs (T) ⁶³	T & T	LA DOTD	Low	TRIED	3	No	No	No
KK.11	Install flashing beacons at stop-controlled intersections (T) ⁶⁴	T & T	LA DOTD	Low/Mod	TRIED	2	No	No	No
LL	Choose appropriate intersection traffic control to minimize crash frequency and severity								
LL.1	Provide all-way stop-control at appropriate intersections (P) ⁶⁵	T & T	LA DOTD	Low/Mod	PROVEN	1	No	No	No
LL.2	Provide roundabouts at appropriate locations (P) ⁶⁶	Pub. Works	LA DOTD	High \$	PROVEN	3	No	Yes	No
LL.3	Avoid signalizing through roads (T) ⁶⁷	T & T	LA DOTD	Low	TRIED	3	No	No	No
MM	Improve driver compliance with								

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	traffic control devices and traffic laws at intersections								
MM.1	Provide targeted enforcement to reduce stop sign violations (T) ⁶⁸	City PD	State PD	Low/Mod	TRIED	3	No	No	No
MM.2	Provide targeted public information and education on safety problems at specific intersections (T) ⁶⁹	MPO	LPSS OMV	Low	TRIED	3	No	No	Yes
NN	Reduce operating speeds on specific intersection approaches ⁷⁰				PROVEN				
NN.1	Provide targeted speed enforcement (P) ⁷¹	City PD	LPSO State PD	Low/Mod	PROVEN	3	No	No	No
NN.2	Provide traffic calming on intersection approaches through a combination of geometrics and traffic control devices (P) ⁷²	Pub. Works	LA DOTD	Mod/High	TRIED	2	No	No	No
NN.3	Post appropriate speed limit on intersection approaches (T)	T & T	LA DOTD	Low		3	No	No	No
OO	Guide motorists more effectively								

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	through complex intersections								
OO.1	Provide turn path markings (T) ⁷³	T & T	LA DOTD	Low/Mod	TRIED	3	No	No	No
OO.2	Provide a double yellow centerline on the median opening of a divided highway at intersections (T) ⁷⁴	T & T	LA DOTD	Low/Mod	TRIED	2	No	No	No
OO.3	Provide lane assignment signing or marking at complex intersections (T) ⁷⁵	T & T	LA DOTD	Low/Mod	TRIED	3	No	No	No
2.3.3	Prevention of Roadway Departures								
PP	Keep Vehicles from Encroaching on the Roadside								
PP.1	Provide improved highway geometry for horizontal curves	Pub. Works	LA DOTD	High		2	No	No	No
PP.2	Apply Shoulder Treatment	Pub. Works	LA DOTD	Moderate		3	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
PP.3	Widen and/or pave shoulders (P)* ⁷⁶	Pub. Works	LA DOTD	Moderate		3	No	No	No
PP.4	Eliminate Shoulder Drop-Offs	Pub. Works	LA DOTD	Moderate		3	No	No	No
PP.5	Provide In-Lane Delineation and Marking for Sharp Curves	T & T	LA DOTD	Low/Mod \$		3	No	No	No
PP.6	Install shoulder rumble strips ⁷⁸	Pub. Works	LA DOTD	Moderate		2	No	No	No
PP.7	Provide enhanced pavement markings ⁷⁹	T & T	LA DOTD	Low/Mod		2	No	No	No
PP.8	Install edgeline "profile marking," edgeline rumble strips or modified shoulder rumble strips on section with narrow or no paved shoulders	Pub. Works	LA DOTD	Low/Mod \$		3	No	No	No
PP.9	Install midlane rumble strips ⁸⁰	Pub. Works	LA DOTD	Low/Mod		1	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
PP.10	Provide skid-resistant pavement surfaces	Pub. Works	LA DOTD	Low/Mod		3	No	No	No
QQ	Minimize the Likelihood of Crashing into an Object or Overturning if the Vehicle Travels Off The Shoulder								
QQ.1	Design Safer Slopes and Ditches to Prevent Rollovers	Pub. Works	LA DOTD	Moderate		2	No	No	No
QQ.2	Remove/Relocate Objects in Hazardous Locations	Pub. Works	LA DOTD	Low/Mod		2	No	No	No
QQ.3	Delineate Trees or Utility Poles with Retroreflective Tape ⁸¹	Pub. Works	LA DOTD	Low/Mod		3	No	No	No
RR	Reduce the Severity of the Crash								
RR.1	Improve Design of Roadside Hardware (e.g. Light Poles, Signs, Bridge Rails)	Pub. Works	LA DOTD	Moderate		2	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
RR.2	Improve Design and Application of Barrier and Attenuation Systems	Pub. Works	LA DOTD	Moderate		2	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
2.4	TARGETING SYSTEM-WIDE SAFETY IMPROVEMENTS								
2.4.1	Evaluating Crash Data								
SS	Evaluate MPO crash data on a yearly basis system-wide								
SS.1	Identify crash trends in terms of MPO crash rates over the past five years.	MPO	T & T LA DOTD	Low \$		3	No	Yes	No
SS.2	Identify crash types in terms of MPO crash rates over the past five years.	MPO	T & T LA DOTD	Low \$		3	No	Yes	No
SS.3	Identify high crash rate locations in the MPO study area.	MPO	T & T LA DOTD	Low \$		3	No	Yes	No
TT	Identify countermeasures to reduce crashes.								
TT.1	Differentiate crash patterns in terms of operational, infrastructural or behavioral solutions at high crash rate locations	MPO	T & T LA DOTD	Low \$		3	No	Yes	No
UU	Integrate crash data analysis into the								

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	MPO project planning process								
UU.1	Include crash data analysis in early process of MPO project planning	MPO	T & T LA DOTD	Low		3	No	Yes	No
2.4.2	Instituting a Safe Lights/Safe Speed (SLSS) Program for the Lafayette								
VV	Improve driver compliance with electronic surveillance								
VV.1	Issue civil violations at key intersections 24 hours a day using electronic surveillance. Violations include, speeding through the intersection and/or disobeying a red light.	LCG	Loc. Gov. LA DOTD	Low/Mod \$		3	Yes	No	No
VV.2	Issue civil violations at multiple sites, where speed vans will be mobilized, with speed detection devices installed in each van to issue violations to speeders.	LCG	Loc. Gov. LA DOTD	Low/Mod \$		3	Yes	No	No
WW	Improve speed enforcement								
AAA.1	Re-establish relationships between all law enforcement agencies whose jurisdiction,	MPO	City PDs LPSO	Low		3	No	No	Yes

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	or part of their jurisdiction, includes the Lafayette MPO study area.		Area SOs						
AAA.2	Maintain relationships between all law enforcement agencies whose jurisdiction, or part of their jurisdiction, includes the Lafayette MPO study area	MPO	City PDs LPSO Area SOs	Low		3	No	No	Yes
AAA.3	Install more speed detection devices for the Speed program at key intersections.	LCG	Loc. Gov. LA DOTD	Low/Mod		3		No	No
XX	Establish a funding source for transportation safety projects.						Yes		
XX.1	Earmark a portion of funds collected by the SSLS program for implementing the Lafayette MPO Transportation Safety Plan	MPO	LCG Loc. Gov.	Low \$		3	Yes	No	No
XX.2	Earmark a portion of funds collected by the SLSS program for establishing and maintaining programs and special projects as identified by the	MPO	LCG Loc. Gov.	Low \$		3	Yes	No	No
2.4.3	Lafayette MPO Area								
YY	Develop a comprehensive access management plan for the Lafayette MPO study area.								
YY.1	Identify technical staff with a background	MPO	LCG	Low		2	No	No	No

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
	in access management		LA DOTD						
YY.2	Develop technical guidelines with input from key Traffic & Transportation Department staff	MPO	LCG LA DOTD	Low		2	No	Yes	No
YY.3	Develop technical guidelines from key staff	MPO	LCG LA DOTD	Low \$		2	No	Yes	No
YY.4	Present technical guidelines to Planning Zoning & Codes and Public Works for comment	MPO	LCG LA DOTD	Low \$		2	No	No	No
YY.5	Develop a working draft document for presentation to the MPO.	MPO	LCG LA DOTD	Low \$		2	No	No	No
ZZ	Adopt an access management plan for the Lafayette MPO area.								
ZZ.1	[PLANNING PROCESS]								
AAA.	Enforce the access management plan for the Lafayette MPO area								

No.	Objective/Strategies	CLASSIFICATIONS					ACTION		
		Lead Department or Agency	Partners	Degree of Cost	Effectiveness	Rank	Ordinance or Other Legislation	Guidelines or Standards	Public Education & Outreach
AAA.1	Mandatory review of all development plats and roadway construction at a central agency for compliance with the access management plan.	PZC	MPO Loc. Govt.	Low \$		3	No	Yes	No

Index No.	Endnote No.	Endnote
Z.1	1	TRIED/PROVEN: Various studies have proven that installing protected left-turn phases improves left-turn safety. The isolation of left-turning traffic usually reduces rear-end, angle, and sideswipe crashes, and improves the flow of through traffic. A protected/permitted left-turn phase has not been shown to provide the higher degree of safety of a protected-only phase, but it is safer than permitted-only phasing. The Federal Highway Administration's Signalized Intersections: Informational Guide provides a summary of studies of the effectiveness of adding left-turn lanes and protected left-turn phases, and concludes that providing both a left-turn phase and left-turn lane appears to provide the most safety benefit. A Florida study concluded
Z.2	2	PROVEN: This strategy is proven effective in reducing multivehicle crashes at signalized intersections. A study of signalized intersections in two counties in New York found a 9% reduction in multivehicle and a 12% reduction in injury crashes at intersections where the duration of the yellow change intervals was lengthened to meet ITE recommendations. The same study showed a 37% reduction in crashes involving pedestrians or bicyclists. Another study showed an 18% decrease in all types of crashes when the clearance interval was increased. Yet another study indicated a 15% decrease in all crashes and a 30% decrease in right-angle crashes when the yellow change interval was increased.
Z.3	3	PROVEN: Studies have proven the effectiveness of signal coordination in improving safety. The Institute of Transportation Engineer's Traffic Safety Toolbox cites two studies of coordinated signals with intersection crash frequencies that dropped an average of 32%. One of the studies showed an improvement in crash rates for mid-block sections as well. Signal coordination can also contribute to a decrease in red-light running. An Arizona study on the effectiveness of traffic signal coordination concluded that crash rates on intersection approaches decreased 6.7% after signal coordination.
Z.4	4	PROVEN: Installation of signal preemption systems for emergency vehicles has been shown to decrease response times. A review of signal preemption system deployments in the United States shows decreases in response times between 14 and 50% for systems in several cities. In addition, the study reports a 70% decrease in crashes with emergency vehicles in St. Paul, Minnesota, after the system was deployed (though the extent to which emergency vehicle priority was implemented in the city is unclear).
Z.5	5	TRIED AND PROVEN: The presence of sidewalks on both sides of the street has proven to significantly reduce the "walking along roadway" pedestrian crash risk compared to locations where no sidewalks/walkways exist. Reductions of 50% to 90% of these types of pedestrian crashes have occurred. The Federal Highway Administration found that a raised median (or raised crossing island) was associated with a significantly lower pedestrian crash rate at multilane crossing locations, with both marked (46% reduction) and unmarked (39% reduction) crosswalks. In contrast, painted (not raised) medians and center two-way left-turn lanes did not offer significant safety benefits to pedestrians on multilane roads, compared to no median at all. A Danish study concluded that providing bicycle lanes can reduce bicycle crashes by 36%.

Z.6	6	PROVEN: Removal of an unwarranted signal will eliminate excessive delay and disobedience of the signal indicators at the targeted intersections if these conditions exist because the signal is no longer needed. Signal removal should also decrease the use of inappropriate routes used by drivers in an attempt to avoid the traffic control signals and decrease the frequency of collisions (especially rear-end collisions). One study found a decrease in annual average crash frequency of greater than one crash per year when intersections are converted to all-way stop control. In 2005, a study reported that removing unwarranted signals may result in a 24% decrease in all crashes, a 53% decrease in injury crashes, a 24% decrease in right-angle crashes, and a 29% decrease in rear-end crashes.
Z.7	7	TRIED: One study in Florida concluded that prohibiting left turns at intersections (signalized and unsignalized) can reduce all crashes by 45% and left turn crashes by 90%. That same study determined that prohibiting right-turn-on-red can reduce right angle crashes by 30% and rear-end crashes by 20%.
AA.1	8	TRIED AND PROVEN: Recent research has demonstrated the substantive safety effect of providing left-turn lanes. The safety effectiveness varies with the location (rural versus urban), number of legs, type of traffic control, and number of approaches for which the lane is installed. One study indicated crashes can be reduced up to 15% for rural three-leg intersections and 33% for rural four-leg intersections. The same study concluded that crashes may be reduced up to 7% at urban three-leg intersections and up to 19% at urban four-leg intersections. Another study indicated that crashes may be reduced up to 58% when a left-turn lane and turn phase are added.
AA.3	9	TRIED/PROVEN: The presence of sidewalks on both sides of the street has proven to significantly reduce the "walking along roadway" pedestrian crash risk compared to locations where no sidewalks/walkways exist. Reductions of 50 to 90% of these types of pedestrian crashes have occurred. The Federal Highway Administration found that a raised median (or raised crossing island) was associated with a significantly lower pedestrian crash rate at multilane crossing locations, with both marked (46% reduction) and unmarked (39% reduction) crosswalks. In contrast, painted (not raised) medians and center two-way left-turn lanes did not offer significant safety benefits to pedestrians on multilane roads, compared to no median at all. A Danish study concluded that providing bicycle lanes can reduce bicycle crashes by 36%.
AA.4	10	TRIED/PROVEN: Determination of the effectiveness is site specific, due to the varying conditions at intersections where these strategies may be employed. One study in 1976 indicated offset intersections had crash rates approximately 43% of the crash rates at comparable four-leg intersections.
BB.1	11	PROVEN: Implementing any of these strategies should improve safety at signalized intersections. More research is needed to better quantify estimates of crash reduction for these countermeasures.
BB.2	12	TRIED: Research has established a relationship between intersection safety and sight distance at unsignalized intersections (5% reduction in crashes per quadrant). No such research quantifies the effectiveness of improving sight distance at signalized intersections. One may expect that crashes related to inadequate sight distance (specifically, angle and turning related) would be reduced if the sight distance problems were improved. However, because the signal assigns right-of-way for most vehicles crossing paths at right angles and because traffic volumes affected by the other situations cited above are low, the overall impact on crashes could be relatively small. For jurisdictions that operate signals on late-night flash, these intersections effectively operate as two-way stop control. Therefore, clearing sight triangles would have an impact on safety.

CC.1	13	TRIED: Making drivers aware of approaching an intersection through the use of enhanced signing and delineation should improve safety by alerting drivers to potential vehicles on the cross streets. This heightened awareness will quicken drivers' reaction times when conflicts occur. The Institute of Transportation Engineers has reported that installing advance warning signs for signalized intersections can reduce all crashes by up to 22% and right angle crashes by 35%. One study concluded that providing advanced dilemma zone protection on rural high-speed approaches may reduce crashes by up to 39%.
CC.2	14	TRIED: Improved visibility and awareness of traffic control information are expected to reduce conflicts related to drivers not being able to see the device well or in enough time to comply with the signal indication or sign message (such as those resulting in rear-end and right-angle crashes). Various studies have indicated that installing larger (12-inch) signal lenses may result in an 11% decrease in crashes, installing backplates may result in a 13% decrease in crashes, converting from pedestal-mounted to mast arm-mounted signals may reduce crashes by up to 49%, and installing additional heads may reduce crashes by up to 28%.
DD.1	15	PROVEN: Several studies have shown the effectiveness of automated red-light enforcement in reducing red-light violations and crashes related to those violations. Fairfax, Virginia, experienced a 44% reduction in violations during the first year of operation. Two other sites in the city that did not have cameras experienced decreases in violations of 34%. Control sites in nearby counties experienced little change. Oxnard, California, experienced approximately 41% fewer red-light violations within a few months of installation. FHWA has made a general estimate of a 15% reduction in red-light running incidents resulting from these programs. The ITE report Automated Enforcement in Transportation (available from www.ite.org) contains information on experiences with red-light running cameras in other jurisdictions. The programs experienced a range of reduction in violations of 23 to 83%. Another study concluded that red-light camera enforcement can reduce crashes at urban signalized intersections up to 11% and left-turn crashes by up to 45%.
DD.2	16	TRIED: Data on the effectiveness of this strategy for this specific application are not known, but it is expected that providing information to drivers will help improve safety at intersections. It may not be possible to identify or reach the entire audience that would benefit from a PI&E campaign.
DD.3	17	TRIED: Targeted enforcement of traffic laws is a short-term, moderate-cost measure to address site-specific signalized intersection safety. Though this is an effective strategy, the effectiveness has often been found to be short lived. It is difficult—if not impossible—to provide constant enforcement of traffic regulations due to funding and staffing reasons, so periodic enforcement may be necessary to sustain the effectiveness of this strategy.
DD.4	18	PROVEN: Several studies have shown the effectiveness of automated red-light enforcement in reducing red-light violations and crashes related to those violations. Fairfax, Virginia, experienced a 44% reduction in violations during the first year of operation. Two other sites in the city that did not have cameras experienced decreases in violations of 34%. Control sites in nearby counties experienced little change. Oxnard, California, experienced approximately 41% fewer red-light violations within a few months of installation. FHWA has made a general estimate of a 15% reduction in red-light running incidents resulting from these programs. The ITE report Automated Enforcement in Transportation (available from www.ite.org) contains information on experiences
DD.5	19	EXPERIMENTAL: No conclusive studies have been performed to determine the effectiveness of these strategies.

EE.1	20	TRIED: Further evaluations are needed to quantify the safety effectiveness of this strategy. Some of the states that have implemented access management policies include Iowa, Minnesota, and Florida.
EE.2	21	TRIED: Restricting cross-median access is expected to eliminate conflicts related to vehicles using the median opening, as well as related rear-end and angle crashes.
FF.1	22	PROVEN: The Institute of Transportation Engineer's Traffic Engineering Handbook states that, based upon a review of crash data, 20% of non-freeway crashes in cities are in one way or another related to parking. Mid-block crash rates on major streets with parking stalls that are used about 1.0 million hours per year per mile could be expected to decrease up to 75% after parking is prohibited. An Australian study showed that banning parking adjacent to an intersection resulted in an average decrease in crashes of 10%. ITE reports a 49% decrease in all crashes when parking is restricted near an intersection
FF.2	23	TRIED: Improved drainage can help improve safety, increase traffic capacity, and increase pavement load capacity. However, there exists no adequate documentation of the effect on crash experience. It can be expected that improved drainage would reduce crashes related to hydroplaning.
FF.3	24	TRIED: The effectiveness of the countermeasure not only depends on the measure selected, but also varies with respect to location, traffic volume, rainfall propensity, road geometry, temperature, pavement structure, etc. The New York State DOT has implemented a program that identifies sites statewide that have a low skid resistance and treats them with overlays or microsurfacing as part of the maintenance program. Between 1995 and 1997, 36 sites were treated on Long Island, resulting in a reduction of more than 800 annually recurring wet-road crashes. These results and others within the state support earlier findings that treatment of wet-road crash locations result in reductions of 50% for wet-road crashes and 20% for total crashes. While the
FF.4	25	TRIED: Relocating the signal hardware outside the clear zone should reduce the likelihood of vehicles striking the hazard. The effectiveness of this strategy is difficult to estimate given the range of conditions and relative infrequency of such conflicts at any one location.
FF.5	26	TRIED: Coordination of signals to clear the tracks when a train is approaching should eliminate the potential for vehicles be trapped on the tracks.
GG.1	27	TRIED: The strategy of closing or relocating driveways adjacent to intersections is considered effective and has been addressed in published literature, but there is no consensus on quantitative estimates of its effectiveness. The safety effectiveness of this strategy is highly site dependent and will vary with the driveway location relative to the intersection before and after the project, the traffic volume using the driveway, the traffic volume and speed on the relevant intersection approaches, and the type of development served by the driveway. Some of the states that have implemented access management policies include: Iowa, Minnesota, and Florida.
GG.2	28	TRIED: Further evaluations are needed to quantify the safety effectiveness of this strategy. Some of the states that have implemented access management policies include: Iowa, Minnesota, and Florida.

HH	29	PROVEN: Research has determined that installation of a single left-turn lane on a major road approach would be expected to reduce total intersection crashes at rural unsignalized intersections by 28% for four-legged intersections and by 44 % for three-legged intersections. At urban unsignalized intersections, installation of a left-turn lane on one approach would be expected to reduce total crashes by 27 % for four-legged intersections and by 33 % for three-legged intersections. Installation of left-turn lanes on both major road approaches to a four-legged intersection would be expected to increase, but not quite double, the resulting effectiveness measures for total intersection crashes
HH.1	30	TRIED: This strategy will reduce rear-end collisions resulting from conflicts between vehicles waiting to turn left and following vehicles during periods when the left-turn demand exceeds the existing storage capacity of the left-turn lane. When a queue of vehicles overflows the left-turn lane and extends into the through lanes of the intersection approach, rear-end collisions are likely. Such overflows may also result in operational delays to through or right-turning vehicles. Lengthening of left-turn lanes may also reduce the potential for rear-end collisions between left-turning vehicles by providing longer entering taper and deceleration lengths. There is no consensus on a quantitative estimate of the safety effectiveness of lengthening left-turn lanes. This effectiveness is likely to depend on the existing length of the left-turn lane, the proportion of time during which the storage capacity of the left-turn lane is exceeded, the volume and speed of traffic on the intersection approach, and the available sight distance upstream of the left-turn queue. Further research to quantify the safety effectiveness of lengthening left-turn lanes is needed.
HH.2	31	Research found that added right-turn lanes are effective in improving safety at rural unsignalized intersections. Installation of a single right-turn lane on a rural major road approach would be expected to reduce total intersection crashes by 14%. Right-turn lane installation reduced crashes on individual approaches to four-legged rural unsignalized intersections by 27%.
HH.3	32	PROVEN: A recent study concluded from a review of the literature that realigning intersection approaches to reduce or eliminate intersection skew improves safety at unsignalized intersections. The study concluded the safety effectiveness of realignment to be as follows: $AMF = e^{0.0040 \times SKEW}$ for three-legged intersections and $AMF = e^{0.0054 \times SKEW}$ for four-legged intersection - Where: AMF = Accident modification factor, SKEW = Intersection skew angle (degrees), expressed as the absolute value of the difference between 90 degrees and the actual intersection angle. Example: Three-leg intersection with a 15 degree skew on the approach. $AMF = e^{0.004 \times 15} = 1.06$ (6% more crashes than an approach with no skew)
HH.4	33	TRIED: This strategy will reduce rear-end collisions resulting from conflicts between vehicles waiting to turn left and following vehicles during periods when the left-turn demand exceeds the existing storage capacity of the left-turn lane. When a queue of vehicles overflows the left-turn lane and extends into the through lanes of the intersection approach, rear-end collisions are likely. Such overflows may also result in operational delays to through or right-turning vehicles. Lengthening of left-turn lanes may also reduce the potential for rear-end collisions between left-turning vehicles by providing longer entering taper and deceleration lengths. There is no consensus on a quantitative estimate of the safety effectiveness of lengthening left-turn lanes. This effectiveness is likely to depend on the existing length of the left-turn lane, the proportion of time during which the storage capacity of the left-turn lane is exceeded, the volume and speed of traffic on the intersection approach, and the available sight distance upstream of the left-turn queue. Further research to quantify the safety effectiveness of lengthening left-turn lanes is needed.

HH.5	34	TRIED: Research has verified that offset left-turn lanes operate safely, but there are no reliable estimates of their safety effectiveness. Safety effectiveness is likely to depend upon the traffic volumes of the conflicting turning and through movements and the amount of offset between the left-turn lanes at the intersection.
HH.6	35	TRIED: Minnesota evaluated the operational and safety effects of using bypass lanes at rural intersections by comparing the operational and safety characteristics of rural intersections without turning lanes, with bypass lanes, and with left-turn lanes. Based upon a comparative crash analysis and a before-after evaluation, Minnesota was unable to conclude that the use of a bypass lane provides a greater degree of safety when compared to intersections without a bypass lane or a left-turn lane. However, Nebraska has reported a marked decrease in rear-end collisions at shoulder bypass lanes, and other states have reported relatively few crashes occurring at shoulder bypass lane installations. A Florida study concluded that left-turn injury crashes were reduced up to 36% and rear-end injury crashes were reduced 24%. Property damage only crashes were also reduced up to 28% and 53% for left-turn and rear-end crashes, respectively.
HH.7	36	TRIED: By removing the slower accelerating left-turning vehicles from the through lanes, this strategy is expected to reduce rear-end and sideswipe crashes resulting from conflicts between vehicles turning left onto the highway and through vehicles on the highway. Research has shown that left turn acceleration lanes at divided highway intersections function effectively and do not create safety problems. However, no quantitative estimates of the safety effectiveness of left-turn acceleration lanes at divided highway intersections are available.
HH.8	37	TRIED: This strategy should reduce rear-end crashes resulting from the conflict between vehicles waiting to turn right and following vehicles during the period when demand exceeds the storage capacity of the lane. When a queue of vehicles overflows the right-turn lane and extends into the through lanes of the intersection approach, rear-end crashes are likely. Lengthening of right-turn lanes may also reduce the potential for rear-end collisions between right-turning vehicles by providing longer entering taper and deceleration lengths. While there is no consensus on a quantitative estimate of the safety effectiveness of lengthening right turn lanes, one study indicated that crashes could be reduced up to 15%. This effectiveness is likely to depend on the existing length of the right-turn lane, the proportion of time during which the storage capacity of the lane is exceeded, the volume and speed of traffic on the intersection approach, and the available sight distance to the rear of the right-turn queue.
HH.9	38	TRIED: Research has verified that offset left-turn lanes operate safely, but there are no reliable estimates of their safety effectiveness. Safety effectiveness is likely to depend upon the traffic volumes of the conflicting turning and through movements and the amount of offset between the left-turn lanes at the intersection.
HH.10	39	TRIED: By removing the slower right-turning vehicles from the through lanes, this strategy is expected to reduce rear-end and sideswipe crashes resulting from conflicts between vehicles making a right turn maneuver onto the highway and through vehicles on the highway. Research has shown that right-turn acceleration lanes at intersections function effectively and do not create safety problems. However, no quantitative estimates of the safety effectiveness of right-turn acceleration lanes at intersections are available.

HH.11	40	TRIED: The published literature on the safety effectiveness of shoulder widening and paving deals primarily with shoulders with roadway segments rather than shoulders at intersections. One research project concluded that the expected reduction in run-off-road and opposite-direction crashes from shoulder-widening projects ranged from 6 to 21%, depending upon the amount of widening. Other past research has concluded that shoulder widening on higher-volume, two-lane roadways reduces total crashes by 2.8% per foot of additional shoulder width. It was also concluded that there is a small safety benefit to paving existing unpaved shoulders. The magnitude of this benefit increases with increasing shoulder width. The results of these studies are not directly applicable to quantify the safety effectiveness of providing full-width paved shoulders at intersections. However, the results do provide an indication that providing full-width paved shoulders at intersections may improve safety.
HH.12	41	TRIED: Turn restrictions or prohibitions should reduce crashes related to the affected turning maneuver by nearly 100% during the period that the restriction or prohibition is in effect. However, a complete assessment of the effect of a turn restriction or prohibition on safety requires consideration of the alternatives to which the traffic that desires to make the affected turn is diverted, as well as the potential effect of that traffic on the safety performance of that alternative route. The net effect on safety of turn prohibitions and restrictions is highly site specific and difficult to quantify. One Florida study indicated prohibiting left turns can reduce crashes by up to 45% (and left-turn crashes 90%). A Virginia study concluded that the installation of turn prohibition signs at urban intersections could result in a 62% decrease in crashes.
HH.13	42	TRIED: Turn restrictions or prohibitions should reduce crashes related to the affected turning maneuver by nearly 100% at the locations where the restriction or prohibition is in effect. However, a complete assessment of the effect of a turn restriction or prohibition on safety requires consideration of the alternatives to which the traffic that desires to make the affected turn is diverted, as well as the potential effect of that traffic on the safety performance of that alternative route. Adequate evaluations of this type are not known. One study estimated a 51% decrease in crashes where directional medians were installed.
HH.14	43	TRIED: Closure of an intersection should eliminate crashes at that location. Consideration must be given to the adjacent intersections, to alternative routes onto which traffic would be diverted, and to the potential impact of safety on those routes.
HH.15	44	TRIED: In one study conducted, offset intersections had crash rates that were approximately 43% of the crash rate at comparable four-legged intersections. Thus, it is expected that this strategy would reduce the crash experience of targeted four-legged intersections. Research completed in the U.K. indicates that total crashes may be reduced by 25-33% when the ratio of major street to minor street traffic is <85% / >15%. However, when the ratio is >85% / <15%, crashes tend to increase.
HH.16	45	TRIED: It is expected that this strategy would reduce crashes involving left-turning traffic from the major road onto the cross street at each of the two T-intersections. It can reduce or eliminate safety problems associated with insufficient spacing between existing offset T-intersections.
HH.17	46	TRIED: It is expected that this strategy will reduce (1) rear-end crashes resulting from the conflict between vehicles waiting to turn left and following vehicles, and (2) right-angle crashes resulting from the conflict between vehicles turning left and oncoming through vehicles. One study concluded that installing indirect left-turn treatments may result in an 18-26% decrease in all crashes depending on the number of lanes.

HH.18	47	VARIABLES: It is expected that improvements to pedestrian and bicycle facilities at unsignalized intersections will reduce the number of crashes between motorists and nonmotorists. Quantitative estimates of effectiveness may exist for some of the countermeasures that may be employed, but not for others. See http://safety.fhwa.dot.gov/safer_journey/Library/matrix.htm for further details. One study concluded that installing pedestrian crossings at rural locations can reduce pedestrian crashes by 60%. Another study indicated that bicycle crashes can be reduced by up to 36% by providing bicycle lanes.
II.1	48	TRIED: There is no research that adequately quantifies the effectiveness of improving sight distance at unsignalized intersections. Based on existing literature, it has been estimated that if the available sight distance in any quadrant of an intersection is less than or equal to the design sight distance for a speed of 12 mph less than the actual 85th-percentile speed of the approach, then the frequency of related crashes at the intersection would be increased by a little under 5%. Thus, a project may be 0 to approximately 17% effective in reducing related crashes, depending upon the severity of the existing sight restriction and the number of intersection quadrants affected.
II.2	49	TRIED: There is no research that adequately quantifies the effectiveness of improving sight distance at unsignalized intersections. Based on existing literature, it has been estimated that if the available sight distance in any quadrant of an intersection is less than or equal to the design sight distance for a speed of 12 mph less than the actual 85th-percentile speed of the approach, then the frequency of related crashes at the intersection would be increased by 5%. Although this assessment was made for intersections on rural two-lane highways, it appears appropriate to extend it to intersections on divided highway intersections, as well. Since the median affects two quadrants on the approach to each side of the divided highway from the median roadway, it is estimated that a project to remove sight obstructions in the median may be 0 to 20% effective in reducing related crashes, depending upon the severity of the existing sight restriction and the number of intersection quadrants affected.
II.3	50	TRIED: There is no research that adequately quantifies the effectiveness of improving sight distance at unsignalized intersections. Based on existing literature, it has been estimated that if the available sight distance in any quadrant of an intersection is less than or equal to the design sight distance for a speed of 12 mph less than the actual 85th-percentile speed of the approach, then the frequency of related crashes at the intersection would be increased by approximately 5%. Each additional quadrant accounts for an approximate 4% decrease in crashes. Thus, a project may be 5 to 17% effective in reducing related crashes, depending upon the severity of the existing sight restriction and the number of intersection quadrants affected.
II.4	51	TRIED: There is no research that adequately quantifies the effectiveness of improving sight distance at unsignalized intersections due to elimination of parking. Based on existing literature, it has been estimated that if the available sight distance in any quadrant of an intersection is less than or equal to the design sight distance for a speed of 12 mph less than the actual 85th-percentile speed of the approach, then the frequency of related crashes at the intersection would be increased by approximately 5%. Each additional quadrant accounts for an approximate 4% decrease in crashes. Thus, a project may be 5 to 17% effective in reducing related crashes, depending upon the severity of the existing sight restriction and the number of intersection quadrants affected. Estimates of the safety effectiveness of eliminating parking that restricts sight distance
JJ.1	52	TRIED: The strategy is presumed to be effective in reducing right-angle and turn-related crashes, but its actual effectiveness has not been quantified.

JJ.2	53	EXPERIMENTAL: This strategy has been implemented in a few locations, but there are no conclusive results on safety effectiveness to date.
KK.1	54	PROVEN: Minnesota evaluated the effectiveness of installing streetlights at rural intersections. As part of the evaluation, Minnesota conducted a literature review and found that previously published research reported 25 to 50% reductions in the nighttime crash/total crash ratio due to the installation of intersection lighting. Based upon a comparative crash analysis and a before-after evaluation, Minnesota concluded that the installation of streetlights reduced nighttime crashes at rural intersections and would be more effective in reducing nighttime crashes than either rumble strips or overhead flashing beacons. From an economic standpoint, Minnesota indicated that the benefits associated with the installation of streetlights at rural intersections outweigh the costs by a margin of 15 to 1. Based upon the Minnesota study and previous studies, providing lighting at an intersection improves the safety of an intersection during nighttime conditions by (1) making drivers more aware of the intersection, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances, and (3) improving the visibility of nonmotorists.
KK.2	55	TRIED: Making drivers aware that they are approaching an intersection, through the use of enhanced signing and delineation, should improve safety at the intersection because drivers will be more alert to potential vehicles on the cross streets. This heightened awareness will quicken drivers' reaction times when conflicts occur. One study concluded that installing double stop signs can reduce all crashes up to 11% and right-angle crashes up to 55%. The same study concluded that installing advance warning signs can reduce all crashes up to 30% at urban locations and 40% at rural locations. Another analysis indicated a crash reduction of 70% when flashing beacons were installed on advance of 3-leg intersections and up to 39% at 4-leg intersections.
KK.3	56	TRIED: Splitter islands are generally perceived to be effective in defining the presence of an intersection. When properly applied, they may reduce traffic speeds and intersection crashes, but there is no consensus on their effectiveness. An Australian study concluded that installing splitter islands on minor road approaches can reduce injury crashes by 35% at rural locations and by 40% at urban locations.
KK.4	57	TRIED: One limited study has indicated that installing stop bars (or wider stop bars) on minor road approaches may reduce crashes by up to 19% and reduce right-angle crashes by up to 47%.
KK.5	58	TRIED: One limited study has indicated that installing larger stop signs may decrease all collisions by up to 19%.
KK.6	59	TRIED: Rumble strips are generally perceived to be effective in reducing intersection crashes when used appropriately, but there is no consensus on their effectiveness. One study concluded that transverse rumble strips may decrease overall crashes by up to 28% and rear-end crashes by up to 90%. Another study indicated that rumble strips installed in rural locations can decrease overall crashes up to 35%.
KK.7	60	TRIED: The effectiveness of this strategy in reducing crashes has not been satisfactorily quantified.
KK.8	61	TRIED: The safety effectiveness of providing supplementary stop signs mounted over the roadway has not been quantified.
KK.9	62	TRIED: Limited studies have suggested that installing supplementary pavement messages may decrease overall crashes by 6% and right-angle crashes at urban locations by 30%.

KK.10	63	TRIED: The effectiveness of this strategy has not been satisfactorily quantified.
KK.11	64	TRIED: Several studies have evaluated the safety effectiveness of flashing beacons at stop-controlled intersections. Ohio compared the safety at rural, low-volume intersections controlled by stop signs and controlled by flashing beacons in conjunction with stop signs. Ohio found that flashing beacons generally reduced vehicular speeds on the major road, particularly at intersections with sight distance restrictions, but the flashing beacons were not necessarily effective in reducing stop sign violations or crashes. Similarly, California found that overhead yellow-red flashing beacons did not significantly reduce the number of fatal crashes at stop-controlled intersections. Therefore, additional research may be desirable to further evaluate the safety effectiveness of this strategy. Florida estimated that overall crashes may be reduced up to 26% and injury crashes may be reduced up to 50% after installing flashing yellow-red signal indications.
LL.1	65	PROVEN: A recent review of the effectiveness of various strategies in reducing crashes concluded that conversion from two-way to all-way stop control could reduce total intersection crashes by 53%. Another study determined that converting to an all-way stop from a two-way stop may reduce overall crashes at urban locations by up to 71%. Similarly, reductions were seen for left-turn crashes (20%), right-angle crashes (72%), rear-end crashes (13%), and pedestrian crashes (39%).
LL.2	66	PROVEN: Provision of modern roundabouts is a relatively new strategy in the United States, although roundabouts have been used overseas for many years. Recent research has estimated the effectiveness of installing a modern roundabout at previously unsignalized locations at a 38% reduction in total crashes, a 76% reduction in injury crashes, and a 90% reduction in fatal and incapacitating-injury crashes. NCHRP Report 572 presents the results of the conversion of 36 two-way stop intersections to modern roundabouts, which resulted in an overall 44% percent reduction in total crashes and an 82% reduction in injury crashes.
LL.3	67	TRIED: The strategies that can be used as alternatives to signals are known to be effective, but their safety effects are highly site specific. It is known that traffic signals generally increase crash frequency when installed. However, there are no established quantitative measures of the effects of traffic signals in increasing crashes or the effects of the alternative strategies in mitigating those effects. The effect of these strategies on crash severity distributions also has not been quantified. Some of the alternative strategies (e.g., indirect left turns) have been used by some highway agencies for many years but there is no consensus on the strategies' quantitative safety effects. Other strategies (e.g.
MM.1	68	TRIED: This strategy is known to be effective in reducing traffic law violations. Programs within the United States have been found to result in decreases in violations of between 23 and 83%. However, the safety effectiveness of such decreases in violation rates has not been quantified. Enforcement agencies have generally found that the effectiveness of increased enforcement at specific locations has a relatively short duration of effectiveness—measured in days or weeks, rather than months or years.
MM.2	69	TRIED: There are no established quantitative measures of the safety effectiveness of providing targeted public information and education on safety problems at specific intersections.

NN	70	PROVEN: The effectiveness of this strategy has been established by numerous studies. The most effective enforcement is the stopping and ticketing of offenders, as opposed to automated enforcement where fines are mailed on the basis of the vehicle's license plate number. Enforcement agencies have generally found that the effectiveness of increased enforcement at specific locations has a relatively short duration of effectiveness—measured in days or weeks, rather than months or years. One study concluded that pedestrian crashes may be significantly reduced when speed enforcement is increased.
NN.1	71	PROVEN: Most traffic calming is implemented on local residential roadways where relatively few crashes occur compared to arterials and highways. Thus, the safety effectiveness data is very limited. Safety issues are oftentimes more of a perception problem on the part of the public. Lacking robust crash data, speed is oftentimes used as a surrogate measure of safety. Results from one study showed that the impacts on mean speed at single sites varied from a 3 mph increase to a 12 mph decrease.
NN.2	72	TRIED: The safety effectiveness of posting appropriate speed limits on intersection approaches has not been quantified.
OO.1	73	TRIED: The safety effectiveness of extending pavement markings through intersections has not been evaluated.
OO.2	74	TRIED: The safety effectiveness of providing a double yellow centerline on the median opening of a divided highway has not been quantified. However, the presence of a double yellow centerline should minimize side-by-side queuing and angle stopping and, thus, reduce driver confusion near the intersection.
OO.3	75	TRIED: The safety effectiveness of providing lane assignment signing or marking has not been quantified. However, the presence of lane assignment signs and/or markings near the intersection should reduce driver confusion concerning proper lane assignment and minimize the number of unexpected maneuvers from designated lane groups.
PP.3	76	Gattis, J. L. Comparison of Delay and Accidents on Three Roadway Access Designs in a Small City. Transportation Research Board 2nd National Conference, Vail, CO, 1996. pp. 269-275.
PP.6	78	On freeways, shoulder rumble strips have proven to be a very effective way to warn drivers that they are leaving or are about to leave the road. According to FHWA, several studies have estimated that rumble strips can reduce the rate of ROR crashes by 20 to 50 percent. Further statistics regarding effectiveness for specific programs are documented below. However, these crash reduction statistics apply to freeways.
PP.7	79	Enhanced lane markings are an appropriate treatment if it is assumed that drivers leave the roadway because they cannot see the pavement edge in the downstream roadway sections. While some driver guidance is needed in such cases, the question is: How much should be added without changing the roadway geometry or the roadside design? Since some evaluations have raised questions about the overall effect of enhanced markings and RPMs, these features are considered a "tried" strategy at this time.

PP.9	80	<p>Early studies reported between 15 and 80 percent reduction in ROR crashes after rumble strips were installed. More recent research has revised those numbers. NCHRP Report 641 notes that in 2005:</p> <ul style="list-style-type: none"> • Shoulder rumble strips on urban and rural freeways reduce SVROR crashes by 18percent and fatal SVROR crashes by 13 percent. • Shoulder rumble strips on rural two-lane roads are expected to reduce SVROR crashes by 15 percent and fatal SVROR crashes by 29 percent. • Shoulder rumble strips on rural multilane divided highways are expected to reduce SVROR crashes by 22 percent and fatal SVROR crashes by 51 percent.
QQ.3	81	<p>Oregon DOT (ODOT) conducted an example application of reflective barrier treatments (shown above) known as the 3M Linear Delineation System. Results reveal that the retroreflective panels provide a good alternative to traditional concrete barrier delineation methods (such as reflective barrier markers). ODOT realized at the end of construction that the panels could be removed from the barrier for reuse on future projects. The success of the panels has led ODOT to consider future implementation when crash histories show the need for additional safety measures. However, installing the panels proved to be more challenging then envisioned, primarily because it is a time-intensive process. The evaluation also cited maintenance concerns about keeping the panels clean from dirt and road grime to maintain an optimal retroreflectivity level.</p>