

## Index of Strategies - Spot Countermeasures

Time Frame for Implementation	Relative Cost to Implement and Operate		
	Low	Medium	High
<b>Short (less than a year)</b>	<ul style="list-style-type: none"> <li>• Add left turn phase without left turn lane</li> <li>• Install guard rail (Injury-fatal crashes only)</li> <li>• Improve guard rail (Injury fatal crashes only)</li> <li>• Remove tree (Tree crashes only)</li> <li>• Speed Zone</li> <li>• Prohibit Turn</li> <li>• Prohibit right-turn-on-red</li> <li>• Install delineators at curve-rural (curve crashes only)</li> <li>• Install painted median</li> <li>• Install 2WLTl-existing pavement</li> <li>• Stabilize berms - rural section</li> <li>• Upgrade existing flasher</li> <li>• Revise signal timing</li> <li>• Add pedestrian heads</li> <li>• Add left turn phase with existing left turn lane</li> <li>• Upgrade pavement markings – general</li> <li>• Install raised pavement markers, locations &amp; sections</li> <li>• Warning signs installed at intersection - rural</li> <li>• Provide enhanced delineation of sharp curves</li> <li>• Improve pavement markings</li> <li>• Remove/relocate objects in hazardous locations</li> <li>• Develop, revise, and implement planting guidelines to prevent placing trees in hazardous locations</li> <li>• Mowing and vegetation control guidelines</li> <li>• Implement driveway turn restrictions</li> <li>• Provide bypass lanes on shoulders at T-intersections</li> <li>• Restrict or eliminate turning maneuvers by</li> </ul>	<ul style="list-style-type: none"> <li>• Make utility pole breakaway (Utility pole fatal crashes only)</li> <li>• Install impact attenuator device</li> <li>• Relocate utility pole 30' from edge of pavement (Utility pole fatal crashes only)</li> <li>• Provide traffic calming on intersection approaches through a combination of geometric and traffic control devices</li> <li>• Install optically programmed heads</li> <li>• Install intersection lighting</li> <li>• Install guard rail at bridge end (Injury-fatal crashes only)</li> <li>• Install flasher</li> <li>• Install plastic pavement markings</li> <li>• Upgrade signs - general</li> <li>• Warning signs on section - rural 2 lane</li> <li>• Warning signs on section - rural &gt; 2 lane</li> <li>• Remove trees in hazardous locations</li> <li>• Shield motorists from striking trees</li> <li>• Provide targeted enforcement to reduce Stop sign violations</li> <li>• Provide target speed enforcement</li> </ul>	

<p><b>Short (less than a year)</b></p>	<p>signing</p> <ul style="list-style-type: none"> <li>• Clear sight triangles on Stop or Yield controlled approaches to intersections</li> <li>• Clear sight triangles in medians of divided highways near intersections</li> <li>• Improve visibility of intersections by providing enhanced signing and delineation</li> <li>• Provide a stop bar (or provide a wider stop bar) on minor-road approaches</li> <li>• Install larger regulatory signs at intersections</li> <li>• Call attention to the intersection by installing rumble strips on intersection approaches</li> <li>• Install flashing beacons at stop-controlled intersections</li> <li>• Provide targeted public information and education on safety problems at specific intersections</li> </ul>		
<p><b>Medium (1 -5 years)</b></p>	<ul style="list-style-type: none"> <li>• Implement driveway turning restrictions</li> <li>• Restrict or eliminate turning maneuvers by signing</li> <li>• Clear sight triangles on Stop or Yield controlled approaches to intersection</li> <li>• Close high-risk intersections</li> <li>• Provide longer right-turn lanes at intersection</li> <li>• Relocate fixed object</li> <li>• Eliminate shoulder drop-off</li> <li>• Provide roadside markers or pavement markings to assist drivers in judging the suitability of available gaps for making turning and crossing maneuvers</li> </ul>	<ul style="list-style-type: none"> <li>• Redesign safer slopes and ditches</li> <li>• Convert offset-T intersections to four-legged intersection</li> <li>• Realign intersection approaches to reduce or eliminate intersection skew</li> <li>• Relocate driveway entrance</li> <li>• Increase cross corner sight distance</li> <li>• Restrict or eliminate turning maneuvers by closing median openings</li> <li>• Implement driveway closures/relocations</li> <li>• Provide offset left-turn lane at intersections</li> <li>• Provide left turn lanes at intersections</li> <li>• Provide longer left-turn lanes at intersections</li> <li>• Provide left-turn acceleration lanes at divided highway intersections</li> <li>• Provide right-turn lanes at intersections</li> <li>• Provide right-turn acceleration lanes at intersections</li> <li>• Provide full-width paved shoulders in intersection areas</li> </ul>	<ul style="list-style-type: none"> <li>• Relocate intersection</li> <li>• Convert four-legged intersections to two T-intersections</li> <li>• Improve barrier &amp; attenuation systems</li> <li>• Lane use signs - overhead</li> <li>• Upgrade existing signal - general</li> <li>• Close median opening</li> </ul>

<p><b>Medium (1 – 5 years)</b></p>		<ul style="list-style-type: none"> <li>• Install splitter islands on the minor-road approach to an intersection</li> <li>• Reconstruct existing signal - major</li> <li>• Install warning sign-mounted flasher</li> <li>• Provide shoulder treatments</li> <li>• Restrict or eliminate turning maneuvers by providing channelization</li> <li>• Use indirect left-turn treatments to minimize conflicts at divided highway intersections</li> </ul>	
<p><b>Long (more than 5 years)</b></p>	<ul style="list-style-type: none"> <li>• Remove existing unwarranted signal</li> <li>• Eliminate Parking</li> </ul>	<ul style="list-style-type: none"> <li>• Widen culvert</li> </ul>	<ul style="list-style-type: none"> <li>• Improved horizontal curve geometry</li> <li>• Replace culvert</li> <li>• Relocate high-risk intersections</li> <li>• Change horizontal and/or vertical alignment of approaches to provide more sight distance</li> <li>• Provide roundabouts at appropriate locations</li> <li>• Install concrete median barrier (median and cross-median crashes only)</li> <li>• Widen pavement to provide 2WLTL</li> <li>• Widen roadway, rural section, no additional lanes.</li> </ul>