

HSP Rank # \_\_\_\_\_ County-Route \_\_\_\_\_  
 Location (Begin Point /End Point) \_\_\_\_\_

**Index of Countermeasure Strategies Checklist**

Accident Patterns	Probable Cause	Countermeasure – (Time & Cost)
<input type="checkbox"/> FIXED OBJECT /RUN-OFF-THE-ROAD	<input type="checkbox"/> OBSTRUCTION TOO CLOSE	<input type="checkbox"/> Install/Improve guard rail (Injury-fatal crashes only) (LS)
		<input type="checkbox"/> Remove tree (tree crashes only) (LS)
		<input type="checkbox"/> Remove/relocate objects in hazardous locations (LS)
		<input type="checkbox"/> Develop, revise, and implement planting guidelines to prevent placing trees in hazardous locations (LS)
		<input type="checkbox"/> Relocate fixed object (LM)
		<input type="checkbox"/> Relocate utility pole 30' from edge of pavement (Utility pole fatal crashes only) (MM)
	<input type="checkbox"/> GUARDRAIL	<input type="checkbox"/> Widen culvert (ML)
		<input type="checkbox"/> Widen roadway, no additional lanes. (HL)
	<input type="checkbox"/> SLIPPERY SURFACE	<input type="checkbox"/> Redesign safer slopes and ditches (MM)
		<input type="checkbox"/> Improve snow & ice removal responsiveness/pre-treating (LS)
		<input type="checkbox"/> Install "Slippery When Wet" signs (LS)
		<input type="checkbox"/> Establish speed zones (LM)
<input type="checkbox"/> Overlay existing pavement (MM)		
<input type="checkbox"/> VEHICLE SPEED	<input type="checkbox"/> Provide skid-resistant pavement (MM)	
	<input type="checkbox"/> De-slick pavement (MM)	
	<input type="checkbox"/> ITS - provide an automated real-time system to inform drivers of road conditions (HL)	
	<input type="checkbox"/> Change profile of road (HL)	
	<input type="checkbox"/> Establish target enforcement area (LS)	
	<input type="checkbox"/> Install additional signing (LS)	
	<input type="checkbox"/> Reduce speed limit (LL)	

LEGEND								
Acronym	Cost	Time Frame	Acronym	Cost	Time Frame	Acronym	Cost	Time Frame
LS	Low	Short < 1 yr.	MS	Medium	Short < 1 yr.	HS	High	Short < 1 yr.
LM	Low	Medium 1-5 yrs.	MM	Medium	Medium 1-5 yrs.	HM	High	Medium 1-5 yrs.
LL	Low	Long > 5yrs.	ML	Medium	Long > 5yrs	HL	High	Long > 5yrs

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Accident Patterns	Probable Cause	Countermeasure -- (Time & Cost)
<input type="checkbox"/> FIXED OBJECT /RUN-OFF-THE-ROAD	<input type="checkbox"/> INADEQUATE LIGHTING	<input type="checkbox"/> Improve/Install area lighting (LS to MM)
	<input type="checkbox"/> SUBSTANDARD GEOMETRICS	<input type="checkbox"/> Improve striping (LS)
		<input type="checkbox"/> Improve signage (MS)
		<input type="checkbox"/> Improve sight distances (horizontal and vertical alignments) (HL)
	<input type="checkbox"/> INADEQUATE DELINEATION	<input type="checkbox"/> Improve pavement striping (LS)
<input type="checkbox"/> INADEQUATE SHOULDERS	<input type="checkbox"/> Eliminate shoulder drop-off (LM)	
<input type="checkbox"/> CROSSOVER/HEAD-ON	<input type="checkbox"/> CONGESTION	<input type="checkbox"/> Install an additional lane each direction (HL)
	<input type="checkbox"/> GEOMETRICS	<input type="checkbox"/> Install painted median (LS)
		<input type="checkbox"/> Provide full-width paved shoulders in intersection areas (MM)
		<input type="checkbox"/> Close median openings (HM)
		<input type="checkbox"/> Install concrete median barrier/cable barrier (median and cross-median crashes only) (HL)
	<input type="checkbox"/> EXCESSIVE SPEED	<input type="checkbox"/> Establish Target Enforcement Area (LS)
<input type="checkbox"/> SLIPPERY SURFACES	<input type="checkbox"/> Improve snow & ice removal responsiveness (LS)	

## LEGEND

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Identify Patterns	Probable Cause	Countermeasure -- (Time & Cost)
<input type="checkbox"/> ANGLE/SIDESWIPE	<input type="checkbox"/> MERGES	<input type="checkbox"/> Close Ramp (time-of-day) (LS)
		<input type="checkbox"/> Improve visibility by providing enhanced signing and striping (LS)
		<input type="checkbox"/> Install larger regulatory signs (LS)
		<input type="checkbox"/> Install/Improve Ramp Metering (MM)
		<input type="checkbox"/> Install warning sign-mounted flasher (MM)
	<input type="checkbox"/> CONGESTION	<input type="checkbox"/> Install/Upgrade lighting (LM)
		<input type="checkbox"/> Lane use signs - overhead (HM)
		<input type="checkbox"/> ITS - provide an automated real-time system to inform drivers of congestion (HL)
		<input type="checkbox"/> Restrict or eliminate maneuvers by signing (LS)
		<input type="checkbox"/> Improve visibility by providing enhanced signing and striping (LS)
	<input type="checkbox"/> GEOMETRICS	<input type="checkbox"/> Install larger regulatory signs (LS)
		<input type="checkbox"/> Install/Improve Ramp Metering (MM)
		<input type="checkbox"/> Lane use signs - overhead (HM)
		<input type="checkbox"/> Widen pavement to provide additional lane (capacity) (HL)
		<input type="checkbox"/> ITS - provide an automated real-time system to inform drivers of congestion (HL)
	<input type="checkbox"/> WET/SLIPPERY PAVEMENT	<input type="checkbox"/> Reconstruct curves (HL)
<input type="checkbox"/> Widen bridge (HL)		
<input type="checkbox"/> Reconstruct curves (HL)		
<input type="checkbox"/> Change horizontal and/or vertical alignment of approaches to provide more sight distance (HL)		
<input type="checkbox"/> Modify Crown of roadway (HL)		
	<input type="checkbox"/> Establish Target Enforcement Areas (LS)	
	<input type="checkbox"/> Install "Slippery When Wet" signs (LS)	
	<input type="checkbox"/> Provide skid-resistant pavement (MM)	
	<input type="checkbox"/> Overlay existing pavement (MM)	
	<input type="checkbox"/> De-slick pavement (ML)	
	<input type="checkbox"/> ITS - provide an automated real-time system to inform drivers of road conditions (HL)	

LEGEND								
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Accident Patterns	Probable Cause	Countermeasure – (Time & Cost)		
<input type="checkbox"/> REAR END	<input type="checkbox"/> CONGESTION	<input type="checkbox"/> Restrict or eliminate maneuvers by signing/stripping (LS)		
		<input type="checkbox"/> Install/Improve ramp metering (MM)		
		<input type="checkbox"/> Widen pavement to provide additional lanes (capacity) (HL) <input type="checkbox"/> ITS - Provide an automated real-time system to inform drivers of congestion (HL)		
	<input type="checkbox"/> QUEUED TRAFFIC FROM RAMPS	<input type="checkbox"/> Add Signal (MM) <input type="checkbox"/> Revise Signal Timing/Phasing (LS) <input type="checkbox"/> Revise signal timing at Ramp Terminal (LS) <input type="checkbox"/> Add left turn phase with existing left turn lane at Ramp Terminal (LS) <input type="checkbox"/> Provide longer left/right-turn lanes at intersection at Ramp Terminal (LM) <input type="checkbox"/> Provide left/right-turn lanes at intersections at Ramp Terminal (MM) <input type="checkbox"/> ITS - Provide an automated real-time system to inform drivers of upcoming queues (HL)		
			<input type="checkbox"/> WET/SLIPPERY PAVEMENT	<input type="checkbox"/> Establish Target Enforcement Area (LS) <input type="checkbox"/> Install "Slippery When Wet" signs (LS) <input type="checkbox"/> Improve snow and ice responsiveness (Pre-Treating) (LS)
				<input type="checkbox"/> Provide skid-resistant pavement (MM) <input type="checkbox"/> Overlay existing pavement (MM)
				<input type="checkbox"/> De-slick pavement (ML)
				<input type="checkbox"/> Change Profile of road (HL) <input type="checkbox"/> ITS - provide an automated real-time system to inform drivers of road conditions (HL)
			<input type="checkbox"/> GEOMETRICS	<input type="checkbox"/> Install warning sign-mounted flasher (MM)
				<input type="checkbox"/> Change horizontal and/or vertical alignment of approaches to provide more sight distance (HL) <input type="checkbox"/> Widen bridge (HL) <input type="checkbox"/> Reconstruct curves (HL)
	<input type="checkbox"/> TRUCKS	<input type="checkbox"/> Lane Restrictions (LM)		
		<input type="checkbox"/> Climbing Lanes (HL)		

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