

Countermeasure Selection Table

Last updated: August 15, 2023

Location Type	Target Crash Type	Contributing or Geometric Factor	Potential Safety Countermeasure(s)
Intersection: All	All	Driveway within functional area	Restrict access
Intersection: All	Pedestrian	Marked crosswalk	Install advanced stop/yield markings, install high visibility crosswalks, install other pedestrian enhancements
Intersection: All	Right-Turn Rear End	Approach angle	"Square up" right turn lane, convert to free-flow right turn
Intersection: Minor Stop	Rear End/Right Angle	Limited intersection sight distance	Clear sight triangles
Intersection: Minor Stop	Rear End/Right Angle	Nighttime/Inattentive driving	Install LED blinker stop signs, install intersection lighting
Intersection: Minor Stop	Rear End/Right Angle	Occluded vehicles, right turn lane alignment	Offset mainline right turn lane
Intersection: Minor Stop	Rear End/Right Angle	Speed-related, failure to stop	Install/adjust advanced warning signs, install transverse rumble strips, install Through Route Activated Warning System (TRAWS)
Intersection: Minor Stop	Right Angle	Inadequate gaps in traffic	Use alternative intersection design or change traffic control (RCUT, J-Turn, MUT, Roundabout, Traffic Signals, etc.)
Intersection: Minor Stop	Right Angle	Intersection skew angle	Improve intersection skew, use alternative intersection designs or change traffic control (Roundabout, Traffic Signals, etc.)
Intersection: Minor Stop	Rear End	Geometric design, poor visibility, inattentive driving	Install bypass lane, install left turn lane
Intersection: Signalized	Left Turn	Occluded vehicles, left turn lane alignment	Positively offset left turn lanes
Intersection: Signalized	Left Turn	Occluded vehicles, vertical crest curve	Use more restrictive turn phasing
Intersection: Signalized	Left Turn	Split phasing	Install Flashing Yellow Arrow (FYA)
Intersection: Signalized	Pedestrian	Marked crosswalk	Install pedestrian countdown timers, install pedestrian push buttons, start with a leading pedestrian phase
Intersection: Signalized	Rear End	Limited queue storage	Add exclusive turn lane, extend turn lane length
Intersection: Signalized	Rear End/Right Angle	Poor signal timing	Adjust signal timing plan
Intersection: Signalized	Rear End/Right Angle	Poor signal visibility	Install a signal head per lane, install retroreflective signal backplates
Intersection: Signalized	Right Turn	Limited intersection sight distance	Don't allow right turns on red
Intersection: Roundabout	Rear-end, Sideswipe/Same Direction	Failure to yield	Update signing, update pavement markings, paint splitter island curbing, restrict sight lines/landscaping adjustments, upgrade lighting, public educational campaign, reconfigure roundabout lanes
Intersection: Roundabout	Run-Off-Road: All Types	Speed-related, weather-related	Update signing, update pavement markings, paint splitter island curbing, add transverse rumble strips, install High Friction Surface Treatment (HFST), restrict sight lines/landscaping adjustments, relocate fixed objects, upgrade lighting, install dynamic speed display signs, public educational campaign, Reconfigure roundabout lanes
Segment	Run-Off-Road: All Types	Inattentive driving, narrow lane width, narrow shoulder width	Install shoulder rumble strips, widen travel lanes, widen paved shoulder
Segment	Run-Off-Road: All Types	Polished pavement	Install High Friction Surface Treatment (HFST)
Segment	Run-Off-Road: All Types	Poor delineation	Install wet reflective pavement markings/edge lines
Segment	Run-Off-Road: Fixed Object	Object in clear zone	Remove fixed object, shield fixed object
Segment	Run-Off-Road: Head-On & Sideswipe/Opposite Direction	Inadequate median width	Install median barrier
Segment	Run-Off-Road: Head-On & Sideswipe/Opposite Direction	Inattentive driving	Install centerline rumble strips
Segment	Run-Off-Road	Horizontal curvature	Install/adjust advanced warning signage, install/adjust curve signage (night arrow, chevrons, delineators), increase sign sizes, widen paved shoulders, install shoulder rumble strips, maintain clear zone, install High Friction Surface Treatment (HFST), realign horizontal curve
Segment	Run-Off-Road: Nighttime	Poor sign visibility or signage	Install retroreflective sign sheeting, install post mounted retroreflectors, install advanced warning signs, install chevrons
Segment	Run-Off-Road: Nighttime	Poor visibility	Install or improve roadway lighting
Segment: All	Run-Off-Road: Weather-Related	Pavement design, geometric design	Improve pavement drainage, install High Friction Surface Treatment (HFST)
Segment: Bridge	Fixed Object	Low vertical clearance	Bridge height warning system
Segment: Rural	Run-Off-Road: Overturn	Non-traversable side slopes or ditch	Flatten side slopes, round ditches
Segment: Rural	Run-Off-Road: Overturn	Pavement edge drop-off	Install Safety Edge, pave shoulder
Segment: Urban	Rear End	High driveway density with high traffic volumes	Reduce access points, install a Two-Way Left Turn Lane (TWLTL)
Segment: Urban	Pedestrian	Cross-section	Install pedestrian refuge island
Segment: Urban	Pedestrian	Mid-block crossing	Install/adjust advanced warning signs, install advanced stop/yield markings, install high visibility crosswalks, install Pedestrian Hybrid Beacon (PHB), install Rapid Rectangular Flashing Beacons (RRFB), curb bump-outs, etc.

NOTE: Before implementing the treatments in this table, site specific context and engineering judgement need to be considered to ensure the project needs are met. Consider potential impacts of implementing a treatment and how it may interact with the roadway facility and/or users.