

DEFINITIONS FOR POSITIVE GUIDANCE COUNTERMEASURE (2B)

- **Reflective pavement marker:** The crash modification factor (CMF) ranges from a 33% reduction to a 43% increase in nighttime crashes—item 672 6006 is \$2.50 each, and item 672 6010 is \$3.00 each.
- **Edge lines:** Highway Safety Improvement Program (HSIP) Work Code (WC) 402 0.25, 2 years, CMF 8 reduction in all crash types with 11% to 13% reduction in run-off-the-road crashes—\$0.43 per linear foot.
- **Wide edge lines:** 6-inch CMF 12% to 37% reduction in all crash types—\$0.60 per linear foot.
- **Centerlines:** HSIP WC 404 0.65, 2 years, CMF crash reduction minimal but where placed in conjunction with edge lines, an approximately 24% reduction in all crash types—\$0.40 per linear foot.
- **Milled edge line rumble strips:** HSIP WC 532 0.5, 10 years—CMF 16% to 17% reduction for all crash types—item 533 6003 is \$0.15, and item 533 6005 is \$0.59.
- **Profile edge line markings:** HSIP WC 533 0.6, 5 years—item 666 6283 is \$0.38 per linear foot (4 inches) or \$0.62 per linear foot (6 inches).
- **Raised edge line rumble strips:** HSIP WC 534 0.6, 2 years—item 6056 6001 is \$2.75 per linear foot.
- **Milled centerline rumble strips:** HSIP WC 542 0.35, 10 years CMF 14% to 15% reduction for all crash types—item 533 6004 is \$0.11.
- **Profile centerline markings:** HSIP WC 543 0.35, 5 years—item 666 6287 is \$0.40 per linear foot (4 inches) or \$0.64 per linear foot (6 inches).
- **Raised centerline rumble strips:** HSIP WC 544 0.35, 2 years—item 6056 6002 is \$2.75 per linear foot.
- **Transverse rumble strips:** HSIP WC 545 0.15, 5 years, CMF at approach to intersection 33% reduction to 33% increase for all crash types—item 6056 6001 is \$2.75 per linear foot.
- **Delineators:** HSIP WC 113 0.3, 2 years, CMF installed in combination with edge line and centerline marking results in 45% reduction in all crash types—item 658 2292 is \$45 each.
- **Chevrons:** HSIP WC 137 0.25, 10 years, CMF installed with curve warning signs results in 31% to 44% reduction in all crash types—item 644 6007 is \$650 each.
- **LED flashing chevrons:** HSIP WC 136 0.35, 10 years—item 6068 6001/6002 is \$4,500 each.
- **Advance warning signals:** replace signs with signals HSIP WC 123 0.1, 10 years—item 685 6004 is \$5,250 each.
- **Install advance warning signals and signs:** HSIP WC 125 0.15, 10 years, CMF 26% to 30% reduction in all crash types—item 685 6004 is \$5,250 each.
- **Install advance warning signs:** HSIP WC 130 0.05, 6 years—item 644 6004 is \$575 each.
- **Driver feedback signs.**
- **Install median barriers:** HSIP WC 201 0.55, 20, CMF any type of median barrier can result in up to a 24% increase in total crashes, but will reduce fatal crashes by up to 43% and injury crashes by up to 30%—varies depending on concrete, cable, etc.
- **Install raised medians:** HSIP WC 203 0.25, 20, CMF urban areas: 14% to 71% reduction in all crash types—varies depending on work.

- **Flatten side slopes:** HSIP WC 204 0.46, 20, CMF for cross-median, fixed-object, run-off-the-road, or other crash types in rural areas: 9% reduction up to a 9% increase in all levels of severity—varies depending on how much the slope is flattened.
- **Modernize bridge rails and approach guardrails:** HSIP WC 205 0.15, 10.
- **Improve guardrails to design standards:** HSIP WC 206 0.35, 10—estimated \$110 per linear foot.
- **Safety-treat fixed objects:** HSIP WC 209 0.5, 20, CMF removed or relocated fixed object associated with a 38% reduction in all crash types—varies depending on work items.
- **High-friction surface treatment (curve):** HSIP WC 306 0.45, 3014 6001 \$28 per square yard.
- **Widen lanes:** HSIP WC 502 0.3, 10, CMF widening rural lane widths from 11 feet to 12 feet results in a 5% reduction in all crash types—depends on how much and type of work.
- **Widen paved shoulders (to 5 feet or less):** HSIP WC 503 0.25, 20, CMF effectiveness varies by width but generally expected to reduce all rural crash types by 18% to 38%—depends on how much and type of work.
- **Construct paved shoulders (1–4 feet):** HSIP WC 504 0.25, 20, CMF results in approximately a 19% reduction in all crash and injury types—depends on how much and type of work.
- **Widen paved shoulders (to >5 feet):** HSIP WC 536 0.4, 20, CMF from 3 feet to 6 feet: 7% to 18% reduction in all crash types and severity types; widening greater than 6 feet results in increased reductions up to 8 feet—depends on how much and type of work.
- **Construct paved shoulders (≥5 feet):** HSIP WC 0.4, 20—depends on how much and type of work.
- **Road diet:** Revise roadway configuration to provide additional paved recovery area (e.g., convert four-lane roadways to three-lane roadways with design features compatible with surrounding land use context). CMF 19% to 25% reduction in urban crashes; approximate 47% reduction in suburban crashes.