

Key Sheet - Introduction to Countermeasures Toolkit

The Countermeasure Toolkit is a range of facilities, treatments, strategies, and actions to make the roadways in the Metropolitan Council Region safer for users of all modes. This Toolkit focuses primarily on vehicular and bicycle safety. The Regional Pedestrian Safety Action Plan includes additional pedestrian safety countermeasure resources. The Toolkit may be used by agencies to help identify potential countermeasures to consider on priority safety corridors and intersections by reviewing the categories and relevance to key findings.

Complimentary strategies and initiatives should be considered when implementing traffic safety countermeasures to support a change to safety culture.

Legend

Estimated Implementation Costs

The estimated costs are for full, permanent construction costs. Countermeasures may have quick-build options that are lower cost while delivering the same or similar safety benefits.

	varies by context type	Urban Segments (per mile)	Urban Intersections	Rural Segments (per mile)	Rural Intersections	Rural Curves
Low	<i>MnDOT Roadway Safety Big Book of Ideas (2023) costs \$ and \$\$</i>	Less than \$50,000	Less than \$50,000	Less than \$30,000	Less than \$30,000	Less than \$20,000
Moderate	<i>MnDOT Roadway Safety Big Book of Ideas (2023) costs \$\$\$</i>	\$50,000 - \$125,000	\$50,000 - \$100,000	\$30,000 - \$60,000	\$30,000 - \$60,000	\$20,000 - \$40,000
High	<i>MnDOT Roadway Safety Big Book of Ideas (2023) costs \$\$\$\$ and \$\$\$\$\$</i>	Greater than \$125,000	Greater than \$100,000	Greater than \$60,000	Greater than \$60,000	Greater than \$40,000

Estimated Effectiveness

Tried	Countermeasure has been tried and has been noted to work either anecdotally or theoretically, but no formal study or CMF has been developed to determine its effectiveness For non-design countermeasures, is a NHTSA Countermeasure that Works with 2-3 stars.
Documented	Countermeasure has been documented in research studies and/or CMF Clearinghouse, but does not appear in the MnDOT Big Book of Ideas, as an FHWA Proven Safety Countermeasure For non-design countermeasures, is a NHTSA Countermeasure that Works with 4 stars.
Proven	Countermeasure appears in the MnDOT Big Book of Ideas, is an FHWA Proven Safety Countermeasure. For non-design countermeasures, is a NHTSA Countermeasure that Works with 5 stars.

Applies to Key Finding in Equity Areas

✓	Countermeasure applies to key finding(s) that are seen in equity areas, as noted in systemic safety analysis
---	--

Safe System Category

✓	Applies to a safe system category and a safe system roadway design hierarchy tier
---	---

Relevance to Key Findings

✓	Applies to key finding
---	------------------------

Sources

CMF Clearinghouse	https://www.cmfclearinghouse.org/
MnDOT District Safety Plan Road Safety Strategies ("Big Book of Ideas")	https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=37383665
FHWA Proven Safety Countermeasures	https://highways.dot.gov/safety/proven-safety-countermeasures
NHTSA Countermeasures That Work	https://www.nhtsa.gov/book/countermeasures/countermeasures-that-work
FHWA Safe System Roadway Design Hierarchy	https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-01/Safe_System_Roadway_Design_Hierarchy.pdf
NCHRP 926, Guidance to Improve Pedestrian and Bicyclist Safety at Intersections	https://nap.nationalacademies.org/catalog/25808/guidance-to-improve-pedestrian-and-bicyclist-safety-at-intersections
Regional Pedestrian Safety Action Plan - Metropolitan Council	Regional Pedestrian Safety Action Plan - Metropolitan Council



Excel Spreadsheet Summary

The Toolkit may be requested as an excel spreadsheet from the Metropolitan Council. Three tabs exist within the Toolkit. A summary of each tab is described below.

Overall Table	<u>Summary table of countermeasures</u> - cost, effectiveness, Safe System Category, Safe System Roadway Design Hierarchy, source, applicability to key findings in equity areas, applicability to key findings from systemic safety analysis	<i>looks up data from the other sheets no data in this table should be edited - use other sheets</i>
CM Attributes, relevance	Where countermeasures fall in terms of FHWA Safe System Roadway Design Hierarchy tiers, which category (following Proven Safety Countermeasures) each falls into, which key finding(s) from systemic safety analysis each countermeasure applies to (including equity areas)	
CMF source, cost effectiveness	Effectiveness (CMF and Crash reduction %) of each countermeasure, which crashes it applies to, context factor for the crashes, source of CMF (CMF clearinghouse, MnDOT roadway safety Big book of ideas, or other source), cost of each countermeasure (from Big Book or external sources if not in Big Book, estimated effectiveness of each countermeasure, estimated implementation timeline of each countermeasure	