Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Animal Collisions	Compile crash data on animal collision locations for wildlife crossing placements and evaluate potential crossings.	Planning / Engineering	There is a wildlife crossing project in our region being implemented by NMDOT on NM 550 that is in process.	https://largelandscapes.org/news/west-wide-study/
Crash Data Acquisition	Continue to enhance crash data acquisition timeliness and geographic accuracy.	Planning / Engineering	The TraCS project provides law enforcement statewide with access to an electronic collection and location tool for submission of the State's uniform crash report, uniform traffic citation, commercial vehicle inspection form.	https://nmtrafficrecords.com/
Crash Diagram Software	Develop a program / process that diagrams crash data at intersections to provide system wide and specific applications for safety improvements at intersections.	Planning / Engineering	Consider using the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://highways.dot.gov/safety/local-rural/improving-safety-rural-local-and-tribal-roads-safety-toolkit/step-4-diagnose
Crash Modification Factors (CMF)	Utilize CMFs when developing both system wide programs and specific designs for roadway safety improvements.	Planning / Engineering	Consider post implementation evaluations to add to research on CMF research.	https://www.cmfclearinghouse.org/userguide_CMF.php
Crosswalk Inventory	Develop a geocoded inventory of both marked and unmarked roadway crosswalks.	Planning / Engineering	Consider using the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://www.pedbikeinfo.org/resources/resources_details.cfm?id=3960
FARS Data and Minorities	Investigate state level Fatality Analysis Reporting System (FARS) data analysis to help account for concentrations of certain minority groups in specific states.	Planning / Engineering	Approximately 52% of the total U.S. American Indian / Alaska Native population resides in just six states – one of them being New Mexico.	https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars
NEMSIS Data and Injuries	Examine the National Emergency Medical Services Information System (NEMSIS) database that collects State and Territorial EMS injury and fatality data from 911 calls. NEMSIS analysis could provide a broader examination of crash involvement by race and includes additional injury data.	Planning / Engineering	Many of the rural areas are in need of quicker EMS service and could benefit from preventive crash measures to reduce the need.	https://nemsis.org/
Non-Motorized Count Program	Develop a multimodal traffic count program to evaluate demand (including latent demand) for all modes of travel.	Pedestrians / Bicyclists	MRMPO is currently developing bicycle and pedestrian counts program that could be emulated.	https://www.pedbikeinfo.org/topics/countingestimating.cfm

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Online Maps / Dashboards	Develop and maintain online maps or dashboards using most recent geocoded crash data, or other safety related infrastructure needs such as Intelligent Transportation Systems (ITS) applications.	Planning / Engineering	MRMPO is currently providing online crash data reports as new data becomes available.	https://mrmpo.maps.arcgis.com/apps/MapSeries/index.html?appid=ec395f5587744d778832207af7d86f93
Post-Crash Evaluation	Develop a streamlined and consistent template for evaluating and following up on fatal and incapacitating crash incidents.	Planning / Engineering	Current committee exists that evaluates post fatal crashes including City of Albuquerque, Albuquerque Police Department, and MRMPO.	https://rosap.ntl.bts.gov/view/dot/73538
Public Health Data	Determine the extent locally to which Black, Indigenous, and People of Color (BIPOC) are disproportionately represented in fatal traffic crashes, and whether certain subsets (e.g., specific races, genders, age groups) have especially high rates.	Planning / Engineering	Reference the Transportation and Health Tool (THT) developed by the U.S. Department of Transportation that examines the health impact of transportation systems.	https://www.transportation.gov/transportation-health-tool
Roadway Elements Inventory	MIRE, the Model Inventory of Roadway Elements, is a federally recommended listing of roadway inventory and traffic elements intended as a guideline to help transportation agencies improve their roadway and traffic data inventories to improve safety.	Planning / Engineering	Consider the supplemental data that includes items such as roadside fixed objects, signs, land use elements related to safety, railroad grade-crossing descriptors, pavement data, and ADA compliant improvements.	https://highways.dot.gov/safety/data-analysis-tools/mire-fde/model-inventory-roadway-elements-mire
Setting Speed Limits	Reevaluate the process of setting speed limits. Provide default speed limits, designate slow / speed zones, and look at conflict density and land use context. Manual on Uniform Traffic Devices (MUTCD) no longer requires using only the 85th percentile.	Speed Management	The National Transportation Safety Board (NTSB) has recommended an overhaul of how speed is managed on U.S. streets, including the way that speed limits are set: https://nacto.org/2017/08/15/federal-study-concludes-us-must-curb-speed/	https://nacto.org/wp-content/uploads/2020/07/NACTO_CityLimits_Spreads.pdf
Sight Distance Reviews	Investigate sight distance issues at intersections and curves with high crashes.	Planning / Engineering	Consider using the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/visibility-sight-distance/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Uniform Crash Report	Ensure consistency with National Highway Traffic Safety Administration (NHTSA) guidance and usability for law enforcement officers to accurately capture crash data, particularly for pedestrians and contributing factors.	Planning / Engineering	Top Contributing Factor was replaced with First Harmful Event in New Mexico in 2020. Pedestrian Error is often used incorrectly because of misunderstandings of the law. Many fields are also left blank.	https://www.nhtsa.gov/traffic-records/model-minimum-uniform-crash-criteria

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Access Management Plans	Inventory existing access management variables and develop a plan to make improvements that will reduce the number of conflicts between modes.	Planning / Engineering	Requires a comprehensive inventory of roadway elements.	https://ops.fhwa.dot.gov/access_mgmt/progplan.htm#toc4
ADA Transition Plans	Support the development and implementation of ADA transition plans. Supplement with a prioritization process.	Planning / Engineering	Most jurisdictions have some sort of ADA transition plan in process. Consider re-evaluating how these infrastructure improvements are prioritized by using both the High Fatal and Injury Network (HFIN) and the MRMPO Vulnerability Index (MVI).	https://highways.dot.gov/civil-rights/programs/ada/ada-transition-plan-and-inventory-map#:~:text=Accessible%20Transportation%20for%20All%20Americans&text=ADA%20Transition%20Plans%20are%20required,facilities%20for%20people%20with%20disabilities.
Barrier Removal Program	Develop a program to remove barriers from sidewalk access such as utility poles, and ways to ensure that there is no parking in bicycle lanes.	Planning / Engineering	Requires are comprehensive inventory of roadway elements or a prioritization process based on the HFIN and the MVI.	https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa13037/chap4.cfm
Community Based Traffic Policing	An approach to traffic enforcement that supports education, collaboration, and shared priorities and responsibility between police and community members.	Enforcement	Equity concern.	https://www.americanprogress.org/article/safe-streets-for-all-an-opportunity-to-rethink-traffic-enforcement/
Complete Streets Policy	Work on developing a complete streets policy for your jurisdiction that can be adopted by elected officials.	Planning / Engineering	Complete Streets or Vision Zero are excellent places to start for moving towards prioritizing roadway safety.	https://smartgrowthamerica.org/program/national-complete-streets-coalition/policy-atlas/
Courtesy Patrols	Implement a program that provides quick support to crashes occurring on major roadways.	Roadways	NMDOT already has this type of program for the Interstates.	https://www.dot.nm.gov/travel-information/courtesy-patrol/
Crosswalks Policy	Develop a policy regarding unmarked or marked, spacing, and use of mid-block crossings that improves safety benefits for pedestrians.	Pedestrians / Bicyclists	See City of Rio Rancho or City of Albuquerque's mid-block crossing policy.	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/
Emergency Medical Services (EMS) Response	A quick EMS response time can be the difference between life and death as there is a critical window of time in which people need treatment for serious injuries to stay alive.	Planning / Engineering	In rural areas the need to transport a person to the hospital within the "golden hour" time frame is essential.	https://www.ems.gov/resources/newsletters/spring-2023/3-ways-highway-safety-and-ems-can-work-together/
Enforcement Staff (Non-Police)	Build non-police first responder teams that focus on traffic and road safety not criminal law enforcement.	Enforcement	Equity Concern. Remove the authority of police to stop cars for minor traffic violations.	https://visionzeronetwork.org/re-thinking-the-role-of-enforcement-in-traffic-safety-work-city-to-city/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Fatal Crash Evaluations	Deploy a response team to investigate locations of fatal and Class A (seriously incapacitating) crashes for safety improvements.	Planning / Engineering	Develop a short memo to document the short and long term recommendations for the site.	https://visionzero.dc.gov/pages/crash-analysis
Ignition Interlock Programs	Provide continued support of Ignition Interlock programs. NM law mandates an ignition interlock on every vehicle driven by anyone in the State convicted of a DWI, including first-time DWI offenders. The NMDOT / Traffic Safety Department (TSD) is responsible for the licensing and certification of ignition interlock providers.	Legislation	This type of program already exists in NM but could be improved.	https://www.dot.nm.gov/planning-research-multimodal-and-safety/modal/traffic-safety/ignition-interlock-program/
Improve School Safety Zones	Improve school zone crosswalks and pick and drop off processes. Also ensure well-trained adult crossing guards.	Planning / Engineering	Includes a *Safety-based prioritization of schools for Safe Routes to School infrastructure projects: A process for transportation professionals.*	https://www.saferoutesinfo.org/
Legalize Idaho Stop (Bicyclists)	Allows bicyclists to yield at stop signs and proceed when safe rather than come to a complete stop.	Legislation	There are currently ~8 states with this type of law.	https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-03/Bicyclist-Yield-As-Stop-Fact-Sheet-032422-v3-tag.pdf
Long Range Bicycle System (LRBS) Prioritization	Prioritize gaps in the long range bicycle system that will improve connections to important community destinations.	Planning / Engineering	MRMPO has developed a Long Range Bicycle System (LRBS) for the region and some of the larger jurisdictions have their own plans.	https://www.arcgis.com/apps/View/index.html?appid=59043be2fefe4d8599ce7c26ca53f303&extent=-106.9364,34.9553,-106.4893,35.1422
LPI Use by Bicyclists	Allows bicyclists to also use the Leading Pedestrian Interval (LPI) button.	Legislation	Likely requires changes in local or State legislation.	https://bklyner.com/lpi-bill-passes-allowing-bicyclists-to-follow-pedestrian-signals/
Motorcycle Helmet Laws	Support State policies that require motorcyclists to wear helmets.	Legislation	Currently in New Mexico persons under 18 must wear a helmet.	MV PICCS Intervention: Universal Motorcycle Helmet Laws	Transportation Safety	CDC
Multiple Threat Crashes	Develop a process to specifically target the reduction of Multiple Threat crashes.	Planning / Engineering	Consider starting at schools and using the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://www.pedbikeinfo.org/webinars/webinar_details.cfm?id=12
Public Health Organizations	Support projects and programs that are high priority for both local agencies and Public Health organizations.	Planning / Engineering	Coordinate with Healthy Here and other public health or active transportation organizations.	https://www.healthequitycouncil.net/healthy-here/
Public School Collaboration	Preemptive collaboration with Schools and Local Agencies prior to changes in roadway design that focus on safe pedestrian crossing and bicycle access to the School.	Schools	Develop consistent communication between local agencies and schools to coordinate future needs when investing in street infrastructure adjacent to school locations.	https://www.safekids.org/research-report/school-zone-research-report

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Reevaluate Minor Traffic Stops	Develop a plan to eliminate traffic stops that do not support public safety by considering alternative approaches that include educational components or vouchers.	Enforcement	Equity Concern. For example, implement voucher programs for minor traffic violations as an alternative to enforcement.	https://lightsonus.org/about/
Repeat DWI Offenders	Strengthen State laws on repeat DWI offenders in the State of New Mexico.	Legislation	Requires Stata law changes. Currently there is a specialty court that handles repeat offenders.	https://seconddistrict.nmcourts.gov/services-programs/jsdp/jsdp-programs/felony-repeat-offender-dwi-court/
Safe Routes to Schools Programs	Develop and enhance programs at schools focused on improving routes to schools for walkers an bikers that are protected and continuous. In Albuquerque focus on highlights from the Vision Zero Youth Initiative.	Schools	Reference Santa Fe Routes to School Action Plan. Las Cruces, NM also has some extensive plans and activities.	https://www.aps.edu/capital-master-plan/documents/website-updates/vision-zero/action-plan
Safe Routes to Transit	Develop a plan to prioritize infrastructure that provides safe walking and bicycling routes to transit stations.	Transit	Consider starting with high ridership stops and using the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://highways.dot.gov/safety/pedestrian-bicyclist/safety-tools/chapter-6-safe-routes-transit-bicycle-and-transit
School Pick up / Drop off Plan	Evaluate and enhance school pick up/drop off plans.	Schools	Coordinate with local jurisdictions for roadway improvements.	http://guide.saferoutesinfo.org/dropoff_pickup/index.cfm
Senior Organizations	Work with organizations that support mobility for seniors and persons with disabilities.	Education	Funding is available from many national organizations that support the development of walkable communities.	https://www.aarp.org/livable-communities/network-age-friendly-communities/
Shared Micromobility Programs	Develop programs that provide lightweight vehicles like bicycles or scooters.	Planning / Engineering	Denver Council of Governments (DRCOG) has developed some extensive systems and regulations to oversee shared micromobility.	https://nacto.org/publication/shared-micromobility-in-2022/
Technical Assistance	MRMPO and RTPO can provide small urban, Tribal, and rural areas with assistance for grant writing and crash data analyses.	Planning / Engineering	MRMPO and RTPO can provide assistance.	https://www.fhwa.dot.gov/bipartisan-infrastructure-law/technical_support.cfm
TIA Safety Assessment	When new development occurs and the Traffic Impact Assessment (TIA) process is initiated add a safety assessment.	Planning / Engineering	Use the HFIN to determine if additional assessments are needed.	https://rosap.ntl.bts.gov/view/dot/55623
Traffic Stop Transparency	Expand transparency of decision making around traffic stops and searches.	Enforcement	Equity Concern. For example, require written consent from drivers before all traffic searches and report legal basis and actions taken. Maintain and report data to identify disparities.	https://www.vera.org/downloads/publications/alternatives-to-policing-traffic-enforcement-fact-sheet.pdf

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Transit Fare Program	Reduce or eliminate transit fares.	Transit	Equity concern.	https://www.cabq.gov/transit/news/zero-fares-is-here-to-stay#:~:text=On%20Wednesday%2C%20November%208%2C%202023%2C%20City%20Council%20approved,the%20Sun%20Van%20Paratransit%20service%20in%20April%202023
Tribal Government Assistance	Work with Tribal governments to support their transportation plans and safety projects.	Planning / Engineering	MRMPO and RTPO can provide assistance.	https://highways.dot.gov/federal-lands/ott/study
Vision Zero with Training	Adopt Vision Zero policies and plans along with training.	Planning / Engineering	The Vision Zero Community of Practice (VZ CoP) through FHWA offers technical resources to assist local communities with reaching their goal of zero.	https://highways.dot.gov/safety/zero-deaths/vision-zero-cop/vision-zero-community-practice

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Access Control / Diverters	An island placed at a neighborhood street intersection that prevents through and / or turning movements and decreases the number of drivers entering the street.	Roadways	Discourages or prevents drivers from cutting through neighborhood streets to decrease traffic and promotes the street for other road user types.	http://www.pedbikesafe.org/bikesafe/countermeasures_detail.cfm?CM_NUM=29
Active Railroad Grade Crossing	Active warning and control devices such as bells, flashing lights, and gates, in addition to passive warning devices such as crossbucks (the familiar x-shaped signs that mean yield to the train), yield or stop signs and pavement markings.	Railroad	The Federal Railroad Administration (FRA) Office or Railroad Safety develops and provides safety statistics.	https://railroads.dot.gov/program-areas/highway-rail-grade-crossing/highway-rail-grade-crossings-overview#:~:text=Active%20Grade%20Crossings%20have%20active,stop%20signs%20and%20pavement%20markings
Advanced Stop Bar / Lines	Stop bar or yield markings are placed in advance of a marked crosswalk to indicate where drivers are required to stop. A STOP HERE ON RED sign can be used to supplement the recessed stop line.	Pedestrians / Bicyclists	Consider the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=13
Automated Pedestrian Detection	Detects the presence of pedestrians as they approach the curb to initiate the walk signal without any action required on the part of the pedestrian.	Pedestrians	Focus on High Fatal and Injury Network (HFIN). high traffic volume intersections, and transit stations / bus stops.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=11
Automated Pedestrian Recall	Provides a pedestrian interval during each traffic cycle and eliminates the need for people to push a pedestrian button. Initially, these systems can be implemented during non-peak hours for drivers.	Pedestrians	Focus on High Fatal and Injury Network (HFIN). high traffic volume intersections, and transit stations / bus stops.	https://journals.sagepub.com/doi/abs/10.1177/0361198121100284 6
Bicycle Detection at Signalized Intersections	Detects the presence of a bicyclist either by push-buttons or by automated means (e.g., in-pavement loops, video, microwave, etc).	Bicyclists	Consider starting with the HFIN for Bicyclists for locations.	https://www.ite.org/technical-resources/topics/complete-streets/bicycle-signals/signal-detection-for-bicycles/
Bike Boulevards / Parallel Roadways	Providing alternative parallel routes that are safer than a main roadway for bicyclists. Includes signage and traffic calming.	Roadways	Reference MRMPO Long Range Bicycle Map or local bike / trail plan.	https://nacto.org/publication/urban-bikeway-design-guide/bicycle-boulevards/
Bike Boxes and Two-Stage Turn Boxes	A designated area at the head of a traffic lane at a signalized intersection. Provides bicyclists with a safe and visible way to get ahead of traffic during the red signal phase.	Bicyclists	Consider starting with the HFIN for Bicyclists for locations.	https://nacto.org/publication/urban-bikeway-design-guide/intersection-treatments/bike-boxes/
Bus Turn-outs	A designated spot on the side of a road where buses pull out of the flow of traffic to pick up and drop off passengers.	Transit	There are some concerns to be aware with these as on heavily trafficked roads it can be difficult for buses to pull back into traffic.	https://nacto.org/publication/transit-street-design-guide/stations-stops/stop-configurations/curbside-pull-stop/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Business Access Transit (BAT) Lanes	Curb lanes used only by right-turning vehicles and buses to help buses move more efficiently through traffic and provide better access to local traffic.	Roadways	Start with corridors that are destination rich.	https://www.ltd.org/business-access-transit-lanes/
Chicanes / Chokers / Pinch Points	A narrowing of the roadway width intended to decrease vehicle operating speeds in high multimodal traffic areas and/or through neighborhoods.	Speed Management	These are generally applied at local streets but can also be used for some Collectors and Bike Boulevards or parallel streets to a main thoroughfare.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=32
Contraflow Bike Lanes	Provide dedicated, on-road space for opposite direction bicycle travel on one-way streets.	Bicyclists	Use with care as there are a variety of considerations to consider before installing this type of facility.	http://www.pedbikesafe.org/BIKESAFE/countermeasures_detail.cfm?CM_NUM=15
Crossing Signs and Markings	Alert drivers to expect pedestrian or bicyclist crossing and indicate preferred crossing locations using signs and markings.	Pedestrians / Bicyclists	Important to develop a policy for crossing locations and use the HFIN.	http://guide.saferoutesinfo.org/engineering/marked_crosswalks.cfm
Curb Radii Reduction	Shorten crossing distances, reduce motor vehicle turning speeds, and improve visibility and sight distance at intersections.	Intersections	Consider starting with identified activity centers and Mainstreets.	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/corner-radii/
Curb Ramps	Provide an accessible, above and beyond ADA compliant, route to transition between the sidewalk and the road.	Pedestrians	Consider the use of PROWAG requirements as they provide more safety benefits.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=3
Demonstration Projects	A temporary roadway infrastructure improvement that allows public agencies and people walking, bicycling, taking transit, and driving to evaluate improvements before investing in permanent changes.	Roadways	These types of projects can be particularly helpful when there is conflicting support for changing the roadway configuration by testing out different concepts.	https://www.transportation.gov/grants/ss4a/planning-and-demonstration-activities
FHWA Proven Safety Countermeasures System Wide	Systemically adopt the use of FHWA PSCs into existing infrastructure improvement programs.	Planning / Engineering	FHWA PSCs are ready-to-go applications with well vetted studies showing the safety benefits.	https://highways.dot.gov/safety/proven-safety-countermeasures
Floating Bus Stops / Bus Islands	Eliminates the conflict between bicyclists traveling in bike lanes and transit vehicles that must pull up to the curb.	Transit	Designs must plan for and provide easily navigable, safe access for visually impaired persons to the bus stop.	https://www.arlingtonva.us/Government/Programs/Transportation/Vision-Zero/Tools-and-Guidelines/Multimodal-Safety-Engineering-Toolbox-Web-Format/Floating-Bus-Stops-Bus-Islands
Four-way Stops / All-way Stops	Requires vehicles on all approaches to an intersecion to stop before proceeding.	Speed Management	Look at where signals can be replaced with 4 way stops. Consider prioritizing existing bicycle lanes combined with high frequency transit services.	https://pubmed.ncbi.nlm.nih.gov/35131654/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Interim Public Plazas	A transformation of underutilized or unsafe areas of roadway into public spaces for surrounding residents and businesses. This transformation is done using low-cost materials, movable landscaping and flexible seating.	Roadways	Consider starting with identified activity centers and Mainstreets.	https://nacto.org/publication/urban-street-design-guide/interim-design-strategies/interim-public-plazas/
LED Lighting	LED lighting enhances visibility making it easier to see pedestrians, bicyclists, and other vehicles.	Roadways	Consider the High Fatal and Injury Network (HFIN) and MRMPO Vulnerability Index (MVI) as a starting point for locations.	https://highways.dot.gov/safety/other/visibility/roadway-lighting-resources
Left-Turn Phasing	A protected left-turn phase provides a green arrow for left turning vehicles while stopping both oncoming traffic and parallel pedestrian crossings.	Intersections	This may require ITS infrastructure upgrades.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=51
Mini Roundabouts / Neighborhood Traffic Circles	Raised circular islands constructed in the center of streets to reduce speed by directing drivers to maneuver around them.	Speed Management	Typically used for lower volume residential streets.	https://nacto.org/publication/urban-street-design-guide/intersections/minor-intersections/mini-roundabout/
Multi-Use Trails / Pathways	Create a dedicated route for pedestrians and bicyclists that is separate from vehicles.	Pedestrians / Bicyclists	See MRMPO Long Range Bicycle System or local plan for trail networks. Maintain existing infrastructure and fill gaps in the current trail system. Consider some of the pedestrian / bike crossing enhancements at conflict points.	https://www.arcgis.com/apps/View/index.html?appid=59043be2fefe4d8599ce7c26ca53f303&extent=-106.9364,34.9553,-106.4893,35.1422
No Right Turn on Red	Signs that prohibit right turns during red lights. Implementation reduces conflicts between turning vehicles and other road users at intersections.	Intersections	Provides a fairly simple low-cost measure.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=49
Parking Restrictions at Crossings	Improve sightlines between drivers and pedestrians or bicyclists crossing the street.	Intersections	Consider starting with school locations.	http://pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=9
Parklets	Changing the use of parking spaces into public seating platforms for adjacent businesses or the general public. The design usually incorporates seating, greenery and/or bike racks on neighborhood retail streets or commercial areas.	Roadways	Look for opportunities in areas with a mix of land uses like Downtowns and Main Streets.	https://globaldesigningcities.org/publication/global-street-design-guide/streets/pedestrian-priority-spaces/parklets/example/
Pedestrian Countdown Signals	A signal that shows a countdown of the remaining time to cross the road.	Pedestrians	Consider using the HFIN for Pedestrians.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=46

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Pedestrian Crossing Signs In - Street	A yield to, or stop, for pedestrian sign that is set in the roadway or median ahead of a crosswalk. Indicates to drivers where to yield for people in a crosswalk.	Pedestrians	Consider using the HFIN for Pedestrians.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=69
Pedestrian Lighting	Pedestrian-level lighting placed over sidewalks to improve security and safety.	Pedestrians	Equity concern. Start with locations using the MRMPO MVI.	https://globaldesigningcities.org/publication/global-street-design-guide/utilities-and-infrastructure/lighting-and-technology/lighting-design-guidance/
Protected Intersections	Intersection design that improves safety by reducing the speed of turning traffic, improving sightlines and designating separate space for all road users thereby reducing conflict points between drivers, bicyclists and pedestrians.	Intersections	Consider a pilot project to test this type of intersection.	https://nacto.org/publication/dont-give-up-at-the-intersection/protected-intersections/
PUFFIN Crossing	Pedestrian User-Friendly Intelligent Intersections (PUFFIN) use detection of people walking in crosswalks to determine whether the pedestrian phase of a traffic signal should be extended or canceled.	Pedestrians	Provides extra time for people in a crosswalk or shortens a driver's wait time if no one is crossing to increase efficiency and compliance.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=11
Slip Lane Reconfiguration / Removal	Reconfigurations to intersections that close or redesign slip lanes for right-turning drivers.	Intersections	Promotes right-turning drivers to travel at safer speeds, improves visibility, and reduces the complexity of the intersection.	https://www.strongtowns.org/journal/2019/11/5/slip-lanes-would-never-exist-if-we-prioritized-safety-over-speed
Speed Hump and Raised Crossings	Raised area that reduces vehicle speeds, increase driver yielding and improves safety for people crossing.	Speed Management	Usually more suitable for Collectors and Local roadways.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=35
Speed Zones / Slow Zones	A section of roadway with a different posted speed limit than the statutory speed limit to reduce vehicle speeds to facilitate safer mobility for all roadway users.	Speed Management	Often used adjacent to schools but can be used in other areas as well such as adjacent to parks or community centers.	https://www.pedbikeinfo.org/resources/resources_details.cfm?id=4844
Transit Access Crossings	Locating bus stops at intervals that minimize crossing the street at unmarked mid-block locations. Provides transit riders with safe and convenient crossings to get to bus stops.	Transit	Some current guidance recommends bus stops are located at mid-block locations and intersections are spaced greater than 800 to 1,000 feet a mid-block crossing should be considered.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=15#:~:text=Place%20crosswalks%20behind%20bus%20stop,motorists%20can%20see%20the%20pedestrian
Transit Priority Lanes	Priority and transit only lanes to improve reliability, efficiency and reduce conflicts between buses and other modes of traffic.	Transit	Currently exist as a part of the Bus Rapid Transit on Central Avenue.	https://nacto.org/publication/transit-street-design-guide/transit-lanes-transitways/transit-lanes/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Transit Stations and Shelters	Create an accessible, identifiable, shaded and comfortable area for waiting, boarding, and alighting of bus passengers.	Transit	Consider starting with high ridership stops, the HFIN, and the MRMPO MVI for locations.	https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/small-transit-shelter/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Anti-Speed Campaigns	Develop educational campaigns coupled with enforcement that emphasize the importance of not speeding.	Campaigns	Make sure choosing locations for enforcement are done in an equitable manner and include members of historically disadvantaged communities.	https://www.cabq.gov/council/find-your-councilor/district-3/news/city-launches-2018speeding-has-a-name2019-campaign-to-slow-speeding-drivers
Defensive Driving Courses	Expand availability of defensive driving courses in schools and places of employment, and ensure that they are addressing multimodal travel.	Schools	Reference Albuquerque Vision Zero Youth Initiative.	https://www.nsc.org/safety-training/defensive-driving/nsc-defensive-driving-courses
Distracted Driving Campaigns	Implement behavioral campaigns aimed at reducing distracted driving and texting while driving.	Campaigns	NMDOT currently has a DNTXT JUST DRIVE campaign.	https://hsc.unm.edu/medicine/departments/emergency-medicine/programs/cipre/cipre-programs/look-for-me/
Driver Education	Improve driver education to include information on new multimodal facilities, design elements and right-of-way laws.	Education	Recent updates from NMDOT Traffic Safety Division who manages this curriculum. The State Taxation and Revenue Department (MVD is in this department) manages the test.	https://rosap.ntl.bts.gov/view/dot/34736
Driving under the Influence	Educational campaigns coupled with enforcement that decrease driving while impaired. Coupling these campaigns with active education or enforcement makes them more effective.	Campaigns	NMDOT couples their driving under the influence campaign with the 100 Days and Nights of Summer enforcement program.	https://www.endwi.com/
High Visibility DUI Saturation Patrols	Highly visible locations along the roadway where drivers are stopped to ensure they are not under the influence. Combine all enforcement with educational campaigns.	Enforcement	Make sure choosing locations for enforcement are done in an equitable manner and include members of the BIPOC community.	https://www.dot.nm.gov/planning-research-multimodal-and-safety/modal/traffic-safety/impaired-driving-dwi-programs/
Motorcycle Helmet Campaigns	Develop campaigns to encourage motorcyclists to use helmets and for other drivers to watch out for motorcyclists.	Campaigns	Currently in New Mexico persons under 18 must wear a helmet.	https://www.mvd.newmexico.gov/helmet-law/
Move Over It's the Law Campaign	An educational campaign that emphasizes moving over to protect law enforcement officers and other first responders stopped on the roadway.	Campaigns	All but seven states have enacted *Move Over* laws.	https://ops.fhwa.dot.gov/publications/fhwahop09005/move_over.htm
Multi-jurisdictional Workshops and Trainings	Provide workshops and training on policies and design guidelines that support a safer transportation system such as the FHWA Safe Systems Approach, Vision Zero, Road Diets and Complete Streets.	Education	USDOT provides free Road Diet workshops.	https://nacto.org/event-type/training/
Press Release with New Infrastructure	Coordinate press releases and educational campaigns with implementation of new multimodal infrastructure such as roundabouts or crossing signals.	Planning / Engineering	Could be a multi-jurisdictional effort.	https://www.rrnm.gov/1411/Roundabouts

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Public Information Meetings on Safety Designs	Provide outreach on safe roadway design to community organizations and schools.	Education	Consider prioritizng meetings with public schools and at community meetings. Priroitize historically disadvantaged communities.	https://journalofroadsafety.org/article/89365-how-to-successfully-engage-a-community-in-road-safety
Roadway Safety Education at Schools	Development of education materials and courses at schools around safe driving and multimodal traffic laws.	Education	Albuquerque Public Schools Youth Initiative is already working on developing curriculum related to roadway safety in their schools.	https://www.aps.edu/capital-master-plan/documents/website-updates/vision-zero/action-plan
Safety and Education Center	Consider the development of a safety educational center along with educational materials and services.	Pedestrians / Bicyclists	Reference Albuquerque's Esparanza Bicycle Education Center programs.	https://www.cabq.gov/parksandrecreation/recreation/bike/esperanza-bicycle-safety-education-center
Vision Zero Safety Culture	Actively share information and experiences with stakeholders such as bicycle advocates, public health representatives, and fellow government organizations to ensure there is a shared responsibility and vision.	Education	Toward Zero Deaths provides multiple resources and campaigns.	https://www.towardzerodeaths.org/traffic-safety-culture/

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Advanced Driver Assistance Systems (ADAS)	ADAS are vehicle-based safety technologies that work by alerting or assisting drivers to prevent or mitigate crashes.	Speed Management	In the Albuquerque metropolitan area consider the Intelligent Transportation Systems (ITS) Priority Corridors and consult the ITS Strategies Matrix.	https://www.itskrs.its.dot.gov/briefings/executive-briefing/vision-zero-and-its
Advanced Signal Timing / Smart Signals	Allocates right-of-way to intersection traffic based on mode and fluctuations in demand over the course of each day, week, and year.	Intersections	In the Albuquerque metropolitan area consider the Intelligent Transportation Systems (ITS) Priority Corridors and consult the ITS Strategies Matrix.	https://mrcog-nm.gov/259/Intelligent-Transportation-Systems
Advanced Vehicle Detection	Uses technology to acquire vehicle counts, speed of each individual vehicle, traffic analysis, and vehicle categorization.	Intersections	In the Albuquerque metropolitan area consider the Intelligent Transportation Systems (ITS) Priority Corridors and consult the ITS Strategies Matrix.	https://www.standards.its.dot.gov/ApplicationArea/10
Bicycle Signal Pilot Project	Install a bicycle light at intersections to test the viability.	Planning / Engineering	Existing infrastructure needs to be present for installation.	https://nacto.org/publication/urban-bikeway-design-guide/bicycle-signals/
Bus Queue Jump Signals / Signal Priority	Allows buses to easily enter traffic flow in a priority position using Advanced Vehicle Detection.	Transit	In the Albuquerque metropolitan area consider the ITS Priority Corridors and consult the ITS Strategies Matrix.	https://nacto.org/publication/transit-street-design-guide/intersections/signals-operations/
Dynamic Message Signs (DMS)	Electronic signs on the roadway that provide drivers with real time traffic alerts.	Roadways	Already used by NMDOT particularly for travel time and weather conditions.	https://www.standards.its.dot.gov/ApplicationArea/8
Emergency / Incident Management Plans	Develop and implement a plan that coordinates a multi-disciplinary response to traffic incidents and other emergency situations.	Planning / Engineering	Current update is in progress for the Albuquerque Traffic Incident Management Plan. The final draft is in circulation to the stakeholder agencies.	https://ops.fhwa.dot.gov/tim/
Emergency Signal Preemption Systems (ESPS)	ESPS are designed to disrupt the regular timing of traffic signals and grant a green light to emergency vehicles approaching intersections.	Intersections	This enables emergency vehicles to navigate through intersections quickly and safely to reach their destinations without delay.	https://www.itskrs.its.dot.gov/briefings/executive-briefing/vision-zero-and-its
Flashing Yellow Arrow	A signal with a flashing yellow arrow indicates that left turns are permitted, but you must first yield to oncoming traffic and pedestrians and then proceed with caution.	Intersections	This may require ITS infrastructure upgrades.	https://www.dot.state.mn.us/trafficeng/signals/flashingyellowarrow.html
Green Wave Systems / Coordinated Signals	Coordinated signal timing synchronizes traffic movements and manages the progression of drivers. Signals can be timed to a target speed limit to encourage drivers to drive at safer speeds.	Speed Management	Coordinated signal timing can limit drivers to safe speeds.	https://www.researchgate.net/publication/276497476_Green-Wave_Traffic_Theory_Optimization_and_Analysis
Intelligent Lane Control Signs (ILCS)	Overhead signals that indicate whether a lane is open or closed due to various reasons such as traffic collision, breakdown, or reversed lanes.	Roadways	This may require ITS infrastructure upgrades.	https://ops.fhwa.dot.gov/publications/fhwahop12046/rwm17_minnesota1.htm

Strategy	Description	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Rest on Red	Traffic signals that remain in the red phase in all directions until a driver is detected. Speed detection can be added, and if a driver is traveling above the speed limit the red phase can be held to stop the driver. Manage excessive driver speeds.	Speed Management	Currently being tested on Lead / Coal in Albuquerque.	https://trid.trb.org/View/61088
Signal Clearances	Evaluate the time between one direction of travel getting the red phase signal and the opposing direction getting the green phase signal.	Intersections	A longer clearance can be achieved by having an all-red phase to increase time for intersections to be cleared before opposing traffic.	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=45
Signal Phasing Modifications	Can reduce conflicting movements between turns, vehicles going straight, and/or pedestrian and bicyclist movements.	Intersections	This may require ITS infrastructure upgrades.	https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/traffic-signals/coordinated-signal-timing/
Smart Work Zones	Dynamic management of work zone traffic, such as queue warning, speed management, and lane merging.	Speed Management	There are multiple portable types of systems and configurations to evaluate.	https://ops.fhwa.dot.gov/wz/its/index.htm
Speed Feedback Indicator Signs	Manage driver speeds by comparing the driver's current speed with the speed limit.	Speed Management	Consider starting with the HFIN Corridors for pinpointing locations.	https://www.nhtsa.gov/book/countermeasures-that-work/speeding-and-speed-management/countermeasures/other-strategies-behavior-change/dynamic-speed#:~:text=Unstaffed%20speed%20display%20devices%2C%20also,some%20drivers%20to%20slow%20down
Traveler Information	Messaging signs that update drivers on current roadway conditions such as delays, incidents, weather, emergency alerts, and alternate routes.	Roadways	An example of capturing this information and providing a map display for reference in addition to dynamic message signs: https://nmroads.com/mapIndex.html?	https://ops.fhwa.dot.gov/travelinfo/about/aboutus.htm
Vehicular Technology Speed Detection	Continue to support vehicular technologies directly related to safety such as limiting speed and detecting other vehicles and people walking, biking, or rolling.	Speed Management	California recently introduced a bill that would require 2027 or newer vehicles built and sold within CA to have a speed limiter that could prevent them from going more than 10 mph over the speed limit.	https://www.ntsb.gov/news/press-releases/Pages/NR20231114.aspx#:~:text=Passive%20ISA%20systems%20warn%20a,responsible%20for%20slowing%20the%20car

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Adequate Lighting	Increase visibility for all road users, especially at crossings and intersections. Ensure adequate illuminance levels and continuous lighting along roadway segments.	Design and Engineering	Roadways	Lighting can reduce crashes up to 42% for nighttime injury pedestrian crashes at intersections. 33-38% for nighttime crashes at rural and urban intersections. 28% for nighttime injury crashes on rural and urban highways. High concern for vulnerable communities along mixed use corridors.	https://highways.dot.gov/safety/proven-safety-countermeasures/lighting
Appropriate Speed Limits for All	Review current speed limits by looking at a range of factors such as pedestrian and bicyclist activity, land use context, and intersection and driveway density and establish non-statutory speed limits and designate reduced speed zones.	Design and Engineering	Speed Management	Systemwide process for reevaluating how speed limits are being set. Traffic fatalities in Seattle decreased 26% after the city implemented city-wide speed management strategies and countermeasures, including setting speed limits on all non-arterial streets at 20 mph and 200 miles of arterial streets at 25 mph.	https://highways.dot.gov/safety/proven-safety-countermeasures/appropriate-speed-limits-all-road-users
Backplates with Retroreflective Borders	Use backplates for Signal Heads that have retroreflective borders making them more visible and conspicuous. Also supports better orientation for older and color vision deficient drivers.	Design and Engineering	Intersections	15% reduction in total crashes. Low cost application.	https://highways.dot.gov/safety/proven-safety-countermeasures/backplates-retroreflective-borders
Bicycle Lanes / Buffered Bicycle Lanes	Provide dedicated, on-road space for bicycling. Buffered lanes provide dedicated on-road space for bicycling with additional marked space between vehicles and bicyclists.	Design and Engineering	Bicyclists	Bicycle Lane additions can reduce crashes up to 49% for total crashes on urban 4-lane undivided collectors and local roads and 30% for total crashes on urban 2-lane undivided collectors and local roads. See MRMPO Long Range Bicycle System recommendations or local bike / trail plan.	https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes
Bicycle Lanes: Separated	On road space for bicyclists that include a separated bicycle lane delineated with flexible posts or other barriers. Sometimes called Protected.	Design and Engineering	Bicyclists	Converting traditional or flush buffered bicycle lanes to a separated bicycle lane with flexible delineator posts can reduce crashes up to 53%. See MRMPO Long Range Bicycle System recommendations or local bike / trail plan.	https://www.arlingtonva.us/Government/Programs/Transportation/Vision-Zero/Tools-and-Guidelines/Multimodal-Safety-Engineering-Toolbox-Web-Format/Separated-Bicycle-Facilities
Corridor Access Management	Design, application, and control of entry and exit points along a roadway, including other intersections and driveways. Ensure enhanced safety for all modes that facilitates walking and biking.	Design and Engineering	Roadways	Reducing driveway density 5-23% reduction in total crashes along 2-lane rural roads. 25-31% reduction in fatal and injury crashes along urban/suburban arterials. Reduce driveway density. Manage spacing of intersection and access points. Limit allowable movements at driveways. Place driveways on an intersection approach corner rather than a receiving corner. Utilize designs such as roundabouts or reduced left-turn conflicts. Use lower speed one-way or two-way off-arterial circulation roads.	https://highways.dot.gov/safety/proven-safety-countermeasures/corridor-access-management

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Crosswalk Visibility Enhancements	Increase visibility at crosswalks with lighting, signing, and pavement markings such as bar pairs, continental or ladder crosswalk patterns.	Design and Engineering	Pedestrians / Bicyclists	High-visibility crosswalks can reduce pedestrian injury crashes up to 40%. Intersection lighting can reduce pedestrian crashes up to 42%. Advance yield or stop markings and signs can reduce pedestrian crashes up to 25%. Prioritize locations based on crash data analyses (like the HFIN) and the location of vulnerable communities.	https://highways.dot.gov/safety/proven-safety-countermeasures/crosswalk-visibility-enhancements
Curb Extension / Bulb-out	Extensions of the sidewalk or curb line into the parking lane to narrow roadway width.	Design and Engineering	Pedestrians	An official Crash Modification Factor (CMF) has not yet been determined; initial research indicates this treatment may be effective at increasing driver yielding and improving pedestrian safety (Johnson et al. 2005; Thomas et al., 2016).	https://www.arlingtonva.us/Government/Programs/Transportation/Vision-Zero/Tools-and-Guidelines/Multimodal-Safety-Engineering-Toolbox-Web-Format/Curb-Extensions-and-Modifications
Daylighting	Removes / prevents parking right at the intersection (typically 20' of the intersection). Improves visibility of people crossing the street and also for drivers to safely see if there's oncoming traffic when making a turn.	Design and Engineering	Intersections	30% for vehicle-pedestrian crashes (Gan et al. 2005).	https://www.strongtowns.org/journal/2023/11/24/how-to-daylight-your-citys-intersections-and-why-it-matters
Dedicated Left- and Right-Turn Lanes at Intersections	Turn lanes that provide physical separation between slower turning traffic with adjacent through traffic.	Design and Engineering	Intersections	Left-Turn Lane 28-48% reduction in total crashes. Positive Offset Left-Turn Lanes 36% reduction in fatal and injury crashes. Right-Turn Lanes 14-26% reduction in total crashes.	https://highways.dot.gov/safety/proven-safety-countermeasures/dedicated-left-and-right-turn-lanes-intersections
Enhanced Delineation for Horizontal Curves	A variety of strategies that can warn drivers of a change in roadway direction that can be implemented in advance of or within curves, such as chevrons or retroreflective signs.	Design and Engineering	Speed Management	Chevron Signs 25% reduction in night-time crashes, 16% reduction in non-intersection fatal and injury crashes. Oversized Chevron Signs 15% reduction in fatal and injury crashes. Sequential Dynamic Chevrons 60% reduction in fatal and injury crashes. In-Lane Curve Warning Pavement Markings 35-38% reduction in all crashes. New Fluorescent Curve Signs or Upgrade Existing Curve Signs to Fluorescent Sheeting 18% reduction in non-intersection, head-on, run-off-road, and sideswipe in rural areas. Priority strategy in areas with multiple roadway departures. Many of these are in rural areas.	https://highways.dot.gov/safety/proven-safety-countermeasures/enhanced-delineation-horizontal-curves
Hardened Centerlines and Turn Wedges	Hardened centerlines are flexible delineator posts or raised speed humps at an intersection to block the diagonal path through the intersection and encourage drivers to turn left at a slower speed. Turn wedges include pavement markings wedged between the sides of perpendicular crosswalks at an intersection to reduce turning speeds and encourage driver yielding.	Design and Engineering	Speed Management	46% for all crashes at raised medians (Bahar et al. 2007). Can be constructed rapidly and inexpensively using markings and flexible delineators. The turning radius of trucks and buses should be considered when installing turn wedges.	https://www.arlingtonva.us/Government/Programs/Transportation/Vision-Zero/Tools-and-Guidelines/Multimodal-Safety-Engineering-Toolbox-Web-Format/Hardened-Centerlines-and-Turn-Wedges

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Hawk Signals / Pedestrian Hybrid Beacons	A traffic control device designed to help pedestrians (and bicyclists) safely cross higher-speed roadways at midblock crossings and uncontrolled intersections.	Design and Engineering	Pedestrians / Bicyclists	55% reduction in pedestrian crashes. 29% reduction in total crashes. 15% reduction in serious injury and fatal crashes. PHBs are used where it is difficult for pedestrians to cross a roadway, such as when gaps in traffic are not sufficient or speed limits exceed 35 miles per hour. They are very effective at locations where three or more lanes will be crossed or traffic volumes are above 9,000 annual average daily traffic.	https://highways.dot.gov/safety/proven-safety-countermeasures/pedestrian-hybrid-beacons
Leading Pedestrian Interval (LPI)	Provide pedestrians with a head start when entering an intersection.	Design and Engineering	Pedestrians	13% reduction in pedestrian-vehicle crashes at intersections. Reduces conflicts between pedestrians and bicyclists from vehicular turning movements. Costs for implementing LPIs are very low when only signal timing alteration is required, but can be costly when the hardware is not already available.	https://highways.dot.gov/safety/proven-safety-countermeasures/leading-pedestrian-interval
Left-Turn Conflict Reduction	Improved geometric design at intersections that reduce the number of severe crashes associated with left-turn movements. Highly effective designs include U-turns to complete certain left-turn movements such as the Restricted Crossing U-turn (RCUT) or the Median U-turn (MUT).	Design and Engineering	Intersections	Two-Way Stop-Controlled to RCUT 54% reduction in fatal and injury crashes. Signalized Intersection to Signalized RCUT 22% reduction in fatal and injury crashes. Unsignalized Intersection to Unsignalized RCUT 63% reduction in fatal and injury crashes. MUT 30% reduction in intersection-related injury crash rate. The RCUT is suitable for and adaptable to a wide variety of circumstances, ranging from isolated rural, high-speed locations to urban and suburban high-volume, multimodal corridors. It is a competitive and less costly alternative to constructing an interchange.	https://highways.dot.gov/safety/proven-safety-countermeasures/reduced-left-turn-conflict-intersections
Local Road Safety Plans	Developing a plan that analyzes and prioritizes safety improvements on local roads. Particularly of importance in neighborhoods and rural areas.	Policies and Programs	Planning / Engineering	25% reduction in county road fatalities in Minnesota. 17% reduction in fatal and serious injury crashes on county-owned roads in Washington State. 35% reduction in severe curve crashes in Thurston County, WA.	https://highways.dot.gov/safety/proven-safety-countermeasures/local-road-safety-plans
Longitudinal Rumble Strips and Stripes	Milled or raised elements on the pavement intended to alert drivers that their vehicle has left the travel lane. Rumble strips are markings placed over the rumble strips.	Design and Engineering	Speed Management	Center Line Rumble Strips 44-64% reduction in head-on fatal and injury crashes on two-lane rural roads. Shoulder Rumble Strips 13-51% reduction in single vehicle, run-off-road fatal and injury crashes on two-lane rural roads. Rumble strips are relatively low-cost, and economic analyses have indicated benefit / cost ratios that exceed 100.	https://highways.dot.gov/safety/proven-safety-countermeasures/longitudinal-rumble-strips-and-stripes-two-lane-roads

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Median Barriers	Longitudinal barriers that separate opposing traffic on a divided highways to reduce cross median crashes. Includes metal-beam guard rails, concrete and cable barriers.	Design and Engineering	Speed Management	8% of all fatalities on divided highways are due to head-on crashes. Median Barriers Installed on Rural Four-Lane Freeways 97% reduction in cross-median crashes. Potential risk factors include: Traffic volumes. Vehicle classifications. Median crossover history. Crash incidents. Vertical and horizontal alignment. Median terrain configurations.	https://highways.dot.gov/safety/proven-safety-countermeasures/median-barriers
Medians and Pedestrian Crossing Islands	Pedestrian safety islands or refuges decrease pedestrian exposure in the intersection or when crossing the road.	Design and Engineering	Pedestrians	Median with Marked Crosswalk 46% reduction in pedestrian crashes. Pedestrian Refuge Island 56% reduction in pedestrian crashes. Highly recommended where pedestrians must cross multiple lanes of traffic in one direction.	https://highways.dot.gov/safety/proven-safety-countermeasures/medians-and-pedestrian-refuge-islands-urban-and-suburban-areas
Mobile Automated Speed Cameras	A portable system that uses a camera and a speed measurement device to detect and capture images of vehicles travelling in excess of the speed limit. It may also include other offenses such as running through a red light or unauthorized use of a bus lane.	Traffic Technologies	Speed Management	Mobile units can reduce crashes on urban principal arterials up to 20% for fatal and injury crashes. Automated traffic enforcement supports the objective of consistent and unbiased enforcement of speeding, red light running and other traffic violations without regard to driver race or socioeconomic status. Ensure equitable implementation.	https://highways.dot.gov/safety/proven-safety-countermeasures/speed-safety-cameras
Paved Shoulders	Paved area of a roadway between the travel lane and the edge of pavement. Provided for accommodation of stopped vehicles for emergency use, and for bicyclists, pedestrians, or wheelchair use typically on rural roadways.	Design and Engineering	Pedestrians / Bicyclists	Paved Shoulders 71% reduction in crashes involving pedestrians walking along roadways. High priority for rural areas.	https://highways.dot.gov/safety/proven-safety-countermeasures/walkways
Pavement Friction Management	Monitoring and maintaining pavement friction at locations where vehicles are frequently turning, slowing and stopping. Pavement friction produces vibration and sound to prevent roadway departure, intersection and pedestrian involved crashes.	Design and Engineering	Speed Management	High Friction Surface Treatment can reduce crashes up to 63% for injury crashes at ramps, 48% for injury crashes at horizontal curves, and 20% for total crashes at intersections. Horizontal curves. Interchange ramps. Intersection approaches. Higher-speed signalized and stop-controlled intersections. Steep downward grades. Locations with a history of rear-end, failure to yield, wet-weather, or red-light-running crashes. Crosswalk approaches	https://highways.dot.gov/safety/proven-safety-countermeasures/pavement-friction-management
Raised Crosswalks	Crosswalks that are elevated above roadway pavement in the form of an elongated speed hump with a flat section in the middle and at-grade with adjacent sidewalks.	Design and Engineering	Pedestrians / Bicyclists	45% for pedestrian crashes (Elvik et al. 2004). 51% for bicycle- vehicle crashes on entrances or exits to streets and driveways (Schepers et al. 2011). Raised crosswalks are typically installed on 2-lane or 3-lane roads with speed limits of 30 mph or less and annual average daily traffic (AADT) below about 9,000.	https://www.arlingtonva.us/Government/Programs/Transportation/Vision-Zero/Tools-and-Guidelines/Multimodal-Safety-Engineering-Toolbox-Web-Format/Speed-Humps-Raised-Crossings-and-Similar-Raised-Areas

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Rectangular Rapid Flashing Beacons (RRFBs)	RRFBs flash with an alternating high frequency when activated to enhance awareness of pedestrians at the crossing to drivers. Increases driver yielding to pedestrians and bicyclists (or equines) at uncontrolled crossings.	Design and Engineering	Pedestrians / Bicyclists	The RRFB is applicable to many types of pedestrian crossings but is particularly effective at multilane crossings with speed limits less than 40 miles per hour.	https://highways.dot.gov/safety/proven-safety-countermeasures/rectangular-rapid-flashing-beacons-rrfb
Road Safety Audits (RSAs)	Conduct RSAs in key locations based on public feedback and crash data analysis. Consider prioritizing these in vulnerable communities.	Policies and Programs	Planning / Engineering	Road Safety Audits can result in a 10-60% reduction in total crashes.	https://highways.dot.gov/safety/proven-safety-countermeasures/road-safety-audit
Roadway Reconfigurations	Reducse the speed of traffic, crossing distances, and/or provide additional space for other uses of the roadway such as bicycle lanes or parking, transit lanes, and narrowing travel lanes. Includes but is not limited to Road Diets, Business Access Transit (BAT), and Lane Diets.	Design and Engineering	Speed Management	4-Lane to 3-Lane, Road Diet Conversions result in 19-47% reduction in total crashes. Low cost application that can be done along with pavement maintenance. See MRMPO's Potential Road Diet Candidates map.	https://highways.dot.gov/safety/proven-safety-countermeasures/road-diets-roadway-reconfiguration
Roundabouts	An intersection with a circular configuration that reduces vehicle speed and minimizes conflict points.	Design and Engineering	Intersections	Signalized Intersection to a Roundabout 78% reduction in fatal and injury crashes.	https://highways.dot.gov/safety/proven-safety-countermeasures/roundabouts
SafetyEdgeSM	This technology shapes the edge of the pavement at approximately 30 degrees from the pavement cross slope. Particularly useful for rural road crashes involving edge drop-offs because they are 2-4 times more likely to include a fatality than other crashes on similar roads.	Design and Engineering	Speed Management	11% reduction in fatal and injury crashes. 21% reduction in run-off road crashes. 19% reduction in head-on crashes. Benefit-Cost Ratio Range 700:1 to 1,500:1.Systemwide on all new asphalt paving and resurfacing projects where curbs and/or guardrail are not present, while also encouraging standard application for concrete pavements.	https://highways.dot.gov/safety/proven-safety-countermeasures/safetyedgesm
Sidewalks / Walkways	Defined pathway adjacent to the roadway for pedestrian travel or use of a wheelchair. Consider wide separation from vehicular traffic and providing facilities that are beyond ADA requirements.	Design and Engineering	Pedestrians	65-89% reduction in crashes involving pedestrians walking along roadways. Implement with ADA plan in systemic matter prioritized by safety needs and vulnerable communities.	https://highways.dot.gov/safety/proven-safety-countermeasures/walkways
Speed Cameras	A camera which may be mounted beside or over a road or installed in an enforcement vehicle or mobile device to detect speeding, vehicles going through a red traffic light, and other offenses.	Traffic Technologies	Speed Management	Fixed units can reduce crashes on urban principal arterials up to 54% and 47% for injury crashes. P2P units (multiple angles) can reduce crashes on urban expressways, freeways, and principal arterials up to 37% for fatal and injury crashes. In New York City, fixed units reduced speeding in school zones up to 63% during school hours. Automated traffic enforcement supports the objective of consistent and unbiased enforcement of speeding, red light running and other traffic violations without regard to driver race or socioeconomic status. Ensure equitable implementation.	https://highways.dot.gov/safety/proven-safety-countermeasures/speed-safety-cameras

Strategy	Description	Broad Category	Secondary Category	Guidance Notes (countermeasure percent, priorities, equity concerns, local initiatives, etc.)	Online Resources / PSC Information
Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	A package of multiple low-cost countermeasures, including enhanced signing and pavement markings at a large number of stop-controlled intersections.	Design and Engineering	Intersections	10% reduction of fatal and injury crashes at all locations. 15% reduction of nighttime crashes at all locations. 27% reduction of fatal and injury crashes at rural intersections. 19% reduction of fatal and injury crashes at 2-lane by 2-lane intersections. Average Cost-Benefit Ratio 12:1.	https://highways.dot.gov/safety/proven-safety-countermeasures/systemic-application-multiple-low-cost-countermeasures-stop
Variable Speed Limits (VSLs)	VSLs use current roadway conditions like traffic speed, volumes, weather, and road surface conditions to determine appropriate speeds and display them to drivers.	Design and Engineering	Speed Management	VSLs can reduce crashes on freeways up to 34% for total crashes, 65% for rear-end crashes, 51% for fatal and injury crashes. Because humans are unlikely to survive high-speed crashes, VSLs reduce speeds so that human injury tolerances are accommodated in three ways: improving visibility, providing additional time for drivers to stop, and reducing impact forces.	https://highways.dot.gov/safety/proven-safety-countermeasures/variable-speed-limits
Wider Edge Lines	Marking a wider roadway edge line to increase visibility to drivers. Potential risk factors for two-lane rural roads include Pavement and shoulder widths, Presence of curves, Traffic volumes, and History of nighttime crashes.	Design and Engineering	Speed Management	Wider edge lines can reduce crashes up to 37% for non-intersection, fatal and injury crashes on rural, two-lane roads. Benefit-Cost Ratio is 25:1 for fatal and serious injury crashes on two-lane rural roads. 22% for fatal and injury crashes on rural freeways.	https://highways.dot.gov/safety/proven-safety-countermeasures/wider-edge-lines
Yellow Change Intervals	Adequate timing on yellow signal following a green signal. Appropriately timed yellow change intervals can reduce red-light running and improve overall intersection safety.	Traffic Technologies	Intersections	Yellow Change Intervals can result in a 36-50% reduction in red-light running, 8-14% reduction in total crashes, and 12% reduction in injury crashes.	https://highways.dot.gov/safety/proven-safety-countermeasures/yellow-change-intervals