



Pedestrian safety is the first priority for the Safety Advisory Working Group (SAWG) and the NYMTC planning area.

4. TRANSPORTATION SAFETY

INTRODUCTION

Safety is a key measure of the quality of the region's transportation system. In 2005, the federal legislation "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU) elevated transportation safety to a national priority by requiring safety to be a separate planning factor in the transportation planning process and establishing the Highway Safety Improvement Program (HSIP) and other safety-related programs. The emphasis on safety in federal transportation guidance continued with MAP-21, which was signed into law in 2012. In keeping with this legislation, NYMTC continues to promote a safe and secure transportation system as an integral part of its transportation planning process. NYMTC and its member agencies seek to go beyond the fulfillment of federal safety requirements to work constantly to ensure the overall safety of highway infrastructure and transit systems. The Council's safety planning work is guided by its Safety Advisory Working Group (SAWG). NYMTC's safety planning is also influenced by other federal, state

and local plans, policies and guidelines, which are discussed later in this section. *Plan 2040* establishes a new goal for the NYMTC planning area: to enhance the safety and security of the transportation system for both motorized and non-motorized users. The following outcomes have been identified to meet this goal:

- Reduced rate of annual injuries and fatalities on the region's transportation systems;
- Promulgation of advanced safety and security measures throughout the region;
- Enhanced coordination, data, and information sharing among members and other stakeholders; and
- Promotion of safety and security improvements in all aspects of transportation planning and implementation.

These outcomes guide the core concepts of *Plan 2040's* safety element. They are designed to help NYMTC and its member agencies target safety programs and

funding priorities. The measures and strategies outlined in this section are also incorporated into NYMTC's annual priorities, the Transportation Improvement Program (TIP), and will be carried forward into future Regional Transportation Plans (RTPs).

SAFETY DATA EVALUATION

Transportation safety data is at the center of the evaluation of safety issues and the planning and implementation of safety programs. Federal transportation legislation emphasizes a data-driven approach to safety planning. This approach involves gathering and analyzing data, identifying needs, and investing safety funds accordingly. The Highway Safety Improvement Program (HSIP) directs funds as the data suggests.

To further incorporate a data-driven approach into its transportation safety planning, NYMTC continues to support New York State's ongoing efforts to collect timely and accurate electronic data. In addition to accuracy, the state's

data collection goal includes real-time data transmission. The cooperation of enforcement agencies is important to gathering timely and accurate crash information. A goal of NYMTC's incorporation of a data-driven approach is to transition enforcement agencies to the electronic transmission of crash data from paper copies. The benefit to police agencies of electronic data collection may become more clear as data analysis becomes streamlined and resources such as ALIS are made available to participating agencies. Data dissemination is part of NYMTC's strategy to improve data collection.

Crash data and reports of roadway crashes are maintained by appropriate state agencies such as the Department of Motor Vehicles. The primary source of safety data is the crash report, which includes contributing factors, crash location, and driver and vehicle characteristics. This information is very useful in identifying the characteristics of crashes. All fatal crashes are reported to the National Highway Traffic Safety Administration, another key data source. In the NYMTC planning area, the major sources of data on transit accidents are the transit operators.

Further planning and research is needed to support local governments in prioritizing safety work. Additionally, local governments need information on their roads' traffic volumes in order to compute crash rates so that locations with statistically significant safety issues can be readily identified. There is a need to prioritize region-wide access to information including crash history and traffic volumes. Empirical data should support transportation projects and programs and safety improvement investments.

TRANSPORTATION SAFETY TRENDS

The National Highway Traffic Safety Administration (NHTSA) reports that in 2011, 32,367 people died in motor vehicle traffic crashes in the United States, the lowest number of fatalities since 1949, and a 1.9 percent reduction in such fatalities from 2010 (32,999). There was also a 1 percent reduction in

injuries from motor vehicle crashes, from 2.24 million in 2012 to 2.22 million in 2011. Motorcyclist fatalities increased from 4,518 in 2010 to 4,612 in 2011, or 2.1 percent. Pedestrian fatalities also increased 3 percent, from 4,302 to 4,432, and bicyclist fatalities increased 8.7 percent, from 623 in 2012 to 677 in 2011. Motorcyclist, pedestrian, and bicyclist injuries decreased by 1.2 percent, 1.4 percent, and 7.7 percent, respectively, over the same time period.

Table 4.3: Crashes in the NYMTC Planning Area, 2009-2011

Category	2009	2010	2011
Total Number of Crashes	163,377	163,348	161,489
Total Fatal Crashes	529	544	534
Total Number of Motor Vehicle only Crashes*	144,042	142,501	141,245
Motor Vehicles Fatalities - Driver	231	238	212
Motor Vehicle Fatalities - Passenger	76	81	87
Motor Vehicle Injuries - Driver	70,249	69,382	66,384
Motor Vehicle Injuries - Passenger	34,993	36,381	33,330
Total Number of Pedestrian/ Motor Vehicle Crashes	12,974	13,576	13,157
Pedestrian Fatalities	235	225	222
Pedestrian Injuries	12,655	13,365	12,986
Total Number of Bicycle/ Motor Vehicle Crashes	4,036	4,649	4,592
Bicycle Fatalities	22	26	43
Bicycle Injuries	3,879	4,478	4,452
Total Number of Motorcycle Crashes	2,325	2,622	2,495
Motorcycle Fatalities	57	75	63
Motorcycle Injuries	2,042	2,292	2,190

Source: New York State Department of Motor Vehicles (NYS DMV).

* These crashes do not include pedestrians, bicyclists, or motorcycles.

The crash records show that the number of traffic crashes did not vary significantly between the years 2009 and 2011. However, comparing the number of crashes for the year 2011 and the average of 2009 and 2010, the total number of crashes decreased slightly, by 1.1 percent, but there was a 5.7 percent increase in bicycle crashes.

Both New York State and the NYMTC planning area followed the same safety trends from 2010 to 2011, although at varying rates. Given the size and importance of the transit system in the NYMTC planning area, transit safety is also of great importance to NYMTC members. Table 4.4 shows accident data for the Metropolitan Transportation Authority (MTA) system for the period 2009-2011.

Table 4.4: MTA Transit Accidents, 2009-2011

		2009	2010	2011
Bus Transit[†]	<i>Total</i>	41	40	53
	Fatalities	6	9	3
	Injuries	143	114	155
Rail Rapid Transit[‡]	<i>Total</i>	122	153	165
	Fatalities	51	51	54
	Injuries	65	90	88
Suburban Rail[§]	<i>Total</i>	21	7	35
	Fatalities	6	0	26
	Injuries	11	2	1
Total Transit Accidents[*]		184	200	253

Source: New York State Public Transportation Safety Board

† MTA/NYCT, MTA Long Island Bus, and MTA Bus

‡ MTA/NYCT and MTA/Staten Island Railway

§ MTA/Metro-North Railroad and MTA/Long Island Railroad

* Includes bus, rapid transit and suburban rail.

TRANSPORTATION SAFETY EFFORTS

Engineering and Planning Initiatives

Modern traffic engineering and planning techniques are available to counties, regions, and municipalities to inform their road management and planning decisions. These techniques, which include location prioritization, road safety audits, and the use of crash reduction factors, can help inform design decisions and improve evaluations of past projects based on post-completion safety and operational data.

Accident Location Information System (ALIS)

NYMTC member agencies need improved access to data. Currently, accessing data is time-consuming and requires navigating several hurdles. The NYSDOT has developed ALIS and is working through the New York State

Association of Metropolitan Planning Organizations (NYSMPO) Safety Working Group to expand MPO use of this web-based system that visually displays a crash data query in a GIS format. Feedback from the initial users of ALIS indicates it is a powerful tool for safety analysis. NYMTC will continue to support the use of ALIS and to ensure member agency access and training.

Traffic Safety Data Viewer

The NYCDOT developed the Traffic Safety Data Viewer to allow easy access to detailed data by planners, analysts, and project managers, in a user-friendly interactive map format. NYCDOT hopes to make this tool accessible to more NYMTC member and NYC agencies in the future.

Complete Streets Design Principles

Complete Streets design principles are roadway design features that accommodate and facilitate safe travel by pedestrians, bicyclists, and motorists of all ages and abilities. These features include sidewalks, paved shoulders suitable for use by bicyclists, bicycle lanes, share-the-road signage, crosswalks, pedestrian control signalization, bus pull-outs, curb cuts, raised crosswalks, ramps, and traffic calming measures designed to allow pedestrian and motor traffic to easily co-exist. Several municipalities within the NYMTC planning area adopted complete streets policies prior to the passage into law of New York's Complete Streets Act in August 2011.⁶⁹ NYMTC agencies must consider complete streets design principles on all future projects which receive both federal and state funding.

Safe Streets for Seniors

NYC Safe Streets for Seniors is a mayoral pedestrian safety initiative for the elderly population in New York City. Along with the office of the Mayor of New York City, the NYCDOT and the Department for the Aging launched this program to improve elderly pedestrian safety. Through crash data analysis, 25 city neighborhoods were identified that have both a high density of senior citizens and a high number of crashes involving pedestrians. The Safe Streets for Seniors program identifies the main contributing factors to senior fatalities and injuries and implements appropriate safety improvements.

The SafeSeniors, a NYSDOT Pilot Program expanded targeted senior pedestrian initiatives to two areas in Nassau and Suffolk counties. The program focused on improvements for pedestrian safety that could be implemented quickly and at low cost. The intent of the program is to incorporate feedback to improve the program and expand statewide.

As part of its Livable Communities Program, Westchester County is actively involved in the AARP pedestrian needs program. A survey was launched in New York State by AARP to bring attention to the safety issues that pedestrians face and what needs to be improved in the pedestrian infrastructure. The survey evaluated 530 intersections across more than 30 counties throughout the state in the spring of 2011. The results of the survey highlighted several poor pedestrian conditions and driving behaviors which are listed in Appendix 2: Pedestrians and Bicycles.

Safe Routes to School (SRTS)

Safe Routes to School (SRTS) originated in New York City and was adopted nationally as a federally-funded program.

SRTS is administered by NYSDOT and guides local projects throughout the state that relate to providing a safe environment for students to walk or cycle to school. Through SRTS, some agencies have identified “priority schools” and created safety improvement recommendations. In New York City, programs like Safety Town and Safety City that teach students about bicycle and pedestrian safety were noted as model programs. In Westchester County and in Long Island, SRTS workshops have been held in many communities and schools. NYMTC members should continue to focus safety improvements on schools with the highest crash rate and educational programs.

New York City Safe Routes to Transit

Safe Routes to Transit is a New York City initiative to improve pedestrian and motor vehicle movement around subway entrances and bus stops in order to increase the accessibility and convenience of mass transit. The three programs comprising the Safe Routes to Transit initiative are Bus Stops under elevated subways structures, Subway-Sidewalk Interface, and Sidewalks to Buses.

Safety Studies

NYMTC member agencies are currently investigating intersections and roadway segments within their respective jurisdictions with statistically significant above-average crash rates. The identified locations will be further studied by in-house safety investigators and/or consultant engineers to determine the cause of the safety problems so that appropriate improvements can be implemented. The highway safety investigations will first evaluate implementation of low cost improvements, such as improved signage, minor paving, sight distance improvements, guiderails, improved pavement markings, adding countdown pedestrian heads, changed

signal timing, and others. However, in certain cases, capital investments may be necessary and could be included in large-scale capital projects. Where crashes tend to be randomly dispersed, a systemic approach should be utilized at locations that have specific safety issues. Roadway treatments such as chevrons, wet reflective pavement marking, rumble strips, and wider shoulders, can decrease unsafe lane departures. Other similar low-cost systemic treatments should be evaluated for intersection and pedestrian safety. In addition to locations identified by crash statistics, safety investigations may also be completed at locations with perceived safety concerns identified by the public and elected officials.

High Crash Corridor Programs

Consistent with newly enacted Complete Streets legislation, NYSDOT considers the entire transportation network when planning projects. NYSDOT also makes efforts to incorporate the Federal Highway Administration’s philosophy that data driven analysis should be used when deciding where to target limited funds. The “corridor approach” identifies systemic improvements to be implemented throughout the study corridor. Current corridor approach projects in the Long Island area include the Hempstead Turnpike Pedestrian Safety Study, the Sunrise Highway Pedestrian Safety Study, and the Southern Parkway Nassau County Lane Departure Crash Analysis.

NYCDOT’s High Crash Corridors program, established by the 2010 NYC Pedestrian Safety Study & Action Plan, includes redesigns of at least 20 miles of High Crash Corridors annually, and upgrades (e.g. with signals or markings) of at least 40 additional miles of High Crash Corridors. High Crash Corridors are defined as the highest-ranked 1/3 of street mileage in each borough, in persons killed or severely injured (KSI) per

mile. The program's objectives have been exceeded in both years since it was initiated. The agency's goal, to which the program contributes, is a 50 percent reduction in citywide traffic fatalities from 2007 to 2030.

New York City's high crash corridor programs complement NYSDOT's network screening process. NYSDOT performs an analysis each year to identify locations where an unusually high number of crashes occur. Each year a portion of these sites, called Priority Investigation Locations, or PILs, are studied to identify cost-effective safety measures. Improvements are implemented by maintenance forces or through capital construction projects.

Education

The FHWA's Pedestrian Safety Campaign is a comprehensive set of materials for local communities to use in implementing their own Pedestrian Safety Campaign. It includes materials designed for use in television, radio, cinema, and print advertising. Forums and other targeted educational programs are used to reach specific groups such as children and seniors. Public Information and Education (PI&E) initiatives in the region include the Safe Routes to Schools and Transit initiatives, as well as ongoing safety education forums focused primarily on children and seniors.

Enforcement

STOP DWI is an important program implemented in the NYMTC planning area that addresses impaired driving. The comprehensive program consists of five areas: education/public information; enforcement; court-related; rehabilitation; and probation. In addition, several other programs address aggressive driving behavior and occupant protection, including Selective Traffic Enforcement

Program (STEP), Buckle Up New York (BUNY), and Child Passenger Safety. STEP encourages jurisdictions to use local data to identify problem areas and to develop enforcement countermeasures that reduce crashes, injuries and fatalities. BUNY grants are for seat belt enforcement and compliance. Child Passenger Safety grants support child passenger fitting stations, training, and child restraint education. NYMTC will continue to monitor new trends and participate in emerging focus areas.

PRIORITY AREAS AND STRATEGIES

Priority Areas

The Council has identified several transportation safety issues to monitor and address across the region. One of the major guiding forces in identifying these issue areas is the available data. It is a NYMTC priority to cooperatively implement an electronic crash data system among enforcement and transportation agencies to seamlessly provide access to recent crash data.

Pedestrians

Pedestrian safety is the first priority for the Safety Advisory Working Group (SAWG) and the NYMTC planning area. A disproportionate number of the crashes involving pedestrians occur in the NYMTC planning area: based on 2010 Census and the three-year average (2009-2011) New York State Department of Motor Vehicles (NYSDMV) data, while only 64 percent of the state residents live in the NYMTC planning area, 83 percent of pedestrian injuries and 73 percent of pedestrian fatalities occur in the region. However, the NYMTC planning area is one of the safest places in the United States to walk. Among 52 metropolitan areas with populations over

one million, New York-Long Island-Northern New Jersey was the third-safest in pedestrian fatality rates, controlling for walk-to-work rates.⁷⁰ Although New York City accounts for a large share of the NYMTC planning area's pedestrian activity, every community within the region has a central area with commercial and community uses, where walking is the primary mode of transportation.

In the NYMTC planning area, according to the U.S. Census, the population aged 65 and older increased by 7.8 percent from 2000 to 2010, from 1,478,220 to 1,593,012. Between 2005 and 2007, 255 pedestrians aged 65 years and older were killed on the NYMTC area roads. Though they comprised less than 12 percent of the area's population, people aged 65 and older accounted for 30 percent of the total pedestrian fatalities during the three-year period.⁷¹ While the older adult population continues to be a vibrant and productive part of the society, its walking ability due to age is more challenging compared to other adults. Therefore, providing safe mobility for older adults is a priority in the region. The key components to safety and mobility would be to eliminate barriers to pedestrian activity for all ages and to prioritize a list of short- and long-term pro-pedestrian safety improvements.

In addition to seniors, child pedestrians are a priority area for safety. Each week in New York State, 20 children age five to nine years are treated at a hospital because of a pedestrian-related injury;⁷² four of them are injured severely enough to require hospitalization. These injuries are the second leading cause of unintentional injury hospitalization and death among this age group.⁷³

Motor Vehicles

Intersections are a planned point of conflict in the roadway system. A typical

two-way road intersection has 56 potential conflicts: 32 vehicle-to-vehicle conflicts and 24 vehicle-to-pedestrian conflicts. With different crossing and entering movements by drivers, pedestrians and bicycles, an intersection is one of the most complex traffic situations encountered by motorists. Dangers are compounded by speeding and distracted motorists who disregard traffic controls. Despite increased emphasis on intersection safety with improved intersection design and more sophisticated applications of traffic engineering measures, the annual toll of human loss due to motor vehicle crashes has not substantially decreased in more than 10 years (from 1998 to 2007).⁷⁴

FHWA has identified roadway departures as one of the three major safety areas (along with intersections and pedestrians) that require a special focus. Nationally, most highway fatalities occur in roadway departure crashes (53 percent), intersection-related crashes (21 percent), and pedestrian crashes (11 percent).⁷⁵

The New York State Strategic Highway Safety Plan (SHSP) states that lane departures and intersections represent the highest fatality areas in the state. Lane departures represent 34 percent of all the state's fatal crashes, while 36 percent of the state's fatal crashes occurred at intersections.

Distracted driving continues to be a national problem. In 2011, 3,331 people were killed in crashes involving a distracted driver and 387,000 people were injured.⁷⁶ While 39 states have recently banned text messaging for all drivers,⁷⁷ there is a continuing need to better educate and train drivers, bicyclists, and pedestrians to develop better safety awareness and skills. As personal devices continue to increase distraction in pedestrians and drivers alike, inattention and/

or distraction are also significant human factors contributing to crashes.

The 2011 NYSDMV crash data show that more than 77 percent of crashes in New York State are related to human factors.⁷⁸ Safety issues related to driver behavior include impaired driving or driving under the influence,⁷⁹ speeding and aggressive driving, and occupant protection. Most issues in this area are addressed through education and/or enforcement and are currently well-managed by the Traffic Safety Boards within the NYMTC planning area.

While there are many active and alert senior drivers (age 65 and above), according to NYSDMV, in 2011, senior drivers comprised 10 percent of all drivers in New York State but were involved in 13.6 percent of all fatality crashes. As the senior age group grows, senior drivers emerge as an important issue requiring safety planning attention. Just as senior pedestrians can be the victims of many pedestrian crashes, senior drivers can potentially be a hazard to other pedestrians and motorists. Aging can impact a person's visual, cognitive and physical health. Due to medical and technological advances, recent population forecasts predict an increase in the national elderly population, which could lead to higher percentages of senior drivers on the roads. Currently, federal agencies are promulgating guidelines to address this growing segment of the population. These new guidelines will help states develop plans to address the particular needs of older drivers and to address the emerging challenges posed by an increasing population of older drivers.

Motorcycles

Over the past decade, motorcycling has become increasingly popular in the NYMTC planning area. Along with the dramatic increase in the number of

motorcycle licenses and registrations in the region, the number of motorcycle crashes involving fatalities or injuries has also increased. With more motorcycles on the road than ever before and increasing crash rates this mode of transportation requires a special focus in relation to roadway safety.

Bicycles

A livable community provides safe and convenient transportation choices to all, including walking, bicycling, transit, or driving. Bicycle safety is a major concern in the NYMTC planning area. Bicycle safety improvements depend on an integrated approach that involves education, planning, design, and maintenance. NYMTC member agencies use street design, such as traffic calming and Complete Streets, to improve safety for bicyclists and all roadway users. Educational programs for drivers, bicyclists, and pedestrians, like Coexist New York States, Share the Road, and Bike Smart Campaigns, also improve safety. Additional information about bicycle safety is in *Appendix 2: Pedestrians and Bicycles*.

Intermodal Connectivity

Safe pedestrian connections at intermodal transfer points, such as bus to rail transfers, are a crucial component of regional intermodal planning. Improved roadway design and wayfinding can greatly improve both safety and connectivity. Intermodal connectivity areas include interface areas between subway and sidewalks, parking lots connecting to commuter rail stations, ferry terminals or airports, and pedestrian paths connecting bus stops with major trip generators, like residential or offices complexes, malls, and hospitals.

Transit

Various transit systems in the NYMTC

planning area have established safety programs to achieve the highest practical level of safety for all modes of transit. In order to protect passengers, employees, revenues, and property, all transit systems are encouraged to develop and implement a proactive system safety program plan. The Federal Transit Administration (FTA) supports these efforts by developing guidelines and best practices, providing training and by performing system safety analyses and reviews. One program developed and implemented by the FTA is the Safety Management Systems (SMS) and Safety Performance Measurement Systems (SPMS). SMS offer the most promising means of preventing public transportation crashes by integrating safety into all aspects of a transit system's activities, including planning, design, construction, operations, and maintenance.

Although the above areas are elevated in importance, the transportation planning process addresses other safety issues as well. These include motor carrier safety for large trucks, emergency medical vehicles (these issues are addressed by other agencies), and trucks mistakenly driving onto onto parkways and striking overpasses with low height clearance.

Strategies

Several strategies will be used together to address the transportation safety issues described in this section. These include the continuation of those strategies that are currently in place and those described below. The outcomes related to *Plan 2040's* safety goal, as described in this section's introduction, will likely be improved through implementation of these strategies. One of the focuses of the safety goal is to develop comprehensive access to safety-related data, including an electronic crash data system that will provide vital crash data between enforcement and transportation agencies.

Build Partnerships between Agencies and Stakeholders

All transportation operating agencies in the NYMTC planning area have formed partnerships with other public agencies, including police departments and Community Boards, to address all aspects of transportation safety, including safety engineering, enforcement, education, and emergency and medical services. Traffic Safety Boards focus on safety education and enforcement in local areas, while other statewide partnerships focus on statewide road safety issues. Agency coordination is especially necessary in multi-jurisdictional areas of the roadway network, such as roadway segments operated by different transportation agencies that connect highway ramps, bridges, and tunnels with the local street network, in order to ensure continuity for roadway safety. NYMTC and its members will continue to foster relationships with other public organizations in order to broaden its approach to improving the safety and efficiency of the entire transportation system.

Integrate Safety at All Levels of Planning

Safety should be integrated into all of the agencies within the transportation planning processes. This entails both dedicating funding to safety-specific research on key safety issues and facilitating multi-agency communication by sharing information and collaboratively generating strategies. Each NYMTC member agency participates in the Safety Advisory Working Group (SAWG) which identifies issues, barriers, and opportunities related to safety integration. In addition to participation in SAWG, each agency could appoint Pedestrian-Bicycle Coordinators or identify specific staff as needed to assist with pedestrian and bicycle safety issues. Additionally, many regional issues mirror statewide issues. NYMTC should continue to partici-

pate in the New York State Association of Metropolitan Planning Organizations (NYSMPO) Safety Working Group, where statewide issues are addressed and future issues are identified.

Continue Education and Training

Promoting an awareness of safety strategies for all road users, along with improving roadway geometry, are vital components of safety planning. Education and outreach is needed for the public as well as for those who implement improvements to the transportation network. NYMTC agencies will work with their Traffic Safety Boards, who have educational programs in place, to address many issues, such as distracted or impaired driving. Drivers, bicyclists, and pedestrians must understand the traffic regulations and yield to each other appropriately.

NYMTC recognizes that community-based workshops have been particularly effective at bringing together stakeholders around common issues. With continued federal and state programming support, NYMTC will continue to sponsor training workshops on Complete Streets, Walkable Communities, Safe Routes to School, Designing Streets for Pedestrian Safety, and Road Safety Audits.

Continue a Focused Approach to Safety (FHWA Focus State Program)

FHWA's Focus State program recognizes that three focus areas account for 85 percent of traffic fatalities: intersections, roadway departure, and pedestrian safety. The purpose of the Focus State program is to further decrease the number of fatalities and serious injuries on the nation's highways through the targeted delivery of technical assistance and resources. The program also calls for the transportation community to think beyond traditional approaches and to consider low cost,

comprehensive, and/or systematic safety solutions. This approach allows Focus States to demonstrate results and to take advantage of lessons learned across the country by states and localities that have implemented safety improvements on their highways. Studies show a 12 percent to 19 percent fatality reduction in Focus State areas from 2002 to 2008.⁸⁰

Road Safety Audits

A Road Safety Audit or Safety Assessment is a proactive, low cost safety tool to assist agencies in addressing problematic locations. Similar processes are used by many agencies under different names. In a safety assessment, an independent multi-disciplinary audit team examines a site and offers solutions. The assessment process emphasizes the connection between the transportation planning process, multimodal considerations, enforcement activities, safety education, and engineering solutions. NYMTC agencies should consider this tool in its efforts to systematically address safety issues.

Crash Reduction / Crash Modification Factor (CRF / CMF)

A crash reduction factor or crash modification factor (CRF or CMF) is the percentage reduction in traffic crashes that might be expected after implementing a given countermeasure at a specific site. CRFs are available for roadway improvements as well as pedestrian measures. Not only can CRFs be used in cost-benefit analysis, they can also serve as a tool in the investment decision-making process.

Establish Asset Preservation Programs

Safety appurtenances such as guiderails, signs, and pavement markings are critical elements in highway safety design. In order to keep these elements functioning as designed, an asset management pro-

gram must be in place to provide ongoing routine maintenance. Asset preservation may be accomplished through both capital and maintenance efforts.

Explore and Expand Emerging Strategies

Explore emerging strategies such as “Vision Zero” and expand Automated Enforcement. The Swedish Parliament introduced a new approach to road safety called “Vision Zero” in 1997 that focuses on prioritizing human life and health over mobility through speed reduction and design. Vision Zero is based on a refusal to accept human deaths or lifelong suffering as a result of road traffic accidents. Sweden reduced fatalities and serious injuries by nearly 50 percent since 1997. Included in the reduction are the decrease in the number of overall deaths from 541 in 1997 to 319 in 2011; a decrease in pedestrian deaths from 72 in 1997 to 53 in 2011, and a decrease in cyclist deaths from 42 in 1997 to 21 in 2011.

Although red light cameras have been in use for some years, an expansion of automated enforcement strategies would place additional cameras and explore the use of speed cameras. Cameras are currently placed in a few counties throughout the region; the installation of additional cameras or of speed cameras would require changes in legislation. Studies indicate that the fatality rate drops to 45 percent when a person is struck by a car going 30 miles per hour compared to higher speeds and to 5 percent at 20 miles per hour or less.⁸¹

OTHER PROGRAMS AND PLANS IMPACTING TRANSPORTATION SAFETY PLANNING

Strategic Highway Safety Plan (SHSP)

The Strategic Highway Safety Plan (SHSP) is New York State’s plan that establishes highway safety goal areas.⁸² NYMTC is working with other New York State stakeholders toward achieving the statewide goals and efforts promulgated within the SHSP. The SHSP feeds into the safety element of *Plan 2040*, which provides input back into the SHSP.

The Governor’s Traffic Safety Committee’s (GTSC) Highway Safety Strategic Plan (HSSP)

The Governor’s Traffic Safety Committee (GTSC) administers the National Highway Traffic Safety Administration’s (NHTSA) Section 402 funds. These federal funds are used to support State and Community Highway Safety programs to reduce deaths and injuries. The GTSC’s Highway Safety Strategic Plan (HSSP) is the principal document for setting priorities, directing program efforts, and assigning resources in New York State.

New York City Pedestrian Safety Study and Action Plan

The first *New York City Pedestrian Safety Report and Action Plan* examined over 7,000 records of crashes that have caused serious injuries or fatalities to pedestrians, identified underlying crash causes, and recommended safety improvements. NYCDOT used this data to inform the public about the agency’s work to reduce traffic fatalities and make New York City

streets safe for everyone. The report concludes that pedestrian fatalities occur disproportionately along multi-lane streets and avenues, and that speeding, driver inattention, and failure to yield are the major underlying factors behind most of pedestrian fatalities or serious injury crashes. The report recommends a series of actions to continue to reduce pedestrian crashes, including pilot programs to reduce speed limits to 20 mph and street redesigns to increase pedestrian safety. The Action Plan also called for NYCDOT to launch an anti-speeding ad campaign to improve safety for pedestrians, motorists, and cyclists throughout the city.

Complete Streets Programs

NYSDOT is currently applying Complete Street provisions on a statewide basis in its project planning, programming, and delivery processes. The applicability of Complete Street features is considered at each stage of project development. A framework has been developed to guide this process for state- and federally-funded projects. An important component of this framework is the Pedestrian Generator Checklist, which is routinely used by planners and designers to identify a need for current or future pedestrian accommodations in a given project. Guidelines are also being developed for projects funded by municipalities. Because NYSDOT and local agencies share the responsibility of implementing Complete Streets, the ability of municipalities to identify opportunities for Complete Street features, and ultimately to install them, will be critical to achieving safer and more sustainable communities.

Highway Safety Improvement Program (HSIP)

NYSDOT manages the Highway Safety Improvement Program (HSIP) using a collaborative approach. In addition to administering regional transportation safety projects, NYSDOT solicits proposals for safety projects through initiatives selected by the Statewide Safety and System Optimization Team. This centrally managed portion of the program allows NYSDOT to support safety-specific projects that direct safety funds to locations, corridors, and areas that demonstrate the highest benefit-cost ratios to reduce fatal and severe injury crashes. Funding is awarded based on an evaluation in order to maximize investment in the most cost-effective safety projects statewide. Selected projects must be consistent with the strategies and emphasis areas identified in the New York State Strategic Highway Safety Plan (SHSP). Both targeted and systematic projects are eligible for HSIP funding. NYMTC will continue to work with New York State to identify future projects appropriate for this program.