District of Columbia Highway Safety Improvement Program Handbook

September 2020

DDOT Highway Safety Improvement Program Handbook

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1.0   Introduction

1.1.   What is the Highway Safety Improvement Program (HSIP)?

HSIP is a core Federal-aid program focused on achieving significant reductions in fatalities and serious injuries on all public roads, including non-State-owned public roads. The District Department of Transportation (DDOT) manages the federally-mandated District of Columbia HSIP.

To obligate HSIP funds, a State must have a Strategic Highway Safety Plan (SHSP) in effect under which the State:

- Develops, implements and updates an SHSP that identifies and analyzes highway safety problems and opportunities;
- Produces a program of projects or strategies to reduce identified safety problems; and
- Evaluates the SHSP on a regularly recurring basis to ensure the accuracy of data and priority of proposed strategies.

1.2.   What Are the Basic HSIP Requirements?

Federal regulations require that HSIP-funded projects:

- Be consistent with a State's SHSP. HSIP projects should logically flow from identified SHSP emphasis areas and strategies.
- Correct or improve a hazardous road location or feature or address a highway safety problem.
- Be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.

1.3.   What Types of Projects are Eligible for HSIP funding?

1.3.1. Infrastructure and Non-Infrastructure Projects

HSIP projects can be either infrastructure or non-infrastructure projects. While the HSIP is targeted primarily toward infrastructure solutions, the FAST Act amended the list of HSIP activities to limit non-infrastructure activities to only those listed below:

- Model traffic enforcement at a railway-highway crossing
- Transportation safety planning
- Collection, analysis, and improvement of safety data
- Planning integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including police assistance) relating to work zone safety
- Road Safety Audits

In general, projects that promote public awareness of highway safety or enforces highway safety laws are no longer eligible under HSIP unless noted above. In addition, research and development activities are generally not eligible under HSIP.

Non-infrastructure projects that remain eligible under HSIP must meet all Title 23 requirements. This includes the requirement that projects be identified in the Statewide and Metropolitan Transportation Improvement Program (STIP/TIP) and be consistent with the Statewide Long-Range Transportation Plan and Metropolitan Transportation Plans.

1.3.2. Projects to Maintain Minimum Levels of Retroreflectivity

HSIP funds may be obligated for any project to maintain minimum levels of retroreflectivity of traffic signs and pavement markings (prescribed in Federal regulation), without regard to whether that project is included in an applicable SHSP.

1.3.3. Automated Enforcement

HSIP funds may not be used for any program to purchase, operate, or maintain an automated traffic enforcement system in fiscal years 2016 through 2020, unless such systems are used to improve safety in school zones.

2.0 Coordination between HSIP and SHSP

Although the HSIP and SHSP are managed by different groups within DDOT, they are coordinated to maximize crash reduction. The HSIP is used to address many of the goals and objectives of the SHSP (when doing so is cost-beneficial) and program managers consider all of the 4 E's (enforcement, education, emergency services, and engineering) when addressing safety problems. All HSIP projects align with one or more SHSP strategies.

This Handbook defines DDOT's HSIP program to develop, implement, and evaluate engineering countermeasures.

3.0 Project Selection

Analysis methods & tools used to identify potential HSIP Projects:

- A variety of safety analysis methods may be used to identify locations for spot safety improvements. States should use the most reliable safety analysis methods based on the availability of data and other resources. Tools that support the use of advanced safety analysis

methods include: AASHTOWare Safety Analyst™, DiExSys™ Roadway Safety Systems, AgileAssets® Safety Analyst™, and State-specific tools.

- Federal law does not specify the methodologies States shall use.

4.0 HSIP Evaluation

Each State's HSIP must include an evaluation process to analyze and assess results achieved by HSIP projects. This includes evaluation of individual projects, groups of projects, and the program as a whole.

The following FHWA guidelines are is designed to support impactful evaluations:

- Maintain an inventory of previously implemented HSIP projects. All safety projects should be evaluated for their safety impacts after a reasonable period of time (e.g., 3 years post implementation).
- Analyze projects with similar countermeasures at similar sites together to obtain a more accurate countermeasure evaluation, as one project at one site can provide variable results.
- Conduct evaluations of highway safety improvement projects and, more importantly, aggregate evaluations by countermeasure type.
- Conduct a more rigorous evaluation with results that can be used locally and perhaps nationally when a critical mass of similar projects has been obtained.
- Employ the Empirical-Bayes or other advanced techniques for evaluating projects when possible for all evaluations. Simple before and after studies may misrepresent the impact of an individual countermeasure but may be useful to identify general trends.
- Consider using consultants and the academic community to support HSIP evaluation efforts.
- Set a goal of developing a State's own crash modification factors (CMFs) for new or innovative countermeasures, or those for which national CMFs may not apply to local conditions, to fill gaps in a State-specific list of CMFs.
- Use the evaluation results to inform the HSIP planning process.
- Assess the quality of the safety data used for the HSIP evaluation relative to data quality performance measures on a periodic basis.

5.0   How Can the District Get the Most Out of the HSIP?

Highway infrastructure safety improvements are made under HSIP projects as well as non-HSIP projects. The greatest impact on safety can be achieved when both funding approaches have a strong safety focus. Proactively incorporating safety features into non-HSIP projects can help eliminate the need for corrective HSIP projects in the future and enable the HSIP to go further in addressing pressing safety problems that cannot be addressed through non-HSIP projects. HSIP effectiveness should not be diluted by diverting funds to safety improvements that should routinely accomplished through non-HSIP projects. HSIP funding, however, can be considered for broader non-HSIP projects to provide safety countermeasures that are not routinely provided on similar projects.

6.0   HSIP PROJECT SELECTION PROCESSES USED BY SELECTED STATES

To inform the development of HSIP project selection procedures for the District it is useful to consider practices enacted in other States. The following was obtained from FHWA's *HSIP Noteworthy Practice Series*:

North Carolina DOT (NCDOT) developed four categories of safety warrants used in the network screening process to identify locations with severe crashes and crash patterns that can be addressed by engineering safety countermeasures. To provide a clear and consistent data-driven process, NCDOT developed a decision support tool to perform the initial prioritization of all candidate safety projects from across the state.

Missouri DOT (MoDOT) made the state's HSIP more proactive through the systemwide implementation of engineering strategies described in Missouri's SHSP. Using HSIP funds, MoDOT incorporates the installation of rumble strips/stripes, improved signing and delineation, wider pavement markings, and improved shoulders into pavement resurfacing projects. Since 2007, almost two-thirds of MoDOT's HSIP funds have been allocated to systemic improvements, resulting in a safer system overall.

Minnesota DOT (MnDOT) restructured its HSIP to provide funding for local agencies to address the large proportion of severe crashes occurring on local roadways, and developed funding goals for proactive and reactive improvements. MnDOT developed a "proactive spectrum" to establish safety funding goals for the Minneapolis/St. Paul area and rural districts. Minnesota has successfully increased the proportion of safety funding spent on proactive improvements. Almost 90 percent of projects programmed for fiscal year 2010-2011 are proactive.

Illinois DOT developed safety performance functions (SPFs) for all state routes and intersections using the Empirical Bayes (EB) method. IDOT uses the SPFs in the network screening process to identify locations with the highest potential for safety improvement. The use of SPFs in the network screening process enables the state to shift emphasis of the HSIP away from focusing on urban densely populated areas. The resulting broader focus includes low-cost safety improvements or systemic improvements that may not have been identified using previous screening methods.

Colorado DOT (CDOT) developed predictive and diagnostic tools that incorporate calibrated SPFs for all public roadway types and intersections in the State. These tools enable CDOT to maximize potential crash reduction within the constraints of available budgets. CDOT institutionalized the use of these tools by applying them to all CDOT projects. Over the seven years of applying these methods on all infrastructure projects, the state has achieved a fatal crash reduction of 36 percent.

7.0 DDOT HSIP PROJECT SELECTION PROCESS

The following multistep HSIP project selection process is used to ensure that HSIP projects meet Federal eligibility criteria and are selected on a data-driven basis:

7.1. Step #1: Call for HSIP Projects and Network Screening

Approximately nine (9) months before DDOT submits a list of proposed HSIP-funded projects to FHWA, DDOT issues a Call for HSIP Projects. The Call for Projects includes HSIP eligibility criteria under FHWA regulations, specifies information that must be provided for all proposed projects, and indicates a firm deadline for submitting proposed projects.

In addition to identifying potential projects through responses to a Call for Projects, DDOT can utilize a network screening process to identify intersections and corridors with the highest numbers of fatal and serious injury crashes. Such a process is used in many States. Results of the network screening process can be used to develop HSIP projects that address crash problems at specific intersections or corridors, and/or can be used as part of the HSIP project prioritization and selection process.

7.2. Step #2: Determine Eligibility of Proposed Projects

After receiving applications for proposed projects, DDOT's Safety Manager uses the HSIP Project Selection Tool to determine eligibility of proposed projects under FHWA regulations.

Under Federal regulations, HSIP projects must:

- Be consistent with a State's SHSP. Projects should logically flow from SHSP emphasis areas and strategies.
  - o SHSP emphasis areas should guide HSIP problem identification.
  - o SHSP strategies should influence countermeasure identification and HSIP project

selection.

- Correct or improve a hazardous road location or feature or address a highway safety problem
- Be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.

7.3.   Step #3: Rank Eligible Projects

Once the DDOT Safety Manager determines which proposed HSIP projects are eligible for HSIP funding, the DDOT HSIP Project Selection Tool is used to rank eligible projects based on key prioritization factors. The HSIP Project Selection Tool utilizes standardized inputs for each proposed project as specified in the Call for Projects. The result of this process is a numeric score that ranks all eligible projects in priority order based on the prioritization factors.

7.4.   Step #4: Final Selection of Proposed HSIP Projects

The DDOT Transportation Safety Manager makes final selection of which HSIP projects to propose for FHWA funding based on results of the

| Issue Call for HSIP Projects; Conduct Network Screening **April** | Deadline for Responding to Call for Projects **September** | Determine Eligibility of Proposed Projects **October** | Rank Eligible Projects **November** | Final Selection of Propsoed HSIP Projects **December** |

Figure 1: Key Steps and Timeline for HSIP Project Selection

8.0 DDOT HSIP PROJECT SELECTION TOOL

The following multi-step process is proposed to select HSIP projects for the District. This process has also been incorporated into an Excel-based HSIP Project Selection Tool.

8.1.1. Eligibility

1. Does the project correct or improve a crash-prone location or feature or address a highway safety problem through a data-driven process?

   o If No, project is not eligible for HSIP funding.

   o If Yes, provide supporting data and analysis methodology.

2. Are crash problems addressed by the proposed project consistent with <u>Critical Emphasis Areas</u> in the SHSP?

   o Aggressive Driving
   o Impaired Driving
   o Driver Competency & Licensing (Younger and Older Drivers)
   o Distracted Driving
   o Pedestrian Safety
   o Bicyclist Safety
   o Signalized Intersections
   o STOP-controlled Intersections
   o Work Zones
   o Large Trucks
   o Motorcycles
   o EMS
   o Occupant Protection
   o Traffic Incident Management (TIM)

3. Is the proposed project consistent with <u>Strategies</u> identified in the SHSP?

   o See Appendix

4. Is the project likely to contribute to a significant reduction in fatalities and serious injuries?

   o If No, project is not eligible for HSIP funding.

   o If Yes, provide basis for projecting safety effects and estimated outcomes.

5. Does the proposed project constitute a duplication of effort with any planned or ongoing District-funded projects?

   o If Yes, project should not be considered.

   o If No, provide documentation.

6. If the proposed project addresses a specific crash-prone location such as an intersection or a corridor, has a search been done to check for any planned or proposed planning or engineering projects that might impact the location?

   o If No, project should not be considered until search has been conducted.

   o If Yes, provide documentation.

7. If the proposed project is for a non-infrastructure effort, are the activities limited to those listed below:
   - o Model traffic enforcement at a railway-highway crossing.
   - o Transportation safety planning.
   - o Collection, analysis, and improvement of safety data.
   - o Planning integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including police assistance) relating to work zone safety.
   - o Road Safety Audits.

      - o If No, project is not eligible for HSIP funding.

      - o If Yes, indicate which approved HSIP activity describes this project.

8. Amount of HSIP funding eligibility approval requested.

8.1.2. Prioritization/Ranking Factors for Eligible Projects

1. Estimated number of fatalities and serious injuries prevented through implementation of the project

2. Benefit-Cost Ratio

3. Percent of total HSIP budget required to fund the project

4. Potential to fund project through alternate sources

5. Right of Way/Utility impact

6. Ease of schedule (e.g., is the project likely to stay on schedule)

7. Alignment with DDOT priorities

8. For proposed projects that addresses crash problems at specific intersections or corridors, are those locations aligned with high-crash locations identified through network screening?

8.1.3. Final Selection of HSIP Projects by DDOT Transportation Safety Manager

The HSIP Project Selection Tool provide a structured and data-driven process to assist with the identification of HSIP projects. But no tool can consider all factors or substitute for engineering judgement, which must be exercised in the selection of HSIP projects. The final step in the HSIP project selection process, therefore, requires engineering judgement by the DDOT Transportation Safety Manager to determine which HSIP projects to designate for funding based on results of the HSIP Project Selection Tool and other considerations.

One such consideration is the alignment of HSIP with the Safe System approach, which is a cornerstone of Vision Zero. The Safe System approach views human life and health as paramount to all else and should be the first and foremost consideration when designing a road network. The principles underpinning the Safe System acknowledge that:

- People make mistakes which can lead to crashes; however, no one should die or be seriously injured on the road as a result of these mistakes.
- The human body has a limited physical ability to tolerate crash forces – any impact greater than 30km/h increases the risk of dying significantly.
- Road safety is a shared responsibility amongst everyone, including those that design, build, operate and use the road system.

9.0   Acknowledgements

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10.0 Appendix

10.1. Strategies Identified in 2014 DDOT SHSP

Table 1| Strategies Identified in 2014 DDOT SHSP (note: this information should be updated to reflect modifications to the SHSP, which occur approximately every five years).

Aggressive Driver-Related Crashes

Infrastructure	Non-Infrastructure
- Provide real-time information to drivers to keep motorists informed of roadway conditions and delays to allow them to make appropriate decisions. - Manage traffic impacts from highway work zones to reduce delays approaching and within the work areas. - Coordinate traffic signals and improve signal timing, especially along heavily traveled corridors, to reduce vehicle delay and driver frustration. - Identify corridors to focus on aggressive driving Engineering Strategies.	- High-Visibility Enforcement. - Organize legislature action committee to review and define aggressive driving and determine changes to statute/s. - Expand Traffic Safety focus at MPD. - Technology and Enforcement on high-speed corridors. - Investigate and determine the use of new technologies. - Established a Web-based scheduling system with DMV to inform MPD about hearings. - Conduct educational and public information outreach campaigns. - Develop materials and target education to specific populations/locations. - Ensure driver education instructors incorporate aggressive driving traits, factors, and risks into lesson plans. - Review/update, as necessary, the DMV Driver Manual and Test materials to ensure they contain information on aggressive driving. - Provide access to crash and violation data in real time.

Young Drivers

Non-Infrastructure
• Expand enforcement targeting young drivers.
• More effective use of license revocations and suspensions.
• Determine feasibility of lower BAC rate for younger drivers.
• Determine feasibility of mandatory training (court-appointed driving school), license revocation, and/or points.
• Outreach. Expand availability of new or novice driver education programs, including incorporating driver education components into existing curriculums, Web-based education, etc.
• Develop a youth task force to focus on reducing DUI—emphasis on young adults, universities, and high schools.
• Explore opportunity of a series of Ward-based District Road Safety Youth summits (high school to young adults) and develop/recommend appropriate strategies to improve the Road Safety Culture.
• Target parents on their roles in teaching and managing novice drivers.
• Review/Update and implement road/driver safety education and other appropriate programs in schools and universities. Target programs by age/level.
• Review certification process for driver training schools to include more stringent educational teaching requirements. Emphasize need for uniform curriculum and enhanced behind-the-wheel and classroom instruction.
• Support continued development and use of advanced technology to enhance safety in high school driving programs.
• Determine feasibility of reinstating the GDL program in high schools.
• Review crash data and related citations issued by driver age to better target safety programs.
• Review/expand the use of EMS strategic locations (e.g., fire house) in the community to host expanded road safety campaigns/programs.

Impaired Driving

Infrastructure	Non-Infrastructure
• Advance use of technologies to reduce DUI. • Work with DPW to open parking impound lots for 24 hours.	• Reduce excessive drinking and underage drinking. • Enact beverage service policies. • Enforce DUI Laws. • Prosecute DUI offenders. • Legislative actions. • Enhance judicial process that identifies and effectively disarms offenders with multiple DUIs. • Review/Update DUI treatment programs offered at for- and nonprofit agencies and measure outcomes. • Expand the Traffic Safety focus at MPD. • Encourage establishing a traffic safety coordinator at DMV. • Continue to work with hospitals to enable easier consent to blood draws and access to medical treatment records. • Encourage screening and brief interventions in treatment centers as standard medical practice. • Prosecute, impose sanctions on and treat DUI offenders. • Legislation to create felony charges for certain repeat offenders and serious injury/death cases. • Provide support as needed to DCSC. • Provide continuing support to the Traffic Safety Resource Prosecutor. • Increase OAG access to DUI–Destiny from 3 to 5 persons. • Investigate/implement new and innovative technologies. • Explore greater ignition interlock sanctions to include first offense. • Work with DPW to have impound lots open/staffed 24/7 and available to all enforcement agencies within the District. • Develop and implement state-of-the-practice DUI technology vehicle for on road use. • Traffic Safety Resource Prosecutor. • Determine need to update drug screening process and reduction of turnaround time for test results. • Work with OAG to establish hire full-time employees to improve turnaround time for DUI cases. • Develop information targeting excessive drinking and underage drinking. • Focus education on specific audiences. • Develop and implement outreach campaigns. • Advocate implementation of mandatory SFST training for more law enforcement officers. • Expand and encourage cooperation between regional safety partners to identify target enforcement locations, times, etc. • Research and investigate the relationship (if any) between alcohol price and impaired driving and recommend appropriate strategies. • Work with local stakeholders (e.g. WRAP) on Sober Ride campaigns and other alcohol- awareness programs in high schools. • Targeted strategies for prehospital professionals / Nurses / Physicians. • Advocate in the community for public education, prevention program, and public policy, and treatment programs for DUPs. • Participate in collaborative research, education, and data gathering to improve the care of patents with DUPs. • Attempt to create a better more cooperative relationship with law enforcement as well as educate them about the laws relating to DUI. • Explore feasibility of adding *place of last drink* to crash reporting form.

Distracted Driving

Infrastructure	Non-Infrastructure
• Use VMS/fixed signs at all entry points into the District to convey District laws and applicability.	• Target high-visibility enforcement to high-crash corridors. • Review/update distracted driving laws to increase fines and points for multiple offenses. • Facilitate stiffer prosecution by adding a distraction enhancement to existing careless or reckless driving laws. • Explore optional training for distracted driving violations to reduce fine and/or points. • Conduct education and awareness campaigns targeting the general driving public. • Encourage trucking companies and other fleet operators to implement fatigue-management programs. • Target strategies for teens and youths. • Develop measures of effectiveness (MOEs) such as number of citations issued and observations of actual phone use. • Improve data collection on driver distractions in crashes. • Explore the feasibility of including driver cell phone use and texting in the annual DC seatbelt survey.

Older Drivers

Infrastructure	Non-Infrastructure
• Plan for an Aging population. • Engineer roadway and driving environment to better accommodate older drivers needs. • Monitor older driver crashes and identify clusters and location trends. Implement appropriate countermeasures at identified locations where older driver crash clusters occur. Simplify intersection operations and geometrics.	• Create driver improvement office in DMV (currently handled by DMV processing center). • Create medical advisory board (DMV) to review license renewal. • Develop and implement an Older Driver Outreach (immersion) program, positive outreach. • Research/update the driver manual to include information related to the "aging" driver. • Explore the option to conduct monthly traffic safety classes in senior centers. • Develop appropriate procedures to assist license administrators to assess drivers who are incapable of driving safety and take appropriate action humanely so as to minimize the effect to older drivers. • Review other Older Driver programs in other urban jurisdictions and implement best practices.

Pedestrians

Infrastructure	Non-Infrastructure
- Expand analysis/implementation of treatments (5 Es) for high pedestrian crash locations / corridors. - Improve safe access to all public transit facilities. - Use physical improvements to reduce vehicle speeds. - Review/upgrade/expand the Safe Routes to School program. - Incorporate pedestrian safety (including ADA compliance issues) from the project scoping stages in *ALL* District projects that affect ROW. - Continue to implement key strategies of the *Pedestrian Master Plan*. - Identify and close sidewalk gaps in priority areas. - Review/update guidelines/policies. - Review policies, standards, and update for sighting high-density public areas. - Establish long-term program with Federal and local funds to address District pedestrian needs. - Establish key pedestrian counting stations to determine the number of pedestrian trips made per year.	- Implement Targeted Enforcement Campaign. - Review legislation and change accordingly. - Expand the Traffic Safety focus at MPD. - Implement biannual meetings of 1) District leadership and 2) DMV hearing offices/MPD. - Review/update Adult School Crossing Guard Program. - Investigate and implement best practices for using the latest proven technologies to enforce traffic violations. - Review existing crash form and amend as needed to ensure all data fields meet analysis needs. - Expand automated enforcement at key locations. - Investigate potential for developing an app for smartphones to report crashes to 911. - Evaluate how existing practices to access affect Ped/Bike safety. - Targeted Education Initiatives. - Outreach Initiatives. - Communicate/Present to Fine Arts and National Planning Commission the importance of safety changes to the infrastructures. - Continue the pedestrian awareness campaign—Street Smart. - Update middle and high school policy/education on texting, cellar phone use, etc., while walking. - Review/update pedestrian safety-related information into new driver training. - Engage community. - Engage school parent population in Safe Routes to School benefits to encourage/support more walking/biking. - Research pedestrian-related crash data to better understand causes of crashes and consequently implement appropriate treatment.

Bicycles

Infrastructure	Non-Infrastructure
• Review the policies of high-biking cities and implement successful strategies. • Integrate bicycle improvements into all road, bridge, real estate development projects, and other roadway improvements from project scoping stage. • Review design and planning guidelines and amend accordingly. • Improve maintenance of bicycle facilities. • Identify bicycle facility network deficiencies and develop projects to address the gaps. • Establish/upgrade key bicycle counting stations to determine the number of bike trips made in DC per year.	• Expand number of targeted enforcement waves/campaigns. • Review/amend legislation and regulations pertaining to bicycle safety. • Monitor number of crashes per year of bike fleets. • Expand targeted education initiatives. • Continue participation in regional bike/ped safety campaigns (Street Smart) to improve bicyclist/driver awareness of each other and expand to involve all enforcement agencies. • Review and change (as necessary) bicyclist safety-related information training to increase sensitivity of drivers to the presence and characteristics of bicyclists and how to safely share the road with them. • Develop a central point for sharing bicycle-related information with the intent to expand and grow the bike community. • Review and update bicycle laws as needed to address emerging trends in the crash data. • Review and amend the crash form to include additional bicycle-related fields to improve analysis.

Occupant Protection

Infrastructure	Non-Infrastructure
• Install oversized signs clearly specifying the District seatbelt laws, applicability, and the fine on the high-volume inbound routes.	• Continue to conduct *Click It or Ticket* (CIOT) Campaign accompanied by enforcement. • Conduct enforcement at locations identified with high-injury crashes and *unknown* and/or low seatbelt use. • Continue/Review Teen Highway Safety Program in schools. • Provide training to MPD officers on seatbelt laws, applicability, seatbelt use in crashes, and methods to improve seatbelt crash reporting. • Expand educational efforts to develop and distribute educational materials. • Work with external partners such as Business Improvement Districts, Advisory Neighborhood Commissions (ANCs), and local businesses to expand the District's outreach. • Expand community programs. • Revise existing PD-10 to conform to MMUCC guidelines. • Establish a set of numeric performance measures to track and improve seatbelt crash reporting. • Revise existing seatbelt survey methodology to capture additional information. • Consider conducting additional surveys. • Explore/increase fine amount from $50 (for adult seatbelt violation) and $75. • Review and enhance the recertification process. • Encourage Law Enforcement Agency officers to buckle up.

Signalized Intersections

Infrastructure	Non-Infrastructure
• Improve safety through traffic control and operational improvements (through road safety audits and other investigations) at corridor-wide, high-crash locations. • Improve safety through improving geometric design (through road safety audits and other investigations) at high-crash locations/corridors. • Improve design and operation of pedestrian and bicycle facilities when redesigning signalized intersections from the scoping stage. • Install traffic signal uninterruptible power supply at critical intersections. • Improve safety through better driver visibility. • Implement improvement projects in at least 10 additional high-crash intersections. • Work with the Street Car Program Administrators to include key design and operational considerations essential when it goes online. • Activate/modify the DPW handheld devices to include a synchronized notification system for missing assets—integrate with City works. • Review top 10 intersections with the highest violation and implement appropriate mitigation measures.	• Expand enforcement of intersection violations. • Work with Maryland and Virginia to restrict drivers with unpaid tickets in the District. • Update HCLC mapping yearly to include future developments and share with other Agencies. • Review/update process for disseminating crash statistics to ANCs and the public. • Determine feasibility and implement best enforcement approaches related to parking too close to intersections and new signalized crossings. • Expand the Traffic Safety focus at MPD. • Issue a memo to all officers on their role in traffic safety enforcement, inclusive of accurate, timely, and consistent completion of information on the crash forms. • Review/expand the *Traffic Control Officer* Program. • Revise traffic violation laws in DC. • Implement Web-based ticket processing system that provides information to both officers and citizens. • Work with DPW to have parking impound lots open and staffed 24/7 and available to MPD and other enforcement agencies. • Work with the Street Car Program Administrators to develop/implement key items relevant to safe operations. • Perform a needs assessment of the Roadway Operations Patrol (ROP) and implement key recommendation. • Develop and deliver a safety education program for engineers and planners • Develop and implement public information program on intersection safety. Focus on various safety themes as well as positive stories. • Work with the Street Car Program Administrators to include public awareness operational characteristics essential when it goes online. • Work with DMV to establish a DMV safety coordinator to provide District-wide support on programs that will reduce crashes, injuries, and fatalities. • Project Evaluations/Safety Performance Goals. • Undertake needs assessment of the District Incident Management response capabilities and implement key recommendations. • Examine the feasibility of access to crash data. • Review existing crash-reporting form and incorporate assets/attributes to make it more compliant with MMUCC. • Investigate and implement data clearinghouse. • Improve the GIS layers by incorporating detailed aerial photography into existing GIS information. • Expand the roadway data assets to be in line with MIRE requirements. • Perform a needs assessment of DDOT Traffic Management Center / Communication Hub and implement key recommendations.

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Unsignalized Intersections

Infrastructure	Non-Infrastructure
• Improve safety through traffic control and other operational improvements. • Improve safety through geometric design improvements. • Continue to improve safety by investigating/evaluating/studying/installing traffic-calming strategies. • Implement appropriate measures to evaluate strategies in general. • Review the safety of street car configuration related to STOP-controlled locations and develop appropriate designs. • Activate/modify the DPW handheld devices for a synchronized notification system for missing assets—integrate with City works. • Investigate new technologies that can improve visibility of TCDs (signing and marking) and implement best practices. • Review locations with high numbers of crashes and implement appropriate treatments on a yearly basis. • Review top 10 intersections with the highest violation and implement appropriate mitigation measures.	• Expand photo enforcement at top 10 high-crash STOP-controlled intersection. • Target compliance at high pedestrian-crash locations. • Expand the Traffic Safety focus at MPD. • Continue to develop the communication process between MPD and other enforcement agencies on high-crash locations. • Explore and implement new technologies that can improve compliance at non-signalized locations. • Review and update School Crossing Guard education training program. • Improve education information distributed to public (in particular high schools) in classroom training, social media, and other networking sites.

Work Zones

Infrastructure	Non-Infrastructure
• Complete/Implement DDOT Work Zone process review recommendations. • Improve work zones design practices. • Improve use of new and innovative traffic control devices in work zones. • Undertake a needs assessment to determine which other District agencies can benefit from work zone training and implement accordingly. • Coordinate with all DDOT administrators regarding the DDOT standards for maintaining work zone safety. Provide training and other expertise as needed.	• Enhance enforcement of traffic laws in work zones. • Expand DDOT work zone/audit inspections. • Review legislation and update. • Provide instructional material on work zone safety in all road safety efforts. • Partner with other agencies to develop/launch public awareness and education programs designed to sensitize highway users on the uniqueness and risk of driving in work zones and change highway user behavior accordingly. • Update the Work Zone Safety and Mobility Policy. • Continue to provide updated work zone information to the public.

Large Trucks

Infrastructure	Non-Infrastructure
• Implement a comprehensive truck route signage program to facilitate safe and efficient truck movement on designated truck routes and avoid local streets. • Improve/expand overhead obstruction signage (fixed or VMS) and provide adequate advance notice to allow drivers to make intelligent bypass decisions. • Research and implement best practices at locations with high CMV crashes. • Explore feasibility and implement accordingly an Enterprise Routing System for CMVs. • Review the high CMV-crash corridors and develop/implement treatments to mitigate these problems. • Establish a key number of truck counting stations to determine truck usage per year. • Identify potential truck/bike conflict points and implement appropriate mitigation measures. • Explore the feasibility of a freight village/intermodal facility. • Explore the feasibility of truck-high priority corridors. • I-295 SB weigh-in-motion (WIM) site. • For I-295 NB, consider feasibility of a fixed site weight station with at minimum a single inspection pit. • Identify and establish an extensive network of WIM scales at key port of entry locations and on high commercial volume corridors to measure compliance and help target enforcement efforts.	• Implement the DC Truck Safety Enforcement Plan. • Increase safety compliance and strengthen the CDL program. • Develop District of Columbia Freight Plan and tie this plan to the *Commercial Vehicle Safety Enforcement Plan* and SHSP. • Evaluate/Update PD-10 crash reporting form to comply with MMUCC/SAFETYNET. • Explore option of Civil Weight Enforcement similar to the Minnesota Relevant Evidence Law, which would enable the MPD to go into facilities that record weight transactions (bills of lading) and serve civil penalties notices to violators. • Develop and implement CVISN. • Expand Vehicle Recognition System to include CMVs on key inbound routes. • Increase the number of law enforcement officers within the motor carrier unit to 14. • Identify new Virtual Weight Stations (VWS) and upgrade all VWS with additional capabilities for CV monitoring. • Explore and implement with the DDOT TMC, a Commercial Vehicle Center (CVC) built around a GIS database connecting the License Plate Reading (LPR), WIM scales and weight stations, as a central point for data collection, information processing, and compliance monitoring system. In addition, establish a Quality Assurance Program as well as a CVC Center Operator. • Expand the use of Automated Enforcement for size, length, height, and weight. • Review legislation. • Increase number of data collection points relating to truck volume data. • Develop and implement CMV Outreach Program (e.g., Smooth Operator Program). • Incorporate related information into DMV driver materials about CMV regulations and sharing the road with them. • Develop information packet for specific outreach to the CMV industry. • Maintain/Update a comprehensive one-stop shop for all commercial vehicle information, regulations, and processes.

Motorcycle

Infrastructure	Non-Infrastructure
• Educate District design, construction, and maintenance agencies (DOT, DPW, etc.) on conditions that pose hazards to motorcycle riders, such as temporary steel plates, raised manhole covers, uneven pavement, and edge drop-offs. • Investigate and re-mark as necessary all traffic circles and other rotating intersections within the District. • Develop a series of key locations on all arterials within the District to collect motorcycle and motor-driven cycles volumes (yearly).	• Use supplemental crash report for motorcycle/ motor-driven cycles crashes to develop accurate, long-term database. • Review/increase penalties for operating motorcycle or motordriven cycles without an endorsement. • Consider reducing penalty/point assessment for motorcycle/ motor-driven cycle violations if an operator completes a MSF motorcycle rider class. • Review laws governing motor-driven cycles and amend as necessary. • Enforce District laws on helmet use and eye protection. • Enforce District laws regarding cell phone use while driving. • Educate operators/owners of motorcycle/ motor-driven cycles on District registration, insurance, and licensing requirements. • Consider sponsoring a MSF-sanctioned rider training course in the District. • Encourage/require new riders to complete a course in Virginia or Maryland. • Establish partnerships with local motorcycle/ motor-driven cycle retailers and organizations to disseminate information on District regulations and promote safe riding. • Expand motorcycle/scooter/moped safety content in the DMV drivers' manual and on the written test for motor vehicle drivers. • Determine the need for a separate motor-driven cycle information/manual and update, as needed. • Include motorcycle crash investigation procedures in the course provided to crash investigators. • Integrate a motorcyclist treatment module in EMS personnel training and other first-responder training. • Explore integrating motorcyclist treatment module into DC-approved trauma hospitals. • Establish a Motorcycle Task Force comprised of District agencies and selected District riders to implement safety procedures and recommendations. • Reemphasize to all District riders the existing procedures for reporting unsafe roadway conditions, such as potholes and debris on the roadway (#311).

EMS

Infrastructure	Non-Infrastructure
• Continue to support EMS integration into hospital programs. • Review/upgrade as necessary all communication systems. • Investigate need for and implement accordingly new trauma locations within the District.	• Maintain a culture of health promotion and safety. • Develop partnership—DCPS lead with FEMS, MPD, DOH, and Hospitals (trauma units) to provide safety education/awareness to middle and high school students. • Review FEMS Pre-Hospital Protocols in relation to the safety goals. • Continue and update as necessary the recertification process to increase education and involvement of EMS personnel in the principles of traffic safety, DDOT's Traffic Responders course, and other Federally available training. • Explore and incorporate best practices in crash scene care. • Review/expand the operations of ROP and ensure that all personnel have appropriate protection devices and training. • Explore feasibility of online training and expanding to all enforcement agencies and other institutions. • Integrate a motorcyclist treatment module in EMS personnel training and other first-responder training. • Explore integrating motorcyclist treatment module into DC-approved trauma hospitals. • Improve response times to crash scene. • Review/upgrade electronic EMS run database. • Develop appropriate performance measures. • Develop/Implement: ER Registry, Hospital Discharge Registry, Trauma Registry.

Traffic Incident Management

Infrastructure	Non-Infrastructure
• Encourage expanded use of interoperable communication capabilities. • Encourage installation of push bumpers on responder vehicles. • Identify and address the delays and safety problems associated with work zones and maintenance activities. • Enhance the capability of current traffic management centers and implement other centers, as needed. • Implement reference and ramp markers on critical routes, District-wide. • Identify critical or Decision Point locations where ITS technology should be located to disseminate incident information. • Identify issues with the TMC system and implement strategies for improvement, including using all DMS system to inform the public of incidents. • Accelerate Implementation of Operations and ITS Technologies & Strategies. • Get into full compliance with Temporary Traffic Control Devices Rule and use the work zone self-assessment to identify actions and priority areas for improvement, as appropriate. • Manage congestion by improving reliability and operating the system at peak performance: Active Transportation and Demand Management (ATDM), Arterial Management/Traffic Signal Operations, Congestion Pricing, Real-Time Transportation Information Program, Road Weather Management, and Work Zone Management. • Refine the architecture for sharing incident information among responding agencies and with agencies along detour routes that may be affected.	• Refine and initiate approval process for quick clearance, move-it, and other related laws. • Promote the use of the national incident management system. • Establish or enhance local incident management teams and cultivate their development. • Incorporate interagency incident management training and emergency traffic control training into ongoing (all) responder training. • Share DDOT's traffic incident management strategic plan with responders and update the plan regularly. • Identify and address the issues by providing timely incident information to the public. • Initiate a public information campaign for motorists on the proper response to an incident. • Provide training to responders on the quick clearance law. • Organizing and Planning for Operations. • Improve reliability through efficient movement of freight. • Modify the crash reporting application to include data on secondary crashes. • Expand roadway service patrols to augment ongoing incident management activities. • Improve the warning system for the end of the traffic queue at major incidents to reduce secondary crashes. • Sponsor post-incident debriefings for all major incidents. • Expand the number of DDOT's Traffic Incident Management staff, reduce the geographic area and roles they are responsible for. • Improve planning and preparation for response to hazardous materials incidents on the roadways.