

# Government of the District of Columbia

## Department of Transportation



### **DISTRICT DEPARTMENT OF TRANSPORTATION ARCHITECT AND ENGINEER (“A/E”) SCHEDULE TASK ORDER (“TO”) REQUEST FOR QUALIFICATIONS (RFQ)**

**Date:** 4/7/2023

**Category of Services:** E- Traffic Engineering Services

**Title:** Combined RFQ - Highway Safety Improvement Program (HSIP)& Traffic Safety Engineering Support Services (TSES)

**Solicitation No.:** OCPTO220076

#### **1. PROJECT BACKGROUND**

The District Department of Transportation (DDOT) desires to solicit assistance from the engineering consultants for conducting traffic data collection, analyzing traffic operations, preparing engineering design plans, conducting traffic safety investigations, performing traffic safety assessment, developing mitigation improvements, evaluating safety benefits and conducting Benefit-To-Cost analyses, reviewing traffic safety and operational studies and engineering design plans for the following projects:

- Traffic Safety Engineering and Support Services (TSES)
- Highway Safety Improvement Program (HSIP)

#### **2. PROJECT PURPOSE**

The purpose of this project is to study traffic safety of intersections and corridors in the District, collect data, analyze traffic operations, signal phasing, evaluate safety benefits, come up with improvement recommendations, and develop designs plans of these recommendations.

#### **3. TASK ORDER COMPETITION**

The District is soliciting qualifications from firms awarded an A/E schedule contract in category E: Traffic Engineering Services to perform the required services in accordance with the provisions of the A/E contract. A minimum of one and up to five Specific Rates of Compensation task order awards are anticipated. The 10 firms competing are:

- AECOM Technical Services
- Daniel Consultants
- STV Incorporated
- HNTB District of Columbia, PC
- Jacobs Engineering Group Inc.
- Parsons Transportation Group
- Pennoni Associates Inc
- Johnson, Mirmiran & Thompson, Inc.
- RK&K, LLP
- WSP

#### 4. APPLICABLE DOCUMENTS

All A/E services shall comply with current requirements of the District of Columbia (DC), Department of Transportation (DDOT), and Federal Highway Administration including the following as applicable:

Sr.No	Agency	Title (Last Editions)	Website
1	FHWA	HSM	<a href="https://highways.dot.gov/safety/data-analysis-tools/highway-safety-manual">https://highways.dot.gov/safety/data-analysis-tools/highway-safety-manual</a>
2	FHWA	MUTCD	<a href="https://mutcd.fhwa.dot.gov/">https://mutcd.fhwa.dot.gov/</a>
3	AASHTO	Geometric Design of Highways and Streets	<a href="https://aashtojournal.org/2018/09/28/aashto-releases-7th-edition-of-its-highway-street-design-green-book/">https://aashtojournal.org/2018/09/28/aashto-releases-7th-edition-of-its-highway-street-design-green-book/</a>
4	TRB	HCM	<a href="https://www.trb.org/Main/Blurbs/175169.aspx">https://www.trb.org/Main/Blurbs/175169.aspx</a>
5	DDOT	Bike Design Guide	<a href="https://ddot.dc.gov/sites/default/files/dc/sites/ddot/DDOT%20Bicycle%20Facility%20Design%20Guide%20-%20Version%202%20%28Final%29.pdf">https://ddot.dc.gov/sites/default/files/dc/sites/ddot/DDOT%20Bicycle%20Facility%20Design%20Guide%20-%20Version%202%20%28Final%29.pdf</a>

#### 5. DISADVANTAGED BUSINESS ENTERPRISE GOAL

5.1 A 22.00% DBE subcontracting goal for firms certified as DBEs in accordance with Title 49, Subtitle A, Part 26 of the CFR has been established for this federally assisted contract. The contract will be subject to all applicable Federal regulations including Title VI of the Civil Rights Acts of 1964. If Offeror does not meet the DBE goal, then Offeror will be required to demonstrate good faith efforts in accordance with Title 49, Subtitle A, Part 26 of the CFR.

#### 6. SPECIAL PROVISIONS RELATED TO THE COVID-19 EMERGENCY

6.1 The Contractor is required to comply with Mayor's Order 2021-099, COVID-19 Vaccination Certification Requirement for District Government Employees, Contractors, Interns, and Grantees, dated August 10, 2021, and all substantially similar vaccine requirements including any modifications to this Order, unless and until they are rescinded or superseded. At the request of the District government, Contractors may be asked to provide certification of compliance with this requirement and/or documents and records in support of this certification.

6.2 The Contractor is required to comply with City Administrator's Order 2021-4, Resumption of Requirement for All Persons to Wear a Mask Inside District Government Buildings and While on Duty as a District Government Employee or Contractor, dated July 30, 2021, and all substantially similar mask requirements including any modifications to this Order, unless and until they are rescinded or superseded.

#### 7. KEY PERSONNEL REQUIREMENTS:

The successful offeror will include a multidisciplinary project team with skills and experience in a variety of technical areas to provide the required services. The team should, at a minimum, include the below personnel possessing the following minimum qualifications:

Key Personnel Title	Key Personnel Minimum Qualifications
Project Manager	The Project Manager must be a professional engineer licensed in the District of Columbia and have at least 10 years of experience in conducting traffic safety studies and preparing engineering design plans in an urban and multi-modal environment.
Project Engineer	The Project Engineer shall be registered and licensed professional engineer in the District of Columbia with Bachelor's Degree in Civil Engineering and minimum four (4) years of experience in conducting traffic operational and safety analysis as well as preparing engineering design plans for roadway safety improvement projects with a State, County, Federal or Municipal department of transportation.
Staff Engineer	Certified Engineer-In-Training (EIT) with a minimum of 2 years of experience and hold a Bachelor's of Science Degree in Civil Engineering. Experience shall include conducting analysis and design of traffic safety and operational improvements projects.
Engineering Technician	Associate Degree in engineering technology with 4 years of experience in preparing engineering design plans and PS&E packages for various traffic control devices and roadway safety improvement projects, with a State, County, Federal or Municipal department of transportation.

**8. SCOPE OF WORK:** The scope of work includes but is not limited to the following:

**8.1 TRAFFIC SAFETY ENGINEERING SUPPORT SERVICES (TSES)**

The Traffic Safety Engineering Support Services project will support DDOT in performing traffic safety and operational analyses; preparing engineering design plans; reviewing traffic safety and operational studies and engineering design plans; conducting traffic data collection and traffic safety investigations (TSIs) and maintaining DDOT's Traffic Safety Datacenter. DDOT is seeking consulting firms, on an as-needed basis, to provide professional engineering services for conducting analyses, design and reviews of traffic safety and operational improvement projects.

**A. Traffic Safety and Operational Analyses**

**A.1 Road Safety Audits (RSA) Studies**

DDOT conducts road safety audits on Vision Zero High Injury Corridors to examine safety performance of existing intersections and roadways. The safety audits are performed by multi-disciplinary RSA team that conducts formal safety assessment, documents safety concerns and identifies opportunities for safety improvements. The Consultant shall analyze crash data, traffic operations, geometry, traffic controls, access to pedestrian, bike and transit facilities, ADA compliance, signal phasing, street lighting, sight distance, etc. as well as safety issues documented by the RSA team. The Consultant shall conduct traffic safety and operational analyses, summarize safety issues, develop mitigation countermeasures, and prepare draft RSA report.

**A.2 Traffic Safety Investigations (TSIs)**

DDOT receives numerous Service Requests in CityWorks related to pedestrian and bike safety due to motorist speeding and/or volume of commuter traffic in residential neighborhoods. The Consultant shall be required to conduct neighborhood traffic calming studies and/or traffic safety investigations that involve data collection; field investigation; analysis of speed data, vehicular volumes, crash data, traffic patterns, geometry, traffic control, sight distance, etc.; develop traffic calming and safety countermeasures; prepare engineering designs and Work Orders corresponding to various Service Requests categories in the CityWorks system including but not limited to TSIs, Roadway Signs, Markings etc.; and/or prepare final report.

### A.3 Traffic Safety and Operations Studies

DDOT requires professional engineering expertise to analyze traffic operations and safety at locations with complex intersection geometry, experiencing high frequency of roadway crashes and injury crashes, traffic congestion, etc. and develop pertinent countermeasures. Traffic safety and operational analyses shall be based on policies and regulations, standards and guidelines enumerated in the latest edition of Highway Safety Manual (HSM), MUTCD, AASHTO Geometric Design of Highways, Highway Capacity Manual (HCM), and other related manuals. The analyses may require extensive data collection for traffic counts, bike and pedestrian counts, speed data, gap studies, travel time studies, origin-destination studies, etc. This effort would include field investigations; analyses of crash data, speed data etc.; operational and level-of-service analyses; traffic modeling and simulation; signal timing and phasing; developing detours for lane closures; analyzing work zone impacts; traffic safety analyses including estimating Predicted Crashes and Expected Crashes utilizing the HSM methodology; summarizing key safety issues; evaluating mitigation countermeasures; estimating Safety Benefits utilizing the Crash Modification Factors (CMFs) based on the HSM Predictive Method and crash costs based on the FHWA's Model Minimum Uniform Crash Criteria (MMUCC), preparing Benefit-Cost analyses to determine the Benefit-Cost Ratio (BCR) to compare the safety benefits of various mitigation improvements; conducting traffic impact and circulation studies, preliminary engineering investigation (PEI) studies, corridor studies, signal warrant studies, safety studies, Road Diet designs, traffic calming studies etc.

### A.4 Work Zone Safety Studies

DDOT requires development of work zone safety plans in compliance with the MUTCD; DDOT Work Zone Safety and Mobility Policy; FHWA Work Zone Safety and Mobility Manual; and the contract requirements. This effort may include analyses of traffic data, speed data, crash data, traffic operations and signal timing for developing the work zone safety plans.

### A.5 Transportation Management Plan. Transportation Operations and Parking Plan (TOPP)

The Consultant shall develop and revise the Transportation Management Plans (TMP) and Transportation Operations and Parking Plans (TOPP), including design plans for Maintenance of Traffic (MOT), Work Zones, major events, as Presidential Inauguration, baseball games at National Park, Audi Field soccer matches, basketball games at Capitals Arena, large scale rallies and marches. The Consultant shall develop comprehensive event logistics plan and prepare design plans for roadway closures, placement of traffic signs and channelization devices, safe access for pedestrians and bike, transit operations, For-Hire vehicle operations, Charter Bus operations, Wayfinding signage and markings, Emergency Evacuation, Signal Operations, Dynamic Message Signs (DMS), placement of Traffic Control Officers (TCO's), Roadway Operations Patrol, Communications Plan, Rapid Maintenance Support, Snow Contingency Plans, Regional Transportation Coordination, Emergency Liaison Officers, Emergency Evacuation Trailers, and After-Action review.

### A.6 Vision Zero Studies and Plans

As part of the DDOT's Vision Zero Program, the TESD staff is currently implementing three (3) initiatives to improve traffic safety for all roadway users in the District: (i) Left Turn Traffic Calming, (ii) Dual Turn Mitigations, and, (iii) No Turn on Red (NTOR) prohibition. Efforts under this task include analyses of traffic operations, geometry and safety; capacity analyses; develop optimal signal timing and phasing plans; and prepare design plans including lane markings, pavement markings, traffic signage, signal modifications, etc.

related to the mitigation improvements. The Consultant may be required to conduct “Before-and-After” evaluation studies for various initiatives undertaken by the TESD staff for the Vision Zero program.

#### A.7 Warrant Studies

DDOT requires analyses of traffic data, crash data, bike and pedestrian volumes, speed data, traffic generation, etc. and applicability of such data pertaining to the warrant analyses for a traffic signal, high-intensity activated crosswalk (HAWK) signal, rectangular rapid flash beacon (RRFB) devices, All Way Stop Control (AWSC), etc. as outlined in the 2009 or latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). The Consultant shall analyze all the pertinent data to determine the optimal traffic control devices for various study locations. The Consultant may also be required to evaluate modification and/or removal of the existing traffic control devices.

#### **B. Traffic Safety Improvements Design**

DDOT requires preparation of engineering design plans for traffic safety and operational improvement projects, Work Orders for various Service Requests in the CityWorks system, installation or modification of traffic control devices, signage and pavement markings plans, Maintenance of Traffic (MOT) and Transportation Management Plans. The Consultant shall prepare the engineering design plans in accordance with the DDOT standards, specifications, and requirements that are suitable for construction. The design packages shall include all the necessary information and details to furnish and install signage, pavement markings and traffic control devices including pay items and quantities. Existing plans would be provided when available. However, if plans aren't available, then the Consultant shall conduct site investigation, field survey, right-of-way research and verification of the existing topography, utilities, infrastructure, and traffic control equipment. The Consultant shall submit costs estimates for construction along with the necessary special provisions. The scope of work will consist of, but not be limited to, the following main items:

##### B.1 Engineering Design Plans for Roadways and Intersections

DDOT requires development of engineering design plans, and, Plans, Specifications, and Estimates (PS&E) packages for geometric design including horizontal and vertical alignments, lane configuration, shoulders, lane transitions, roadway slopes, drainage, sidewalks, curb extensions, quick build materials, channelization, turn lanes design, sight distance, installation or modification of traffic control devices (e.g. traffic signal, HAWK signal, RRFB.), streetlighting, traffic calming, signage, pavement markings, ADA facilities, multimodal facilities for bikes, pedestrians and transit, and, safety and operational improvements.

##### B.2 Corridor Signage and Pavement Markings Plans

DDOT requires development of engineering designs plans for safety and operational improvement projects, including Road Diets, along roadway corridors in the District. Efforts under this task include identifying geometric improvements; determining placement, type, size and color of various pavement markings and sign layouts; sign locations; sign schedules; details on sign structures and support foundations and preparing detailed summary of quantities for pavement markings and traffic signage.

##### B.3 Maintenance of Traffic (MOT) and Traffic Control Plans

DDOT requires development of MOT plans and Traffic Control Plans (TCPs) associated with construction projects; determining impacts on traffic operations and safety; and developing pertinent countermeasures. The Consultant may also be required to develop the phased construction plans based on the analyses of geometric design, capacity analyses, construction signing, temporary guide signing, temporary pavement markings and temporary signal design.

##### B.4 Conceptual Layout Plans

DDOT requires development of the conceptual layout plans for different traffic safety and operational mitigation countermeasures pertaining to various transportation projects. The efforts may include data

collection, traffic modeling, operational analysis, developing mitigation alternatives, summary report and preparing conceptual layout plans for mitigation alternatives.

### **C. Performing Review of Traffic Safety Analyses and Designs**

DDOT requires assistance with reviews of traffic safety and operational studies, and engineering design plans including but not limited to traffic calming and safety studies; capacity and operational analyses; signal timing and phasing studies; analyses and design of multimodal facilities for pedestrians, bikes and transit, and, design plans and PS&E packages for installation or modification of traffic control devices and traffic safety and operational improvement projects. The Consultant shall perform thorough review and provide written summary of comments and proposed recommendations for traffic safety and operational studies, engineering design plans, PS&E packages prepared by either DDOT staff or other engineering consulting firms. The Consultant maybe required to attend project meetings for addressing comments. If the comments require additional revisions to the project deliverables, the Consultant shall follow-up with TESD staff to confirm that revisions have been made to their satisfaction. The review work will include, but not limited to, the following items:

- i. Perform reviews of traffic impact studies, traffic calming and safety studies, operational and capacity analyses, signal warrant studies, signal timing studies, work zone safety studies, PEI studies, corridor studies, Road Diet designs and Transportation Management Plans.
- ii. Perform reviews of design plans and PS&E packages for signage, pavement markings, multimodal facilities for pedestrians, bikes and transit, installation or modification of traffic control devices, and, safety and operational improvement projects.
- iii. Perform review of MOT plans, traffic control plans, and work zone safety plans.
- iv. Review project deliverables for future DDOT projects.

### **D. Traffic Data Collection and Analysis Services**

#### D.1 Turning Movement Counts Data

The turning movement counts or intersection counts enumerate traffic volumes, comprising of motorists, vehicles, pedestrians and bicyclists, for each movement by approach from which the traffic enters and exits the intersection. Turning movement counts should capture all traffic volumes at the study intersections including motorists, pedestrians, bicyclists, and other non-motorized transportation modes. Turning movement counts are conducted in fifteen (15) minute intervals during morning peak-hour and evening peak-hour on the weekdays and during mid-day peak on the weekends. Further, turning movement counts are conducted on Tuesday, Wednesday or Thursday during a typical weekday and generally Saturday on the weekend. The weekday morning peak-hour ranges from 6:30 AM to 9:30 AM, while the evening peak-hour ranges from 4:00 PM to 7:00 PM. The mid-day peak typically varies from 11:00 AM to 2:00 PM on weekends. In addition, DDOT may also request turning movement counts for 12-hour duration on weekdays.

#### D.2 Average Daily Traffic Volumes (ADT), Speed and Vehicle Classifications Counts Data

The ADT volumes data and speed and vehicle classification data is collected to determine the vehicular volumes, speeds and vehicular classification in specific direction at given location. The ADT counts shall be conducted in fifteen (15) minute intervals, from midnight to midnight, summarized by specific direction for a minimum duration of twenty-four (24) continuous hours unless otherwise specified by DDOT. The vehicular speed data shall include but not limited to mean, mode, median, pace, 85<sup>th</sup> percentile speeds and spot speed studies etc. Vehicle classification data shall consist of classification counts, for six (6) different vehicle classes, as outlined in the FHWA-13 Vehicle Classification Scheme. The Consultant shall prepare and submit technical reports for studies related to ADT counts, speed data, and classification data.

#### D.3 Travel Time and Delay Studies

Travel time data is used to estimate amount of time required for a vehicle to travel from one specific location to another, particularly during the hours of peak traffic volumes. Delay studies are conducted to determine the

time vehicles are stopped at a specific location, usually stop controlled or signalized intersections. Travel time studies will be performed using the “floating car” methodology. A Professional Engineer will accompany the driver to ensure consistency in driving behavior, observe general traffic conditions such as vehicle queues, and record travel times and delays on a stopwatch. Cumulative travel time measurements begin when test vehicle passes the stop line at the first intersection, and end when the vehicle passes stop line at the last intersection in the section of arterial being evaluated. Signal delays will also be recorded at each intersection for both major and minor streets. The Engineer will also record field observations of queues, turn bay overflows, average link running speeds, and test vehicle queue position during all runs. A minimum of six (6) runs per direction will be compiled for each period to develop average travel time, stopped delay, travel speed, and number of stops.

#### D.4 Pedestrian, Bicycle, and Non-Motorized Data

Data collection for pedestrians, bicyclists and other non-motorized modes will be performed at intersections, mid-block crossings, uncontrolled crosswalks, etc. as requested by the DDOT.

#### D.5 Gap Studies

Gap studies show time and/or distance between vehicles traversing a specific location on a roadway. Gap studies are mainly conducted during morning and evening peak-hour durations, unless specified by the DDOT.

#### D.6 Parking Studies

Parking studies are conducted to determine occupancy and capacity of existing parking facilities at the time of peak parking demand. DDOT shall specify location, duration, specific dates and times to the Consultant.

#### D.7 Origin-Destination Studies

Origin-Destination (O-D) studies are conducted to determine vehicular trip patterns and mode choices of motorists at a given location. O-D studies are typically conducted during the morning and evening peak-hours but can vary pending project needs.

#### D.8 Traffic Calming Studies

Consultant shall prepare traffic calming studies to address safety concerns related to speeding, diversion traffic and/or crashes at specific location. DDOT receives numerous Service Requests for traffic calming and safety assessments on roadways throughout the District. The selected Consultant will coordinate with TESD staff to conduct safety assessments and develop mitigation measures. The efforts shall include:

- i. Conduct traffic data collection (traffic volumes, speed data, geometry, crash data, etc.) if necessary for evaluating traffic safety investigations (TSIs);
- ii. Analyze operational and safety data to assess requirements for developing traffic calming improvements to address the underlying safety issues;
- iii. Prepare accompanying constructible engineering design plans for Work Orders, pertaining to the corresponding Service Requests, for field implementation;
- iv. Prepare technical report presenting the findings and summarizing recommendations.

#### D.9 Crash Statistics Analysis and Reporting

DDOT will provide both access and training to the Traffic Accident Reporting and Analysis System (TARAS) crash database. The Consultant shall retrieve crash data to perform following tasks: conduct statistical analyses of crashes related to vehicles, pedestrians, bikes, transit, etc.; prepare standard crash reports, such as Annual Crash Summary Report, High Crash Locations, etc., analyze crash data and prepare customizable crash statistics reports for trucks, pedestrians, bikes, trucks, transit etc.

#### D.10 DDOT Traffic Safety Data Center

The project would allow TESD to support and maintain DDOT's Traffic Safety Datacenter. The main goals of the Traffic Safety Datacenter are to conduct traffic studies, collect and maintain traffic and safety data, and conduct traffic operational and safety analyses to support DDOT's program goals and objectives. The Safety Data Center also aims to make traffic data accessible through a web-based database to DDOT and general public. The Consultant shall operate and maintain the existing safety datacenter and the data warehouse. The Consultant would also seek potential collaboration with different research universities to operate, support and maintain the DDOT's Traffic Safety Datacenter. The Consultant may also be required to attend various meetings and conferences, as Transportation Research Board Annual Meeting, Annual Traffic Safety Conference, Traffic Records Coordination Committee meeting etc. to support DDOT's goals and objectives.

#### D.11 Traffic Data Collection Schedule

Unless specified by DDOT, the Consultant shall not conduct traffic counts on federal holidays. Traffic counts shall not be conducted during the week of Thanksgiving Day, Christmas and New Year's Day. Further, traffic data collection shall not be conducted during the inclement weather conditions (snow, hail, etc.), during emergency evacuation situations, or during planned road closures or special events at the study location. Depending on location, data collection may also need to be conducted when Congress is in active session and/or District of Columbia Public Schools are open. Data collection during the summer months will require prior DDOT approval.

#### D.12 Quality Control

The Consultant shall be responsible for conducting the QA/QC process, data accuracy and coordination of traffic data collection tasks furnished to DDOT under this project. The Consultant shall review traffic data and ensure technical accuracy before submitting to the DDOT. DDOT would review traffic data and make final determination on accuracy and completeness of the data. The Consultant shall repeat traffic data collection at locations where data is determined to be inaccurate or incomplete.

#### D.13 Traffic Data Submittal

The Consultant shall submit traffic counts of study locations to DDOT no later than fifteen (15) business days after the initial collection date. The Consultant shall submit traffic data and related information in the following file formats:

- i. Microsoft Word format (.docx) or Adobe Portable Document Format (PDF)
- ii. Microsoft Excel formats, as .xlsx and .csv (raw data files only)
- iii. Video files in Windows Media compatible format such as .mp4 and .wmv

### **8.2 HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)**

This project will provide DDOT with the contractual support for analyzing crash data; reviewing traffic operations, signal timing and phasing; performing traffic safety assessment; developing mitigation improvements; evaluating safety benefits; and conducting Benefit-To-Cost analyses for the proposed mitigation improvements.

#### **8.2.1 Highway Safety Improvement Program Intersection Study Project**

DDOT annually studies 25-50 intersections based on the ranking of Injury Crash Composite Index (CCI). This project will provide DDOT with the contractual support for conducting analyses of traffic operations, signal timing and phasing; traffic safety assessment; crash data analyses including predictive crash analyses and expected crash analyses; Vision Zero evaluation for injury and fatal crashes including bike and pedestrian crashes; identify contributing factors; develop short-term and long-term mitigation improvements; evaluate safety benefits; and conduct Benefit-To-Cost analyses of the proposed mitigation improvements. The selected Consultant will be required to perform the following tasks in accordance with the criteria listed, as well as any other general guidance provided by DDOT.

##### **A. Existing Conditions Summary and Data Collection**



The Consultant will prepare summary of current land uses, lane configuration and vehicular movements, traffic control devices, on-street parking, adjacent parking facilities, pavement conditions, traffic signage, pavement markings, streetlighting and description of transportation facilities for vehicles, pedestrians, bicyclists and transit at the study location. Further, the Consultant may also be required to obtain peak hour turning movement counts, for AM peak and PM peak durations at the study intersections.

## **B. Analyze Traffic Operations and Signal Timing Parameters**

The Consultant shall analyze traffic operations, signal timing and phasing, and calibrate traffic models for the study intersections based on the signal timing plans provided by DDOT. The Consultant shall prepare detailed summary of traffic delays, level of service, peak queuing and available storage for intersection approaches for both AM peak and PM peak durations. Further, Consultant shall evaluate existing signal timing parameters, including clearance intervals, Flashing Don't Walk (FDW) intervals and Pedestrian Clearance Intervals (PCI) based on the DDOT Guidelines on Vehicular and Pedestrian Interval Calculations.

## **C. Conduct Traffic Safety Assessment**

The Consultant shall conduct field observations, analyze crash data, perform Vision Zero Evaluation and estimate predictive crashes and expected crashes for the study intersection. The calculations for the predictive crashes and expected crashes shall be based on the analytical approach outlined in the HSM.

### C.1 Field Observations

The Consultant will conduct field visits to evaluate intersection operations including vehicles, bikes, pedestrians and transit; conduct sight distance analyses; observe driver behavior patterns especially aggressive driving, red light running, speeding, etc.; summarize queuing, vehicular delays and traffic backups for intersection approaches; signage and pavement markings; streetlighting during nighttime conditions; illegal parking; and observe potential conflicts between motorists and pedestrians.

### C.2 Crash Data Analyses

The Consultant shall perform comprehensive evaluation of crash data at the study locations provided by DDOT. The Consultant shall prepare collision diagrams and detailed crash summaries based on crash types, crash severity, time-of-day, weather, lighting conditions, contributing factors, etc.

### C.3 Vision Zero Evaluation

The Consultant shall utilize Vision Zero approach for evaluating injury crashes and fatal crashes at the study locations with a focus on any bicycle or pedestrian crashes. The Consultant shall review detailed PD-10 reports, provided by the DDOT staff, and summarize crash types, crash frequency and primary contributing factors pertaining to the injury crashes and/or fatal crashes at the study locations.

### C.4 Estimate Predictive Crashes and Expected Crashes

The Highway Safety Manual (HSM) outlines analytical approach to estimate predicted crashes and expected crashes to determine number of crashes for the baseline conditions of the intersection. The HSM Predictive method outlines procedures to evaluate intersection safety that includes intersection characteristics in addition to the crash history. Safety Performance Functions (SPFs) are utilized to estimate predicted number of crashes based on the intersection type and AADT. Crash Modification Factors (CMFs) are applied to adjust predicted number of crashes when intersection characteristics differ from the base conditions. The Consultant shall utilize HSM analytical approach to develop comprehensive summary of Predicted Crashes and Expected Crashes for fatal and injury crashes, property damage crashes and total crashes at the study intersection.

## D. Prepare Summary of Findings

The Consultant shall prepare detailed summary of primary contributing factors, crash frequency and crash severity of most frequently occurring crashes at the study locations. The Consultant shall also provide assessment summary of existing signage, pavement markings and traffic control devices based on the standards outlined in the DDOT Design and Engineering Manual (DEM) and MUTCD.

## E. Develop Mitigation Improvements

The Consultant shall develop detailed summary of short-term and long-term mitigation improvements, along with related advantages and disadvantages, based on primary contributing factors for crashes with highest frequency and severity at the study location.

### E.1 Estimate Safety Benefits of Mitigation Improvements

The Consultant shall estimate Safety Benefits of proposed mitigation improvements by estimating expected change of crash frequency due to the implementation of specific improvement and converting that change of crash frequency into a monetary value. The expected change in crash frequency shall be estimated using the CMF and pertinent expected crashes based on the HSM predictive method. The crash costs shall be based on the FHWA's *Crash Costs for Highway Safety Analysis*. The FHWA's crash cost data refers to various levels of crash injury severity, as defined in the FHWA's Model Minimum Uniform Crash Criteria (MMUCC), also referred as KABCO scale. The Consultant shall develop detailed Safety Benefits summary, on annual basis, for both short-term and long-term improvements at the study location.

### E.2 Conduct Benefit-Cost Analyses of Mitigation Improvements

The Consultant shall conduct Benefit-Cost analyses to determine the Benefit-Cost Ratio (BCR) to compare the safety benefits of mitigation improvements to the cost of implementing of mitigation improvements. The BCR divides the present value of safety benefits by the implementation cost of countermeasures. A BCR greater than one typically indicates the countermeasures are economically justified, while a BCR less than one indicates countermeasures may not be economically justified.

## F. Prepare Final Report

The Consultant shall prepare Final Report summarizing existing conditions, operational analyses, traffic safety assessment, summary of mitigation improvements, safety benefits and benefit-cost analyses of proposed mitigation improvements, and final recommendations for each study location.

## 9. DELIVERABLES

SOW Reference	Deliverable Title	Deliverable Description	Delivery Method
IV	Traffic Operational and Safety Studies	Study documents	Electronic Copies
IV	HSIP Reports & Memos	Reports & Memos	Electronic Copies
IV	Design Plans & PSE Packages	Design Plans	Electronic Copies
IV	Traffic Data	ADT Counts, Speed and Classification data, etc	Electronic Copies

## 10. PERIOD OF PERFORMANCE

The base period shall be from date of award through September 30, 2024. The District will have an option to extend for 1 two-year option period and 1 one-year option periods.

## 11. INSTRUCTIONS TO OFFERORS

### 11.1 Submission Due Date

- Submissions, in whole, shall not exceed 50 pages in length.
- Submissions are due on or before 2:00 PM on April 28, 2023.

### 11.2 Organization and Content

- 11.2.1 Offerors shall submit qualifications on the Standard Form 330 to include all parts and sections via email to the general A/E schedule mailbox at [ddot.aeschedule@dc.gov](mailto:ddot.aeschedule@dc.gov), Briana Vaden, Contract Specialist, at [briana.vaden@dc.gov](mailto:briana.vaden@dc.gov), and Briana Vaden, Contracting Officer, at [briana.vaden@dc.gov](mailto:briana.vaden@dc.gov). Inclusion of other materials by reference will not be considered. All questions must be submitted via email to the aforementioned email addresses no later than seven (7) calendar days before the due date for submissions identified in § 10.1.
- 11.2.2 Section H of the SF 330 shall provide information regarding the following topics. The information should demonstrate an understanding of the requirement or expound upon the experience and qualifications presented in the context of the requested information. The answers provided will be evaluated as a part of the qualifications in accordance with the evaluation criteria in Section 12 of this TO RFQ.
- 11.2.3 Describe your understanding of the project's complexities, and your experience and qualifications in overcoming the type of complexities identified.
- 11.2.4 Provide qualifications and experience regarding implementing best practices and strategies applicable to the requirement, including: avoidance and mitigation of impacts in the adjacent public space; public outreach and communication between stakeholders; experience utilizing QA/QC processes to ensure contract compliance; and identification, management, and mitigation of project risks.
- 11.2.5 Provide relevant information regarding Factor 4 - Past Performance. Offerors should note that Factor 4 relates to the administration of the experience with regards to cost control, quality of work, and compliance with performance schedules. Offerors shall specifically address their past performance in the context of cost control, quality of work, and compliance with performance schedules.
- 11.2.6 Identify (3) three significant potential risks to successful performance and describe your experience and mitigation strategies in overcoming the identified risks.

## 12. EVALUATION OF QUALIFICATIONS

Your submission is an opportunity to present your firm's qualifications to successfully perform the requirement. It is important that your qualifications highlight your firm's capabilities as it relates to the SOW and the evaluation criteria. The evaluation factors and their relative importance are as follows:

Factor 1 - Professional qualifications necessary for satisfactory performance of required services; **(30 Points)**

Factor 2 - Specialized experience and technical competence in the type of work required; **(40 Points)**

Factor 3 - Capacity to accomplish the work in the required time; **(20 Points)** and

**Factor 4** - Past performance on contracts with Government agencies and private industry in terms of cost control, quality of work, and compliance with performance schedules. **(10 Points)**

In addition to each offeror's response to Factor 4 - Past Performance, the District may utilize additional Past Performance sources to include:

- District eVAL
- Federal Awardee Performance and Integrity Information System (FAPIS)
- Publicly available information

**Factor 5** - Risk Assessment: The offeror's demonstrated (i) understanding of the potential risks to performance, quality, and costs, along with associated mitigation measures for such risks, and (ii) quality of its plan to ensure successful project delivery. **(25 Points)**

Offerors are advised to pay close attention to the evaluation criteria, and ensure they address all aspects within their submission. The District will evaluate qualifications in accordance with this solicitation, and only consider information received in accordance with the solicitation.

Total Possible Points: **125**

### 13. SCORING METHODOLOGY

The technical evaluation panel will review the submittals with reference to the evaluation factors specified in Section 12 in accordance with the rating scale provided in this section and will assign a quantitative rating for each of the evaluation factors.

<u>Numeric Rating</u>	<u>Adjective</u>	<u>Description</u>
0	Unacceptable	Fails to meet minimum requirements, e.g., no demonstrated capacity or offeror did not address the factor.
1	Poor	Marginally meets the minimum requirements; major deficiencies are present.
2	Minimally Acceptable	Marginally meets minimum requirements; minor deficiencies are present.
3	Acceptable	Meets requirements; no deficiencies.
4	Good	Meets requirements and exceeds some requirements; no deficiencies.
5	Excellent	Exceeds most, if not all requirements; no deficiencies.

The rating scale is a weighting mechanism that will be applied to the point value for each evaluation factor to determine the Offeror's score for each factor. The Offeror's total score will be determined by adding the Offeror's score in each evaluation factor. For example, if an evaluation factor has a point value range of zero (0) to fifty (50) points, using the Rating Scale above, if the District evaluates the Proposer's response as "Good," then the score for that evaluation factor is 4/5 of 50, or 40 points.

### 14. CONTRACTING OFFICER'S REPRESENTATIVE (CA)

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*Sincerely,*

Briana Vaden, Contracting Officer

C.C: Derek Voight, DDOT