

**PROFESSIONAL SERVICES AGREEMENT  
BETWEEN  
THE REGENTS OF THE UNIVERSITY OF MICHIGAN  
AND  
THE CITY OF ANN ARBOR  
FOR THE NEAR-MISS VIDEO ANALYTICS SYSTEM**

This agreement (“Agreement”) is between the CITY OF ANN ARBOR, a Michigan municipal corporation, 301 E. Huron St. Ann Arbor, Michigan 48104 (“City”), and THE REGENTS OF UNIVERSITY OF MICHIGAN, a(n) Michigan constitutional corporation, 3003 South State Street, Ann Arbor, Michigan 48109-1274 (“Contractor”). City and Contractor agree as follows:

**1. DEFINITIONS**

**Administering Service Area/Unit** means **Public Services / Engineering**.

**Contract Administrator** means Suzann Flowers, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

**Deliverables** means all documents, plans, specifications, reports, recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

**Effective Date** means the date this Agreement is signed by the last party to sign it.

**Project** means Near-Miss Video Analytics System for the City of Ann Arbor.

**Services** means The Contractor shall design, implement, and support the Near-Miss Video Analytics System for the City of Ann Arbor. Services include system integration with the City’s traffic cameras, deployment of analytics software, data management using AWS cloud storage, and compliance with federal SS4A grant requirements. The Contractor will also provide training, testing, ongoing maintenance, and cybersecurity support to ensure system functionality and data security. as further described in Exhibit A.

**2. DURATION**

- A. The obligations of this Agreement shall apply beginning on April 15, 2025 and this Agreement shall remain in effect through April 14, 2027 unless terminated as provided for in this Agreement.

**3. SERVICES**

- A. Contractor shall perform all Services in compliance with this Agreement. The City retains the right to make changes to the quantities of Services within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the Services, the compensation shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.
- B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality

shall be made solely by the Contract Administrator.

- C. Contractor shall perform Services in compliance with all applicable statutory, regulatory, and contractual requirements now or hereafter in effect. Contractor shall also comply with and be subject to City policies applicable to independent contractors.
- D. Contractor may rely upon the accuracy of reports and surveys provided by the City, except when a defect should have been apparent to a reasonably competent professional or when Contractor has actual notice of a defect.

#### **4. INDEPENDENT CONTRACTOR**

- A. The parties agree that at all times and for all purposes under the terms of this Agreement each party's relationship to any other party shall be that of an independent contractor. Each party is solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer-employee relationship, either express or implied, shall arise or accrue to any party as a result of this Agreement.
- B. Contractor does not have any authority to execute any contract or agreement on behalf of the City, and is not granted any authority to assume or create any obligation or liability on the City's behalf, or to bind the City in any way.

#### **5. COMPENSATION OF CONTRACTOR**

- A. The total amount of compensation paid to Contractor under this Agreement shall not exceed \$481,944.00, which shall be paid upon invoice by Contractor to the City for services rendered according to the schedule in Exhibit B. Compensation of Contractor includes all reimbursable expenses unless a schedule of reimbursable expenses is included in an attached Exhibit B. Expenses outside those identified in the attached schedule must be approved in advance by the Contract Administrator.
- B. Payment shall be made monthly following receipt of invoices submitted by Contractor and approved by the Contract Administrator, unless a different payment schedule is specified in Exhibit B.
- C. Contractor shall be compensated for additional work or Services beyond those specified in this Agreement only when the scope of and compensation for the additional work or Services have received prior written approval of the Contract Administrator.
- D. Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

#### **6. INSURANCE/INDEMNIFICATION**

- A. Contractor shall procure and maintain from the Effective Date or Commencement Date of this Agreement (whichever is earlier) through the conclusion of this Agreement, such insurance policies, including those required by this Agreement, as will protect itself

and the City from all claims for bodily injury, death, or property damage that may arise under this Agreement; whether the act(s) or omission(s) giving rise to the claim were made by Contractor, Contractor's subcontractor, or anyone employed by Contractor or Contractor's subcontractor directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide documentation to the City demonstrating Contractor has obtained the policies and endorsements required by this Agreement. Contractor shall provide such documentation in a form and manner satisfactory to the City. Currently, the City requires insurance to be submitted through its contractor, myCOI. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractors.

B. All insurance providers of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

C. To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City and its officers, employees, and agents harmless from all suits, claims, judgments, and expenses, including attorney's fees, resulting or alleged to result, from an act or omission by Contractor or Contractor's employees or agents occurring in the performance or breach of this Agreement, except to the extent that any suit, claim, judgment, or expense are finally judicially determined to have resulted from the City's negligence, willful misconduct, or failure to comply with a material obligation of this Agreement. The obligations of this paragraph shall survive the expiration or termination of this Agreement.

D. Contractor is required to have the following minimum insurance coverage:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting Contractor and its employees - \$1,000,000.

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy.

\$1,000,000	Each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined
\$2,000,000	Per project General Aggregate
\$1,000,000	Personal and Advertising Injury

3. Worker's Compensation Insurance in accordance with all applicable state and federal statutes; also, Employers Liability Coverage for:

Bodily Injury by Accident - \$500,000 each accident  
 Bodily Injury by Disease - \$500,000 each employee  
 Bodily Injury by Disease - \$500,000 each policy limit

4. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.
- E. Commercial General Liability Insurance and Motor Vehicle Liability Insurance (if required by this Agreement) shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.
- F. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and unqualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company; name(s), email address(es), and address(es) of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions, which may be approved by the City in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. If any of the above coverages expire by their terms during the term of this Agreement, Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.

## 7. WAGE AND NONDISCRIMINATION REQUIREMENTS

- A. Nondiscrimination. Contractor shall comply, and require its subcontractors to comply, with the nondiscrimination provisions of MCL 37.2209. Contractor shall comply with the provisions of Section 9:158 of Chapter 112 of Ann Arbor City Code and assure that Contractor's applicants for employment and employees are treated in a manner which provides equal employment opportunity.
- B. Living Wage. If Contractor is a "covered employer" as defined in Chapter 23 of Ann Arbor City Code, Contractor must comply with the living wage provisions of Chapter 23 of Ann Arbor City Code, which requires Contractor to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

## **8. REPRESENTATIONS AND WARRANTIES BY CONTRACTOR**

- A. Contractor warrants that the quality of Services shall conform to the level of quality performed by persons regularly rendering this type of service.
- B. Contractor warrants that it has all the skills, experience, and professional and other licenses necessary to perform the Services.
- C. Contractor warrants that it has available, or will engage at its own expense, sufficient trained employees to provide the Services.
- D. Contractor warrants that it has no personal or financial interest in this Agreement other than the fee it is to receive under this Agreement. Contractor certifies that it will not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of the Services. Contractor certifies that it does not and will not employ or engage any person with a personal or financial interest in this Agreement.
- E. Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City, including real and personal property taxes. Further Contractor agrees that the City shall have the right to set off any such debt against compensation awarded for Services under this Agreement.
- F. Contractor warrants that its bid or proposal for services under this Agreement was made in good faith, that it arrived at the costs of its proposal independently, without consultation, communication, or agreement for the purpose of restricting competition as to any matter relating to such costs with any competitor for these services; and no attempt has been made or will be made by Contractor to induce any other person or entity to submit or not to submit a bid or proposal for the purpose of restricting competition.
- G. The person signing this Agreement on behalf of Contractor represents and warrants that they have express authority to sign this Agreement for Contractor and agrees to hold the City harmless for any costs or consequences of the absence of actual authority to sign.
- H. The obligations, representations, and warranties of this section 8 shall survive the expiration or termination of this Agreement.

## **9. OBLIGATIONS OF THE CITY**

- A. The City shall give Contractor access to City properties and project areas as required to perform the Services.
- B. The City shall notify Contractor of any defect in the Services of which the Contract Administrator has actual notice.

## **10. ASSIGNMENT**

- A. Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to

all warranties, certifications, indemnifications, promises, and performances required of Contractor under the Agreement unless specifically released from the requirement in writing by the City.

- B. Contractor shall retain the right to pledge payments due and payable under this Agreement to third parties.

## **11. TERMINATION OF AGREEMENT**

- A. If either party is in breach of this Agreement for a period of 15 days following receipt of notice from the non-breaching party with respect to the breach, the non-breaching party may pursue any remedies available against the breaching party under applicable law, including the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.
- B. The City may terminate this Agreement, on at least 30 days' advance notice, for any reason, including convenience, without incurring any penalty, expense, or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Contractor acknowledges that if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds through the City budget process. If funds are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within 30 days after the Contract Administrator has received notice of such non-appropriation.
- D. The expiration or termination of this Agreement shall not release either party from any obligation or liability to the other party that has accrued at the time of expiration or termination, including a payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

## **12. REMEDIES**

- A. This Agreement does not, and is not intended to, impair, divest, delegate, or contravene any constitutional, statutory, or other legal right, privilege, power, obligation, duty, or immunity of the parties.
- B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any other agreement between the parties, or otherwise.
- C. Absent a written waiver, no act, failure, or delay by a party to pursue or enforce any right or remedy under this Agreement shall constitute a waiver of that right with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this

Agreement. No waiver by either party shall subsequently affect the waiving party's right to require strict performance of this Agreement.

### **13. NOTICE**

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated below or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If notice is sent to Contractor:

THE REGENTS OF U OF M  
ATTN: Henry Liu  
3003 South State Street  
Ann Arbor, Michigan 48109-1274

If notice is sent to the City:

City of Ann Arbor  
ATTN: Suzann Flowers  
301 E. Huron St.  
Ann Arbor, Michigan 48104

With a copy to: The City of Ann Arbor  
ATTN: Office of the City Attorney  
301 East Huron Street, 3<sup>rd</sup> Floor  
Ann Arbor, Michigan 48104

### **14. CHOICE OF LAW AND FORUM**

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

### **15. OWNERSHIP OF DOCUMENTS**

Upon completion or termination of this Agreement, all Deliverables prepared by or obtained by Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities, and other data shall remain in the possession of Contractor as instruments of service unless specifically incorporated in a Deliverable, but shall be made

available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Services. Prior to completion of the Services the City shall have a recognized proprietary interest in the work product of Contractor.

## **16. CONFLICTS OF INTEREST OR REPRESENTATION**

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City and to obtain the City's consent therefor. The City's prospective consent to Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, Contractor has obtained sensitive, proprietary, or otherwise confidential information of a non-public nature that, if known to another client of Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

## **17. SEVERABILITY OF PROVISIONS**

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance is prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

## **18. EXTENT OF AGREEMENT**

This Agreement, together with all Exhibits constitutes the entire understanding between the City and Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements, or understandings, whether written or oral. Neither party has relied on any prior representations in entering into this Agreement. No terms or conditions of either party's invoice, purchase order, or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such terms or conditions. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended, or modified by written amendment signed by Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

## **19. ELECTRONIC TRANSACTION**

The parties agree that signatures on this Agreement may be delivered electronically or by facsimile in lieu of a physical signature and agree to treat electronic or facsimile signatures as



binding.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK, SIGNATURE PAGES FOLLOW]**

**THE REGENTS OF U OF M**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**CITY OF ANN ARBOR**

By: \_\_\_\_\_  
Name: Milton Dohoney Jr.  
Title: City Administrator  
Date: \_\_\_\_\_

**Approved as to substance:**

By: \_\_\_\_\_  
Name: Jordan Roberts  
Title: Public Services Area  
Administrator  
Date: \_\_\_\_\_

**Approved as to form:**

By: \_\_\_\_\_  
Name: Atleen Kaur  
Title: City Attorney  
Date: \_\_\_\_\_

*(Signatures continue on following page)*

**CITY OF ANN ARBOR**

By: \_\_\_\_\_

Name: Christopher Taylor

Title: Mayor

Date: \_\_\_\_\_

By: \_\_\_\_\_

Name: Jacqueline Beaudry

Title: City Clerk

Date: \_\_\_\_\_

## **ATTACHMENT A**

**PROJECT WORK PLAN** - Scope of work detailing the University of Michigan's responsibilities, key tasks, and timeline for integrating the UM Msight system with the City of Ann Arbor's infrastructure.

## Proposed Work Plan

The University of Michigan will be responsible for the successful execution of the project. Dr. Henry Liu, Director of Mcity, will lead the project. He will establish a core project team comprised of senior engineers, data analysts, and software engineers, as described in section A above. This project will integrate the UM Msight system into the City of Ann Arbor's fiber optic network, interface with any of the City's traffic cameras and analyze the images to identify crashes and near-misses. To that end, the project has been broken down into the tasks below. The high-level schedule is shown in Figure 1.

### Task 1 – Program Management

Debby Bezzina, PMP will lead the program management of the project and will employ generally accepted program management practices, such as those contained in the Program Management Book of Knowledge (PMBOK). Debby has developed reliable tools and methods to execute these practices. These tools were developed and used for the Road Departure Crash Warning (RDCW) Field Operational Test; the Integrated Vehicle Based Safety Systems (IVBSS) Field Operational Test, the SPMD; AACVTE, AACE, and continues to be used with the Smart Intersections Project. For each of these successful programs, lessons learned were gathered and integrated into the existing tools and methods improve their robustness for the next program. Ms. Bezzina will oversee adherence to PMBOK, resolve issues, and monitor and control the program.

During the project initiation phase, a kick-off meeting will be held with the City of Ann Arbor. Additionally, during this phase, a detailed program management plan as well as subsidiary plans for security implementation, stakeholder communications, and risk management will be delivered.

**Program Management Plan.** The project management plan will consolidate all of the subsidiary management plans and baselines from the planning process. It will contain the scope baseline (scope statement and work breakdown structure), schedule baseline (master schedule), and cost performance baseline (budget).

**Security Implementation Plan.** The security implementation plan will document the protocols and processes that have been developed from the Smart Intersections Project and will fully comply with all City of Ann Arbor security protocols. The plan will describe:

- Data encryption and other security measures
- Safeguards against unauthorized access such as firewalls and VPNs
- Vulnerability and Intrusion detection tools, testing, and auditing to identify and mitigate security risks per Security Technical Implementation Guide developed by WSP for previous City integration projects
- Compliance with ISO/IEC 27001 standards

**Stakeholder Communications Plan.** Communications planning will be conducted during the development of the program management plan. Inputs for the plan include the stakeholder register and the stakeholder management strategy, which will be co-developed with the City of Ann Arbor.

**Risk Management Plan.** The main element of the risk management plan is the risk register. The team will initially identify the risks using brainstorming techniques, document review (device specifications, timing plans, etc.), expert judgment, and incorporating lessons learned from the team's knowledge base. The output will be the risk register. For each risk, a response plan will be identified to develop options and actions to enhance opportunities and to reduce threats to the project objectives. A risk response owner shall be identified to take responsibility for each agreed to and funded risk response. Planned risk responses will be incorporated by inserting resources and activities into the budget, schedule, and project management plan as needed. As the program progresses, the risks will be monitored and controlled by implementing the risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness.

The monthly progress report will contain an updated risk register as appropriate. The monthly report will also indicate:

- Anticipated challenges, captured in changes to the risk register, including re-evaluation of impact or probabilities and/or updated risk mitigation plans.
- Any risks that have been triggered and consequent corrective actions executed.
- Any risks that may trigger in the very near future.
- Summary of the remaining work

Milestones:

- Kick-off Meeting

Deliverables

- Project management plan
- Monthly progress reports
- Meeting minutes

## Task 2 - System Design

The system design will scale UM's Msight perception system developed for and deployed in the Smart Intersections Project (SIP), where the City of Ann Arbor is a partner. The Msight system takes an algorithmic approach that:

- Leverages the Michigan Traffic Lab (MTL) team's cutting-edge machine learning and computer vision algorithms
- Deploys Msight near-miss detection framework to:
  - Analyze existing GridSmart camera video streams without hardware modifications
  - Identify potential conflict scenarios using advanced trajectory analysis
  - Provide granular classification of near-miss events and potential safety risks
- Its proven data processing architecture is designed to be scalable and:
  - Utilizes a cloud-based data platform that can ingest and process video streams
  - Ensures compatibility with existing City infrastructure and communication networks
  - Implements a robust network security, and data privacy and security protocols

**UM will provide all software, unlimited user licenses, and subscriptions free of charge to the City.** Furthermore, the Mcity team has developed a user interface (UI), as shown in Figure 3 Monitor Page and Figure 4 Report Page and described in section D. The UI shows the locations of crashes and near misses. Furthermore, the UI provides users with tools to monitor intersections, configure conflict detection algorithms, and perform advanced queries. Users can query conflicts based on specific time periods, days of the week, times of day, intersections or mid-block locations, and apply filters for conflict type, vehicle type, lane, severity, and movement. Additionally, users can view detailed trajectories and conflict-related videos. The dashboard also allows users to generate comprehensive reports in PDF format. These reports include conflict data presented in tabular format, summary information, conflict images, heatmaps, and other relevant details, ensuring a clear and actionable presentation of the data. The team will work with the City to update the user interface if necessary to maximize value.

Lastly, although the basic system design and user interface has been completed, the project team will incorporate any design changes stemming from Task 3 – System Installation and Integration as warranted.

Deliverables:

- User interface screen shots (within 4 weeks of project selection) for City review, feedback, and approval
- Finalized user interface

### Task 3 - System Installation and Integration

Under this task, the team will finalize the integration strategy. It will be built from the existing SIP integration model. To finalize the plan, the team will conduct a comprehensive assessment of existing City traffic camera infrastructure. The team will rely on WSP's expertise and experience integrating and deploying the Msight system on the City of Ann Arbor network, including adherence to all safety protocols. A system architecture diagram will be created and reviewed with the City. This task will also entail the procurement of the servers that will be deployed on the City's network. The server will be integrated and tested.

A minimal disruption approach will be followed:

- Zero new hardware installation at intersections
- Staged deployment at Mcity, then Wheeler simulation lab prior to deployment in Ann Arbor
- Minimal operational impact during implementation

Deliverables

- Proposed hardware (server/networking) for City Approval
- System architecture diagram of proposed solution (within 4 weeks of project selection) for City Approval
- Site specific system integration plan. The draft System Architecture and System Integration Plan is included in Appendix B.
  - System architecture diagrams
  - Integration Strategy

## Task 4 - Testing and Verification

The team has developed a preliminary comprehensive system acceptance testing (SAT) plan and procedures (Appendix D). The SAT test plan covers testing to be performed at Mcity and on the City's fiber optic network. The testing will be carried out in several phases. These include the LDAT (Local Device Acceptance Testing), the ST (Software Testing), the SST (Subsystem Testing), the FST (Final System Testing) and on-going testing to be carried out throughout the life of the deployment. This comprehensive testing will cover hardware (the central server) and software running on the central server and in the cloud. Testing will also cover all interoperation of the Msight software and all the traffic cameras (of varying types) and traffic controllers already deployed in the City. The SAT test plan is written to ensure that all requirements laid out in the RFP are met. A failure log will be used to document the tests that fail and the proposed resolution and timeframe for retesting. The failure log template is included in the SAT and the failure log will be included in the SAT test report.

During this period, UM will work with the City to develop and document all urgent maintenance criteria.

Upon successful system testing and acceptance, a 30 day system burn-in period will be initiated. Personnel assigned by the City shall monitor and operate the system according to normal operating conditions. Any deficiencies identified shall be reported to UM and corrected by UM. The City may restart the burn-in period at its discretion in the event that a deficiency arises that disrupts service such that continued operations are hindered. The City will notify UM in writing that the system has completed the burn-in period.

At the completion of the burn-in testing, a summary report will be generated and delivered.

### Milestones:

- SAT Plan acceptance
- System acceptance
- Issue Tracking and Resolution system set up

### Deliverables:

- System Acceptance Testing Plan (submitted six weeks prior to testing)
- LDAT (Local Device Acceptance Test) for server hardware
- Software Test (ST Test) Report
- Subsystem Test (SST Test) Report
- System Acceptance Test (SAT) Report
- Final Acceptance forms
- Urgent maintenance criteria
- Summary Report

## Task 5 - Training and Knowledge Transfer

In this task, the team will develop all training materials for use in a half-day course for the City personnel and their designated consultant. Any handouts for the course will be delivered a minimum of 30 days prior to the scheduled training. All demonstration equipment and training



aids will be provided. A draft Training Plan Document is shown in Appendix C and a draft User Manual is shown in Appendix E.

Milestones:

- Conduct training session

Deliverables:

- Training plan (two weeks before training session held)
- Training materials
- System Operating and Instruction Manuals (hard copy and electronic)

### Task 6 - Reporting and Data Insights

As part of the monthly progress report, UM will include insights from the data analysis of crashes and near misses identified from the system.

### Task 7 – System Operations and Maintenance

UM will provide regular maintenance and provide access to the technical support team, which will be available between 9 a.m. and 5 p.m. EST/EDT (as appropriate). Additionally, UM will provide the City written notice of any pending software releases, patches, or planned maintenance activities, along with the related documentation describing the new functions or features added to the software, software bugs addressed, security issues resolved, or other relevant attributes of the new release. The written notice will also include a schedule such that the City has adequate time to prepare for any potential downtime.

For urgent maintenance requests, UM agrees to acknowledge and respond to written requests within 24 hours. UM will provide the City with a timeline to conduct a root cause analysis and implement any corrective action(s) identified, which may include re-testing.

UM has developed a preliminary escalation process that will be reviewed and finalized with the City upon award. The plan is in alignment with the timelines set forth in the RFP:

- For critical issues—those that disrupt essential system functionality or safety operations—the offeror must acknowledge the issue within 1 hour and provide a resolution plan within 4 hours. The issue must be resolved within 24 hours, or a temporary workaround must be provided.
- For major issues, the offeror must acknowledge within 2 hours and provide a resolution plan within 8 hours, with the issue being fully resolved within 48 hours.
- Minor issues must be addressed within 1 business day, with a resolution plan provided within 5 business days.

Sean Shen will be the main point of contact for all system malfunctions and critical issues that may arise during both training and ongoing support. He will coordinate with the UM team to resolve issues quickly and completely. A UM “call tree” escalation system will be set up via project email so UM management team is always aware of user reported issues and can respond if Sean is otherwise unavailable (e.g. out of office).

Level 1: These minor issues will be reported during the regularly scheduled progress meetings and documented in the monthly progress report.

Level 2: Sean Shen will be responsible for escalating all major issues to the City Project Manager and Dr. Henry Liu for major issues. Status updates will be provided daily, and final resolution will be documented in the monthly progress reports.

Level 3: Sean Shen will inform Dr. Henry Liu and will jointly escalate the issue to the City’s designated executive for all critical issues. A “war room” will be established at Wheeler utilizing existing dedicated space (used for SIP). The City will have access to real-time updates. Final resolution will be documented in the monthly progress reports.

Deliverables:

- Root Cause analysis report for each issue

### Project Schedule

The high-level project schedule is shown in Figure 1 below. A full master schedule will be delivered with the project management plan in task 1. The proposing team estimates six months to complete all tasks up to the 30 day burn-in. Once burn-in is successfully completed, maintenance and support and reporting of data insights will begin. The total project period of performance is 24 months.

ID	Task Name	Start	Finish	2025			2026				2027
				Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	Task 1 – Program Management	4/1/2025	3/31/2027								
2	Task 2 – System Design	4/1/2025	4/30/2025								
3	Task 3 – System Installation and Integration	4/1/2025	7/1/2025								
4	Task 4 – System Testing and Verification	5/1/2025	10/1/2025								
5	30 Day Burn-In	10/1/2025	11/3/2025								
6	Task 5 – Training and Knowledge Transer	7/1/2025	10/1/2025								
7	Task 6 – Reporting and Data Insights	11/3/2025	3/1/2027								
8	Task 7 – System Operations and Maintenance	11/3/2025	3/1/2027								

Figure 1: High-Level Project Schedule

## Technical Capabilities of the System

### System Requirements Matrix

The proposed Msight system will meet the requirements outlined in the System Requirements Matrix. Below is a high-level description of how the Msight meets those requirements.

Responses to all requirements in the matrix for the Msight system is shown in Table 2 (pp 21-30).

#### *a) System Operation Requirements*

Our system offers an integrated approach to processing and analyzing traffic video feeds for object tracking, near-miss detection, and event analysis, tailored to meet the needs of the City of Ann Arbor. Leveraging compatibility with existing traffic cameras (IP-based PTZ cameras and GridSmart camera), the platform processes video data efficiently while ensuring secure transmission and compliance with data protection standards. With advanced multi-object tracking and near-miss detection algorithms, the system identifies, classifies, and logs near-miss and crash events in real time or near-real-time. The system's flexibility extends to custom configurations, adaptive learning through AI/ML, and scalable solutions for various traffic scenarios. Designed for intuitive use, it empowers City personnel with robust tools for monitoring, analysis, and data-driven decision-making to improve road safety.

#### *b) Reporting Requirements*

The system's database is designed to efficiently meet all querying requirements outlined in the RFP, ensuring rapid and accurate data retrieval. Coupled with a secure, cloud-based solution, the system supports comprehensive reporting capabilities, including advanced filtering, customizable queries, and multi-format data exports. This robust architecture guarantees full compliance with the RFP while providing scalability and flexibility for future needs.

#### *c) Hardware Requirements*

The hardware components of the system are meticulously selected and designed to strictly comply with the City's restrictions while fully satisfying the specified requirements. Every piece of hardware is chosen to ensure seamless integration with existing infrastructure without introducing additional burdens on the City's network. This careful selection guarantees that the system operates efficiently, adheres to all security and operational guidelines, and aligns with the City's objectives for scalability and compliance.

#### *d) Processing Requirements*

The system fully satisfies all processing requirements outlined in the RFP. It is capable of real-time video- analytics, supports high-definition video processing, handles various video formats, and includes advanced features like event duplication suppression and intent prediction.

*e) Data Management Requirements*

The proposed system is designed to meet the data management requirements outlined in Attachment B of the RFP, ensuring secure, efficient, and reliable handling of all data. All data, including metadata and detailed conflict information, will be stored in a cloud-based infrastructure compliant with the City's requirements. AWS S3 will be used for secure storage of detailed data, while a robust database will maintain metadata to support user queries and analysis. All information stored on AWS S3 is encrypted using Amazon S3's server-side encryption (SSE). The system supports SSE-S3, which automatically encrypts data at rest using AES-256, a widely recognized secure encryption standard. The system ensures no data, including video or conflict information, is stored on the City's network or devices, adhering strictly to data privacy and security protocols. The system adheres to ISO/IEC 27001 standards, with bi-annual vulnerability testing to maintain compliance and security.

*f) Security Requirements*

The team will employ a comprehensive security plan that addresses critical aspects of integrating the Near Miss Video Analytics System with the City's existing IT and traffic management infrastructure. This will cover cybersecurity governance, led by WSP, and include a comprehensive risk assessment and mitigation strategy, leveraging learnings from the previous Smart Intersections Project. WSP and the team will implement a formal information security management system aligned with the MITRE STIG (Security Technical Implementation Guide) protocols and conduct regular vulnerability assessments and penetration testing.

The UM/WSP team will also address data protection and privacy, acknowledging that it is critical to implement end-to-end encryption for all video stream transmissions, as well as develop data anonymization protocols if required. We note that in our current work with GridSmart cameras, the fish-eye distortion and pixel resolution of road users personally identifiable information (PII) was not discernable in raw video images from the bird-eye vantage point as they are deployed in the City of Ann Arbor. For other types of cameras, PII will be blurred or represented using BEV (Bird's Eye View). Per the RFP, no video data will be stored on Ann Arbor on-premises servers. The system will retain only anonymized, aggregated safety insights.

Network security will be adhered to in alignment with the current Smart Intersection Project STIG and security posture implementation jointly developed by WSP and the City of Ann Arbor. This covers the tools and multi-layer firewall configurations necessary to segregate the project traffic from critical City systems; granular role-based access control, and the Principle of Least Privilege for user permissions. In addition, access monitoring and real time intrusion detection will be implemented per the STIG plan. System Hardening and vulnerability management will be implemented via automated vulnerability scanning, regular security patch management, and continuous integration of security updates. Finally, endpoint protection will be implemented using hardened system configurations and regular security configuration audits with City of Ann Arbor IT oversight.

The University of Michigan and Msight team can deliver a unique security value proposition, offering a proactive strategy that protects the City's infrastructure, ensures data privacy, and maintains the integrity of the Near-Miss Video Analytics System. Key differentiators include a comprehensive, multi-layered approach, commitment to privacy and data protection, adaptive and forward-looking security framework, and transparent and collaborative security governance.

*g) Installation and Integration Requirements*

The proposing team will take full responsibility for the central server installation, configuration, testing and maintenance of the proposed near-miss video analytics system. Additionally, a comprehensive user manual<sup>4</sup> will be provided to ensure transparency and ease of use for the City personnel.

The central server will undergo rigorous testing at Mcity using the test environment established in previous projects. The UM team will collaborate with WSP to install additional servers, coordinating closely with the City of Ann Arbor's IT team to ensure optimal functionality upon deployment. These servers will be preconfigured with detailed configuration files containing system, network, and camera information designated by the City for integration. City operators will retain the flexibility to modify the central servers' behavior by updating the configuration file, guided by the comprehensive documentation we provide. Additionally, the detection algorithm will be fine-tuned during deployment to maximize accuracy and performance.

To ensure transparency and maintain control, the City will be granted root privileges on the servers. This will allow City personnel to directly access logs, configurations, and system files or request our assistance if needed. This collaborative approach ensures that the system is not only secure and efficient but also user-friendly for City personnel.

*h) Testing and Verification Requirements*

The System Acceptance Testing (SAT) plan describes these testing phases in greater detail.

The System Acceptance Test (SAT) plan describes the various testing phases throughout the deployment of the Msight system. This plan includes the Local Device Acceptance Testing (LDAT), the Software Testing (ST), the Subsystem Testing (SST), and the Final System Testing (FST) prescribed in the RFP. It also includes a section called POST. This section describes the ongoing testing necessary for the system to maintain a proper security posture. Each of these sections have test cases with robust instructions and clear pass/fail conditions.

The LDAT section of the SAT describes the off-site testing to be performed on the central server(s) prior to installation into the City's network. During this testing phase the central server(s) will be deployed at Mcity and connected to various cloud applications that simulate

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<sup>4</sup> Reference draft User Manual in Appendix E

the many video/traffic signal controller streams that the central servers will encounter while deployed at the City's network.

The ST section of the SAT allows for the isolation of the software components so that they may be tested before they are plugged together for system-level testing. Testing in isolation allows for a narrower focus and reduces debugging time. This is a common best practice in software development. This testing will provide the opportunity to test the Msight web application (the user interface) using mocked data to ensure that the user interface will meet all the necessary requirements.

The SST section of the SAT allows for the isolation of components of the system that live in the cloud. There are two prominent components of the system that live in the cloud: the object detection component, and the near miss detection component. This testing will be complete when these components demonstrate the ability to fulfill the key features of the Msight system.

The FST section of the SAT describes the last step in the SAT before acceptance and the Burn-in stage. This phase serves as the basis for system acceptance. Therefore, the bulk of the testing is in this phase. The FST shall be performed at the at City following completion of the following phases: SAT, LDAT, ST and the SST. The FST will be successful when the proposing team can verify that the system meets requirements while deployed in the City's network.

Once the FST phase has been completed, the City has accepted the Msight system, and the training has been delivered, the POST testing phase can begin. The POST testing phase includes the 30-Day Burn-in period and the on-going testing. The on-going testing includes audits of configurations, scans and logs to maintain the health and security of the central servers and the cloud (application and data).

More details for all the testing phases are provided in the SAT plan included in Appendix D.

*i) Compliance Requirements*

The proposed system fully complies with the requirements of the specified regulatory agencies, including adherence to the IEEE 802.X standards for networking and communication protocols and the National Transportation Communications for ITS Protocol (NTCIP) for integration with intelligent transportation systems.

*j) Training Requirements*

The proposing team will provide comprehensive end-user training to ensure effective operation and maintenance of the system. All training materials, including, user manual, and handouts, will be delivered to the City at least 30 days prior to the training sessions. These materials will detail the scope, content, and duration of the training to ensure clarity and preparedness.

The training will be conducted over a half day. To facilitate hands-on learning, demonstration equipment and necessary training aids will be supplied by the proposing team. Upon

completion, all course materials will remain the property of the City to support future reference and internal training initiatives.

User manual: The proposing team will provide a comprehensive user manual alongside the delivery of the system. This manual will be in an electronic format and will serve as a detailed reference for system operation and maintenance, ensuring end-users have access to all necessary information for effective system use. The draft User Manual is included in Appendix E.

*k) Maintenance Requirements*

The system will support both remote and local configuration, with remote access via secure SSH over a VPN designated by the City's IT, and local access managed by system integrators in coordination with WSP and the City's IT team. Designed for 99% uptime, the system ensures reliable performance and supports seamless updates using CI/CD tools like GitHub Actions. It includes AI and ML models to enhance accuracy over time and a self-checking mechanism for real-time health monitoring via a web-based interface. Maintenance will include 24 months of patch management, security updates, and OS support. Sean Shen will coordinate issue resolution with the UM technical team, WSP, and City IT, ensuring a 24-hour response time to support requests. A preliminary escalation plan aligned with RFP timelines will be finalized upon award.

*l) Submittal Requirements*

Please see the Appendices for the draft documents:

- Appendix B- System Architecture and System Integration Plan
- Appendix C – Training Plan Document
- Appendix D – System Acceptance Testing (SAT) Plan
- Appendix E – User Manual

Table 2: Msight System Requirements Matrix

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments	
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future		Not Available
<b>System Operation Requirements</b>								
A1	The system must be capable of receiving data from existing camera feeds or recorded video footage from any IP-based or analog CCTV cameras and managing the video data securely.	X		X				Our system securely ingests video data from existing traffic camera feeds, including IP-based PTZ and GridSmart cameras, without requiring new hardware installations. Video streams are processed in real-time or near-real-time through our system that supports various transmission protocols, including RTSP protocol (previously validated in our SIP project with GridSmart cameras). All video data is encrypted during transmission within our system and adheres to stringent data security protocols.
A2	The system shall provide classification of near-miss traffic events and crashes by the following types: - Vehicle-to-pedestrian - Vehicle-to-scooter - Vehicle-to-bicycle - Vehicle-to-vehicle - Single vehicle		X		X			The system classifies near-miss and crash events into the specified categories, including vehicle-to-pedestrian, vehicle-to-scooter, vehicle-to-bicycle, vehicle-to-vehicle, and single-vehicle events. These classifications are powered by robust roadside perception and comprehensive near-miss detection algorithms. The system is validated at the intersections in Ann Arbor, with sample near-miss events from Main & Stadium intersection illustrated in Section C, system design, Core Algorithms and Methodology.
A3	The system shall provide tracking of the following objects via multi-object tracking: -Vehicles -Bicyclists -Pedestrians -Scooter		X		X			Our multi-object tracking module identifies and tracks vehicles, bicyclists, pedestrians, and scooters within the video feeds. Leveraging state-of-the-art tracking algorithms, the system ensures consistent object tracking, precise localization and accurate identification, even in scenarios with dense traffic or less ideal weather conditions (e.g., snow).
A4	The system shall record details pertaining to each near-miss event including: -Date and time -Object speed -Object trajectory -Post encroachment time (PET) -Time to collision (TTC) -Gap time -Road user classification -Conflict type		X		X			The system logs comprehensive details for every detected near-miss event. Event timestamps are synchronized with the NTP server that is installed through SIP, and object speed and trajectory are computed by our object tracker and state estimator, which first associates detected road users across frames with road user IDs and then estimates their speed based on displacement. Post-encroachment time (PET) is derived by dividing the intersection area into grids, identifying the occupancy time of each grid by road users, and calculating PET from trajectory data. Time-to-collision (TTC) is computed by determining trajectory intersections and calculating time-to-intersect under the assumption of constant speed. "Gap time" is the time interval between two users at their closest point, computed by applying the similar method of computing TTC. Road user classification utilizes a fine-grained VRU classification module developed for the USDOT Intersection Safety Challenge, featuring a customized high-resolution network for VRU feature extraction. For conflict types, please refer to A2. These logs are accessible via the user interface and can be exported for analysis. The interface also provides near-miss replays, including raw video playback, conflict trajectories, scenario reconstruction videos, and TTC analysis images.



Requirement ID	Requirement Description	Type		Delivery			Offeror Comments	
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future		Not Available
A5	The system shall identify various contributing factors, if applicable, for each near-miss event or crash logged, including, but not limited to: -Vehicle speed -Traffic control violations -Pedestrian, bike, and scooter violations (i.e. illegal crossing) -Lane compliance violations -Turning movement violations -Hard braking -Lighting conditions	X		X				The system identifies key contributing factors for each near-miss event, providing detailed insights to empower City planners in pinpointing root causes and implementing targeted interventions. For vehicle speeding, the system compares the detected vehicle speed against the posted speed limit. Traffic control violations are flagged when a vehicle is detected moving through an intersection while the traffic signal for its lane is red. Pedestrian and cyclist behavior violations are identified by checking if road users are outside designated pedestrian crosswalks or cycling lanes. Lane compliance is monitored by analyzing lane changes and verifying adherence to solid lane markings. Turning movement errors are detected by locating the vehicle's lane information and comparing its trajectory to established lane rules. Bad lighting conditions are assessed by fusing data from real-time weather information with image brightness levels, ensuring accurate identification under varied conditions.
A6	The system shall provide real-time detection of near-miss events and crashes within 200 milliseconds (ms).		X			X		Currently, the system processes near-miss events in near-real-time. However, achieving a processing latency of under 200 milliseconds—measured from the arrival of sensor image data at the central server to the detection of a near-miss event—is planned as a future enhancement. Our development roadmap includes integrating optimized inference pipelines and hardware acceleration to meet this requirement. Once implemented, the system will provide real-time detection capabilities, ensuring immediate identification of potential hazards.
A7	The system shall support the creation of at least 30 object detection templates.		X	X				We employ a deep learning-based object detection and tracking algorithm capable of continuously detecting and tracking objects across the entire sensor field of view. This advanced capability eliminates the need for the "30 templates" requirement, as conflicts can be detected in all areas and across all parameter sets. Nevertheless, the frontend system will remain flexible and allow users to define and utilize up to 30 templates such as expected area of interest, based on their specific requirements.
A8	The system shall provide a severity configuration for near-miss events that is configurable to user preferences.	X		X				Users can define and configure severity levels for near-miss events based on their preferences or specific use cases. Level of severity configurations and a severity filter are available for real-time monitoring and offline customizable queries of reporting page. The system supports a range of severity thresholds to accommodate diverse operational needs and reporting requirements. The severity score is a comprehensive score derived by safety metrics, user classification, and speed difference.

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments	
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future		Not Available
A9	The system shall provide a general-user-interface (GUI) for a desktop computer that supports the monitoring of near-miss traffic events and software configuration.	X		X				The web-based GUI consists of two main pages: a monitoring page and a reporting page. The monitoring page enables fully customizable real-time monitoring based on user preferences and needs. Meanwhile, the reporting page supports offline queries using various criteria to deliver insightful analytics. The interface is designed for intuitive navigation, ensuring ease of use for City staff and their designated partners, even without extensive technical expertise.
A10	The system shall provide access to a GUI for a minimum of two simultaneous users.	X		X				The system provides simultaneous access for at least two users, ensuring that multiple stakeholders can monitor and analyze events concurrently. This capability supports collaborative traffic management efforts.
A11	The system shall have the capability to record video and shall not store any recorded video on City of Ann Arbor networks or property.	X		X				The system records detailed metadata and near-miss event information. The data is stored in a private AWS S3 cloud service owned by Mcity with compliance of ISO/IEC 27001, not on the City's networks or devices. Video streams are processed in real-time, and any non-conflict data is discarded to reduce the storage overhead and maintain privacy. This design guarantees that no video or conflict information is retained locally, while the cloud infrastructure allows users to query and analyze near-miss data with efficiency and flexibility.
A12	The system shall have the capability to continuously learn and improve accuracy over time via artificial intelligence, machine learning, or other means.		X	X				Through integrated artificial intelligence and machine learning models, the system continuously improves its accuracy over time. By analyzing historical data and refining algorithms, the solution adapts to evolving traffic patterns and environmental conditions. In the system GUI, there is a case-review page that allows users to annotate the correctness of the detected near-misses. Our algorithm can collect the user feedback on the detection results, find the pattern of the false detection samples, and re-train the detector model to continuously improve the performance.
A13	The system shall have the capability to configure the software to review video feeds of an intersection, mid-block pedestrian crossing, or other road segment.	X		X				The system offers flexible review capabilities, allowing users to review and analyze video feeds from intersections, mid-block pedestrian crossings, roundabout, or other road segments. This functionality supports the City's diverse traffic management needs and enables targeted safety analyses for specific locations.

Requirement ID	Requirement Description	I type		Delivery			Offeror Comments
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future Enhancements	
<b>Reporting Requirements</b>							
B1	The system shall provide a means of exporting near-miss data into a tabular report that includes summary information, still image or short video, heatmaps, and other visuals that provide insight to near-miss traffic events.			X			The system will generate comprehensive reports that include a tabular presentation of near-miss details, summary information, and visualizations of the events.
B2	The system shall provide reports filterable by user-defined date ranges, day of the week, or time of day and allow users to compare different date ranges, days, or timeframes.	X		X			The system includes robust reporting capabilities that allow users to filter reports based on user-defined date ranges, specific days of the week, or times of day. It also supports the comparison of data across different date ranges, days, or timeframes, enabling users to conduct in-depth analyses and identify patterns or trends over time.
B3	The system shall be capable of filtering reports by vehicle class or VRUs, by lane, by severity, and by movement.	X		X			The system is equipped with advanced filtering capabilities, allowing users to filter reports by vehicle class, vulnerable road users (VRUs), lane, severity, and movement. These filters enable precise data analysis tailored to specific use cases and scenarios.
B4	The system shall provide the ability to export data and reports in common file formats. File format must include .pdf, .csv., .xlsx, and .txt.	X		X			The system provides the capability to export data and reports in commonly used file formats, including .pdf, .csv, .xlsx, and .txt, ensuring compatibility with a wide range of tools and workflows.
B5	The system must be capable of distributing configurable push notifications and alerts for events via email, SMS, or a custom API within five minutes of the detected event.			X	X		The system contains a cloud portion where the Amazon Simple Notification Service (SNS) is integrated. Critical events such as sensor offline and crashes will be sent to the SNS service, which will send push notifications and alerts via email, SMS, or a custom API within five minutes of the event.
B6	Any output from the system shall blur out personal identification information within the video.	X		X			The fish-eye distortion and pixel resolution of road users personally identifiable information (PII) is not discernable in raw video images from the bird-eye vantage point. For other types of cameras, PII will be blurred or represented using BEV (Bird's Eye View).
<b>Hardware Requirements</b>							
C1	The system must make use of and be compatible with off-the-shelf hardware including servers, cameras, and traffic signal controllers.	X		X			The system is built with standard technology stack and protocols, ensuring seamless compatibility with a wide range of off-the-shelf hardware, including servers, cameras, V2X devices and traffic signal controllers. This design approach eliminates the need for specialized equipment, streamlining integration and deployment while maintaining flexibility for future upgrades or additions.
C2	The system shall make use of the following architecture: - The solution must not require the installation of any additional hardware at individual intersections for data collection, processing, or storage. - The vendor may install a server within the City's existing server infrastructure for centralized processing. However, video recording or storage of any kind is not permitted on this central server. - A cloud-based solution for video processing is acceptable. All video must be streamed directly to the cloud, where processing occurs, with no on-premises or central server storage of video or video recordings.	X		X			The proposed system fully adheres to the specified architectural requirements. Specifically, it does not require the installation of additional hardware at individual intersections for data collection, processing, or storage. Centralized processing server will be installed within City's existing infrastructure. The server strictly avoids video recording or storage on local or central servers. The near-miss detection algorithm primarily operates as a cloud-based solution, streaming video directly to the cloud for processing without retaining any data on-premises. For further details, please refer to Section D System Design.
C3	The system shall support the addition of new camera deployments.	X		X			The system can be easily extended and added new camera deployment. More details can be found in the user manual (Appendix E).

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments	
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future		Not Available
<b>C4</b>	The system shall be able to integrate with traffic signal controllers using Network (SNMP, HTTP) communication and shall support common traffic signal controller protocols such as NTCIP 1202 and AB3418.	X		X				The system is fully compatible with existing traffic controllers.
<b>Processing Requirements</b>								
<b>D1</b>	The system shall be capable of suppressing duplicate events from multiple cameras.	X		X				The system effectively suppresses duplicate events detected by different sensors at the same intersection using a non-maximum suppression algorithm. This ensures that only the most accurate and reliable event data is retained, reducing redundancy and enhancing data quality.
<b>D2</b>	The system must be capable of predicting movement and intent that could lead to dangerous situations involving road users.	X		X				The system includes a prediction module that accurately forecasts the movement of road objects. For more details, please refer to Section D System Design.
<b>D3</b>	The system must be capable of processing high-definition video ranging from 720p to 4K resolution.	X		X				The system supports a wide range of resolutions and optimizes bandwidth usage by converting all images larger than 720p to 720p for further processing. This ensures efficient operation without compromising performance.
<b>D4</b>	The system must be capable of analyzing various video formats including .mp4, H.264, and H.265.	X		X				The system supports H.264 and H.265 codec, along with multiple other video formats, such as a local MP4 file, ensuring compatibility with various video sources.
<b>D5</b>	The system must be capable of analyzing video from various lens types, such as, 360 degree, fish-eye, etc.	X		X				The system supports all common lens types, including fisheye, 360-degree, wide-angle, and standard lenses.
<b>Data Management Requirements</b>								
<b>E1</b> <b>E2</b>	The system must be capable of connecting and integrating into the City of Ann Arbor's ITS network.	X X		X				The software system is built on a generic internet common stack, ensuring compatibility and seamless integration with standard network architectures and firewalls. This design enables the system to connect reliably to the City's fiber optic network without requiring modifications or significant custom configurations. In previous projects, we have successfully demonstrated the integration of our central servers with the City's existing ITS network and infrastructure, showcasing the system's adaptability and compatibility in real-world environments.
	Data must be stored on the Offeror's offsite cloud-based system in the US and not on the City of Ann Arbor's network.			X				The critical data of the application – the identified near-miss and sample of video data for training and testing propose – are stored in the AWS S3 bucket. Only the near-miss data is retained; all other video data is discarded if no conflict is detected after 6 months of collection. No data will be stored on any other systems, particularly within the City's network or devices.

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future	
<b>Security Requirements</b>							
F1	Data on the cloud-based server shall be encrypted at all times.	X	X				AWS will be used for data storage. The AWS tools will be used to create and encrypt data and metadata using industry standard AES-256 encryption algorithm and will be documented in the security plan.  The proposing team will adhere to all security measures identified through SIP and will be documented in the security plan.  The routine testing and auditing procedures will be documented in the security plan.  The system will comply with ISO/IEC 27001 standards, which will be documented in the security plan.
F2		X					
F3	The cloud-based server shall make use of firewalls, VPNs, and other security configurations to prevent unauthorized access.	X		X			
F4	The server shall undergo routine testing and auditing bi-annually for vulnerabilities to identify and mitigate security risks.	X		X			
	The system shall be in compliance with ISO/IEC 27001 standards.	X		X			
<b>Installation and Integration Requirements</b>							
G1	The offeror shall provide all labor, materials, equipment and any incidentals required to furnish, install, configure, and test the system.	X	X				<p>The proposing team will take full responsibility for the central server installation, configuration, testing and maintenance of the proposed near-miss video analytics system. Additionally, a comprehensive user manual will be provided to ensure transparency and ease of use for the City personnel.</p> <p>The central server will undergo rigorous testing at Mcity using the test environment established in previous projects. The UM team will collaborate with WSP to install additional servers, coordinating closely with the City of Ann Arbor's IT team to ensure optimal functionality upon deployment. These servers will be preconfigured with detailed configuration files containing system, network, and camera information designated by the City for integration. City operators will retain the flexibility to modify the central servers' behavior by updating the configuration file, guided by the comprehensive documentation we provide.</p> <p>Additionally, the detection algorithm will be fine-tuned during deployment to maximize accuracy and performance.</p> <p>To ensure transparency and maintain control, the City will be granted root privileges on the servers. This will allow City personnel to directly access logs, configurations, and system files or request our assistance if needed. This collaborative approach ensures that the system is not only secure and efficient but also user-friendly for City personnel.</p>

Requirement ID	Requirement Description	I type		Delivery			Offeror Comments
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future	
<b>Testing and Verification Requirements</b>							
H1	The offeror shall provide a system acceptance test (SAT) plan for approval prior to conducting testing to ensure the system is complete and ready for service. The test plan shall consist of the following: -individual test cases with clear passing criteria for all project components, software, cloud infrastructure and/or centralized server, and systems -local device, software, subsystem, and system testing for all components, software, cloud infrastructure and/or centralized server, and systems integrated through this project	X		X			The proposing team has created a System Acceptance Testing (SAT) plan and included it in this document as an Appendix D. The proposing team will work with the City to iterate the testing plan until it is satisfactory to the City. The plan includes details about the various phases of testing: The Local Device Acceptance Testing (LDAT) phase, the Software Testing (ST) phase, the Subsystem Testing (SST) phase, the Final System Testing (FST) phase, and the on-going testing necessary for maintaining the health of the system. Test cases for each of the testing phases have been included and each have clear objectives and pass/fail conditions.
H2	Failures during testing must be included in a report that documents the defect or setting and the corrective action taken. Minor failures may be addressed and retested at the City's discretion. Major failures, which would require additional work may cause a temporary pause to testing until the issue has been resolved. No extension of time or additional payments will be given or made due to delays caused by failed acceptance testing.	X					
H3	The SAT forms as well as any supplemental documentation completed during the testing are to be delivered to the City upon system acceptance. The forms must be signed by the City.	X					
H4	The offeror shall conduct stand-alone tests of and local hardware device (e.g., centralized server) and associated components installed as part of the System, if applicable. The local device acceptance test (LDAT) must, at a minimum, exercise all functional requirements of the server equipment and any associated components.	X		X			The System Acceptance Testing (SAT) plan (included in Appendix D) describes the Local Device Acceptance Testing phase in detail. In summary, the LDAT plan will be executed at Mcity to ensure that the central server has the capabilities it needs to operate properly on the City's network.
H5		X					
H6		X					
H7	The offeror shall conduct stand-alone tests of the software and associated components installed as part of the System. The software test (ST) must, at a minimum, exercise all functional requirements of the software and any associated components.	X		X			The System Acceptance Testing (SAT) plan (included in Appendix D) describes the Software Testing (ST) phase in detail. This testing phase involves mocking video and traffic signal controller feeds in the cloud and feeding them into the software running on the central server to ensure that the local software is running properly.
	The offeror shall conduct a subsystem test (SST) to verify that the cloud server is functioning correctly.	X					The System Acceptance Testing (SAT) plan (included in Appendix D) describes the Subsystem Testing (SST) phase in detail. This testing phase involves deploying the main near-miss detection components in the cloud and testing that those components (in isolation) perform appropriately.
	Final system testing (FST) is the last step in the SAT and serves as the basis for system acceptance. The FST shall be performed at the at City following completion of the SST to verify that the City can access the cloud-based software. After the successful completion of the FST, the burn-in period shall begin for the software.	X					The System Acceptance Testing (SAT) plan (included in Appendix D) describes the Final System Testing (FST) phase in detail. This testing phase involves the testing to be done at the City on the City's network. This is where the bulk of the test cases live. These test cases will be executed by a member of the proposing team in the presence of a witness from the City. When this testing phase is done, and the City is satisfied, the City will sign the System Acceptance Testing Sign-Off form, and the Burn-in period of the system can begin.

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future	
<b>Compliance Requirements</b>							
I1	The offeror shall comply with the following requirements of regulatory agencies. 1. Institute of Electrical and Electronics Engineers (IEEE) 802.X 2. National Transportation Communications for ITS Protocol (NTCIP)	x		X			The proposed system fully complies with the requirements of the specified regulatory agencies, including adherence to the IEEE 802.X standards for networking and communication protocols and the National Transportation Communications for ITS Protocol (NTCIP) for integration with intelligent transportation systems.
<b>Training Requirements</b>							
J1	The offeror shall provide comprehensive end-user training. Provide all training material, including hand-outs, a minimum of 30 days prior to the delivery of the training. Training materials shall include the scope, content, and duration of the training session(s). Training shall be conducted over a two-day period, maximum, up to eight hours per day, or as requested by the City. Course materials will remain the property of the City of Ann Arbor. Demonstration equipment or training aids must be provided by the offeror.	x		X			The proposing team will provide comprehensive end-user training to ensure effective operation and maintenance of the system. All training materials, including, user manual, handouts, will be delivered to the City at least 30 days prior to the training sessions. These materials will detail the scope, content, and duration of the training to ensure clarity and preparedness. The training will be conducted over a half day. To facilitate hands-on learning, demonstration equipment and necessary training aids will be supplied by the proposing team. Upon completion, all course materials will remain the property of the City to support future reference and internal training initiatives.
J2	A comprehensive user-manual shall be provided alongside the delivery of the System. The user-manual shall be electronic format.	x		X			The proposing team will provide a comprehensive user manual alongside the delivery of the system. This manual will be in both printed and electronic formats and will serve as a detailed reference for system operation and maintenance, ensuring end-users have access to all necessary information for effective system use.

Requirement ID	Requirement Description	Type		Delivery			Offeror Comments
		Baseline	Desirable	Current Software Capability	Requires Custom Software	Planned Future	
<b>Maintenance Requirements</b>							
K1	The offeror must provide maintenance and technical support services to ensure continued functionality and operation of the system for two years following the approval of the SAT.	x		X			The System Acceptance Testing (SAT) plan (included in Appendix D) describes an ongoing testing phase for after final acceptance (POST). This POST testing phase involves the routine testing that will be performed on the system (the central server and the cloud) on at least a bi-annual basis. The testing tasks detailed in this phase include auditing configurations, logs, and scans to ensure that the system maintains an adequate security posture.
K2	The system must be capable of allowing remote and local configuration and maintenance.	x		X			The system will support both remote and local configuration and maintenance, the remote configuration will be conducted via secure SSH over a VPN as designated by the City's IT. And local configuration will be provided by the system integrator and technical personnel in coordination with WSP and the City's IT team.
K3	The system must be capable of maintaining a 99% uptime.	x		X			The system will be designed and maintained to ensure a 99% uptime, delivering reliable performance.
K4	The system must be capable of receiving software updates and patches throughout the life of the software.	x		X			The proposing team will provide on-going patch management, security/vulnerability, and OS updates for central servers, including up to 24 months maintenance. The system will support seamless software updates and patches throughout its lifecycle, using GitHub Actions or similar CI/CD technology, ensuring security and functionality are maintained over time. Also through integrated artificial intelligence and machine learning models, the system continuously improves its accuracy over time.
K5	The system must be capable of providing system health and status checks to both the offeror and to the City.	x		X			The Msight system includes a built-in self-checking mechanism that performs automatic health checks. This feature provides real-time health and status monitoring, accessible to both the proposing team and the City, enabling proactive issue detection and swift resolution. The status information will be displayed in the monitoring module of the web-based user interface for all connected intersections.
K6	The system shall be supported by a technical support team, which shall be available to provide assistance during 8A-5P EST.	x		X			Sean Shen will act as the primary point of contact, coordinating with the UM technical team and WSP to troubleshoot and resolve issues related to the Msight system, Ubuntu-supplied applications and services, and hardware, including the central server.
K7	The offeror shall respond to maintenance or support requests by the City within 24 hours. The offeror shall provide escalation procedures if a request cannot be responded to or supported within a 24 hour period.	x		X			The proposing team agrees to respond to all maintenance or support requests within 24 hours. UM has developed a preliminary escalation process that will be reviewed and finalized with the City upon award. The plan is in alignment with the timelines set forth in the RFP:



Submittal Requirements							
L1	The offeror shall provide a system architecture diagram of the proposed solution, detailing all communications links for proposed servers and software required to integrate with existing City facilities, network and infrastructure.	x					The current system architecture design is illustrated in Figure 2. It outlines the core components and interactions within the system, including the integration of central servers, cloud processing, and user dashboard interfaces. During the project, the proposing team will collaborate closely with representatives from the City to refine and update the system design as needed. This iterative approach ensures that the architecture aligns with the City's specific requirements and operational needs while maintaining flexibility for future enhancements.
L2	The offeror shall provide a system integration plan that details the installation and integration process of the system into the City of Ann Arbor network.	x					The integration plan will be built from the existing SIP integration model. To finalize the plan, the team will conduct a comprehensive assessment of existing City traffic camera infrastructure. The team will rely on WSP's expertise and experience integrating and deploying the Msight system on the City's network, including adherence to all safety protocols. The plan will also include the procurement of servers. The draft integration plan is included in Appendix B.
L3	The offeror shall submit training materials as outlined in J1.	x	X				The training plan is included in Appendix C.
L4	The offeror shall submit a SAT as outlined in H1 through H7.	x					The System Acceptance Testing (SAT) plan (included in Appendix D) describes this testing in detail.
L5	The offeror shall submit user-manual(s) as outlined in J2.	x	X				The user-manual is included in Appendix E.

## System Design

### Hardware

The system utilizes the existing roadside traffic cameras in the City's fiber optic network. The only required hardware is one or more servers installed within the City's network. These central servers are equipped with robust computational capabilities, enabling real-time perception and processing. The central servers are compatible with a variety of video streaming protocols, including RTSP, RTP, HTTP Live Streaming (HLS), and WebRTC. They also support diverse camera types such as thermal, fisheye, 360-degree, panoramic, and wide-angle cameras, ensuring seamless integration with various camera setups.

All hardware will be deployed in strict adherence to the City's security requirements, ensuring compliance with network protocols and safeguarding data integrity throughout the system. This streamlined hardware approach provides a scalable, efficient, and secure solution.

### System Architecture Introduction

As shown in Figure 2, the perception system consists of two components—roadside and cloud—which work together seamlessly to fulfill conflict analytics. The *roadside portion* leverages camera sensors that are already installed at the roadside. These sensors send raw data to a central server, which runs the perception algorithms described above in real-time, producing perception results; The *cloud portion* receives detection results and raw sensor data from the roadside for further processing, where a conflict detection module is executed. The identified near-misses are stored into a cloud data center. A user interface (UI) allows for users to view the near-miss analysis results.

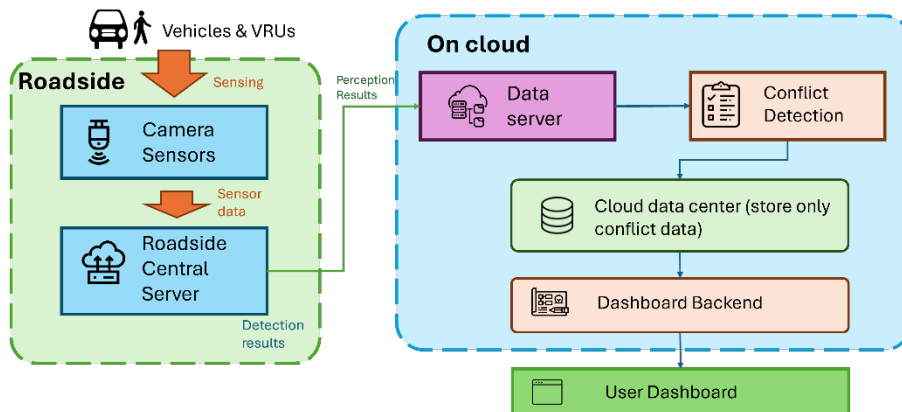


Figure 2 System design of the conflict detection system

Our system supports video streams ranging from 480p to 4K resolution, encoded in H.264, H.265, or MP4 formats<sup>5</sup>, and is compatible with various camera types, including fisheye and 360-degree cameras. To ensure privacy, all personal information in the

<sup>5</sup> H264 and H265 are codec and mp4 is the container, our system supports H264, H265 codecs as well as online stream that is wrapped in MP4 container or streamed with RTSP

video is blurred. The central server is designed to be compatible with most off-the-shelf roadside cameras, traffic signal controllers, and edge devices. Our solution avoids adding any new equipment to the City network. Importantly, no data is stored on these local central servers or elsewhere within the City's network. The system is tailored for scalability and mass production, offering flexibility for diverse use cases. Adding or removing cameras to the system is straightforward, ensuring ease of deployment and maintenance. Furthermore, the system integrates seamlessly with traffic controllers and supports standard traffic signal controller protocols, ensuring broad compatibility and efficient operation. All data is securely stored in the cloud data center, ensuring no video or other data resides on the City's network or devices.

## **User Interface**

The user dashboard system comprises a backend capable of accessing data from the cloud data center to fulfill user queries and a frontend interface designed for user interaction. User sessions are managed using JSON Web Tokens (JWT), enabling multiple users to log in and monitor the system simultaneously.

The web-based GUI consists of two main pages: a monitoring page and a reporting page. The monitoring page enables fully customizable real-time monitoring based on user preferences and needs. Meanwhile, the reporting page supports offline queries using various criteria to deliver insightful analytics. The interface is designed for intuitive navigation, ensuring ease of use for City staff and their designated partners, even without extensive technical expertise. Below are the key modules of the UI.

- **User Login**
- **Monitor Module**
  - Info Bar Overview: Intersection icons and date/time display.
  - Interactive Map Navigation: Zooming and event marker details.
  - Intersection Safety Performance Table: Customizing indices, adding intersections, and adjusting severity levels.
  - Conflict Event List: Attributes, table settings, and accessing event details.
- **Report Module**
  - Query Panel Usage: Intersection selection, date/time range, event type, object class, and severity filtering.
  - Query Results Overview: Safety Performance Table and Conflict Event List
- **Advanced Visualizations**
  - Raw Video with Detection Bounding Box:

- Bird's-Eye View of Trajectories with Tracking:
- Bird's-Eye View of Conflict Events:
- Conflict Event Insight:
- **Conflict Event Details Table**
  - Reviewing event data: Attributes such as TTC, PET, speed, contributing factors, event type, classification, location and ETC.

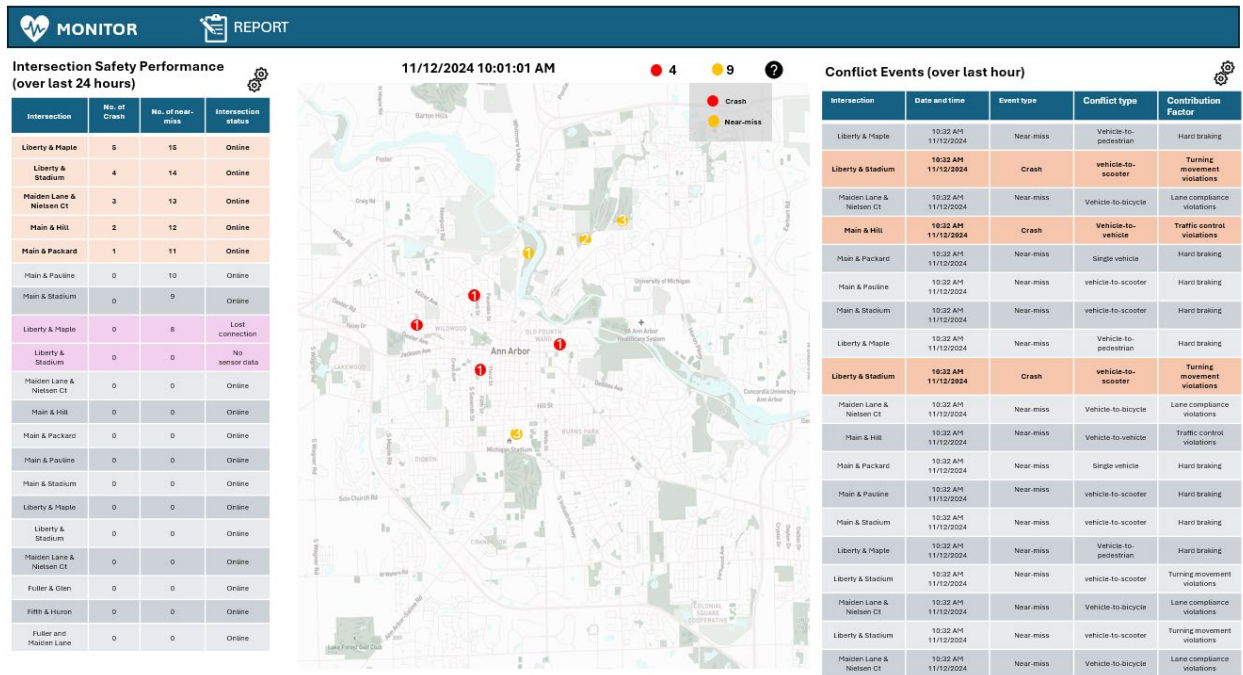


Figure 3 Monitor Page

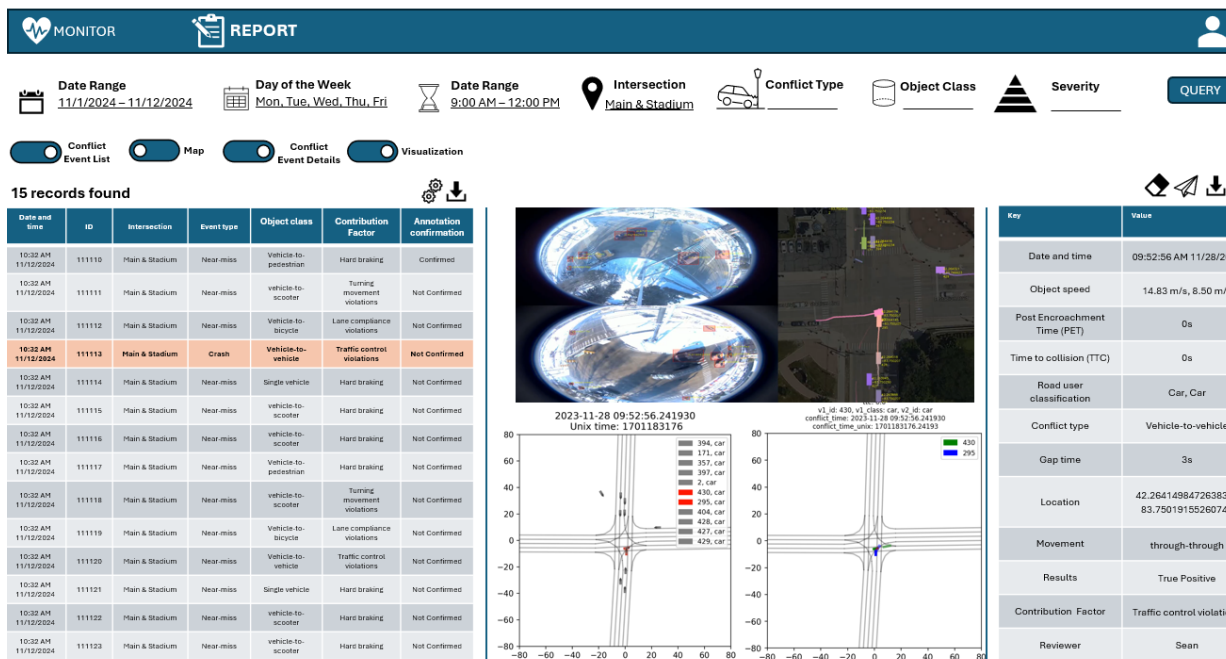


Figure 4 Report Page

## Core Algorithms and Methodology

Figure 5 illustrates the overall perception pipeline. The system can integrate multiple camera sensors to detect and localize road users such as vehicles and vulnerable road users (VRUs). These detection results from different sensors are then passed to a fusion-tracking module, where the detections of the same object from multiple sensors are fused into a single, best-estimated result. Tracking is also performed to assign consistent IDs to the same object over time. Finally, a state estimation is performed to determine additional attributes of the road users that are useful for the conflict detection module. Finally, the detection module will perform conflict detection and spot the potential conflict and output the results. Note that since the system obtains a highly modular design based on container technology, each of the module can be separately deployed and are independent of others. In this project, the object perception - including detection, localization, tracking and state-estimation - will be on a local edge while the conflict detection will be executed on the cloud. The perception pipeline will be able to provide tracking information of vehicles, bicyclists, pedestrians, and scooters.

**Object Detection:** We use YOLO algorithm<sup>6</sup>, a state-of-the-art object detector, to perform 2D detection on image data from roadside cameras. YOLOv8 is well-known for its high-speed performance and accuracy in detecting various objects, including vehicles and vulnerable road users (VRUs). The model processes images in real-time, identifying and classifying vehicles and VRUs with high precision. Subsequently, the

<sup>6</sup> Jiang, Peiyuan, et al. "A Review of Yolo algorithm developments." *Procedia computer science* 199 (2022): 1066-1073.

Perspective-n-Point algorithm is used to map detected objects from image to real-world coordinates, ensuring accurate localization.

**Sensor Fusion & Tracking:** Detections are initially performed on individual sensors; a sensor fusion and tracking algorithm is applied to combine the results. The fusion process assigns the most probable position and category inferred from different sensors' output for each object and assigns a consistent ID to the same object over time, ensuring continuity in object tracking across multiple time frames.

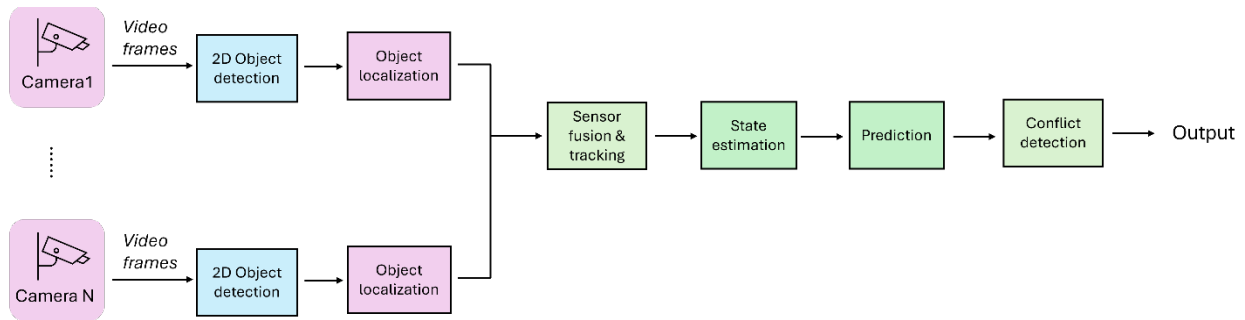


Figure 5 The conflict detection pipeline

**State Estimation:** The output of the previous module provides only position information. To estimate additional attributes like heading and speed, we use a Bicycle Model with a Kalman filter. This method accurately predicts the probabilistic-optimal speed and heading for each detected object, refining state estimation using real-time and past data.

**Prediction:** The motion prediction module consists of three major components: an encoder, a goal predictor to classify future maneuvers, and a decoder to predict future trajectories. An encoder is used to extract features from past trajectories, map contexts, and interactions between objects. This encoder uses a graph transformer-based cross-attention mechanism, which helps capture patterns over time, how objects interact with each other, and how they relate to the map. The module predicts different potential movements by identifying both the likely routes an object may take (e.g. going straight or turning) and the possible maneuvers. These options are represented using Gaussian Mixture Models, where each possible route is modeled as a combination of discrete components (like lane centers) and continuous components (offsets from the lane center). A modality tracking mechanism is introduced, which uses the goals predicted in previous timesteps to filter out less likely future movements and focus on the most probable ones. Finally, the predicted goals are used to estimate the future movement of each object. This step uses a Graph Transformer-based cross-attention mechanism, which allows the system to exchange information between the predicted goals, objects, and map features to create a complete motion prediction.

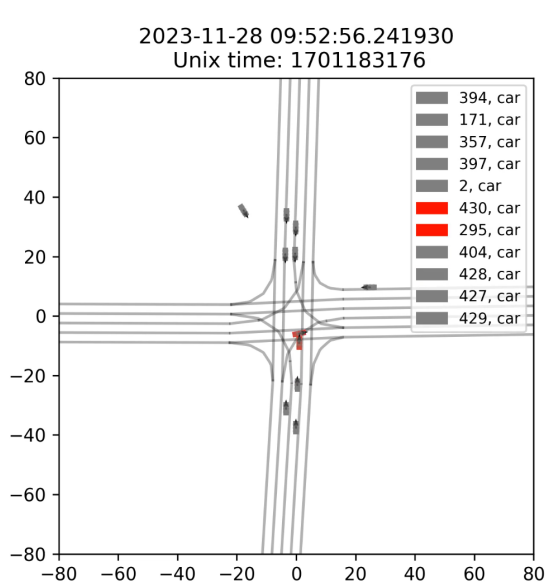
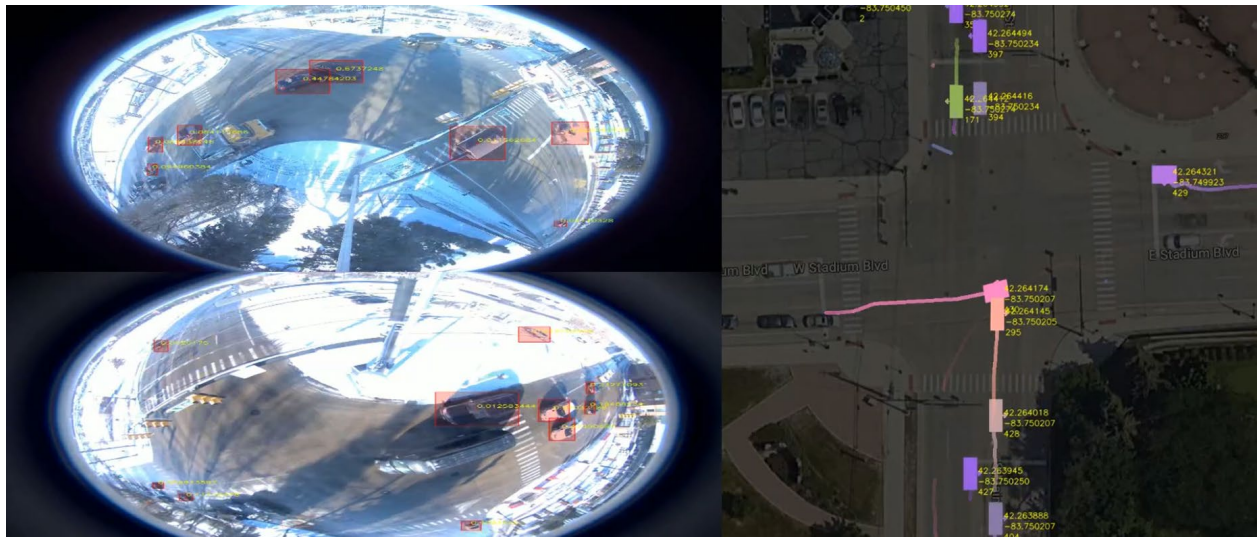
**Near-miss Detection:** The near-miss detection system analyzes the real-time localization data of all road users to evaluate their trajectories. It identifies potential points where the paths of two participants might intersect. At each intersection, the

system calculates the Time-to-Collision (TTC), a critical measure of how soon the participants could come into close proximity based on their current speeds and directions. If the TTC drops below a predefined threshold, the system flags the situation as a potential conflict, indicating an elevated risk of a near-miss or collision.

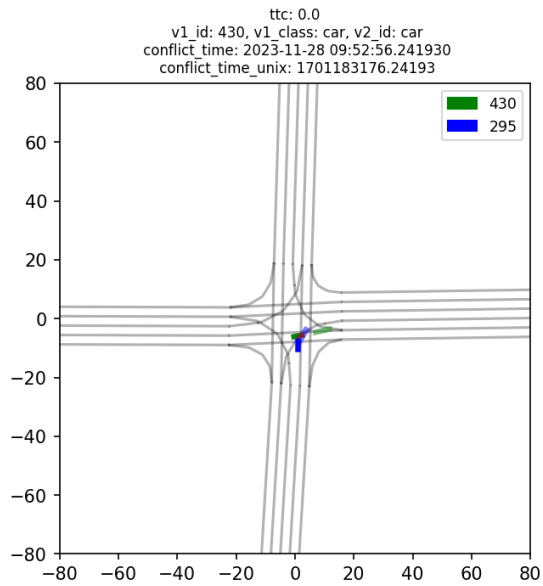
Below is an example of a near-miss/crash event detected by our system using data collected during the Smart Intersection Project. The event involves a vehicle-to-vehicle crash, as illustrated in Figure 6, which includes (from top left to bottom right) Raw Video with Detection Bounding Box, Bird's-Eye View of Trajectories with Tracking, Bird's-Eye View of Conflict Events, and Conflict Event Insight.

In this incident, Vehicle ID 430, traveling west to east, runs a red light and collides with Vehicle ID 295, moving south to north. The crash occurs at 09:52:56 on November 28, 2023. The vehicles' speeds are 14.83 m/s and 8.50 m/s, respectively, and the crash is classified as a sideswipe. Both the Time-to-Collision (TTC) and Post-Encroachment Time (PET) are zero, indicating the collision occurs at the most critical moment. The severity is rated at level 1, signifying the highest degree of seriousness, with "traffic control violations" identified as the contributing factor.

<b>Key</b>	<b>Value</b>
<b>Date and time</b>	09:52:56 AM 11/28/2023
<b>Object speed</b>	14.83 m/s, 8.50 m/s
<b>Post Encroachment Time (PET)</b>	0
<b>Time to collision (TTC)</b>	0
<b>Road user classification</b>	Vehicle-to-vehicle
<b>Conflict type</b>	Crash
<b>Location</b>	42.26414984726383, -83.75019155260746
<b>Movement</b>	through-through
<b>Results</b>	True Positive
<b>Contribution Factor</b>	Traffic control violations



c. Bird's-Eye View of conflict Event



d. Conflict Event Insight

Figure 6: The Crash Event Visualization - Raw Video with Deflection Bounding Box (Top Left) and Bird's-Eye View of Trajectories (Top Right). Birds'-Eye View of Conflict Event (Bottom Left) and Conflict Event Insight (Bottom Right).



## Value Added Factor

### a. Leverage the existing project

The University of Michigan (UM) and WSP bring substantial value to this project by leveraging their experience, expertise and infrastructure from the Smart Intersection Project (SIP). Their previous collaboration with the City of Ann Arbor on deploying roadside perception has established a robust foundation of technology and operational knowledge directly applicable to this system's development. Key benefits include:

- **Central Server Installation and Maintenance:** The processes for central server setup, software updates, and maintenance have already been practiced and validated during the SIP, ensuring streamlined adoption for this project.
- **Software and Technology Pipeline:** The central server software for acquiring sensor data from traffic cameras, performing vehicle and VRU perception, and complying with the City's networking and security standards has been successfully deployed and customized to City's sensors and network configurations. This proven pipeline minimizes the risk of errors and accelerates project implementation.
- **Familiarity with Ann Arbor's Regulations:** Through close collaboration during SIP, the team has developed a deep understanding of the City's security, networking, data privacy, and compliance standards. Pre-configured software stacks and operational practices minimize delays and ensure swift implementation.
- **Performance Advantages:** Many of the intersections in this proposal were previously optimized during the SIP project, where perception algorithms were extensively fine-tuned. This ensures the algorithms are well performed and can be deployed quickly. The success demonstrated at these locations highlights the reliability and effectiveness of the proposed approach, increasing confidence in the project's successful implementation.

### b. Test at Mcity

Our near-miss detection algorithm has been developed, tested and optimized in Mcity. The Mcity testing facility provides a controlled environment, where we perform field experiments replicating complex urban driving scenarios involved with various vehicles, pedestrians, cyclists and other common yet critical traffic scenarios. By utilizing Mcity for comprehensive testing, we can identify and address potential challenges in a safe and controlled setting before deploying the system in real-world environments.

Mcity is equipped with advanced infrastructure, and the same sensor and network configuration the industry has been widely adopted, including roadside cameras, controllers, NTP server, computational devices and communication radios, enables us to develop and test software stacks toward industrial production. This allows us to do

iterative testing and rapid prototyping, ensuring that our perception system performs reliably under diverse conditions.

Our extensive experience with Mcity also provides us with valuable insights into system integration, sensor calibration, and data analysis, which are directly applicable to the current project. The ability to test and validate our solution in a controlled yet realistic environment gives us a significant advantage in ensuring the system's robustness and accuracy. By leveraging Mcity's resources, we minimize the risk of unforeseen issues during deployment, reducing downtime and ensuring a smooth transition to real-world operation.

#### c. Compatible with multi-sensors

While the software system proposed in this proposal is tailored for image-based camera detection, it is inherently designed to operate seamlessly with a wide variety of sensors, including radar and LiDAR. The Msight algorithm is equipped to integrate and process detection results from multiple sensor types, enabling sensor fusion for enhanced perception capabilities. This flexibility allows the system to deliver superior performance in near-miss detection by leveraging the strengths of different sensors, such as radar's robustness in adverse weather and LiDAR's precision in spatial measurements. The out-of-box compatibility with diverse sensors ensures the scalability and adaptability of the system for future applications if the City decides to leverage existing sensors or install new sensors.

#### d. Future research outcome to be integrated into the system

The near-miss detection and analysis algorithms are developed by University of Michigan, Michigan Traffic Lab, a well-known, leading transportation research group led by Dr. Henry Liu, brings a unique advantage to this project by continuously advancing the understanding of near-miss and crash behavior analysis. Our deep expertise in these areas ensures that the latest scientific insights and cutting-edge methodologies are incorporated into the system, keeping it at the forefront of traffic safety technology. By leveraging our ongoing research, this project will benefit from a state-of-the-art approach to near-miss perception and analytics, resulting in advanced performance.

The Michigan Traffic Lab's research portfolio focuses on critical areas such as naturalistic and adversary simulations for traffic safety, near-miss and crash behavior modeling, near-miss detection and predictions. As new findings emerge from our studies, these outcomes will be directly applied to enhance the near-miss detection system. For instance, our recent advancements in machine learning for crash prediction and trajectory analysis can significantly improve the system's ability to detect high-risk situations and generate actionable insights in real time. This integration of cutting-edge research ensures that the proposed system is not only robust and reliable at the time of deployment but also evolves over time.

By integrating future research outcomes, this project underscores its commitment to delivering a solution that is not only state-of-the-art at launch but also positioned to lead the way in traffic safety innovation for years to come. This synergy between research and application ensures that the City of Ann Arbor benefits from the most advanced and effective technology available, further solidifying its role as a pioneer in smart transportation systems.

## **Local Presence**

All key personnel at the University of Michigan are located in Ann Arbor. Furthermore, the main integrator at WSP, Kevin Braun, is also located in Ann Arbor. Being a local presence with a deep history of collaboration with the City of Ann Arbor on Transportation Projects ensures the City will get the support needed to deliver a successful project. The proposing team of University of Michigan and WSP have demonstrated the ability to understand and collaborate with City of Ann Arbor IT and security requirements, ensuring a seamless integration of this safety perception project with ongoing and future ITS (Intelligent Transportation System) projects with the City. As a neutral research entity, the University team is uniquely positioned to advise the City on technology solutions for safety and mobility, avoiding vendor lock-in and providing benchmarks against the state of the art in the rapidly evolving arena of intelligent transportation safety. Furthermore, WSP has over three decades of experience to support UMTRI and the City of Ann Arbor with integration, CAV device deployment and testing including successfully integrating security, IT/networking with field devices that support TSMO/Vision Zero testing, integration, strategy alignment, and operational implementation.

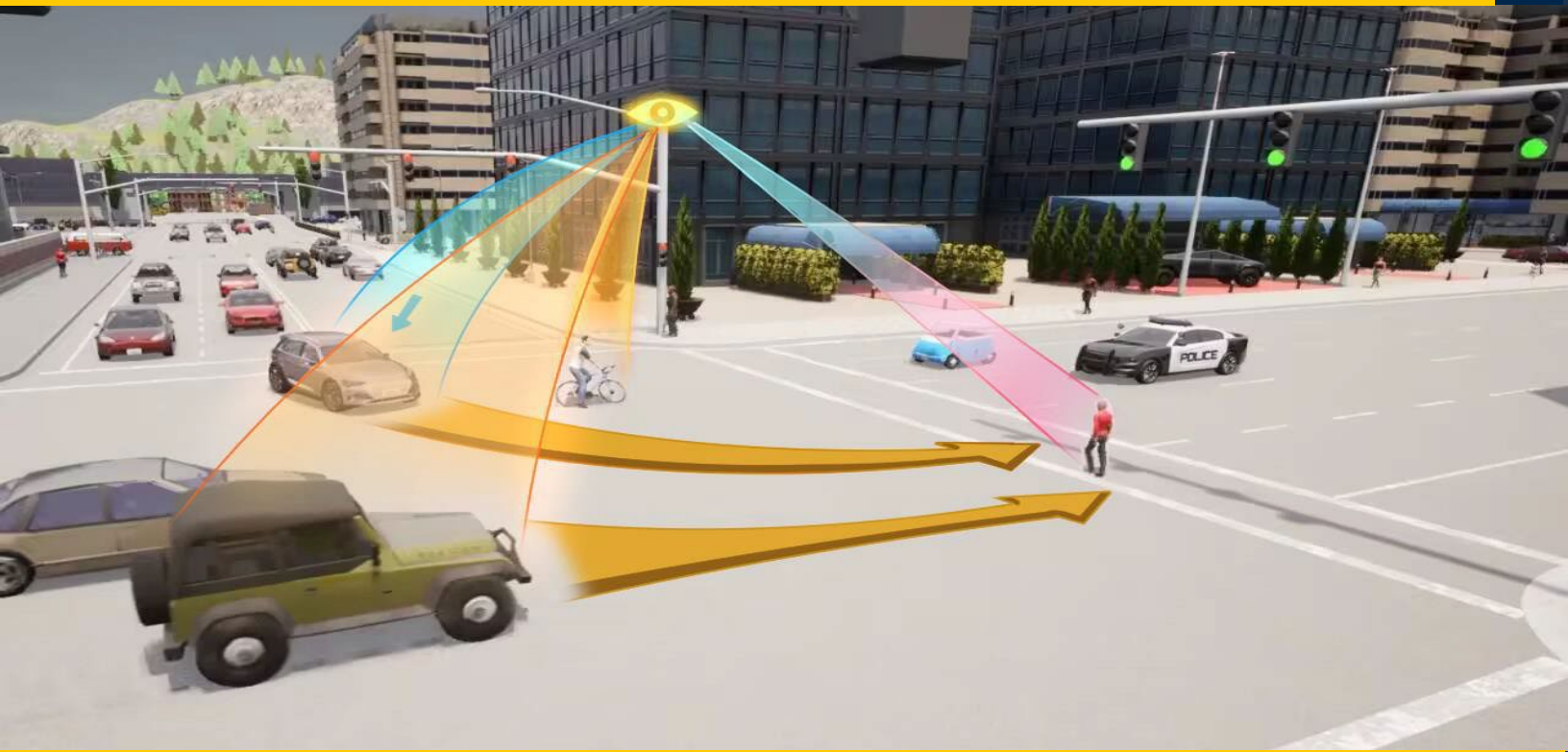
**ATTACHMENT B**

PROPOSED BUDGET – University of Michigan’s financial proposal for the Near-Miss Video Analytics System for City of Ann Arbor (RFP #24-58), outlining project costs and funding allocation.

# Near-miss Video Analytics System for City of Ann Arbor RFP # 24-58



UNIVERSITY OF  
MICHIGAN



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# 1. Budget

## Project Budget by Year

CATEGORIES	Installation and Testing	Maintenance / Operations		TOTAL PROJECT 2 Year	Total Hours
	months 4/15/25 - 10/15/25	months 10/15/25 - 4/15/26	months 4/15/26 - 4/15/27		
<b>a. Personnel Costs</b>					
Henry Liu (.15 month/ yr)	\$1,750	\$1,803	\$3,713	\$7,266	52
Debby Bezzina (260 hrs; 200 hrs)	\$29,469	\$8,786	\$15,138	\$53,394	484
Sean Shen (260 hrs; 300 hrs)	\$11,303	\$4,478	\$9,112	\$24,892	560
Rusheng Zhang (260 hrs; 300 hours)	\$13,520	\$5,356	\$10,899	\$29,775	560
Derek Johnson (260 hrs)	\$18,703	\$0	\$0	\$18,703	260
Vince Belanger (260 hrs; 300 hrs)	\$11,697	\$4,634	\$9,430	\$25,760	560
				\$0	
				\$0	
				\$0	
<b>TOTAL PERSONNEL COSTS</b>	<b>\$86,441</b>	<b>\$25,056</b>	<b>\$48,292</b>	<b>\$159,790</b>	
<b>c. Fringe Benefits</b> =30% / 28.5%	\$25,490	\$7,385	\$14,261	\$47,136	
<b>TOTAL FRINGE BENEFITS</b>	<b>\$25,490</b>	<b>\$7,385</b>	<b>\$14,261</b>	<b>\$47,136</b>	
<b>d. Equipment</b>			\$0	\$0	
<b>TOTAL EQUIPMENT COSTS</b>		\$0	\$0	\$0	
<b>e. Travel-Domestic</b>				\$0	
Travel-Foreign		\$0		\$0	
<b>TOTAL TRAVEL COSTS</b>		\$0		\$0	
<b>f. Participant Support Costs</b>		\$0		\$0	
<b>TOTAL PARTICIPANT COSTS</b>		\$0		\$0	
<b>f. Contracts</b>		\$0		\$0	
<b>TOTAL CONTRACTUAL COSTS</b>		\$0		\$0	
<b>g. Other Direct Costs</b>					
1. Two servers	\$52,261			\$52,261	
2. Mcity Track time				\$0	
3. Research Supplies				\$0	
4. Computer Services				\$0	
5. Subawards (WSP)	\$47,090			\$47,090	
6. Other- AWS Cloud Storage	\$29,352			\$29,352	
<b>TOTAL OTHER COSTS</b>	<b>\$128,703</b>	<b>\$0</b>	<b>\$0</b>	<b>\$128,703</b>	
<b>h. TOTAL DIRECT COSTS</b> (sum of a-g)	<b>\$240,634</b>	<b>\$32,441</b>	<b>\$62,553</b>	<b>\$335,629</b>	
BASE for IC (Total direct minus equipment & tuition)	\$166,283	\$32,441	\$62,553	\$261,278	
<b>I. INDIRECT COSTS/CHARGES</b> 56% less tuition and equipment	\$93,119	\$18,167	\$35,030	\$146,315	
<b>j. TOTAL PROJECT COSTS</b> (sum of h & i)	<b>\$333,753</b>	<b>\$50,609</b>	<b>\$97,582</b>	<b>\$481,944</b>	
<b>k. TOTAL FUNDS REQUESTED</b> FROM SPONSOR	<b>\$333,753</b>	<b>\$50,609</b>	<b>\$97,582</b>	<b>\$481,944</b>	



# Project Budget by Task

Univeristy of Michigan Mcity RFP #24-58 "Near-miss Video Analytics System for City of Ann Arbor"																			
TOTAL BUDGET			Task 1: Program Management		Task 2: System Design		Task 3: System Installation and Integration		Task 4: Testing and Verification		Task 5: Training and Knowledge Transfer		Task 6: Reporting and Data Insights		Task 7: System Operations and Maintenance		TOTAL BUDGET 06/01/23 - 05/31/26		
Name*	Project Role	Hourly Rate	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hourly Rate	Hrs	Amount
Henry Liu	Principal Investigator	Varied	52	7,266	0	0	0	0	0	0	0	0	0	0	0	0	Varied	52	7,266
Debby Bezzina	Contractor Project Manager	Varied	364	40,156	0	0	0	0	0	0	120	13,238	0	0	0	0	Varied	484	53,394
Sean Shen	Contract System Integrator	Varied	0	0	60	2,667	100	4,445	100	4,445	80	3,556	0	0	220	9,779	Varied	560	24,892
Rusheng Zhang	Contract Technical Personnel	Varied	0	0	100	5,317	100	5,317	60	3,190	150	7,976	60	3,190	90	4,785	Varied	560	29,775
Derek Johnson	Contract Technical Personnel	Varied	0	0	0	0	0	0	260	18,703	0	0	0	0	0	0	Varied	260	18,703
Vince Belanger	Contract Technical Personnel	Varied	0	0	0	0	260	11,960	0	0	0	0	0	0	300	13,800	Varied	560	25,760
<b>Total Salaries</b>			416	47,421	160	7,984	460	21,722	420	26,338	350	24,770	60	3,190	610	28,364		2,476	159,790
<b>Sick/Vacation/Holiday (POOL)</b>			28%	11,444			0	0		0	3,773		0						15,217
<b>Fringes Benefits (Permanent Staff)</b>			30%	2,180		2,395	6,517	7,901		3,459		957		8,509					31,919
<b>Fringes Benefits (Gradcare)</b>			20%	0		0	0	0		0		0		0					0
<b>FICA (Temps)</b>			7.65%	0		0	0	0		0		0		0					0
<b>Subtotal Labor</b>				<b>61,046</b>		<b>10,379</b>		<b>28,239</b>		<b>34,239</b>		<b>32,002</b>		<b>4,147</b>		<b>36,874</b>			<b>206,926</b>
<b>Equipment</b>																			
Two Servers				0		0	52,261		0		0		0		0				52,261
<b>Subtotal Equipment</b>				<b>0</b>		<b>0</b>	<b>52,261</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>				<b>52,261</b>
<b>Subcontract Partners</b>																			
WSP				1,007		0	46,083		0		0		0		0				47,090
<b>Subtotal Subcontract Partners</b>				<b>1,007</b>		<b>0</b>	<b>46,083</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>				<b>47,090</b>
<b>Other Direct Costs</b>																			
Data Expenses				0		0	0		0		0		0		0				0
AWS Cloud Storage				0		0	0		0		0		0		29,352				29,352
<b>Subtotal Other Direct Costs</b>				<b>0</b>		<b>0</b>	<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>29,352</b>				<b>29,352</b>
<b>Total Direct Cost</b>				<b>62,053</b>		<b>10,379</b>		<b>126,583</b>		<b>34,239</b>		<b>32,002</b>		<b>4,147</b>		<b>66,226</b>			<b>335,629</b>
<b>Indirect Costs</b>			56.0%	<b>34,185</b>		<b>5,812</b>		<b>29,814</b>		<b>19,174</b>		<b>17,921</b>		<b>2,322</b>		<b>37,086</b>			<b>146,315</b>
<b>Total Cost</b>				<b>96,238</b>		<b>16,192</b>		<b>156,397</b>		<b>53,413</b>		<b>49,923</b>		<b>6,470</b>		<b>103,312</b>			<b>481,944</b>

# WSP Budget by Task

WSP Michigan Inc. RFP #24-58 "Near-miss Video Analytics System for City of Ann Arbor"																			
TOTAL BUDGET			Task 1: Program Management		Task 2: System Design		Task 3: System Installation and Integration		Task 4: Testing and Verification		Task 5: Training and Knowledge Transfer		Task 6: Reporting and Data Insights		Task 7: System Operations and Maintenance		TOTAL BUDGET 06/01/23 - 05/31/26		
Name*	Project Role	Hourly Rate	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Hrs	Amt	Rate	Hrs	Amount
Brian Reed	Task Lead	296.67	0	0			0	0									\$296.67	0	0
Benjamin Nace	Software Developer	146.46	0	0			220	32,221									\$146.46	220	32,221
Amber Sillmon	Project Accountant	125.85	8	1,007			0	0									\$125.85	8	1,007
Kenneth (Ken) Whitesell	Senior Developer	192.53	0	0			72	13,862									\$192.53	72	13,862
<b>Total Salaries - fully burdened</b>				8	1,007		0	292	46,083		0	0	0	0	0	0		300	47,090
<b>Total Direct Cost</b>				<b>1,007</b>		<b>0</b>		<b>46,083</b>		<b>0</b>		<b>0</b>		<b>0</b>		<b>0</b>			<b>47,090</b>

## University of Michigan Personnel Rates

Name	Position / Title	Annual Salary Rate		
		9/1/24	9/1/25	9/1/26
Henry Liu	Mcity Director / Principal Investigator	\$280,000.00	\$288,400.00	\$297,052.00
Debby Bezzina	Senior Project Manager / Contractor Project Manager	\$225,350.00	\$232,110.50	\$239,073.82
Sean Shen	Research Engineer / Contract System Integrator	\$90,422.00	\$93,134.66	\$95,928.70
Rusheng Zhang	Assistant Research Scientist / Contract Technical Personnel	\$108,160.00	\$111,404.80	\$114,746.94
Derek Johnson	Principal Engineer / Contract Technical Personnel	\$149,620.00	\$154,108.60	\$158,731.86
Vince Belanger	Senior Engineer in Research / Contract Technical Personnel	\$93,576.00	\$96,383.28	\$99,274.78

Name	Position / Title	Hourly Salary Rate		
		9/1/24	9/1/25	9/1/26
Henry Liu	Mcity Director / Principal Investigator	\$134.62	\$138.66	\$142.82
Debby Bezzina	Senior Project Manager / Contractor Project Manager	\$108.34	\$111.59	\$114.94
Sean Shen	Research Engineer / Contract System Integrator	\$43.47	\$44.77	\$46.12
Rusheng Zhang	Assistant Research Scientist / Contract Technical Personnel	\$52.00	\$53.56	\$55.17
Derek Johnson	Principal Engineer / Contract Technical Personnel	\$71.93	\$74.09	\$76.31
Vince Belanger	Senior Engineer in Research / Contract Technical Personnel	\$44.99	\$46.34	\$47.73

## University of Michigan Total Hours

Name	Position / Project Title	Total Hours
Henry Liu	Mcity Director / Principal Investigator	52
Debby Bezzina	Senior Project Manager / Contractor Project Manager	484
Sean Shen	Research Engineer / Contract System Integrator	560
Rusheng Zhang	Assistant Research Scientist / Contract Technical Personnel	560
Derek Johnson	Principal Engineer / Contract Technical Personnel	260
Vince Belanger	Senior Engineer in Research / Contract Technical Personnel	560

## 2. Budget Justification

### University of Michigan

This budget is for a two-year period beginning April 15th, 2025 and continuing through April 14th, 2027.

#### Salaries

Salaries for faculty and staff are based on the current fiscal year (July 1st, 2024 - June 30th, 2025) rates with anticipated 3% annual increases for faculty and staff. Annual increases go into effect September 1<sup>st</sup> each year

Henry Liu (Principal Investigator): Support is requested for .15 months for each year of the project, for a total of 52 hours. Dr. Liu will oversee all aspects of the project and direct the University of Michigan team. A total of \$7,265.65 is requested for his salary.

Debra Bezzina (Contractor Project Manager): Support is requested for 272 hours during the installation and testing period and 212 hours during the maintenance and operations period, for a total of 484 hours. She will be responsible for organizing monthly meetings with Subcontracting partners, disseminate information about the project to the City of Ann Arbor, and produce required reporting information. She will also present to the City of Ann Arbor Transportation Commission. A total of \$53,394.00 is requested for her salary.

Sean Shen (Contract System Integrator): Support is requested for 260 hours during the installation and testing period and 300 hours for maintenance and operation support, for a total of 560 hours. He will be based at Mcity, ensuring a local presence for system installation, integration and quick response for troubleshooting and maintenance. He will serve as the primary contact for the System Integrator and as the lead Trainer. A total of \$24,892.35 is requested for his salary.

Rusheng Zhang (Contract Technical Personnel): Support is requested for 260 hours during the installation and testing period and 300 hours for maintenance and operations support for a total of 560 hours. Dr. Zhang will bring his specialized expertise to lead the customization and configuration of the software. He will monitor all the details in the deployment of the proposed system, ensuring seamless integration with the City of Ann Arbor's existing infrastructure. Additionally, Dr. Zhang will provide in-depth knowledge and technical guidance on the development and implementation of the near-miss detection algorithm, ensuring its accuracy and effectiveness in identifying critical traffic safety events. A total of \$29,775.46 is requested for his salary.

Derek Johnson (Contract Technical Personnel): Support is requested for 260 hours during the installation and testing period. Mr. Johnson will be responsible for developing the System Acceptance Testing (SAT) Plan and Procedures, as well as conducting Local Device Acceptance Testing (LDAT), Software Testing (ST), and Subsystem Testing (SST). A total of \$18,702.50 is requested for his salary.

Vince Belanger (Contract Technical Personnel): Support is requested for 260 hours during the installation and testing period and 300 hours during the maintenance and operations period, for a total of 560 hours. Mr. Belanger will be responsible for supporting hardware setup and configuration, network configuration, and ongoing system maintenance. A total of \$25,760.62 is requested for his salary.

#### Fringe Benefits:

Fringe benefit rates are calculated at a rate of 30% for permanent staff. Pooled employees are calculated at 28.5%. These rates are averages. The actual rate will be based on the selection of benefits and dependent status of the personnel assigned to the project. A total of \$46,381.67 is requested for fringe benefits.

#### Other Direct Costs

Servers: A total of \$52,261 is requested for two servers. Two servers are required for the project. This quote is for two Dell PowerEdge R760XA units at \$26,130.50 each. This total is based on a quote obtained from Dell in 2024.

AWS Cloud Storage: A total of \$29,352 is requested for AWS cloud storage. This total includes:

- EC2 - T3 medium - 6 units - \$476/ unit for 3 years; total \$2,856 Kinesis - 5hz - 12 hour - 61 intersections - 24 at \$872/ unit; \$20,928
- Lamda - 310 request per second with 512 MB with duration 10 - 24 at \$162 per unit; \$3,888
- S3 - 2MB, 60 cases per day, 60 intersections for a total of 240 GB per month, 300kb/unit, 768600 PUT - 24 at \$70/ unit; \$1,680

These totals are based on previous usage of AWS; actual totals will be based on actual usage.

Subaward to WSP: A total of \$47,090 is requested for a subaward to WSP. Please see WSP's Budget Justification for additional details.

#### F & A Rates

The current indirect cost rate (Facilities and Administrative Cost Rate) is 56% as negotiated with the Department of Health and Human Services (DJJS). The base used to calculate the indirect cost includes modified total direct costs consisting of all direct costs less tuition, equipment and participant support costs. A total of \$146,315.43 is requested for Indirect Costs. The current indirect cost rate agreement can also be found at the following website: <https://orsp.umich.edu/indirect-costs-rates>

## WSP Michigan Inc. (WSP)

### Salaries

Salaries for faculty and staff are based on the fiscal year (January 1st, 2025 - December 31st, 2025) rates with anticipated 4% annual increases for professional staff.

### **Key Staff**

**Brian Reed** (Task Lead – Security Posture/Server Installation, \$286.63 burdened hourly rate) – Brian will serve as WSP Project Manager to oversee server/security maintenance updates for up to 2 hours. A total of \$0 is requested for his salary, overhead and professional services fee. He will coordinate WSP staff resources to apply security posture and provide monthly invoices based on staff resources committed and performing active work on this task assignment.

### **Technical Staff**

**Benjamin Nace** (Software Developer & Security Support, \$146.46 burdened hourly rate). Ben will provide Linux OS support, patch management, security updates, and security posture support/updates and log support for up to 220 hours. A total of \$32,221.21 is requested for his salary, overhead and professional services fee.

**Amber Sillmon** (Project Accountant, \$125.85 burdened hourly rate). Amber will provide invoicing, reporting, billing and payment tracking and management support for up to 8 hours. A total of \$1,006.82 is requested for her salary, overhead and professional services fee.

**Kenneth (Ken) Whitesell** (Linux System Administration and Senior Developer, \$192.53 burdened hourly rate). Ken will provide OS installation, STIG and security posture setup/ update support and security posture log/report setup and update support for up to 72 hours. A total of \$13,862 is requested for his salary, overhead and professional services fee.

### Audited Overhead Rate (Michigan DOT) – Home/Office Rate

Fringe Benefits and Corporate Overhead Rate are audited by MDOT (letter July 19, 2024) for WSP the current rates 'staff' assigned to a WSP office are a rate of 141.93%. The overhead is included in the fully burdened labor rate.

### Professional Services – WSP Fee

As WSP is a professional services firm that is publicly traded, as a business that is for profit, we include a Fee per staff hour on client projects of 11%. The fee is included in the fully burdened labor rate.

### Total Task Costs

For this task order support work, a total of \$47,090 is requested, if hours per staff exceed task budget proposal, WSP costs (labor, overhead and professional service fees) will be billed on a time and materials basis.

**ATTACHMENT C**

**CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

**CITY OF ANN ARBOR**

**SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

**Notice:** The contract or purchase order to which this addendum is attached is made using federal assistance provided to the City of Ann Arbor by U.S. Department of Transportation Federal Highway Administration through the Safe Streets For All (SS4A) program made available by Section 24112 of the Infrastructure Investment and Jobs Act (Pub. L. 117-58, November 15, 2021; also referred to as the “Bipartisan Infrastructure Law” or “BIL”). The City’s SS4A award is 69JJ32440046 and includes the Grant Agreement and the General Terms and Conditions Under Fiscal Year 2022 Safe Streets and Roads for All Grant Program, dated August 1, 2023 and the Exhibits to FHWA Grant Agreements Under the Fiscal Year 2022 Safe Streets and Roads for All Grant Program, dated February 8, 2023 which are available at <https://www.transportation.gov/grants/ss4a/grant-agreements>.

In using such funds, the City must comply with the terms of its SS4A grant agreement with the USDOT FHWA and its award terms and conditions and exhibits, all of which are hereby incorporated into this Contract, as applicable, and included as Attachments 4 and 5.

Additionally, the City must comply with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200 other than such provisions as USDOT FHWA may determine are inapplicable, and pursuant to 2 C.F.R. §200.327 the City must include within any subcontract or subaward applicable provisions described in Appendix II to 2 C.F.R. Part 200, which are contained in this Addendum.

The following terms and conditions apply to you, the contractor or vendor, as a contractor of the City of Ann Arbor, according to the City’s SS4A Award, Grant Agreement, and the applicable Terms and Conditions; and by the SS4A implementing regulations:

1. **General Federal Requirements.** Contractor also agrees to comply with applicable federal laws, regulations, and executive orders, and Contractor shall provide for such compliance by other parties in any agreements it enters into with other parties relating to this Contract.
2. **Termination for Cause and for Convenience.** The City reserves the right to immediately terminate this Contract in the event of a breach or default of the Contract by Contractor in the event Contractor fails to: 1) meet schedules, deadlines, and/or delivery dates within the time specified in the Contract; 2) make any payments owed; or 3) otherwise perform in accordance with the Contract. The City also reserves the right to terminate this Contract immediately, with written notice to Contractor, for convenience, if the City believes, in its sole discretion that it is in the best interest of the City to do so. Contractor will be compensated for work performed and accepted and goods accepted by the City as of the termination date if the Contract is terminated for convenience of the City.
3. **Equal Employment Opportunity.**
  - A. Contractor shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by EO 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 C.F.R. Part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

- B. If this contract is a Federally Assisted Construction Contract exceeding \$10,000, during the performance of this Contract, Contractor agrees as follows:
- i. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
  - ii. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
  - iii. Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Contractor's legal duty to furnish information.
  - iv. Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
  - v. Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
  - vi. Contractor will furnish to the Administering Agency and the Secretary of Labor all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Administering Agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
  - vii. In the event of Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended, in whole or in part, and Contractor may be



declared ineligible for further Government contracts or Federally Assisted Construction Contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965. Such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- viii. Contractor will include the provisions of paragraphs B(i) through (vii) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. Contractor will take such action with respect to any Subcontract or purchase order as the Administering Agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Administering Agency, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The City further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work. Provided, that if the City so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government which does not participate in work on or under the Contract.

- ix. The City agrees that it will assist and cooperate actively with the Administering Agency and the Secretary of Labor in obtaining the compliance of Contractor and any Subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor; that it will furnish the Administering Agency and the Secretary of Labor such information as they may require for the supervision of such compliance; and that it will otherwise assist the Administering Agency in the discharge of the agency's primary responsibility for securing compliance.
- x. The City further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and Federally Assisted Construction Contracts pursuant to the Executive Order and that it will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon Contractor and any Subcontractors by the Administering Agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the City agrees that if it fails or refuses to comply with these undertakings, the Administering Agency may take any or all of the following actions: cancel, terminate, or suspend, in whole or in part, this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from

such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

C. If this Contract is not a Federally Assisted Construction Contract exceeding \$10,000, the provisions of this section shall not apply.

4. **Davis-Bacon Act, as amended (40 U.S.C. 3141-3148)**. When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.
5. **Copeland "Anti-Kickback" Act**. Contractor and any subcontractors performing work under the Contract shall comply with all applicable provisions of the Copeland "Anti-Kickback" Act (18 U.S.C. § 874; 40 U.S.C. §3145) as supplemented by Department of Labor regulations (29 C.F.R. Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The City shall report all suspected or reported violations to Treasury.
6. **Contract Work Hours and Safety Standards Act**. If this Contract is for an amount in excess of \$100,000 and involves the employment of mechanics or laborers, Contractor must comply with 40 U.S.C. §§3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. Part 5). Under 40 U.S.C. §3702 of the Act, Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. §3704 are applicable to construction work and provide that no laborer or mechanic must be required work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
7. **Rights to Inventions Made Under a Contract or Agreement**. Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 C.F.R. Part 401, "Rights to Inventions Made by Non-profit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements," and any applicable implementing regulations.
8. **Clean Air Act and Federal Water Pollution Control Act**
  - A. *Clean Air Act*. Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§7401 *et seq.*

Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to Treasury and the appropriate Environmental Protection Agency Regional Office. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed, in whole or in part, with federal assistance provided by Treasury.

- B. *Federal Water Pollution Control Act.* Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251 *et seq.* Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to Treasury and the appropriate Environmental Protection Agency Regional Office. Contractor agrees to include these requirements in each Subcontract exceeding \$150,000 financed, in whole or in part, with federal assistance provided by Treasury.

## **9. Debarment and Suspension**

- A. This Contract is a covered transaction for purposes of 2 C.F.R. §180.210 and 31 C.F.R. §19.210. Therefore, this Contract is a lower-tier covered transaction for purposes of 2 C.F.R. Part 180 and 31 C.F.R. Part 19 if (1) the amount of this Contract is greater than or equal to \$25,000 (2 C.F.R. §180.220(b)(1); 31 C.F.R. §19.220(b)(1)); (2) the Contract requires the consent of an official of the Department of the Treasury (2 C.F.R. §180.220(b)(2); 31 C.F.R. §19.220(b)(2)); or (3) this Contract is for federally required audit services (2 C.F.R. §180.220(b)(3); 31 C.F.R. §19.220(b)(3)).
- B. As a covered transaction, Contractor is required to verify that its principals (defined at 2 C.F.R. §180.995) or its affiliates (defined at 2 C.F.R. §180.905) of both Contractor and its principals are not excluded (defined at 2 C.F.R. §180.935) and are not disqualified (defined at 2 C.F.R. §180.935). Contractor represents and warrants that, as of the execution of this Contract, neither Contractor and its principals nor any subcontractor or sub-consultant performing work under this Contract (at any tier) is included on the federally debarred bidder's list listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. §180 that implement Executive Orders 12549 (3 C.F.R. Part 1986 Comp., p. 189) and 12689 (3 C.F.R. Part 1986 Comp., p. 235), "Debarment and Suspension." Additionally, Contractor's completed Certification Regarding Debarment, Suspension and Other Responsibility Matters is attached hereto (Attachment 2) and incorporated herein. This certification is a material representation of fact relied upon by the City and all liability arising from an erroneous representation shall be borne solely by Contractor.
- C. If at any point during the Contract term, Contractor or its principals or any subcontractor or sub-consultant performing work at any tier is included on the federally debarred bidder's list, Contractor shall notify the City immediately.
- D. If any of the foregoing persons are excluded or disqualified and the Secretary of the Treasury has not granted an exception pursuant to 31 C.F.R. §19.120(a) (a) this Contract shall be void; (b) City shall not make any payments of federal financial assistance to Contractor; and (c) City shall have no obligations to Contractor under this Contract.

- E. Contractor must comply with 2 C.F.R. Part 180, subpart C and 31 C.F.R. Part 19, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- F. If it is later determined that Contractor did not comply with 2 C.F.R. Part 180, subpart C and 31 C.F.R. Part 19, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

**10. Byrd Anti-Lobbying Amendment.** Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. §1352. Contractor shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

**\*Purchases over \$100,000 - Contractors must sign the certification included as Attachment 1 and shall cause any subcontractors with a subcontract (at any tier) exceeding \$100,000 to file with the tier above it the same certification\***

**11. Procurement of Recovered Materials**

- A. This section shall apply if (1) this Contract involves the purchase of an item designated by the Environmental Protection Agency (“EPA”) in 40 C.F.R. Part 247 that exceeds \$10,000 or (2) the total value of such designated items acquired during The City’s preceding fiscal year exceeded \$10,000.
- B. In the performance of the Contract, Contractor shall make maximum use of products containing recovered materials that are EPA-designated items, unless the product cannot (1) be acquired competitively within a timeframe providing for compliance with the Contract performance schedule, (2) meet Contract performance requirements, or (3) be acquired at a reasonable price.
- C. Information about this requirement, along with the list of EPA-designated items, is available on EPA’s website. Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

**12. Prohibition on Contracting for Covered Telecommunications and Video Surveillance Services or Equipment.**

Contractor shall not use funds under this Contract to purchase, or enter into subcontracts to purchase, any equipment, services, or systems that use telecommunications equipment or services as a substantial or essential component of a system that is subject to 2 C.F.R. §200.216 (generally, video surveillance or telecommunications equipment produced by Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company, their subsidiaries or affiliates, or any entity that the Secretary of Defense reasonably believes to be an entity owned or controlled by the government of a foreign country). In the event Contractor identifies covered telecommunications equipment or services that constitute a substantial or essential component of any system, or as critical technology as part of any system that is subject to 2

C.F.R. §200.216, during Contract performance, Contractor shall alert the City as soon as possible and shall provide information on any measures taken to prevent recurrence.

**13. Buy USA - Domestic Preferences for Certain Procurements Using Federal Funds.**

Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States and “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

**14. Solicitation of Minority and Women-Owned Business Enterprises.**

Contractor hereby agrees to comply with the following when applicable: The requirements of Executive Orders 11625 and 12432 (concerning Minority Business Enterprise), and 12138 (concerning Women's Business Enterprise), when applicable. Accordingly, the contractor hereby agrees to take affirmative steps to assure that women and minority businesses are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

- A. Including qualified women’s business enterprises and small and minority businesses on solicitation lists;
- B. Assuring that women’s enterprises and small and minority businesses are solicited whenever they are potential sources;
- C. When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by small and minority business, and women’s business enterprises;
- D. Where the requirement permits, establishing delivery schedules which will encourage participation by women’s business enterprises and small and minority business; and
- E. Using the services and assistance of the Small Business Administration, and the U.S. Office of Minority Business Development Agency of the Department of Commerce; and the North Carolina Office for Historically Underutilized Businesses.

For the purposes of these requirements, a Minority Business Enterprise (MBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by members of the following groups: Black, Hispanic, Asian or Pacific Islander, American Indian, or Alaskan Natives. A Women Business Enterprise (WBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by women.

**15. Access to Records; Record Retention**

- A. Contractor agrees to provide the City, the Department of the Treasury, the Treasury Office of Inspector General, the Government Accountability Office, and the Comptroller General

of the United States, or any authorized representatives of these entities, access to any records (electronic and otherwise) of Contractor which are directly pertinent to this Contract to conduct audits or any other investigations. Contractor agrees to permit any of the foregoing parties to reproduce such records by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

- B. Contractor agrees to provide the Treasury Department or authorized representatives access to construction or other work sites pertaining to the work being completed under the Contract.
- C. No language in this Contract is intended to prohibit audits or internal reviews by the Treasury Department or the Comptroller General of the United States.
- D. Contractor agrees to retain all records covered by this section through December 31, 2031, or such longer period as is necessary for the resolution of any litigation, claim, negotiation, audit, or other inquiry involving the Contract.

**16. Assurances of Compliance with Title VI of the Civil Rights Act of 1964.** Contractor and any subcontractor, or the successor, transferee, or assignee of Contractor or any subcontractor, shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. §§2000d *et seq.*), as implemented by the Department of the Treasury's Title VI regulations, 31 C.F.R. Part 22, which are herein incorporated by reference and made a part of this Contract. Title VI also provides protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. §§2000d *et seq.*, as implemented by Treasury's Title VI regulations, 31 C.F.R. Part 22, and herein incorporated by reference and made a part of this Contract.

**17. Other Non-Discrimination Statutes.** Contractor acknowledges that the City is bound by and agrees, to the extent applicable to Contractor, to abide by the provisions contained in the federal statutes enumerated below and any other federal statutes and regulations that may be applicable to the expenditure of SS4A Funds:

- A. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 *et seq.*), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;
- B. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
- C. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101 *et seq.*), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and
- D. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§12101 *et seq.*), which prohibits discrimination on the basis of disability in programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.

## **18. Other Applicable Statutes and Regulations**

- A. Prohibition on Providing Funds to the Enemy (2 C.F.R. 183)
- i. The Contractor must exercise due diligence to ensure that none of the funds, including supplies and services, received under this Contract are provided directly or indirectly (including through subcontracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities. The Contractor must terminate or void in whole or part any subcontract with a person or entity listed in the System Award Management Exclusions (SAM) as a prohibited or restricted sources pursuant to subtitle E of Title VIII of the NDAA for FY 2015, unless the Federal awarding agency provides written approval to continue the subcontract.
  - ii. The Federal awarding agency has the authority to terminate or void this Contract, in whole or in part, if the Federal awarding agency becomes aware that the Contractor failed to exercise due diligence as required by paragraph (i) of this clause or if the Federal awarding agency becomes aware that any funds received under this Contract have been provided directly or indirectly to a person or entity who is actively opposing coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities.
  - iii. In addition to any other existing examination-of-records authority, the Federal Government is authorized to examine any records of the Contractor and its Subcontracts to the extent necessary to ensure that funds, including supplies and services, available under this Contract are not provided, directly or indirectly, to a person or entity that is actively engaged in hostilities.
  - iv. The Contract must include the substance of this clause, including paragraph, in subcontracting agreements that have an estimated value over \$50,000 and will be performed outside the United States, including its outlying areas.
- B. Contractor agrees to comply with the Regulatory Requirements applicable to this Contract, which include, without limitation, the following:
- i. 2 C.F.R. Part 200 Appendix II requirements;
  - ii. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, as applicable;
  - iii. Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25;
  - iv. OMB (Office of Management and Budget) Guidelines to Agencies on Government-wide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the

award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19;

- v. Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part;
- vi. Government-wide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20; and
- vii. Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328), which limits certain political activities of federal employees, as well as certain other employees who work in connection with federally funded programs.

#### **19. Conflicts of Interest; Gifts and Favors**

- A. Contractor understands that (1) the City will use SS4A Funds to pay for the cost of this Contract, in whole or in part, and (2) the expenditure of SS4A Funds is governed by the City's Conflict of Interest Policy and the Regulatory Requirements (including, without limitation, 2 C.F.R. §200.318(c)(1)).
- B. Contractor certifies to the City that as of the date hereof, to the best of its knowledge after reasonable inquiry, no employee, officer, or agent of the City involved in the selection, award, or administration of this Contract (each a "Covered Individual"); no member of a Covered Individual's immediate family; no partner of a Covered Individual; and no organization (including Contractor) which employs or is about to employ a Covered Individual has a financial or other interest in, or has received a tangible personal benefit from, Contractor. Should Contractor obtain knowledge of any such interest or any tangible personal benefit described in the preceding sentence after the date hereof, Contractor shall promptly disclose the same to the City in writing.
- C. Contractor certifies to the City that it has not provided, nor offered to provide, any gratuities, favors, or anything of value to an officer, employee, or agent of the City. Should Contractor obtain knowledge of the provision, or offer of any provision, of any gratuity, favor, or anything of value to an officer, employee, or agent described in the preceding sentence after the date hereof, Contractor shall promptly disclose the same to the City in writing.

**20. Publications.** Any publications produced with funds from this award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of recipient] by the U.S. Department of Treasury."

#### **21. Miscellaneous**

- A. *Increasing Seat Belt Use in the United States.* Pursuant to Executive Order 13043, 62 Fed. Reg. 19,216 (Apr. 18, 1997), the City encourages Contractor to adopt and enforce on-the-job seat belt policies and programs for its employees when operating company-owned, rented, or personally owned vehicles.
- B. *Reducing Text Messaging While Driving.* Pursuant to Executive Order 13513, 74 Fed. Reg. 51,225 (Oct. 6, 2009), the City encourages Contractor to adopt and enforce policies that ban text messaging while driving.



**22. Conflicts and Interpretation.** To the extent that any portion of this Addendum conflicts with any term or condition of this Contract expressed outside of this Addendum, the terms of this Addendum shall govern.

**FOR \_\_\_\_\_,**  
**CONTRACTOR**

**FOR THE CITY OF ANN ARBOR**

By \_\_\_\_\_  
Name:  
Title:

By \_\_\_\_\_  
Milton Dohoney Jr., City Administrator

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**- (This form is required only for purchases of more than \$100,000) -**

**ATTACHMENT 1  
CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

**49 C.F.R. PART 20 – New Restrictions On Lobbying  
CERTIFICATION REGARDING LOBBYING**

The undersigned certifies, to the best of the undersigned's knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31 of the U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, \_\_\_\_\_, certifies and affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chapter 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

**ATTACHMENT 2**  
**CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**  
**CERTIFICATION REGARDING DEBARMENT,**  
**SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The undersigned bidder, proposer, contractor, or subcontractor, as appropriate, certifies to the best of its knowledge and belief that neither it nor any of its officers, directors, or managers who will be working under the Contract, or persons or entities holding a greater than 10% equity interest in it (collectively "Principals"):

1. Are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department or agency in the United States;
2. Have within a three-year period preceding this proposal, bid, or agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state anti-trust or procurement statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are presently indicted for or otherwise criminally or civilly charged by a government entity, (federal, state or local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and
4. Have within a three-year period preceding this application/proposal had one or more public transactions (federal, state or local) terminated for cause or default.

The undersigned bidder, proposer, contractor, or subcontractor, as appropriate, certifies that they are "Actively" registered with SAM (System for Award Management) and have been assigned the following Unique Entity Identifier (UEI): \_\_\_\_\_. The undersigned further certifies that it shall not knowingly enter any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department/agency.

I understand that a false statement on this certification may be grounds for rejection of this proposal or bid, or termination of the award or, in some instances, criminal prosecution.

The Contractor, \_\_\_\_\_, certifies as stated above:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Title and Name of authorized representative

I am unable to certify to one or more the above statements. Attached is my explanation.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Title and Name of authorized representative

**ATTACHMENT 3**  
**CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

System for Award Management (SAM) record search for business name and business principal  
– (*Screenshot of Results*)

**ATTACHMENT 4**  
**CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

U.S. DEPARTMENT OF TRANSPORTATION  
GENERAL TERMS AND CONDITIONS UNDER THE FISCAL YEAR 2022 SAFE STREETS  
AND ROADS FOR ALL ("SS4A") GRANT PROGRAM: FHWA PROJECTS  
Revision 2: August 1, 2023

**U.S. DEPARTMENT OF TRANSPORTATION**

**GENERAL TERMS AND CONDITIONS UNDER THE  
FISCAL YEAR 2022 SAFE STREETS AND ROADS FOR ALL (“SS4A”) GRANT  
PROGRAM:  
FHWA PROJECTS**

Original: February 8, 2023  
Revision 1: March 28, 2023  
Revision 2: August 1, 2023

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## GENERAL TERMS AND CONDITIONS

The Infrastructure Investment and Jobs Act (Pub. L. 117–58, November 15, 2021; also referred to as the “Bipartisan Infrastructure Law” or “BIL”) established the Safe Streets and Roads for All (SS4A) Discretionary Grant Program (BIL Section 24112) and appropriated funds to the United States Department of Transportation (the “USDOT”) under Division J, Title VIII of BIL to implement the program. The funds are available to provide Federal financial assistance to support local initiatives to prevent death and serious injury on roads and streets, commonly referred to as “Vision Zero” or “Toward Zero Deaths” initiatives.

The USDOT published a Notice of Funding Opportunity (the “NOFO”) to solicit applications for Federal financial assistance in Fiscal Year 2022 for the SS4A Discretionary Grant Program (87 Fed. Reg. 31606 (May 24, 2022; subsequently amended in 87 Fed. Reg. 47818 on August 4, 2022).

These general terms and conditions are incorporated by reference in a project-specific grant agreement under the fiscal year 2022 SS4A grant program. Articles 1–6 are in the project-specific portion of the agreement. The term “Recipient” is defined in the project-specific portion of the agreement. Attachments A through D are project-specific attachments.

### ARTICLE 7 PURPOSE

**7.1 Purpose.** The purpose of this award is to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through safety action plan development or projects focused on all users, including pedestrians, bicyclists, public transportation users, motorists, personal conveyance and micromobility users, and commercial vehicle operators. The parties will accomplish that purpose by achieving the following objectives:

- (1) timely completing the Project; and
- (2) ensuring that this award does not substitute for non-Federal investment in the Project, except as proposed in the Grant Application, as modified by section 3.3 and Attachment B.

### ARTICLE 8 USDOT ROLE

#### **8.1 Division of USDOT Responsibilities.**

- (a) The Office of the Secretary of Transportation is ultimately responsible for the USDOT’s administration of the SS4A Grant Program.

- (b) The Federal Highway Administration (the “FHWA”) will administer this grant agreement on behalf of the USDOT. In this agreement, the “**Administering Operating Administration**” means the FHWA.

## **8.2 USDOT Program Contacts.**

FHWA Safe Streets and Roads for All  
Federal Highway Administration  
Office of Safety  
1200 New Jersey Avenue SE  
HSA-1, Mail Drop E71-117  
Washington, DC 20590  
SS4A.FHWA@dot.gov  
(202) 366-2201

and

[enter FHWA Division Office lead point of contact]  
[enter address]  
[enter email address]  
[enter telephone]

## **ARTICLE 9 RECIPIENT ROLE**

### **9.1 Statements on the Project.** The Recipient states that:

- (1) all material statements of fact in the Grant Application were accurate when that application was submitted; and
- (2) Attachment B documents all material changes in the information contained in that application.

### **9.2 Statements on Authority and Capacity.** The Recipient states that:

- (1) it has the authority to receive Federal financial assistance under this agreement;
- (2) It has the legal authority to complete the Project, including either ownership and/or maintenance responsibilities over a roadway network; safety responsibilities that affect roadways; or has an agreement from the agency that has ownership and/or maintenance responsibilities for the roadway within the applicant’s jurisdiction; if applicable.
- (3) it has the capacity, including institutional, managerial, and financial capacity, to comply with its obligations under this agreement;

- (4) not less than the difference between the “Total Eligible Project Cost” and the “SS4A Grant Amount” listed in section 3.3 are committed to fund the Project;
- (5) it has sufficient funds available, or an agreement with the agency that has ownership and/or maintenance responsibilities for the roadway within the recipient’s jurisdiction, to ensure that infrastructure completed or improved under this agreement will be operated and maintained in compliance with this agreement and applicable Federal law; and
- (6) the individual executing this agreement on behalf of the Recipient has authority to enter this agreement and make the statements in this article 9 and in section 24.7 on behalf of the Recipient.

**9.3 USDOT Reliance.** The Recipient acknowledges that:

- (1) the USDOT relied on statements of fact in the Grant Application to select the Project to receive this award;
- (2) the USDOT relied on statements of fact in both the Grant Application and this agreement to determine that the Recipient and the Project are eligible under the terms of the NOFO;
- (3) the USDOT relied on statements of fact in both the Grant Application and this agreement to establish the terms of this agreement; and
- (4) the USDOT’s selection of the Project to receive this award prevented awards under the NOFO to other eligible applicants.

**9.4 Project Delivery.**

- (a) The Recipient shall complete the Project under the terms of this agreement.
- (b) The Recipient shall ensure that the Project is financed, constructed, operated, and maintained in accordance with all applicable Federal laws, regulations, and policies.
- (c) The Recipient shall provide any certifications or assurances deemed necessary by the USDOT in ensuring the Recipient’s compliance with all applicable laws, regulations, and policies.
- (d) The Recipient shall provide access to records as provided at 2 CFR 200.337.

**9.5 Rights and Powers Affecting the Project.**

- (a) The Recipient shall not take or permit any action that deprives it of any rights or powers necessary to the Recipient’s performance under this agreement without written approval of the USDOT.

- (b) The Recipient shall act, in a manner acceptable to the USDOT, promptly to acquire, extinguish, or modify any outstanding rights or claims of right of others that would interfere with the Recipient's performance under this agreement.

**9.6 Notification of Changes to Key Personnel.** The Recipient shall notify all USDOT representatives who are identified in Section 4.4 in writing within 30 calendar days of any change in key personnel who are identified in Section 4.3.

## **ARTICLE 10 AWARD AMOUNT, OBLIGATION, AND TIME PERIODS**

**10.1 Federal Award Amount.** The USDOT hereby awards a SS4A Grant to the Recipient in the amount listed in Section 2.2 as the SS4A Grant Amount.

**10.2 Federal Obligations.**

This agreement obligates for the budget period listed in section 2.5 of the grant agreement.

(a) If the Federal Obligation Type identified in section 2.3 is "Single," then the project-specific agreement obligates for the budget period the amount listed in section 2.2. as the Grant Amount and sections 10.2 (c)–10.2(f) do not apply to the project specific agreement.

(b) If the Federal Obligation Type identified in section 2.3 is "Multiple," then an amount up to the Grant Amount listed in section 2.2 will be obligated with one initial obligation and one or more subsequent, optional obligations, as described in sections 10.2(c)–10.2(f).

(c) The Obligation Condition Table in section 2.3 allocates the Grant among separate portions of the Project for the purpose of the Federal obligation of funds. The scope of each portion of the Project that is identified in that table is described in section 2.3.

(d) The project-specific agreement obligates for the budget period only the amounts allocated in the Obligation Condition Table in section 2.3 to portions of the Project for which that table does not list an obligation condition.

(e) The project-specific agreement does not obligate amounts allocated in the Obligation Condition Table in section 2.3 to portions of the Project for which that table lists an obligation condition. The parties may obligate the amounts allocated to those portions of the Project only by modifying the project specific agreement under section 21.

(f) For each portion of the Project for which the Obligation Condition Table in section 2.3 lists an obligation condition, the amount allocated in that table to that portion of the Project will be obligated if the condition is met not later than the date listed in Section 2.5 of the project-specific agreement.

(g) For any portion of the Project for which the Obligation Condition Table in section 2.3 lists an obligation condition, if the obligation condition is satisfied, the parties amend this agreement documenting that:

(1) the FHWA determines that the obligation condition listed in that table for that portion of the Project is satisfied; and

(2) the FHWA determines that all applicable Federal requirements for obligating the amount are satisfied.

(h) The Recipient shall not request reimbursement of costs for a portion of the Project for which the Obligation Condition Table in section 2.3 lists an obligation condition, unless the amount allocated in that table to that portion of the Project is obligated under section 10.2(c)-(f).

**(i) Reserved.**

**(j) The Recipient acknowledges that:**

(1) the FHWA is not liable for payments for a portion of the Project for which the Obligation Condition Table in section 2.3 lists an obligation condition, unless the amount allocated in that table to that portion of the Project is obligated under section 10.2(c)-(f);

(2) any portion of the Grant that is not obligated under this section 10.2 by the budget period end date identified in the project-specific agreement for those funds lapses on the day after that date and becomes unavailable for the Project; and

(3) the FHWA may consider the failure to obligate funds by the budget period end date identified in the project-specific agreement as applicable to the Grant Program for those funds to be a basis for terminating the project-specific agreement under section 16.

### **10.3 Budget Period**

The budget period for this award begins on the date of this agreement and ends on the budget period end date that is listed in section 2.5, which shall be no later than 5 years from the date of grant execution. In this agreement, “budget period” is used as defined at 2 C.F.R. 200.1.

### **10.4 Period of Performance.**

(a) The period of performance for this award begins on the effective date of award listed in page 1 item 2 and ends on the period of performance end date that is listed in Section 2.3.

(b) In this agreement, “period of performance” is used as defined at 2 C.F.R. 200.1.

**ARTICLE 11**  
**STATEMENT OF WORK, SCHEDULE, AND BUDGET CHANGES**

- 11.1 Notification Requirement.** The Recipient shall notify all USDOT representatives who are identified in section 4.4 in writing within 30 calendar days of any change in circumstances or commitments that adversely affect the Recipient’s plan to complete the Project. In that notification, the Recipient shall describe the change and what actions the Recipient has taken or plans to take to ensure completion of the Project. This notification requirement under this section 11.1 is separate from any requirements under this article 11 that the Recipient request amendment of this agreement.
- 11.2 Statement of Work Changes.** If the Project’s activities differ from the statement of work that is described in section 3.1 and Attachment B, then the Recipient shall request an amendment of this agreement to update section 3.1.
- 11.3 Schedule Changes.** If one or more of the following conditions are satisfied, then the Recipient shall request an amendment of this agreement to update the relevant dates:
- (1) a substantial completion date for the Project or a component of the Project is listed in section 3.2 and the Recipient’s estimate for that milestone changes to a date that is more than six months after the date listed in section 3.2; or
  - (2) a schedule change would require the period of performance to continue after the period of performance end date listed in section 2.4.

For other schedule changes, the Recipient shall request an amendment of this agreement unless the USDOT has consented, in writing consistent with applicable requirements, to the change.

**11.4 Budget Changes.**

- (a) The Recipient acknowledges that if the cost of completing the Project increases:
  - (1) that increase does not affect the Recipient’s obligation under this agreement to complete the Project; and
  - (2) the USDOT will not increase the amount of this award to address any funding shortfall.
- (b) The Recipient shall request an amendment of this agreement to update section 3.3 and Attachment B if, in comparing the Project’s budget to the amounts listed in section 3.3:
  - (1) the “Non-Federal Funds” amount decreases; or
  - (2) the “Total Eligible Project Cost” amount decreases.



- (c) For budget changes that are not identified in section 11.4(b), the Recipient shall request an amendment of this agreement to update section 3.3 and Attachment B unless the USDOT has consented, in writing consistent with applicable requirements, to the change.
- (d) If the actual eligible project costs are less than the “Total Eligible Project Cost” that is listed in section 3.3, then the Recipient may propose to the USDOT, in writing consistent with applicable requirements, specific additional activities that are within the scope of this award, as defined in sections 7.1 and 3.1, and that the Recipient could complete with the difference between the “Total Eligible Project Cost” that is listed in section 3.3 and the actual eligible project costs.
- (e) If the actual eligible project costs are less than the “Total Eligible Project Cost” that is listed in section 3.3 and either the Recipient does not make a proposal under section 11.4(d) or the USDOT does not accept the Recipient’s proposal under section 11.4(d), then:
  - (1) in a request under section 11.4(b), the Recipient shall reduce the Federal Share by the difference between the “Total Eligible Project Cost” that is listed in section 3.3 and the actual eligible project costs; and
  - (2) if that amendment reduces this award and the USDOT had reimbursed costs exceeding the revised award, the Recipient shall request to add additional project work that is within the scope of this project.

In this agreement, “**Federal Share**” means the sum of the “SS4A Action Plan or Implementation Grant Amount” and the “Other Federal Funds” amounts that are listed in section 3.3.

- (f) The Recipient acknowledges that amounts that are required to be refunded under section 11.4(e)(2) constitute a debt to the Federal Government that the USDOT may collect under 2 C.F.R. 200.346 and the Federal Claims Collection Standards (31 C.F.R. parts 900–999).

**11.5 USDOT Acceptance of Changes.** The USDOT may accept or reject amendments requested under this article 11, and in doing so may elect to consider only the interests of the SS4A grant program and the USDOT. The Recipient acknowledges that requesting an amendment under this article 11 does not amend, modify, or supplement this agreement unless the USDOT accepts that amendment request and the parties modify this agreement under section 21.1.

## **ARTICLE 12 GENERAL REPORTING TERMS**

**12.1 Report Submission.** The Recipient shall send all reports required by this agreement to all USDOT contacts who are listed in section 4.4. Reports will be added to a central repository maintained by FHWA.

**12.2 Alternative Reporting Methods.** FHWA may establish processes for the Recipient to submit reports required by this agreement, including electronic submission processes. If the Recipient is notified of those processes in writing, the Recipient shall use the processes required by the FHWA.

**12.3 Paperwork Reduction Act Notice.**

Under 5 C.F.R. 1320.6, the Recipient is not required to respond to a collection of information that does not display a currently valid control number issued by the Office of Management and Budget (the “OMB”). Collections of information conducted under this agreement are approved under OMB Control No. 2125-0675.

**ARTICLE 13  
PROGRESS AND FINANCIAL REPORTING**

**13.1 Quarterly Program Performance Reports.** Quarterly, on or before the 20th day of the first month of each calendar year (e.g., reports due on or before January 20<sup>th</sup>, April 20<sup>th</sup>, July 20<sup>th</sup>, and October 20<sup>th</sup>) and until the end of the period of performance, the Recipient shall submit to the USDOT a Quarterly Project Progress Report in the format and with the content described in Exhibit C (SF-PPR). If the date of this agreement is in the final month of a calendar year, then the Recipient shall submit the first Quarterly Project Progress Report in the second calendar year that begins after the date of this agreement.

**13.2 Quarterly Financial Status.** Quarterly, on or before the 20<sup>th</sup> day of the first month of each calendar year, the Recipient shall submit a Federal Financial Report using SF-425.

**ARTICLE 14  
PERFORMANCE REPORTING**

**14.1 Baseline Performance Measurement.** If the Designation in Section 2.5 is “Implementation,” then:

- (1) the Recipient shall collect data for each performance measure that is identified in the Performance Measure Table in Attachment A, accurate as of the Baseline Measurement Date that is identified in Attachment A; and
- (2) on or before the Baseline Report Date that is stated in Attachment A, the Recipient shall submit a Baseline Performance Measurement Report that contains the data collected under this section 14.1 and a detailed description of the data sources, assumptions, variability, and estimated levels of precision for each performance measure that is identified in the Performance Measure Table in Attachment A.

**14.2 Section 24112(h) Report:** The Recipient shall submit to the USDOT, not later than 120 days after the end of the period of performance, a report that describes, consistent with section 24112(g) of BIL:

- (1) the costs of carrying out the project;
- (2) the outcomes and benefits that each eligible project generated as identified in the grant application and measured by data to the maximum extent practicable (i.e. number of fatalities and serious injuries that occurred within the limits of the project location); and
- (3) the lessons learned, and any recommendations related to future projects or strategies to prevent death and serious injuries on roads and streets.

**14.3 Performance Measurement Information.**

For each performance measure that is identified in the Performance Measure Table in Attachment A, not later than January 31 of each year that follows a calendar year within the period of performance during which data was collected, the Recipient shall submit to the USDOT a Performance Measurement Report containing the data collected in the previous calendar year and stating the dates when the data was collected.

**14.4 Performance Reporting Survival.**

The data collection and reporting requirements in this article 14 survive the termination of this agreement which is three years post period of performance.

**14.5 Program Evaluation.**

As a condition of grant award, the recipient may be required to participate in an evaluation undertaken by USDOT, or another agency or partner. The evaluation may take different forms such as an implementation assessment across grant recipients, an impact and/or outcomes analysis of all or selected sites within or across grant recipients, or a benefit/cost analysis or assessment of return on investment. The Department may require applicants to collect data elements to aid the evaluation. As a part of the evaluation, as a condition of award, grant recipients must agree to: (1) make records available to the evaluation contractor; (2) provide access to program records, and any other relevant documents to calculate costs and benefits; (3) in the case of an impact analysis, facilitate the access to relevant information as requested; and (4) follow evaluation procedures as specified by the evaluation contractor or USDOT staff.

**ARTICLE 15**  
**NONCOMPLIANCE AND REMEDIES**

**15.1 Noncompliance Determinations.**

- (a) If the USDOT determines that the Recipient may have failed to comply with the United States Constitution, Federal law, or the terms and conditions of this agreement, the USDOT may notify the Recipient of a proposed determination of noncompliance. For the notice to be effective, it must be written and the USDOT must include an explanation of the nature of the noncompliance, describe a remedy, state whether that remedy is proposed or effective at an already determined date, and describe the process through and form in which the Recipient may respond to the notice.
- (b) If the USDOT notifies the Recipient of a proposed determination of noncompliance under section 15.1(a), the Recipient may, not later than 7 calendar days after the notice, respond to that notice in the form and through the process described in that notice. In its response, the Recipient may:
  - (1) accept the remedy;
  - (2) acknowledge the noncompliance, but propose an alternative remedy; or
  - (3) dispute the noncompliance.

To dispute the noncompliance, the Recipient must include in its response documentation or other information supporting the Recipient's compliance.

- (c) The USDOT may make a final determination of noncompliance only:
  - (1) after considering the Recipient's response under section 15.1(b); or
  - (2) if the Recipient fails to respond under section 15.1(b), after the time for that response has passed.
- (d) To make a final determination of noncompliance, the USDOT must provide a notice to the Recipient that states the bases for that determination.

**15.2 Remedies.**

- (a) If the USDOT makes a final determination of noncompliance under section 15.1(d), the USDOT may impose a remedy, including:
  - (1) additional conditions on the award;
  - (2) any remedy permitted under 2 C.F.R. 200.339–200.340, including withholding of payments; disallowance of previously reimbursed costs, requiring refunds from the Recipient to USDOT; suspension or termination of the award; or suspension and disbarment under 2 C.F.R. part 180; or

- (3) any other remedy legally available.
- (b) To impose a remedy, the USDOT must provide a written notice to the Recipient that describes the remedy, but the USDOT may make the remedy effective before the Recipient receives that notice.
- (c) If the USDOT determines that it is in the public interest, the USDOT may impose a remedy, including all remedies described in section 15.2(a), before making a final determination of noncompliance under section 15.1(d). If it does so, then the notice provided under section 15.1(d) must also state whether the remedy imposed will continue, be rescinded, or modified.
- (d) In imposing a remedy under this section 15.2 or making a public interest determination under section 15.2(c), the USDOT may elect to consider the interests of only the USDOT.
- (e) The Recipient acknowledges that amounts that the USDOT requires the Recipient to refund to the USDOT due to a remedy under this section 15.2 constitute a debt to the Federal Government that the USDOT may collect under 2 C.F.R. 200.346 and the Federal Claims Collection Standards (31 C.F.R. parts 900–999).

### **15.3 Other Oversight Entities.**

Nothing in this article 15 limits any party’s authority to report activity under this agreement to the United States Department of Transportation Inspector General or other appropriate oversight entities.

## **ARTICLE 16 AGREEMENT TERMINATION**

### **16.1 USDOT Termination.**

- (a) The USDOT may terminate this agreement and all of its obligations under this agreement if any of the following occurs:
  - (1) the Recipient fails to obtain or provide any non-SS4A Grant contribution (all eligible project costs other than the SS4A Grant Amount, as described in section 3.2 table (a) of the grant agreement) or alternatives approved by the USDOT as provided in this agreement and consistent with article 3;
  - (2) a construction start date for the Project or Strategy is listed in section 3.2 and the Recipient fails to meet that milestone by six months after the date listed in section 3.2;

- (3) a substantial completion date for the Project or Strategy is listed in section 3.2 and the Recipient fails to meet that milestone by six months after the date listed in section 3.2;
  - (4) the Recipient fails to comply with the terms and conditions of this agreement, including a material failure to comply with the schedule in section 3.2 even if it is beyond the reasonable control of the Recipient; or,
  - (5) the USDOT determines that termination of this agreement is in the public interest.
  - (6) the Recipient fails to expend the funds within 5 years after the date on which the government executes the grant agreement, which is the date funds are provided for the project.
- (b) In terminating this agreement under this section, the USDOT may elect to consider only the interests of the USDOT.
- (c) This section 16.1 does not limit the USDOT's ability to terminate this agreement as a remedy under section 15.2.
- (d) The Recipient may request that the USDOT terminate the agreement under this section 16.1.

## **16.2 Closeout Termination.**

- (a) This agreement terminates on Project Closeout.
- (b) In this agreement, "**Project Closeout**" means the date that the USDOT notifies the Recipient that the award is closed out. Under 2 C.F.R. 200.344, Project Closeout should occur no later than one year after the end of the period of performance.

**16.3 Post-Termination Adjustments.** The Recipient acknowledges that under 2 C.F.R. 200.345–200.346, termination of the agreement does not extinguish the USDOT's authority to disallow costs, including costs that USDOT reimbursed before termination, and recover funds from the Recipient.

## **16.4 Non-Terminating Events.**

- (a) The end of the period of performance described under section 10.4 does not terminate this agreement or the Recipient's obligations under this agreement.
- (b) The liquidation of funds under section 20.1 does not terminate this agreement or the Recipient's obligations under this agreement.

**16.5 Other Remedies.** The termination authority under this article 16 supplements and does not limit the USDOT's remedial authority under article 15 or 2 C.F.R. part 200, including 2 C.F.R. 200.339–200.340.

**ARTICLE 17**  
**MONITORING, FINANCIAL MANAGEMENT, CONTROLS, AND RECORDS**

**17.1 Recipient Monitoring and Record Retention.**

- (a) The Recipient shall monitor activities under this award, including activities under subawards and contracts, to ensure:
  - (1) that those activities comply with this agreement; and
  - (2) that funds provided under this award are not expended on costs that are not allowable under this award or not allocable to this award.
- (b) If the Recipient makes a subaward under this award, the Recipient shall monitor the activities of the subrecipient in compliance with 2 C.F.R. 200.332(d).
- (c) The Recipient shall retain records relevant to the award as required under 2 C.F.R. 200.334.

**17.2 Financial Records and Audits.**

- (a) The Recipient shall keep all project accounts and records that fully disclose the amount and disposition by the Recipient of the award funds, the total cost of the Project, and the amount or nature of that portion of the cost of the Project supplied by other sources, and any other financial records related to the project.
- (b) The Recipient shall keep accounts and records described under section 17.2(a) in accordance with a financial management system that meets the requirements of 2 C.F.R. 200.301–200.303, 2 C.F.R. part 200, subpart F, and title 23, United States Code, and will facilitate an effective audit in accordance with 31 U.S.C. 7501–7506.
- (c) The Recipient shall separately identify expenditures under the fiscal year 2022 SS4A grants program in financial records required for audits under 31 U.S.C. 7501–7506. Specifically, the Recipient shall:
  - (1) list expenditures under that program separately on the schedule of expenditures of Federal awards required under 2 C.F.R. part 200, subpart F, including “FY 2022” in the program name; and
  - (2) list expenditures under that program on a separate row under Part II, Item 1 (“Federal Awards Expended During Fiscal Period”) of Form SF-SAC, including “FY 2022” in column c (“Additional Award Identification”).

- 17.3 Internal Controls.** The Recipient shall establish and maintain internal controls as required under 2 C.F.R. 200.303.

**17.4 USDOT Record Access.** The USDOT may access Recipient records related to this award under 2 C.F.R. 200.337.

## **ARTICLE 18 CONTRACTING AND SUBAWARDS**

**18.1 Build America, Buy America.** This award term implements § 70914(a) of the Build America, Buy America Act, Pub. L. No. 117-58, div. G, tit. IX, subtitle A, 135 Stat. 429, 1294 (2021) and Office of Management and Budget (OMB) Memorandum M-22-11, “Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure.”

*Requirement to Use Iron, Steel, Manufactured Products, and Construction Materials Produced in the United States.*

The Recipient shall not use funds provided under this award for a project for infrastructure unless:

- (1) all iron and steel used in the project are produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
- (2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product; and
- (3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

*Inapplicability.*

The domestic content procurement preference in this award term only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

*Waivers.*



When necessary, the Recipient may apply for, and the USDOT may grant, a waiver from the domestic content procurement preference in this award term.

A request to waive the application of the domestic content procurement preference must be in writing. The USDOT will provide instructions on the waiver process and on the format, contents, and supporting materials required for any waiver request. Waiver requests are subject to public comment periods of no less than 15 days and must be reviewed by the Office of Management and Budget (OMB) Made in America Office.

When the USDOT has made a determination that one of the following exceptions applies, the awarding official may waive the application of the domestic content procurement preference in any case in which the USDOT determines that:

- (1) applying the domestic content procurement preference would be inconsistent with the public interest;
- (2) the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
- (3) the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

There may be instances where an award qualifies, in whole or in part, for an existing waiver described at <https://www.transportation.gov/office-policy/transportation-policy/made-in-america>.

### *Definitions*

“Construction materials” includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

“Domestic content procurement preference” means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States.

“Primarily iron or steel” means that the cost of the iron and steel content in the article, material, or supply exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron

or steel components. The origin of the elements of the iron or steel is not relevant to the determination of whether it is domestic or foreign.

**“Project”** means the construction, alteration, maintenance, or repair of infrastructure in the United States.

- (a) Construction materials used in the Project are subject to the domestic preference requirement at § 70914 of the Build America, Buy America Act, Pub. L. No. 117-58, div. G, tit. IX, subtitle A, 135 Stat. 429, 1294 (2021), as implemented by OMB, USDOT, and FHWA. The Recipient acknowledges that this agreement is neither a waiver of § 70914(a) nor a finding under § 70914(b).
- (b) Under 2 C.F.R. 200.322, as appropriate and to the extent consistent with law, the Recipient should, to the greatest extent practicable under this award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. The Recipient shall include the requirements of 2 C.F.R. 200.322 in all subawards including all contracts and purchase orders for work or products under this award.

**18.2 Small and Disadvantaged Business Requirements.** The Recipient shall expend all funds under this award in compliance with the requirements at 2 C.F.R. 200.321 (“Contracting with small and minority businesses, women’s business enterprises, and labor surplus area firms”).

**18.3 Engineering and Design Services.** The Recipient shall award each contract or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping, or related services with respect to the project in the same manner that a contract for architectural and engineering services is negotiated under 2 CFR 200.320 or an equivalent qualifications-based requirement prescribed for or by the Recipient.

**18.4 Foreign Market Restrictions.** The Recipient shall not allow funds provided under this award to be used to fund the use of any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

**18.5 Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment.** The Recipient acknowledges that Section 889 of Pub. L. No. 115-232, 2 C.F.R. 200.216 and 2 C.F.R. 200.471 prohibit the Recipient and all subrecipients from procuring or obtaining certain telecommunications and video surveillance services or equipment under this award.

**18.6 Recipient Responsibilities For Subawards.** If the Recipient makes a subaward under this award, the Recipient shall comply with the requirements on pass-through entities under 2 C.F.R. parts 200 and 1201, including 2 C.F.R. 200.331–200.333.

## **18.7 Subaward and Contract Authorization.**

If the USDOT Office for Subaward and Contract Authorization identified in section 5.1 is “FHWA Office of Acquisition and Grants Management,” then the Recipient shall obtain prior written approval from the USDOT agreement officer for the subaward or contracting out of any work under this agreement for Action Plan awards. This provision does not apply to the acquisition of supplies, material, equipment or general support services. That approval will be contingent upon a fair and reasonable price determination on the part of the Recipient and the agreement officer’s concurrence on that determination.

## **ARTICLE 19 COSTS, PAYMENTS, AND UNEXPENDED FUNDS**

- 19.1 Limitation of Federal Award Amount.** Under this award, the USDOT shall not provide funding greater than the amount obligated on the SS4A Grant cover page, Item 11, Federal Funds Obligated. The Recipient acknowledges that USDOT is not liable for payments exceeding that amount, and the Recipient shall not request reimbursement of costs exceeding that amount.
- 19.2 Projects Costs.** This award is subject to the cost principles at 2 C.F.R. part 200 subpart E, including provisions on determining allocable costs and determining allowable costs.
- 19.3 Timing of Project Costs.**
- (a) The Recipient shall not charge to this award costs that are incurred after the period of performance.
  - (b) The Recipient shall not charge to this award costs that were incurred before the effective date of award of this agreement, unless there has been an approval pre-award costs under 2 C.F.R. 200.458. pre-award costs under 2 C.F.R. 200.458.
- 19.4 Recipient Recovery of Federal Funds.** The Recipient shall make all reasonable efforts, including initiating litigation, if necessary, to recover Federal funds if the USDOT determines, after consultation with the Recipient, that those funds have been spent fraudulently, wastefully, or in violation of Federal laws, or misused in any manner under this award. The Recipient shall not enter a settlement or other final position, in court or otherwise, involving the recovery of funds under the award unless approved in advance in writing by the USDOT.
- 19.5 Unexpended Federal Funds.** Any Federal funds that are awarded at section 10.1 but not expended on allocable, allowable costs remain the property of the United States.

**19.6 Timing of Payments to the Recipient.** When reimbursement is used, the Recipient shall not request reimbursement of a cost before the Recipient has entered an obligation for that cost.

**19.7 Payment Method.** The USDOT may deny a payment request that is not submitted using the method identified in section 5.2.

**19.8 Information Supporting Expenditures**

(a) If the USDOT Payment System identified in section 5.2 is “DELPHI eInvoicing,” then when requesting reimbursement of costs incurred or credit for cost share incurred, the Recipient shall electronically submit the SF 270 (Request for Advance or Reimbursement), shall identify the Federal share and the Recipient’s share of costs, and shall submit supporting cost detail to clearly document all costs incurred. As supporting cost detail, the Recipient shall include a detailed breakout of all costs incurred, including direct labor, indirect costs, other direct costs, and travel.

(b) If the Recipient submits a request for reimbursement that the USDOT determines does not include or is not supported by sufficient detail, the USDOT may deny the request or withhold processing the request until the Recipient provides sufficient detail.

**19.9 Reimbursement Frequency.** If the USDOT Payment System identified in section 5.2 is “DELPHI eInvoicing,” then the Recipient shall not request reimbursement more frequently than monthly.

**ARTICLE 20**

**LIQUIDATION, ADJUSTMENTS, AND FUNDS AVAILABILITY**

**20.1 Liquidation of Recipient Obligations.**

(a) The Recipient shall liquidate all obligations of award funds under this agreement not later than the earlier of (1) 120 days after the end of the period of performance or (2) the statutory availability to eligible entities date, which shall be 5 years after the date on which the grant is provided.

(b) Liquidation of obligations and adjustment of costs under this agreement follow the requirements of 2 C.F.R. 200.344–200.346.

**ARTICLE 21**

**AGREEMENT MODIFICATIONS**

**21.1 Bilateral Modifications.** The parties may amend, modify, or supplement this agreement by mutual agreement in writing signed by the USDOT and the Recipient. Either party

may request to amend, modify, or supplement this agreement by written notice to the other party.

**21.2 Unilateral Contact Modifications.**

- (a) The USDOT may update the contacts who are listed in sections 4.4 by written notice to all of the Recipient contacts who are listed in section 4.3.

**21.3 USDOT Unilateral Modifications.**

- (a) The USDOT may unilaterally modify this agreement to comply with Federal law, including the Program Statute.
- (b) To unilaterally modify this agreement under this section 21.3(a), the USDOT must provide a notice to the Recipient that includes a description of the modification and state the date that the modification is effective.

**21.4 Other Modifications.** The parties shall not amend, modify, or supplement this agreement except as permitted under sections 21.1, 21.2, or 21.3. If an amendment, modification, or supplement is not permitted under section 21.1, not permitted under section 21.2, and not permitted under section 21.3, it is void.

**ARTICLE 22  
CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE**

**22.1 Climate Change and Environmental Justice.** Consistent with Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad” (Jan. 27, 2021), Attachment C documents the consideration of climate change and environmental justice impacts of the Project.

**ARTICLE 23  
RACIAL EQUITY AND BARRIERS TO OPPORTUNITY**

**23.1 Racial Equity and Barriers to Opportunity.** Consistent with Executive Order 13985, “Advancing Racial Equity and Support for Underserved Communities Through the Federal Government” (Jan. 20, 2021), Attachment D documents activities related to the Project to improve racial equity and reduce barriers to opportunity.

**ARTICLE 24**  
**FEDERAL FINANCIAL ASSISTANCE, ADMINISTRATIVE, AND NATIONAL**  
**POLICY REQUIREMENTS**

**24.1 Uniform Administrative Requirements for Federal Awards.** The Recipient shall comply with the obligations on non-Federal entities under 2 C.F.R. parts 200 and 1201.

**24.2 Federal Law and Public Policy Requirements.**

- (a) The Recipient shall ensure that Federal funding is expended in full accordance with the United States Constitution, Federal law, and statutory and public policy requirements: including but not limited to, those protecting free speech, religious liberty, public welfare, the environment, and prohibiting discrimination.
- (b) The failure of this agreement to expressly identify Federal law applicable to the Recipient or activities under this agreement does not make that law inapplicable.

**24.3 Federal Freedom of Information Act.**

- (a) The USDOT is subject to the Freedom of Information Act, 5 U.S.C. 552.
- (b) The Recipient acknowledges that the Technical Application and materials submitted to the USDOT by the Recipient related to this agreement may become USDOT records subject to public release under 5 U.S.C. 552.

**24.4 History of Performance.** Under 2 C.F.R 200.206, any Federal awarding agency may consider the Recipient's performance under this agreement when evaluating the risks of making a future Federal financial assistance award to the Recipient.

**24.5 Whistleblower Protection.**

- (a) The Recipient acknowledges that it is a "grantee" within the scope of 41 U.S.C. 4712, which prohibits the Recipient from taking certain actions against an employee for certain disclosures of information that the employee reasonably believes are evidence of gross mismanagement of this award, gross waste of Federal funds, or a violation of Federal law related this this award.
- (b) The Recipient shall inform its employees in writing of the rights and remedies provided under 41 U.S.C. 4712, in the predominant native language of the workforce.

**24.6 External Award Terms and Obligations.**

- (a) In addition to this document and the contents described in article 29, this agreement includes the following additional terms as integral parts:
  - (1) Appendix A to 2 C.F.R. part 25: System for Award Management and Universal Identifier Requirements;

- (2) Appendix A to 2 C.F.R. part 170: Reporting Subawards and Executive Compensation;
- (3) 2 C.F.R. 175.15(b): Trafficking in Persons; and
- (4) Appendix XII to 2 C.F.R. part 200: Award Term and Condition for Recipient Integrity and Performance Matters.

(b) The Recipient shall comply with:

- (1) 49 C.F.R. part 20: New Restrictions on Lobbying;
- (2) 49 C.F.R. part 21: Nondiscrimination in Federally-Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964;
- (3) 49 C.F.R. part 27: Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance; and
- (4) Subpart B of 49 C.F.R. part 32: Governmentwide Requirements for Drug-free Workplace (Financial Assistance).

**24.7 Incorporated Certifications.** The Recipient makes the statements in the following certifications, which are incorporated by reference:

- (1) Appendix A to 49 CFR part 20 (Certification Regarding Lobbying).

## **ARTICLE 25 ASSIGNMENT**

**25.1 Assignment Prohibited.** The Recipient shall not transfer to any other entity any discretion granted under this agreement, any right to satisfy a condition under this agreement, any remedy under this agreement, or any obligation imposed under this agreement.

## **ARTICLE 26 WAIVER**

**26.1 Waivers.**

- (a) A waiver granted by USDOT under this agreement will not be effective unless it is in writing and signed by an authorized representative of USDOT.
- (b) A waiver granted by USDOT under this agreement on one occasion will not operate as a waiver on other occasions.

- (c) If USDOT fails to require strict performance of a provision of this agreement, fails to exercise a remedy for a breach of this agreement, or fails to reject a payment during a breach of this agreement, that failure does not constitute a waiver of that provision or breach.

## **ARTICLE 27 ADDITIONAL TERMS AND CONDITIONS**

- 27.1 Effect of Action Plan or Implementation Plan.** Based on information that the Recipient provided to the USDOT, including the Technical Application, at indicated in section 2.5, this agreement designates this award as an Action Plan award or a Implementation award, as defined in the NOFO. The Recipient shall comply with the requirements that accompany that designation on minimum award size, geographic location, and cost sharing.
- 27.2 Disclaimer of Federal Liability.** The USDOT shall not be responsible or liable for any damage to property or any injury to persons that may arise from, or be incident to, performance or compliance with this agreement.
- 27.3 Environmental Review**
- (a) In this section, “**Environmental Review Entity**” means:
- (1) if the Project is located in a State that has assumed responsibilities for environmental review activities under 23 U.S.C. 326 or 23 U.S.C. 327 and the Project is within the scope of the assumed responsibilities, the State; and
  - (2) for all other cases, the FHWA.
- (b) Except as authorized under section 27.3(c), the Recipient shall not begin final design; acquire real property, construction materials, or equipment; begin construction; or take other actions that represent an irretrievable commitment of resources for the Project unless and until:
- (1) the Environmental Review Entity complies with the National Environmental Policy Act, 42 U.S.C. 4321 to 4370m-12, and any other applicable environmental laws and regulations; and
  - (2) if the Environmental Review Entity is not the Recipient, the Environmental Review Entity provides the Recipient with written notice that the environmental review process is complete.
- (c) If the Recipient is using procedures for early acquisition of real property under 23 C.F.R. 710.501 or hardship and protective acquisitions of real property 23 C.F.R. 710.503, the Recipient shall comply with 23 C.F.R. 771.113(d)(1).



- (d) The Recipient acknowledges that:
- (1) the Environmental Review Entity's actions under section 27.3(a) depend on the Recipient conducting necessary environmental analyses and submitting necessary documents to the Environmental Review Entity; and
  - (2) applicable environmental statutes and regulation may require the Recipient to prepare and submit documents to other Federal, State, and local agencies.
- (e) Consistent with 23 C.F.R. 771.105(a), to the extent practicable and consistent with Federal law, the Recipient shall coordinate all environmental investigations, reviews, and consultations as a single process.
- (f) The activities described in this agreement may inform environmental decision-making processes, but the parties do not intend this agreement to document the alternatives under consideration under those processes. If a build alternative is selected that does not align information in this agreement, then:
- (1) the parties may amend this agreement under section 21.1 for consistency with the selected build alternative; or
  - (2) if the USDOT determines that the condition at section 16.1(a)(5) is satisfied, the USDOT may terminate this agreement under section 16.1(a)(5).
- (g) The Recipient shall complete any mitigation activities described in the environmental document or documents for the Project, including the terms and conditions contained in the required permits and authorizations for the Project.

**27.4 Railroad Coordination.** If the agreement includes one or more milestones identified as a "Railroad Coordination Agreement," then for each of those milestones, the Recipient shall enter a standard written railroad coordination agreement, consistent with 23 C.F.R. 646.216(d), no later than the deadline date identified for that milestone, with the identified railroad for work and operation within that railroad's right-of-way.

**27.5 Relocation and Real Property Acquisition.**

- (a) The Recipient shall comply with the land acquisition policies in 49 C.F.R. part 24 subpart B and shall pay or reimburse property owners for necessary expenses as specified in that subpart.
- (b) The Recipient shall provide a relocation assistance program offering the services described in 49 C.F.R. part 24 subpart C and shall provide reasonable relocation payments and assistance to displaced persons as required in 49 C.F.R. part 24 subparts D–E.
- (c) The Recipient shall make available to displaced persons, within a reasonable period of time prior to displacement, comparable replacement dwellings in accordance with 49 C.F.R. part 24 subpart E.

**27.6 Equipment Disposition.**

- (a) In accordance with 2 C.F.R. 200.313 and 1201.313, if the Recipient or a subrecipient acquires equipment under this award, then when that equipment is no longer needed for the Project that entity shall request disposition instructions from the FHWA.
- (b) In accordance with 2 C.F.R. 200.443(d), the distribution of the proceeds from the disposition of equipment must be made in accordance with 2 C.F.R. 200.313–200.316 and 2 C.F.R. 1201.313.
- (c) The Recipient shall ensure compliance with this section 27.6 for all tiers of subawards under this award.

**ARTICLE 28  
MANDATORY AWARD INFORMATION**

**28.1 Information Contained in a Federal Award.** For 2 C.F.R. 200.211:

- (1) the “Federal Award Date” is the date of this agreement, as defined under section 30.2;
- (2) the “Assistance Listings Number” is 20.939 and the “Assistance Listings Title” is “Safe Streets and Roads for All Grant Program”; and
- (3) this award is not for research and development.

**ARTICLE 29  
CONSTRUCTION AND DEFINITIONS**

**29.1 Attachments.** This agreement includes the following attachments as integral parts:

Attachment A	Performance Measurement Information
Attachment B	Changes from Application
Attachment C	Racial Equity and Barriers to Opportunity
Attachment D	Climate Change and Environmental Justice Impacts
Attachment E	Labor and Workforce
Attachment F	Critical Infrastructure Security and Resilience

**29.2 Exhibits.** The following exhibits, which are in the document titled “Exhibits to FHWA Grant Agreements Under the Fiscal Year 2022 SS4A Grant Program”, dated February 8, 2023, and available at [https://www.transportation.gov/sites/dot.gov/files/2023-02/SS4A-FY22-FHWA-Exhibits\\_2023-02-08.pdf](https://www.transportation.gov/sites/dot.gov/files/2023-02/SS4A-FY22-FHWA-Exhibits_2023-02-08.pdf), are part of this agreement.

Exhibit A	Applicable Federal Laws and Regulations
Exhibit B	Additional Standard Terms

- Exhibit C Quarterly Project Progress Reports and Recertifications: Format and Content
- Exhibit D Form for Subsequent Obligation of Funds

- 29.3 Construction.** If a provision in the exhibits or the attachments conflicts with a provision in articles 1–30, then the provision in articles 1–30 prevails. If a provision in the attachments conflicts with a provision in the exhibits, then the provision in the attachments prevails.
- 29.4 Integration.** This agreement constitutes the entire agreement of the parties relating to the SS4A grant program and awards under that program and supersedes any previous agreements, oral or written, relating to the SS4A grant program and awards under that program.
- 29.5 Definitions.** In this agreement, the following definitions apply:

“**Program Statute**” means the BIL section 24112 and statutory text under the heading “Safe Streets and Roads for All Grants” in title I of division J of the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58 (November 15, 2021), and all other provisions of that act that apply to amounts appropriated under that heading.

“**Project**” means the project proposed in the Grant Application, as modified by the negotiated provisions of this agreement, including article 3 and Attachments A–D.

“**SS4A Grant**” means an award of funds that were made available under the NOFO.

“**Grant Application**” means the application identified in section 2.1, including Standard Form 424 and all information and attachments submitted with that form through Grants.gov.

## ARTICLE 30 AGREEMENT EXECUTION AND EFFECTIVE DATE

- 30.1 Counterparts.** This agreement may be executed in counterparts, which constitute one document. The parties intend each countersigned original to have identical legal effect.
- 30.2 Effective Date.** The agreement will become effective when all parties have signed it. The date of this agreement will be the date this agreement is signed by the last party to sign it. This instrument constitutes a SS4A Grant when the USDOT’s authorized representative signs it.

**ATTACHMENT 5**  
**CITY OF ANN ARBOR SAFE STREETS FOR ALL (SS4A) CONTRACT ADDENDUM**

U.S. DEPARTMENT OF TRANSPORTATION  
EXHIBITS TO FHWA GRANT AGREEMENTS UNDER THE FISCAL YEAR 2022 SAFE  
STREETS AND ROADS FOR ALL GRANT PROGRAM  
February 8, 2023

**U.S. DEPARTMENT OF TRANSPORTATION**

**EXHIBITS TO FHWA GRANT AGREEMENTS UNDER THE  
FISCAL YEAR 2022 SAFE STREETS AND ROADS FOR ALL GRANT PROGRAM**

**February 8, 2023**

**EXHIBIT A**  
**APPLICABLE FEDERAL LAWS AND REGULATIONS**

By entering into this agreement for a FY 2022 Safe Streets and Roads for All Grant, the Recipient assures and certifies, with respect to this Grant, that it will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance, and use of Federal funds for this Project. Performance under this agreement shall be governed by and in compliance with the following requirements, as applicable, to the type of organization of the Recipient and any applicable sub-recipients. The applicable provisions to this agreement include, but are not limited to, the following:

**General Federal Legislation**

- a. Federal Fair Labor Standards Act – 29 U.S.C. 201, et seq.
- b. Hatch Act – 5 U.S.C. 1501, et seq.
- c. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 – 42 U.S.C. 4601, et seq.
- d. National Historic Preservation Act of 1966 - Section 106 – 54 U.S.C. 306108
- e. Archeological and Historic Preservation Act of 1974 – 54 U.S.C. 312501, et seq.
- f. Native American Graves Protection and Repatriation Act – 25 U.S.C. 3001, et seq.
- g. Clean Air Act, P.L. 90-148, as amended – 42 U.S.C. 7401, et seq.
- h. Section 404 of the Clean Water Act, as amended – 33 U.S.C. 1344
- i. Section 7 of the Endangered Species Act, P.L. 93-205, as amended – 16 U.S.C. 1536
- j. Coastal Zone Management Act, P.L. 92-583, as amended – 16 U.S.C. 1451, et seq.
- k. Flood Disaster Protection Act of 1973 - Section 102(a) – 42 U.S.C. 4012a
- l. Age Discrimination Act of 1975 – 42 U.S.C. 6101, et seq.
- m. American Indian Religious Freedom Act, P.L. 95-341, as amended
- n. Drug Abuse Office and Treatment Act of 1972, as amended – 21 U.S.C. 1101, et seq.
- o. The Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970, P.L. 91-616, as amended – 42 U.S.C. 4541, et seq.
- p. Sections 523 and 527 of the Public Health Service Act of 1912, as amended – 42 U.S.C. 290dd through 290dd-2
- q. Architectural Barriers Act of 1968 – 42 U.S.C. 4151, et seq.
- r. Power Plant and Industrial Fuel Use Act of 1978, P.L. 100-42 - Section 403 – 42 U.S.C. 8373
- s. Contract Work Hours and Safety Standards Act – 40 U.S.C. 3701, et seq.
- t. Copeland Anti-kickback Act, as amended – 18 U.S.C. 874 and 40 U.S.C. 3145
- u. National Environmental Policy Act of 1969 – 42 U.S.C. 4321, et seq.
- v. Wild and Scenic Rivers Act, P.L. 90-542, as amended – 16 U.S.C. 1271, et seq.
- w. Federal Water Pollution Control Act, as amended – 33 U.S.C. 1251-1376
- x. Single Audit Act of 1984 – 31 U.S.C. 7501, et seq.
- y. Americans with Disabilities Act of 1990 – 42 U.S.C. 12101, et seq.
- z. Title IX of the Education Amendments of 1972, as amended – 20 U.S.C. 1681 through 1683 and 1685 through 1687
- aa. Section 504 of the Rehabilitation Act of 1973, as amended – 29 U.S.C. 794
- bb. Title VI of the Civil Rights Act of 1964 – 42 U.S.C. 2000d, et seq.
- cc. Title IX of the Federal Property and Administrative Services Act of 1949 – 40 U.S.C.

- 1101 -1104, 541, et seq.
- dd. Limitation on Use of Appropriated Funds to Influence Certain Federal Contracting and Financial Transactions – 31 U.S.C. 1352
- ee. Freedom of Information Act – 5 U.S.C. 552, as amended
- ff. Magnuson-Stevens Fishery Conservation and Management Act – 16 U.S.C. 1855
- gg. Farmland Protection Policy Act of 1981 – 7 U.S.C. 4201, et seq.
- hh. Noise Control Act of 1972 – 42 U.S.C. 4901, et seq.
- ii. Fish and Wildlife Coordination Act of 1956 – 16 U.S.C. 661, et seq.
- jj. Section 9 of the Rivers and Harbors Act and the General Bridge Act of 1946 – 33 U.S.C. 401 and 525
- kk. Section 4(f) of the Department of Transportation Act of 1966 – 49 U.S.C. 303
- ll. Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended – 42 U.S.C. 9601, et seq.
- mm. Safe Drinking Water Act – 42 U.S.C. 300f to 300j-26
- nn. Wilderness Act – 16 U.S.C. 1131-1136
- oo. Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 – 42 U.S.C. 6901, et seq.
- pp. Migratory Bird Treaty Act – 16 U.S.C. 703, et seq.
- qq. The Federal Funding Transparency and Accountability Act of 2006, as amended (Pub. L. 109–282, as amended by section 6202 of Public Law 110–252)
- rr. Cargo Preference Act of 1954 – 46 U.S.C. 55305
- ss. Section 889 of the John D. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. 115-232

### **Executive Orders**

- a. Executive Order 11246 – Equal Employment Opportunity
- b. Executive Order 11990 – Protection of Wetlands
- c. Executive Order 11988 – Floodplain Management
- d. Executive Order 12372 – Intergovernmental Review of Federal Programs
- e. Executive Order 12549 – Debarment and Suspension
- f. Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- g. Executive Order 13166 – Improving Access to Services for Persons With Limited English Proficiency
- h. Executive Order 13985 – Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
- i. Executive Order 14005 – Ensuring the Future is Made in All of America by All of America’s Workers
- j. Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad

### **General Federal Regulations**

- a. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards – 2 C.F.R. Parts 200, 1201
- b. Non-procurement Suspension and Debarment – 2 C.F.R. Parts 180, 1200
- c. Investigative and Enforcement Procedures – 14 C.F.R. Part 13
- d. Procedures for predetermination of wage rates – 29 C.F.R. Part 1

- e. Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States – 29 C.F.R. Part 3
- f. Labor standards provisions applicable to contracts governing federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act) – 29 C.F.R. Part 5
- g. Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements) – 41 C.F.R. Parts 60, et seq.
- h. New Restrictions on Lobbying – 49 C.F.R. Part 20
- i. Nondiscrimination in Federally Assisted Programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 – 49 C.F.R. Part 21
- j. Uniform relocation assistance and real property acquisition for Federal and Federally assisted programs – 49 C.F.R. Part 24
- k. Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance – 49 C.F.R. Part 25
- l. Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance – 49 C.F.R. Part 27
- m. DOT’s implementation of DOJ’s ADA Title II regulations compliance procedures for all programs, services, and regulatory activities relating to transportation under 28 C.F.R. Part 35
- n. Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Transportation – 49 C.F.R. Part 28
- o. Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors – 49 C.F.R. Part 30
- p. Governmentwide Requirements for Drug-Free Workplace (Financial Assistance) – 49 C.F.R. Part 32
- q. DOT’s implementing ADA regulations for transit services and transit vehicles, including the DOT’s standards for accessible transportation facilities in Part 37, Appendix A – 49 C.F.R. Parts 37 and 38
- r. Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs – 49 C.F.R. Part 26 (as applicable under section 18.3 of this agreement)

**Office of Management and Budget Circulars**

- a. Any applicable OMB Circular based upon the specific FY 2022 Safe Streets and Roads for All Grant Recipient.

**Highway Federal Legislation**

- a. Agreements relating to the use of an access to rights-of-way—Interstate System, 23 U.S.C. 111
- b. Planning, 23 U.S.C. 134 and 135 (except for projects that are not regionally significant that do not receive funding under Title 23 or Chapter 53 of Title 49)
- c. Tolls, 23 U.S.C. 301 (to the extent the recipient wishes to toll an existing free facility that has received Title 23 funds in the past); except as authorized by 23 U.S.C. 129 and 166.
- d. Efficient Environmental Reviews - 23 U.S.C. 139



- e. Policy on lands, wildlife and waterfowl refuges, and historic sites - 49 U.S.C. 303

**Federal Highway Regulations**

- a. Planning – 23 C.F.R. Part 450 (except for projects that are not regionally significant that do not receive funding under Title 23 or Chapter 53 of Title 49)
- b. National Highway System Design Standards – 23 C.F.R. Part 625
- c. Location and Hydraulic Design of Encroachments on Flood Plains – 23 C.F.R. Part 650 Subpart A
- d. Manual on Uniform Traffic Control Devices – 23 C.F.R. Part 655
- e. Length, Width and Weight Limitations – 23 C.F.R. Part 658
- f. Environmental Impact and Related Procedures – 23 C.F.R. Part 771
- g. Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)) – 23 C.F.R. Part 774
- h. Permitting Requirements under the National Pollutant Discharge Elimination System – 40 C.F.R. Part 122

Specific assurances required to be included in the FY 2022 Safe Streets and Roads for All Grant agreement by any of the above laws, regulations, or circulars are hereby incorporated by reference into this agreement.

**EXHIBIT B**  
**ADDITIONAL STANDARD TERMS**

**TERM B.1**  
**TITLE VI ASSURANCE**  
**(Implementing Title VI of the Civil Rights Act of 1964, as amended)**

**ASSURANCE CONCERNING NONDISCRIMINATION IN FEDERALLY-ASSISTED  
PROGRAMS AND ACTIVITIES RECEIVING OR BENEFITING FROM FEDERAL  
FINANCIAL ASSISTANCE**

(Implementing the Rehabilitation Act of 1973, as amended, and the Americans With Disabilities  
Act, as amended)

49 C.F.R. Parts 21, 25, 27, 37 and 38

**The United States Department of Transportation (USDOT)**

**Standard Title VI/Non-Discrimination Assurances**

**DOT Order No. 1050.2A**

By signing and submitting the Technical Application and by entering into this agreement under the FY 2022 Safe Streets and Roads for All (SS4A) grant program, the Recipient **HEREBY AGREES THAT**, as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation (DOT), through the Federal Highway Administration (FHWA), it is subject to and will comply with the following:

**Statutory/Regulatory Authorities**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 C.F.R. Part 21 (entitled *Non-discrimination In Federally-Assisted Programs Of The Department Of Transportation—Effectuation Of Title VI Of The Civil Rights Act Of 1964*);
- 28 C.F.R. section 50.3 (U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964);

The preceding statutory and regulatory cites hereinafter are referred to as the “Acts” and “Regulations,” respectively.

**General Assurances**

In accordance with the Acts, the Regulations, and other pertinent directives, circulars, policy, memoranda, and/or guidance, the Recipient hereby gives assurance that it will promptly take any measures necessary to ensure that:

*“No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity,” for which the Recipient receives Federal financial assistance from DOT, including the FHWA.*

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Non-discrimination requirements (The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973), by restoring the broad, institutional-wide scope and coverage of these non-discrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

### **Specific Assurances**

More specifically, and without limiting the above general Assurance, the Recipient agrees with and gives the following Assurances with respect to its Federally assisted FY 2022 SS4A grant program:

1. The Recipient agrees that each “activity,” “facility,” or “program,” as defined in §§ 21.23 (b) and 21.23 (e) of 49 C.F.R. § 21 will be (with regard to an “activity”) facilitated, or will be (with regard to a “facility”) operated, or will be (with regard to a “program”) conducted in compliance with all requirements imposed by, or pursuant to the Acts and the Regulations.
2. The Recipient will insert the following notification in all solicitations for bids, Requests For Proposals for work, or material subject to the Acts and the Regulations made in connection with the FY 2022 SS4A Grant and, in adapted form, in all proposals for negotiated agreements regardless of funding source:

*“The Recipient, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that for any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.”*

3. The Recipient will insert the clauses of Appendix A and E of this Assurance in every contract or agreement subject to the Acts and the Regulations.
4. The Recipient will insert the clauses of Appendix B of this Assurance, as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a Recipient.

5. That where the Recipient receives Federal financial assistance to construct a facility, or part of a facility, the Assurance will extend to the entire facility and facilities operated in connection therewith.
6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the Assurance will extend to rights to space on, over, or under such property.
7. That the Recipient will include the clauses set forth in Appendix C and Appendix D of this Assurance, as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the Recipient with other parties:
  - a. for the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
  - b. for the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.
8. That this Assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the Assurance obligates the Recipient, or any transferee for the longer of the following periods:
  - a. the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or
  - b. the period during which the Recipient retains ownership or possession of the property.
9. The Recipient will provide for such methods of administration for the program as are found by the Secretary of Transportation or the official to whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, sub-recipients, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Acts, the Regulations, and this Assurance.
10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Acts, the Regulations, and this Assurance.

By signing this ASSURANCE, the Recipient also agrees to comply (and require any sub-recipients, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing the FHWA's access to records, accounts, documents, information, facilities, and staff. You also recognize that you must comply with any program or compliance reviews, and/or complaint investigations conducted by the FHWA. You must keep records, reports, and submit the material for review upon request to FHWA, or its designee in a timely,

complete, and accurate way. Additionally, you must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance.

The Recipient gives this ASSURANCE in consideration of and for obtaining any Federal grants, loans, contracts, agreements, property, and/or discounts, or other Federal-aid and Federal financial assistance extended after the date hereof to the recipients by the U.S. Department of Transportation under the FY 2022 SS4A grant program. This ASSURANCE is binding on the Recipient, other recipients, sub-recipients, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in the FY 2022 SS4A grant program.

## APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 C.F.R. Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
  - a. withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant

thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.



## APPENDIX B

### CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Specific Assurance 4:

**NOW, THEREFORE**, the U.S. Department of Transportation as authorized by law and upon the condition that the Recipient will accept title to the lands and maintain the project constructed thereon in accordance with the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58 (Nov. 15, 2021), the Consolidated Appropriations Act, 2022, Pub. L. No. 117-103 (Mar. 15, 2022), 49 U.S.C. § 6702, the Regulations for the Administration of FY 2022 SS4A grant program, and the policies and procedures prescribed by the Federal Highway Administration (FHWA) of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the Recipient all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

#### (HABENDUM CLAUSE)

**TO HAVE AND TO HOLD** said lands and interests therein unto Recipient and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the Recipient, its successors and assigns.

The Recipient, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]\* (2) that the Recipient will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

## APPENDIX C

### CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the Recipient pursuant to the provisions of Specific Assurance 7(a):

- A. The (Recipient, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add “as a covenant running with the land”] that:
  - 1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (Recipient, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
- B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, Recipient will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.\*
- C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the Recipient will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the Recipient and its assigns.\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

## APPENDIX D

### CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by Recipient pursuant to the provisions of Specific Assurance 7(b):

- A. The (Recipient, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, “as a covenant running with the land”) that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (Recipient, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
- B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, Recipient will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.\*
- C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, Recipient will there upon revert to and vest in and become the absolute property of Recipient and its assigns.\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

## APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

### **Pertinent Non-Discrimination Authorities:**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 C.F.R. Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 C.F.R. Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. Parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 *et seq.*).

**TERM B.2**  
**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER**  
**RESPONSIBILITY MATTERS -- PRIMARY COVERED TRANSACTIONS**

**2 C.F.R. Parts 180 and 1200**

These assurances and certifications are applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 C.F.R. Parts 180 and 1200.

By signing and submitting the Technical Application and by entering into this agreement under the FY 2022 SS4A grant program, the Recipient is providing the assurances and certifications for First Tier Participants and Lower Tier Participants in the FY 2022 SS4A Grant, as set out below.

**1. Instructions for Certification – First Tier Participants:**

a. The prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms “covered transaction,” “civil judgment,” “debarred,” “suspended,” “ineligible,” “participant,” “person,” “principal,” and “voluntarily excluded,” as used in this clause, are defined in 2 C.F.R. Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a Recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a Recipient or subrecipient of

Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions,” provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment, including a civil settlement, rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

## **2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 C.F.R. Parts 180 and 1200)

a. The prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms “covered transaction,” “civil settlement,” “debarred,” “suspended,” “ineligible,” “participant,” “person,” “principal,” and “voluntarily excluded,” as used in this clause, are defined in 2 C.F.R. Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a Recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a Recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered



transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction,” without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**TERM B.3**  
**REQUIREMENTS REGARDING DELINQUENT TAX LIABILITY OR A FELONY**  
**CONVICTION UNDER ANY FEDERAL LAW**

As required by sections 744 and 745 of Title VII, Division E of the Consolidated Appropriations Act, 2023, Pub. L. No. 117-328 (Dec. 29, 2022), and implemented through USDOT Order 4200.6, the funds provided under this award shall not be used to enter into a contract, memorandum of understanding, or cooperative agreement with, make a grant to, or provide a loan or loan guarantee to, any corporation that:

- (1) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless a Federal agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or
- (2) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless a Federal agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government.

The Recipient therefore agrees:

1. **Definitions.** For the purposes of this exhibit, the following definitions apply:

“**Covered Transaction**” means a transaction that uses any funds under this award and that is a contract, memorandum of understanding, cooperative agreement, grant, loan, or loan guarantee.

“**Felony Conviction**” means a conviction within the preceding 24 months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the United States Code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. 3559.

“**Participant**” means the Recipient, an entity who submits a proposal for a Covered Transaction, or an entity who enters into a Covered Transaction.

“**Tax Delinquency**” means an unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

2. **Mandatory Check in the System for Award Management.** Before entering a Covered Transaction with another entity, a Participant shall check the System for Award Management (the “SAM”) at <http://www.sam.gov/> for an entry describing that entity.

3. **Mandatory Certifications.** Before entering a Covered Transaction with another entity, a Participant shall require that entity to:

- (1) Certify whether the entity has a Tax Delinquency; and
- (2) Certify whether the entity has a Felony Conviction.

4 **Prohibition. If**

- (1) the SAM entry for an entity indicates that the entity has a Tax Delinquency or a Federal Conviction;
- (2) an entity provides an affirmative response to either certification in section 3; or
- (3) an entity’s certification under section 3 was inaccurate when made or became inaccurate after being made

then a Participant shall not enter or continue a Covered Transaction with that entity unless the USDOT has determined in writing that suspension or debarment of that entity are not necessary to protect the interests of the Government.

5. **Mandatory Notice to the USDOT.**

- (a) If the SAM entry for a Participant indicates that the Participant has a Tax Delinquency or a Felony Conviction, the Recipient shall notify the USDOT in writing of that entry.
- (b) If a Participant provides an affirmative response to either certification in section 1, the Recipient shall notify the USDOT in writing of that affirmative response.
- (c) If the Recipient knows that a Participant’s certification under section 1 was inaccurate when made or became inaccurate after being made, the Recipient shall notify the USDOT in writing of that inaccuracy.

6. **Flow Down.** For all Covered Transactions, including all tiers of subcontracts and subawards, the Recipient shall:

- (1) require the SAM check in section 2;
- (2) require the certifications in section 3;
- (3) include the prohibition in section 4; and

(4) require all Participants to notify the Recipient in writing of any information that would require the Recipient to notify the USDOT under section 5.

**TERM B.4**  
**RECIPIENT POLICY TO BAN TEXT MESSAGING WHILE DRIVING**

(a) *Definitions.* The following definitions are intended to be consistent with the definitions in DOT Order 3902.10, Text Messaging While Driving (Dec. 30, 2009) and Executive Order 13513, Federal Leadership on Reducing Text Messaging While Driving (Oct. 1, 2009). For clarification purposes, they may expand upon the definitions in the executive order.

For the purpose of this Term B.4, “**Motor Vehicles**” means any vehicle, self-propelled or drawn by mechanical power, designed and operated principally for use on a local, State or Federal roadway, but does not include a military design motor vehicle or any other vehicle excluded under Federal Management Regulation 102-34-15.

For the purpose of this Term B.4, “**Driving**” means operating a motor vehicle on a roadway, including while temporarily stationary because of traffic congestion, a traffic signal, a stop sign, another traffic control device, or otherwise. It does not include being in your vehicle (with or without the motor running) in a location off the roadway where it is safe and legal to remain stationary.

For the purpose of this Term B.4, “**Text messaging**” means reading from or entering data into any handheld or other electronic device (including, but not limited to, cell phones, navigational tools, laptop computers, or other electronic devices), including for the purpose of Short Message Service (SMS) texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication. The term does not include the use of a cell phone or other electronic device for the limited purpose of entering a telephone number to make an outgoing call or answer an incoming call, unless this practice is prohibited by State or local law. The term also does not include glancing at or listening to a navigational device that is secured in a commercially designed holder affixed to the vehicle, provided that the destination and route are programmed into the device either before driving or while stopped in a location off the roadway where it is safe and legal to remain stationary.

For the purpose of this Term B.4, the “**Government**” includes the United States Government and State, local, and tribal governments at all levels.

(b) *Workplace Safety.* In accordance with Executive Order 13513, Federal Leadership on Reducing Text Messaging While Driving (Oct. 1, 2009) and DOT Order 3902.10, Text Messaging While Driving (Dec. 30, 2009), the Recipient, subrecipients, contractors, and subcontractors are encouraged to:

(1) adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers including policies to ban text messaging while driving—

(i) Company-owned or -rented vehicles or Government-owned, leased or rented vehicles; or

(ii) Privately-owned vehicles when on official Government business or when performing any work for or on behalf of the Government.

(2) Conduct workplace safety initiatives in a manner commensurate with the size of the business, such as—

(i) Establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and

(ii) Education, awareness, and other outreach to employees about the safety risks associated with texting while driving.

(c) *Subawards and Contracts*. To the extent permitted by law, the Recipient shall insert the substance of this exhibit, including this paragraph (c), in all subawards, contracts, and subcontracts under this award that exceed the micro-purchase threshold, other than contracts and subcontracts for the acquisition of commercially available off-the-shelf items.

**EXHIBIT C**  
**QUARTERLY PROJECT PROGRESS REPORTS AND RECERTIFICATIONS:**  
**FORMAT AND CONTENT**

**1. Purpose.** The purpose of the Quarterly Project Progress Reports and Recertifications under this agreement for the FY 2022 SS4A grant program are to ensure that the project scope, schedule, and budget will be maintained to the maximum extent possible.

**2. Format and Content.** The Recipient shall produce a quarterly cost, schedule, and status report that contains the sections enumerated in the following list. At the discretion of the USDOT, modifications or additions can be made to produce a quarterly reporting format that will most effectively serve both the Recipient and the USDOT. Some projects will have a more extensive quarterly status than others. For smaller projects, the USDOT may determine that the content of the quarterly reports will be streamlined and project status meetings will be held on a less-frequent basis. The first quarterly progress report should include a detailed description and, where appropriate, drawings of the items funded.

**(a) Project Overall Status.** This section provides an overall status of the project's scope, schedule and budget. The Recipient shall note and explain any deviations from the scope of work, the schedule, or the budget that are described in this agreement.

**(b) Project Significant Activities and Issues.** This section provides highlights of key activities, accomplishments, and issues occurring on the project during the previous quarter. Activities and deliverables to be reported on should include meetings, audits and other reviews, design packages submitted, advertisements, awards, construction submittals, construction completion milestones, submittals related to any applicable Recovery Act requirements, media or Congressional inquiries, value engineering/constructability reviews, and other items of significance.

**(c) Action Items/Outstanding Issues.** This section should draw attention to, and track the progress of, highly significant or sensitive issues requiring action and direction in order to resolve. The Recipient should include administrative items and outstanding issues that could have a significant or adverse effect on the project's scope, schedule, or budget. Status, responsible person(s), and due dates should be included for each action item/outstanding issue. Action items requiring action or direction should be included in the quarterly status meeting agenda. The action items/outstanding issues may be dropped from this section upon full implementation of the remedial action, and upon no further monitoring anticipated.

**(d) Project Scope Overview.** The purpose of this section is to provide a further update regarding the project scope. If the original scope contained in the grant agreement is still accurate, this section can simply state that the scope is unchanged.

**(e) Project Schedule.** An updated master program schedule reflecting the current status of the program activities should be included in this section. A Gantt (bar) type chart is probably the most appropriate for quarterly reporting purposes, with the ultimate

format to be agreed upon between the Recipient and the USDOT. It is imperative that the master program schedule be integrated, i.e., the individual contract milestones tied to each other, such that any delays occurring in one activity will be reflected throughout the entire program schedule, with a realistic completion date being reported. Narratives, tables, and/or graphs should accompany the updated master program schedule, basically detailing the current schedule status, delays and potential exposures, and recovery efforts. The following information should also be included:

- Current overall project completion percentage vs. latest plan percentage.
- Completion percentages vs. latest plan percentages for major activities such as right-of-way, major or critical design contracts, major or critical construction contracts, and significant force accounts or task orders. A schedule status description should also be included for each of these major or critical elements.
- Any delays or potential exposures to milestone and final completion dates. The delays and exposures should be quantified, and overall schedule impacts assessed. The reasons for the delays and exposures should be explained, and initiatives being analyzed or implemented in order to recover the schedule should be detailed.

**(f) Project Cost.** An updated cost spreadsheet reflecting the current forecasted cost vs. the latest approved budget vs. the baseline budget should be included in this section. One way to track project cost is to show: (1) Baseline Budget, (2) Latest Approved Budget, (3) Current Forecasted Cost Estimate, (4) Expenditures or Commitments to Date, and (5) Variance between Current Forecasted Cost and Latest Approved Budget. Line items should include all significant cost centers, such as prior costs, right-of-way, preliminary engineering, environmental mitigation, general engineering consultant, section design contracts, construction administration, utilities, construction packages, force accounts/task orders, wrap-up insurance, construction contingencies, management contingencies, and other contingencies. The line items can be broken-up in enough detail such that specific areas of cost change can be sufficiently tracked and future improvements made to the overall cost estimating methodology. A Program Total line should be included at the bottom of the spreadsheet. Narratives, tables, and/or graphs should accompany the updated cost spreadsheet, basically detailing the current cost status, reasons for cost deviations, impacts of cost overruns, and efforts to mitigate cost overruns. The following information should be provided:

- Reasons for each line item deviation from the approved budget, impacts resulting from the deviations, and initiatives being analyzed or implemented in order to recover any cost overruns.
- Transfer of costs to and from contingency line items, and reasons supporting the transfers.



- Speculative cost changes that potentially may develop in the future, a quantified dollar range for each potential cost change, and the current status of the speculative change. Also, a comparison analysis to the available contingency amounts should be included, showing that reasonable and sufficient amounts of contingency remain to keep the project within the latest approved budget.
- Detailed cost breakdown of the general engineering consultant (GEC) services (if applicable), including such line items as contract amounts, task orders issued (amounts), balance remaining for tasks, and accrued (billable) costs.
- Federal obligations and/or disbursements for the project, compared to planned obligations and disbursements.

**(g) Federal Financial Report (SF-425).** The Federal Financial Report (SF-425) is a financial reporting form used throughout the Federal Government Grant system. Recipients shall complete this form and attach it to each quarterly Project Progress and Monitoring Report. The form is available at <https://www.grants.gov/forms/post-award-reporting-forms.html>.

**(h) Certifications.**

- i. A certification that the Recipient is in compliance with 2 C.F.R. 200.303 (Internal Controls) and 2 C.F.R. Part 200, Subpart F (Audit Requirements).
- ii. The certification required under 2 C.F.R. 200.415(a).

**EXHIBIT D  
FORM FOR SUBSEQUENT OBLIGATION OF FUNDS**

The USDOT and **[recipient name]** entered a grant agreement for the **[project name]** that was executed by the USDOT on **[date of USDOT signature on original agreement]** (the “Agreement”).

This instrument obligates **[\$XXX]** for **[insert portion of project listed in the Agreement]**.

**[Recipient name]** states that:

- (1) the Agreement accurately describe the Project’s activities;
- (2) for each completion date listed in the Agreement, the Recipient’s estimate for that milestone is not more than six months after the date listed in the Agreement;
- (3) comparing the Project’s current budget with the amounts listed in the Agreement, the “Non-Federal Funds” amount has not decreased and the total eligible project costs amount has not decreased; and
- (4) under the terms of article 21 of the General Terms and Conditions, the Recipient is not presently required to request a modification to the Agreement.

**[Recipient name]** acknowledges that USDOT is acting in reliance on the Recipient’s statements above.

	By:	
Date		Signature of Recipient’s Authorized Representative
		<b>[insert name]</b>
		Name
		<b>[insert title]</b>
		Title

The USDOT has determined that all applicable Federal requirements for obligating these funds are satisfied.

\_\_\_\_\_ By: \_\_\_\_\_  
Date Signature of USDOT's Authorized Representative  
  
[insert name]  
\_\_\_\_\_  
Name  
  
[insert title]  
\_\_\_\_\_  
Title