CIOGS Specification Report (June 2024)

Detroit MODES – Mobility Optimization through Data for Equity and Safety (MODES)

1. Description

The City of Detroit's Office of Mobility Innovation (OMI) previously secured 100% federally funded award from the USDOT Strengthening Mobility and Revolutionizing Transportation (SMART) grant program for the Detroit Mobility Optimization through Data for Equity and Safety (Detroit MODES) initiative. This project aims to reduce traffic fatalities and enhance transportation-safety and operations equity for Detroiters, especially in Historically Disadvantaged Communities (HDCs). The project addresses the problem by creating smart intersections using existing traffic signal technologies and camera already deployed in Detroit and using the software solutions to predict and prevent traffic accidents in Detroit, thus the goal of saving lives on Detroit Roads.

The grant partners include: Miovision, TYME Consulting Engineers, Wayne State University (WSU), Michigan Department of Transportation (MDOT), CommunityLogiq Software, Inc (Urban Logiq), and 3 areas that a vendor has not yet been selected for including telecommunications internet service provider, Fiber and hardware installation contractor, community engagement and communications contractor.

2. Purpose

The purpose of the Detroit MODES initiative is to adopt smart intersection technologies that improve safety and addresses equity issues in transportation through advanced analytics. The project involves integrating advanced traffic safety solutions and traffic signal management systems to provide historical and real-time insights into traffic patterns and potential roadway hazards with the hopes of early mitigation and saving lives using advanced traffic and safety software and analytics.

The System will deploy smart intersection technologies that can collect, store, and analyze traffic information to address the challenges of road safety in the City. The System will utilize the City’s existing traffic camera network to deploy advanced analytics software to provide:

New server at the Detroit Traffic Management Center (TMC) that analyses traffic from the 22 locations in real-time thus allowing for the detection of near-miss incidents, pedestrian safety issues, predict where traffic incidents are likely to occur, and other safety- related insights. The summarized data will then be pushed to a secure cloud platform which allows the City to see those traffic and safety insights and visualizations for improved decision making and real-time support of crash locations.

3. Deployment

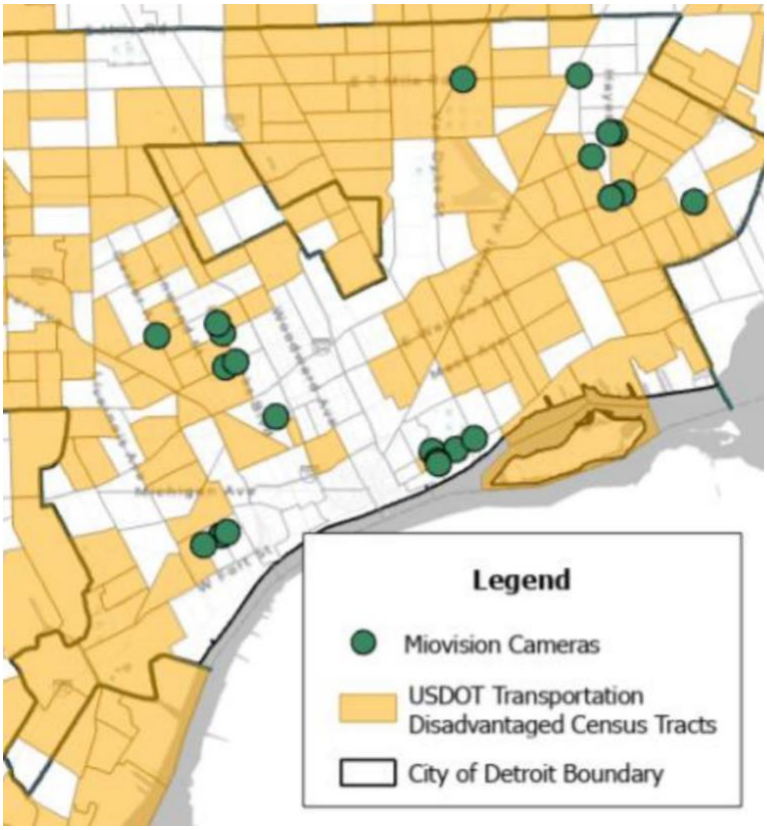
Factors for deployment include identifying intersections and locations that will benefit most from traffic safety enhancements, particularly in HDCs. The technology will be installed at critical points to provide the best coverage and insights. The list of tentative signalized intersections are listed below and

depicted on the map. Those locations are subject to change or removal based on any unforeseen circumstance such as possibility of obsolete signals or inability to extend broadband internet service.

List of tentatively proposed Signalized Intersection IDs and names of Cross Streets:

- 97 - Chalmers and Harper and Hayes
- 100 - Chalmers and Seven Mile E
- 113 - East Outer Drive and Harper Avenue
- 114 - Hayes and Houston Whittier
- 120 - Houston Whittier and Kelly
- 130 - Outer Drive E and Seven Mile E
- 384 - Chene and Lafayette E
- 385 - Chene and Larned E
- 458 - West Forest Ave & Trumbull
- 493 - East Jefferson Avenue and Chene Street
- 530 - Larned E and McDougall
- 531 - Larned E and Mt Elliott
- 623 - Clark and Vernor W
- 658 - Junction Street and West Vernor Highway
- 676 - Scotten and Vernor W
- 686 - Rosa Parks Boulevard and Blaine Street
- 726 - Dexter and Joy
- 746 - West Euclid Avenue and Rosa Parks Boulevard
- 754 - Fourteenth and Grand Blvd W
- 774 - Grand Blvd W and Rosa Parks Blvd
- 1062 - East Outer Drive and Chalmers Street
- 1071 - East Outer Drive and East Warren Avenue

MAP



4. Fiscal Impact

The project is 100% federally funded by a $2 million award from the USDOT SMART grant program (LINK). This is a Sole Source Procurement request, due to the USDOT SMART Grant - FY 2022 naming the 9 partners used in the project, which includes this Vendor. The grant total amount awarded is $2,000,000, the City's share as an in kind match for personnel time of $76,500 , totaling $2,076,500.

5. Civil Rights and Liberties Impacts

The technology is designed to enhance safety without infringing on civil rights and liberties. Cameras and sensors are not being installed as part of this project. Existing traffic systems which already fall under this CIOGS and have gone through the vetting process are being enhanced with non-personally identifiable information (non-PII) such as weather and historical crash locations, and using advanced analytics will be deployed to improve traffic management and roadway safety without intruding on personal privacy.

6. Authorized Use

The surveillance technology is intended solely for traffic safety and transportation equity purposes. It will be used to analyze traffic data, detect crashes, identify high-crash locations within the City, and

provide real-time alerts to enhance roadway safety. The final solution will have two platforms: (1) An internally facing platform with analytical abilities and (2) a community facing platform for information sharing and dissemination. All access to the system is controlled by individual login and access control levels. Upon request, the City-facing platform is available for use amongst all City entities and departments, including the Department of Neighborhood and the offices of the City Council members. The Community facing platform is intended to be open to the public and provides access to high-level summaries that help better understand roadway traffic operations and crash safety on our roads in the City and in our neighborhoods. The high-level public-facing platform will only be providing aggregated and non-PII publicly available open-source information. The information displayed on that community platform will be based on feedback collected from focus-group engagement with a group of stakeholders and residents. Additionally, grant partners working with the City on this project and select individuals from the USDOT will have view only access to this data for review, evaluation, and improvement purposes.

7. Data Collection

- **Types of Data Collected**: This system will not be collecting any new data that is different from the existing data provided by the Remote Traffic Signal Management System. The only difference is that it will be processed through a designated traffic server to help analyze the near-misses and crashes to allow the Traffic Management teams to respond quicker. Existing traffic data including vehicle counts, traffic signal performance measures, and safety data collected from the 360 traffic cameras which the City already owns. Additionally, the Derq system can detect speeds and near-miss incidents at intersections that help understand why the crashes are occurring. In addition to this data, the system is being enhanced with data sets, sample trajectory data sets, and an array of open-source City maps that provide more context around the crash such as land-use, **roadway condition, and weather.**
- **Inadvertently Collected Data**: Measures will be in place to minimize the collection of unrelated data. Any inadvertently collected data that is not relevant to traffic safety will be deleted promptly. Video through the DERQ system will not be saved and only used for near-miss and crash detection. Video through Miovision will continue to follow the same guidelines identified and followed for that system.

8. Data Protection

All Data will adhere to strict cybersecurity and cloud storage guidelines set forth in ISO 27001 or AICPA Soc 2 Type 2 reporting as applicable. The ISO guidelines provide a security framework created by the International Organization for Standardization (ISO). To achieve certification, companies must complete an audit to verify that they comply with ISO 27001's rigorous standards. The American Institute of Certified Public Accountants (AICPA) guidelines assess a company's ability to keep its data safe. Contractors are also expected to destroy all Data, including back-ups and copies thereof, according to the National Institute of Standards and System 800-53 (NIST) standards or as otherwise directed by the City. Data will be encrypted to ensure it is protected from unauthorized access. Only authorized

personnel will have access to the data through a login-based cloud platform. Standard network security and authentication methods along with cybersecurity measures will be implemented to safeguard the system.

9. Data Retention

Traffic data will be retained for a period necessary to analyze traffic patterns and enhance safety measures. It must be noted that historical safety data is fundamental to ensure proper understanding of traffic flow and crash patterns and accordingly it is recommended that this non-PII data can be retained for up to 10 years pending no storage constraints. Data constituting evidence of a crime related to an open or pending case will be retained as required by law.

10. Surveillance Data Sharing

This is not a camera and no video will be shared. Data sharing will be authorized with relevant entities such as traffic management authorities, project partners, and law enforcement for the purposes of traffic operations and safety management and improvements. This data has no intention or use for any surveillance purposes. The only data that will be shared externally shall be with our evaluation partner, Wayne State University, which is tasked with evaluating the efficacy and performance of the deployed system. Shared data will be governed by strict protocols to ensure privacy and security.

11. Demands for Access to Surveillance Data

All requests for access to surveillance data will be reviewed and approved by the City of Detroit's Law Department to ensure compliance with legal standards.

12. Auditing and Oversight

The technology is available for audits to ensure it is used appropriately and effectively. The system will include capabilities for auditing user login and some activities to ensure transparency. The System will also be closely developed with the DoIT Data and Data Science teams at the City of Detroit allowing them to have technical input into the development, running, and maintenance of the system.

13. Training

Each of our three technology partners (DERQ, Miovision, and urban Logiq) will be providing training on their portion of the system. Miovision's system which already operated at City of Detroit signalized intersections will provide training on the use and configuration of that system. Derq will provide training on the use and summarization of safety and traffic data from their system along with any real-time crash alerts. Urban Logiq is the developer of the platform and will be bringing in all these data sources together and will provide the City and stakeholders training on use of the system and ways to speed up

the extraction of information and optimizing the use of intended outcomes such as congestion, crash hotspots, and real-time operation use of the system for crash alerts. Urban Logiq will also have an external training session on the community facing platform that will be recorded and provided on the project landing page for review by any of our residents.

14. Complaints

Public complaints or concerns about the deployment or use of technology can be logged through submitting emails to SMART-MODES@detroitmi.gov and will be addressed by the Department of Public Works (DPW) or the Office of Mobility Innovation (OMI).