

CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

	REQUISITION NUMBER	DUE DATE	TIME DUE
MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)	
DESCRIPTION			
MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED ** = OPTIONAL Check the appropriate Tier in the box below		CONSULTANT: Provide only checked items below in proposal	
<input type="checkbox"/> TIER I (\$50,000 - \$150,000)	<input type="checkbox"/> TIER II (\$150,000-\$1,000,000)	<input type="checkbox"/> TIER III (>\$1,000,000)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Understanding of Service **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Innovations</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organizational Chart
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Qualifications of Team
Not required as part of Official RFP	Not required as part of Official RFP	<input type="checkbox"/>	Quality Assurance/Quality Control **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location: The percentage of work performed in Michigan will be used for all selections unless the project is for on-site p=inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	<input type="checkbox"/>	Presentation **
N/A	N/A	<input type="checkbox"/>	Technical Proposal (if Presentation is required)
3 pages (MDOT Forms not counted) (No Resumes)	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP not including key personnel resumes. Resumes limited to 2 pages per key staff personnel.

PROPOSAL AND BID SHEET EMAIL ADDRESS – mdot-rfp-response@michigan.gov

GENERAL INFORMATION

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least five (5) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

5100D – Request for Proposal Cover Sheet

5100J – Consultant Data and Signature Sheet (Required only for firms not currently prequalified with MDOT)

(These forms are not included in the proposal maximum page count.)

REQUEST FOR PROPOSAL

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest (Consultant/Vendor Selection Guidelines for Services Contracts” and “Guideline for Completing a Low Bid Sheet(S)*, if a low bid is involved as part of the selection process. **Reference Guidelines are available on MDOT’s website under Doing Business > Vendor/Consultant Services >Vendor/Consultant Selections.**

RFP SPECIFIC INFORMATION

ENGINEERING SERVICES BUREAU OF TRANSPORTATION PLANNING OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS
 NO YES DATED _____ THROUGH _____

<input type="checkbox"/> Prequalified Services – See the attached Scope of Services for required Prequalification Classifications.	<input type="checkbox"/> Non-Prequalified Services – If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, if overhead is not audited, is on file with MDOT’s Office of Commission Audits. This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed. Form 5100J is required with Proposal for firms not currently prequalified with MDOT
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Qualifications Based Selection – Use Consultant/Vendor Selection Guidelines

For all Qualifications Based Selections, the selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor’s job-order accounting system.

Qualification Based Selection / Low Bid – Use Consultant/Vendor Selection Guidelines. See Bid Sheet instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted. The vendor that has met established qualification threshold and with the lowest bid will be selected.

Best Value – Use Consultant/Vendor Selection Guidelines, See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

Low Bid (no qualifications review required – no proposal required.) See Bid Sheet Instructions below for additional instructions.

BID SHEET INSTRUCTIONS

Bid Sheet(s) must be submitted in accordance with the “Guidelines for Completing a Low Bid Sheet(s)* (available on MDOT’s website). Bid Sheet(s) are located at the end of the Scope of Services. Submit bid sheet(s) with the proposal, to the email address: mdot-rfp-response@michigan.gov. Failure to comply with this procedure may result in your bid being rejected from consideration.

PARTNERSHIP CHARTER AGREEMENT

MDOT and ACEC created a Partnership Charter Agreement which establishes guidelines to assist MDOT and Consultants in successful partnering. Both the Consultant and MDOT Project Manager are reminded to review the [ACEC-MDOT Partnership Charter Agreement](#) and are asked to follow all communications, issues resolution and other procedures and guidance’s contained therein.

**NOTIFICATION
MANDATORY ELECTRONIC SUBMITTAL**

Proposals submitted for this project must be submitted electronically.

The following are changes to the Proposal Submittal Requirements:

- Eliminated the Following Requirements:
 - Safety Program
 - Communication Plan
 - Past Performance as *a separate section*
 - Separate section for DBE Statement of goals. Include information in Qualification of Team section

- Implemented the Following Changes:
 - All proposals require an Organization Chart
 - Resumes must be a maximum of two pages
 - Only Key (lead) staff resumes may be submitted
 - Tier III proposal reduced from 19 to 14 pages
 - Forms 5100D, 5100I, and 5100G combined – 5100D
 - Forms 5100B and 5100H combined – 5100B
 - RFP's will be posted on a weekly basis -- on Mondays

The following are Requirements for Electronic Submittals:

- Proposals must be prepared using the most current guidelines
- The proposal must be bookmarked to clearly identify the proposal sections (See Below)
- For any section not required per the RFP, the bookmark must be edited to include “N/A” after the bookmark title.
Example: Understanding of Service – N/A
- Proposals must be assembled and saved as a single PDF file
- PDF file must be 5 megabytes or smaller
- PDF file must be submitted via e-mail to MDOT-RFP-Response@michigan.gov
- MDOT's requisition number and company name must be included in the subject line of the e-mail. The PDF shall be named using the following format:
 - Requisition#XXX_Company Name.PDF
- MDOT will not accept multiple submittals
- Proposals must be *received* by MDOT on or before the due date and time specified in each RFP

If the submittals do not comply with the requirements, they may be determined unresponsive.

The Consultant's will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. **Consultants are responsible for ensuring the MDOT receives the proposal on time.**

****Contact Contract Services Division immediately at 517-373-4680 if you do not get an auto response****

Required Bookmarking Format:

- I. Request for Proposal Cover Sheet Form 5100D
 - A. Consultant Data and Signature Sheet, Form 5100J (if applicable)
- II. Understanding of Service
 - A. Innovations
- III. Qualifications of Team
 - A. Structure of Project Team
 - 1. Role of Firms
 - 2. Role of Key Personnel
 - B. Organization Chart
 - C. Location
- IV. Quality Assurance / Quality Control Plan
- V. Resumes of Key Staff
- VI. Pricing Documents/Bid Sheet (if applicable)

2/14/12

**NOTIFICATION
E-VERIFY REQUIREMENTS**

E-Verify is an Internet based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring, under Public Act 200 of 2012, Section 381, that as a condition of each contract or subcontract for construction, maintenance, or engineering services that the pre-qualified contractor or subcontractor agree to use the E-Verify system to verify that all persons hired during the contract term by the contractor or subcontractor are legally present and authorized to work in the United States.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: <http://www.dhs.gov/E-Verify>.

The documentation supporting the usage of the E-Verify system must be maintained by each consultant and be made available to MDOT upon request.

It is the responsibility of the prime consultant to include the E-Verify requirement documented in this NOTIFICATION in all tiers of subcontracts.

9/13/12

Michigan Department of Transportation

**SCOPE OF SERVICE
FOR
INTELLIGENT TRANSPORTATION SYSTEMS**

CONTROL SECTION: 81075, 81103, 47013

JOB NUMBER: 112678, 122201

PROJECT LOCATION:

US-23 from M-14 to M-36 in Washtenaw and Livingston Counties in Michigan.

DESCRIPTION OF WORK:

This scope is to provide systems engineering, software development and design for an Intelligent Transportation Systems (ITS) project for the following:

- Provide early preliminary engineering for an Active Traffic Management (ATM) system using Lane Control Signs (LCS).
- Develop a final bid package based on 100% complete plans and provide a cost estimate for construction.
- Develop enhancements the MDOT statewide ATMS software package for ATM system functionality using LCS.
- Serve as the MDOT representative, and system manager software integrator, through the construction phase.

The services will be provided through three separate authorizations: early preliminary engineering, preliminary engineering, and system manager services.

The Consultant will be responsible to scope the project using a systems engineering process, software development & software integration, refine locations of equipment, develop plans and proposal information to 100% completion, define known or anticipated environmental issues, provide necessary geotechnical information related to the ITS system, and define known or anticipated utility issues or traffic concerns related to the ITS devices.

PRIMARY PREQUALIFICATION CLASSIFICATION(S):

Intelligent Transportation Systems - Design and System Manager

SECONDARY PREQUALIFICATION CLASSIFICATION(S):

Geotechnical Engineering Services

Utility Coordination

ANTICIPATED START DATE: March 17, 2014

ANTICIPATED COMPLETION DATE: April 30, 2017

DBE REQUIREMENT: There is no DBE requirement for this project.

MDOT PROJECT MANAGER:

Stephanie Palmer
Traffic Safety and Operations Engineer
MDOT- University Region
4701. W. Michigan Ave.
Jackson, MI 49201
Phone: 517-750-0422
Fax: 517-750-4397
palmers3@michigan.gov

This is an ITS project that consists of all work related to the design of an ATM System using LCS along the US-23 corridor in Washtenaw and Livingston counties. The project will entail the detailed design of all related ITS infrastructure, communication, and software development and integration for this system.

The systems shall include, but are not limited to lane control gantries with LCS, Dynamic Message Signs (DMS), vehicle detection, and closed circuit televisions (CCTVs) cameras all of which shall be interoperable with all of the existing ITS A T M S software and equipment.

For details on the proposed system's overview, description, and architecture, as well as high level requirements see Attachment A –*Concept of Operations Summary*.

The Consultant shall contact the Project Manager prior to beginning any work on the project.

The project manager shall be an engineer licensed in the State of Michigan with relevant experience in ITS systems engineering and design services. The project manager shall be an employee of the primary consulting firm responding to the RFP and not a sub-Consultant.

REQUIRED MDOT GUIDELINES AND STANDARDS:

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Bridge Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, the Design Survey Manual, etc.). The software integration portion of the project will be done using the Michigan Department of Technology, Management & Budget (DTMB) project methodology, as applicable.

GENERAL INFORMATION:

The Consultant shall have substantial ITS conception, design background and experience as well as national experience with the design of lane control gantries and the application of ATM systems. The Consultant should also have experience in software development and integration for ATM systems. The Consultant should be prepared to demonstrate their background and experience with a presentation, as this will be a major part of this selection.

The system will require modification to the existing ATMS to monitor and control the LCS using ATM system. An interface between the LCS and the new ATMS will be completed as part of this project. The Consultant will be responsible for contracting with the current ATMS Software vendor, Delcan Corporation, as a sub-consultant for tasks associated with the design and integration with the ATMS software.

The Consultant shall furnish all services and labor necessary to conduct and complete the services described herein. The Consultant shall also furnish all materials, equipment, supplies, and incidentals necessary to perform the Services (other than those designated in writing to be furnished by the Department) and check and/or test the materials, equipment, supplies and incidentals as necessary in carrying out this work. The Services shall be performed to the satisfaction of the Department consistent with applicable professional standards.

The Consultant shall comply with all applicable Federal and State laws, rules, and regulations. The Consultant staff shall conduct themselves with professionalism in carrying out their duties.

The Consultant shall notify the Project Manager, in writing, prior to any personnel changes from those specified in the Consultant's original approved proposal. Any personnel substitutions are subject to review and approval of the Project Manager.

At the request of the Department, the Consultant, during the progress of the Services, shall furnish information or data relating to the Services described herein that may be required by the Department to enable it to carry out or to proceed with related phases of the Project not described herein, or which may be necessary to enable the Department to furnish information to the Consultant upon which to proceed with further Services.

CONSULTANT RESPONSIBILITIES:

Complete a design of this project including, but not limited to the following:

- Provide a state-of-the-practice review of other road agencies for the use of ATM and provide recommendations and lessons-learned to the Department.
- Provide a risk analysis for this project.
- Provide early preliminary engineering for ATM using LCS; including developing a conceptual layout for the corridor, including gantry location, power location, communication layout, and preliminary cost estimate.
- Provide a recommendation to MDOT on the design of the gantry system for the LCS as well as a recommendation for other ATMS strategies (such as dynamic parking information) that could be incorporated as part of this project.
- The Consultant will be required to revise the Ann Arbor Area Concept of Operations for the any changes to the ATM concept that are determined through the design process.
- Provide information and graphics for public outreach of ATM and LCS.
- Perform the required design and functional technical specification writing and/or modification for the ATM System. The proposed facilities shall include but are not limited to DMS, CCTVs, vehicle detection, and gantries with LCS.
- Present proposed enhancements to the MDOT statewide Advanced Traffic Management System (ATMS) software and infrastructure changes to MDOT and DTMB for review.
- Develop enhancements the MDOT statewide ATMS software package for ATM system functionality using LCS.
- Develop a final bid package based on 100% complete plans and provide a cost estimate for construction.
- Serve as the MDOT representative, system manager (SM) and software developer, through the construction phase.

STUDY (EARLY PRELIMINARY ENGINEERING)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)
		CONSULTANT CONTRACT AUTHORIZATION/EXECUTION	
YES	NO		
		<u>INFORMATION GATHERING/STUDIES</u>	
<input type="checkbox"/>	<input type="checkbox"/>	1115 Traffic Data Collection for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1120 Prepare Traffic Analysis Report for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1125 Traffic Capacity Analysis for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1155 Request/Perform Safety Analysis for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1300 Traffic Impact Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1350 Determine Need for Interstate Access Change Request	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1400 Feasibility Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1500 Corridor Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1555 Interstate Access Change Request	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<u>155M FHWA Approval of Interstate Access Change Request</u>	/ /

- | | | | | | |
|--------------------------|--------------------------|------|------------------------------|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 1600 | Access Management Study Plan | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 1700 | Other Miscellaneous Studies | | |

EPE SCOPING ANALYSIS

- | | | | | | |
|--------------------------|--------------------------|-------------|---|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 2100 | Scope Verification and Initiation of EPE Activities | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2115 | Prepare Traffic Analysis Report for EPE/Design | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2120 | Traffic Data Collection for EPE/Design | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2125 | Traffic Capacity Analysis for EPE/Design | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2130 | Prepare Project Purpose and Need | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>213M</u> | <u>Concurrence by Regulatory Agencies with the Purpose and Need</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2140 | Develop and Review Illustrative Alternatives | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2155 | Request/Perform Safety Analysis for EPE/Design | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2160 | Prepare and Review EIS Scoping Document | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>216M</u> | <u>Public Information Meeting</u> | / | / |

EPE DRAFT ANALYSIS

- | | | | | | |
|--------------------------|--------------------------|------|---|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 2310 | Conduct Technical SEE Studies | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2311 | Cultural Resources Survey | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2312 | Recreational Survey – Section 4(f)/6(f) | / | / |

EPE DRAFT ANALYSIS (cont'd)

- | | | | | | |
|--------------------------|--------------------------|-------------|---|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 2313 | Endangered Species Survey | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2314 | Wetland Assessment | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2315 | Wetland Mitigation | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2316 | Other Technical Reports | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2321 | Prepare for Aerial Photography | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2322 | Finish/Print Aerial Photography | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2330 | Collect EPE Geotechnical Data | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2340 | Develop and Review Practical Alternatives | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>233M</u> | <u>Aerial Photography Flight</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2360 | Prepare and Review EA | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>236M</u> | <u>Approval of EA by FHWA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2370 | Prepare and Review Draft EIS | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>237M</u> | <u>Approval of Draft EIS by FHWA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2380 | Distribute EA | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>238M</u> | <u>Public Hearing for EA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2390 | Distribute DEIS | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>239M</u> | <u>Public Hearing for DEIS</u> | / | / |

EPE FINAL ANALYSIS

- | | | | | | |
|--------------------------|--------------------------|-------------|--|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 2510 | Determine and Review Recommended Alternative | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>250M</u> | <u>Concurrence by Reg Agencies with Recom Alternatives</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2525 | Prepare and Review Engineering Report | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2530 | Prepare and Review Request for FONSI | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>252M</u> | <u>Approval of FONSI by FHWA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2540 | Prepare and Review FEIS | / | / |

- | | | | | |
|--------------------------|--------------------------|--------------------------------------|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <u>254M Approval of FEIS by FHWA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2550 Obtain ROD | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | <u>255M ROD Issued by FHWA</u> | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2570 ITS Concept of Operations | | |

CONTAMINATION INVESTIGATION

- | | | | | |
|--------------------------|--------------------------|---|---|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 2810 Project Area Contamination Survey (PCS) | / | / |
| <input type="checkbox"/> | <input type="checkbox"/> | 2820 Preliminary Site Investigation (PSI) for Contamination | / | / |

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO			
<u>DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION</u>				
<input type="checkbox"/>	<input type="checkbox"/>	3130	Verify Design Scope of Work and Cost	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3310	Prepare Aerial Topographic Mapping	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3320	Conduct Photogrammetric Control Survey	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3321	Set Aerial Photo Targets	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3325	Geotechnical Structure Site Characterization	
<input type="checkbox"/>	<input type="checkbox"/>	3330	Conduct Design Survey	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3340	Conduct Structure Survey	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3350	Conduct Hydraulics Survey	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3360	Prepare Base Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>311M</i>	<i>Utility Notification</i>	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3361	Review and Submit Preliminary ROW Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>331M</i>	<i>Preliminary ROW Plans Distributed</i>	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3365	Pre-Conceptual ITS Design and Meeting	
<input type="checkbox"/>	<input type="checkbox"/>	3370	Prepare Structure Study	
<input type="checkbox"/>	<input type="checkbox"/>	3375	Conduct Value Engineering Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3380	Review Base Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3385	Preliminary Load Rating	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>332M</i>	<i>Base Plan Review (Pre-GI Inspection)</i>	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3390	Develop the Maintaining Traffic Concepts	/ /
<u>PRELIMINARY PLANS PREPARATION</u>				
<input type="checkbox"/>	<input type="checkbox"/>	3500	Develop Transportation Management Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3510	Perform Roadway Geotechnical Investigation	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3520	Conduct Hydraulic/Hydrologic and Scour Analysis	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3522	Conduct Drainage Study, Storm Sewer Design, and use Structural Best Management Practices	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3530	Geotechnical Foundation Engineering Report	
<input type="checkbox"/>	<input type="checkbox"/>	3535	Conduct Str. Review for Arch. & Aesthetic Improvements	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3540	Develop the Maintaining Traffic Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3551	Prepare/Review Preliminary Traffic Signal Design Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3552	Develop Preliminary Pavement Marking Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3553	Develop Preliminary Non-Freeway Signing Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3554	Develop Preliminary Freeway Signing Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3555	Prepare/Review Preliminary Traffic Signal Operations	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3570	Prepare Preliminary Structure Plans	
<input type="checkbox"/>	<input type="checkbox"/>	3580	Develop Preliminary Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3581	Review and Submit Final ROW Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>351M</i>	<i>Final ROW Plans Distributed</i>	/ /

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN (cont'd)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO			
<u>PRELIMINARY PLANS PREPARATION (cont'd)</u>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3585	Final ITS Concept Design and Meeting	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3590	Review Preliminary Plans (Hold Plan Review Meeting)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>352M</i>	<i>THE Plan Review (Grade Inspection)</i>	
<input type="checkbox"/>	<input type="checkbox"/>	3595	Conduct ITS Structure Foundation Investigation	/ /
<u>UTILITIES</u>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3610	Compile Utility Information	
<input type="checkbox"/>	<input type="checkbox"/>	3615	Compile ITS Utility Information	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3650	Coordinate RR Involvement for Grade Separations	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3655	Coordinate RR Involvement for At-Grade Crossings	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3660	Resolve Utility Issues	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>360M</i>	<i>Utility Conflict Resolution Plan Distribution</i>	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<i>361M</i>	<i>Utility Meeting</i>	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3670	Develop Municipal Utility Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3672	Develop Special Drainage Structures Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3675	Develop Electrical Plans	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3680	Preliminary ITS Communication Analysis	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3690	Power Design (Power Drop in Field)	/ /
<u>MITIGATION/PERMITS</u>				
<input type="checkbox"/>	<input type="checkbox"/>	3710	Develop Required Mitigation	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3720	Assemble Environmental Permit Applications	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3730	Obtain Environmental Permit	/ /
<u>FINAL PLAN PREPARATION</u>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3815	Geotechnical Structure Design Review	
<input type="checkbox"/>	<input type="checkbox"/>	3821	Prepare/Review Final Traffic Signal Design Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3822	Complete Permanent Pavement Marking Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3823	Complete Non-Freeway Signing Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3824	Complete Freeway Signing Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3825	Prepare/Review Final Traffic Signal Operations	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3830	Complete the Maintaining Traffic Plan	/ /
<input type="checkbox"/>	<input type="checkbox"/>	3840	Develop Final Plans and Specifications	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>380M</i>	<i>Plan Completion</i>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3850	Develop Structure Final Plans and Specifications	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3870	Hold Omissions/Errors Check (OEC) Meeting	
<input type="checkbox"/>	<input type="checkbox"/>	3875	Final Load Rating	/ /

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN (cont'd)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO			
<u>FINAL PLAN PREPARATION (cont'd)</u>				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>387M Omissions/Errors Checks Meeting</i>		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>389M Plan Turn-In</i>		
<input type="checkbox"/>	<input type="checkbox"/>	3880 CPM Quality Assurance Review	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3890 Final ITS Communication Analysis	/	/

PRELIMINARY ENGINEERING – RIGHT OF WAY

<u>EARLY RIGHT OF WAY WORK</u>				
<input type="checkbox"/>	<input type="checkbox"/>	4120 Obtain Preliminary Title Commitments	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4130 Prepare Marked Final Right Of Way Plans	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<i>413M Approved Marked Final ROW</i>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4140 Prepare Property Legal Instruments	/	/
<u>ROW ACQUISITION</u>				
<input type="checkbox"/>	<input type="checkbox"/>	4411 Preliminary Interviews	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<i>441M Post-Decision Meeting</i>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4412 Real Estate Services Assignment Proposal and Fee Estimate (Form 633s) for Appraisal Work Authorization	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4413 Appraisal Reports	/	/
<u>ROW ACQUISITION (cont'd)</u>				
<input type="checkbox"/>	<input type="checkbox"/>	4420 Appraisal Review Reports	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4430 Acquire Right Of Way Parcels	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4510 Conduct Right Of Way Survey & Staking	/	/
<u>ROW RELOCATION</u>				
<input type="checkbox"/>	<input type="checkbox"/>	4710 Relocation Assistance	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4720 Prepare Improvement Removal Plan	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<i>442M ROW Certification</i>	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

POST LETTING/AWARD TASKS (for reference only)

		P/PMS TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO				
<input type="checkbox"/>	<input type="checkbox"/>	4810	Complete Acquisition Process	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4820	Manage Excess Real Estate	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4830	Provide Post-Certification Relocation Assistance	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4910	Conduct ROW Monumentation	/	/
<input type="checkbox"/>	<input type="checkbox"/>	5010	Construction Phase Engineering and Assistance	/	/
<input type="checkbox"/>	<input type="checkbox"/>	5020	Prepare As-Built Drawings	/	/

OTHER P/PMS RELATED TASKS

- Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, utility conflict resolution, local agency meetings, etc.
- Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
- The Consultant shall evaluate vertical elevations and design the depth of any proposed ITS facilities so as not to be in conflict with the existing or proposed utilities.
- The Consultant may be required to provide Design Services during the construction phase of this project. This will include SM tasks such as to assist the MDOT Project Delivery Office with review tasks during the construction phase of the project to complete tasks including, review of shop drawing submittals, meeting correspondence, etc. If Construction Assistance is required, then a separate authorization for those services will be issued. The Consultant will not be compensated for performing work due to errors or omissions.
- The Consultant shall be required to prepare and submit a CPM network for review and use for preparing the progress schedule for the project.
- Attend any project-related meetings as directed by the MDOT Project Manager.

- The Consultant representative shall record and submit minutes for all project related meetings to the MDOT Project Manager within one week of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
- The MDOT Project Manager shall be the official MDOT contact person for the Consultant and shall be made aware of all communications regarding this project. The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.
- The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.
- The Consultant shall determine all potential utility conflicts with the proposed facility placement. The Consultant shall also define solutions to the various utility conflicts and have them reviewed by MDOT before they are designed and placed on the construction plans.
- The Consultant is also responsible for determining the availability of electric and communication service to the proposed facilities at the locations described previously. Any potential problems with utility electric and communication service shall be brought to MDOT's attention as soon as they are known.
- All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.
- All plans, specifications, and other project related items are subject to review and approval by MDOT.

BI-WEEKLY PROGRESS REPORT:

The Consultant shall submit bi-weekly project progress reports to the MDOT Project Manager (or designee). The reports shall include work accomplished during the previous 2 weeks; anticipated work items for the upcoming 2 weeks; real or anticipated problems on the project; update of previously approved detailed project schedule, including explanations for any delays or changes; items needed from MDOT; copy of Verbal Contact Records for the period.

MDOT RESPONSIBILITIES (GENERAL):

- A. Schedule and/or conduct the following:
 - 1. Project related meetings
 - 2. The Plan Review
 - 3. Utility Meetings
 - 4. Stakeholder engagement meetings
 - 5. Final item cost estimates, as necessary

- B. Make decisions or provide input for the following items:
 - 1. Resolve political issues
 - 2. Resolve issues related to funding
 - 3. Review of Final packaging of the Proposal after the consultant's review of the final package
 - 4. Determine which letting date will be used for the project
 - 5. Coordinate with local Contractor's association (MITA)

- C. Furnish existing plans.

- D. Provide environmental clearance.

- E. Coordinate any necessary utility relocation.

- F. Safety Reviews for any required design exceptions.

- G. Review and approve all external communications.

- H. Review and approve all budget, schedule, and design aspects.

- I. DTMB will be responsible for IT work including hardware and software, as applicable to the State of Michigan Network.

DELIVERABLES:

All plan sheets required for this project shall be completed by the Consultant provided to MDOT for inclusion into the road design plan set and proposal. This includes all information and sheets related to the design items above but not limited to:

- Title Sheet
- Note Sheet
- Typical Cross-Sections
- Plan Sheets
- Project specific Special Details
- ATMS Software Design Documents
- Electronic files for each to be provided

TRAFFIC CONTROL AND MDOT PERMITS

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through the Utilities/Permits Section, Real Estate Division at (517) 373-7680.

UTILITIES

The Consultant shall be responsible for obtaining from MDOT and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project. The Consultant shall provide for the staking of various proposed facilities so as to locate potential utility conflicts and aid in the completion of utility relocation plans for and private utility companies.

SCHEDULE:

Achievement of the project milestones will require a concentrated effort by both the Consultant and MDOT. Timely communications, receipt of information, and development and approval of deliverables will be critical to the success of the assigned deliverables.

The schedule will be determined on a task by task basis as set forth in each task.

The start date for the Consultant services will be immediately upon notice to proceed (NTP). The duration of the services will be at the discretion of MDOT project manager. The Consultant shall provide at the kick off meeting a detailed schedule of target dates for each step of the design.

PROJECT MANAGEMENT:

This project will require close interaction and good communication between the Consultant and MDOT.

If there are any major deviations from the original scope of this assignment, these changes must be documented and jointly approved by the Consultant and MDOT. The selected Consultant shall provide all necessary project management services, including monthly and quarterly progress reports, developing and maintaining a project schedule, and providing invoices in a timely manner.

Consultants should provide a description of their management team for this project and list all key personnel responsible for the deliveries of this RFP.

STATUS REPORTS/ MEETINGS:

There will be periodic, regular meetings between MDOT representatives and the selected Consultant to review work product, and to communicate progress, issues, ideas, and expectations.

The selected Consultant shall provide copies of all project reports, correspondence, meeting announcements, and meeting minutes which shall be delivered by email to the MDOT Manager. The Consultant shall provide the minutes of all meetings attended. These shall be distributed by email to the MDOT Project Manager.

PROJECT DOCUMENTATION:

All documentation and reports shall be delivered in the current version of Microsoft Word or Adobe Acrobat (whichever applies) being used by MDOT. All documentation delivered shall be clear, concise, complete, and in compliance with standards required by the MDOT Project Manager. All CADD files shall be delivered in the current version of MicroStation being used by MDOT.

CONSULTANT PAYMENT – Actual Cost Plus Fixed Fee:

for all other types of work will be approved on a case by case basis.

Compensation for this project shall be on an **actual cost plus fixed fee** basis. This basis of payment typically includes an estimate of labor hours by classification or employee, hourly labor rates, applied overhead, other direct costs, subconsultant costs, and applied fixed fee. The fixed fee for profit allowed for this project is 11.0% of the cost of direct labor and overhead.

All billings for services must be directed to the Department and follow the current guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's website. This document contains instructions and forms that must be followed and used for billing. Payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the Consultant. Typically, billings must be submitted within 60 days after the completion of services for the current billing. The final billing must be received within 60 days of the completion of services. Refer to your contract for your specific contract terms.

Direct expenses, if applicable, will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted with the billing for all eligible expenses on the project in accordance with the Reimbursement Guidelines. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this project.

MDOT will reimburse the consultant for vehicle expenses and the costs of travel to and from project sites in accordance with MDOT's Travel and Vehicle Expense Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Travel_Guidelines_05-01-13_420289_7.pdf?20130509082418. MDOT's travel and vehicle expense reimbursement policies are intended primarily for construction engineering work. Reimbursement for travel to and from project sites and for vehicle expenses for all other types of work will be approved on a case by case basis.

MDOT will pay overtime in accordance with MDOT's Overtime Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Overtime_Guidelines_05-01-13_420286_7.pdf?20130509081848. MDOT's overtime reimbursement policies are intended primarily for construction engineering work. Overtime reimbursement for all other types of work will be approved on a case by case basis.

ATTACHMENT A
SCOPE OF SERVICE
FOR
UTILITY COORDINATION

The Consultant is directly responsible for all aspects of the project's utility coordination as it relates to the ITS design components. The Consultant is expected to provide technical assistance to MDOT, utilities and other stakeholders regarding utility identification, project utility coordination and utility conflict resolution.

A utility is defined as any privately, publicly, municipal or cooperatively owned line, facility, or system for producing, transmitting, or distributing communication, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, or any other similar commodity, including any fire or police signal system or street lighting system.

MDOT shall -

- Provide a preliminary list of utilities, with contact information, that may have facilities located within the project limits. This list may not be 100% accurate and/or complete.
- Provide assistance, if necessary, in contacting utilities to obtain facility records.
- Provide Consultant with utility responses and facility records if utility information solicitation has been performed.
- Organize and host a kick-off meeting with Consultant and MDOT prior to Consultant beginning utility coordination services.

Consultant shall -

- Maintain a Utility Conflict Matrix* spreadsheet and deliver as the bi-weekly status report.
- Distribute form letters, plans, etc. as outlined in 14.16 (Request for Utility Information) and 14.26 (Distribution of Preliminary Plans to Utilities and Utility Coordination Meeting) of the MDOT Road Design Manual.
 - Identify existing/proposed utility owners and facilities.
 - Collect and compile utility responses.
 - Follow up with non-responsive utilities.
- Schedule and conduct utility meetings for the resolution of conflicts between utility facilities and proposed construction.
 - Identify conflicts, discuss possible design modifications, develop utility relocation schemes, discuss reimbursable relocations, and discuss project scope and schedule.
 - Identify the utility's design and construction contacts and ensure the plan's note sheet utility contact information is accurate.
 - Record meeting minutes and distribute to all attendees.

- Schedule and conduct field meetings with individual utilities to resolve conflicts.
- Schedule and conduct in meetings convened for the purpose of utility betterments.
- Ensure municipal utility relocations, betterments and reimbursements follow Chapter 9 of the MDOT Road Design Manual.
- Identify eligible reimbursable utility relocations, for public/private utilities, as outlined in 23 Code of Federal Regulations (CFR) Part 645 Subparts A and B – Utilities and ensure 23 CFR Part 635.410 - Buy America Requirements are met.
 - Collect documentation to evaluate reimbursable utility relocations.
- Evaluate utility relocation plans for compatibility with the proposed project.
- Ensure utility relocation schedules do not impact the project schedule.
- Confirm utility relocation permit applications are submitted to the TSC.
- Prepare the “Utilities Status Report” (MDOT Form 2286) and “Notice to Bidders - Utility Coordination” documents.
- Track and monitor utility relocation progress.

Deliverables (Provided to the TSC Utility Coordinator and Project Manager):

- Courtesy copies of all correspondence with the utilities
- Utility Conflict Matrix
- Utility coordination meeting minutes
- Reimbursable utility relocation documentation
- Utilities Status Report and Notice to Bidders - Utility Coordination

* The Utility Conflict Matrix (UCM) is located on the <http://www.trb.org/Main/Blurbs/166731.aspx> website under Training materials > Prototype 1 – Stand-alone UCM. The UCM was developed as part of the Transportation Research Board’s (TRB) second Strategic Highway Research Program (SHRP 2) Report S2-R15B-RW-1: Identification of Utility Conflicts and Solutions which provides concepts and procedures to identify and resolve utility conflicts. Tools described in the report include utility conflict matrices that enable users to organize, track, and manage conflicts that frequently arise.

Concept of Operations Summary

US-23 Active Traffic Management (ATM)

November 14, 2013

Background

In an effort to mitigate congestion issues on US-23 in the vicinity of Ann Arbor, MDOT has initiated efforts to implement lane control signs (LCS) to facilitate active traffic management (ATM) strategies to accommodate peaks in demand. This would be the first ATM implementation within the state of Michigan. This summary is intended to provide a quick look at what details have been defined to date through the Concept of Operations (COO) development to guide the next phases of the design and implementation of the ATM solution on US-23.

Project Limits

The first phase of the ATM will be implemented for US-23 from M-14 to M-36 in Livingston and Washtenaw counties. The second phase of this system will be for US-23 from M-36 to I-96.

Project Implementation Schedule

- Authorization for early preliminary engineering services for ATM system (February 2014)
- Summary of best practices for ATM utilizing the shoulder (March 2014)
- Preliminary design of gantry structure type (April 2014)
- Refinement of COO and High Level Requirements (May 2014)
- Conceptual layout of ATM gantries (July 2014)
- Detailed software requirements document (September 2014)
- Preliminary engineering services (October 2014)
- Construction and integration (November 2015- December 2016)

Operations

During the early stages of the project, all of the impacted stakeholders should agree to their roles and responsibilities. The stakeholder commitment should be made by the agency, as individuals can often change roles within an organization. This commitment will secure that on day one of operating the new system all agencies have agreed to and understand their responsibilities. The roles and responsibilities with respect to the ATM are still under development and will be refined in upcoming stakeholder meetings.

Operational scenarios define the integration of roles through multiple scenarios as anticipated once the proposed system is in place. Below are examples of the operational scenarios that have been discussed to date. Each of these will be further refined as the COO is finalized and will further drive design decisions with respect to the ATM.

- Incident Management (crash, special event, lane closure, etc.)
- Peak Period Operations
- Traveler Information

Intelligent Transportation Systems (ITS) Infrastructure

The Ann Arbor area has implemented several ITS devices within the region to facilitate improved operations of the network. To date, the devices in the Ann Arbor region have included closed-circuit television (CCTV) cameras, dynamic message signs (DMS), microwave vehicle detection systems (MVDS), and travel time signs (TTS). In addition to the initial deployment, additional CCTV cameras have been identified for US-23 to supplement the current surveillance coverage. All of the existing and proposed devices are presented on the following map.

Additional field equipment will be required for operating and managing the ATM system. At a minimum, this equipment will include LCS and smaller DMS. The quantities and locations of the additional field equipment will be further refined in future design steps of the project.

Lane Control Signs (LCS)

There are several facets of the LCS and supporting structure that will need to be refined moving forward. Those are highlighted below along with additional information regarding the status of each.

- *Structural Preference:* MDOT will be providing guidance on the preferred structure that will be allowed for the LCS installations as part of the ATM implementation.
- *Structure Protection Requirements:* These requirements will be dependent on the preferred structure.
- *LCS Configuration:* This will prescribe the number of LCS and small DMS used on each structure as well as the density and number of LCS installed along the corridor.
- *Lane Control Specifications and Preferences:* This will prescribe the dimensions and capabilities of the individual LCS.

Supplemental DMS

As part of defining the density and placement of the LCS and structures, it may be prudent to use small DMS to support operations of the ATM system. These signs would convey supplemental information that cannot easily be communicated via LCS.

Software Requirements

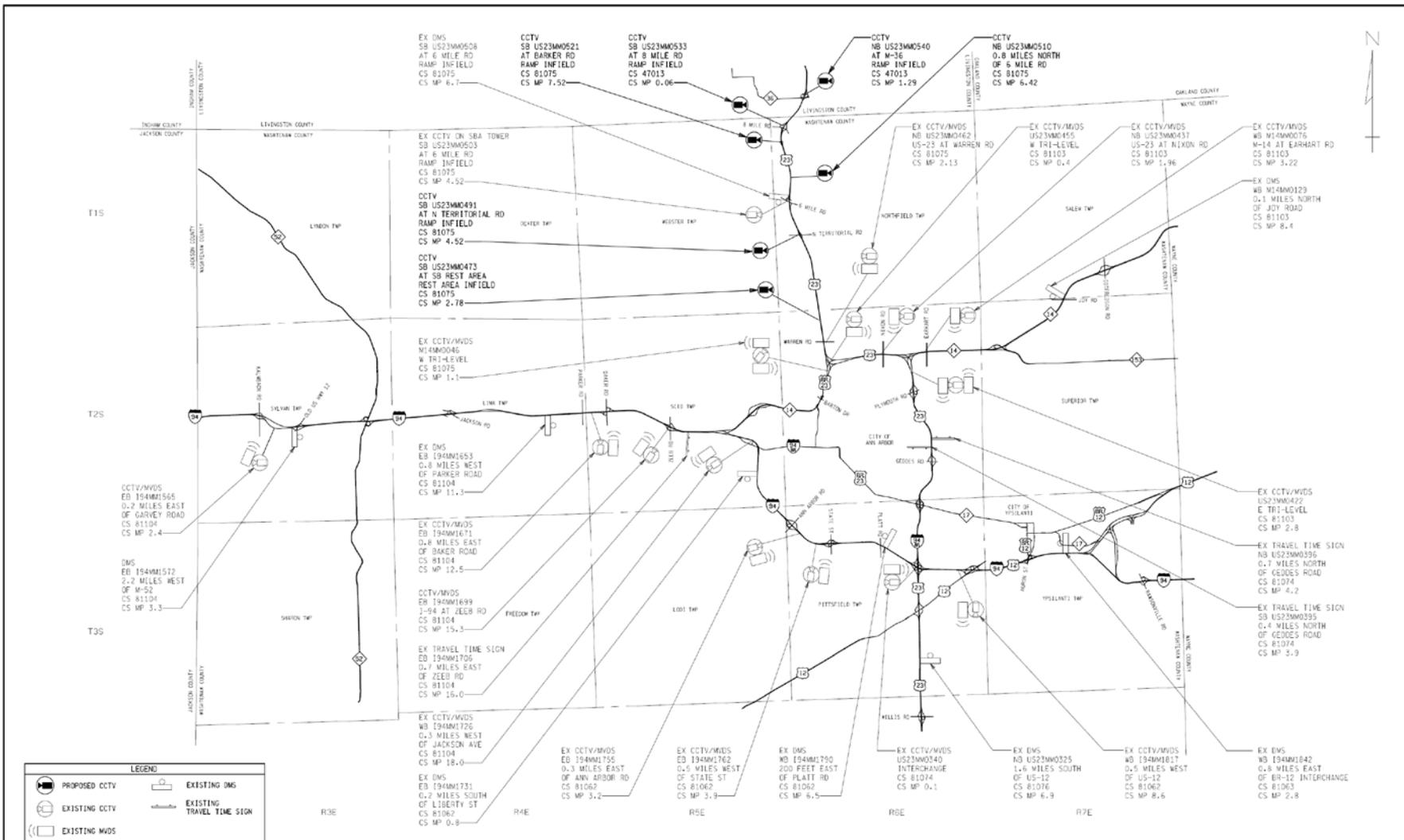
The central software should communicate with and control all of the ITS components to form a complete system for the ATM corridor. The ATM will use both DMS and LCS to manage traffic. The ATM should be a module of the existing statewide Advanced Traffic Management System (ATMS) software and provide a system that provides configuration and control of the system. The following high level requirements apply to use of the statewide ATMS to control the field equipment. Additional requirements may be defined as the Concept of Operations is finalized.

- ATMS should control all CCTV cameras within the defined limits of the ATM corridor.
- ATMS should control all MVDS within the defined limits of the ATM corridor.
- ATMS should control all DMS installed within the defined limits of the ATM corridor including posting messages, clearing of messages, and sign status.
- ATMS should provide control for small DMS including posting messages, clearing of messages, and sign status.
- ATMS should provide control of LCS including posting arrows, symbols and text, clearing of messages, and sign status.
- ATMS should provide intelligent configuration for lane control gantries to prevent conflicting messages and signals. This includes messaging on LCS for individual gantries as well as a

series of gantries to comprise a system to prevent confusion of conflicting information to the traveler.

Education and Outreach

MDOT will be leading the education and outreach effort for the ATM implementation. There will be many stakeholders, internal and external to MDOT that will be involved in the outreach effort. Additionally, the design and implementation schedule and progress of the project will be key in developing an effective outreach plan.



LEGEND	
	PROPOSED CCTV
	EXISTING DMS
	EXISTING CCTV
	EXISTING TRAVEL TIME SIGN
	EXISTING MVD

ASBLET PLAN REVISIONS				NOT TO SCALE	DATE: 06/20/13	CS: 47013, 81082, 81063, 81074, 81075, 81708, 81103, 81104	ANN ARBOR ITS DEVICE VICINITY MAP	DRAWING SHEET
NO.	DATE	AUTH.			DESCRIPTION	NO.		

FILE: 107179_McKibb_B_Cam.dgn

DESIGN UNIT: PALMER
TSC: UNIVERSITY REGION

JN: 107179A