

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

	REQUISITION NUMBER	DUE DATE	
MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)	
DESCRIPTION			
MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED GRAY SHADING = OPTIONAL Check the appropriate Tier in the box below		CONSULTANT: Provide only checked items below in proposal	
<input type="checkbox"/> TIER I (\$25,000-\$99,999)	<input type="checkbox"/> TIER II (\$100,000-\$250,000)	<input type="checkbox"/> TIER III (>\$250,000)	
<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

BUREAU OF HIGHWAYS BUREAU OF TRANSPORTATION PLANNING OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

NO YES DATED _____ THROUGH _____

Prequalified Services – See page ____ of the attached Scope of Services for required Prequalification Classifications.

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**

Qualifications Based Selection – Use Consultant/Vendor Selection Guidelines

For all Qualifications Based Selections, the section team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that 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 Review / 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. The selected vendor may be contacted to confirm capacity.

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) separate from 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.

**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

Michigan Department of Transportation

**SCOPE OF SERVICE
FOR
INTELLIGENT TRANSPORTATION SYSTEMS
Infrastructure Maintenance Services
Qualification Based Low Bid Selection
Revised 11.8.2012**

CONTROL SECTION(S): 84900

JOB NUMBER(S): JN113431, JN113436, JN113516

PROJECT LOCATION:

Various locations throughout Michigan Department of Transportation (MDOT) Bay, Grand, Metro, North, Southwest, Superior, and University Regions.

DESCRIPTION OF WORK:

Complete Intelligent Transportation Systems (ITS) infrastructure maintenance in all of the seven MDOT Regions. ITS infrastructure is currently installed or planned to be installed in the counties specified per each MDOT Region below.

Bay Region – Arenac, Bay, Clare, Genesee, Midland, and Saginaw Counties

Metro Region – Oakland, Macomb, St. Clair, and Wayne Counties

University Region – Clinton, Ingham, Jackson, Livingston, Monroe, and Washtenaw Counties

Grand Region – Ionia, Kent, Muskegon, and Ottawa Counties

Southwest Region – Allegan, Berrien, Calhoun, Kalamazoo, and Van Buren Counties

North Region – Cheboygan, Crawford, Emmet, Ogemaw, Otsego, and Roscommon Counties

Superior Region – Alger, Baraga, Chippewa, Delta, Houghton, Iron, Mackinac, Marquette, and Schoolcraft Counties

The Contractor will also maintain ITS Infrastructure for the Mackinac Bridge Authority (MBA) and Blue Water Bridge (BWB). Remote ITS sites are also installed at spot locations throughout the state where detection, surveillance, or information dissemination is needed. Some counties included in the above list are maintained via direct MDOT forces (Delta County) or city forces (Kent County) and are included for informational purposes only.

All work to be performed through the contract shall be done in accordance with the

Michigan Department of Transportation's 2012 Standard Specifications for Construction; the 2011 Michigan Manual on Uniform Traffic Control Devices; all applicable national, state and local building and electrical codes; and all applicable national, state, and local worker safety policies.

ITS devices to be and not to be maintained under the contract have been identified in **ATTACHMENT A - Current System Description.**

PRIMARY PREQUALIFICATION CLASSIFICATION(S): N/A

SECONDARY PREQUALIFICATION CLASSIFICATION(S): N/A

ANTICIPATED START DATE: January 1, 2013

ANTICIPATED COMPLETION DATE: December 31, 2015

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

PREFERRED QUALIFICATIONS:

The contractor shall have five related projects working with state government or local municipalities over the past five years.

The contractor shall have related work experience in the areas of ITS.

The contractor shall have a license electrician on staff.

MDOT PROJECT MANAGER:

Elise Kapphahn
Michigan Department of Transportation
8885 Ricks Rd.
P.O. Box 30049
Lansing, MI, 48917
517-636-0036
KapphahnE@michigan.gov

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

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, 2012 Standard Specifications for Construction, the Design Survey Manual, etc.).

BACKGROUND:

The Contractor shall have direct ITS maintenance and installation experience.

The Contractor shall furnish all services and labor necessary to conduct and complete the services described herein. The Contractor 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 Contractor shall comply with all applicable Federal and State laws, rules, and regulations. The Contractor staff shall conduct themselves with professionalism in carrying out their duties.

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

At the request of the Department, the Contractor, during the progress of the Services, shall furnish information or data relating to the Services described herein. These 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 Contractor upon which to proceed with further Services.

CONTRACTOR RESPONSIBILITIES:

Project Description

Comprehensive response and preventative maintenance services are required to keep Michigan's ITS infrastructure in proper working order. This will include all labor, equipment, tools, and materials necessary to maximize system availability and efficiency.

Maintenance services for additional elements that are fundamentally similar to elements included in the original contract will be incorporated into the contract at existing bid prices upon notification by the Engineer. These elements will be included in the contract within ten business days after notification by the Engineer, during which time the Contractor will have the right to inspect new elements prior to inclusion in the maintenance contract. If the Contractor chooses not to inspect the new elements, they will become automatically included in the contract after ten business days have elapsed. Deficiencies in workmanship of the new elements, as noted by the Contractor, will be resolved prior to inclusion in the contract. The device(s) shall be added on the day of completion of inspection or at the close of the ten day exception window if the Contractor waives the inspection.

Maintenance services for non-operational field elements may be removed from the contract by notification of the Engineer. In such case, the next business day after notice of removal from the contract is provided by the Engineer, the field elements being

removed will no longer be the responsibility of the Contractor and the corresponding pay item quantity will be reduced.

Maintenance services for additional elements that are not similar to existing elements may be added to the contract through a mutually agreed upon contract modification.

General Requirements for ITS Field Devices

The Contractor shall provide all labor to maximize system availability and efficiency of the MDOT ITS. The Contractor shall obtain, maintain, and achieve a minimum operational rate of 90 percent for all equipment per MDOT Region. For example, a 90 percent operational rate must be maintained for all equipment in MDOT Superior Region. Failure to achieve and maintain a 90 percent operational rate (excluding Third Party Damage & Acts-of-God) may be cause for termination of this agreement. Operation will be defined as operating as intended, designed, or previously modified. The Engineer will be the final authority regarding the operational status of field equipment.

The Contractor is responsible for coordinating with the appropriate warranty company for all devices that are under warranty. The Contractor shall contact the warranty company within a predetermined amount of time as defined in the Response and Repair Time section of this RFP. Reasonable effort must be shown in contacting and prompting the warranty company to repair the device in a quick and timely manner. The Engineer will be the final authority regarding the operational status of field equipment.

The Contractor is responsible for maintaining power infrastructure at each site on the MDOT side of the meter. Any work required on the utility company side of the meter, including the meter, shall be performed by the utility company with associated costs paid by MDOT directly to the utility company.

Loops that are not operational due to failure on the travel lane side of the handhole in the shoulder shall be excluded from the operational rate calculation for the purpose of calculating system availability. Equipment that has been removed from the contract by notification of the Engineer shall be excluded from the operational rate calculation.

Spare parts inventory will be owned by MDOT, maintained by the Contractor, and available for audit by MDOT. The Contractor will be reimbursed on an actual cost basis for replacement spare parts to maintain an adequate inventory.

The Contractor shall provide and anticipate utilizing appropriate bucket-trucks and all other equipment as needed to perform the services defined herein.

The Contractor may be required to assist other contractors with integration of future projects as requested by the Engineer.

DESCRIPTION OF WORK

Under this scope, the Contractor shall provide 36 months of maintenance services on the following components of the MDOT ITS infrastructure. The specifications for maintenance of each type of ITS device site are listed in **ATTACHMENT B - DESCRIPTION OF PAY ITEMS AND OTHER CONTRACT ITEMS**.

ITS Devices and Communications Equipment

The Contractor shall provide maintenance for, but not limited to, inductive loop, magnetometer, point, MVDS, video, and radar vehicle detectors, DMS, CCTV cameras, TTS, communications system (licensed and unlicensed wireless radios, fiber optic cable, cellular modems, etc.), Truck Parking Information and Management System (TPIMS), Solarwinds Monitoring Software, mechanical equipment in the shelters (compressors, generators, etc.), and applicable TOC communications equipment and display (video wall and controller, etc.). The Contractor shall utilize Solarwinds and provide access to MDOT employees online as designated.

During the duration of the contract, devices may be added or eliminated. Devices that are added and that are similar to the existing devices shall be covered by this maintenance agreement starting ten business days after notice from the Engineer.

The Contractor shall also provide maintenance for the communication network that has been deployed under multiple contracts using different technologies. The network is a combination of leased and MDOT owned networks. The MDOT leased/owned network consists of wireless and wire-line systems. The communication networks are critical to the Southeast Michigan Transportation Operations Center (SEMTOC) in Detroit, the West Michigan Transportation Operations Center (WMTOC) in Grand Rapids, and the Statewide Transportation Operations Center (STOC) in Lansing, as well as other existing and future standalone ITS throughout the state. Failure of these networks could cause the loss of significant field equipment access and its repair and maintenance must be of highest priority. Although failure repair time is difficult to predict, the selected Contractor will be required to update the Engineer hourly and/or daily on maintenance/repair progress. Failure to meet any requirement of the contract may be grounds for contract termination. Networking support will also be required and will consist of providing support, fixes, patches, and repairs to the network; as well as network guidance and compliance for projects that are tying into the current network as requested by the Engineer.

During the duration of the contract, the Contractor shall provide all labor, tools, equipment, and minor materials, including, but not limited to, jumper wires, connectors, or any wiring that is completely within a single cabinet, to maintain the system and maximize system availability and efficiency. More significant spare parts, such as circuit boards, will come from a spare parts inventory to be purchased, managed, and maintained by the Contractor.

Preventative Maintenance

The Contractor shall conduct preventative maintenance to all ITS devices including, but not limited to, inductive loop, magnetometer, point, MVDS, video, and radar vehicle detectors, DMS, CCTV cameras, TTS, communications system (licensed and unlicensed wireless radios, fiber optic cable, cellular modems, etc.), Truck Parking Information and Management System (TPIMS), Solarwinds Monitoring Software, mechanical equipment in the shelters (compressors, generators, etc.) and applicable TOC communications equipment and display (video wall and controller, etc.). The Contractor shall provide all personnel, test equipment, and all other items for preventative maintenance during the

contract. In addition, the Contractor shall also be responsible for notifying the Engineer when the generators within the shelter require refueling, so that fuel can be ordered prior to emptying

The Contractor must develop and submit a preventative maintenance plan. The preventative maintenance plan must be comprehensive and address all items in sufficient detail, including time durations. Consideration must be given to the overall contract length as it pertains to and affects device preventative maintenance. The Contractor shall adhere to all submitted and approved preventative maintenance activities and schedules. The following items are to be addressed:

Routine and Emergency Maintenance Service Requirements

The Contractor shall provide all personnel, test equipment, and all other items for remedial maintenance during the period of the contract. The Contractor will be reimbursed at cost for replacement spare parts to maintain an adequate inventory. The Contractor shall anticipate utilizing appropriate bucket-trucks and traffic control equipment for shoulder closures, during hours approved by MDOT.

As required to maintain the system properly, the Contractor shall provide an on-call professional Project Manager for the maintenance/administration of the TOC hardware. They will provide technical expertise, direction, and strategies regarding all aspects of TOC maintenance, operation, and/or improvements as follows:

- The Project Manager or designee shall be available to the Engineer 24 hours a day, seven days a week through phone, pager, email, or other means.
- The Project Manager or designee shall participate in bi-weekly coordination meetings with MDOT, Department of Technology, Management & Budget (DTMB), and other contract personnel, as specified by the Engineer.

Coordination with MDOT Offices

The Contractor shall coordinate with the Engineer for all overarching concerns and areas of statewide consistency. Day to day activities will be delegated to the Region ITS Representative as designated by the Engineer. The Engineer may delegate some coordination activities to others. The Contractor shall notify the Engineer when any work involving coordination with other MDOT offices occurs and issues arise.

Coordination with Maintenance Organizations in Delta and Kent County

All maintenance work within Delta and Kent counties will be completed by their own forces however coordination with MDOT maintenance forces in Delta County and city maintenance forces in Kent County may be required on certain instances including but not limited to doing work near county lines.

Coordination with Other Contractors

Other contracts that increase or decrease field equipment quantities, expand the communication network, and/or develop/integrate software device drivers to control additional equipment will be awarded, under construction, and completed during the life of this maintenance contract. The Contractor shall be responsible for coordinating

with the Engineer and other Contractors, efforts related to these other contracts to ensure that access to SEMTOC, WMTOC, STOC, and other statewide Advanced Traffic Management System (ATMS) field devices is not the cause of construction, design delays, or claims. In the event that outside contractor(s) perform similar work, either through warranty services for new devices added under separate contract(s) or through award of non-routine maintenance work, the Contractor shall coordinate with outside contractor(s).

The coordination necessary under this requirement will consist of ensuring that access to sites is provided and associated coordination correspondence and communication occurs.

The Contractor shall be responsible for assisting the Engineer with any Requests for Information (RFIs) to may occur during the duration of the contract.

If work performed by another Contractor, either installation, warranty, non-routine, or road work construction, requires remedial action directed by the Engineer, then that remedial work shall be performed in accordance with the requirements defined under Non-Routine Maintenance.

Cellular Telephones

Each key Contractor staff member as defined in the contract, as well as a minimum of one member of each work crew or team, shall be equipped with a cellular telephone and shall keep that telephone on hand at all times while working on this project.

Asset Management Software

The Contractor will be required to work with asset management software as specified by the Engineer and input all work performed on any field elements, including notes on adjustments or parts replaced during maintenance and conditions discovered through inspection. In addition, required repairs will be transmitted to the Contractor through work orders issued through the specified asset management software and the repair will not be considered complete until properly documented in the software package. Maintenance of the MDOT ITS field elements inventory in the asset management software will be completed by the Contractor, including the addition of field elements as they become operational, as well as element removal. All newly added field elements will conform to the current MDOT naming conventions for ITS infrastructure. The Contractor shall also work with MDOT and their designee to integrate Solarwinds and the asset management tool together. The Engineer or his/her designee has the authority to inspect all work performed by the Contractor and review and reject work orders; any rejected work order shall be documented by the Engineer with notification to the Contractor within two business days.

Office Space

MDOT will provide office space for one Contractor staff member at a MDOT building if the locations are determined to be necessary for contract compliance by the Engineer. This space will include one telephone, one personal computer connected to the State of Michigan (SOM) network, and access to a fax

machine/printer/copier. In addition, MDOT will provide shop space at a MDOT designated/approved facility for the awarded Contractor's use. The office space, telephone, personal computer, fax machine, and copy machine are all for project use only. Any costs for non-project related uses will be deducted from money due the Contractor.

Personal Computer

The provided personal computer will be connected to the SOM network and the Contractor Project Manager will be provided with a MDOT email address. This email address shall be used for all project related communications and only for project related communications. Additional personal computers, including laptops, required to perform the work described herein shall be provided by the Contractor. No payment will be made to the Contractor for costs associated with these computers or related services and equipment.

Installed Material

All compensation for work performed under the contract will be through the bid items included. No additional compensation will be made for any labor, equipment, or tools except as described for non-routine maintenance services. Minor materials such as wiring, fasteners, connectors, jumpers, or other cables contained within a single cabinet, will be included in the pay items included in the contract. If material originates from the inventory warehouse, the Contractor will be compensated on an actual cost basis for replacing the spare parts inventory.

Equipment

All compensation for equipment used for work under the contract will be through the bid items included. No additional compensation will be made for any labor, equipment, or tools except as described for non-routine maintenance services.

Response and Repair Time

The maximum response times to report to a problem site, diagnose the problem, prepare an action plan, and if possible, repair the problem shall be determined according to the severity of the problem, as described below.

The Contractor shall have a representative assigned to a location that will allow them to respond to the highest severity incidents within the appropriate response time, as described below.

The Engineer will have final determination regarding classification of the severity of the problem as described below. The severity classifications and response times do not impact payment schedules and will not be interpreted as extending or altering repair times for the purposes of determining payment.

Failure to comply with the time frames described below may result in termination of the contract. The severity of the problem and the maximum response times will be defined as follows:

HIGH SEVERITY – High Severity problems are defined as those that cause approximately ten percent or more of all ITS equipment per MDOT Region to become dysfunctional, create a safety concern, or create a significant inconvenience to the traveling public. A safety concern may be due to hazards caused directly by malfunctioning or damaged ITS equipment, such as a damaged equipment support or bracket or due to hazards caused indirectly by malfunctioning ITS equipment, such as a malfunctioning CCTV camera or DMS in an area impacted by traffic generated by a major special event. Maximum response time for a High Severity problem, from initial contact from the Engineer or designee to reporting to the site, shall be four hours. Within that time, a representative of the Contractor shall be on site, reported to the Engineer, and provided a summary of the problem. After an additional two hours, the Contractor shall prepare an action plan, including estimated time to repair and a cost estimate to repair the problem if it does not fall under the normal scope of the contract. This communication shall initially be provided to the Engineer verbally and re-iterated in writing by e-mail or hard copy no later than 10:00 AM the following business day.

MEDIUM SEVERITY – Medium Severity problems are defined as those that cause critical components of the ITS to become inoperable. Critical components of the ITS may be defined differently at different times of the contract depending on special traffic patterns due to special events, adjacent construction or maintenance activities, or holidays. Maximum response time for a Medium Severity problem, from initial contact from the Engineer or designee to reporting to the site, shall be six hours. Within that time, a representative of the Contractor shall be on site and shall have reported to the Engineer and provided a summary of the problem. After an additional two hours, the Contractor shall prepare an action plan, including estimated time to repair, and a cost estimate to repair the problem if it does not fall under the normal scope of the contract. This communication shall initially be provided to the Engineer verbally and re-iterated in writing by e-mail or hard copy no later than 10:00 AM the following business day.

LOW SEVERITY – Low Severity problems are all problems not identified as High Severity or Medium Severity as defined above. Maximum response time for a Low Severity problem shall be one business day from initial contact from the Engineer. Within that time, a representative of the Contractor shall be on site, reported to the Engineer, and provided a summary of the problem, an action plan, including estimated time to repair, and a cost estimate to repair the problem, if it does not fall under the normal scope of the contract. This communication may initially be provided to the Engineer verbally, but must be re-iterated in writing by e-mail or hard copy no later than 10:00 AM the following business day.

Relationship between Pay Items

In the event that the inoperability of a field element is due to the failure of a separate system, payment will be withheld for maintenance of both systems.

Example: If a communications system failure causes the inoperability of multiple

CCTV, DMS, and Detector sites, than the CCTV, DMS, and Detector sites as well as the communications system will not be considered operational until the communications system is repaired and the sites are fully operational.

MDOT RESPONSIBILITIES (GENERAL):

- A. Schedule and/or conduct the following:
 - 1. Project related meetings
 - 2. Stakeholder engagement meetings

- B. Make decisions or provide input for the following items:
 - 1. Resolve issues related to funding
 - 2. Review and approve all budget and schedule aspects

TRAFFIC CONTROL

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

PROJECT MANAGEMENT:

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

The selected Contractor shall provide all necessary project management services, including monthly and quarterly progress reports and providing invoices in a timely manner.

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

STATUS REPORTS/ MEETINGS:

There will be periodic, regular meetings between MDOT representatives and the selected Contractor to review work product and to communicate progress, issues, ideas, and expectations, as determined necessary to complete the services as approved by MDOT.

The selected Contractor shall provide copies of all project reports, correspondence, meeting announcements, and meeting minutes for all meetings attended, which shall be delivered 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.

The Contractor shall establish and maintain its own document control system (DCS) to

store and record all correspondence, design inputs, drawings, progress reports, technical reports, specifications, Contract Documents, submittals, calculations, test results, inspection reports, nonconformance reports, administrative documents, and other documents generated under the Contract. This DCS must be accessible via a username and password protected secure website by MDOT personnel and Contractors as needed.

BID TABULATIONS:

The price proposal shall be completed in the format contained on the following bid tabulation sheets for Statewide MDOT ITS Maintenance. All costs shall be in U.S. dollars.

CONTRACTOR PAYMENT – Unit Price and Lump Sum:

Compensation for some items on this this project shall be on a **unit price** basis. This basis of payment typically includes a maximum quantity of units and a maximum reimbursable cost per unit.

And compensation for some items on this project shall be on a **lump sum** basis. One lump sum payment will be made once the deliverable is received and approved by the MDOT Project Manager. These items will be based on actual cost and may not exceed the actual cost of work. The MDOT Project Manager may authorize partial payment if the project is delayed due to circumstances beyond the Contractor's control.

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

INTELLIGENT TRANSPORTATION SYSTEMS
 INFRASTRUCTURE MAINTENANCE
MDOT STATEWIDE
2013

PAYMENT ITEMS

ALL ENTRIES MADE ON THIS PAGE SHALL BE HANDWRITTEN IN INK.

ITEMS OF WORK		UNIT	QUANTITY	PRICE/UNIT	TOTAL PRICE
1	Equipment Repair	Hour	1,244.8		
2	Maintain CCTV Site	Calendar Day	159,193		
3	Maintain DMS Site	Calendar Day	69,798		
4	Maintain Communication System	Calendar Day	365		
5	Maintain Detector Station Site	Calendar Day	179,483		
6	Maintain TTS Site	Calendar Day	3,285		
7	Maintain SEMTOC Equipment	Dollar	\$56,721	1	\$56,721
8	Maintain STOC Equipment	Dollar	\$28,361	1	\$28,361
9	Maintain Solarwinds Monitoring Software	Calendar Day	0		
10	Solarwinds License Renewal	Dollar Each	0		
11	Maintain Spare Parts Inventory	Calendar Day	365		
12	Maintain Speed and Curve Warning System	Calendar Day	730		
13	Maintain TPIMS Site	Calendar Day	0		
14	Maintain DSRC Site	Calendar Day	0		
15	Maintain DTPS Site	Calendar Day	0		
16	Networking Support	Hour	520		
17	Non-routine Maintenance and Repairs	Dollar	\$280,000	1	\$280,000
18	Spare Parts Direct Cost	Dollar	\$1,085,000	1	\$1,085,000
19	Utility Staking and Protection One Person	Hour	168.00		
20	Lighted Arrow, Type C, Furn.	Each	14		
21	Lighted Arrow, Type C, Oper.	Each	14		
22	Minor Traffic Devices	Lump Sum	1		
23	Plastic Drum, High Intensity, Lighted, Furn.	Each	525		
24	Plastic Drum, High Intensity, Lighted, Oper.	Each	525		
25	Sign Cover	Each	112		
26	Sign, Type B, Temp, Prismatic, Furn.	Sq Ft	3,024		
27	Sign, Type B, Temp, Prismatic, Oper.	Sq Ft	3,024		
28	Truck Mounted Attenuator	Each	7		
29	Mobilization, Max.	Lump Sum	1		

CHECK UNIT PRICE COLUMN FOR OMISSIONS BEFORE ENTERING BID TOTAL

Bid Price for the above listed items and quantities:

\$ _____

CONTRACTOR'S NAME: _____

CONTRACTOR'S SIGNATURE: _____

DATE: _____

INTELLIGENT TRANSPORTATION SYSTEMS
INFRASTRUCTURE MAINTENANCE
MDOT STATEWIDE
2014

PAYMENT ITEMS

ALL ENTRIES MADE ON THIS PAGE SHALL BE HANDWRITTEN IN INK.

	ITEMS OF WORK	UNIT	QUANTITY	PRICE/UNIT	TOTAL PRICE
1	Equipment Repair	Hour	1,410		
2	Maintain CCTV Site	Calendar Day	174,908		
3	Maintain DMS Site	Calendar Day	78,731		
4	Maintain Communication System	Calendar Day	365		
5	Maintain Detector Station Site	Calendar Day	193,815		
6	Maintain TTS Site	Calendar Day	3,285		
7	Maintain SEMTOC Equipment	Dollar	\$59,557	1	\$59,557
8	Maintain STOC Equipment	Dollar	\$29,779	1	\$29,779
9	Maintain Solarwinds Monitoring Software	Calendar Day	153		
10	Solarwinds License Renewal	Dollar Each	0		
11	Maintain Spare Parts Inventory	Calendar Day	365		
12	Maintain Speed and Curve Warning System	Calendar Day	730		
13	Maintain TPIMS Site	Calendar Day	1,380		
14	Maintain DSRC Site	Calendar Day	1,380		
15	Maintain DTPS Site	Calendar Day	1,380		
16	Networking Support	Hour	520		
17	Non-routine Maintenance and Repairs	Dollar	\$294,000	1	\$294,000
18	Spare Parts Direct Cost	Dollar	\$1,139,250	1	\$1,139,250
19	Utility Staking and Protection One Person	Hour	168		
20	Lighted Arrow, Type C, Furn.	Each	14		
21	Lighted Arrow, Type C, Oper.	Each	14		
22	Minor Traffic Devices	Lump Sum	1		
23	Plastic Drum, High Intensity, Lighted, Furn.	Each	525		
24	Plastic Drum, High Intensity, Lighted, Oper.	Each	525		
25	Sign Cover	Each	112		
26	Sign, Type B, Temp, Prismatic, Furn.	Sq Ft	3,024		
27	Sign, Type B, Temp, Prismatic, Oper.	Sq Ft	3,024		
28	Truck Mounted Attenuator	Each	7		
29	Mobilization, Max.	Lump Sum	1		

CHECK UNIT PRICE COLUMN FOR OMISSIONS BEFORE ENTERING BID TOTAL

Bid Price for the above listed items and quantities:

\$ _____

CONTRACTOR'S NAME: _____

CONTRACTOR'S SIGNATURE: _____

DATE: _____

INTELLIGENT TRANSPORTATION SYSTEMS
INFRASTRUCTURE MAINTENANCE
MDOT STATEWIDE
2015

PAYMENT ITEMS

ALL ENTRIES MADE ON THIS PAGE SHALL BE HANDWRITTEN IN INK.

ITEMS OF WORK		UNIT	QUANTITY	PRICE/UNIT	TOTAL PRICE
1	Equipment Repair	Hour	1,482.59		
2	Maintain CCTV Site	Calendar Day	183,963		
3	Maintain DMS Site	Calendar Day	81,427		
4	Maintain Communication System	Calendar Day	365		
5	Maintain Detector Station Site	Calendar Day	201,072		
6	Maintain TTS Site	Calendar Day	3,285		
7	Maintain SEMTOC Equipment	Dollar	\$62,535	1	\$62,535
8	Maintain STOC Equipment	Dollar	\$31,267	1	\$31,267
9	Maintain Solarwinds Monitoring Software	Calendar Day	365		
10	Solarwinds License Renewal	Dollar Each	1		
11	Maintain Spare Parts Inventory	Calendar Day	365		
12	Maintain Speed and Curve Warning System	Calendar Day	730		
13	Maintain TPIMS Site	Calendar Day	1825		
14	Maintain DSRC Site	Calendar Day	1825		
15	Maintain DTPS Site	Calendar Day	1825		
16	Networking Support	Hour	520		
17	Non-routine Maintenance and Repairs	Dollar	\$308,700	1	\$308,700
18	Spare Parts Direct Cost	Dollar	\$1,196,213	1	\$1,196,212.50
19	Utility Staking and Protection One Person	Hour	168.00		
20	Lighted Arrow, Type C, Furn.	Each	14		
21	Lighted Arrow, Type C, Oper.	Each	14		
22	Minor Traffic Devices	Lump Sum	1		
23	Plastic Drum, High Intensity, Lighted, Furn.	Each	525		
24	Plastic Drum, High Intensity, Lighted, Oper.	Each	525		
25	Sign Cover	Each	112		
26	Sign, Type B, Temp, Prismatic, Furn.	Sq Ft	3,024		
27	Sign, Type B, Temp, Prismatic, Oper.	Sq Ft	3,024		
28	Truck Mounted Attenuator	Each	7		
29	Mobilization, Max.	Lump Sum	1		

CHECK UNIT PRICE COLUMN FOR OMISSIONS BEFORE ENTERING BID TOTAL

Bid Price for the above listed items and quantities:

\$ _____

CONTRACTOR'S NAME: _____

CONTRACTOR'S SIGNATURE: _____

DATE: _____

ATTACHMENT A

CURRENT SYSTEM DESCRIPTION

Provided in the following section are detailed descriptions of the ITS Infrastructure currently installed in the field, as well as descriptions of planned systems in the future.

BAY REGION

The MDOT Bay Region currently has a number of ITS device installed in the field and are in the process of designing and expanding their ITS. A brief description of each current and future system is provided below.

Current Systems

The MDOT Bay Region has a number of ITS devices that will be deployed in the coming years. Included in these deployments are two systems. One system is located in Genesee County on freeways I-75 and I-475, and the second system is located in Saginaw and Bay Counties on portions of freeways I-75 and I-675. Both systems include: CCTVs, DMSs, microwave vehicle detectors (MVDS), and communications towers.

The Genesee County ITS is located on freeways I-75 and I-475 from approximately mile marker 109 to mile marker 136 on I-75 and the entire length of I-475. The system will consist of 7 CCTVs, 4 DMSs, 18 MVDS, 2 ESS, and 4 communications hubs/towers. Communications will consist of unlicensed 900 MHz and 5.8 GHz microwave links.

The Saginaw/Bay County ITS is located on freeways I-75 and I-675 from approximately mile marker 149 to mile marker 155 on I-75 and the entire length of I-675. The systems will consist of 7 CCTV, 5 DMS, 7 MVDS, and 3 communications hubs/towers. Communication will consist of unlicensed 900 MHz and 5.8 GHz microwave links.

Triangle Phase 1 (JN106682) is located along freeway I-75 in the Jackson and Lansing Areas. Included in this system are approximately 6 CCTV, 2 DMS and 2 TTS. The system is focused on one freeway I-75, and extends from approximately mile maker 116.2 to 190.4. Communications to CCTV, DMS and TTS are a combination of leased cellular service, and unlicensed 900 MHz wireless links.

Future Systems

Genesee Phase 2 (JN113616) - The MDOT Bay Region has a planned ITS for construction in FY2013 along freeways I-75 and I-69 in the Flint Area. Included in this system will be approximately 5 CCTV and 2 DMS. The system is focused on three freeways I-75, I-475 and I-69 and extends from approximately mile maker 108 to 118 on I-75 and 122 to 139 on I-69. Communications to CCTV and DMS will be a combination of leased cellular service, and unlicensed 900 MHz wireless links (where existing communication infrastructure is available in the Flint Area). All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

All of the above devices will be included in the maintenance contract quantities upon

verification of operation including maintain communication system.

METRO REGION

The MDOT Metro Region currently has a number of ITS device installed in the field, and are in the process of designing and expanding their ITS. A brief description of each current and future system is provided below.

Current Systems

The Michigan Department of Transportation (MDOT) operates an Advanced Traffic Management System (ATMS)/Advanced Traveler Information System (ATIS) on approximately 200 miles of Metropolitan Detroit Freeways. Major ATMS/ATIS components are: 99 inductive loop and magnetometer vehicle sensors, 260 microwave vehicle detection systems (MVDS), 99 Dynamic Message Signs (DMS), 269 closed-circuit television (CCTV) cameras, and a speed and curve warning system. Additional devices requiring maintenance under the contract include Fial 2311 AL SNMP Encoders for the Tower/Shelter Alarms and the South East Michigan Transportation Operations Center (SEMTOC), including Video Walls and rack equipment, along with the communications system described in the following paragraphs.

To support the ITS Equipment, MDOT owns/leases and operates a communications network that has been deployed under multiple contracts. It is a hybrid wire-line and wireless system of Spread Spectrum Radios (900 MHz), Microwave Wireless Ethernet (6 & 11 GHz Licensed and 5 GHz Unlicensed), Cellular, Fiber Optic, Coaxial Cable, and Twisted Pair, on a 10 Gigabit Ethernet Local Area Network (LAN). The communication network is critical to the SEMTOC operation.

The original 32.5-mile legacy system used coaxial and fiber optic cables for backbone video and data communications along with multi-pair twisted cable for both short and long range data transmission. The communication backbone of the 145-mile updated system is a hybrid network of thirteen towers transmitting tower-to-tower and tower-to-fiber optic. Coarse Wavelength Division Multiplexer (CWDM) on an Alcatel 10 Gigabit Ethernet LAN.

In regions that operate on the updated 145-mile system, field devices communicate via Ethernet to a Managed Field Ethernet Switch (MFES) in the cabinets. The cabinets communicate to the regional node using a combination of copper, fiber optic, 900 MHz, and 5 GHz Unlicensed Microwave Radios. The regional nodes relay data using 6 & 11 GHz Licensed Microwave Radios and Fiber Optic communications to communicate back to SEMTOC.

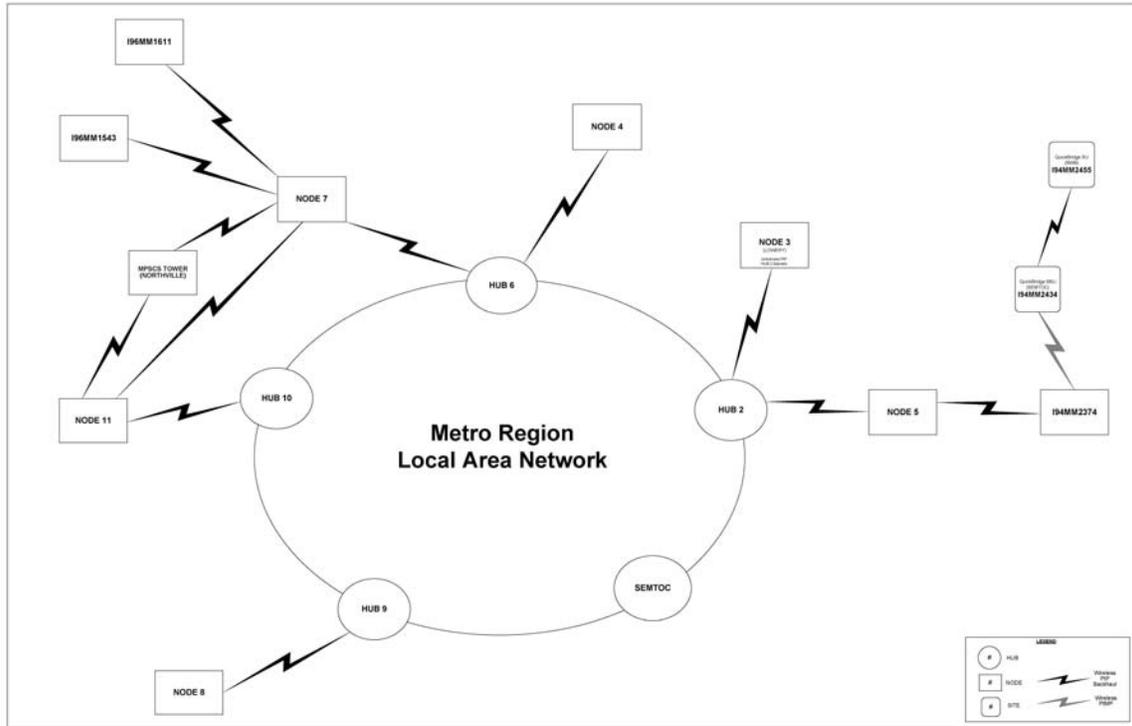


FIGURE 1: MICHIGAN DOT SEMTOC COMMUNICATIONS NETWORK

The communication network consists of four hubs interconnected to SEMTOC via Verizon Fiber Optic leased lines to the 1692 MSE CWDM. All five locations include Alcatel OmniSwitch 9700 Core Switches to complete a redundant fiber communications ring. In addition, nine nodes are interconnected using microwave Point-to-Point architecture to one of the four hubs. Field equipment is interconnected to either communications hubs or nodes as shown in Figure 1 above.

In the near future, Michigan State Police (MSP) will be riding on the communications network on a dedicated VLAN from the Northville MSP tower to the SEMTOC.

Wireless Communication

Since the 900 MHz spread spectrum frequency band and 5 GHz microwave wireless is unlicensed, it is possible that others may install equipment that interferes with the radio links at a future date. This will be considered Third Party Damage as described in the contract. As long as the required work to correct this situation would otherwise be considered part of the scope of the contract, the Contractor shall be responsible for any correction to the wireless links affected, similar to as described under the Third Party Damages and Acts-of-God section of the contract.

The unlicensed wireless links are setup as Point-to-Point (PtP) and Point-to-Multipoint (PtMP). Point-to-Point links are utilized for relay communications due to no line of site to the regional hub/node. Point-to-Multipoint links are setup with base stations at the regional hub/nodes and configured to communicate to remote subscriber units at the field device locations.

The licensed wireless backhaul links consist of Point-to-Point Alcatel MDR8000 6 & 11 GHz Microwave Radios that relay communications from node-to-node and node-to- hubs that are on the fiber communications ring.

Main Towers

The towers throughout the Metro Region are monitored by SNMP encoders (Fial 2311AL) and have up to 28 current analog alarms. These alarms are captured by the network management system and distributed to the responsible parties. The analog alarms include door, gate, power, ups, generator, temperature, smoke, and tower strobes.

All of the tower locations include a Layer 3 Alcatel OmniSwitch for the core communications network. OS9700's are in the hubs and OS6850's in the nodes. The OmniSwitches include advanced routing software to support the OSPF routing protocol used for the communications network.

The towers consist of a variety of antenna types to support the wireless communications from the field devices. The communication cables route down the tower and into the shelters through the rubber sealed section of wall. They include, but are not limited to, Waveguide, Cat5 , Coax, and Multi-pair.

Communication links are as follows:

- Fiber Ring – Alcatel 1692 MSE (8 channel) Coarse Wavelength Division Multiplexer utilizing leased lines from Verizon to complete a redundant link between the Hubs.
- Licensed Microwave Backhaul – Alcatel MDR8000 (6 GHz & 11 GHz) to link Nodes to the Hubs and Nodes to Nodes that are obstructed or exceed distances to the Hubs.
- Unlicensed 5 Ghz Wireless – PtMP sectored base stations to communicate to the remote subscribers at the field device locations within the regional node and PtP Base Radios to backhaul repeater sites.
- Spread Spectrum (900 MHz) – Master radios on the tower to communicate to the remote subscribers at field device locations within a regional node (excludes CCTV).
- Fiber Optic – Segments of the network contain fiber loops that terminate at the Hub/Node to Media Converters, Transceivers, and SFP's in the network switches.
- Coax & Multi-pair – Tower cameras and local devices within distance are directly cabled into the shelters.

Multiple systems are currently in either the design or deployment phase in the Metro region and will affect the number of ITS devices that will be maintained but will not include additional payment for the communications system pay item.

FY2013

I-75 Wayne Build (JN106649) – 6 CCTV, 3 MVDS, 1 DMS, and 1 COMM TOWER (Paired with University Region Job)

MDOT and Blue Water Bridge Design and Install (JN113892) – 1 CCTV

Triangle Phase 1 (JN106682) – The MDOT Metro Region has a planned ITS for construction in FY2012 along freeway I-75 in the Auburn Hills Area. Included in this system will be approximately 1 Travel Time Sign (TTS). The system is focused on one freeway I-75, and is located at approximately mile maker 82.7. Communications to the TTS will be a leased cellular service. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

MDOT Metro Region ITS Expansion I-275 (JN111643) – 7 CCTV, 4 DMS, and 16 MVDS installed along I-275

SEMTOC to Blue Water Bridge (JN110938) – Install conduit and fiber, along with 1 CCTV and 2 MVDS

Fiber Backbone 2013 and 2014 (JN 112221 and JN 113027) – These projects are conduit and fiber and connect existing devices into the new fiber and removes the wireless devices. There is a section of M-10 from Eight Mile to I-94 that will have approx. 6 CCTV and MVDS

Border wait time systems at international crossings 2013 and 2014 – Project will install cameras and detection etc at the border crossings to be used in the wait time system at all borders. Approximately 5 MVDS and 3 CCTV at each crossing

Integrated corridor management routes FY2013, FY2014, and FY2015 – Will install cameras and detection on local agency roads to be used for integrated corridor mgmt. plans of rerouting traffic from the freeway onto the local agency roads/MDOT arterials to keep traffic moving.

FY2015

MDOT Metro Region ITS Expansion I-75 (JN113719) – 20 CCTV, 2 DMS, and 17 MVDS installed along I-75

I-69 BWB to County Line FY2015 and FY2016 – Approximately 15 CCTV, 3 DMS and 15 MVDS plus fiber communications

UNIVERSITY REGION

The MDOT University Region currently has a number of ITS device installed in the field, and are in the process of designing and expanding their ITS. A brief description of each currently operational and future system is provided below.

Current Systems

Brighton ITS (JN88138) - The MDOT University Region has ITS along freeways I-96 and US-23 in the Brighton area. Included in this system are approximately 10 CCTV, 7 DMS, 5 MVDS, and communications infrastructure. The system is mainly focused near the interchange of the two freeways and extends from approximate mile markers 131.6 to 151.6 on I-96 and 57.4 to 68.2 on US-23. All communications to CCTV sites in the field will be via a leased cable at each CCTV location. All DMS will be communicated to using a cellular router. All devices are integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

Ann Arbor ITS (JN107179) - The MDOT University Region has ITS along freeways I-94, US-23 and M-14 in the Ann Arbor area. Included in this system are approximately 11 CCTV, 8 DMS, 13 MVDS, 3 TTS, and communications infrastructure. The system is mainly focused near the interchanges of the three freeways and extends from approximate mile markers 156.5 to 184.2 on I-94, 32.5 to 50.8 on US-23, and 4.6 to 12.9 on M-14. All communications to CCTV sites in the field will be via a leased cable at each CCTV location. All DMS and TTS will be communicated to using a cellular router. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

Future Systems

I-75 Monroe County (JN106649) - The MDOT University Region has a planned ITS for construction in FY2012 along freeway I-75 in Monroe County. Included in this system will be approximately 12 CCTV, 6 DMS, 7 MVDS, 1 Communication Tower, and communications infrastructure. The system is focused on the freeway and extends from approximate mile marker 1.1 to 28.9 on I-75. Communications to CCTV and MVDS sites in the field will be a combination of leased cable and cellular service, unlicensed 5 GHz wireless links and single mode fiber optic cable. Communications to DMS will be a combination of leased cellular service, and unlicensed 900 MHz wireless links and fiber optic cable. These communications includes wireless connections to the existing Michigan State Police Communications System (MPSCS) tower 2804 and single mode fiber optic connection to the to be constructed MDOT ITS Communication Tower at mile marker 32.0 on I-75. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

Lansing ITS (JN110762) - The MDOT University Region has a planned ITS for construction in FY2012 along freeways I-96 and US-127 in the Lansing Area. Included in this system will be approximately 6 CCTV, 3 DMS, 4 ESS, 1 Communication Tower, 7 Pavement Condition Sensors, 4 Visibility Sensors, and communications infrastructure. The system is mainly focused near the interchanges of three freeways I-96, US-127, and I-496, and extends from approximate mile markers 106.5 to 116.5 on I-96 and 71.0 to 81.0 on US-127. Communications to CCTV, ESS and MVDS sites will be unlicensed 5 GHz wireless links to a new Communications Tower located at the I-96/US-127 interchange. Communications to DMS will be a combination of leased cellular service, and unlicensed 900 MHz wireless links. System communications include a licensed wireless connection between an existing Michigan State Police tower located on the Mason Building Rooftop in downtown Lansing and to the newly constructed MDOT ITS Communication Tower located at the I-96/US-127 interchange. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan,

Inc.

Triangle Phase 2 (JN106928) - The MDOT University Region has a planned ITS for construction in FY2013 along freeways I-94 and US-127 in the Jackson and Lansing Areas. Included in this system will be approximately 7 CCTV (with MVDS) and 2 DMS. The system is mainly focused on two freeways I-94 and US-127, and extends from approximately M-60 to the US-127 interchange on I-94, I-496 to the I-69 interchange on US-127. Communications to CCTV and DMS will be a combination of leased cellular service, and unlicensed 900 MHz wireless links (where existing communication infrastructure is available in the Lansing Area). All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

All of the above devices will be included in the maintenance contract quantities upon verification of operation including maintain communication system.

GRAND REGION

All ITS Infrastructure located in Kent County including the West Michigan TOC (WMTOC) is currently and will remain maintained under a municipal contract with the City of Grand Rapids maintenance forces. All devices on M-6 in Ottawa County are also maintained by the City of Grand Rapids. The section below is described for informational purposes and is provided for reference and better understanding of the overall Grand Region ITS system and its linkage to devices outside of the Kent County boundaries.

Currently in the Grand Region, MDOT does not utilize a consolidated central traffic management system known as an Advanced Traffic Management System (ATMS). Instead vendor-specific applications are utilized to manage each device type. MDOT uses the vendor specific central control systems to transport video and device data to and from field devices on the telecommunications network. Due to the established center-to-center connectivity data/video is also shared bi-directionally with the City of Grand Rapids and Grand Rapids Police department. The primary ITS device types currently within the system are CCTV cameras, vehicle detection, and DMSs, with the traffic signals on an isolated network. Video cameras are being used to transfer live images to the WMTOC, which outputs device control data (pan, tilt, and zoom) to the cameras. Video is viewed at the WMTOC as well as shared with other agencies and public websites such as MDOT's MI Drive. The system includes legacy and newer DMS installations, which communicate with controllers (vendor specific or 2070) that transmit message data to and from the WMTOC central control systems. It is anticipated that both Delcan Networks ATMS and Solarwinds monitoring software will be installed on the system in 2012.

In addition, MDOT currently has six closed loop systems in the Grand Region outside of the Grand Rapids Metro area. Communication to the master controllers is done via fiber optic, wireless radio interconnect or dial-up POTS and occurs only on an as-needed basis for signal timing maintenance or manual timing plan changes, such as for special events. The closed loop traffic signal systems currently in place in the Grand Region are operated and maintained by either MDOT's traffic signals unit or the City of Grand Rapids. All signals outside of the Grand Rapids metro area are maintained by MDOT or the local agency such as the City of Muskegon or the City of Grand Rapids. The approximately

350 signals in the Grand Rapids metro area are maintained by the City of Grand Rapids. Currently, while these signals are not operated by MDOT, many are accessible by the WMTOC via the center-to-center connectivity.

The number of existing ITS and traffic control devices managed by the WMTOC in Kent/near Ottawa County are presented below.

- 54 CCTV Cameras
- 25 Dynamic Message Signs (DMS)
- 4 Variable Speed Signs (VSS) and an Anti-icing System
- 112 microwave vehicle detection (MVDS) units.

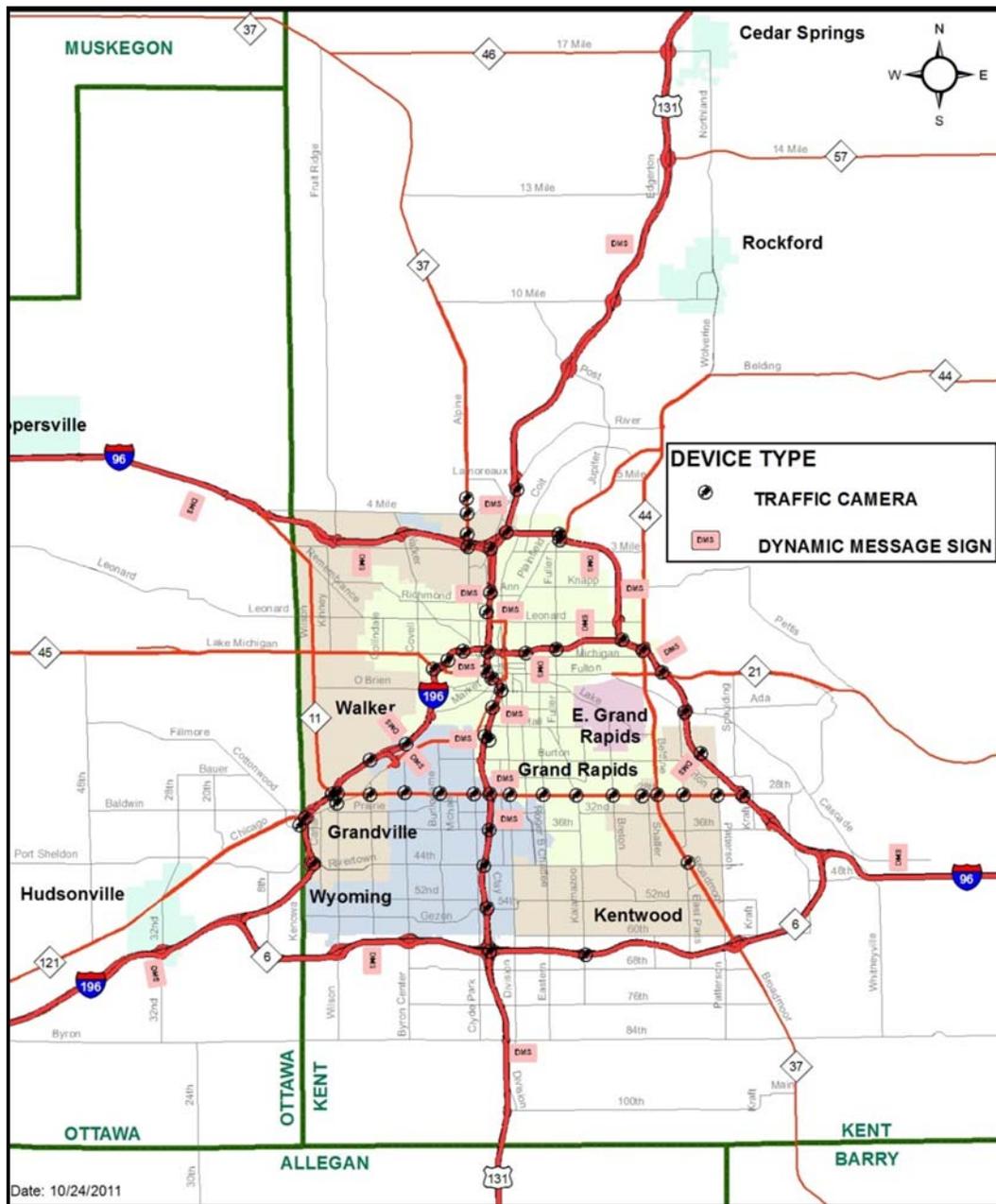


FIGURE 2: MICHIGAN DOT WMTOC – KENT/NEAR OTTAWA COUNTY DEVICE

LOCATIONS

To support the ITS equipment, MDOT owns/leases and operates a communication network that has been deployed under multiple contracts. It is a hybrid wire-line and wireless system of spread spectrum radio, wireless Ethernet, microwave, fiber-optic, SONET, 10BaseT local area network (LAN), coaxial cable, and twisted pair cable. The communication network is critical to the WMTOC operations.

Currently, the Grand Region devices outside of the Kent County area, to be maintained under the contract, include:

- 3 CCTV Cameras (in Grand Haven)
- 2 DMS (in Muskegon and Allegan Counties)

These devices above are included in the maintenance contract quantities.

SOUTHWEST REGION

The MDOT Southwest Region currently has a number of ITS device installed in the field, and are in the process of designing and expanding their ITS. A brief description of each current and future system is provided below.

Current Systems

The MDOT Southwest Region has an ITS system located on freeway I-94 from US-131 in Kalamazoo County to the Calhoun/Jackson County line and on a portion of I-69 near the intersection of the two freeways. Devices included in this installation will be approximately 4 LED DMS, 10 CCTV cameras, and 4 MVDS. All communications to the DMS, CCTV, and MVDS sites will be a combination of leased cellular and cable service.

The MDOT Southwest Region also operates 1 DMS, on NB I-196 in Allegan County at approximately mile marker 40 that is operated by the WMTOC.

Future Systems

I-94/I-196 DMS Project (JN109707) - The MDOT Southwest Region has a planned ITS for construction in FY2013 along freeways I-94 and I-196 in Berrien and Van Buren Counties. Included in this system will be approximately 4 DMS. The system is focused on two freeways I-94 and I-196, and is located from approximately mile maker 2.4 to 44.7 on I-94, and at mile marker 3.2 on I-196. All communications to DMS sites will be leased cellular service. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

I-94/US-131 ITS Project (JN107963) - The MDOT Southwest Region has a planned ITS for construction in FY2013 along freeways I-94 and US-131 in the Kalamazoo, Portage and Battle Creek areas, in Calhoun and Kalamazoo Counties. Included in this system will be approximately 3 CCTV and 9 DMS. The system is focused on the two freeways I-94 and US-131, and is located from approximately mile maker 70.1 to 102.6 on I-94, and 30.5 to 45.4 on US-131. All communications to the CCTV and DMS sites will be a combination of leased cellular and cable service. All devices are planned to be integrated

with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

I-94 CCTV and Detector – JN107965 – The MDOT Southwest Region has a planned ITS for construction in FY2014 along freeway I-94 in Berrien, Van Buren, Kalamazoo, and Calhoun Counties. Included in this system will be approximately 20 CCTV and 20 MVDS. It is anticipated that all communications to the CCTV and MVDS sites will be a combination of leased cellular and cable service. The system is currently under design and budget constraints may limit the amount of planned devices installed in the field. Exact amount and device locations will be determined at the completion of the design contract.

Truck Parking Information and Management System (TPIMS) – This is a system that will be developed during the lifetime of this project and will culminate April 2014. TPIMS will include capabilities to measure truck parking availability at public rest areas along I-94 from the Indiana border to east of the I-69 interchange. This will measure available parking that will provide safe alternatives for parking overflow, and communicating that information to commercial vehicle operators. This includes 5 Dedicated Short-Range Communication (DSRC) sites and 5 Dynamic Truck Parking Sign (DTPS) sites.

All of the above devices will be included in the maintenance contract quantities upon verification of operation including maintain communication system.

NORTH REGION

The MDOT North Region currently has a small number of ITS devices in operation, but are in the process of designing and expanding their ITS. A brief description of each current and future system is provided below.

Current Systems

The MDOT North Region has 2 LED DMS approximately two miles south of Grayling on I-75 (one northbound, one southbound). The DMS have cellular communications, and are controlled via the MDOT ATMS Software package.

The Mackinac Bridge Authority (MBA) currently operates 6 DMS near the bridge. These were recently upgraded to LED DMS and their maintenance of the signs will fall under this maintenance contract.

Future Systems

Triangle Phase 1 (JN 106682) - The MDOT North Region has a planned ITS project for construction in 2012 & 2013 along freeway I-75 in Crawford, Ogemaw and Roscommon Counties. Included in this system are 4 CCTV Cameras located at Exit 212, Exit 227, US-127 and Exit 254. The two southerly cameras will have cellular communications while the two northerly cameras will have cable communications. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

I-75 Grayling to Mackinaw City (JN 107598) - The MDOT North Region has a planned ITS project for construction in 2014 along freeway I-75 in Crawford, Otsego, Cheboygan and Emmet Counties. The project is still in the design phase, but it is estimated that 3

DMS, 2 CCTV Cameras, 2 Icy Bridge Warning Systems (including bridge deck and pavement sensors, flashing beacons, etc.) and up to 8 MVDS will be installed during construction in 2014. Locations of these devices are not final, but will spread across the entire project area. Most communication to these devices will be cellular with the possibility of cable communication at some locations. All devices are planned to be integrated with the MDOT Statewide ATMS Software Package provided by Delcan, Inc.

All devices that are installed in the future, including, but not limited to those listed above, will be included in the maintenance contract quantities upon verification of operation.

SUPERIOR REGION

The MDOT Superior Region currently has a number of ITS device installed in the field, and are in the process of designing and expanding their ITS. A brief description of each current and future system is provided below.

Current Systems

The MDOT Superior Region has 8 LED DMS, at the following locations: 2 on US-2 between mile markers 3.0 and 12.0; 1 on M-28/M-94 at mile marker 2.4; 1 on US-41 at mile marker 0; 1 on US-2 approximately 2.5 miles west of I-75; 1 on M-28 approximately 1 mile west of I-75; and 3 on I-75 between mile markers 362 and 393.

The DMS have cellular communications, and are controlled via the MDOT ATMS Software package.

Future Systems

All devices that are installed in the future will be included in the maintenance contract quantities upon verification of operation. No additional payment for the communications system pay item shall be made with the completion of this work.

STATEWIDE

Any supporting documentation that is needed by the Contractor to verify device locations, type, characteristics, etc. can be supplied by the Engineer at the Contractor's request. Throughout the duration of the contract, multiple ITS deployments will be installed and documentation will be provided as it becomes available. Multiple systems are currently in the design phase and documentation will be supplied as developed and approved.

ATTACHMENT B

DESCRIPTION OF PAY ITEMS AND OTHER CONTRACT ITEMS

All work shall be completed in accordance with the description of pay items and other contract items listed below.

PAY ITEMS

1. EQUIPMENT REPAIR

a. Description. This work shall consist of repairing individual pieces of equipment or individual electronic components of equipment and will be used in the event that replacement of the device/equipment and/or individual electronic component is not possible or cost effective.

b. Materials. Furnish all equipment and tools necessary for bench repairing individual device's/equipment's electronic components and minor materials such as resistors, capacitors, integrated circuits, power supplies, jumper wires, and other components. More significant components necessary for this work will be procured through processes similar to the procurement for other spare parts as described in the contract.

c. Construction Methods. Prior to beginning any work under this pay item, the Contractor shall notify the Engineer that it is necessary to bench repair a component. Upon agreement that an item needs to be bench repaired, the Contractor shall produce, in writing, an estimate of the number of hours that will be needed for the repair, along with any costs for parts or components necessary for the repair. The Engineer will review this proposal and will either agree to the estimate or request a revised estimate.

Upon written agreement to the estimate, the Contractor shall commence repairs upon the subject component.

d. Measurement and Payment. The completed work as measured will be paid for at the contract unit price for the agreed upon number of hours upon completion of the subject work.

Contract Item
Equipment Repair

Pay Unit
Hour

Payment for **Equipment Repair** includes all tools, labor, equipment, transportation, and other requirements necessary to repair electronic components, boards, or other devices that are either more cost effective to repair or are unavailable to replace.

2. MAINTAIN CCTV SITE

a. Description. This work shall consist of the preventative maintenance and repairs to CCTV camera sites, including camera, cabinet, camera controller, video transmitter, and

all communications equipment dedicated to the individual camera sites. The existing and future CCTV systems are a hybrid of multiple communications media. The equipment for each site varies depending on the system used at the sites. The equipment in this pay item is in multiple locations, including the camera site (Field), the communications relay site (Relay), the communications node site (Node), the fiber optic communications node site (Fiber Optic Node), and at the TMC. The equipment includes, but is not limited to:

- CCTV Camera (Field)
- CCTV Camera Controller Cabinet (Field)
- CCTV Camera Pole (Field)
- CCTV Video Encoder (Field)
- Video Transmitter (Field)
- Microwave Radio (Field)
- Microwave Radio (Relay and Node)
- Video Titlers (Fiber Optic Node)
- Distribution Amplifiers (Fiber Optic Node)
- Video CODECs (Fiber Optic Node)
- CCTV Video Decoder (TMC)

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 2.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the camera housing, pole or cabinet shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. For each camera site identified under Attachment A of the Log of Project, as well as for potential new camera sites added in the future, perform the following items of work at the Field site, Relay site, Node site, Fiber Optic Node site, and at the TMC end of the communications, per the approved Preventative Maintenance Plan and as indicated below:

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs and Notification

Upon notification of improper operation or failure of a CCTV camera, commence with the necessary steps to repair the camera site back to proper operation. Notification shall be made via the creation of a work order by MDOT or their designee. Upon discovery of abnormal wear to the pole and/or concrete base, report the condition by e-mail to the Engineer within one business day of discovery.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day for which the site operates above the following minimum threshold. The minimum threshold is defined as a site with none of the following unresolved

reported problems:

- Loss of image of control of a camera.
- Loss of communications to a CCTV site.
- Degradation of image on control to less than 75% of optimal operation.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the problem has been identified and resolved satisfactorily within the reported day, the Contractor shall be paid for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, then the Contractor shall not be paid for any days after the reported day for that site until the day after the site is returned to above the minimum threshold and the work order is closed.

Contract Item
Maintain CCTV Site

Pay Unit
Calendar Day

Maintain CCTV Site Calendar Day Payment for **Maintain CCTV Site** includes all tools, labor, equipment, transportation, materials as mentioned above and other requirements necessary to maintain, diagnose, troubleshoot, and repair the CCTV sites as detailed above.

3. MAINTAIN DMS SITE

a. Description. This work shall consist of the preventative maintenance, diagnosis of problems, repairs and inspections of DMS sites, including the DMS, the enclosure, the structure, the controller, and all the communications equipment dedicated solely to the individual DMS sites. This item shall include the DMS LED used in connection with the Speed Warning Systems.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 3.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet, shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. For each DMS site identified under Attachment A of the Log of Project, perform the following items of work on the prescribed schedule:

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs

Irregularity at a DMS site, commence with the necessary steps to repair the DMS site back to proper operation. Upon discovery of abnormal wear to the structure, enclosure, or mounting upon notification of improper operation, failure, or

detection of a visible hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural repairs will be done by forces outside of the contract. Structural repairs and structural painting are not included under the contract.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day the site operates above the minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a DMS site.
- Pixel errors that fail a DMS.
- Any driver board, power supply, or module malfunctions that fail a sign.
- Failure resulting in an un-lit sign during darkness.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the problem has been identified and resolved satisfactorily within the reported day, the Contractor shall be paid for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, than the Contractor shall not be paid for any days after the reported day for that site until the day after the site is returned to above the minimum threshold and the work order is closed.

As an example, for a calendar day during which one DMS site is operating above the minimum threshold, the Contractor shall receive payment for one each of the Maintain DMS Site payment items.

Contract Item	Pay Unit
Maintain DMS Site	Calendar Day

Payment for **Maintain DMS Site** includes all tools, labor, equipment, transportation, materials mentioned above, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the DMS sites as detailed above.

4. MAINTAIN COMMUNICATIONS SYSTEM

a. Description. This work shall consist of the preventative maintenance, diagnosis of problems, and repairs to all components of the communications system, including, but not limited to, microwave radio links, cabling, fiber optic and SONET end equipment, microwave antennas, and cellular and RS-232/422 modems.

The communication maintenance shall include all equipment, in the field or at the applicable TMC, required for communications to the field including, but not limited to, fiber optic distribution and trunk cabling, fiber optic end equipment, microwave radios, and modems.

Sample communications diagrams are included in the Log of Projects.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 4.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

The specific equipment to be included in this pay item includes the following:

- Add/Drop Fiber Optic Multiplexers (Also called a Fiber Optic Network Interface),
- Video Equalization Amplifiers,
- Video Switcher Matrix,
- Ethernet Multiplexers,
- RS-422 Splitters,
- RS-232 to RS-422 Converters,
- 11 GHz Radio System,
- All Microwave Radio Antennas and Antenna Cables,
- Node Shelters,
- All Cables and Wiring Contained within a Cabinet, Node, or Hub Node
- Fiber Optic Distribution and Trunk Cabling

c. Construction Methods. The following minimum items of work must be performed:

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

On an annually recurring schedule, perform the following minimum preventative maintenance tasks at the communication shelters:

- Inspect field antennas.
- Conduct path alignment tests on wireless communication links and check antenna alignment from receive and transmit end.
- Measure antenna gain.
- Measure the Voltage Standing Wave Ratio.
- Inspect fiber optic connections.

Make all adjustments, corrections, repairs, and replacements necessary to optimize the efficiency, stability, and reliability of the communications network.

d. Measurement and Payment. The completed work as measured shall be paid for at the contract unit price for each calendar day the communications system operates above the minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to 10-percent of any type of field element in a given MDOT ITS Infrastructure Maintenance Region.

Examples: Communications to 17 out of 170 CCTV cameras not operational or communications to 6 out of 64 DMS signs not operational.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following when the problem is reported to the Contractor. If the problem has been identified and resolved satisfactorily within the reported day, the Contractor shall be paid for that day. If the problem persists beyond the reported day, then the Contractor shall not be paid for any days after the reported day until the system is brought back into compliance with the threshold above.

Contract Item	Pay Unit
Maintain Communications System	Calendar Day

Payment for **Maintain Communications System** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the Communications System as detailed above.

5. MAINTAIN DETECTOR STATION SITE

a. Description. This work shall consist of the preventative maintenance and repairs to Detector Station sites, including the cabinet and its contents, vehicle detectors, and all communications equipment dedicated solely to the individual detector station sites.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 5.c. Construction Methods. Minor materials including, but not limited to fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet, shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. For each detector station site identified under Attachment A of the Log of Project, perform the following items of work on the prescribed schedule:

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs

Upon notification of improper operation or irregularity at a detector station site, commence with the necessary steps to repair the site back to proper operation. Upon discovery of abnormal wear to the structure, enclosure, or mounting upon notification of improper operation, failure, or detection of a visible hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural repairs will be done by forces outside of the contract. Structural repairs and structural painting are not included under the contract.

d. Measurement and Payment. The completed work as measured at each site where this

work applies shall be paid for at the contract unit price for each applicable site for each calendar day the site operates above the minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a detector site.
- Loop failure at 50% or more of the loops reporting to that detector site.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the site is returned to above the minimum threshold within the reported day, the Contractor shall be paid for that site for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, than the Contractor shall not be paid for any days after the reported day for that site.

As an example, for a calendar day during which 90 detector sites are operating above the minimum threshold, the Contractor shall receive payment for 90 each of the Maintain Detector Station Site payment items.

Contract Item	Pay Unit
Maintain Detector Station Site	Calendar Day

Payment for **Maintain Detector Station Site** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the Detector Station sites as detailed above.

6. MAINTAIN TTS SITE

a. Description. This work shall consist of the preventative maintenance, diagnosis of problems, repairs and inspections of TTS sites, including the Dynamic Message Panels, the enclosure, the structure, the controller, and all the communications equipment dedicated solely to the individual TTS sites.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 6.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet, shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods.

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs

Structural repairs will be done by forces outside of the contract. Upon notification of improper operation, failure, or detection of a visible irregularity at a TTS site,

commence with the necessary steps to repair the TTS site back to proper operation.

Upon discovery of abnormal wear to the structure, enclosure, or mounting hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural painting is not included under the contract.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day for which the site operates above the following minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a TTS site.
- Pixel errors that fail a TTS.
- Any driver board, power supply, or module malfunction that fails a sign.
- Failure resulting in an un-lit sign during darkness.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the site is returned to above the minimum threshold within the reported day, the Contractor shall be paid for that site for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, then the Contractor shall not be paid for any days after the reported day for that site.

As an example, for a calendar day during which one TTS site is operating above the minimum threshold, the Contractor shall receive payment for one each of the Maintain Travel Time System (TTS) Site payment items.

Contract Item	Pay Unit
Maintain TTS Site	Calendar Day

Payment for **Maintain TTS Site** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the TTS as detailed above.

7. & 8. MAINTAIN SEMTOC EQUIPMENT & MAINTAIN STOC EQUIPMENT

a. Description. This work shall consist of maintaining the SEMTOC and the STOC equipment required under the contract.

The Contractor is responsible for maintaining certain components in a TOC. These components include the end equipment of the systems previously described including video monitors (in the main control room and the Emergency Operations Center at the SEMTOC), camera controllers, the 360 software and all associated components including but not limited to software, firewalls, and servers, and all cabling between the rack-mounted equipment, monitors, and controllers.

The Contractor shall replace and/or repair equipment such as monitors and video wall cubes when video quality degrades (MDOT will determine the acceptability of the video quality).

The Contractor is not responsible for maintaining the Department of Technology, Management, and Budget (DTMB) managed computer network, servers, or software at the applicable TOC.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 7 & 8.c. Construction Methods. Minor materials will be included, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely within one room. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. For the TOC equipment including associated cabling, use a swap and repair method of maintaining full functionality of the applicable TMC equipment.

d. Measurement and Payment. The completed work as measured shall be paid for as a lump sum.

Contract Item	Pay Unit
Maintain SEMTOC Equipment	Dollar
Maintain STOC Equipment	Dollar

Payment for **Maintain SEMTOC Equipment & Maintain STOC Equipment** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the TMC equipment as detailed above.

9. & 10. MAINTAIN SOLARWINDS & SOLARWINDS LICENSE RENEWAL

a. Description. This work shall consist of maintaining the Solarwinds Software required under the contract.

The Contractor will be required to maintain the three servers (one SQL, one NPM and one NCM server). This shall include backing up, dumping and backing up old logs, normal maintenance, any fixes to the servers, firewall maintenance, and any other associated server maintenance. These servers will be located at SEMTOC and are the property of MDOT.

The Contractor shall provide support, fixes, patches, and repairs to the Solarwinds, SQL Server, SQL DBA, and the monitoring network. As well as, create and maintain compatibility between Solarwinds and the ITS asset management system.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 9.c. Construction Methods. Minor materials shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. The following minimum items of work must be performed:

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Make all adjustments, corrections, repairs, and replacements necessary to optimize the efficiency, stability, and reliability of the Solarwinds Software.

The following license renewals will also be included and paid by the renewal date of May 10, 2015 unless otherwise instructed by MDOT:

NPM	\$4,995.00
NCM	\$1,499.00
IPAM	\$799.00
NTA	\$2,999.00
Three Toolsets	\$1,185.00

d. Measurement and Payment. The completed work as measured shall be paid for at the contract unit price for each calendar day the Solarwinds Software operates above the minimum threshold. The minimum threshold is defined as having 100% functionality.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following when the problem is reported to the Contractor. If the problem has been identified and resolved satisfactorily within the reported day, the Contractor shall be paid for that day. If the problem persists beyond the reported day, than the Contractor shall not be paid for any days after the reported day until the system is brought back into compliance with the threshold above.

Contract Item	Pay Unit
Maintain Solarwinds Software	Calendar Day
Solarwinds License Renewal	Dollar Each

Payment for **Maintain Solarwinds Software & Solarwinds License Renewal** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the Solarwinds Software as detailed above.

11. & 17. MAINTAIN SPARE PARTS INVENTORY AND SPARE PARTS DIRECT COST

a. Description. This work shall consist of procuring, storing, and maintaining an inventory of ITS replacement parts at a site(s) as approved by MDOT and preparing monthly inventory tracking reports. These parts will be inventoried, audited, and may only be used in support of the contract.

b. Materials. Materials will be procured by the Contractor and compensated by MDOT on an actual cost basis.

c. Construction Methods. The Contractor shall procure and maintain an inventory of ITS replacement parts at an approved “warehouse” site. These parts will be inventoried, audited, and only utilized in support of the contract.

The Contractor shall be responsible for all aspects of the warehouse. The Contractor will be compensated for all direct costs for the spare parts material.

Upon termination of the contract, the Contractor shall be responsible for packaging, transporting, delivery, and un-packing all remaining spare parts inventory at a site as determined and directed by the Engineer. The Contractor will be responsible for any and all damages to the remaining spare parts inventory occurring during delivery.

This work shall be done by the following requirements:

1) Minimum Hardware Required

Along with the Maintenance Plan to be submitted by the Contractor as described in this proposal, the Contractor shall submit a list of equipment recommended for purchase. This list shall consist of complete units with mid to high failure rates as determined by a review of the MaintStar maintenance database or other MDOT approved asset management and work authorization tracking system. This quantity will not exceed 10-percent of the existing hardware. The Contractor will also submit a reasonable quantity of individual components needed to repair failed units.

The Contractor shall guarantee a percentage of operational hardware that will always be available in the warehouse as identified in the approved Maintenance Plan. The Contractor will be required to maintain this percentage of equipment for the duration of the contract, but shall never fall below 25 % of the recommended inventory.

2) Tracking of Spare Parts Inventory

The Contractor is responsible for all spare parts. Any lost or stolen items shall be replaced at the Contractor’s expense. The Contractor shall track all inventory by description, serial number, location, current status, and date of status change. As existing units and parts are swapped into the inventory, these units shall also be tracked. The Contractor shall be required to track the inventory in the MDOT Asset Management system called MaintStar or other MDOT approved asset management and work authorization tracking system.

In the monthly status report to MDOT, the Contractor shall submit the inventory and status of all spare parts. The reports shall summarize the units ready for deployment, units under repair, units failed and waiting for parts, and units failed but no action. The Contractor shall also provide dates when a unit status changes.

3) Security of Hardware

The Contractor shall provide the necessary security precautions for all hardware and tools purchased under the contract. The equipment is considered MDOT

property loaned to the Contractor. Even though the Contractor is responsible for replacement costs, the time to replace can have an impact on overall ATMS/ATIS operations.

The Contractor shall provide MDOT audit staff access to the inventory within 2-hours notification by the Engineer.

4) Warranty

Equipment provided under the contract will include the manufacturer standard warranties. All warranties will be assigned to MDOT. The Contractor will track the equipment to the warranties. The warranty information shall be updated continuously in the asset inventory database. When warranties apply, the Contractor shall coordinate with the manufacturer on all replacements. At the completion of the contract, the Contractor will provide a list of all remaining equipment warranties.

5) Purchasing Requirements

The Contractor shall obtain three bids for all parts or equipment procured, including vendor repairs, on any individual purchase exceeding \$2,500.00. The Contractor may be required to obtain three bids for any parts or equipment on any individual purchase as requested by MDOT. In the event that three bids are not able to be obtained, the Contractor shall notify MDOT in writing prior to purchasing said item. The Contractor shall maintain all bid information and furnish upon request to MDOT.

For materials approved by the Engineer for purchase as spare parts, the Contractor will be compensated for the cost of materials delivered, including tax and transportation charges.

d. Measurement and Payment. The completed work as measured for Maintain Spare Parts Inventory will be paid for at the contract unit price for each calendar day during the contract.

Contract Item	Pay Unit
Maintain Spare Parts Inventory	Calendar Day
Spare Parts Direct Cost	Dollar

Payment for **Maintain Spare Parts Inventory** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain the spare parts inventory and for all record keeping, ordering replacement parts, and coordination with suppliers as detailed above.

Payment of **Spare Parts Direct Cost** is made on a direct reimbursement basis with no Contractor mark up for delivered materials upon receipt of supporting documentation.

12. MAINTAIN SPEED AND CURVE WARNING SYSTEMS

a. Description. This work shall consist of the preventative maintenance and repairs to Speed Warning Systems, each containing multiple sites, including the two cabinets and contents, vehicle detectors, and associated communications equipment. Preventative maintenance and repairs of the warning sign that is used by this system is included in Maintain DMS Sign Site.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under Construction Methods of this article. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. For the speed and curve warning and systems, perform the following items of work on the prescribed schedule:

d. Measurement and Payment. The completed work as measured will be paid for at the contract unit price for each day the speed warning system included in the contract is properly operational under the following contract unit item. For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following when the problem is reported to the Contractor. If the problem has been identified and resolved satisfactorily within that period, the Contractor shall be paid for that day. If the problem persists beyond that period, the Contractor will not be paid for that day, or for any days until the system is brought back into compliance with the threshold above.

If the problem persists beyond that period, the Contractor will not be paid for that day. In the event that the problem is related to an in-pavement detector failure, the site will be removed from the contract and all maintenance activities will cease until the detector is repaired and the site is operational. Repair of the in-pavement detectors will be considered out of the scope of the contract.

Contract Item	Pay Unit
Maintain Speed and Curve Warning Systems	Calendar Day

Payment for **Maintain Speed and Curve Warning Systems** includes all tools, labor, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the Speed Warning System sites as detailed above.

13. MAINTAIN TPIMS SITE

a. Description. Truck Parking Information and Management System (TPIMS) is a system that will be developed during the lifetime of this project. TPIMS will include capabilities to measure truck parking availability at public rest areas along I-94 from the Indiana border to east of the I-69 interchange. This will measure available parking that will provide safe alternatives for parking overflow, and communicating that information to commercial vehicle operators. The responsibilities of the contract will be to maintain and repair the connectivity and equipment at the public rest areas. This will include parking availability sensing technology (detectors) and controllers, CCTVs cameras, and

associated communication hardware.

This work shall consist of the preventative maintenance, diagnosis of problems, repairs and inspections of TPIMS sites, the enclosure, the structures, the controller, and all the communications equipment dedicated solely to the individual TPIMS sites.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 6.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet(s), shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods.

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs

Structural repairs will be done by forces outside of the contract. Upon notification of improper operation, failure, or detection of a visible irregularity at a TPIMS site, commence with the necessary steps to repair the TPIMS site back to proper operation.

Upon discovery of abnormal wear to the structure, enclosure, or mounting hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural painting is not included under the contract.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day for which the site operates above the following minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a TPIMS site.
- Any malfunction of the parking availability detection and controller, including inaccurate or loss of data.
- Loss of image of control of a camera.
- Degradation of image on control to less than 75% of optimal operation.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the site is returned to above the minimum threshold within the reported day, the Contractor shall be paid for that site for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, than the Contractor shall not be paid for any days after the reported day for that site.

As an example, for a calendar day during which one TPIMS site is operating above the minimum threshold, the Contractor shall receive payment for one each of the **Maintain TPIMS Site** payment items.

Contract Item

Maintain TPIMS Site

Pay Unit

Calendar Day

Payment for **Maintain TPIMS Site** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the TPIMS as detailed above.

14. MAINTAIN DSRC SITE

a. Description. This work shall consist of the preventative maintenance and repairs to Dedicated Short-Range Communication (DSRC) sites, including radio, cabinet, antennas, and all backhaul communications equipment dedicated to the individual DSRC sites. The future DSRC sites are a hybrid of multiple backhaul communications media. The equipment for each site varies depending on the systems used at the sites.

This work shall consist of the preventative maintenance, diagnosis of problems, repairs and inspections of DSRC sites, including but not limited to the DSRC Radios, the enclosure, the structure, the antennas, and all the communications equipment dedicated solely to the individual DSRC sites.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 6.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any wiring completely contained within the cabinet, shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods.

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

On an annually recurring schedule, perform the following minimum preventative maintenance tasks at the communication shelters:

- Inspect field antennas.
- Check antenna alignment from receive and transmit strengths.
- Measure antenna gain.
- Inspect cable connections

Make all adjustments, corrections, repairs, and replacements necessary to optimize the efficiency, stability, and reliability of the DSRC radio.

Repairs

Structural repairs will be done by forces outside of the contract. Upon notification of improper operation, failure, or detection of a visible irregularity at a DSRC site, commence with the necessary steps to repair the DSRC site back to proper operation.

Upon discovery of abnormal wear to the structure, enclosure, or mounting hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural painting is not included under the contract.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day for which the site operates above the following minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a DSRC site.
- Any radio, antenna, or controller malfunction that fails a DSRC site.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the site is returned to above the minimum threshold within the reported day, the Contractor shall be paid for that site for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, then the Contractor shall not be paid for any days after the reported day for that site.

As an example, for a calendar day during which one DSRC site is operating above the minimum threshold, the Contractor shall receive payment for one each of the **Maintain DSRC Site** payment items.

Contract Item

Maintain DSRC Site

Pay Unit

Calendar Day

Payment for **Maintain DSRC Site** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the DSRC as detailed above.

15. MAINTAIN DTSPS SITE

a. Description. This work shall consist of the preventative maintenance, diagnosis of problems, repairs and inspections of Dynamic Truck Parking Sign (DTSPS) sites, including the Dynamic Message Panels, the enclosure, the structure, the controller, and all the communications equipment dedicated solely to the individual DTSPS sites.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 6.c. Construction Methods. Minor materials including, but not limited to, fuses, fasteners, jumper cables, cable connectors, and any

wiring completely contained within the cabinet, shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods.

Preventative Maintenance

Preventative maintenance shall be performed per the Contractor developed and MDOT approved preventative maintenance plan.

Repairs

Structural repairs will be done by forces outside of the contract. Upon of improper operation, failure, or detection of a visible irregularity at a DTSP site, commence with the necessary steps to repair the DTSP site back to proper operation.

Upon discovery of abnormal wear to the structure, enclosure, or mounting hardware, report the condition to the Engineer within one business day of discovery. Any necessary structural painting is not included under the contract.

d. Measurement and Payment. The completed work, as measured at each site where this work applies, shall be paid for at the contract unit price for each applicable site for each calendar day for which the site operates above the following minimum threshold. The minimum threshold is defined as a site with none of the following unresolved reported problems:

- Loss of communications to a DTSP site.
- Pixel errors that fail a DTSP.
- Any driver board, power supply, or module malfunction that fails a sign.
- Failure resulting in an un-lit sign during darkness.

For this purpose, a day of not operating properly shall be defined as a day starting with the day immediately following the day the problem is reported to the Contractor. If the site is returned to above the minimum threshold within the reported day, the Contractor shall be paid for that site for that day. If the site continues to operate at or below the minimum threshold beyond the reported day, than the Contractor shall not be paid for any days after the reported day for that site.

As an example, for a calendar day during which one TTS site is operating above the minimum threshold, the Contractor shall receive payment for one each of the **Maintain DTSP Site** payment items.

Contract Item

Maintain DTSP Site

Pay Unit

Calendar Day

16. NETWORKING SUPPORT

a. Description. This work shall consist of providing support, fixes, patches, and repairs to the network; as well as [network guidance and compliance for projects that are tying into the current network](#) as requested by the Engineer.

b. Materials. Furnish all equipment and materials necessary to perform the required functions as documented under section 9.c. Construction Methods. Minor materials shall be included in this work. More significant materials will be provided through the spare parts inventory as described in the contract.

c. Construction Methods. Make all adjustments, corrections, repairs, and replacements necessary to optimize the efficiency, stability, and reliability of the network as requested by the Engineer.

d. Measurement and Payment. The completed work as measured will be paid for at the contract unit price for the number of person hours required to support the network.

Contract Item	Pay Unit
Networking Support	Hour

Payment for **Networking Support** includes all tools, labor, equipment, transportation, and other requirements necessary to maintain, diagnose, troubleshoot, and repair the network as detailed above.

17. NON-ROUTINE MAINTENANCE AND REPAIRS

a. Description. The Contractor is responsible for the routine maintenance and emergency repairs as described within the contract. Through the duration of the contract, non-routine maintenance and repairs due to Third Party Damages, Acts-of-God, and required system modifications or improvements are likely to occur that exceed the intent and scope of the contract. Third Party Damage is defined as damage caused by vehicle collision, explosions or terrorism, caused by any person or company that is not related to the prime Contractor, vendor or any subcontractors involved in the contract. Acts-of-God include, but are not limited to, damages that occur resulting from winds above the equipment design speed, floods, facility fire, and lightning/electrical storms. Required system modifications or improvements will be defined as any system upgrade or modification requested by MDOT and may be requested to modernize the system technology or otherwise modify or upgrade the system.

Troubleshooting, diagnosing, and repairs that are normally considered part of the pay items included in the contract will not be paid for separately regardless of whether the problems were caused by Third Party Damage & Acts-of-God.

When requested by MDOT to provide services relating to required system modifications or improvements that exceed the intent and scope of the pay items of the contract, the Contractor shall be required to develop a separate scope-of-work, define labor requirements, submit subcontractors, create separate schedule and submit separate cost

estimates for negotiation and/or approval. Under this step in the process, the Contractor will not be required to submit proprietary information. In the event the parties are unable to reach agreement on lump sum prices for extra work, the extra work shall be done through the process described under Force Account in the MDOT 2012 Standard Specifications for Construction.

The submission of the scope and estimate described above does not guarantee Contractor selection for the described work. The MDOT reserves the right to use this scope and estimate to obtain competitive bids for the described work. If the Contractor is selected, the Contractor may be required to submit additional information that could normally be considered proprietary information by the Contractor.

b. Authorization. If the Contractor’s submission is selected as the “best value” scope and estimate, the Contractor shall not start work until a Notice-to-Proceed is executed by MDOT. The MDOT reserves the right to award the work under the contract or award the work under a different contract.

c. Disputes. The Engineer is the final authority to declare that work falls under Third Party Damage or Acts-of-God, or is out of the normal scope of the contract.

d. Compensation. Compensation for work that is deemed to be out of the normal scope of the contract, including as caused by Third Party Damage & Acts-of-God, will be developed through processes described in the MDOT Standard Specifications for Construction.

e. Measurement and Payment. The completed work as measured will be paid for in accordance with Section 109.05 (Force Account Work) of the MDOT 2012 Standard Specifications for Construction.

Contract Budget

Non-Routine Maintenance and Repairs

Pay Unit

Dollar

19. UTILITY STAKING AND PROTECTION, ONE PERSON

a. Description. This work shall consist of coordinating with MDOT staff and other MDOT consultants and Contractors to protect the ATMS/ATIS systems from damage by others. This effort will be provided whenever the Contractor is notified by other Parties, or by MDOT, of construction planned near one of the ITS equipment sites.

b. Materials. Furnish all equipment and tools necessary for clearly and properly locating and marking the ATMS/ATIS underground equipment, including conduit, direct bury cable, underground manholes and vaults, and other MDOT ATMS/ATIS equipment.

c. Construction Methods. Physically identify the location of buried ITS infrastructure. Complete the task within 72 hours of receipt of the staking request and notify the requesting Contractor and MDOT when staking is complete. This effort will be provided at both single sites, and for system buried along the right of way and not associated with a

specific site. All fielded ATMS/ATIS equipment and communication infrastructure is included in this task, including infrastructure that may be added over the term of the contract.

Enter and update work order information in MaintStar, including hours, record of contact with requesting party, and notes as applicable for all staking requests. Field notes shall be maintained by the Contractor and provided to MDOT upon request. Mark up and modify as-built plans to indicate changes identified during staking.

d. Measurement and Payment. The completed work as measured will be paid for at the contract unit price for the number of person hours required to coordinate and mark the required underground field elements.

Contract Item	Pay Unit
Utility Staking and Protection, One Person	Hour

Payment for **Utility Staking and Protection, One Person** includes all tools, labor, equipment, transportation, and other requirements necessary to coordinate and mark the underground facilities.

29. MOBILIZATION

Mobilization will be paid for in accordance with Section 150 of the MDOT 2012 Standard Specifications for Construction.

OTHER CONTRACT ITEMS

TEMPORARY TRAFFIC CONTROL

Any temporary traffic control required to perform the contract work shall be approved by the Engineer before use.

All temporary traffic control items will be in accordance with Sections 812 and 922 of the MDOT 2012 Standard Specifications for Construction. All traffic control devices and their usage shall conform to the current edition of the Michigan Manual of Uniform Traffic Control Devices.

The Contractor shall notify the Engineer prior to implementing any roadway, lane, or ramp closures, so that proper notification can be given to the public.

ATTACHMENT C

ITS MAINTENANCE **SCORING POINT ASSIGNMENT**

1. PROJECT APPROACH (35 Points)

1.1. Project Management Approach.

- 15 pts: Thoroughly explained project specific management approach above expectations, custom tailored for this project.
- 10 pts: Adequately explained project management approach meets minimum expectations, well explained approach for all projects.
- 5 pts: Generic project management approach meets minimum expectations, not related to the project or subcontractors.

1.2. ITS Project Maintenance.

- 10 pts: Thoroughly explained project maintenance tailored to the project, above expectations.
- 7 pts: Adequately explained project maintenance, meets minimum expectations.
- 5 pts: Generic project maintenance plan, meets minimum expectations.

1.3. Preventative Maintenance Plan.

- 10 pts: Thoroughly explained the Preventative Maintenance Plan and addressed all items in sufficient detail, including time durations.
- 7 pts: Adequately explained the Preventative Maintenance Plan and addressed all items without sufficient detail, including time durations.
- 5 pts: Generic Preventative Maintenance Plan and addressed all items in sufficient detail, including time durations.

2. PROPOSER QUALIFICATIONS (40 points)

2.1. Project Manager

- 15 pts: Project Manager shows minimum of three (3) directly related service projects
- 8 pts: Project Manager shows minimum of one to two (1-2) directly related service projects
- 0 pts: Project Manager shows no directly related service projects.

2.2. Key Task Leader and Key Staff.

- 25 pts: Key Task Leader and Key Staff show an exceeding amount of experience in the areas of ITS integration, installation, and corresponding electrical work.

15 pts: Key Task Leader and Key Staff show a minimum amount of experience in the areas of ITS integration, installation, and corresponding electrical work.

0 pts: Key Task Leader and Key Staff show no experience in the areas of ITS integration, installation, and corresponding electrical work.

3. PAST PERFORMANCE (20 points)

20 pts: Designated five (5) or more successfully completed projects with a minimum value of 1 million dollars per project that are relevant to the anticipated scope of work for this project. **

15 pts: Designated three to four (3-4) successfully completed projects with a minimum value of 1 million dollars per project that are relevant to the anticipated scope of work for this project. **

10 pts: Designated one to two (1-2) successfully completed projects with a minimum value of 1 million dollars per project that are relevant to the anticipated scope of work for this project. **

** Successfully completed projects will be defined through reference checks by review team.

4. LOCATION (5 points)

- 95-100% 5 points
- 80-94% 4 points
- 50-79% 3 points
- 25-49% 2 points
- 10-24% 1 point
- Less than 10% 0 points

5. EVALUATION CRITERIA

Proposals will be scored using the following criteria. The Technical Proposal must score a minimum of 85 points prior to the bid being opened and scored.

Criterion Maximum Points

	Maximum Points
<u>Technical Proposal</u>	
1. Project Approach	35 pts.
▪ Project Management Approach	
▪ ITS Project Maintenance	
▪ Preventative Maintenance Plan	
2. Proposer Qualifications	40 pts.
▪ Project Manager Qualifications	
▪ Key Task Leader and Key Staff Qualifications	
3. Past Performance	20 pts.
4. Location	5 pts.
Total	100 pts.

Proposals that do not meet the requirements of the Michigan Department of Transportation Consultant/Vendor Selection Guidelines for Service Contracts will be considered non-responsive to this RFP.