

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

	REQUISITION NUMBER	DUE DATE	TIME DUE
MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)	
DESCRIPTION			
<b>MDOT PROJECT MANAGER:</b> Check all items to be included in RFP  WHITE = REQUIRED ** = OPTIONAL  Check the appropriate Tier in the box below		<b>CONSULTANT:</b> Provide only checked items below in proposal	
<input type="checkbox"/> <b>TIER I</b> (\$50,000 - \$150,000)	<input type="checkbox"/> <b>TIER II</b> (\$150,000-\$1,000,000)	<input type="checkbox"/> <b>TIER III</b> (>\$1,000,000)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Understanding of Service **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Innovations</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organizational Chart
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Qualifications of Team
Not required as part of Official RFP	Not required as part of Official RFP	<input type="checkbox"/>	Quality Assurance/Quality Control **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Location:</b> 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) ( <b>No Resumes</b> )	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP <b>not including key personnel resumes.</b> Resumes limited to 2 pages per key staff personnel.

**PROPOSAL AND BID SHEET EMAIL ADDRESS – [mdot-rfp-response@michigan.gov](mailto:mdot-rfp-response@michigan.gov)**

### GENERAL INFORMATION

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

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

### MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

**5100D** – Request for Proposal Cover Sheet

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

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

**REQUEST FOR PROPOSAL**

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

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

**RFP SPECIFIC INFORMATION**

ENGINEERING SERVICES       BUREAU OF TRANSPORTATION PLANNING       OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

NO       YES      DATED \_\_\_\_\_ THROUGH \_\_\_\_\_

**Prequalified Services** – See 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 selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

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

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

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

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

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

**BID SHEET INSTRUCTIONS**

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

**PARTNERSHIP CHARTER AGREEMENT**

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

**NOTIFICATION  
MANDATORY ELECTRONIC SUBMITTAL**

**Proposals submitted for this project must be submitted electronically.**

**The following are changes to the Proposal Submittal Requirements:**

- Eliminated the Following Requirements:
  - Safety Program
  - Communication Plan
  - Past Performance as *a separate section*
  - Separate section for DBE Statement of goals. Include information in Qualification of Team section
  
- Implemented the Following Changes:
  - All proposals require an Organization Chart
  - Resumes must be a maximum of two pages
  - Only Key (lead) staff resumes may be submitted
  - Tier III proposal reduced from 19 to 14 pages
  - Forms 5100D, 5100I, and 5100G combined – 5100D
  - Forms 5100B and 5100H combined – 5100B
  - RFP's will be posted on a weekly basis -- on Mondays

**The following are Requirements for Electronic Submittals:**

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

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

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

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

**Required Bookmarking Format:**

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

**2/14/12**

**NOTIFICATION  
E-VERIFY REQUIREMENTS**

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

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

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

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

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

9/13/12

**Michigan Department of Transportation**

**SCOPE OF SERVICE  
FOR  
SPECIALTY SERVICES**  
Private Truck Stop – Support Services

**CONTROL SECTION(S):** 84915

**JOB NUMBER(S):** 116062

**PROJECT LOCATION(S):** Various Locations along I-94 in the MDOT Southwest and University Regions.

**DESCRIPTION OF WORK:** Provide support services for the MDOT Truck Parking Information and Management System (TPIMS) existing Private Truck Stop Facilities on I-94 in the Southwest and University Regions of the State of Michigan.

**ANTICIPATED START DATE:** December 1, 2016

**ANTICIPATED COMPLETION DATE:** November 30, 2019

**PRIMARY PREQUALIFICATION CLASSIFICATION:** N/A

**SECONDARY PREQUALIFICATION CLASSIFICATION:** N/A

**QUALIFICATION REQUIREMENTS:** The Vendor shall have experience on related projects working with state government, local municipalities, or international equivalent over the past five years providing operations and maintenance of parking availability data systems, preferably for private truck stops. The Vendor shall demonstrate a thorough understanding of the MDOT TPIMS as a whole.

As minimum qualifications, the Vendor must show previous experience, proving that they are able to plan and execute the project and deliver the operations, maintenance and integration with existing MDOT TPIMS Private Truck Stop equipment. The Vendor must be able to display ITS project experience, including working knowledge of parking availability detection systems and parking data aggregation. The Vendor must also display a highly developed ability to work with multiple teams on complex projects.

**MDOT PROJECT MANAGER:**

Collin Castle, P.E.  
Michigan Department of Transportation  
8885 Ricks Road  
P.O. Box 30049  
Lansing, MI 48909  
Email: [castlec@michigan.gov](mailto:castlec@michigan.gov)  
Tel: (517) 636-0715  
Fax: (517) 322-5664

**REQUIRED MDOT GUIDELINES AND STANDARDS:**

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards.

**GENERAL INFORMATION:**

The Vendor shall furnish all services and labor necessary to conduct and complete the services described herein. The Vendor 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 Vendor shall comply with all applicable Federal and State laws, rules and regulations. The Vendor's staff shall conduct themselves with professionalism in carrying out their duties. Some State of Michigan facilities may require security clearance for access.

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

At the request of the Department, the Vendor, 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 Vendor upon which to proceed with further Services.

All materials submitted in response to this RFP become the property of MDOT, proposals and supporting materials will not be returned to Vendors. MDOT reserves the right to reject any or all proposals.

**SCHEDULE, LENGTH OF CONTRACT TIME PERIOD:**

The contract term shall be for 1 year, with an optional 2 years (based on Vendor performance), contracted in one year-increments to meet internal MDOT funding requirements.

**BACKGROUND:**

The Michigan Department of Transportation (MDOT) constructed multiple locations on I-94 in the Southwest and University Regions to provide real time parking information to disseminate to users. In an effort to keep up with growing demands, reduce costs and operate the system more efficiently MDOT is looking to contract out the operations, maintenance and data aggregation/dissemination of the currently instrumented private truck stops systems.

The system includes, but is not limited to; Closed-Circuit Television (CCTV) Cameras, Video Detection Sensors, software development, servers, and communications infrastructure, all of which interface with other existing ITS monitoring software and equipment currently.

This project includes providing MDOT with Private Truck Stop Data for Private Truck Stops as identified in the scope below.

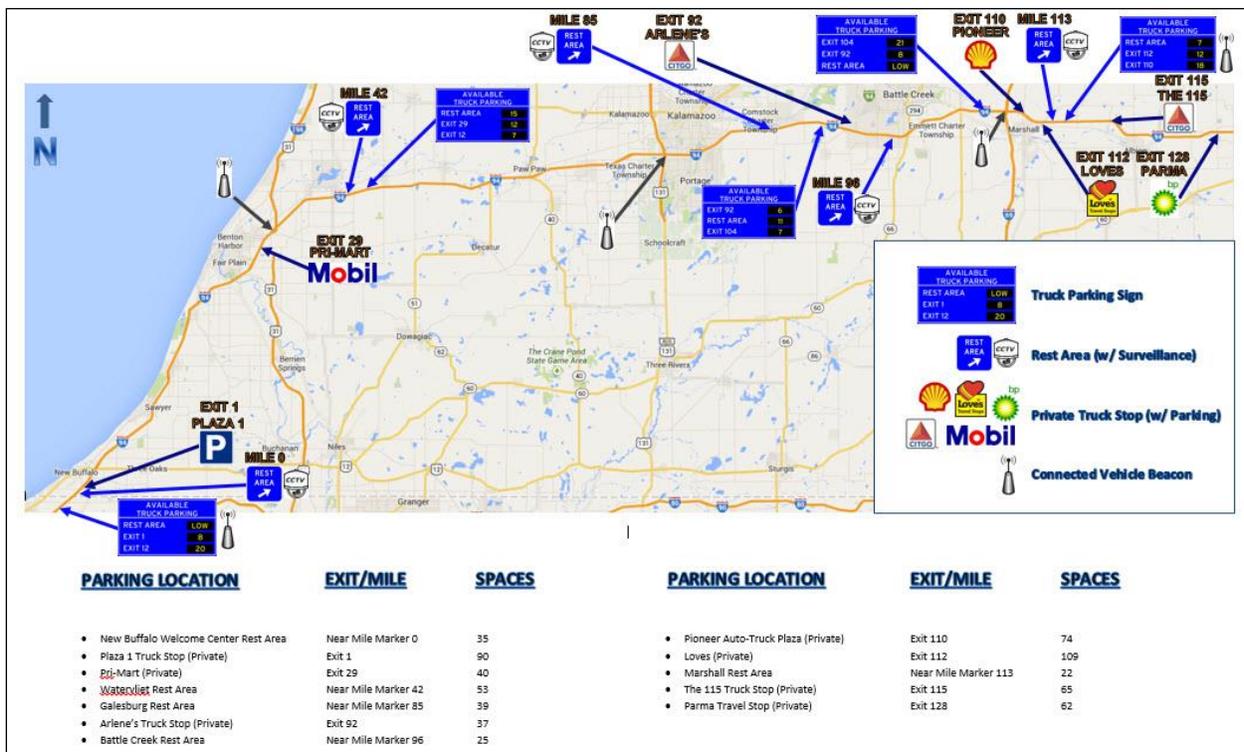
This project will also include providing user interfaces for the following systems/users; MDOT Statewide Advanced Traffic Management System (ATMS) Software application, 3<sup>rd</sup> party smartphone applications and 3<sup>rd</sup> party traveler information web sites.

**CURRENT SYSTEM DESCRIPTION:**

The MDOT Southwest and University Regions currently have 7 Private Truck Stops deployed with TPIMS detection devices along the I-94 corridor. Below is a table and figure which identify the instrumented facilities:

**Table 1: Private Truck Stops**

Exit	Truck Stop
1	Plaza 1
29	Pri-Mart
92	Arlene's
110	Pioneer
112	Love's
115	The 115 Truck Stop
128	Parma Travel Stop



**Figure 1: Existing MDOT I-94 TPIMS Deployment Locations**

The I-94 TPIMS currently collects truck parking availability information and disseminates it to users over a variety of media, including:

- Dynamic Truck Parking Signs (DTPS);
- Smart Phone Applications;
- Connected Vehicle Infrastructure;
- MDOT Mi Drive Website; and
- Traveler Information Websites.

Each of these applications is described below:

**Dynamic Truck Parking Signs**

Parking availability information is sent to dynamic parking information signs upstream from the rest areas. These signs provide information about the number of parking spaces available. The availability information displayed on the DTPS is sent in near real-time utilizing MDOT's ATMS application.

### **Smart Phone Application**

3<sup>rd</sup> party smartphone applications disseminate truck parking information to subscribers. The Vendor will be required to provide Truck Parking Availability Data to 3<sup>rd</sup> party smartphone applications.

### **Connected Vehicle Application**

Dedicated Short Range Communications (DSRC) roadside units (RSUs) were installed in advance of the defined rest areas and private truck stops in the I-94 project corridor. Parking availability information is sent from MDOT's ATMS application, hosted in Lansing, MI to the roadside equipment. The parking availability information is then broadcast to a pilot group of Connected Vehicle equipped commercial vehicles passing the RSU.

### **Mi Drive Website**

MDOT ATMS Software publishes parking availability information on the Mi Drive website and mobile application. This website includes a layer specifically for "Truck Parking". Dispatchers can use this information to inform their drivers of parking availability in the corridor.

### **Traveler Information Websites**

3<sup>rd</sup> party traveler information websites disseminate truck parking information to subscribers. The Vendor will be required to provide Truck Parking Availability Data to 3<sup>rd</sup> party traveler information websites.

More detailed information on the MDOT TPIMS high level attributes and system architecture are included in **ATTACHMENT A: MDOT TPIMS HIGH LEVEL ATTRIBUTES AND SYSTEM ARCHITECTURE.**

### **VENDOR RESPONSIBILITIES:**

The Vendor must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job and adherence to the Personal Protective Equipment (PPE) standards.

Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Vendor shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the scope of services. Attention shall be given to critical target dates that may require a large lead time.

The Vendor shall provide a Project Work Plan within 10 business days of notice to proceed. The project work plan will include a project schedule that outlines all necessary steps required to provide the Private Truck Stop availability data in this RFP. This includes the identification of interim deliverables and reviews required of MDOT. The schedule will include key milestones and the commencement date for the delivery of Private Truck Stop Data feed will be part of the schedule.

The Vendor will provide a Quality Assurance/Quality Control Plan that describes the Vendor's plan for monitoring and maintaining data quality within 10 business days of Notice to Proceed.

The project will begin with a formal in person kick-off meeting, to review the project work plan and provide an opportunity for MDOT and the Vendor to share expectations for the project.

The Vendor will provide operation and maintenance of the current equipment at the private truck stop facilities as outlined in this RFP and provide data processing, aggregation, and a private truck stop data feed to MDOT. Any supporting documentation that is needed by the Vendor to verify device locations, type, characteristics, etc. can be supplied by the Department at the Vendor's request.

The Vendor's activities may include, but not be limited to, the following activities as directed by the MDOT Project Manager:

**A. MDOT TPIMS Private Truck Stop Infrastructure Operation:** The Vendor shall be responsible for operation of all TPIMS Private Truck Stop Infrastructure per the requirements below.

1. The Vendor shall monitor the parking availability information and check each participating Private Truck Stop for accuracy by utilizing CCTV surveillance cameras to ensure that the truck parking availability data is meeting the minimum requirements for accuracy as identified herein.
2. The CCTV camera at each site will be utilized to manually count the available spaces and reset the system as needed.
3. The Vendor shall continuously monitor site uptime and equipment availability through standard means, including but not limited to ping tests and Simple Network Management Protocol (SNMP) traps.
4. The Vendor shall record system performance and each manual reset in a log, to be provided as part of the monthly system status report.

**B. MDOT TPIMS Private Truck Stop Infrastructure Maintenance:** The Vendor shall be responsible for all maintenance of all TPIMS infrastructure per the following requirements. Please refer to ATTACHMENT C: TPIMS EQUIPMENT LIST for more information on the existing infrastructure. Additional information on site design may be provided upon request of the Vendor.

**1. General**

- a. Monitor system daily in order to identify malfunctions.
- b. Provide on-site or remote service interruption analysis at those sites identified as malfunctioning, dependent on the necessary action to remedy malfunction.
- c. Replace or repair non-functioning equipment. The Vendor shall include the cost for equipment/sensor replacement in the cost proposal. Equipment/sensors requiring replacement during the term of the contract will not be paid for individually.
- d. Response Time: The Vendor shall respond on site to service non-functioning equipment within 48 hours of the reporting of non-functioning.
- e. All replacement parts supplied by the Vendor shall be new or reconditioned such that their performance is equal to that of the equivalent new part. Vendor will maintain an inventory of spare parts. All spare parts will be new, complete and fully serviceable and carry a full manufacturer's warranty.

## 2. Preventive Maintenance

- a. The Vendor shall perform preventive maintenance on all equipment, and this shall coincide with on-site hardware maintenance when possible.
- b. The Vendor shall 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 Vendor shall adhere to all submitted and approved preventative maintenance activities and schedules.

## 3. System Health Monitoring

- a. The Vendor shall monitor the system daily or more frequently if necessary from its central office to identify equipment malfunctions that negatively impact the accuracy and/or availability of the Private Truck Stop Data.

## 4. Warranties

- a. The Vendor must ensure that all warranties remain valid. To achieve this, the Vendor shall perform all the preventive work specified by the manufacturer within the periods specified by the manufacturer for all equipment. During the warranty period the Vendor will replace all defective equipment covered by the warranty at no expense to MDOT.
- b. Replacement equipment provided under the contract will include the manufacturer standard warranties. All warranties will be assigned to MDOT. When warranties apply, the Vendor shall coordinate with the manufacturer on all replacements. At the completion of the contract, the Vendor will provide a list of all remaining equipment warranties.

## 5. System Status Report

- a. The Vendor shall provide a system status report by e-mail to MDOT once per month, containing content as agreed upon with the Project Manager.

## C. MDOT TPIMS Private Truck Stop Data Feed – The Private Truck Stop Data shall meet the following requirements:

1. **System Coverage Area** – The Vendor will provide a Private Truck Stop Data feed to MDOT for the Private Truck Stops identified in Table 1 of the RFP.
2. **Task Deliverables** – The Vendor will provide Private Truck Stop Availability Data based on existing Private Truck Stop detection infrastructure. The Vendor will need to obtain site licenses for access to the Private Truck Stop facilities through separate agreements with each participating private truck stop operator.
  - a. **Data Validation** – The Vendor will cooperate, at MDOT's expense, with data validation either by MDOT or an independent Vendor selected by MDOT.
    - i. **Validated Spaces Available** – Calculated by MDOT or an independent Vendor selected by MDOT, using CCTV Cameras, physical on-site counting, or other calculation means.

This is the ground truth number of available spaces validated/confirmed by MDOT and/or its independent Vendor.

**b. Real Time Private Truck Stop Data Requirements**

**i. Data Format**

- (a) The Private Truck Stop data shall be provided in Extensible Markup Language (XML) format, using an MDOT approved schema.
- (b) The Private Truck Stop data shall be provided in Comma Separated Values (CSV) format.
- (c) The Private Truck Stop data files shall be delivered via a webservice accessible by Hypertext Transfer Protocol (HTTP) or another standard protocol.

**ii. Data Elements**

- (a) Data Elements to be supplied as part of the Private Truck Stop data feed are presented below in Table 2: Truck Parking Availability Data Feed Elements

**Table 2: Truck Parking Availability Data Feed Elements**

Data Element	In Public Data Feed	Description
Location Identifier	Dynamic Feed Updated every 1 to 5 minutes	Unique fixed-length identifier including state, route number, route type, mile marker, side of road and unique location number or name abbreviation. See more detailed description below.
Time Stamp of Dynamic Feed Update		Provides the date and time that the site record was last updated (YYYYMMDDHHMMSS).
		Time reported in UTC
Available Spots Reported		Number of available spots shared through the data feed. The number is capped at the total number of parking spots at the site and "Low" is reported if the low threshold is reached.
Trend		Reports whether the site is emptying, steady or filling.
Open or Closed		Will report open unless the parking site is closed to parking for maintenance or another situation.
Last Static Update		Provides the date and time that the site record was last updated (YYYYMMDDHHMMSS). Time Reported in UTC. Will alert user when Static Feed is updated (Time Stamp of Static Feed Update)
Site Failure Flag		This flag will report that no data or erroneous data is being provided for a site.
Location Identifier		Unique fixed-length identifier including state, route number, route type, mile marker, side of road and unique location

		number or name abbreviation. See more detailed description below.
Time Stamp of Static Feed Update		Provides the date and time that the site record was last updated (YYYYMMDDHHMMSS). Time Reported in UTC
Mile Marker		Provides the mile marker for the center of the rest area or interchange.
Exit Number		At interchanges, the designated interchange number is provided. For rest areas and weigh stations that do not have an exit number the value will be set to null.
Direction of Travel		Text indicating the direction(s) of travel that can access the site. For sites that can be accessed by either direction of travel, a bi-directional identifier such as "NS" or "EW" can be used.
GPS Coordinates		The latitude and longitude in a decimal format.
Private or Public		Text such as "PR" and "PU" used to indicate whether a parking site is privately owned or publicly owned.
Number of Spots		Total number of parking spots within the site. Could also be called "Capacity".
Name		Name of facility as text (e.g., Rest Area or Flying J Truck Stop).
Street address		Text based address number and street name.
City		Name of city in which the parking area is located. If not in a city, the county name can be used (e.g., Johnson County).
State		Abbreviation for state in which the parking area is located.
Amenities		List of text based amenities descriptions. Data structure would allow a varying number of amenities to be listed.
Image Links (logo of public or private stop)		Provides a link to an image file on a server that shows the private truck stop logo or TPIMS logo.
Image Link		Provides a link to an image file on a server that shows the lot status visually. This is only used if images are being captured and shared from a surveillance camera, otherwise it will be null.
Location Identifier	Archiving Only (not public)	Unique fixed-length identifier including state, route number, route type, mile marker, side of road and unique location number or name abbreviation. See more detailed description below.
Manual Reset Flag		This flag will note that the report value of available spots is based on a manual reset. Used for performance measures and system monitoring, not for public consumption.

"Low" Number of Spots Threshold	If the parking spot availability in the lot drops below this value, the data feed will report "Low" instead of a number.
Number of Spots Available	This will be the actual number of spots the detection system is reporting is available. This number can exceed the maximum number of spots and will report actual values under the "Low" threshold. Used for performance measures and system monitoring, not for public consumption.

Location Identifier (Fixed Length)			
Field Position	Field Size	Filed Name	Description
0	2	State	Two letter state abbreviation.
2	5	Route number	Five digits with zeros padded to the left.
7	2	Route type	Two letter abbreviation (e.g., IS for interstate, US for US highway, SH for state highway, etc.).
9	6	Mile marker	Six-digit number with implied 1/10 decimal point and zeros padded to the left.
15	2	Side of Road	Two letter designation indicating the direction(s) of travel that can access the site. Site accessed from one direction are "ON", "OS", "OE" or "OW". For sites that can be accessed by either direction of travel, a bi-directional identifier such as "NS" or "EW" can be used.
17	8	Unique Site Designation	Eight character unique location number or name abbreviation to differentiate between multiple truck stops at the same interchange.

**iii. Update Interval** - The Private Truck Stop data feed containing the data elements as identified in Table 2 shall be supplied in a 5 minute interval per the data format as identified in Section C. 2. b. i. Each 5 minute interval is a reporting cycle.

**iv. Accuracy**

(a) Percent availability error per private truck stop, per reporting cycle shall not be greater than +/- 10%.

(b) Percent Availability error shall be calculated using the following formula:

(i) 
$$\text{Percent Availability Error} = ((\text{Number of Spaces Available} - \text{Validated Spaces Available}) / (\text{Total Number of Spaces})) * (100)$$

**v. Data Availability**

(a) The Vendor shall provide Private Truck Stop Data 24 hours a day 7 days a week, with allowances made for up to 40 hours of scheduled total system downtime for maintenance per year, during off hours. Individual sites may be taken down for maintenance upon prior approval, and will be subject to the payment terms for site outages. The Vendor shall not perform scheduled maintenance without prior approval from MDOT 24 hours before the scheduled maintenance.

(b) Apart from scheduled downtime, the Vendor shall maintain an overall data availability of at least 97.5 percent per day for each operating site of the contract.

**c. Historical Private Truck Stop Data Requirements**

**i. Data Access and Archive**

(a) At the end of each contract quarter-year, the Vendor shall provide MDOT with a USB flash drive or portable hard drive containing all of the collected data within that year in CSV format.

**d. Data License** – The Vendor shall be able to grant, for the term of the Contract, an irrevocable, non-assignable, fully paid-up, and royalty-free license for use of the Private Truck Stop Parking availability data to MDOT for public agency truck parking information purposes such as population on dynamic message signs, broadcasting via dedicated short range communication (DSRC) devices, potential future 511 services, potential future connected vehicle applications, and websites including Mi Drive.

**3. User Interfaces**

**a. Maintain Interface with TPIMS applications** – The Vendor shall maintain and operate a webservice with the above data feed elements for authorized parties to access and utilize Private Truck Parking Data for end use applications.

**b. Integrate Public Data into Truck Stops Data Feed** – Vendor will, or through a third party vendor will, integrate the public truck parking availability data, provided by MDOT through the XML API, into the Truck stop Data Feed as identified above

**PROGRESS REPORTS:**

The Vendor shall submit monthly project progress reports to the MDOT Project Manager (or designee) during this project. Monthly progress reports will include, at a minimum, all key information affecting the quality, availability or reliability of the private truck stops data feeds in the previous month. For any issues that arise, the Vendor shall present a plan for how they will be resolved. Any formal request made to the Vendor to investigate inconsistent or questionable data must be responded to within seven calendar days. The monthly progress reports must also include any changes made to the Private Truck Stop availability data.

**MDOT RESPONSIBILITIES (GENERAL):**

MDOT shall provide the Vendor with all relevant documentation needed to complete the tasks assigned and approved by the MDOT Project Manager.

Included as attachments to this RFP are **A) TPIMS HIGH-LEVEL ATTRIBUTES AND SYSTEM ARCHITECTURE, B) TPIMS MEASUREMENT AND PAYMENT, and C) TPIMS EQUIPMENT LIST.**

MDOT will provide truck parking availability data feeds from public rest areas to the Vendor. The public rest areas for this project are: Marshall, Battle Creek, Galesburg, Watervliet, and New Buffalo.

**PROJECT MANAGEMENT:**

1. This project will require close interaction and good communication between the Vendor and multiple MDOT staff.
2. If there are any major deviations from the original scope of this assignment, these changes must be documented and jointly approved by the Vendor and the MDOT Project Manager.
3. The Vendor shall provide all necessary project management services, including monthly progress reports, and providing invoices in a timely manner.
4. The Vendor should provide a description of their management team for this project and list all key personnel responsible for the deliveries of this RFP.

**STATUS REPORTS/ MEETINGS:**

There will be periodic, regular meetings between MDOT representatives and the selected Vendor to review work product, and to communicate progress, issues, ideas and expectations. The Vendor shall provide copies of all project reports, correspondence, meeting announcements and minutes of 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 Office 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.

**VENDOR PAYMENT – Unit Price:**

Compensation for 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. See **ATTACHMENT B: TPIMS MEASUREMENT AND PAYMENT.**

All billings for services must be directed to the Department and follow the current guidelines. Payment may be delayed or decreased if the instructions are not followed.

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

**SCORING POINT ASSIGNMENT:**

Total Points = 130 Points

**Proposed Selection Criteria and Total Possible Points:**

Understanding of Service – 30 Points

Describe your understanding of the service to be provided.

Qualifications of Team – 40 Points

Describe your team and the roles of key personnel. Provide resumes for key personnel.

Past Performance – 20 Points

Provide references and examples of similar work performed for other agencies.

Location – 5 Points

Indicate the percentage of work that will be performed in Michigan.

Price – 35 Points

Formula:  $\text{Low Bid/Bid} * \text{points assigned}$

INTELLIGENT TRANSPORTATION SYSTEMS  
I-94 TPIMS PRIVATE TRUCK STOP – SUPPORT SERVICES  
MDOT STATEWIDE

**PAYMENT ITEMS**

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

	<b>ITEMS OF WORK</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>PRICE/UNIT</b>	<b>TOTAL PRICE</b>
1	I-94 TPIMS Private Truck Stop Support Services Year 1	Stop-Month	84		
2	I-94 TPIMS Private Truck Stop Support Services Year 2	Stop-Month	84		
3	I-94 TPIMS Private Truck Stop Support Services Year 3	Stop-Month	84		

**CHECK UNIT PRICE COLUMN FOR OMISSIONS BEFORE ENTERING BID TOTAL**

**Bid Price for the above listed items and quantities: \$**\_\_\_\_\_

**VENDOR'S NAME:** \_\_\_\_\_

**VENDOR'S SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## **ATTACHMENT A: TPIMS HIGH-LEVEL ATTRIBUTES AND SYSTEM ARCHITECTURE**

### **A. High-Level Attributes of the Current System**

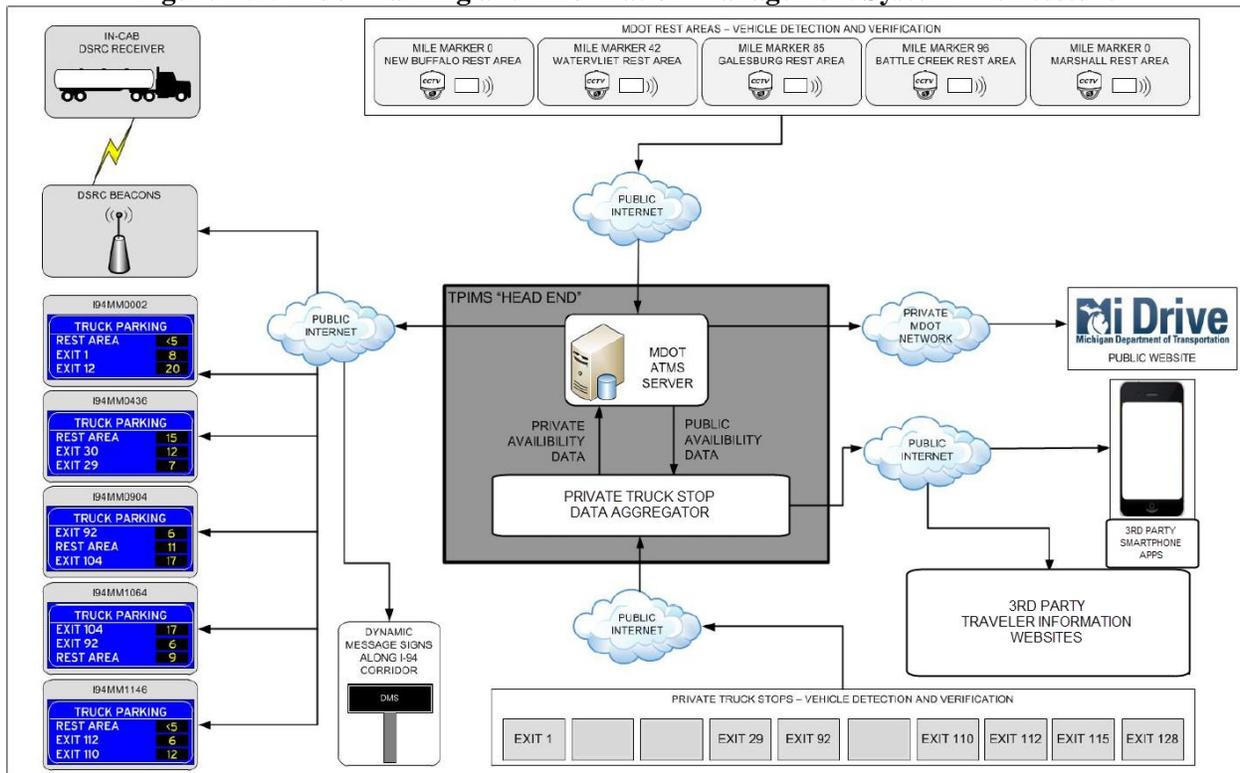
1. The private truck stop infrastructure and data aggregation/dissemination system is currently operated and maintained by a 3<sup>rd</sup> party private parking data aggregator.
  - a. The number of available parking spaces at private truck stops along the segment of I-94 is determined by counting entering and exiting vehicles at truck parking areas only.
  - b. Video detection systems are deployed at the ingress and egress points for trucks at all private truck stops along the I-94 corridor to determine the number of available spaces.
  - c. CCTV cameras are used to monitor and verify truck availability at private truck stops, including common overflow areas.
  - d. Each private truck stop includes local communications and data server to process and communicate data and video.
  - e. Communications are currently established between the local communications equipment at the private truck stops and a 3<sup>rd</sup> party data aggregator.
  - f. Parking availability data and video from the private truck stops are transmitted over a 3<sup>rd</sup> party data aggregator furnished cellular or leased communications network to the back office.
  - g. Parking availability information at private truck stops is being collected, processed and transmitted via the internet to the MDOT ATMS application by a 3<sup>rd</sup> party private parking aggregator.
2. The MDOT ATMS application currently transmits rest area parking information to the 3<sup>rd</sup> party private parking data aggregator.
3. Parking availability data is displayed on Dynamic Truck Parking Signs upstream of the rest areas.
4. The MDOT ATMS application currently displays the parking availability data on a corridor map showing all rest areas and private truck stops in the corridor.
5. The MDOT ATMS application currently transmits parking availability messages for the corridor based on operational thresholds and user defined transmit update timing parameters.
6. Parking availability data is collected, processed, displayed, and updated at intervals of no more than every five minutes.
7. Parking availability data is provided on the Mi Drive website and to drivers via mobile applications.
8. Parking availability data is currently disseminated by a private parking management service provider.

### **B. TPIMS System Architecture**

The system architecture for the TPIMS includes components related to data collection, verification, processing, storage, communications, display, and information dissemination. Some of the processes are distributed to local servers at rest areas. Most of the data processing takes place at the Statewide Transportation Operations Center (STOC) in Lansing, MI.

The below Figure describes the system architecture. As depicted, traffic sensors collect truck parking availability at rest areas along the project segment. The sensors are installed and collect truck entry and exit data. CCTV cameras are installed at each rest area to verify sensor data. Information about truck parking availability at private facilities is being provided by a parking information service provider. The Vendor currently partners with the truck stops in the corridor to obtain this parking availability information through the service provider.

**Figure A.1: Truck Parking and Information Management System Architecture**



Sensor data is stored on local servers at the rest areas. The local servers process the parking data and send the verified information via local communications links to dynamic parking signs upstream of the rest area.

The data also is transmitted to the STOC in Lansing for dissemination through the Mi Drive website, DMS, DSRC roadside units, and through the smartphone application. An interface between the communications server for the Parking Management and Information System and the new MDOT ATMS software are also part of the system. An interface is provided between the parking information service provider and the STOC to allow exchange of data.

**ATTACHMENT B: TPIMS 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 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.
- Less than 97.5% of reporting cycles.

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 Vendor. If the site is returned to above the minimum threshold within the reported day, the Vendor 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 Vendor shall not be paid for any days after the reported day for that site.

MDOT shall receive a credit against future Parking System services equal to a pro rata portion of fees for the period of downtime, as compared to the total fees for the then current billing unit of time. The equations for and a sample calculation for a site over a month are provided below:

**Site Data Availability = (# days operating above minimum threshold) / (# calendar days in month)**

*Site Data Availability with 4 days not meeting in the month of July = (26/30) = 0.87 stop-months*

**ATTACHMENT C: TPIMS EQUIPMENT LIST:**

Below is a list of equipment currently installed and operational at the I-94 TPIMS Private Truck Stops identified by location:

<b>Location</b>	<b>Qty</b>	<b>Device Name</b>	<b>Make</b>	<b>Model</b>
Arlene's	3	Traffic Camera	Citilog	Xcam-HDR
Arlene's	3	Traffic Camera	Citilog	Xcam-TD
Arlene's	1	Cellular Modem	Sierra Wireless	LS300-AC
Arlene's	2	Communications Module	Citilog	Xcom
Arlene's	1	Ethernet Switch	Garretcom	6KL-24VDC
Arlene's	1	Surveillance Camera	Axis	P5512-E
Arlene's	2	Wireless Link	Ubiquiti	NB-5G22
Loves	5	Traffic Camera	Citilog	Xcam-TD
Loves	1	Traffic Camera	Citilog	Xcam-HDR
Loves	1	Cellular Modem	Sierra Wireless	LS300-AC
Loves	2	Communications Module	Citilog	Xcom
Loves	1	Ethernet Switch	Garretcom	6KL-24VDC
Loves	1	Surveillance Camera	Axis	P5512-E
Loves	1	Unmanaged Ethernet SW	L-com Global Connectivity	SWTC-NS205
Loves	2	Wireless Link	Ubiquiti	NB-5G22
Parma	3	Traffic Camera	Citilog	Xcam-TD
Parma	1	Traffic Camera	Citilog	Xcam-HDR
Parma	1	Cellular Modem	Sierra Wireless	LS300-AC
Parma	2	Communications Module	Citilog	Xcom
Parma	1	Ethernet Switch	Garretcom	6KL-24VDC
Parma	1	Surveillance Camera	Axis	P5512-E
Parma	3	Wireless Link	Ubiquiti	NB-5G22
Pioneer	2	Traffic Camera	Citilog	Xcam-HDR
Pioneer	2	Traffic Camera	Citilog	Xcam-TD
Pioneer	1	Cellular Modem	Sierra Wireless	LS300-AC
Pioneer	2	Communications Module	Citilog	Xcom
Pioneer	1	Ethernet Switch	Garretcom	6KL-24VDC
Pioneer	1	Surveillance Camera	Axis	P5512-E
Pioneer	3	Wireless Link	Ubiquiti	NB-5G22
Plaza 1	3	Traffic Camera	Citilog	Xcam-TD
Plaza 1	3	Traffic Camera	Citilog	Xcam-HDR
Plaza 1	1	Cellular Modem	Sierra Wireless	LS300-AC
Plaza 1	3	Communications Module	Citilog	Xcom
Plaza 1	1	Ethernet Switch	Garretcom	6KL-24VDC
Plaza 1	3	Wireless Link	Ubiquiti	NB-5G22
Plaza 1	1	Surveillance Camera	Axis	P5512-E

Pri-Mart	1	Traffic Camera	Citilog	Xcam-TD
Pri-Mart	3	Traffic Camera	Citilog	Xcam-HDR
Pri-Mart	1	Cellular Modem	Sierra Wireless	LS300-AC
Pri-Mart	1	Communications Module	Citilog	Xcom
Pri-Mart	1	Ethernet Switch	Garrettcom	6KL-24VDC
Pri-Mart	1	Surveillance Camera	Axis	P5512-E
The 115	2	Traffic Camera	Citilog	Xcam-HDR
The 115	2	Traffic Camera	Citilog	Xcam-TD
The 115	1	Cellular Modem	Sierra Wireless	LS300-AC
The 115	2	Communications Module	Citilog	Xcom
The 115	1	Ethernet Switch	Garrettcom	6KL-24VDC
The 115	1	Surveillance Camera	Axis	P5512-E
The 115	2	Wireless Link	Ubiquiti	NB-5G22