

REQUEST FOR PROPOSAL

PORTABLE TRAFFIC MANAGEMENT SYSTEM SERVICES

RFP D607-106-RW

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LIST OF ACRONYMS

MHTC	Missouri Highways and Transportation Commission
MoDOT	Missouri Department of Transportation
RFP	Request for Proposals
ATMS	Advanced Traffic Management System
ITS	Intelligent Transportation System

INTRODUCTION

This Request For Proposals (**RFP**) seeks proposals from qualified organizations (**Offeror**) to furnish the described services to the Missouri Highways and Transportation Commission (**MHTC**). Five (5) copies of each proposal must be mailed in a sealed envelope to **Teresa (Terri) Mount, Procurement Specialist, Missouri Department of Transportation, 2309 Barrett Station Road, Ballwin, Missouri 63021**, or hand-delivered in a sealed envelope to the MoDOT Procurement Office at the same address mentioned above. Proposals must be returned to the offices mentioned above no later than **2:00 p.m., March 30, 2007**.

MHTC reserves the right to reject any and all bids for any reason whatsoever. Time is of the essence for responding to the RFP within the submission deadlines.

PROPOSAL

- (1) The Offeror shall provide a fee proposal to MHTC on the **PRICE PAGE** in accordance with the terms of this RFP.
- (2) The Offeror agrees to provide the services at the fees quoted, under the terms of this RFP.

Authorized Signature of Offeror: _____

Date of Proposal: _____

Printed or Typed Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Fax: _____

Electronic Mail Address: _____

ACCEPTANCE

This proposal is accepted by MHTC.

(Name and Title)

Date

**SECTION (1):
GENERAL DESCRIPTION AND BACKGROUND**

- (A) **Request for Proposal:** This document constitutes a RFP from qualified organizations to provide portable traffic management system lease services to MHTC and the Missouri Department of Transportation (**MoDOT**) (both hereinafter referred to as **Department**).
- (B) **Background:** The **Department** is currently planning and designing permanent transportation system management and operation (ITS) components along Interstate 44 in the St. Louis area. The project construction award for these components will be early summer of 2007 with final construction being completed by summer 2007. The **Department** has committed to providing limited system management and operation components along Interstate 44 in the vicinity of Eureka for the summer and fall season of 2007. The requested portable traffic management system will fulfill this commitment. This requested portable traffic management system will be service contract.
- (C) **Fiscal Year:** The fiscal year runs from July 1-June 30.
- (D) **Contract Period:** This service contract period will be from May 1, 2007 through November 1, 2007.

**SECTION (2):
SCOPE OF WORK**

- (A) **Services:** The Offeror shall provide the following professional services: portable traffic management system.
- (B) **Specific Requirements:** The Offeror will provide to the **Department** five copies of a program proposal that will include the following: all necessary components identified in the specification list in Exhibit A. The Offeror must clearly define all service limitations as part of a limitation disclosure.
- (C) **Administration of Program:** The Offeror will consult MHTC's representative regarding any problems involved with the administration of the services provided pursuant to this RFP.

**SECTION (3):
AGREEMENT REQUIREMENTS**

This RFP shall be governed by the following contract provisions. The award of this RFP is subject to a post-award negotiated contract. These same contract provisions will appear in the post-award negotiated contract. If the parties are unable to agree to terms in the post-award contract, MHTC shall reserve the right to cancel the award of the RFP and contract and select a different offeror.

- (A) **MHTC's Representative:** MoDOT's Chief Engineer is designated as MHTC's representative for the purpose of administering the provisions of the Agreement as defined in Paragraph (E) of this section. MHTC's representative may designate by written notice other persons having the authority to act on behalf of MHTC in furtherance of the performance of the Agreement. The Offeror shall fully coordinate its activities for MHTC with those of the **Department's** St. Louis District Office. As the work of the Offeror progresses, advice and information on matters covered by the Agreement shall be made available by the Offeror to the **Department's** St. Louis District Office throughout the effective period of the Agreement.
- (B) **Release to Public:** No material or reports prepared by the Offeror shall be released to the public without the prior consent of MHTC's representative.
- (C) **Assignment:** The Offeror shall not assign or delegate any interest, and shall not transfer any interest in the services to be provided (whether by assignment, delegation, or novation) without the prior written consent of MHTC's representative.
- (D) **Status as Independent Contractor:** The Offeror represents itself to be an independent contractor offering such services to the general public and shall not represent itself or its employees to be an employee of MHTC or MoDOT. Therefore, the Offeror shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers' compensation, employee insurance, minimum wage requirements, overtime, or other such benefits or obligations.
- (E) **Components of Agreement:** The Agreement between MHTC and the Offeror shall consist of: the RFP and any written amendments thereto, the Standard Solicitation Provisions and General Terms and Conditions that are attached to this RFP, the proposal submitted by the Offeror in the response to the RFP and the post-award contract agreement signed between the parties. However, MHTC reserves the right to clarify any relationship in writing and such written clarification shall govern in case of conflict with the applicable requirements stated in the RFP or the Offeror's proposal. The Offeror is cautioned that its proposal shall be subject to acceptance by MHTC without further clarification.

- (F) **Amendments:** Any change in the Agreement, whether by modification or supplementation, must be accompanied by a formal contract amendment signed and approved by the duly authorized representative of the Offeror and MHTC.
- (G) **DBE/WBE Participation Encouraged:**
1. Bidders are encouraged to submit copies of existing affirmative action programs, if any. Bidders are also encouraged to directly hire minorities and women as direct employees of the bidder. MHTC reserves the right to consider the use of minority and female employee when making the award of the Agreement.
 2. Regardless of which persons or firms, if any, that the Offeror may use as subcontractors, subconsultants, or suppliers of goods or services for the services to be provided, the Offeror ultimately remains responsible and liable to MHTC for the complete, accurate and professional quality/performance of these services.
- (H) **Nondiscrimination:** The Offeror shall comply with all state and federal statutes applicable to the Offeror relating to nondiscrimination, including, but not limited to, Chapter 213, RSMo; Title VI and Title VII of Civil Rights Act of 1964 as amended (42 U.S.C. Sections 2000d and 2000e, *et seq.*); and with any provision of the “Americans with Disabilities Act” (42 U.S.C. Section 12101, *et seq.*).
- (I) **Bankruptcy:** Upon filing for any bankruptcy or insolvency proceeding by or against the Offeror, whether voluntarily, or upon the appointment of a receiver, Offeror, or assignee, for the benefit of creditors, MHTC reserves the right and sole discretion to either cancel the Agreement or affirm the Agreement and hold the Offeror responsible for damages.
- (J) **Law of Missouri to Govern:** The Agreement shall be construed according to the laws of the state of Missouri. The Offeror shall comply with all local, state and federal laws and regulations relating to the performance of the Agreement.
- (K) **Cancellation:** MHTC may cancel the Agreement at any time by providing the Offeror with written notice of cancellation. Should MHTC exercise its right to cancel the Agreement for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the Offeror.
- (L) **Venue:** No action may be brought by either party concerning any matter, thing or dispute arising out of or relating to the terms, performance, nonperformance or otherwise of the Agreement except in the Circuit Court of Cole County, Missouri. The parties agree that the Agreement is entered into at Jefferson City, Missouri, and substantial elements of its performance will take place at or be delivered to Jefferson City, Missouri, by reason of which the Offeror consents to venue of any action against it in Cole County, Missouri.

- (M) **Ownership of Reports:** All documents, reports, exhibits, etc. produced by the Offeror at the direction of MHTC's representative and information supplied by MHTC's representative shall remain the property of MHTC.
- (N) **Confidentiality:** The Offeror shall not disclose to third parties confidential factual matters provided by MHTC's representative except as may be required by statute, ordinance, or order of court, or as authorized by MHTC's representative. The Offeror shall notify MHTC immediately of any request for such information.
- (O) **Nonsolicitation:** The Offeror warrants that it has not employed or retained any company or person, other than a bona fide employee working for the Offeror, to solicit or secure the Agreement, and that it has not paid or agreed to pay any percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of the Agreement. For breach or violation of this warranty, MHTC shall have the right to annul the Agreement without liability, or in its discretion, to deduct from the Agreement price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.
- (P) **Conflict of Interest:** The Offeror covenants that it presently has no actual conflict of interest or appearance of conflict of interest and shall not acquire any interest, directly or indirectly, which would conflict in any manner or degree with the performance of the services under this Agreement. The Offeror further covenants that no person having any such known interest shall be employed or conveyed an interest, directly or indirectly, in this Agreement.
- (Q) **Maintain Papers:** The Offeror must maintain all working papers and records relating to the Agreement. These records must be made available at all reasonable times at no charge to MHTC and/or the Missouri State Auditor during the term of the Agreement and any extension thereof, and for three (3) years from the date of final payment made under the Agreement.
1. MHTC's representative shall have the right to reproduce and/or use any products derived from the Offeror's work without payment of any royalties, fees, etc.
 2. MHTC's representative shall at all times have the right to audit any and all records pertaining to the services.
- (R) **Indemnification:** The Offeror shall defend, indemnify and hold harmless the Commission, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the Offeror's performance of its obligations under this Agreement.

2309 Barrett Station Road
Ballwin, Missouri 63021
Telephone No.: (314)-301-1431
Facsimile No.: (314)- 301-1437
E-mail address: Teresa.Mount@modot.mo.gov

5. **Written Questions:** Any pre-submission question(s), comment(s), concern(s) or request(s) for clarification regarding the RFP or proposal requirements shall be submitted **on or before March 16, 2007, 2:00 p.m., local time**, by facsimile transmission (fax), electronic mail (email), or in writing, to Ms. Teresa, (Terri) Mount at the address listed above. No questions about the RFP will be entertained after the due date for Written Questions

Responses to the questions will be posted on The Department's website at: http://www.modot.mo.gov/business/contractor_resources/NonHighway-ConstructionBids.htm in the form of a written addendum. **It is anticipated that this addendum will be issued on March 22, 2007.** No contact with the Commission Board members or other Department's staff will be allowed during the RFP process. Any contact with these individuals will be grounds for disqualification. It will be the responsibility of the Offeror to access The Department's website in order to obtain any and all addenda issued during the course of this RFP process.

(B) REQUIRED ELEMENTS OF PROPOSAL

1. **Experience.** The proposal must clearly identify the Offeror's experience in offering the services requested in this RFP during the past three (3) years. The description should include a list of the agencies that your organization has served or currently serves.
2. **Proposed Method of Performance.** Proposals will be subjectively evaluated based on the Offeror's plan for performing and providing the requested services. Therefore, the Offeror must present a plan that demonstrates the method and/or manner in which the Offeror proposes to satisfy services requested in this document. In presenting the method of performance, the Offeror must submit or describe the following:
 - Offeror's concept of design on how they will accomplish the Detail Design requirements listed Exhibit A
 - List of proposed components includes manufacture, model, etc.
 - Block diagram for proposed communication system
 - Method of calculating the proposed solar power system
 - Offeror's concept of operation on how they will accomplish the operation and maintenance of the proposed system listed Exhibit A

- Example of web sites developed for a similar portable system
 - Example of an acceptance test plan
 - Proposed plan to ensure fully functional operations
 - Proposed plan to operation and maintenance portable system
3. **References.** Proposals should indicate the name, title and telephone number of at least three officials of clients within the past three years.

(C) EVALUATION CRITERIA AND PROCESS

1. **Evaluation Factors:** Any agreement for services resulting from this RFP shall be awarded to the Offeror providing the best proposal to MHTC. After determining responsiveness, proposals will be evaluated in accordance with the following criteria:
- A. Experience, expertise and reliability; (20 points)
 - B. Proposed Method of Performance; (15 points)
 - C. Cost, Fees and Expenses; (50 points)
 - D. Recommendations from references; (10 points)
 - E. Overall clarity and quality of proposal; and (5 points)
2. **Historic Information:** MHTC reserves the right to consider historic information and facts, whether gained from the Offeror's proposal, question and answer conferences, references, or other sources, in the evaluation process.
3. **Responsibility to Submit Information:** The Offeror is cautioned that it is the Offeror's sole responsibility to submit information related to the evaluation categories and that MHTC's representative is under no obligation to solicit such information if it is not included with the Offeror's proposal. Failure of the Offeror to submit such information may cause an adverse impact on the evaluation of the Offeror's proposal.

(D) PRICING

1. **Fee Schedule:** The Offeror must submit a proposed fee for all services defined in the Scope of Work. This fee must be shown on Section (5), Price Page, of this proposal which must be completed, signed and returned with the Offeror's proposal.

**SECTION (5):
PRICE PAGE**

(A) FEE SCHEDULE: The Offeror shall indicate below all fees for providing services in accordance with the provisions and requirements stated herein:

Description	Unit	Proposed Units	Unit Cost	Total Cost
Portable Traffic Management System Option A	Days	184		
Portable Traffic Management System Option B	Days	184		

Name of Firm: _____ **Date:** _____

Signature: _____ **Title:** _____

Exhibit A

PORTABLE TRAFFIC MANAGEMENT SYSTEM

1.0 General

1.1 Description. For six months, provide and maintain portable solar powered traffic management system along a portion of Interstate 44 in Eureka, Missouri. Operate a web site that enables MoDOT staff with access to the Internet to monitor and control the system.

Provide the equipment on approximately four miles of I-44 including the Interchange 264 (Rt. 109) and Interchange 261 (Six Flags Rd.) The equipment shall consist of traffic sensors, dynamic message signs, surveillance cameras, and communication equipment linking the sensors, signs, and cameras to a web site. Exhibits 1 and Exhibit 2 show the approximate locations of the sensors, signs, and cameras. The equipment may be trailer-mounted or mounted on wood posts and poles.

The system provider must demonstrate 2-3 years of similar experience providing portable traffic management systems that include video surveillance.

The system must be operational by May 1, 2007 and shall remain operational through August 1, 2007. Subsequent days of operation will be paid for at the bid daily rate, with a latest end date of November 1, 2007.

2.0 Materials

2.1 Traffic sensors shall be radar-type units that report volume, occupancy, and speed by lane. Provide evidence of the proposed unit's accuracy and references that can attest to its durability.

2.2 The dynamic message signs shall be line matrix or full matrix signs with pixels formed by amber light emitting diodes (LEDs). The LEDs shall have a 30-degree viewing cone. The sign shall have three lines of 18” characters. Lines shall be at least 48 pixels (8 characters) wide. The sign’s light output shall meet the requirements of NEMA TS-4 for battery-powered signs and shall be dimmed at night. The bottom of the sign shall be at least seven feet above the traveled way.

2.3 Cameras shall have the ability to pan, tilt, and zoom. They shall automatically adjust the focus and iris, but those adjustments shall be overridden by commands from the user. They shall be able to move to any of at least ten preset views and shall display the view title on the picture. When the camera is not displaying a preset view, it shall display the title (if any) assigned to the sector at which it is looking. The resolution shall be at least 460 horizontal TV lines and the optical zoom shall be capable of providing a magnification range of at least 1 to 22X.

2.5 Traffic control devices, including guard rail or any other structure placed within highway right of way, shall meet the requirements of the *Missouri Standard Specifications for Highway Construction* and MoDOT’s *Quality Standards for Temporary Traffic Control Devices*.

EXHIBIT 1
PRELIMINARY EQUIPMENT LAYOUT – Option A

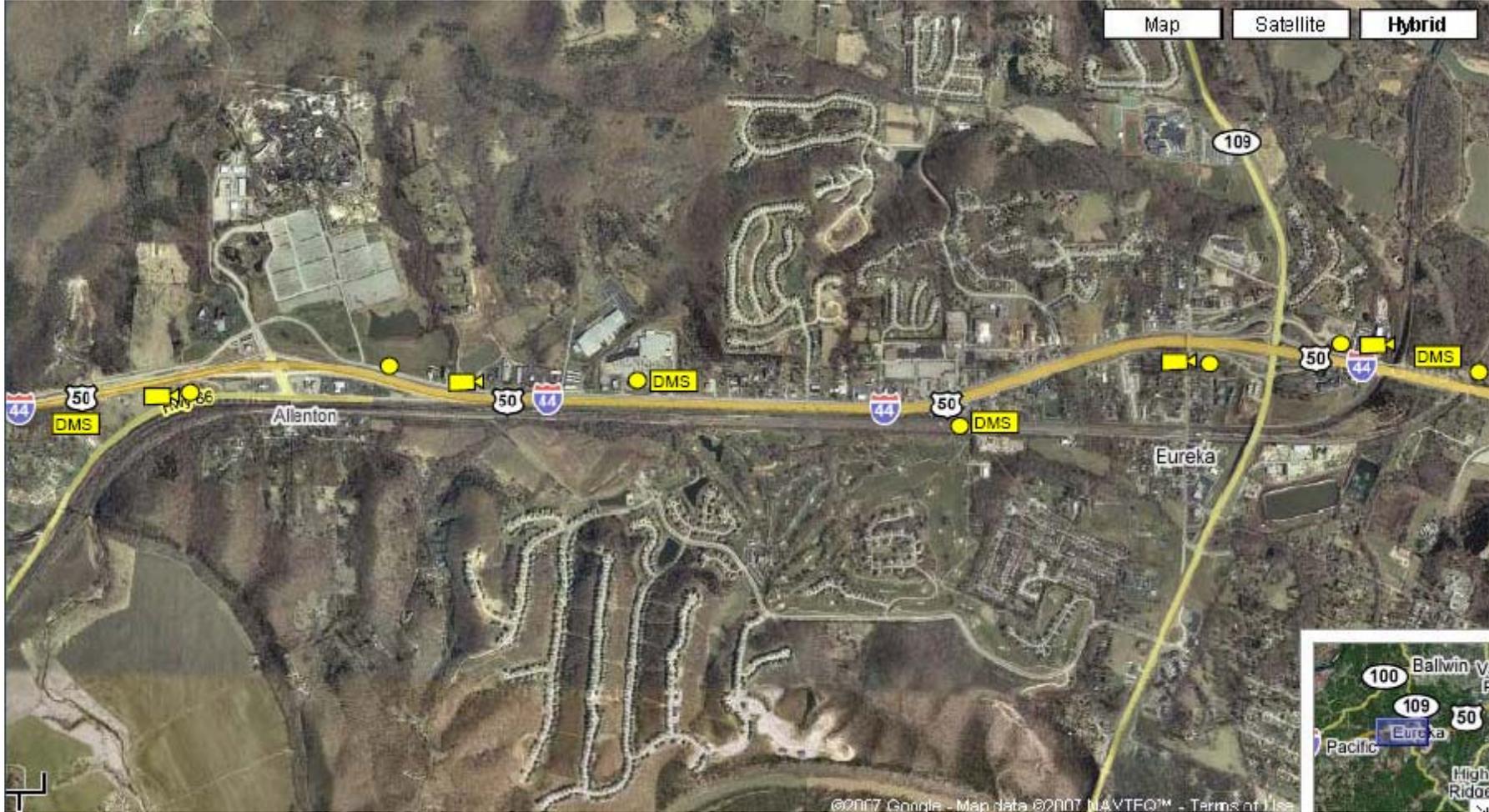
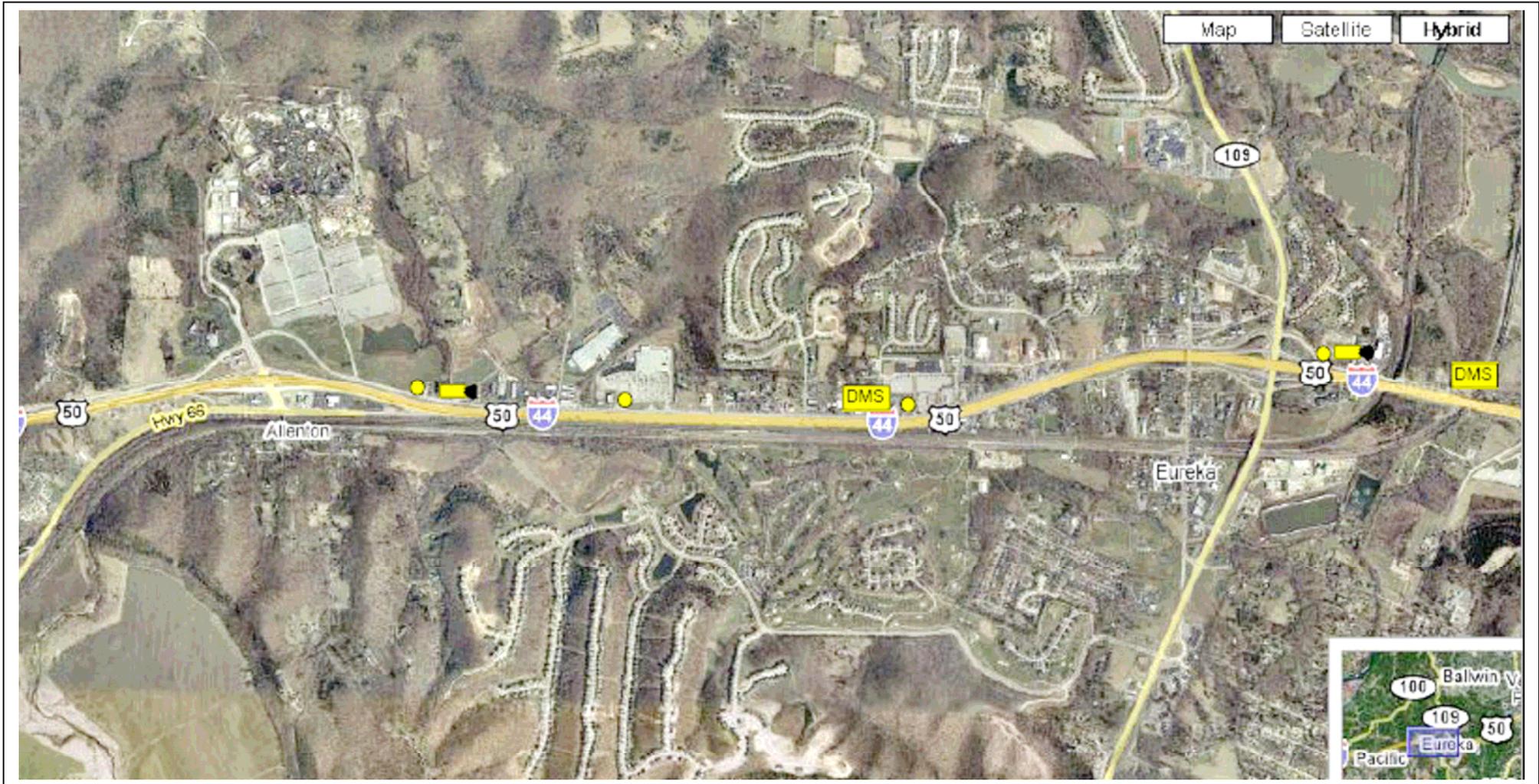


EXHIBIT 1
PRELIMINARY EQUIPMENT LAYOUT - Option B



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3.0 Construction Requirements

3.1 Detailed Design. Prepare a detailed design for the traffic management system and purchase no equipment until the design is approved. The system must perform as follows:

Option A – Eastbound and Westbound

- Unobstructed camera coverage of traffic exiting westbound I-44 at Exits 261 and 264 and traffic exiting eastbound I-44 at Exits 261 and 264. The camera must be able to view at least 80 percent of each ramp plus the mainline traffic approaching each ramp. Video shall be color, with a minimum of 5 picture refreshes per second.
- Volume occupancy and speed data for each I-44 lane at approximately half-mile intervals. The westernmost traffic sensor location shall be approximately 1 before the start of the ramp from eastbound I-44 at Exit 261. The easternmost sensor location shall be approximately 1 mile before the start of the ramp from westbound I-44 at Exit 264.
- On each exit ramp or “exit only” lane, detection of stopped traffic about 100 feet from the point where the ramp or lane diverges from the main line.
- Dynamic message signs in advance of each exit point. The signs must be no closer than a quarter mile and no farther than 1 mile in advance of the exit point. They shall be visible from all mainline lanes for a distance of 1,000 feet in advance of the sign.
- Continuously available communication between each device and the web site. The communication system shall allow at least two cameras to be viewed simultaneously, and provide resolution equivalent to 640 x 480 pixels, with at least 5 picture refreshes per second.

Option B – Westbound Only

- Unobstructed camera coverage of traffic exiting westbound I-44 at Exits 261 and 264. The camera must be able to view at least 80 percent of each ramp plus the mainline traffic approaching each ramp. Video shall be color, with a minimum of 5 picture refreshes per second.
- Volume occupancy and speed data for each I-44 lane at approximately half-mile intervals. The westernmost traffic sensor location shall be at the westbound off-ramp at Exit 261. The easternmost sensor location shall be approximately 1 mile before the start of the ramp from westbound I-44 at Exit 264.
- On each exit ramp (westbound Exits 264 and 261) or “exit only” lane, detection of stopped traffic about 100 feet from the point where the ramp or lane diverges from the main line.
- Dynamic message signs in advance of each westbound exit point. The signs must be no closer than a quarter mile and no farther than 1 mile in advance of the exit point. They shall be visible from all mainline lanes for a distance of 1,000 feet in advance of the sign.

- Continuously available communication between each device and the web site. The communication system shall allow at least two cameras to be viewed simultaneously, and provide resolution equivalent to 640 x 480 pixels, with at least 5 picture refreshes per second.

The design shall include:

- Exact locations for all roadside equipment. The number of devices and their locations may be different from those shown in Exhibit 1. For each device, include the mounting height above the roadway and the mounting configuration, trailer or ground mount.
- Catalog cut sheets for all devices, including cabinets, support structures, traffic protection devices, power supply, and communication equipment. This information shall demonstrate that the devices meet all the requirements of this special provision. Include a cut sheet for the proposed rain repellent for the cameras.
- Structural analysis of each support structure, including trailers, signed by a professional engineer registered in Missouri.
- Approved traffic control plan in accordance with MoDOT's *Traffic Control for Field Operations* (located at <http://www.modot.org/business/manuals/trafficcontrol.htm>) shall be in place during the deployment and removal of the portable transportation management system. Proposed traffic control plan shall be submitted to and approved by the Engineer prior to deployment of the system.
- A block diagram and explanatory write up of the proposed communication system.
- A draft user's manual for the web site, showing every screen the user will encounter. The manual should demonstrate that the web site shall meet the requirements in this special provision.
- The graphic (base map and device symbols) proposed for the web site's map of the area.

Photos or video clips taken from the proposed camera locations, , demonstrating that the video coverage meets the requirements stated above.

- Calculations demonstrating that the proposed solar power systems will have the capability to:
 - Keep the equipment operating normally during two weeks without sun.
 - Recharge the discharge batteries while also powering the equipment with 16 hours of full sun.

Revise the design as directed by the Engineer to meet the specifications and resubmit it as many times as necessary until approved by the Engineer.

3.2 Construct the system in accordance with the approved design.

3.3 Provide and operate an internal only web site that permits the MoDOT staff to use the detectors, signs, and cameras. This web site shall have the following features.

- Users will need no special software on their computers. Assume the users' computers have a Windows 2000 operating system, an Internet browser, a DVD player, Microsoft Media Player, ActiveX, and Apple QuickTime.
- Each user shall have an individual password and a set of privileges set by the system administrator. People without an authorized password shall not have access to the site. The privilege system shall include at least three categories of user: system administrator (able to perform all functions, including assigning passwords and privileges to other users); operators (able to aim the cameras and post messages), and viewers (able to see the information coming from all devices, but unable to control the devices).
- At least 10 users shall be able to access the site simultaneously, viewing video without degrading performance. One operator should be allowed to control the system at any particular time.
- The main screen shall be a map or diagram of I-44 in the project area. It need not be to scale, but must show the individual lanes on I-44 and the ramps. It shall show each detection zone in each lane, each camera, and each dynamic message sign.
- Detection zones shall be represented by colored arrows oriented with the flow of traffic. When the average speed in the lane is above 45 MPH, the arrow shall be green. When below 25 MPH, red. Otherwise, yellow. If no current data is available, the arrow shall be gray. When the cursor hovers over one of the arrow symbols, a box shall appear giving the volume (vehicles per hour), occupancy (percent), and speed (miles per hour) in that lane. The values shall be averages (or smoothed averages) of values measured at one minute (or less) intervals. The arrow color and related data shall be updated automatically every minute with no need for any action by the user. The detection zones must also be clickable, opening information from each respective detection zone in either a pop-up window or side frame of the website.
- Dynamic message signs shall be represented by colored icons, green for blank signs, yellow for signs with messages, and gray for signs that are malfunctioning or cannot be monitored. When the cursor hovers over a sign symbol, a box shall appear giving the text of the message currently being displayed. The signs must also be clickable,

opening information from each respective sign in either a pop-up window or side frame of the website. If the message on the sign is unknown (because of a sign or communication malfunction), the box shall say so. When an authorized user left-clicks on a sign symbol or hyperlink, a window shall pop up, allowing the user to change the message on the sign. The rectangle color and current message shall be updated whenever conditions change, with no need for any action by the user.

- Cameras shall be represented by camera-shaped icons. They shall be blue for working cameras and gray for cameras that are malfunctioning or cannot be monitored. When the user left-clicks on a camera symbol, a window shall pop up displaying the video from the camera. If the user is authorized to control the camera, the window shall include a control panel that permits camera aiming, zooming, and manual override of the automatic iris and focus functions. This window shall enable the user to call up a preset view by selecting the view from a list of views. It shall be possible to display the video from the camera full screen. If an authorized user right clicks on the camera icon, a window will pop up that allows the user to create and name preset views and named sectors. The icons shall automatically change color to reflect the operational status of the cameras with no need for any action by the user.
- The system shall detect and report the beginning and end of alarm conditions, including:
 - Slow traffic (less than 25 mph) near the beginning of an exit ramp
 - Slow traffic (less than 25 mph) on the mainline
 - Stopped traffic near the beginning of an exit ramp
 - Stopped traffic on the mainline
 - No communication to multiple devices
 - Intermittent communication to multiple devices
 - No communication to (or no response from) one device
 - Intermittent communication with one device.
 - Loss of video from a camera
 - Low battery

A communication failure shall exist when a device does not respond to a command sent by the user or a computer at the web site, unless it responds to an automatic retry. The failure shall be labeled “no communication” until a later command produces a response. At that point, the log shall show the end of the “no communication” alarm and the beginning of the “intermittent communication” alarm. The system shall not be considered recovered until it has operated for one hour without another communication failure.

- The map shall have an icon for alarms. When a user left-clicks on this symbol, a window shall pop up displaying the alarm log. The log shall display the occurrence alarm conditions in chronological order, most recent first, except that all current

alarm conditions shall be at the beginning of log (in chronological order) regardless of when they first occurred. The current alarms shall be listed in a bold font, while alarms that are no longer current shall be in a regular font. As alarm conditions change, the log display shall automatically change accordingly. For each event, the log shall list the following information:

- Device(s) affected
 - Device location
 - Description of condition
 - Start date and time
 - End date and time
- The system shall automatically notify certain people of alarm conditions via e-mail. For each type of alarm, the system administrator shall provide a list of e-mail addresses to which the notification should be sent. The system administrator shall be able to update these addresses at any time.

3.4 Provide and operate an external web site that permits public access to real-time traffic information that is refreshed every 60 seconds with current camera snapshots, current DMS messages and current average speed that is displayed in pop-up message box when the mouse cursor is positioned over an icon, or the icon is clicked on, depicting the approximate location of the field devices on map display. The information contained within the message box shall be time and date stamped to indicate the time of the last refresh of traffic information. The public website shall include a map of the area being monitored, using real-time GPS coordinates of the devices to accurately locate them on the map. The map shall be to scale and user friendly to the satisfaction of the Engineer.

3.5 Device Setup

3.5.1 Configure each sensing device so that there is a detection zone covering each lane at the location. Calibrate and test the sensors to provide accurate measurements of volume, occupancy, and speed. Calibration shall be done or overseen in the field by someone certified by the sensor manufacturer to perform that work.

3.5.2 Adjust the brightness of each dynamic message sign so that the message can easily be read over the full range of lighting conditions at the sign. Ensure that the sign will be legible during bright summer sun, even if such conditions do not prevail at the time of setup.

3.5.3 Apply a rain repellent coating to the camera dome or enclosure window. Use a repellent appropriate for the material being coated.

3.5.4 For each camera, determine whether the camera is able to view activity in sensitive private areas, such as homes or yards. Provide the Engineer with a list and photos of all such locations.

Install a mask on the inside of the dome to prevent viewing those areas if the Engineer so requests.

3.5.5 Create presets for each camera after submitting a preset name list to the engineer for approval.

3.5.6 For each camera, create and title sectors for looking east, looking west, and for each ramp the camera can view.

3.6 Equipment Removal

3.6.1 At the end of the project, remove and dispose of all roadside equipment.

3.6.2 If wood poles were used, cut them off, grind the stump to at least 12 inches below grade (measured at the lowest point of the surrounding earth), remove the chips, fill the pit with topsoil. Restore and seed the area in accordance with the *Missouri Standard Specifications for Highway Construction*.

3.6.3 Complete all work by November 15, 2007.

4.0 Acceptance Testing

4.1 Prepare an acceptance test plan that describes the test procedures, test equipment, expected results of each test, and forms for recording the test results. The procedures must include:

- Visual inspection of all roadside equipment installations.
- Comparison of counts and average speeds reported by the system with those measured by observers in the field. Each detection zone (lane) shall be tested separately. Speeds shall be measured using temporary loops, piezoelectric sensors, or a radar gun or similar device operated by a trained, experienced operator. The sample size shall be at least 50 vehicles. To pass, the system shall provide count accuracy within five percent and speed accuracy within ten percent for every lane.
- Demonstration that all software features work as described in the user manual.
- Demonstration that all devices can be monitored and controlled from a user's computer.
- Demonstration that the video quality from every camera meets the requirements of this special provision.
- Demonstration that at least 10 users can use the system simultaneously.

Revise and resubmit the plan until it meets the Engineer's approval.

4.2 Conduct the testing in accordance with the approved plan in the presence of the Engineer's representative. The system must pass every test to be accepted.

4.3 After successful testing, submit the test results on the approved forms to the Engineer.

5.0 Operation and Maintenance

5.1 Ensure that the roadside equipment, web site, and communication links (except those between users and the Internet) operate normally and without interruption from May 1, 2007 to November 1, 2007. Conduct preventive and remedial maintenance, including replacement of damaged equipment, during that period.

5.2 Repair all malfunctions and damage within 48 hours. Notification of the need for such repairs shall be exclusively by e-mail to an address provided by the Contractor. Such notification shall sometimes come from the system itself, which is required to send e-mail notification of certain malfunctions. For problems not automatically recognized by the system, the notification shall come from a member of the MoDOT staff. The 48-hour repair period begins when the e-mail is sent. When the repair is complete, notify the Engineer by e-mail. The repair shall be deemed complete at the time that e-mail is sent, unless the Engineer's representative responds that the repair is not satisfactory.

5.3 When equipment is damaged by others, the Contractor may seek reimbursement from the damaging party for the cost of repair or replacement. However, this shall not affect the Contractor's responsibility to restore the equipment to normal operation within 48 hours.

5.4 Carry out all preventive maintenance procedures recommended by the manufacturers, following the schedules that the manufacturers recommend. Every two months, conduct a visual inspection of all roadside equipment. At that time, wash the solar panels, replace dirty air filters, and reapply rain repellent to the cameras.

6.0 Training

6.1 Prior to conducting training, revise the draft user manual to reflect comments from the Engineer and the actual operation of the software. Ensure that the screen shots in the manual exactly match those that the user sees on his computer. Provide the manual to the Engineer on a compact disc or other acceptable soft copy format.

6.2 Conduct a one-hour training session for up to ten people. Give each trainee a printed copy of the user manual and familiarize them with its contents. Allow each attendee to use the system, aiming the camera and posting test messages, under the trainer's supervision. Ensure that only test messages approved by the TMC Manager are posted and that all test messages are removed at the end of the training session. Lead a discussion of the types of malfunctions that may occur, how a user can recognize them, and how they should be reported for repair.

7.0 Method of Measurement

7.1 Measurement of the portable traffic management system will be made per day of service.

8.0 Basis of Payment

8.1 The sole compensation for all work described in this special provision, including incidental items necessary to complete the work, is the contract unit price per day of service. That amount shall be paid for each day between May 1, 2007 and November 1, 2007 when the system is fully operational as described within this document. **No payment** will be made for the following exceptions:

- Days prior to successful completion of acceptance testing.
- Days prior to training.
- Days beyond the 48-hour period (described in Section 5.2) that acceptable repairs for malfunctions and/or damages to the system have not been completed.

Item No.	Type	Description
	Day	Portable Traffic Management System – Option A
	Day	Portable Traffic Management System – Option B

EXHIBIT B
FIRM'S PRIOR EXPERIENCE

(Duplicate this page, or supply the information it requests, for each Firm and contract listed.)

PRIOR SERVICES PERFORMED FOR:

AGENCY NAME _____

CONTACT _____

PERSON _____ TITLE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

TELEPHONE _____ FAX NUMBER _____

E-MAIL ADDRESS _____

DESCRIPTION OF PROFESSIONAL SERVICES CONTRACT: _____

CONTRACT PERIOD: FROM _____ TO _____

SUMMARY OF SERVICES PERFORMED:

