**Request for Proposal (RFP)**

**For**

**Bluetooth Wireless Traffic Detection System**

**RFP # 270512**

Issued by:

State of Wisconsin

Department of Transportation

Division of Transportation System Development

Bureau of Traffic Operations

**Proposals must be submitted**

**no later than 2:00 PM CST**

**November 13, 2012**

Important: See building security access restrictions in Section 2.3

**Questions must be received in writing**

**No later than 5:00 PM CDT**

**October 24, 2012**

Submit questions by e-mail to: lyman.fuson@dot.wi.gov

Late proposals will not be accepted.

There will not be a public opening for this RFP.

For further information regarding this RFP contact:

Lyman Fuson

WisDOT Purchasing Unit

Phone: (608) 267-3628

Email: lyman.fuson@dot.wi.gov

Date of Issue: October 16, 2012

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# GENERAL INFORMATION

## Introduction

The purpose of this document is to provide interested parties with the information necessary to prepare and submit a proposal for providing a Wireless Traffic Detection System (System). The Wireless Traffic Detection System includes the procurement of several different types of Wireless Detection Devices (Devices) and related equipment, Central System Software (Software) to process the data collected by the Devices, and Vendor provided services related to training, support, and maintenance of the System.

The State, as represented by WisDOT, intends to use the results of this Request for Proposal (RFP) to award a contract(s) for the above listed Wireless Traffic Detection System. The contract administrator will be determined at the time the contract is awarded.

The Wisconsin Department of Transportation (WisDOT) Purchasing Unit is the sole point of contact for the State of Wisconsin (State) during the entire selection and award process. **The person responsible for managing the procurement and award process is Lyman Fuson (see contact information below). Contact with anyone else involved with this process without the prior authorization of the WisDOT Purchasing Unit may result in the disqualification of your proposal.**

 WisDOT Purchasing Unit Contact

Name: Lyman Fuson

Phone: (608) 267-3628

Email: lyman.fuson@dot.wi.gov

## Definitions

The following definitions are used throughout the RFP:

* Agency means the Wisconsin Department of Transportation
* Assembly means solar power assembly for a wireless traffic detection device
* ATMS means Advanced Traffic Management System
* ATP means Acceptance Test Procedure
* BAFO means Best and Final Offer
* BTO means the Bureau of Traffic Operations
* Contractor means a company or individual submitting a proposal in response to this RFP
* Department means the Wisconsin Department of Transportation
* Device means wireless traffic detection device
* DTSD means the Division of Transportation System Development
* DOT means the Wisconsin Department of Transportation
* DVB means a Disabled Veteran-Owned Business as certified by the Wisconsin Department of Commerce under S. 560.0335(3)
* Engineer means the WisDOT representative responsible for overseeing the project
* GPS means Global Positioning System
* HARN means High Accuracy Reference Network
* ITS means Intelligent Transportation System
* ITSNet means the WisDOT owned and operated ITS fiber optic communications network
* MAC means Media Access Control
* MBE means a Minority Business Enterprise as certified by the Wisconsin Department of Commerce under S. 560.036(2).
* NEMA means National Electrical Manufacturers Association
* NAD 87 means North American Datum of 1987
* Proposer means a company or individual submitting a proposal in response to this RFP
* RFP means Request for Proposal
* SDD means WisDOT Standard Detail Drawings
* State means the State of Wisconsin
* STOC means the WisDOT Statewide Traffic Operations Center in Milwaukee, Wisconsin
* System means the entire wireless traffic detection system procured under this contract
* TTY means Telecommunications Relay System
* Vendor means a company or individual submitting a proposal in response to this RFP
* WGS 84 means World Geodetic System of 1984
* WisDOT means the Wisconsin Department of Transportation

## Project Scope

WisDOT desires to establish a contract(s) for the procurement of a Wireless Traffic Detection System. The proposal includes acquisition and procurement of the following items, which collectively will comprise the entire System:

* Standard Wireless Traffic Detection Device
* Cabinet or Rack Mountable Wireless Traffic Detection Device\*
* Portable Wireless Traffic Detection Device\*
* Solar Power System Assembly for a Wireless Traffic Detection Device
* Cellular Modem for a Wireless Traffic Detection Device
* Wireless Traffic Detection Central System Software
* Wireless Traffic Detection System Service, Support, and Maintenance

\*Note: Specifications for three types of Wireless Traffic Detection Devices have been included in this RFP: Standard, Cabinet/Rack Mounted, and Portable. Vendors are only required to provide the Standard Wireless Traffic Detection Device type in order to submit a proposal in response to this RFP and to be awarded a contract. Higher proposal scores will be awarded to Vendors that are able to provide all three Wireless Traffic Detection Device types.

The procured System will be integrated with the existing WisDOT Advanced Traffic Management System (ATMS) used by the Statewide Traffic Operations Center (STOC) to manage Intelligent Transportation System (ITS) devices located across the state. The proposed Bluetooth Wireless Traffic Detection System will be utilized to provide:

* Vehicle Travel Time Calculations
* Vehicle Origin and Destination Information
* Vehicle Route Choice Information
* Transportation System Performance Management

Selected Vendor(s) will be required to coordinate with TransCore, provider of the TransSuite ATMS central system software (utilized in the STOC to manage statewide ITS devices), to integrate the Wireless Traffic Detection System. All effort and funding required by TransCore to integrate the new System is not included in this contract and will be handled separately by the Department.

All materials procured and services performed under this Contract shall be completed in accordance with the current Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction (<http://roadwaystandards.dot.wi.gov/standards/stndspec/index.htm>), all supplemental and interim specifications issued by the Department, and all requirements included in this document. All Vendors are to retain a copy of this document; if award this contract, the requirements included in this document will become the contract terms and conditions.

Conditions of the contract that include the word “must” or “shall” describe a mandatory requirement. All specifications are defined as mandatory minimum requirements unless otherwise stated.  Failure to meet a mandatory requirement may result in proposal disqualification. In addition to the mandatory requirements included in this RFP, WisDOT has also identified desired System features and functionality. Desired features and functionality will be scored as part of the evaluation process.

 Other State Agencies may also utilize this RFP for procurement products and/or services included in the contract.

## Clarification and Revisions to the RFP

Any questions concerning this RFP must be submitted in writing on or before October 23, 2012 at 5:00 p.m. CST to Lyman Fuson, WisDOT Purchasing Unit (Email: lyman.fuson@dot.wi.gov). Contact with any other Department or State employee(s) concerning this RFP is prohibited, except as authorized by the RFP manager during the time period beginning on the date of release of the RFP and ending after the notice of intent to award the contract is released.

Vendors are expected to raise any questions, exceptions, or additions concerning this RFP document during this stage of the RFP process. If a Vendor discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in the RFP, the Vendor is to notify the above named individual of such error immediately and request a modification or clarification to the RFP. In the event that it becomes necessary to provide additional clarifying information, or to revise any part of this RFP, revisions, amendments, and/or supplements, an amendment will be posted to Vendornet. Each proposal shall stipulate that it is predicated upon the requirements, terms, and conditions included in this RFP and any supplements or revisions thereof.

## Reasonable Accommodations

WisDOT will provide reasonable accommodations, including providing informational material in an alternative format, for qualified individuals with disabilities upon request. If you think you will need additional accommodations, contact Lyman Fuson with the WisDOT Purchasing Unit at (608) 267-3628 (voice) or the Wisconsin Telecommunications Relay System (TTY) at (800) 947-3529.

## Calendar of Events

Listed below are specific and estimated dates and times for actions related to this RFP. The actions with specific dates must be completed as indicated unless otherwise changed by WisDOT. In the event that WisDOT finds it necessary to change any of the specific dates and times identified below, it will do so by issuing an amendment to the RFP. It is the proposers responsibility to check Vendornet for amendments.

|  |  |
| --- | --- |
| DATE | EVENT |
| October 16, 2012 | RFP issue date |
| October 24, 2012 | Last day for proposers to submit questions (5:00 p.m. CST)  |
| October 26, 2012 | Question answers and RFP Amendments posted (tentative) |
| **November 13, 2012** | **All proposals due on or before 2:00 p.m. CST** |
|  | The following dates are subject to change |
| December 11, 2012 | Begin Wireless Traffic Detection Field Study |
| December 20, 2012 | End Wireless Traffic Detection Field Study |
| January 3, 2012 | Wireless Traffic Detection Field Study Report due |

## Contract Term and Funding

The contract shall be effective on the date indicated on the purchase order or contract and will continue for one (1) year from that date. By mutual agreement of the Agency and the Vendor, the contract may be renewed for up to four (4) additional one (1) year periods for a maximum potential contract duration of five (5) years.

## New or Deleted Items

WisDOT reserves the right to add new products to this contract based on technological advances or changes to standards unknown at the time of this bid. Vendor(s) prices must be comparable to current contract pricing for similar products. The Vendor must promptly notify the WisDOT Purchasing Department of new or discontinued products within 30 days.

## Minority Business Enterprise (MBE)

The Wisconsin Department of Transportation is committed to the promotion of minority businesses in the State’s purchasing program. Authority for this program is found in Wisconsin Statutes 15.107(2), 16.75(3m), and 16.755.

Vendors are strongly urged to use due diligence to further this policy by setting up subcontracts to state-certified Minority Business Enterprises (MBE) and/or by using such enterprises to provide goods and services incidental to this contract (second-tier suppliers), with a goal of awarding 5% of the contract cost to such enterprises. An MBE means a business certified, or certifiable, by the Wisconsin Department of Commerce under Statute 560.036(2).

Vendors must submit the attached WisDOT MBE Program Awareness, Compliance & Action Plan (Attachment C) indicating their proposed utilization of state-certified minority businesses for this contract. Contact the State’s Minority Business Manager for assistance in locating certified firms at (608) 267-3293 or the WisDOT Minority Business Program Coordinator at (608)-267-2886. A listing of State of Wisconsin certified minority businesses, as well as the services and products they provide, is located on the State-certified MBE web site ([www.doa.wi.gov/mbe](http://www.doa.wi.gov/mbe)).

## Disabled Veteran-Owner Business (DVB)

Wisconsin statutes support purchasing goods and services from Disabled Veteran Owned Businesses (DVB) located in Wisconsin. Vendors are strongly urged to use due diligence to further this policy by setting up subcontracts to state-certified DVBs and/or by using such enterprises to provide goods and services incidental to this contract (second-tier suppliers), with a goal of awarding 5% of the contract cost to such enterprises. A DVB means a business certified, or certifiable, by the Wisconsin Department of Administration under Statute 16.283 (3).

"Disabled Veteran" means a person who is verified by the Department of Veterans Affairs as being all of the following at the time the person applies for certification:

1. A veteran as defined in Statute 45.01(12),
2. A resident of the state of Wisconsin, and
3. A person who is in receipt of an award from the U.S. Department of Veterans Affairs of a service–connected disability rating under 38 USC 1114 or 1134 of at least 30%.

Vendors that feel they qualify should seek certification from the Department of Administration and indicate such in Attachment C of the Request for Proposal.

## Certification for Collection of State Sales and Use Tax

The State of Wisconsin shall not enter into any contract with a Vendor, and reserves the right to cancel any existing contract with a Vendor, if the Vendor has not met or complied with the requirements of Statute 77.66 of the State of Wisconsin and any other related statutes regarding certification for collection of State Sales and Use Tax.

## VendorNet Registration

State of Wisconsin purchasing information and the Vendor notification service is available to all businesses and organizations that want to do business with the State. VendorNet access is available to anyone on the Internet at: <http://vendornet.state.wi.us>. VendorNet has information on State purchasing practices and policies, goods and services that the State buys, and tips on selling to the State.

Vendors may use the same website address to request inclusion on the State Bidders List for goods and services that the business or organization wants to sell to the State. A subscription with notification guarantees the business or organization will receive an email message each time a State agency, including any campus of the University of Wisconsin System, posts a Request for Bid or a Request for Proposal in their designated commodity/service area(s) with an estimated value over $25,000.00.

Businesses and organizations without internet access may elect to receive paper copies in the mail. Increasingly, State agencies are using VendorNet to post simplified bids valued at $25,000.00 or less. Vendors also may receive email notices of simplified bid opportunities. For questions about VendorNet, call the VendorNet Information Center at (800) 482-7813 or, for Madison area businesses and organizations, call (608) 264-7898.

Vendors may also register for WisDOT’s VendorNet database by accessing the WisDOT Purchasing website at: [www.dot.wisconsin.gov/business/purchase/index.htm](http://www.dot.wisconsin.gov/business/purchase/index.htm), or by contacting purchasing via email at: tipscorrespondence.dbm@dot.wi.gov.

# PREPARING AND SUBMITTING A PROPOSAL

## General Instructions

The evaluation of a Vendor(s) will be based on the information submitted in the proposal, information obtained from Vendor references, interviews with the Vendor, Vendor presentations, Field Test results, and other pertinent information available to the Department. Proposers must respond to all requirements clearly and completely. Failure to respond to each of the requirements in the RFP may result in rejection of the proposal. Elaborate proposals (e.g. expensive artwork), beyond that sufficient to present a complete and effective proposal, are not necessary and/or desired. WisDOT encourages all proposers to print their submission double-sided to save paper.

## Incurring Costs

The State of Wisconsin is not liable for any costs incurred by proposers in responding to this RFP. This includes Vendor participation in any interviews, presentations, demonstrations, or Field Tests.

## Submitting Proposals

Proposers must submit, in a sealed package, **one (1) original (clearly labeled), one (1) electronic version (on CD, DVD, or USB flash drive), and five (5) copies** of all materials required for acceptance of their proposal **on or before 2:00 p.m. CST, November 6, 2012** to:

*U.S. Mail:* *UPS, Fed Ex, etc.:*

Purchasing Unit Purchasing Unit

Wisconsin Department of Transportation Wisconsin Department of Transportation

4802 Sheboygan Ave., Room 751 4802 Sheboygan Ave., Room 751

P.O. Box 7396 Madison, WI 53705

Madison, WI 53707-7396

A proposer may also hand deliver their proposal package on or before the date and time listed above. **Because of increased building security, access to the WisDOT Purchasing Office is restricted and may cause delay if hand delivering your proposal. Allow ample time for security clearance to Room 751 when hand delivering a proposal.**

All proposals must be time-stamped by the WisDOT Purchasing Office by the stated time. Proposals not so stamped will not be accepted. Receipt of the proposal by the State mail system does not constitute receipt of the proposal by the WisDOT Purchasing Office.

WisDOT does not accept facsimile machine or email submitted proposals. All proposals must be packaged, sealed, and show the following information on the outside of the package:

* Proposer's Name and Address
* Request for Proposal Title
* Request for Proposal Number
* Proposal Due Date

COST PROPOSAL: Submit one (1) original plus one (1) copy (Refer to Attachment D). Seal in an envelope and submit within the proposal package. The outside of the envelope must clearly state “Cost Proposal” and the name of proposer.

## Proposal Organization and Format

Proposal should be typed and submitted on 8.5” by 11” paper and bound securely with page numbers clearly indicated on each page. Proposers responding to this RFP must comply with the following format requirements:

1. Tab 1 - COVER LETTER, RFP SIGNATURE PAGES, DESIGNATION OF CONFIDENTIAL & PROPRIETARY INFORMATION FORM, and PROPOSER INFORMATION SHEET. Include here the cover letter, the RFP signature pages one and two, any addendum/amendment signature pages, the designation of confidential and proprietary information form found in the front section of the RFP, completed Attachment A – Proposer Information Sheet found at the back of this RFP, and the Vendor Agreement Form.

Proposals submitted in response to this RFP must be signed by the person in the proposer's organization who is responsible for the proposal submittal, and all prices included in the proposal. Each proposal shall stipulate that it is predicated upon the requirements, terms, and conditions of this RFP and any addendums/amendments thereof.

1. Tab 2 - FINANCIAL STABILITY DOCUMENTATION (If requested). Proposers responding to this RFP must be able to substantiate their financial stability by providing a letter from either the proposer’s bank or auditor verifying the Vendors financial stability. Do not submit financial statements/documents as part of the initial RFP submittal. If necessary, the State may request additional reports on financial stability from an independent financial rating service in order to further substantiate Vendor stability.
2. Tab 3 - RESPONSE TO PROPOSER INFORMATION AND SOLUTIONS (total page limit of 25 pages including appendices). Responses to the requirements in the proposer information and solutions section must be in the same sequence and numbered as they appear in this RFP. Include a completed Attachment B – References Sheet which can be found at the back of this RFP.
3. Tab 4 - WISDOT MINORITY BUSINESS ENTERPRISE (MBE) PROGRAM AWARENESS, COMPLIANCE, AND ACTION PLAN. Proposers must detail their action plan for potential MBE subcontracts and/or MBE second-tier agreements. Include here completed Attachment C found at the back of this RFP.
4. Separate Sealed Envelope: COST PROPOSAL, (clearly labeled)– Attachment D of the RFP (total page limit of 10 pages including appendices). Provide cost information as detailed in Section 7.0 of this RFP. All costs, as requested, for furnishing the product(s) and/or service(s) must be included in this proposal. The cost proposal must NOT be listed in any other part of the proposal response.

## Multiple Proposals

Multiple proposals from an individual Vendor or proposer are permissible. Each proposal must fully conform to the requirements for proposal submission. Each such proposal must be separately submitted and labeled as Proposal #1, Proposal #2, etc. on each page included in the RFP response.

## Withdrawal of Proposals

Proposals shall be irrevocable until contract award unless the proposal is withdrawn. Proposers may withdraw a proposal, in writing, at any time up to the proposal due date and time or upon expiration of 180 days after the due date and time. The written withdrawal notice must be received by the Purchasing Agent or Purchasing Supervisor managing the RFP process. The notice must be signed by an authorized representative of the proposer. If a previously submitted proposal is withdrawn before the proposal due date and time, the proposer may submit another proposal at any time before the proposal due date and time.

# PROPOSAL SELECTION AND AWARD PROCESS

## Evaluation Committee

The WisDOT evaluation committee will consist of members who have been selected because of their expertise and knowledge of the service(s) and/or product(s) that are the subject of this RFP. Proposers may not contact members of the evaluation committee at any time during the selection process unless at the direction of WisDOT.

## Preliminary Evaluation

All proposals will be reviewed to determine if the mandatory contract requirements are met. Conditions of the contract that include the words “must” or “shall” describe a mandatory requirement. All specifications are defined as mandatory minimum requirements unless otherwise stated. In the event that all proposers do not meet one or more of the mandatory requirements, WisDOT reserves the right to continue the evaluation of the proposals that most closely meet the mandatory requirements of this RFP. In addition to the mandatory requirements included in this RFP, WisDOT has also identified some desired System features and functionality. Desired features and functionality are preferred but not required. Proposals will be scored based on the vendors ability to meet the desired system features and functionality.

## Right to Reject Proposals

The Department reserves the right to reject any and all proposals submitted in response to this RFP.

## Proposal Scoring

Accepted proposals will be reviewed by an evaluation committee and scored against the stated criteria. The committee may review references, request interviews/presentations, request demonstrations, or request a field test be performed. The resulting information will be used to score the proposals. Proposals from state-certified MBE and DVB may have points weighted by a factor of 1.00 to 1.05 to provide up to a five percent (5%) preference to these businesses. The evaluation committee's scoring will be tabulated and proposals ranked based on the numerical scores received.

## Evaluation Criteria

The proposals will be scored using the following criteria:

|  |  |  |
| --- | --- | --- |
|  | **Description** | **Points** |
| A. | Proposer Information (Section 5.0) |  | 480 |
|  |  Proposer History and Capabilities | 40 |  |
|  |  Wireless Traffic Detection Devices | 120 |  |
|  |  Device and Hardware Delivery | 10 |  |
|  |  Central System Software | 160 |  |
|  |  System Service and Support | 40 |  |
|  |  Proposer Project References | 80 |  |
|  |  Acceptance Test Procedure | 30 |  |
|  |  |  |  |
| B. | Desired Device/System Functionality (Section 6.0) |  | 170 |
|  |  Wireless Signal Strength | 25 |  |
|  |  Bluetooth Scanning Frequency | 25 |  |
|  |  Wi-Fi Detection Technology | 30 |  |
|  |  MAC Address Data Encryption | 15 |  |
|  |  Interoperability and Open Standards | 10 |  |
|  |  Wireless Device Antenna | 10 |  |
|  |  Software Licensing | 15 |  |
|  |  Value Added Solutions | 40 |  |
|  |  |  |  |
| C. | Cost Proposal (Section 7.0) |  | 300 |
|  |  Deployment Scenario One | 90 |  |
|  |  Deployment Scenario Two | 90 |  |
|  |  Deployment Scenario Three | 90 |  |
|  |  Quantity Cost Reductions | 30 |  |
|  |  |  |  |
| D. | Overall Clarity and Quality of Proposal |  | 50 |
|  |  |  |  |
|  | TOTAL |  | 1000 |

## Proposer Shortlist

Top-scoring proposers, based on an evaluation of the written proposal, may be selected by the Department for further analysis. Additional analysis may include proposer interviews, presentations, demonstrations, field studies, reference checks, and/or analysis of other pertinent proposer information. If WisDOT opts to utilize a shortlist as part of the RFP selection process, the number of proposers to be shortlisted will vary based on the total number of proposers and the proximity of written proposal evaluation scores.

## Interviews, Presentations, and Demonstrations

If requested by the Department, top-scoring proposers (based on an evaluation of the written proposal) may be required to participate in interviews, presentations, or demonstrations to support and/or clarify their proposal. The State will make every reasonable attempt to schedule each interview, presentation, or demonstration at a time and location that is agreeable to the proposer. Failure of a proposer to complete a scheduled interview/presentation with the State may result in rejection of that proposer's proposal. WisDOT may conduct site visits of the proposer’s facilities to clarify or confirm information included in the proposal.

## Proposer Field Study and Report

If requested by the Department, top-scoring proposers (based on an evaluation of the written proposal) may be required to perform a Field Study demonstrating the proposer’s System. The Field Study will consist of the deployment of up to six Wireless Traffic Detection Devices on State roadways at locations identified by the Department. Proposers asked to participate in the Field Study will be deploying Devices in similar locations to make the Field Test as consistent and fair as possible. The proposer will be responsible for the installation of all Devices required for the Field Test. WisDOT personnel will be present during the installation of the Devices included in the Field Test and during the removal of the Devices after the Field Test has been completed.

Vehicle data will be collected by the Devices for a specified period of time as determined by the Department. Each proposer will be required to provide the Department with both raw Device detection data as well as data processed by the proposer’s Software. Processed data is to include both travel time information and origin/destination information. Each Vendor will be required to submit a Field Study Report detailing the results of the Field Study.

The State will make every reasonable attempt to schedule the Field Test at a time and location that is mutually agreeable to the proposer and DOT. Failure of a proposer to complete the scheduled Field Test or subsequent Field Test Report may result in rejection of that proposer's proposal. WisDOT may conduct a field inspection of any and all Devices while deployed during the Field Test.

## Final Evaluation

Upon completion of any interviews, presentations, demonstrations, and Field Studies the WisDOT evaluation team will review prior evaluations and make adjustments to the requirements scores based on the information obtained during the final evaluation process, reference checks, as well as any other pertinent proposer information.

## Award and Best and Final Offers (BAFO)

Award will be granted in one of two ways. The award may be granted to the highest scoring responsive and responsible proposer(s) after the original evaluation process is complete. Alternatively, the highest scoring proposer(s) may be requested to submit a Best and Final Offer (BAFO). If WisDOT requests a BAFO, the proposals will be reevaluated against the stated criteria, scored, and then ranked by the evaluation committee. The award will then be granted to the highest scoring proposer(s) following that process. Proposers should not expect WisDOT to request a BAFO prior to contract award.

## Notification of Intent to Award

All proposers who respond to this RFP will be notified in writing of WisDOT's Intent to Award the contract(s) as a result of the RFP. After notification of the Intent to Award is made, and under the supervision of Department staff, copies of all proposals will be available for public inspection from 8:00 a.m. CST to 4:00 p.m. CST, in the WisDOT Purchasing Section, Room 751, 4802 Sheboygan Avenue, Madison, Wisconsin. Proposers should make appointments to ensure that space and time are available for the review. Contact the Purchasing Agent managing the RFP process to schedule an appointment.

## Multiple Contract Awards

WisDOT reserves the right to award this contract to multiple Vendors provided all of the Vendors receiving a contract each meet all of the requirements included in the RFP. Vendor proposals and/or pricing contingent on the number of contracts awarded from this RFP will be rejected.

## Appeals Process

The appeals process applies only to Requests for Proposals for services that result in a contract greater than $25,000. Notices of Intent to Protest and protests must be formally made in writing. Protestors should make their protests as specific as possible and must identify the Wisconsin Statute(s) and Wisconsin Administrative Code provision(s) that are alleged to have been violated.

The written notice of Intent to Protest the Intent to Award a contract must be filed with Mark Gottlieb, P.E., Secretary, Wisconsin Department of Transportation, 4802 Sheboygan Avenue, P.O. Box 7910, Madison, Wisconsin 53707, phone: (608) 266-1114, facsimile: (608) 266-9912, and received in his office no later than five (5) working days after the notice of Intent to Award is issued. All written protests must be received in his office no later than ten (10) working days after the notice of Intent to Award is issued.

The decision of the head of the procuring agency or Department may be appealed to the Secretary of the Wisconsin Department of Administration within five (5) working days of issuance, with a copy of such appeal filed with the procuring Agency or Department. The appeal must allege a violation of a Wisconsin Statute or a provision of the Wisconsin Administrative Code.

## Negotiate Contract Terms

The Department reserves the right to negotiate the terms of the contract, including the award amount, with the selected proposer(s) prior to entering into a contract. If contract negotiations cannot be concluded successfully, the Department reserves the right to reject the proposal.

# MANDATORY CONTRACT REQUIREMENTS

Submit all response information for this section within Tab 3 of the Vendor proposal. Refer to Section 2.4 of this RFP for information on proposal submission format requirements**.** The requirements identified in this section are mandatory and the proposer must satisfy them as a pass/fail pre-screening requirement. Any proposal submitted not in compliance with any of the mandatory requirements may be disqualified, rejected, not evaluated, and/or not scored.

## System Deployment History

The proposed Wireless Traffic Detection System must have been marketed and deployed under field conditions for a minimum of one year with details provided upon request. The System includes both the Wireless Traffic Detection Devices and the central system software responsible for Device management and data processing. This requirement shall not apply to next generation Devices introduced to replace older style devices and newer versions of central system software replacing an older software version.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Project References

Each Vendor must include in their proposal a list of project references (minimum of three and a maximum of four) for projects the proposer has completed. The proposer will need to identify the organization and/or client for which the project was completed and their contact information as part of the reference. Potential Subcontractors and/or WisDOT staff cannot be considered as references. Vendor submission of a proposal and inclusion of a reference will constitute Vendor approval for the Department to contact the reference. The Department will determine which, if any, references to contact and/or visit to assess the quality of work performed and/or to see the product in use. The proposer will not be present during any reference checks and/or site visits. WisDOT may also utilize other pertinent sources of information regarding the products and/or services provided by the proposer.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Contract Quantities

The quantities identified for each of the bid items in the three deployment scenarios included in the Cost Proposal are for proposal scoring purposes only. The Department does not guarantee the purchase of any specific bid item quantities. Any proposals that state that the Department must guaranty to purchase a specific quantity or dollar amount may be disqualified.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Subcontractors

The Vendor will be responsible for contract performance when Subcontractors are used. Whenever or wherever a Subcontractor is used by the Vendor, the Subcontractor must abide by all terms and conditions of the Vendor contract. If a Subcontractor is to be used for any part of the contract, the Vendor must clearly explain their participation as part of the proposal.

[ ]  Have read, understand, and will comply [ ]  Will Not Comply

## Wireless Traffic Detection Device Technology

All Wireless Traffic Detection Devices must be capable of detecting vehicles using Bluetooth wireless technology. All Devices procured under this contract are required to be able to detect Bluetooth MAC addresses from electronic devices with Bluetooth wireless technology in travelling vehicles.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Wireless Traffic Detection Device Types

Specifications for three types of Wireless Traffic Detection Devices have been included in this RFP: Standard, Cabinet/Rack Mounted, and Portable. Vendors are only required to provide the Standard Wireless Traffic Detection Device type in order to submit a proposal response to this RFP and be awarded the contract. To score the Cost Proposal, if a Vendor is unable to provide a Cabinet/Rack Mounted Wireless Detection Device, a Portable Wireless Detection Device, or both the cost of the Standard Wireless Detection Device will be used in place of the unavailable Device type.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Wireless Traffic Detection Device Clock Synchronization

The Vendor will provide devices with an internal clock that is automatically synchronized to the GPS master clock on a daily basis, at a minimum, without the need to connect to an Ethernet or cellular phone network. If there is a loss of the GPS signal, the Device’s internal clock shall remain stable to the last known good GPS observation with an accuracy of ±1 second per day or better.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Wireless Traffic Detection Device Output

The Vendor will make all necessary arrangements to allow WisDOT to obtain raw, unprocessed wireless traffic detection data directly from all Devices procured under this contract for the life of the Device, regardless of whether WisDOT continues to use the Vendor’s wireless traffic detection central system software, procured as part of this contract, to process that data. Raw, unprocessed wireless detection data means time-stamped MAC address observations before they have been matched, filtered for outliers, truncated, or encrypted. Failure to provide WisDOT with a means to obtain raw, unprocessed detection data directly from the Devices without the need to utilize the Vendor’s Software will result in rejection of the Vendors proposal.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Central System Software Server

The Vendor may propose a Wireless Traffic Detection System that includes central system Software installed on a server located either at a WisDOT facility or at a third-party location chosen by the Vendor and approved by the Department. If the Software is to be hosted on a server located at a WisDOT facility, the Department will be responsible for acquisition of the server. For proposals including a WisDOT hosted central system Software, an amount equal to $6,500.00 will be added to the Cost Proposal to account for the funding needed by the Department to acquire the server.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Detection Data Ownership

Regardless of whether the Wireless Traffic Detection Central System Software supplied by the Vendor is hosted on a server located at a WisDOT facility or at a Vendor designated facility, WisDOT will retain ownership rights to both the raw unprocessed data and the data processed by the wireless traffic detection central system Software. If the Software is hosted on Vendor servers, the Vendor will be required to provide both raw and processed data to WisDOT on a daily basis (at a minimum). The Vendor will also be permitted ownership rights to the data.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Hardware/Software Specification Sheets, Documentation, Manuals, and Instructions

The Vendor will be responsible for providing the Department with a minimum of five copies of all product specifications, documentation, manuals, and instructions for the hardware and software procured under this Contract. The Vendor will also be responsible for providing the Department with an electronic document (in PDF format) of each of the aforementioned items. At a minimum this shall include the following hardware and software:

* Standard Wireless Traffic Detection Device
* Cabinet or Rack Mountable Wireless Traffic Detection Device\*
* Portable Wireless Traffic Detection Device\*
* Solar Power System for Wireless Traffic Detection Device
* Cellular Modem Communications for Wireless Traffic Detection Device
* Traffic Detection Central System Software
* Wireless Traffic Detection System Service, Support, Training, and Maintenance

\*Note: Specifications for three types of Wireless Traffic Detection Devices have been included in this RFP: Standard, Cabinet/Rack Mounted, and Portable. Vendors are only required to provide the Standard Wireless Traffic Detection Device type in order to submit a proposal in response to this RFP and to be awarded a contract. Higher proposal scores will be awarded to Vendors that are able to provide all three Wireless Traffic Detection Device types.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Coordination with TransCore

The selected Vendor will be required to coordinate with TransCore, provider of the TransSuite ATMS central system software currently utilized by the STOC to manage statewide ITS devices, to integrate the Wireless Traffic Detection System. All efforts and additional costs, if any, on the part of the Vendor to integrate the Wireless Traffic Detection System into the existing WisDOT ATMS are to be included in the costs in the Vendor’s proposal. All effort and/or funding required by TransCore to integrate the Wireless Traffic Detection System is not included in this contract and will be handled separately by the Department.

During the term of this contract, WisDOT may elect to upgrade the current ATMS software or implement an entirely new ATMS central system software. If either of these events were to occur, the Vendor will be required to coordinate with TransCore or the current ATMS provider in order to assist with integration of the Devices and Software into the ATMS.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Warranty and Support

The Vendor will warranty the hardware and software procured under this Contract for a minimum of one year from the date of WisDOT acquisition or WisDOT approval of the Acceptance Test associated with that particular item, whichever is later. The Vendor will provide troubleshooting support and assistance for all hardware and software procured under this contract for the duration of the warranty period and subsequent years as part of WisDOT’s annual service and support contract with the Vendor. Refer to individual hardware and software specifications included with this RFP for additional warranty, service, and support information.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

## Acceptance Testing

As part of the response to this RFP, the Vendor will be required to submit an Acceptance Test Procedure (ATP) that will be used to verify all required features and functionality of the Wireless Traffic Detection System, including all hardware and software, included in the RFP. In addition to the required functionality, the ATP should also include all desired features and functionality that the Vendor has indicated their proposed System can provide. If awarded the contract, WisDOT will work with the Vendor to make any necessary revisions and/or modifications to the ATP before being formally adopted by the Department for the project.

If, during the course of performing the ATP, Department staff determine that the System or any hardware/software performs unfavorably or fails any part of the acceptance test; the identified problems will need to be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification of the deficiency by the Department. The Department will restart the ATP once all deficiencies have been sufficiently addressed. If the Vendor is again unable to demonstrate all of the functionality requirements identified in the ATP, the Department reserves the right to reject the Vendor’s proposal.

[ ]  Have Read, Understand, and Will Comply [ ]  Will Not Comply

# PROPOSER INFORMATION

Submit all response information for this section within Tab 3 of the Vendor proposal. Refer to Section 2.4 of this RFP for information on proposal submittal format requirements**.** The Device/System features and functionality identified in this section are required and/or mandatory. All Vendor proposals that do not include the features and/or functionality included in this section may be rejected.

## Proposer History and Capabilities

Describe the organization/company's experience and capabilities providing similar products and services to those required under this contract. Outline the organization/company’s history relative to providing similar products and services. Do not include specific and/or detailed project deployment information in this section; this information is to be included in the Project References section of the proposal.

## Wireless Traffic Detection Devices

Describe the three different wireless traffic detection Devices\* (Standard, Cabinet/Rack Mountable, and Portable) that will be procured under this contract. Describe the Device deployment history and evolution of the devices throughout the organization/company’s history as well as plans for future Device development and enhancement. All Device product lines must have been marketed and deployed under field conditions for a minimum of one year with details provided to WisDOT upon request. Refer to individual Device specifications included in Attachments E, F, and G for detailed requirements for each Device type. Do not include project specific Device deployment information in this section; this information is to be included in the Project References section of the proposal.

\*Note: Specifications for three types of Wireless Traffic Detection Devices have been included in this RFP: Standard, Cabinet/Rack Mounted, and Portable. Vendors are only required to provide the Standard Wireless Traffic Detection Device type in order to submit a proposal in response to this RFP and to be awarded a contract. Higher proposal scores will be awarded to Vendors that are able to provide all three Wireless Traffic Detection Device types.

## Device and Hardware Delivery

Proposer must submit documentation outlining the delivery time for all Devices and hardware included in this contract. Delivery time should be given for each bid item and is to be given in business days and based on the total time between Vendor receipt of the order from the Department and receipt of the hardware by Department. The delivery times identified by the Vendor will become the required delivery time for the contract if awarded to that proposer.

After award, if the Vendor fails to complete delivery of the product within the Vendor specified delivery time, WisDOT reserves the right to deduct from the invoice one percent (1.0%) the total cost of that order for each business day that the order is late. A business day is defined to be Monday through Friday, from 8:00 AM to 5:00 PM, excluding State recognized holidays. It is at the discretion of WisDOT as to whether it will accept partial shipments in these circumstances. This deduction shall be treated not as a penalty, but as a fixed and agreed upon liquidated damages due the State from the Vendor. Permitting the Vendor to continue and finish delivery of the material after the required delivery time shall in no way operate as a waiver on the part of WisDOT of any of its rights under the contract. Any deduction shall not exceed the full amount of the invoice.

## Wireless Traffic Detection Central System Software

Describe the Software that will be procured under this contract. Specify how the Central System Software meets the requirements included in this RFP and Central System Software Specification included in Attachment J. Outline the Software deployment history and evolution of the Software throughout the organization/company’s history as well all plans for future Software development and enhancements. The Software product must have been marketed and deployed under field conditions for a minimum of one year with details provided to WisDOT upon request.

The Vendor has the option to provide Software hosted on a server located either at a WisDOT facility or at an alternate location chosen by the Vendor and approved by the Department. For Vendor’s proposing a third party hosted Software solution, the Vendor must identify and describe the location where the server running the Software will be located. In either hosting scenario, the proposal is to include information on how the Software will be accessed and managed. If the Software is hosted on a server located at a WisDOT facility, the Department will be responsible for acquisition of the server and $6,500.00 will be added to that proposer’s proposal to account for WisDOT’s expenditure to acquire the server.

WisDOT currently uses TransCore’s TransSuite ATMS central system software to manage the statewide network of ITS devices; describe the organization/company’s prior history integrating the Wireless Traffic Detection Central System Software with the TransSuite ATMS software. Vendors that do not have experience integrating the Software with the TransSuite ATMS software or have additional experience integrating the Software with other ATMS software should describe their history integrating the Software with other ATMS software. Refer to Appendix F – Procurement Specifications for additional Software requirements. Do not include project specific Software deployment information in this section; this information is to be included in the Project References section of the proposal.

## System Service and Support

Describe the service and support program provided for all hardware and software procured under this contract. The description should include service and support provided by the Vendor during the individual bid item warranty period, during each optional year of contracted service and support with the Vendor, and any differences between the warranty period and the yearly service and support period. Identify any maximum limits to the number of Vendor site visits, number of meetings attended by the Vendor, Vendor provided service and support hours, or other limits during each optional year of contracted service and support.

## Proposer Project References

Proposer must include in their proposal a list of project references (minimum of three and no more than four) that the proposer has completed. The proposer will need to identify the organization and/or client for which the project was completed. Each project must have been completed within the last three years and be of a similar nature to that required by this solicitation. No more than one project is to be included for any one organization and/or client. Include a point of contact (person’s name, company name, address, telephone number, and email address) and a description for each project that was the basis for the business relationship. A completed Attachment B – References Sheet will be considered part of the formal response to this section. Potential Subcontractors and/or WisDOT staff cannot be considered as references.

The Department will determine which, if any, references to contact and/or visit to assess the quality of work performed, the personnel assigned to the project, and/or to see the product in use. The proposer will not be present during any reference checks and/or site visits. If contacted, all references will be asked to verify that a high level of satisfaction was provided. WisDOT may also utilize other pertinent sources of information regarding the products and/or services provided by the proposer.

## Acceptance Test Procedure

As part of the response to this RFP, the Vendor must submit an Acceptance Test Procedure (ATP) that will be used to demonstrate all required functionality of the Wireless Traffic Detection System, including all hardware and software, included in the RFP. In addition to the required functionality, the ATP should also include all desired features and functionality that the Vendor has indicated their proposed System can provide. If awarded the contract, WisDOT will work with the Vendor to make any necessary revisions and/or modifications to the ATP before being formally adopted by the Department for the project.

At a minimum, the Vendor provided ATP should address the items located below. The Vendor is encouraged to provide additional testing criteria.

1. Detector Performance Testing
	* Clock test (maintain accurate time settings for seven days in absence of GPS signal)
	* Detection sensitivity bench test (measure minimum and maximum detection distances for a known Bluetooth device under ideal laboratory conditions)
	* Urban freeway Bluetooth match rate (compared with a reference device)
	* Rural freeway Bluetooth match rate
	* Suburban arterial Bluetooth match rate
	* Urban arterial Bluetooth match rate
	* Rural two-lane highway Bluetooth match rate
2. Physical Durability Testing
	* Thermal test (for example, the ability to survive 100 thermal cycles consisting of two hours in a freezer at 0 degrees F, two hours at room temperature, two hours at 140 degrees F, and two hours at room temperature)
	* Moisture penetration test (for example, the car wash test – the ability survive eight hours of continuous water spray)
	* Drop test (for example, the step ladder test - ability for detector [without battery or solar panel] to survive being dropped ten feet onto concrete three times)
	* Antenna connector test (for example, the toddler test – antenna connector will not bend or pull out of the cabinet when a 50 pound weight is applied to antenna cable)
	* Vibration test (for example, the ability of detector to continue operating correctly while sitting on a vibrating plate for seven days)
	* Mounting bracket strength test (for example, the ability to support the weight of a detector plus a 250 pound dead load)
	* Solar panel bracket test (for example, the ability to support a dead weight equivalent to eight inches of heavy wet snow without buckling)
3. Solar Power System Testing
	* Ability to operate continuously without manual battery recharge in Bayfield County, Wisconsin for ten days (evaluation of the combined effects of low temperature, short daylight, and salt/snow partially obscuring solar panel).
4. Wireless Modem Testing
	* Ability to transmit data correctly for an entire day (24 hours) at each of seven unique deployment scenarios with varying levels of wireless carrier signal strength.
5. Central System Software Testing
	* General software stability tests: Use all standard software features in every sequence without crashing or hanging.
	* Report readability tests: Generate outputs from all standard reports and verify report readability (e.g. none of the text is cut off, overlapping, etc.).
	* Report reliability tests: Compare report results with hand calculations for five to six common use cases and verify that results are the same.
	* Cryptography test: If functionality is provided, assure that the each MAC address encodes consistently for all detectors and follows the pattern expected.
	* Server performance tests
	* Travel time data tests: Evaluate timeliness and usability of travel time data feed.
	* Routing data tests: Evaluate timeliness and usability of routing data feed.
	* OD data tests: Evaluate timeliness and usability of OD data.

# DESIRED DEVICE/SYSTEM FUNCTIONALITY

Submit all response information for this section under Tab 3 of Vendor proposal. Refer to Section 2.4 of this RFP for proposal submittal format information**.** Be as specific as possible in each response. The device/system features and functionality included in this section are desired but not required/mandatory for contract award. Failure to provide a desired feature or functionality will not result in an automatic disqualification of the Vendor’s proposal; the Vendor, however, will not receive any points toward proposal scoring for the particular feature or functionality.

## Wireless Signal Strength

Devices should be capable of measuring and reporting the wireless signal strength of each wireless device detection observation. Obtaining the wireless signal strength as part of each detection observation is an important factor to consider when determining an accurate timestamp for an individual wireless device when the device (MAC address) is detected multiple times over a short period of time by the same detection Device. This situation often occurs during slow or stop-and-go traffic conditions.

By analyzing the signal strength associated with each of the similar wireless device detections, the System is able to determine a single timestamp for the wireless device by selecting the timestamp of the observation with the highest signal strength; the higher the signal strength, the closer the wireless device is assumed to be to the detection Device. By using this methodology, the Device and/or System is able to combine multiple readings of the same wireless device into one accurate detection observation. The desired wireless signal strength measurement and processing applies to all forms of wireless (Bluetooth and Wi-Fi).

## Bluetooth Scanning Frequency

Devices should be capable of scanning all 32 Bluetooth inquiry channels in 5.5 seconds or less. Limiting the time required to scan all 32 Bluetooth inquiry channels will reduce the potential a vehicle with a wireless device is missed as it passes through the Device’s detection field. The Vendor must also provide information as to the maximum number of Devices that can be detected in one Device scan cycle; in congested traffic conditions, the Device should not max out the total number of detections during a cycle and miss subsequent detections during the cycle because it has reached the maximum number of detections threshold.

## Wi-Fi Detection Technology

Devices should be capable of detecting, monitoring, and recording the Media Access Control (MAC) address of various devices through the use of wireless receivers capable of detecting and Wi-Fi wireless technology. All hardware and equipment necessary to detect Wi-Fi wireless signals should be housed completely within the Device assembly. Device outputs shall consist of unfiltered wireless device observations in plain text format, including the observed device’s MAC address and the time stamp associated with the observation. It is desirable that each observation include information on the wireless signal strength of each observation. This information will then be aggregated by Central System Software procured under this contract for further processing.

## MAC Address Data Encryption

Devices should be equipped with a switch or user setting that allows the MAC address output of the Device to be toggled between plaintext and a SHA-256 one-way cryptographic hash, with a salt and Initialization Vector (IV) to be specified by the Department and stored in the Device’s memory. All Devices are to use this same salt and IV, which is to be kept confidential by the Vendor. The default output mode for each Device should be set to plaintext. Devices should not delete or truncate any MAC address digits prior to encryption.

## Interoperability and Open Standards

Devices and Software whose outputs are in non-proprietary formats based on open standards such as ASCII text or XML are preferred. For the purposes of detection Devices, it is strongly desired that the devices provide raw MAC address outputs in a text format that will be interoperable with competing products. Equipment and software that provides outputs in proprietary formats will not receive any points for the feature. Regardless of the output format, the Vendor will be required to provide WisDOT with the output format to obtain raw data from the devices without the need for the Vendor’s Software.

## Wireless Device Antennas

The specification for each Device type requires a Class 1 Omni-directional antenna capable of detecting Bluetooth MAC addresses from devices located inside vehicles within a minimum range of 150 feet in all directions. The vendor should provide alternate antenna procurement options (different signal strength Omni antennas and directional antennas) that can be used to accommodate different deployment scenarios. Alternate deployment scenarios could include situations where a larger detection radius is required, a smaller detection radius is required, or a much more focused, directional detection zone is required. Points for this section will be awarded based on the Vendors ability to provide alternate Device antennas. Do not include pricing information in this section; all optional antenna pricing should be included in the Cost Proposal.

## Software Licensing

This contract will be used to procure multiple Wireless Traffic Detection Devices. WisDOT anticipates that a number of the Devices procured under this contract will still be functional beyond the end/termination of the contract. It is desirable that the Department continue to be able to utilize the Vendor’s software to process wireless traffic detection data from the Devices beyond the contract end/termination date without the need to pay additional software licensing fees. Points for this section will be awarded based on the availability of the Vendors Central System Software after contract end/termination date and the ability to obtain future software upgrades after the contract end/termination date

## Value Added Solutions

Value-Added Solutions are those System features and functionality above and beyond the mandatory and desired features and functionality described in Section 4, Section 6, and Attachments E through K of this RFP. The Vendor is to provide a description for each Value-Added feature or function and clearly label it a “Value-Added Feature.”

# COST PROPOSAL

## General Instructions and Scoring of the Cost Proposal

The cost proposal **must** be submitted in a separate sealed envelope within the written proposal package. All prices must be quoted in U.S. Dollars.

The three individual deployment scenarios included in the cost proposal will be scored using a standard quantitative calculation where the most points will be awarded to the proposal with the lowest cost. Various costing methodologies are available to analyze the cost information submitted to determine the lowest cost. WisDOT will select one method and use it consistently throughout the proposal analysis. The cost methodology will be available, by request from the Purchasing Agent, at the time the proposals are due.

The Purchasing Agent will score each individual deployment scenario included in the cost proposal. The lowest cost will be given the total available cost points. The cost points awarded to the other proposers will be based on the following formula: Calculation of points awarded to subsequent proposals will use the lowest dollar proposal amount as a constant numerator and the dollar amount of the firm being scored as the denominator. This number is then multiplied by the number of points given to the cost section of the RFP, resulting in the cost proposal score.

 Lowest Proposed Cost (constant) Maximum

 Other Proposer's Cost x Evaluation Points = Score

(Varies according to proposal being scored) Given to Cost

In addition to the three deployment scenarios included in the Cost Proposal, each Vendor will receive points based on available discounts or price reductions available to the Department. The Vendor should identify: 1) any applicable price reductions or discounts for large, one-time purchase orders and 2) any price reductions for reaching pre-established quantity benchmarks over the length of the contract. In the latter scenario, the Vendor must identify the various quantity amounts that, if exceeded, would result in discounts or cost reductions on all future purchases by the Department. If price reductions or discounts are provided by the Vendor, they should correspond to the applicable Bid Item cost included in each of the three deployment scenarios.

## Format for Submitting the Cost Proposal (Attachment D)

Submit one original plus one copy in a separate sealed envelope clearly marked as the Cost Proposal. Instructions for submission of the Cost Proposal can be found in Attachment D. If needed, include any additional pricing information on a separate sheet of paper and include it in the Cost Proposal.

## Fixed Price Period

All prices, costs, and conditions outlined in the proposal shall remain fixed and valid for acceptance for one hundred and twenty (120) days starting on the due date for proposals. The awarded Vendor(s) must hold the accepted prices and/or costs for the entire contract period. Any adjustment to prices and/or costs at the beginning of a contract renewal period will be negotiated between WisDOT and the Vendor. Price increase requests must be justified with supporting documentation of industry-wide increases. If WisDOT deems cost increases are unacceptable, it reserves the right to re-bid the contract in whole or part. Acceptance of the price increases shall be in writing.

If the Contractor’s cost decreases during the term of the contract, the Contractor shall immediately notify WisDOT. Such cost decreases shall become effective to WisDOT the same date the decrease is effective to the contractor. If WisDOT is not properly notified of price decreases, the pricing at the time of order will be used for invoice payment and the Vendor will provide refunds as necessary.

|  |  |  |
| --- | --- | --- |
|  | **ATTACHMENT A** |  |

**Proposer INFORMATION**

Submit this completed form under Tab 1 of proposal; refer to Section 2.4

|  |  |  |
| --- | --- | --- |
| 1. | PROPOSING COMPANY/ORGANIZATION NAME  |  |
|  |  | FEIN (Federal Employer ID Number) | OR | SOCIAL SECURITY NUMBER (if sole proprietorship) |
|  | Phone | ( ) | Toll Free Phone | ( ) |
|  | FAX | ( ) | Email Address |  |
|  | Address |  |
|  | City |  | State |  | Zip + 4 |  |
|  |  |
| 2. | Name the person to contact for questions concerning this proposal. |
|  | Name |  | Title |  |
|  | Phone | ( ) | Toll Free Phone | ( ) |
|  | FAX | ( ) | Email Address |  |
|  | Address |  |
|  | City |  | State |  | Zip + 4 |  |
|  |  |
| 3. | Any Vendor awarded over $25,000.00 on this contract must submit affirmative action information to the Department. Please name the Personnel/Human Resource and Development or other person responsible for affirmative action in the company to contact about this plan. |
|  | Name |  | Title |  |
|  | Phone | ( ) | Toll Free Phone | ( ) |
|  | FAX | ( ) | Email Address |  |
|  | Address |  |
|  | City |  | State |  | Zip + 4 |  |
|  |  |
| 4. | Mailing address to which state purchase orders are mailed and person the Department may contact concerning orders and billings. |
|  | Name |  | Title |  |
|  | Phone | ( ) | Toll Free Phone | ( ) |
|  | FAX | ( ) | Email Address |  |
|  | Address |  |
|  | City |  | State |  | Zip + 4 |  |

**ATTACHMENT B**

**References**

Submit this completed form under Tab 3 of proposal; refer to Section 2.4 and 4.3 of the RFP for additional instructions.

**PROPOSER:**

Provide company name, address, contact person, telephone number, and appropriate information on the product(s) provided to customers similar to those requested in this solicitation document. Potential Subcontractors cannot be references. Any subcontractor arrangement for the completion of this work shall be listed on a separate proposal page.

**Company Name:**

Address (include Zip + 4)

Contact Person Phone No.

Email Address:

Product(s) Used and/or Service(s) Provided:

**Company Name:**

Address (include Zip + 4)

Contact Person Phone No.

Email Address:

Product(s) Used and/or Service(s) Provided:

**Company Name:**

Address (include Zip + 4)

Contact Person Phone No.

Email Address:

Product(s) Used and/or Service(s) Provided:

**Company Name:**

Address (include Zip + 4)

Contact Person Phone No.

Email Address:

Product(s) Used and/or Service(s) Provided:

**ATTACHMENT C**

**WisDOT MINORITY BUSINESS ENTERPRISE (MBE) PROGRAM**

**AWARENESS, COMPLIANCE & ACTION PLAN**

As a matter of sound business practice, the Wisconsin Department of Transportation is committed to “supply diversity” by promoting the use of minority business whenever and wherever possible. Further, as an agency of the State of Wisconsin, WisDOT shares in the state goal of placing five (5) percent of its total annual purchasing dollars with state-certified minority businesses.

State of Wisconsin procurement policy provides that Minority Business Enterprises (MBE) certified by the Wisconsin Department of Commerce, Bureau of Minority Business Development should have the maximum opportunity to participate in the performance of its contracts/projects.

You, as a Vendor, are strongly urged to use due diligence to further this policy by awarding subcontracts to minority-owned business enterprises or by using such enterprises to provide goods and services incidental to this agreement (second-tier suppliers), with a goal of awarding 5% of the contract price to such enterprises.

Monthly or Quarterly reports are requested to be submitted to the Department of Transportation Purchasing Unit’s Minority Business Specialist, itemizing the costs of services and goods provided by certified firms. Reports should state the costs for the previous contract/project month or quarter.

**Authority for the MBE program is found in Wisconsin Statutes 15.107(2), 16.75(3m), and 16.755 and 560.036(2), and details about the program can be found at:** <http://www.doa.state.wi.us/category.asp?linkcatid=677&linkid=113&locid=0>

**Your complete response on the following form must address the following components of your company’s/organization’s commitment/action plan:**

1. Indication that you understand the **WisDOT’s goal,**
2. Listing of any **MBE Vendors with which you intend to subcontract,**
3. Description of the various **second tier MBE expenses** (goods and services procured that are incidental to the contract/project; *examples are*: specific office supplies to perform the contract, percentage of cost for uniforms for contract staff, travel to perform the contract/project, percentage of facility maintenance services for your facility used directly by your staff during the contract/project period) your company/organization will be able to report that are in direct connection with the administration of this contract,
4. **Statement expressing your commitment** to complete the required monthly or quarterly reports that will reflect your subcontracts and second-tier expenditures for the period.

For information on certified State of Wisconsin minority business enterprises, please contact:

**June Robinson**

MBE Program Coordinator

WisDOT Division of Business Management

4802 Sheboygan Avenue, Room 751

Madison, WI 53705

Phone: 608-267-2886

Fax: 608-267-3609

[www.dot.wisconsin.gov/business/mbe](http://www.dot.wisconsin.gov/business/mbe/index.htm)

Email: june.robinson@dot.wi.gov

A complete listing of certified minority businesses, as well as the services and commodities they provide, is available on the web at: [www.doa.wi.gov/mbe](http://www.doa.wi.gov/mbe) and information regarding certification of minority businesses is available at: <http://commerce.wi.gov/BD/BD-MBD-Index.html>.

**ATTACHMeNT c**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WisDOT MINORITY BUSINESS ENTERPRISE (MBE) PROGRAM****AWARENESS, COMPLIANCE & ACTION PLAN**Complete and sign--Submit under Tab 4 in the proposal; refer to Section 2.4**.** Failure to complete this form as a component of your proposal may result in rejection of your proposal.

|  |  |  |
| --- | --- | --- |
| Our company/organization is a Wisconsin-certified Minority Business Enterprise (MBE).  | ⬜ Yes  | ⬜ No |
| Our company/organization is a minority business but has not yet received Wisconsin certification (please provide details): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | ⬜ Yes  | ⬜ No |
| We are aware of the WisDOT’s goal to spend at least 5% of their total annual purchasing dollars with state-certified MBE firms.  | ⬜ Yes  | ⬜ No |
| We are aware that if awarded this contract/project our company/organization will provide monthly or quarterly reports to WisDOT reporting all expenditure activity directed to MBE Subcontractors or second-tier MBE suppliers that directly relate to this contract. (Any non-certified minority businesses could be a potential subcontractor/second-tier supplier--indicate these on your plan. WisDOT will work with those businesses for possible certification.) | ⬜ Yes  | ⬜ No |
| **Subcontractors:** Our company/organization intends to subcontract at least 5% dollar volume with certified MBE firms listed below (names, addresses, telephone numbers): | ⬜ Yes  | ⬜ No |
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|  |

**Second-tier Suppliers:** In addition to direct subcontracting efforts, your company/organization can help WisDOT achieve the 5% goal by managing your second-tier minority business purchases. Second-tier business refers to incidental business expenses your company may spend with Wisconsin-certified MBE firms as it pursues the normal course of business supplying the WisDOT-contracted products or services. Here are some *examples*:* Percentage of your office supplies specifically used during the course of this contract/project.
* Percentage of uniform costs for staff performing this contract/project.
* If you travel to perform this contract/project, you could use a state-certified MBE travel agency and report that expense.
* Percentage of facilities maintenance services for facilities directly used by your staff during the course of this contract/project.

These second-tier expenses can only be reported to the extent that they directly relate to your business with WisDOT. The percentage of the expense you can report is determined by the amount of your WisDOT sales as it relates to your total sales volume. Per the terms of your contract, you should actively pursue directing business towards these types of companies, and report your efforts in this regard on a monthly basis. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*In paragraph form, describe your company/organization’s commitment/action plan with regard to the planned use of state-certified MBE businesses in subcontracting efforts, as well as developing MBE second-tier suppliers. Please list your specific commitments (attach sheet, if necessary).

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SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PRINTED NAME & TITLE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

COMPANY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ATTACHMENT D**

**COST PROPOSAL**

Submit one original and one copy of this completed form under Tab 3 of proposal; refer to Section 2.4, 4.3, and 7.1 of the RFP for additional instructions.

Bluetooth wireless traffic detection is a relatively new and rapidly evolving technology. The number of Vendors providing this type of technology continues to grow and the pricing model for each Vendor often varies. On a separate sheet of paper, the Vendor is to describe the pricing model for the Vendor’s products and services. Include information in the description of the pricing model about the wireless traffic detection System as whole, the individual detection Devices, and the system Software. Include this in your cost proposal documentation.

If the Vendors proposal pricing is contingent on being awarded a contract by the Department for all of the bid items included in this RFP (e.g. award of a contract for the entire System and not just the Software or just the Devices) the Vendor must clearly outline those contingencies within this section. Vendor proposals and pricing may not however be contingent on the number of Vendors awarded a contract; Vendor proposals and/or pricing contingent on the number of contracts awarded from this RFP will be rejected.

To account for differences in Vendor pricing models, three individual deployment scenarios have been included in the cost proposal: scenario one includes a total of 40 Devices, scenario two includes a total of 120 Devices, and scenario three includes a total of 300 Devices. The Vendor must complete the Bid Tab spreadsheet included in this attachment for each of the three deployment scenarios. Proposers may add additional lines to the scenario pages as necessary. Each of the three scenarios will be scored individually using the methodology described in Section 7.1 of the RFP. The total cost from each scenario will be used as the basis for awarding cost points for each deployment scenario.

Each deployment scenario includes an additional spreadsheet for detailing the itemized costs included in Bid Item 6 (Wireless Traffic Detection Central System Software) and Bid Item 7 (Wireless Traffic Detection System Service, Support, Training, and Maintenance). All costs included in these two bid items must be detailed in the Itemized Cost spreadsheet for each of the three deployment scenarios. Examples of itemized costs could include licensing fees, hosting fees, integration effort, coordination effort, training, as well as any other applicable items.

In addition to the three deployment scenarios, each Vendor will receive points based on available discounts or price reductions available to the Department. On the same sheet of paper used to describe the Vendor pricing model, the Vendor should identify: 1) any applicable price reductions or discounts available for large, one-time purchase orders and 2) any price reductions for reaching pre-established quantity benchmarks over the entire length of the contract. In the latter scenario, the Vendor must identify the various quantity amounts that, if exceeded, would result in discounts or cost reductions on future purchases by the Department. If price reductions or discounts are provided by the Vendor, they should be represented in the applicable bid item cost included in each of the three deployment scenarios.

Vendors have the option of providing alternate antenna options to accommodate alternate deployment scenarios in response to this RFP. Vendors that include alternate antenna options should include all pricing information in the Cost Proposal. Pricing information for any alternate antenna options will not be included in the Cost Proposal scoring analysis.

Vendors also have the option to submit pricing information for cellular service to support the transmission of wireless data for each Device. The Department may elect to utilize a Vendor provided wireless service but will not be obligated to enter into any such agreements. Pricing information for cellular service will not be included in the Cost Proposal scoring analysis.

**Deployment Scenario One – Bid Tab**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Bid Item Description** | **Bid Item Cost** | **Unit** | **Bid Item Quantity** | **Total Item Cost** |
| 1 | Standard Wireless Traffic Detection Device (Refer to Attachment E) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 20 |   |
| 2 | Cabinet or Rack Mountable Wireless Traffic Detection Device\* (Refer to Attachment F) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 10 |   |
| 3 | Portable Wireless Traffic Detection Device\* (Refer to Attachment G) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 10 |   |
| 4 | Solar Power System for Wireless Traffic Detection Device (Refer to Attachment H) | Cost for a complete Assembly including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 10 |   |
| 5 | Cellular Modem for Wireless Traffic Detection Device (Refer to Attachment I) | Cost for a complete Modem including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 30 |   |
| 6 | Wireless Traffic Detection Central System Software\*\* (Refer to Attachment J) | Cost for the Software including all licensing/hosting fees and coordination effort required to integrate the Software with the ATMS. For WisDOT hosted solutions, add $6,500.00 for WisDOT acquisition of a server. |   | Lump Sum | 1 |   |
| 7 | Wireless Traffic Detection System Service, Support, and Maintenance\*\* (Refer to Attachment K) | Cost for one year of service, support, and maintenance for the System (applicable to optional contract years two, three, four, and five). Does not include the Bid Item warranty period; the warranty should be included with each Bid Item. |   | Year | 4 |   |
|  |  |  |  |  | **Total:** |  |
| \* Vendors that are unable to provide either the Cabinet/Rack Mountable Wireless Traffic Detection Device or the Portable Wireless Traffic Detection Device should use the Bid Item Cost for Bid Item #1 - Standard Wireless Traffic Detection Device for the Bid Item Cost for that particular item. \*\* Provide an itemized cost for each line item included in the Bid Item on the Bid Item Itemized Cost form included as part of this attachment. |

**Deployment Scenario One – Itemized Costs**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Item** | **Item Description** | **Cost** | **Unit** | **Quantity** | **Total Cost** |
| 6 | Wireless Traffic Detection Central System Software |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 6 Total:**  |  |
| 7 | Wireless Traffic Detection System Service, Support, and Maintenance |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 7 Total:**  |  |

**Deployment Scenario Two – Bid Tab**

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| --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Bid Item Description** | **Bid Item Cost** | **Unit** | **Bid Item Quantity** | **Total Item Cost** |
| 1 | Standard Wireless Traffic Detection Device (Refer to Attachment E) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 60 |   |
| 2 | Cabinet or Rack Mountable Wireless Traffic Detection Device\* (Refer to Attachment F) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 30 |   |
| 3 | Portable Wireless Traffic Detection Device\* (Refer to Attachment G) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 30 |   |
| 4 | Solar Power System for Wireless Traffic Detection Device (Refer to Attachment H) | Cost for a complete Assembly including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 30 |   |
| 5 | Cellular Modem for Wireless Traffic Detection Device (Refer to Attachment I) | Cost for a complete Modem including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 90 |   |
| 6 | Wireless Traffic Detection Central System Software\*\* (Refer to Attachment J) | Cost for the Software including all licensing/hosting fees and coordination effort required to integrate the Software with the ATMS. For WisDOT hosted solutions, add $6,500.00 for WisDOT acquisition of a server. |   | Lump Sum | 1 |   |
| 7 | Wireless Traffic Detection System Service, Support, Training, and Maintenance\*\* (Refer to Attachment K) | Cost for one year of service, support, and maintenance for the System (applicable to optional contract years two, three, four, and five). Does not include the Bid Item warranty period; the warranty should be included with each Bid Item. |   | Year | 4 |   |
|  |  |  |  |  | **Total:** |  |
| \* Vendors that are unable to provide either the Cabinet/Rack Mountable Wireless Traffic Detection Device or the Portable Wireless Traffic Detection Device should use the Bid Item Cost for Bid Item #1 - Standard Wireless Traffic Detection Device for the Bid Item Cost for that particular item. \*\* Provide an itemized cost for each line item included in the Bid Item on the Bid Item Itemized Cost form included as part of this attachment. |

**Deployment Scenario Two – Itemized Costs**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Item** | **Item Description** | **Cost** | **Unit** | **Quantity** | **Total Cost** |
| 6 | Wireless Traffic Detection Central System Software |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 6 Total:**  |  |
| 7 | Wireless Traffic Detection System Service, Support, and Maintenance |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 7 Total:**  |  |

**Deployment Scenario Three – Bid Tab**

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| --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Bid Item Description** | **Bid Item Cost** | **Unit** | **Bid Item Quantity** | **Total Item Cost** |
| 1 | Standard Wireless Traffic Detection Device (Refer to Attachment E) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 150 |   |
| 2 | Cabinet or Rack Mountable Wireless Traffic Detection Device\* (Refer to Attachment F) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 75 |   |
| 3 | Portable Wireless Traffic Detection Device\* (Refer to Attachment G) | Cost for a complete Device including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 75 |   |
| 4 | Solar Power System for Wireless Traffic Detection Device (Refer to Attachment H) | Cost for a complete Assembly including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 75 |   |
| 5 | Cellular Modem for Wireless Traffic Detection Device (Refer to Attachment I) | Cost for a complete Modem including all equipment, cables, connections, incidentals necessary for installation, and warranty. Price quoted must be FOB Destination, freight included to any Wisconsin location. |   | Each | 225 |   |
| 6 | Wireless Traffic Detection Central System Software\*\* (Refer to Attachment J) | Cost for the Software including all licensing/hosting fees and coordination effort required to integrate the Software with the ATMS. For WisDOT hosted solutions, add $6,500.00 for WisDOT acquisition of a server. |   | Lump Sum | 1 |   |
| 7 | Wireless Traffic Detection System Service, Support, and Maintenance\*\* (Refer to Attachment K) | Cost for one year of service, support, and maintenance for the System (applicable to optional contract years two, three, four, and five). Does not include the Bid Item warranty period; the warranty should be included with each Bid Item. |   | Year | 4 |   |
|  |  |  |  |  | **Total:** |  |
| \* Vendors that are unable to provide either the Cabinet/Rack Mountable Wireless Traffic Detection Device or the Portable Wireless Traffic Detection Device should use the Bid Item Cost for Bid Item #1 - Standard Wireless Traffic Detection Device for the Bid Item Cost for that particular item. \*\* Provide an itemized cost for each line item included in the Bid Item on the Bid Item Itemized Cost form included as part of this attachment. |

**Deployment Scenario Three – Itemized Costs**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Bid Item #** | **Bid Item** | **Item** | **Item Description** | **Cost** | **Unit** | **Quantity** | **Total Cost** |
| 6 | Wireless Traffic Detection Central System Software |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 6 Total:**  |  |
| 7 | Wireless Traffic Detection System Service, Support, and Maintenance |   |   |   |   |   |   |
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|  |  |  |  |  | **Bid Item 7 Total:**  |  |

**Attachment E**

**Standard Wireless Traffic Detection Device**

1. **Description.**

This special provision describes furnishing a Standard Wireless Traffic Detection Device (Device) that is capable of detecting, monitoring, and recording the Media Access Control (MAC) address of various Devices through the use of wireless receivers capable of detecting Bluetooth (mandatory) and Wi-Fi (optional) wireless signals. Device outputs shall consist of unfiltered wireless device observations in plain text format, including the observed device’s MAC address and the time stamp associated with the observation. It is desirable, but not mandatory, that each observation include information on the wireless signal strength of each observation. This information will then be aggregated by Central System Software (Software) for further processing. Together, the individual Devices and Software will comprise the Wireless Traffic Detection System (System). By matching unique MAC addresses, or wireless device identifiers, with timestamps from multiple unique Device locations, the System will provide accurate vehicle speed and travel time data, vehicle origin/destination information, and traffic related performance management.

1. **Materials.**

Furnish a Device that meets or exceeds the following requirements:

*General Device Requirements*

Provide Device field components that meet or exceed all Department performance and operating environment standards and specifications for traffic related field devices. Furnish field components that meet the following requirements:

* Capable of withstanding operating temperatures ranging from -20° F to 145° F (-28° C to 63° C).
* Resistant to water, snow, ice, fog, dust, salt, and wind speeds of up to 100 mph.
* Capable of being powered by AC 100-240 line voltage, solar power, and a DC battery.

*Enclosure*

Furnish a Device enclosure made of a non-metallic material. Provide an access door to the Device controls that is hinged, has a clasping mechanism designed for easy access, and has quick release and locking capabilities. Provide an enclosure that supports the use of a padlock. Furnish enclosures that have adequate ventilation to prevent the Device from overheating. Provide an enclosure capable of completely housing a battery of sufficient size to meet the requirements included in this specification.

*Bluetooth Scanning Frequency*

It is desired, but not required, that the Device be capable of scanning all 32 Bluetooth inquiry channels in 5.5 seconds or less.

*Ethernet Port*

Furnish a Device that has an Ethernet port capable of accepting an Ethernet cable with an RJ-45 connector.

*GPS Receiver*

Furnish a Device with a global positioning system (GPS) receiver capable of recording accurate location and time stamping information. Set the GPS receiver datum to either the World Geodetic System of 1984 (WGS 83) or the North American Datum of 1987 (NAD 87) High Accuracy Reference Network (HARN).

*Battery*

Provide a Device with a sealed battery capable of providing power sufficient for all Device operations for a minimum of ten days within the range of operating conditions of the Device. Device operations are to include all functionality related to the Bluetooth/Wi-Fi reader, the GPS receiver, the Device clock, and all communications equipment (modem). Furnish a battery that can be completely housed inside the Device enclosure. Provide a battery with a quick connect adapter for easy removal and charging. Furnish a rubber boot to cover the positive terminal to protect against accidental shorting.

*Clock*

Furnish a Device with an internal clock that is automatically synchronized to the GPS master clock on at least a daily basis without the need to connect to an Ethernet or cellular phone network. In case of a loss of the GPS signal, the internal clock shall remain stable to the last known reliable GPS observation with an accuracy of ±1 second per day or better.

*Encryption*

Furnish Devices that do not delete or truncate any MAC address digits prior to encryption. It is desirable, but not required, the Vendor provide Devices equipped with a switch or user setting that allows the MAC address output of the Device to be toggled between plaintext and a SHA-256 one-way cryptographic hash, with a salt and Initialization Vector (IV) to be specified by the Department and stored in the Device’s memory. If available, furnish Devices that use this same salt and IV, which is to be kept confidential by the Vendor. Provide Devices with the default output mode set to plain text.

*Antenna and Reception*

Furnish a Device with a Class 1 Omni-directional antenna capable of detecting Bluetooth MAC addresses from devices located inside vehicles with a minimum range of 150 feet in all directions in order to adequately cover a large, multi-lane, divided highway during all weather conditions. Provide an antenna that is easily accessible and connected using a standard antenna connector so that alternate antennas (different signal strength Omni antennas and/or directional antennas) can be used to accommodate different deployment scenarios. Furnish only Devices that allow the use of an antenna extension cable of at least 50 feet in length in order to externally mount the antenna in situations where mounting the Device at an ideal height is not an option.

*Optional Antenna*

If available, provide pricing information for additional antennas to accommodate alternate deployment scenarios. Optional antennas may include additional Omni antennas with higher/lower gain levels or directional antennas that can be used to focus or narrow the wireless detection zone of the Device. Additional antennas and pricing will not be included in the proposal analysis and award but may be used for procurement by the Department.

*Communications*

Furnish a Device capable of communicating directly with the System. Furnish a Device that meets the following communication requirements:

* Supports Ethernet and IP based communications with the System.
* Supports static IP addressing.
* Capable of supporting the use of an external modem for communications.
* Supports periodic polling by the System to retrieve collected traffic data.
* Supports a configurable polling period in the range of once per second to once per day.
* Provides raw, unfiltered wireless detection data to the System.
* Provide the MAC address, signal strength (desired but not required), and timestamp of each individual Device detection to the System.
* Capable of providing the System with hourly Device status updates including: current detector GPS coordinates, electrical supply voltage, total number of observations in the previous hour, and other detector health information.

*External Data Interface*

Furnish a Device capable of providing collected traffic data to the System, located either at a Department facility or a third-party location, through a defined, documented interface for further processing. Provide a data interface that supports polling of data by the System. Define an XML data delivery schema and provide that schema to WisDOT. Provide a data interface that adheres to the NTCIP standard for Transportation Sensor Systems (NTCIP 1209).

*Warranty*

Provide a Device warranty for a minimum of 12 months from the date of acceptance of the Acceptance Test Procedure by the Department or Department acquisition of the Device, whichever is later. Repair and/or replace, at no cost to the Department, any and all Devices that fail to operate as specified within 5 business days of notification by the Department of a Device failure.

*Service and Support*

Provide customer service and support for the Device during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the warranty period.

1. **Construction Methods.**

Deliver the Devices to the Department, or Department representative as designated on individual purchase orders. Provide a representative during installation and configuration of the first supplied Device to provide support and answer any questions. The Department is responsible for installation of the Devices in the field.

*Unit Mounting*

Provide all Device brackets and mounts, including any hardware, with detailed instructions, in English, if assembly is required. Furnish parts that consist entirely of corrosion-resistant materials. Provide saw tooth type bracket(s) to allow the Device to be quickly and easily mounted to a pole or existing structure along the roadway. Furnish mounting hardware that once mounted with a Device will be secure when subjected to sustained wind speeds of 100 miles per hour with an allowable movement not to exceed ¼ inch. Provide brackets that accommodate the use of readily available steel strap ties unless otherwise provided by the Vendor.

1. **Acceptance Testing.**

The Vendor and the Department will work together to make any necessary revisions and/or modifications to the Acceptance Test Procedure (ATP) submitted by the Vendor that will be used to demonstrate all required functionality. If, during the course of testing, Department staff determine that the Device, any associated hardware, or any other part of the System performs unfavorably or fails any part of the acceptance test; these problems will be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification to the Vendor of the deficiency by the Department. Restart ATP once all problems have been corrected. If the Vendor is unable to demonstrate any of the device functionality or requirements identified in this specification or the ATP, the Department reserves the right to reject the Vendor’s proposal.

1. **Method of Measurement.**

A complete Device shall be measured as a unit delivered, deployed, tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete Device, measured as provided above, shall be paid for at the contract price for each Device, which price shall be payment in full for completing delivery; and for all labor, tools, ground transportation, equipment, cables, connections, and incidentals necessary to complete delivery.

**Attachment F**

**Cabinet or Rack Mountable Wireless Traffic Detection Device**

1. **Description.**

This special provision describes furnishing a cabinet or rack-mountable Wireless Traffic Detection Device (Device) that is capable of detecting, monitoring, and recording the Media Access Control (MAC) address of various devices through the use of wireless receivers capable of detecting Bluetooth (mandatory) and Wi-Fi (optional) wireless signals. Device outputs shall consist of unfiltered wireless device observations in plain text format, including the observed device’s MAC address and the time stamp associated with the observation. It is desirable, but not mandatory, that each observation include information on the wireless signal strength of each observation. This information will then be aggregated by Central System Software (Software) for further processing. Together, the individual Devices and Software will comprise the Wireless Traffic Detection System (System). By matching unique MAC addresses, or wireless device identifiers, with timestamps from multiple unique Device locations, the System will provide accurate vehicle speed and travel time data, vehicle origin/destination information, and traffic related performance management.

1. **Materials.**

Furnish a Device that meets or exceeds the following requirements:

*General Device Requirements*

Provide Device field components that meet or exceed all Department performance and operating environment standards and specifications for traffic related field devices. Provide a Device Ethernet card that meets all applicable IEEE standards as well as all Department standards pertaining to rack mounted devices and Ethernet cards. Furnish field components that meet the following requirements:

* Compatible with any standard NEMA certified cabinet.
* Capable of withstanding operating temperatures ranging from -20° F to 145° F (-28° C to 63° C).
* Capable of being powered by AC or DC power from the cabinet electrical bus.

*Bluetooth Scanning Frequency*

It is desired, but not required, that the Device be capable of scanning the 32 Bluetooth inquiry channels in 5.5 seconds or less.

*GPS Receiver*

Furnish a Device with a global positioning system (GPS) receiver capable of recording accurate location and time stamping information. Set the GPS receiver datum to either the World Geodetic System of 1984 (WGS 83) or the North American Datum of 1987 (NAD 87) High Accuracy Reference Network (HARN).

*Clock*

Furnish a Device with an internal clock that is automatically synchronized to the GPS master clock on at least a daily basis without the need to connect to an Ethernet or cellular phone network. In case of a loss of the GPS signal, the internal clock shall remain stable to the last known good GPS observation with an accuracy of ±1 second per day or better.

*Encryption*

Furnish only Devices that do not delete or truncate any MAC address digits prior to encryption. It is desirable, but not required, the Vendor provide Devices equipped with a switch or user setting that allows the MAC address output of the Device to be toggled between plaintext and a SHA-256 one-way cryptographic hash, with a salt and Initialization Vector (IV) to be specified by the Department and stored in the Device’s memory. If available, furnish only Devices that use this same salt and IV, which is to be kept confidential by the Vendor. Provide Devices with the default output mode set to plain text.

*Antenna and Reception*

Furnish a Device with a Class 1 Omni-directional antenna capable of detecting Bluetooth MAC addresses from devices located inside vehicles with a minimum range of 150 feet in all directions in order in order to adequately cover a large, multi-lane, divided highway during all weather conditions. Provide an antenna that is easily accessible and connected using a standard antenna connector so that alternate antennas (different signal strength Omni antennas and/or directional antennas) can be used to accommodate different deployment scenarios. Furnish only Devices that allow the use of an antenna extension cable of at least 50 feet in length in order to externally mount the antenna in situations where mounting the Device at an ideal height is not an option.

*Optional Antenna*

If available, provide pricing information for additional antennas to accommodate alternate deployment scenarios. Optional antennas may include additional Omni antennas with higher/lower gain levels or directional antennas that can be used to focus or narrow the wireless detection zone of the Device. Additional antennas and pricing will not be included in the proposal analysis and award but may be used for procurement by the Department.

*Communications*Furnish a Device capable of communicating directly with the System. Furnish a Device that meets the following communication requirements:

* Supports Ethernet and IP based communications with the System.
* Supports static IP addressing.
* Capable of supporting the use of an external modem for communications.
* Supports periodic polling by the System to retrieve collected traffic data.
* Supports a configurable polling period in the range of once per second to once per day.
* Provides raw, unfiltered wireless detection data to the System.
* Provides the MAC address, signal strength (desired by not required), and timestamp of each individual wireless Device detection to the System.
* Capable of providing the System with hourly general Device status updates including current detector GPS coordinates, electrical supply voltage, total number of observations in the previous hour, and other detector health information.

*External Data Interface*

Furnish a Device capable of providing collected traffic data to the System, located either at a Department facility or a third-party location, through a defined, documented interface for further processing. Provide a data interface that supports polling of data by the System. Define an XML data delivery schema and provide that schema to WisDOT. Provide a data interface that adheres to the NTCIP standard for Transportation Sensor Systems (NTCIP 1209).

*Warranty*

Provide a Device warranty for a minimum of 12 months from the date of acceptance of the Acceptance Test Procedure by the Department or Department acquisition of the Device, whichever is later. Repair and/or replace, at no cost to the Department, any and all Devices that fail to operate as specified within 5 business days of notification by the Department of a Device failure.

*Service and Support*

Provide customer service and support for the Device during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the warranty period.

1. **Construction Methods.**

Deliver the Devices to the Department, or Department representative designated on individual purchase orders. Provide a representative during installation and configuration of the first supplied Device to provide support and answer any questions. The Department will be responsible for installation of the Devices in the field.

*Unit Mounting*

Provide a cabinet or rack mountable Device as a pre-assembled package capable of being mounted directly into a National Electrical Manufacturers Association (NEMA) certified TS1 or TS2 controller cabinet. Provide all Device brackets and mounts, including any hardware, with detailed instructions, in English, if assembly is required. Provide only parts that consist entirely of corrosion-resistant materials.

1. **Acceptance Testing.**

The Vendor and the Department will work together to make any necessary revisions and/or modifications to the Acceptance Test Procedure (ATP) submitted by the Vendor that will be used to demonstrate all required functionality. If, during the course of testing, Department staff determine that the Device, any associated hardware, or any other part of the System performs unfavorably or fails any part of the acceptance test; these problems will be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification to the Vendor of the deficiency by the Department. Restart ATP once all problems have been corrected. If the Vendor is unable to demonstrate any of the device functionality or requirements identified in this specification or the ATP, the Department reserves the right to reject the Vendor’s proposal.

1. **Method of Measurement.**

A complete Device shall be measured as a unit delivered, deployed, tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete Device, measured as provided above, shall be paid for at the contract price for each Device, which price shall be payment in full for completing delivery; and for all labor, tools, ground transportation, equipment, cables, connections, and incidentals necessary to complete delivery.

**Attachment G**

**Portable Wireless Traffic Detection Device**

1. **Description.**

This special provision describes furnishing a standalone portable Wireless Traffic Detection Device (Device) that is capable of detecting, monitoring, and recording the Media Access Control (MAC) address of various devices through the use of wireless receivers capable of detecting Bluetooth (mandatory) and Wi-Fi (optional) wireless signals. Device outputs shall consist of unfiltered wireless device observations in plain text format, including the observed device’s MAC address and the time stamp associated with the observation. It is desirable, but not mandatory, that each observation include information on the wireless signal strength of each observation. This information will then be aggregated by Central System Software (Software) for further processing. Together, the individual Devices and Software will comprise the Wireless Traffic Detection System (System). By matching unique MAC addresses, or wireless device identifiers, with timestamps from multiple unique Device locations, the System will provide accurate vehicle speed and travel time data, vehicle origin/destination information, and traffic related performance management.

1. **Materials.**

Furnish a portable Device that meets or exceeds the following requirements:

*General Device Requirements*

Provide Device field components that meet or exceed all Department performance and operating environment standards and specifications for traffic related field devices. Furnish field components that meet the following requirements:

* Capable of withstanding operating temperatures ranging from -20° F to 145° F (-28° C to 63° C).
* Resistant to water, snow, ice, fog, dust, salt, and wind speeds of up to 100 mph.
* Capable of being powered by a DC battery or solar power.
* Maximum weight of Device, including enclosure, of 20 lbs.

*Enclosure*

Furnish a Device enclosure made of a non-metallic material. Provide an access door to the Device controls that is hinged, has a clasping mechanism designed for easy access, and has quick release and locking capabilities. Provide an enclosure that supports the use of a padlock. Furnish only enclosures that have adequate ventilation to prevent the Device from overheating. Provide an enclosure capable of completely housing a battery of sufficient size to meet the requirements included in this specification (the battery enclosure may be separate from the detector enclosure).

*Bluetooth Scanning Frequency*

It is desired, but not required, that the Device be capable of scanning the 32 Bluetooth inquiry channels in 5.5 seconds or less.

*GPS Receiver*

Furnish a Device with a global positioning system (GPS) receiver capable of recording accurate location and time stamping information. Set the GPS receiver datum to either the World Geodetic System of 1984 (WGS 83) or the North American Datum of 1987 (NAD 87) High Accuracy Reference Network (HARN).

*Battery*

Provide a Device with a sealed battery capable of providing power sufficient for all Device operations for a minimum of ten days within the range of operating conditions of the Device. Provide a set of quick connect terminals where a supplemental external battery can be attached without shutting down the unit. Device operations are to include all functionality related to the Bluetooth/Wi-Fi reader, the GPS receiver, the Device clock, and all other communications equipment (modem). Provide a battery with a quick connect adapter for easy removal and charging. Furnish a rubber boot to cover the positive terminal to protect against accidental shorting. This specification includes provision of the battery required to power the Device.

*Clock*

Furnish a Device with an internal clock that is automatically synchronized to the GPS master clock on at least a daily basis without the need to connect to an Ethernet or cellular phone network. In case of a loss of the GPS signal, the internal clock shall remain stable to the last known good GPS observation with an accuracy of ±1 second per day or better.

*Encryption*

Furnish only Devices that do not delete or truncate any MAC address digits prior to encryption. It is desirable, but not required, the Vendor provide Devices equipped with a switch or user setting that allows the MAC address output of the Device to be toggled between plaintext and a SHA-256 one-way cryptographic hash, with a salt and Initialization Vector (IV) to be specified by the Department and stored in the Device’s memory. If available, furnish only Devices that use this same salt and IV, which is to be kept confidential by the Vendor. Provide Devices with the default output mode set to plain text.

*Antenna and Reception*

Furnish a Device with a Class 1 Omni-directional antenna capable of detecting Bluetooth MAC addresses from devices located inside vehicles with a minimum range of 150 feet in all directions in order in order to adequately cover a large, multi-lane, divided highway during all weather conditions. Provide an antenna that is easily accessible and connected using a standard antenna connector so that alternate antennas (different signal strength Omni antennas and/or directional antennas) can be used to accommodate different deployment scenarios. Furnish only Devices that allow the use of an antenna extension cable of at least 50 feet in length in order to externally mount the antenna in situations where mounting the Device at an ideal height is not an option.

*Optional Antenna*

If available, provide pricing information for additional antennas to accommodate alternate deployment scenarios. Optional antennas may include additional Omni antennas with higher/lower gain levels or directional antennas that can be used to focus or narrow the wireless detection zone of the Device. Additional antennas and pricing will not be included in the proposal analysis and award but may be used for procurement by the Department.

*Local Data Storage*

Provide a Device capable of storing data locally on either a micro SD or SD card that is 32 GB or larger in size. Provide traffic data that includes the MAC address, signal strength (desired but not required), and the time stamp of each individual observation. Also store an hourly detector performance summary including GPS-based location, electrical supply voltage, total observations in the previous hour, and other detector health information.

*External Data Interface*

Furnish a Device capable of providing collected traffic data to the System, located either at a Department facility or a third-party location, through a defined, documented interface for further processing. Provide a data interface that supports polling of data by the System. Define an XML data delivery schema and provide that schema to WisDOT. Provide a data interface that adheres to the NTCIP standard for Transportation Sensor Systems (NTCIP 1209).

*Warranty*

Provide a Device warranty for a minimum of 12 months from the date of acceptance of the Acceptance Test Procedure by the Department or Department acquisition of the Device, whichever is later. Repair and/or replace, at no cost to the Department, any and all Devices that fail to operate as specified within 5 business days of notification by the Department of a Device failure.

*Service and Support*

Provide customer service and support for the Device during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the warranty period.

1. **Construction Methods.**

Deliver the Devices to the Department, or Department representative designated on individual purchase orders. Provide a representative during installation and configuration of the Device to provide support and answer any questions. The Department will be responsible for installation of the Devices in the field.

*Unit Mounting*

Provide all Device brackets and mounts, including any hardware, with detailed instructions, in English, if assembly is required. Furnish parts that consist entirely of corrosion-resistant materials. Provide saw tooth type bracket(s) to allow the Device to be quickly and easily mounted to a pole or existing structure along the roadway. Furnish mounting hardware that once mounted with a Device will be secure when subjected to sustained wind speeds of 100 miles per hour with an allowable movement not to exceed ¼ inch. Provide brackets that accommodate the use of readily available steel strap ties unless otherwise provided by the Vendor.

1. **Acceptance Testing.**

The Vendor and the Department will work together to make any necessary revisions and/or modifications to the Acceptance Test Procedure (ATP) submitted by the Vendor that will be used to demonstrate all required functionality. If, during the course of testing, Department staff determine that the Device, any associated hardware, or any other part of the System performs unfavorably or fails any part of the acceptance test; these problems will be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification to the Vendor of the deficiency by the Department. Restart ATP once all problems have been corrected. If the Vendor is unable to demonstrate any of the device functionality or requirements identified in this specification or the ATP, the Department reserves the right to reject the Vendor’s proposal.

1. **Method of Measurement.**

A complete Device shall be measured as a unit delivered, deployed, tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete Device, measured as provided above, shall be paid for at the contract price for each Device, which price shall be payment in full for completing delivery; and for all labor, tools, transportation, equipment, cables, connections, and incidentals necessary to complete delivery.

**Attachment H**

**Solar Power ASSEMBLY for Wireless Traffic Detection Device**

1. **Description.**

This special provision describes furnishing a complete, ready to install, Solar Power Assembly (Assembly) to provide sufficient power for the operation of a Wireless Traffic Detection Device (Device). The Assembly shall be designed to provide adequate power for Device operations year-round and during all weather conditions in any county in the state of Wisconsin.

1. **Materials.**

The Assembly is to include all solar power arrays, cabling, mounting hardware, and a solar power charge controller. The Assembly shall meet or exceed the following requirements:

*General System Requirements*

Provide an Assembly capable of supporting Device operations 24 hours per day, seven days per week, and 365 days per year. Design the Assembly to operate with a probability of failure of 1.0% or less in Bayfield County, Wisconsin during consecutive 10-day periods in December and January based on historical temperature, cloud cover, and sunrise/sunset data. Submit Assembly design calculations along with all proposals and for review prior to award of this contract. Furnish an Assembly capable of withstanding operating temperatures ranging from -20° F to 145° F (-28° C to 63° C). Provide Assembly components that are resistant to water, snow, ice, fog, dust, salt, and wind speeds up to 100 mph. The Assembly is to be separate from the Device enclosure to allow for optimum orientation and placement independent of the location and orientation of the Device.

*Solar Charge Controller*

Provide a solar charge controller that is built directly into the Assembly enclosure. Furnish a solar charge controller that can control battery charging through pulse width, modulated, temperature compensating, and constant charging algorithm. Provide a solar charge controller that is capable of controlling battery charging with both a low voltage and high voltage disconnect. Utilize visible LED’s to indicate the system is charging correctly. Fuse the solar panel, load, and battery for short circuit protection and ease of Assembly maintenance. Provide a connector at the end of the cable from the charge controller to the solar panel that is of a quick connect/disconnect design and has a water tight seal at the connection to the Assembly enclosure.

*Solar Panel*

Furnish a high efficiency solar panel that is a single crystal silicon solar cell with a 0.5% or lower temperature coefficient per degree Celsius. Provide a solar panel with a minimum power tolerance of at least the minimum specified output required to operate/charge the Assembly. Furnish a solar panel that is self-cleaning, impact resistant, highly transmissive, and of tempered glass superstate. Provide a solar panel module frame made of extruded, polymer-coated aluminum alloy with corners anodized after the cut. Furnish corner seams that are sealed by screw or weld to protect the solar panel from corrosion. Provide a solar panel module junction box that is made of corrosion-resistant materials and has a water tight seal. Pre-wire the solar panel with a cable of at least fifty (50) linear feet in length with all connectors being of quick connect/release design and water tight upon connection. Furnish a solar panel system with a minimum wattage necessary to power all Device operations as determined by the Vendor, with design calculations submitted as part of the proposal package.

*Battery*

Provide a sealed battery capable of providing power sufficient for all Device operations for a minimum of ten days within the range of all operating conditions. Device operations are to include all functionality related to the Bluetooth/Wi-Fi reader, the GPS receiver, the Device clock, and all other communications equipment (modem). Furnish a battery that can be completely housed inside the Device enclosure. Provide a battery with a quick connect adapter for easy removal and charging. Furnish a rubber boot to cover the positive terminal to protect against accidental shorting.

*Autonomous Operation (No Sunlight) Duration*

Furnish a Solar Power System capable of supporting autonomous operation (periods of minimal or no sunlight) in Bayfield County, Wisconsin during all consecutive 10-day periods in December and January based on historical temperature, cloud cover, and sunrise/sunset data.

*Service and Support*

Provide customer support for the Assembly during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the warranty period.

*Warranty*

Provide an Assembly warranty for a minimum of 12 months from the date of acceptance of the Acceptance Test Procedure by the Department or Department acquisition of the Assembly, whichever is later. Repair and/or replace, at no cost to the Department, any and all Assemblies that fail to operate as specified within 5 business days of notification by the Department of Assembly failure.

1. **Construction Methods.**

Deliver the Assembly to the Department, or Department representative designated on individual purchase orders. Provide a representative during installation and configuration of the Device to provide support and answer any questions. The Department will be responsible for installation of the Assembly.

*Unit Mounting*

Provide all Assembly brackets and mounts, including any hardware, with detailed instructions, in English, if assembly is required. Furnish parts that consist entirely of corrosion-resistant materials. Provide saw tooth type bracket(s) to allow the Assembly to be quickly and easily mounted to a pole or existing structure along the roadway. Furnish mounting hardware that once mounted with a Device will be secure when subjected to sustained wind speeds of 100 miles per hour with an allowable movement not to exceed ¼ inch. Provide brackets that accommodate the use of readily available steel strap ties unless otherwise provided by the Vendor. Provide an Assembly that can be field adjusted to obtain optimum angle and tilt orientation as needed. Provide all materials required to effectively ground the Assembly.

1. **Acceptance Testing.**

The Vendor and the Department will work together to make any necessary revisions and/or modifications to the Acceptance Test Procedure (ATP) submitted by the Vendor that will be used to demonstrate all required functionality. If, during the course of testing, Department staff determine that the Assembly, any associated hardware, or any other part of the System performs unfavorably or fails any part of the acceptance test; these problems will be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification to the Vendor of the deficiency by the Department. Restart ATP once all problems have been corrected. If the Vendor is unable to demonstrate any of the Assembly or functionality requirements identified in this specification or the ATP, the Department reserves the right to reject the Vendor’s proposal.

1. **Method of Measurement.**

A complete Assembly shall be measured as a unit delivered, deployed, tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete Assembly, measured as provided above, shall be paid for at the contract price for each Assembly, which price shall be payment in full for completing delivery; and for all labor, tools, transportation, equipment, cables, connections, and incidentals necessary to complete delivery.

**Attachment I**

**Cellular Modem for Wireless Traffic Detection Device**

1. **Description.**

This special provision provides for providing a real-time communications system, or cellular modem (Modem), for transmission of data from a Wireless Traffic Detection Device (Device) to a Central System Software (Software) using a cellular signal. The Modem will serve as an interface between the field Devices and the Software. Together, the individual Devices and Software will comprise the Wireless Traffic Detection System (System). Because cellular coverage varies considerably across the state of Wisconsin, the ability to use multiple wireless carriers is highly desirable.

1. **Materials.**

Furnish a Modem that meets or exceeds the following requirements:

*General Device Requirements*

Provide Modem that meets or exceed all Department operating environment standards and specifications for traffic related field devices. Furnish a Modem that meets the following requirements:

* Field hardened.
* Capable of allowing a wireless Device to provide data in real time over a secure network.
* Capable of transmission of the field data including but not limited to: the MAC address of each detected wireless device, signal strength (desired but not required), the time stamp for each individual reading, and periodic Device health updates.
* Capable of withstanding operating temperatures ranging from -20° F to 145° F (-28° C to 63° C).
* It is preferred, but not required, that the SIM card be compatible with all wireless communication providers operating in the state of Wisconsin.

*Service and Support*

Provide customer support for the Modem during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the warranty period.

*Warranty*

Provide a Modem warranty for a minimum of 12 months from the date of system acceptance by the Department or Department acquisition of the Modem, whichever is later. Repair and/or replace, at no cost to the Department, any and all Modems that fail to operate as specified within 5 business days of notification by the Department of Modem failure.

1. **Construction Methods.**

Deliver the Modems to the Department, or Department representative designated on individual purchase orders. Install all Modem hardware directly in the Device enclosure or shall be able to be mounted in an NEMA certified cabinet (TS1 or TS2). The Department will handle installation of the Modem but a representative from the Vendor shall be available during installation and configuration to provide support and to answer any questions.

1. **Method of Measurement.**

A complete Modem shall be measured as a unit delivered, deployed, tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete Modem, measured as provided above, shall be paid for at the contract price each, which price shall be payment in full for completing delivery; and for all labor, tools, ground transportation, equipment, cables, connections, and incidentals necessary to complete delivery. In addition to providing a cost for each Modem, the Vendor may also submit a price for monthly cellular service to support wireless data transmission for each Device. The Department may elect to utilize a Vendor provided wireless service but will not be obligated to enter into any such agreements. Analysis of proposal and award of the contract will not include any costs related to monthly or annual cellular service.

**Attachment J**

**WIRELESS Traffic detection Central System Software**

1. **Description.**

This special provision shall provide for a Central System Software (System), to be located on a server(s) hosted either by the Department or the Vendor, capable of communicating on a periodic basis directly with the Bluetooth (mandatory) and Wi-Fi (optional) Wireless Traffic Detection Devices (Devices) deployed in the field, retrieving the traffic data collected by those Devices, processing the data received by those Devices, and then utilizing that processed data to provide accurate vehicle speed and travel time data, vehicle origin/destination information, and traffic related performance management. The Vendor will be required to coordinate with the Department and TransCore, provider of WisDOT’s ATMS central system software TransSuite, to integrate information from the System into the TransSuite ATMS software. WisDOT will be responsible for contracting directly with TransCore under a separate agreement for all TransCore effort required to integrate the System into the TransSuite ATMS software.

1. **Materials.**

Furnish a System that meets or exceeds the following requirements:

*Operating Environment*

If the system is to be hosted by WisDOT, furnish Software capable of running on the Windows Server 2008 R2 operating system. Provide Software that starts automatically when the server is booted and the operating system is started.

*Communications*Furnish a System capable of communicating directly with each individual Device located in the field. Provide a System that can support communications with a minimum of 500 individual Devices. Furnish a System that meets the following communication requirements:

* Capable of IP based communications to Devices located in the field.
* Supports periodic polling of Devices to retrieve collected traffic data.
* Supports a configurable polling period in the range of once per second to once per day.

*Data Collection*Furnish a System capable of obtaining raw, unprocessed data from each individual Device located in the field. Vendors providing Devices capable of detecting MAC addresses using Wi-Fi technology must provide Software capable of compiling and processing that information. Provide a System capable of collecting data from a minimum of 500 individual Devices. Furnish a System capable of compiling and processing the following information:

* Detector location and health data including but not limited to GPS coordinates of the detector, battery voltage, and number of traffic observations in the previous hour
* Date and time of each individual detection
* MAC Address of each individual detection
* Signal strength of each individual detection (desired but not mandatory)

*Data Storage*

Furnish a System capable of storing all raw and processed traffic data retrieved from the Devices in a centralized database for the duration of the contract with the Department. Save both raw data collected by each Device as well as data processed by the System in a centralized database that can be accessed through the System UI. Provide both raw data collected by each Device as well as data processed by the System to the Department on a daily basis (at a minimum) for archiving purposes. The preferred database back-end is Oracle or Microsoft SQL Server, but proposals using other database software will also be considered.

*System Access*

Provide the Department access to the System and all features and functionality identified in this specification either locally on the Department’s network or remotely through a web-based user interface.

*Account Management*Provide a System capable of establishing individual user accounts with customizable permission levels for access to select Devices, features, and functionality.

*Device Management*

Provide a System capable of assigning Devices to multiple user-defined groups to which access can be provided.

*User Interface*Provide a System with a user interface (UI) that can be used to configure the Device information including, but not limited to the location and polling period. Furnish a System UI that can display the current status for each Device (online, offline, failed, comm. fail, etc.). Provide a System UI that provides display options for the traffic data retrieved from the Devices; these options shall include real-time views, vehicle speeds, vehicle pairs, travel times, and graphical views.

*System Functionality*Provide a System capable of analyzing information obtained from multiple Bluetooth (mandatory) and Wi-Fi (optional) Devices located in the field and using that information to produce vehicle travel times, origin/destination information, and performance management. All filtering and matching algorithms used in the system shall be fully documented.

* Vehicle Travel Time Computations: Furnish a System capable of comparing data observed from two individual Devices, identifying similar MAC address pairs, and using the data included in that data pair to calculate each vehicle’s travel time between those two Devices. The travel time analysis module shall run in real time with a latency of not more than 180 seconds following the arrival of raw data from the downstream MAC address.
* Device Detection Filtering: Furnish Software capable of filtering Device detection outliers under various Device deployment scenarios. Device detection filtering must be configurable. It is desirable that the Software include filters to select an individual representative detection when multiple observations of the same MAC address are made by the same Device. A filter could choose the observation corresponding to the highest signal strength or temporal median of all observations. Additionally options to compute the difference in times between the first (at the upstream device) and last observation (at the downstream device) or vice-versa are desirable.
* Device Configuration Management: Provide a way for individual users to be able to create, modify, and delete Device series in the System. It is preferable that the user be able to do so through a map-based interface as opposed to a table or menu. Furnish a System that allows users to implement pre-established data filters based on the deployment scenario to remove invalid data series from the travel time calculation. Filtering parameters shall be adjustable by authorized users to account for variations in field conditions. Outputs shall include the observed trip start and end times for each paired vehicle.
* Route Choice Analysis: Furnish a System that can report the travel time differences (and proportion of observed vehicles) traveling between administrator-selected groups of 3 detectors (trios), for example A to B via C versus A to B via D.
* Travel Time Performance Management: Furnish a System capable of analyzing data from multiple Devices and calculating traffic related performance measures. The performance measures shall include, at minimum:
	+ System health report summarizing the reported status of each Device.
	+ Continuously-updated median travel time for each detector series, based on the running median of the last several observations (e.g. last 9 observations).
	+ Continuously-updated route choice and median travel time analysis for administrator-selected detector trios.
	+ Observed daily travel time report for each 5-minute time period of the day when a sufficiently large sample size exists (this report may downsample to quarter-hour or hourly granularity during low-volume periods).The report is to be prepared nightly based on the previous 24 hours data. It shall provide median travel times, semi-variance, and the 5th through 95th percentile travel times for each detector pair and trio (semi-variance shall be calculated based on the free-flow travel time).
* Origin Destination Information: Furnish a System capable of comparing data observed from a group of Devices and producing origin and destination information. OD analysis may run as a background task or scheduled batch process. Provide a System that allows an individual user to select a group of Devices and create an origin-destination matrix that identifies all vehicles that travelled between a specified zone pair during a specified period of time. Furnish a System that can include up to 250 individual Devices in any one origin-destination analysis, with the capability to group several field detectors into an origin or destination zone. Analyze the OD data to remove observations of a vehicle at one zone, which were then subsequently re-identified at a more distant zone within a time threshold specified by an authorized system user.

*External Data Interface*

Provide Software that manages the retrieval of raw data from field devices. Provide a data interface that supports polling of data by the System. Define an XML data delivery schema for the raw observations, filtered matched pairs, detector health reports, running median travel times, route choice analysis, travel time performance management, and OD data. Provide a data interface that adheres to the NTCIP standard for Transportation Sensor Systems (NTCIP 1209). Regardless of whether the System is hosted internally at Department facilities or externally at a third-party location, the WisDOT must be able to get raw vehicle data (MAC address, signal strength, and time stamp information for each reading) directly from each Device for storage and archive without the need for any additional third-party software.

*System Training*

Provide two half-day (four hour minimum) training sessions, hosted by qualified instructors, for Department personnel and any representatives (maximum of 20 people in total) describing the System and all required features and functionality. Provide detailed instructions on System operations and any materials required for training System users to the Department for approval at least twenty-one (21) days prior to the proposed anticipated start of the training sessions. Department approval of the material will be required prior to scheduling the training sessions.

Conduct all training sessions at locations determined by the Department. Provide both formal classroom lectures as well as “hands-on” training to all participants. Provide “Hands-on” training that includes working directly with the actual wireless detection devices as well as the Software used to manage the System. Video tape all training sessions, and provide the tapes to the Department for training new personnel in the future.

*Service and Support*

Provide service and support for the Software for a minimum of 12 months from the date of System acceptance by the Department or Department acquisition of the Software, whichever is later. Troubleshoot and/or repair, at no cost to the Department, any and all hardware or software components that fail to operate as specified within 5 business days of notification by the Department of the failure. Provide customer support for the System during normal business hours, Monday through Friday, with an email contact and phone contact provided for the duration of the service and period.

1. **Acceptance Testing.**

The Vendor and the Department will work together to make any necessary revisions and/or modifications to the Acceptance Test Procedure (ATP) submitted by the Vendor that will be used to demonstrate all required functionality. If, during the course of testing, Department staff determine that the Software, any associated hardware, or any other part of the System performs unfavorably or fails any part of the acceptance test; these problems will be corrected at no additional expense to the Department. The Vendor will be required to correct all deficiencies observed during the ATP within 21 calendar days of notification to the Vendor of the deficiency by the Department. Restart ATP once all problems have been corrected. If the Vendor is unable to demonstrate any of the Assembly or functionality requirements identified in this specification or the ATP, the Department reserves the right to reject the Vendor’s proposal.

1. **Method of Measurement.**

A complete Software package shall be measured as software delivered, installed, configured, and tested, and accepted for valid operation.

1. **Basis of Payment.**

A complete System, measured as provided above, shall be paid for at the contract price, which price shall be payment in full for completing delivery and passing all acceptance testing; and for all labor, tools, transportation, equipment, cables, connections, and incidentals necessary to complete delivery. The cost proposal must clearly identify all costs to be incurred by the Department during System deployment and System operations during the first year. Deployment and first year costs include all one-time costs (e.g. software purchase), any annual costs associated with System operation during the first year (e.g. Software service, support, and maintenance), and any one-time or annual charges associated with connecting each detector.

**Attachment K**

**SPECIFICATION FOR Wireless Traffic Detection**

**System service, support, and maintenance**

1. **Description.**

This special provision provides for Vendor provided service, support, and maintenance (Support) for all hardware and software included in the contract. The hardware and software included in these specifications shall collectively be referred to as the system (System).

1. **Materials.**

Furnish service, support, and maintenance that meet or exceed the following requirements:

*Yearly Service and Support*

Following the conclusion of the twelve month warranty period for the System (including all hardware and software), provide service and support to the Department for a specified annual cost. The annual cost will be applicable to the optional second, third, fourth, and fifth year of the contract. Provide service and support for the System in each optional contract year identical to the service and support provided during the warranty period. This will not include replacement of failed hardware or software. Payment for this service and support will be paid at the completion of each optional year of the contract.

*Firmware and Software Upgrades*

Provide Wireless Traffic Detection Device (Device) firmware updates as well as updates for the Central System Software to the latest available version at no additional cost to the Department during the Warranty period and any optional yearlong contract extension.

1. **Method of Measurement.**

Each complete year of Support shall be measured as providing all required Vendor service, support, and maintenance services for a period of one year from the date of the contract extension.

1. **Basis of Payment.**

Each complete year of Support, measured as provided above, shall be paid for at the lump sum contract price, which price shall be payment in full for completing a full year of Support.