



DELAWARE DEPARTMENT OF TRANSPORTATION

# State of Delaware

## Invitation to Bid

Title: **PORTABLE DYNAMIC MESSAGE SIGNS**

Contract ID: **DOT1414-PORT\_DMS**

**- *Deadline to Respond* -**

**Tuesday August 19, 2014**

**2:00 P.M. Local Time**

**Bids shall be submitted to:**



State of Delaware  
**DEPARTMENT OF TRANSPORTATION**  
Administration Building  
Contract Administration  
800 Bay Road, Dover, DE 19901



**QUESTIONS** are to be submitted via e-mail to [dot-ask@state.de.us](mailto:dot-ask@state.de.us).

Responses to Questions will be posted to this project at <http://www.bids.delaware.gov>.

STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS

**ALL BIDDERS:**

The enclosed packet contains an "INVITATION TO BID". The invitation consists of the following documents:

INVITATION TO BID -

**I. DEFINITIONS AND GENERAL PROVISIONS**

I.A – GENERAL PROVISIONS

I.B – AWARD AND EXECUTION OF CONTRACT

I.C – GENERAL AUTHORITY

I.D – EQUAL OPPORTUNITY

**II. SPECIAL PROVISIONS**

**III. TECHNICAL SPECIFICATIONS**

**IV. BID QUOTATION REPLY SECTION**

INFORMATIONAL DOCUMENTS: *(not required to be returned with bid)*

1 – SAMPLE MONTHLY USAGE REPORT (Sample Report 1)

2 – SAMPLE SUBCONTRACTING (2<sup>ND</sup> TIER) QUARTERLY REPORTING (Sample Report 2)

3 – OFFICE OF SUPPLIER DIVERSITY (OSD) APPLICATION INFORMATION

4 – NO BID REPLY FORM

5 – PROPOSAL REPLY REQUIREMENTS

REQUIRED BID DOCUMENTS: *(MUST be completed and returned with your bid)*

ATTACHMENT A – NON-COLLUSION STATEMENT AND ACCEPTANCE

ATTACHMENT B – SUBCONTRACTOR INFORMATION FORM

ATTACHMENT C – BUSINESS REFERENCES

ATTACHMENT D – CONFIDENTIAL AND PROPRIETARY INFORMATION

ATTACHMENT E – Bid Form – (Paper)

INFORMATIONAL DOCUMENTS and REQUIRED BID DOCUMENTS are made part of this solicitation and are contained within the ITB pdf file, or available for download at the following site: <http://bids.delaware.gov/>

In order for your bid to be considered, the REQUIRED BID DOCUMENTS shall be executed completely and correctly and received in a sealed envelope clearly displaying the contract number, by the date and time listed on the previous page.

## I. DEFINITIONS AND GENERAL PROVISIONS

The attached Definitions and General Provisions apply to all contracts and are part of each invitation to bid. The requirement to furnish a bid bond and performance bond is applicable unless waived in the Special Provisions. Should the General Provisions conflict with the Special Provisions, the Special Provisions shall prevail. Bidders or their authorized representatives are required to fully acquaint themselves as to State procurement laws and regulations prior to submitting bid.

### DEFINITIONS

Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

**STATE**: The State of Delaware

**AGENCY**: Delaware Department of Transportation.

**BIDDER OR VENDOR**: Any individual, firm, or corporation formally submitting a proposal for the material or work contemplated, acting directly or through a duly authorized representative.

**BIDDER'S DEPOSIT**: The security designated in the proposal to be furnished by the bidder as a guaranty of good faith to enter into a contract with the Agency if the work to be performed or the material or equipment to be furnished is awarded to the bidder.

**BID INVITATION**: The "bid invitation" or "invitation to bid" is a packet of material sent to vendors and consists of General Provisions, Special Provisions, specifications, and enclosures.

**BOND**: The approved form of security furnished by the Vendors and its surety as a guaranty of good faith on the part of the Vendor to execute the work in accordance with the terms of the contract.

**CONTRACT**: The written agreement covering the furnishing and delivery of material or work to be performed.

**CONTRACTOR**: Any individual, firm, or corporation with whom a contract is made by the Agency.

**DESIGNATED OFFICIAL**: The agent authorized to act for the Agency.

**GENERAL PROVISIONS**: General Provisions are instructions pertaining to contracts in general. They contain, in summary, requirements of laws of the State, policies of the Agency, and instructions to vendors.

**ITB**: Invitation to Bid.

**LOCAL TIME**: Eastern Standard Time/Eastern Daylight Time

**PROPOSAL**: The offer of the bidder submitted on the approved form and setting forth the bidder's prices for performing the work or supplying the material or equipment described in the specifications.

**SPECIAL PROVISIONS**: Special Provisions are specific conditions or requirements peculiar to the contract under consideration and are supplemental to the General Provisions. Should the Special Provisions conflict with the General Provisions, the Special Provisions shall prevail.

**SURETY**: The corporate body which is bound with and for the contract, or which is liable, and which engages to be responsible for the contractor's payments of all debts pertaining to and for its acceptable performance of the work for which it has contracted.

## **SECTION I.A - GENERAL PROVISIONS**

### **1. BID INVITATION**

See "Definitions".

### **2. PROPOSAL FORMS**

The invitation to bid shall contain pre-printed forms for use by the vendor in submitting its bid. The forms shall contain basic information such as description of the item and the estimated quantities and shall have blank spaces for use by the vendor for entering information such as unit bid price, total bid price, etc.

### **3. INTERPRETATION OF ESTIMATES**

The attention of bidders is called to the fact that, unless stated otherwise, any quantities given in the proposal form are to be considered to be approximate only and are given as a basis for the comparison of bids. The Agency may increase or decrease the amount of any item as may be deemed necessary or expedient, during the period of the contract.

An increase or decrease in the quantity for any item is not sufficient ground for an increase or decrease in the unit price.

### **4. SILENCE OF SPECIFICATIONS**

The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specifications compliance will be the responsibility of the vendor.

### **5. EXAMINATION OF SPECIFICATIONS AND PROVISIONS**

The bidder shall examine carefully the proposal and the contract forms for the material contemplated. The bidder shall investigate and satisfy itself as to the conditions to be encountered, quality and quantities of the material to be furnished, and the requirements of the Special Provisions and the contract. The submission of a proposal shall be conclusive evidence that the bidder has made examination of the aforementioned conditions.

### **6. PREPARATION OF PROPOSAL**

- a. **The bidder's proposal shall be written in ink or typewritten** on the form provided.
- b. The proposal shall show a total bid price for each item bid and the total bid price of the proposal.

### **7. PRICES QUOTED**

The prices quoted are those for which the material will be furnished F.O.B. Ordering Agency and include all charges that may be imposed during the period of the contract. **All prices must be quoted in U.S. Dollars.**

### **8. DISCOUNT**

No qualifying letter or statements in or attached to the proposal, or separate discounts will be considered in determining the low bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into unit bid price(s).

**9. SAMPLES OR BROCHURES**

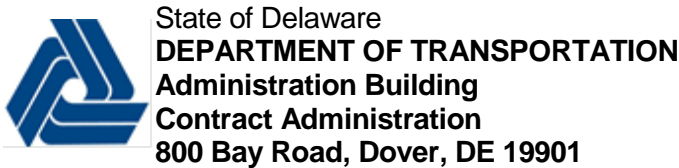
Samples or brochures may be required by the agency for evaluation purposes. They shall be such as to permit the Agency to compare and determine if the item offered complies with the intent of the specifications.

**10. PROPOSAL GUARANTY; BID BOND**

Waived.

**11. DELIVERY OF PROPOSALS**

Proposals shall be delivered in sealed envelopes, and shall bear on the outside the name and address of the bidder as well as the designation of the contract. Proposals must be delivered to the address listed below. All bids must clearly display the bid number on the envelope.



All proposals will be accepted at the time and place set in the advertisement. Bidder bears the risk of delays in delivery. Proposals received after the time set for public opening will be returned unopened.

**12. WITHDRAWAL OF PROPOSALS**

A bidder may withdraw its proposal unopened after it has been deposited, if such a request is made prior to the time set for the opening of the proposal.

**13. PUBLIC OPENING OF PROPOSALS**

The bids shall be publicly opened at the time and place specified by the Agency. Bidders or their authorized representatives are invited to be present.

**14. PUBLIC INSPECTION OF PROPOSALS**

If the bidder designates a portion of its bid as confidential, it shall isolate and identify in writing the confidential portions. The bidder shall include with this designation a statement that explains and supports the firm's claim that the bid items identified as confidential contain trade secrets or other proprietary data.

**15. DISQUALIFICATION OF BIDDERS**

Any one or more of the following causes may be considered as sufficient for the disqualification of a bidder and the rejection of its proposal or proposals:

- a. More than one proposal for the same contract from an individual, firm, or corporation under the same or different names.
- b. Evidence of collusion among bidders.
- c. Unsatisfactory performance record as evidenced by past experience.
- d. If the unit prices are obviously unbalanced either in excess or below reasonable cost analysis values.

- e. If there are any unauthorized additions, interlineations, conditional or alternate bids or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
- f. Non-attendance of mandatory pre-bid meetings may be cause of disqualification.

#### **16. ADDENDA TO THE INVITATION TO BID (ITB)**

If it becomes necessary to revise any part of this ITB, revisions will be posted at <http://bids.delaware.gov/>. By submitting an offer to the State, vendors have acknowledged receipt, understanding and commitment to comply with all materials, revisions, and addenda related to the Invitation to Bid.

#### **17. LOBBYING AND GRATUITIES**

Lobbying or providing gratuities shall be strictly prohibited. Vendors found to be lobbying, providing gratuities to, or in any way attempting to influence a State of Delaware employee or agent of the State of Delaware concerning this ITB or the award of a contract resulting from this ITB shall have their proposal immediately rejected and shall be barred from further participation in this ITB.

The selected vendor will warrant that no person or selling agency has been employed or retained to solicit or secure a contract resulting from this ITB upon agreement or understanding for a commission, or a percentage, brokerage or contingent fee. For breach or violation of this warranty, the State of Delaware shall have the right to annul any contract resulting from this ITB without liability or at its discretion deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

All contact with State of Delaware employees, contractors or agents of the State of Delaware concerning this ITB shall be conducted in strict accordance with the manner, forum and conditions set forth in this ITB.

#### **18. SOLICITATION OF STATE EMPLOYEES**

Until contract award, vendors shall not, directly or indirectly, solicit any employee of the State of Delaware to leave the State of Delaware's employ in order to accept employment with the vendor, its affiliates, actual or prospective contractors, or any person acting in concert with vendor, without prior written approval of the State of Delaware's contracting officer. Solicitation of State of Delaware employees by a vendor may result in rejection of the vendor's proposal.

This paragraph does not prevent the employment by a vendor of a State of Delaware employee who has initiated contact with the vendor. However, State of Delaware employees may be legally prohibited from accepting employment with the contractor or subcontractor under certain circumstances. Vendors may not knowingly employ a person who cannot legally accept employment under state or federal law. If a vendor discovers that they have done so, they must terminate that employment immediately.

#### **19. INDEPENDENT CONTRACTORS**

The parties to the contract shall be independent contractors to one another, and nothing herein shall be deemed to cause this agreement to create an agency, partnership, joint venture or employment relationship between parties. Each party shall be responsible for compliance with all applicable workers compensation, unemployment, disability insurance, social security withholding and all other similar matters. Neither party shall be liable for any debts, accounts, obligations or other liability whatsoever of the other party or any other obligation of the other party to pay on the behalf of its employees or to withhold from any compensation paid to such employees any social benefits, workers compensation insurance premiums or any income or other similar taxes. It may be at the State of Delaware's discretion as to the location of work for the contractual support personnel during the project period.

## **SECTION I.B - AWARD AND EXECUTION OF CONTRACT**

### **1. CONSIDERATION OF BIDS**

- a. After the proposals have been opened, the bids will be tabulated and the results will be made available to the public. Tabulations of the bids will be based on the correct summation of items at the unit price bid.
- b. The right is reserved to waive technicalities, to reject any or all bids, or any portion thereof, to advertise for new proposals, to proceed to do the work otherwise, or to abandon the work, if in the judgment of the Agency or its agent, the best interest of the State will be promoted thereby.

### **2. MATERIAL GUARANTY**

Before any contract is awarded, the successful bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all of the material to be used in the contract together with such samples as may be requested for the purpose of testing.

### **3. CONTRACT AWARD**

Within thirty days from the date of opening proposals, the contract will be awarded or the proposals rejected.

### **4. EXECUTION OF CONTRACT**

The bidder to whom the award is made shall execute a formal contract within twenty days after date of official notice of the award of the contract.

If the successful bidder fails to execute the required contract, as aforesaid, within twenty days after the date of official notice of the award of the contract, award will then be made to the next lowest qualified bidder of the work or re-advertised, as the Agency may decide.

### **5. REQUIREMENT OF CONTRACT BOND**

Successful bidders shall furnish bond, unless bond(s) have been waived as noted in the Special Provisions, simultaneously with the execution of the formal contract, to the State of Delaware for the benefit of the Agency with surety in the amount of 100% of the total contract award or as otherwise provided in the Special Provisions. Said bonds shall be conditioned upon the faithful performance of the contract.

The bond forms shall be provided by the Agency and the surety shall be acceptable to the Agency.

### **6. WARRANTY**

The successful bidder(s) shall be required to extend any policy guarantee usually offered to the general public, FEDERAL, STATE, COUNTY, or MUNICIPAL governments, on material in this contract against defective material, workmanship, and performance.

### **7. THE CONTRACT(S)**

The contract(s) with the successful bidder(s) will be executed with the Department of Transportation.

**8. RETURN OF BIDDER'S DEPOSIT**

The deposits shall be returned to the successful bidder upon the execution of the formal contract. The deposits of unsuccessful bidders shall be returned to them immediately upon the awarding of the contract or rejection of their bids. Bidders are made aware that Certified Checks submitted in lieu of Bond will be deposited, and unsuccessful bidders will receive payment of the value of the check from the state.

**9. INFORMATION REQUIREMENT**

The successful bidder's shall be required to advise the state's Government Support Services the gross amount of purchases made as a result of the contract.

**10. CONTRACT EXTENSION**

The State reserves the right to extend this contract on a month-to-month basis for a period of up to three months.

**11. TERMINATION FOR CONVENIENCE**

Contracts shall remain in effect for the time period and quantity specified unless the contract is terminated by the State. The State may terminate the contract at any time by giving written notice of such termination and specifying the effective date thereof, at least sixty (60) days before the effective date of termination.

**12. TERMINATION FOR CAUSE**

If, for any reasons, or through any cause, the Contractor fails to fulfill in timely and proper manner its obligations under this Contract, or if the Contractor violates any of the covenants, agreements, or stipulations of this Contract, the State shall thereupon have the right to terminate this contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least 5 days before the effective date of such termination. In that event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the Contractor under this Contract shall, at the option of the State, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials which is usable to the State.



## **SECTION I.C – GENERAL AUTHORITY**

### **1. AUTHORITY OF AGENCY**

On all questions concerning the interpretation of specifications, the acceptability and quality of material furnished and/or work performed, the classification of material, the execution of the work, and the determination of payment due or to become due, the decision of the Agency shall be final and binding.

### **2. LAWS TO BE OBSERVED**

The contractor is presumed to know and shall strictly comply with all National, State, or County laws, and City or Town ordinances and regulations in any manner affecting the conduct of the work. The contractor shall indemnify and save harmless the State of Delaware, the Agency, and all Officers, Agency and Servants thereof against any claim or liability arising from or based upon the violation of any such laws, ordinances, regulations, orders, or decrees whether by itself or by its employees.

### **3. PERMITS AND LICENSES**

All necessary permits, licenses, insurance policies, etc. required by local, State or Federal laws, shall be provided by the contractor at its own expense.

### **4. PATENTED DEVICES, MATERIAL AND PROCESSES**

- a. The contractor shall provide for the use of any patented design, device, material, or process to be used or furnished under this contract by suitable legal agreement with the patentee or owner, and shall file a copy of this agreement with the Agency.
- b. The contractor and the surety shall hold and save harmless the State of Delaware, the Agency, the Director, their Officers or Agents from any and all claims because of the use of such patented design, device, material, or process in connection with the work agreed to be performed under this contract.

### **5. EMERGENCY TERMINATION OF CONTRACT**

- a. Due to restrictions which may be established by the United States Government on material, or work, a contract may be terminated by the cancellation of all or portions of the contract.
- b. In the event the contractor is unable to obtain the material required to complete the items of work included in the contract because of restrictions established by the United States Government and if, in the opinion of the Agency, it is impractical to substitute other available material, or the work cannot be completed within a reasonable time, the incomplete portions of the work may be cancelled, or the contract may be terminated.

### **6. TAX EXEMPTION**

- a. Material covered by this proposal is exempt from all FEDERAL and STATE TAXES. Such taxes shall not be included in prices quoted.
- b. Any material which is to be incorporated in the work or any equipment required for the work contemplated in the proposal may be consigned to the Agency. If the shipping papers show clearly that any such material is so consigned, the shipment will be exempt from the tax on the transportation of property under provisions of Section 3475 (b) of the Internal Revenue Code, as amended by Public Law 180

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(78th Congress). All transportation charges shall be paid by the contractor. Each bidder shall take its exemption into account in calculating its bid for its work.

**7. OR EQUAL (PRODUCTS BY NAME)**

Specifications of products by name are intended to be descriptive of quality or workmanship, finish and performance. Desirable characteristics are not intended to be restrictive. Substitutions of products for those named will be considered provided the vendor certifies that the function, characteristics, performance and endurance qualities of the material offered is equal or superior to that specified. Final determination of equal status shall reside with the Agency.

**8. BID EVALUATION AND AWARD**

The Department of Transportation will award this contract to the lowest responsible bidder(s) which in their judgment best serves the interest of the State of Delaware in accordance with Delaware Code Title 29, Section 6923(k). Personnel with experience and technical background may be utilized by the Agency in making judgment. In case of error in price extension, the unit price(s) shall prevail.

**9. INVOICING**

After the awards are made, the agencies participating in the bid may forward their purchase orders to the successful bidder(s) in accordance with State Purchasing Procedures. The State will generate a payment voucher upon receipt of an invoice from the vendor.

**10. SEVERABILITY**

If any term or provision of this Agreement is found by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable, the same shall not affect the other terms or provisions hereof or the whole of this Agreement, but such term or provision shall be deemed modified to the extent necessary in the court's opinion to render such term or provision enforceable, and the rights and obligations of the parties shall be construed and enforced accordingly, preserving to the fullest permissible extent the intent and agreements of the parties herein set forth.

**SECTION I.D - EQUAL OPPORTUNITY**

**1. EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS**

During the performance of any contract for public works financed in whole or in part by appropriation of the State of Delaware, the contractor agrees as follows:

- a. The contractor, as set forth in Title 19 Delaware Code Chapter 7 section 711, will not discriminate against any employee or applicant for employment with respect to compensation, terms, conditions or privileges of employment because of such individual's race, marital status, genetic information, color, age, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated equally during employment without regard to their race, marital status, genetic information, color, age, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: advertising, lay-off or termination, rates of pay or other forms of compensation, and selection for training including apprenticeships. The contractor agrees to post in conspicuous places, notices to be provided by the contracting agency setting forth the provisions of this non-discrimination clause.
- b. During the performance of this contract, the contractor agrees as follows:
  1. The contractor, as set forth in Title 19 Delaware Code Chapter 7 section 711, will not discriminate against any individual with respect to compensation, terms, conditions or privileges of employment because of such individual's race, marital status, genetic information, color, age, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, marital status, genetic information, color, age, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
  2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, marital status, genetic information, color, age, religion, sex, sexual orientation, gender identity, or national origin."
- c. The term "contractor for public works" means construction, reconstruction, demolition, alteration, and/or repair work, maintenance work, and paid for in whole or in part out of the funds of a public body except work performed under a vocational rehabilitation program. The manufacture or furnishing of materials, articles, supplies or equipment is not a public work within the meaning of this subsection unless conducted in connection with and at the site of the public work.

## **II. SPECIAL PROVISIONS**

### **1. CONTRACT REQUIREMENTS**

This contract will be issued to cover the requirements for the Delaware Department of Transportation.

### **2. AGENCY USE CONTRACT**

Pursuant to 29 Del. C. §6904(e) respectively, if no state contract exists for a certain good or service, covered agencies may procure that certain good or service under another agency's contract so long as the arrangement is agreeable to all parties. Agencies, other than covered agencies, may also procure such goods or services under another agency's contract when the arrangement is agreeable to all parties.

### **3. CONTRACT TERM**

Each vendor's contract shall be valid for a three (3) year period from contract execution with the option to continue the Contract for two (2) additional one-year extensions. The one-year extension should be approved by both parties in writing, at least ninety (90) days prior to expiration of the existing Contract. The Contractor may deliver additional units to the Department or any other state or local agency at the Contract price during this period, if agreeable to both parties.

### **4. PRICES**

**Prices shall remain firm for the initial term of the contract. All prices shall be quoted in U.S. Dollars.**

### **5. PRICE ADJUSTMENT**

The Vendor is not prohibited from offering price reductions, nor is the State prohibited from requesting price reductions, and the contract may be amended at any time upon agreement of both parties for such reductions.

If agreement is reached to extend this contract beyond the initial term, the Department of Transportation, Contract Administration shall have the option of offering a determined price adjustment that shall not exceed the change in the current All Urban Consumers Price Index (CPI-U), Philadelphia-Wilmington area Average. If the CPI-U is used, any increase/decrease shall reflect the change during the previous published twelve (12) month period at the time of renegotiation.

### **6. SHIPPING TERMS**

F.O.B. destination; freight pre-paid.

### **7. QUANTITIES**

The attention of bidders is called to the fact that, unless stated otherwise, the quantities given in the proposal are best estimates and are given as a basis for the comparison of bids. Quantities ordered may be increased or decreased by any eligible agency as deemed necessary during the period of the contract.

Prior contract utilization may be viewed at the following site, if available: <http://contracts.delaware.gov/>.

### **8. FUNDING OUT**

The continuation of this contract is contingent upon funding appropriated by the legislature.

**9. BID BOND REQUIREMENT**

Waived.

**10. PERFORMANCE BOND REQUIREMENT**

Waived.

**11. MANDATORY INSURANCE REQUIREMENTS**

As a part of the contract requirements, the contractor must obtain at its own cost and expense and keep in force and effect during the term of this contract, including all extensions, the minimum coverage limits specified below with a carrier satisfactory to the State. All contractors must carry the following coverage depending on the type of service or product being delivered.

- a. Commercial General Liability - \$1,000,000.00 per person/\$3,000,000 per occurrence.  
and
- b. Medical/Professional Liability - \$1,000,000.00 per person/\$3,000,000 per occurrence.  
or
- c. Miscellaneous Errors and Omissions - \$1,000,000.00 per person/\$3,000,000 per occurrence.  
or
- d. Product Liability - \$1,000,000.00 per person/\$3,000,000 per occurrence.  
and
- e. Automotive Liability Insurance covering all automotive units used in the work with limits of not less than \$100,000 each person and \$300,000 each accident as to bodily injury and \$25,000 as to property damage to others.  
and
- f. The vendor shall maintain such insurance as will protect against claims under Worker's Compensation Act and from any other claims for damages for personal injury, including death, which may arise from operations under this contract. The vendor is an independent contractor and is not an employee of the State of Delaware.

Before any work is done with the State, a Certificate of Insurance referencing the name and contract number stated herein, shall be filed with the State. The certificate holder is as follows:

Delaware Department of Transportation  
Contract No. DOT1412-PORT\_DMS  
Send to Attention of:  
Contract Administration  
800 Bay Road, Dover, DE 19901

**Note: The State of Delaware shall not be named as an additional insured.**

Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

**12. BASIS OF AWARD**

The Delaware Department of Transportation shall award this contract to the lowest responsible and responsive bidder(s) who best meets the terms and conditions of the bid. The award will be made on basis of price, product evaluation, and prior history of service and capability.

The Delaware Department of Transportation reserves the right to reject any or all bids in whole or in part, to make multiple awards, partial awards, award by types, item by item, or lump sum total, whichever may be most advantageous to the State of Delaware.

**13. STATE OF DELAWARE BUSINESS LICENSE**

Prior to receiving an award, the successful vendor shall either furnish proof of State of Delaware Business Licensure or initiate the process of application where required. An application may be requested in writing to: Division of Revenue, Carvel State Building, P.O. Box 8750, 820 N. French Street, Wilmington, DE 19899-8750 or by telephone to one of the following numbers: (302) 577-8201 - Public Service, (302) 577-8205 - Licensing Department.

Information regarding the award of this contract will be given to the Division of Revenue. Failure to comply with the State of Delaware licensing requirements may subject your organization to applicable fines and/or interest penalties.

**14. HOLD HARMLESS**

The successful bidder agrees that it shall indemnify and hold the State of Delaware and all its agencies harmless from and against any and all claims for injury, loss of life, or damage to or loss of use of property caused or alleged to be caused, by acts or omissions of the successful bidder, its employees, and invitees on or about the premises and which arise out of the successful bidder's performance, or failure to perform as specified in the Agreement.

**15. OWNERSHIP OF INTELLECTUAL PROPERTY**

All copyright and patent rights to all papers, reports, forms, materials, creations, or inventions created or developed in the performance of this contract shall become the sole property of the State of Delaware. On request, the contractor shall promptly provide an acknowledgment or assignment in a tangible form satisfactory to the State to evidence the State's sole ownership of specifically identified intellectual property created or developed in the performance of the contract.

**16. NON-PERFORMANCE**

In the event the vendor does not fulfill its obligations under the terms and conditions of this contract, the ordering agency may purchase equivalent product on the open market. Any difference in cost between the contract prices herein and the price of open market product shall be the responsibility of the vendor. Under no circumstances shall monies be due the vendor in the event open market products can be obtained below contract cost. Any monies charged to the vendor may be deducted from an open invoice.

**17. FORCE MAJEURE**

Neither the vendor nor the ordering agency shall be held liable for non-performance under the terms and conditions of this contract due, but not limited to, government restriction, strike, flood, fire, or unforeseen catastrophe beyond either party's control. Each party shall notify the other in writing of any situation that may prevent performance under the terms and conditions of this contract.

## **18. CONTRACTOR NON-ENTITLEMENT**

State of Delaware Contractors for Materiel and for Services shall not have legal entitlement to, nor seek business from another Contractors' Central Contract. Additionally, they shall not utilize other Central Contracts to fulfill the requirements of their respective contract as they are not a "Covered Agency" as defined by Title 29 Chapter 69 of the State Procurement Code.

## **19. MANDATORY USAGE REPORTING**

One of the primary goals in administering this contract is to keep accurate records regarding its actual value/usage. This information is essential in order to update the contents of the contract and to establish proper bonding levels, if they are required. The integrity of future contracts revolves around our ability to convey accurate and realistic information to all interested parties.

A complete and accurate Usage Report (Sample Report 1) shall be furnished in an Excel format and submitted electronically, no later than the 15th (or next business day after the 15th day) of each month, detailing the purchasing of all items on this contract. The reports shall be submitted and sent as an attachment to [vendorusage@state.de.us](mailto:vendorusage@state.de.us). Submitted reports shall contain accurate descriptions of the products, goods or services procured, purchasing agency information, including the six-digit department and organization code, quantities procured and prices paid. Any exception to this mandatory requirement or failure to submit complete reports, or in the format required, may result in corrective action, up to and including the possible cancellation of the award. Failure to provide the report with the minimum required information may also negate any contract extension clauses. Additionally, Vendors who are determined to be in default of this mandatory report requirement may have such conduct considered against them, in assessment of responsibility, in the evaluation of future proposals.

In accordance with Executive Orders 14 and 29 – Increasing Supplier Diversity Initiatives within State Government and Ensuring Representation of Veteran-Owned Businesses (VOBE) including Service Disabled Veteran Owned Businesses (SDVOBE), the State of Delaware is committed to supporting its diverse business industry and population. The successful Vendor will be required to accurately report on the participation by Diversity Suppliers which includes: minority (MBE), woman (WBE), veteran owned business (VOBE), or service disabled veteran owned business (SDVOBE) under this awarded contract. The reported data elements shall include but not be limited to; name of state contract/project, the name of the Diversity Supplier, Diversity Supplier contact information (phone, email), type of product or service provided by the Diversity Supplier and any minority, women, veteran, or service disabled veteran certifications for the subcontractor (State OSD certification, Minority Supplier Development Council, Women's Business Enterprise Council, VetBiz.gov). The format used for Subcontracting 2nd Tier reporting is shown as Sample Report 2.

Accurate 2nd Tier reports shall be submitted to the Office of Supplier Diversity at [vendorusage@state.de.us](mailto:vendorusage@state.de.us) on the 15th (or next business day) of the month following each quarterly period. For consistency quarters shall be considered to end the last day of March, June, September and December of each calendar year. Contract spend during the covered periods shall result in a report even if the contract has expired by the report due date.

## **20. BUSINESS REFERENCES**

In order to have your bid considered, please supply three (3) business references consisting of current or previous customers with your reply. Please include name, address, telephone number, and a contact person.

**PLEASE DO NOT UTILIZE STATE OF DELAWARE PERSONNEL AS REFERENCES.**

## **21. ORDERING PROCEDURE**

Successful contractors are required to have either a local telephone number within the (302) area code, a toll free (800) number, or agree to accept collect calls. Each agency is responsible for placing their orders and may be accomplished by written purchase order, telephone, fax or computer on-line systems. The contractor or vendor must accept full payment by procurement (credit) card and/or conventional check and/or other electronic means at the State's option, without imposing any additional fees, costs or conditions.

## **22. BILLING**

**The successful vendor is required to "Bill as Shipped" to the respective ordering agency(s). Ordering agencies shall provide contract number, ship to and bill to address, contact name and phone number.**

## **23. PAYMENT**

The agencies or school districts involved will authorize and process for payment each invoice within thirty (30) days after the date of receipt of a correct invoice. The contractor or vendor must accept full payment by procurement (credit) card and/or conventional check and/or other electronic means at the State's option, without imposing any additional fees, costs or conditions.

## **24. PRODUCT SUBSTITUTION**

All items delivered during the life of the contract shall be of the same type and manufacture as specified or accepted as part of the bid proposal unless specific approval is given by the Delaware Department of Transportation to do otherwise. However, awarded vendors are highly encouraged to offer any like substitute product (s); either generic or brand name, at any time during the subsequent contract term, especially if an opportunity for cost savings to the state exists. In such cases, the state may require the submission of written specifications and/or product samples for evaluation prior to any approvals being granted.

## **25. BID/CONTRACT EXECUTION**

Both the non-collusion statement that is enclosed with this Invitation to Bid and the contract form delivered to the successful bidder for signature **shall** be executed by a representative who has the legal capacity to enter the organization into a formal contract with the State of Delaware, Department of Transportation.

The State of Delaware requires completion of the Delaware Substitute Form W-9 to make payments to vendors. Successful completion of this form enables the creation of a State of Delaware vendor record. The Taxpayer ID (SSN or EIN) and Applicant (vendor) name are submitted to the Internal Revenue Service for "matching." If the Taxpayer ID and name do not match, the vendor record cannot be approved.

It is the applicant's responsibility to select the appropriate 1099 Withholding Type and Class. If incorporated, a business is not subject to 1099 reporting unless the business is providing legal or medical services.

Any questions about completing this form or specific comments about a form that you have submitted, please contact vendor services by phone at 302-672-5000.

## **26. CONTRACTOR RESPONSIBILITY**

The State will enter into a contract with the successful contractor. The successful contractor shall be responsible for all products and services as required by this ITB. Subcontractors, if any, shall be clearly identified in the financial proposal.



**27. PERSONNEL**

- a. The Contractor represents that they have, or will secure at their own expense, all personnel required to perform the services required under this contract.
- b. All of the services required hereunder shall be performed by the Contractor or under its direct supervision, and all personnel, including subcontractors, engaged in the work shall be fully qualified and shall be authorized under State and local law to perform such services.
- c. None of the work or services covered by this contract shall be subcontracted without the prior written approval of the State.

**28. LIFE CYCLE COSTING**

If applicable, the specifications contained within this ITB have been developed through Life Cycle Cost Analysis that will allow the State to realize the lowest total cost of ownership and operation over the useful life of the equipment

**29. ENVIRONMENTAL PROCUREMENT PRODUCTS**

- a. Energy Star - If applicable, the Contractor must provide products that earn the ENERGY STAR rating and meet the ENERGY STAR specifications for energy efficiency in order to keep overall event costs to a minimum. The Contractor is encouraged to visit [www.energystar.gov](http://www.energystar.gov) for complete product specifications and updated lists of qualifying products.
- b. Green Products – third party certification of green products accepted from GSS w/approved green certification shall be offered wherever available in addition to or as a substitute for non-green products.
- c. Contractors shall report all green items procured during the monthly reporting period using the Usage Report that will be provided to the awarded Vendor(s).
- d. Environmental Procurement Policies of the State shall determine acceptable consideration and credit for environmentally preferred products and services in the performance of this award. The State Environmental Procurement Policies may be found:  
<http://gss.omb.delaware.gov/contracting/documents/agencyboilers/espp.pdf>.

**30. TERMINATION FOR CONVENIENCE**

Contracts shall remain in effect for the time period and quantity specified unless the contract is terminated by the State. The State may terminate the contract at any time by giving written notice of such termination and specifying the effective date thereof, at least sixty (60) days before the effective date of termination.

**31. TERMINATION FOR CAUSE**

If, for any reasons, or through any cause, the Contractor fails to fulfill in timely and proper manner its obligations under this Contract, or if the Contractor violates any of the covenants, agreements, or stipulations of this Contract, the State shall thereupon have the right to terminate this contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least 5 days before the effective date of such termination. In that event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the Contractor under this Contract shall, at the option of the State, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials which is usable to the State.

### **32. AUDIT ACCESS TO RECORDS**

The Vendor shall maintain books, records, documents, and other evidence pertaining to this Contract to the extent and in such detail as shall adequately reflect performance hereunder. The Vendor agrees to preserve and make available to the State, upon request, such records for a period of five (5) years from the date services were rendered by the Vendor. Records involving matters in litigation shall be retained for one (1) year following the termination of such litigation. The Vendor agrees to make such records available for inspection, audit, or reproduction to any official State representative in the performance of their duties under the Contract. Upon notice given to the Vendor, representatives of the State or other duly authorized State or Federal agency may inspect, monitor, and/or evaluate the cost and billing records or other material relative to this Contract. The cost of any Contract audit disallowances resulting from the examination of the Vendor's financial records will be borne by the Vendor. Reimbursement to the State for disallowances shall be drawn from the Vendor's own resources and not charged to Contract cost or cost pools indirectly charging Contract costs.

### **33. VENDOR EMERGENCY RESPONSE POINT OF CONTACT**

The awarded vendor(s) shall provide the name(s), telephone, or cell phone number(s) of those individuals who can be contacted twenty four (24) hours a day, seven (7) days a week to meet a critical need for commodities or services when the Governor of the State of Delaware declares a state of emergency under the current Delaware Emergency Operations Plan. Failure to provide this information could render the bid as non-responsive.

### **34. SUBCONTRACTS**

Subcontracting is permitted under this ITB and contract. However, every subcontractor shall be identified in the Proposal (Attachment E) and agreed to in writing by the State or as are specifically authorized in writing by the Agency during the performance of the contract. Any substitutions in or additions to such subcontractors, associates, or consultants will be subject to the prior written approval of the State.

The Vendor(s) shall be responsible for compliance by the subcontractor with all terms, conditions and requirements of the ITB and with all local, State and Federal Laws. The Vendor shall be liable for any noncompliance by any subcontractor. Further, nothing contained herein or in any subcontractor agreement shall be construed as creating any contractual relationship between the subcontractor and the State.

**If a company elects to be a subcontractor for another vendor, the subcontractor may not independently bid on this solicitation.**

### **35. AGENCY'S RESPONSIBILITIES**

The Agency shall:

- a. Examine and review in detail all letters, reports, drawings and other documents presented by the Vendor to the Agency and render to the Vendor in writing, findings and decisions pertaining thereto within a reasonable time so as not to delay the services of Vendor.
- b. Give prompt written notice to the Contractor whenever the Agency observes or otherwise becomes aware of any development that affects the scope or timing of the Contractor's services.
- c. When an ordering agency first experiences a relatively minor problem or difficulty with a vendor, the agency will contact the vendor directly and attempt to informally resolve the problem. This includes failure to perform by the date specified and any unacceptable difference(s) between the purchase order

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and the merchandise received. Ordering agencies should stress to vendors that they should expedite correction of the differences because failure to reply may result in an unfavorable rating in the execution of the awarded contract.

- d. The state has several remedies available to resolve non-performance issues with the contractor. The Agency should refer to the Contract Terms and Conditions to view these remedies. When a default occurs, the Agency should first review the contract to confirm that the issue is a part of the contract. If the issue is not covered by the contract, the state cannot expect the contractor to perform outside the agreement. If the issue is a part of the contract, the Agency or GSS - Contracting must then contact the contractor, discuss the reasons surrounding the default and establish a date when the contractor will resolve the non-performance issue.
- e. If there is a performance deficiency, a Corrective Action Report (CAR) may be used. Complete this form to report concerns with vendors or commodities. Be sure to furnish as much detail as possible. <http://gss.omb.delaware.gov/divisionwide/forms.shtml>.

### **36. CONFIDENTIALITY**

All documents submitted as part of the vendor's proposal will be deemed confidential during the evaluation process. Vendor proposals will not be available for review by anyone other than the State of Delaware/Proposal Evaluation Committee or its designated agents. There shall be no disclosure of any vendor's information to a competing vendor prior to award of the contract.

The State of Delaware is a public agency as defined by state law, and as such, it is subject to the Delaware Freedom of Information Act, 29 *Del. C.* Ch. 100. Under the law, all the State of Delaware's records are public records (unless otherwise declared by law to be confidential) and are subject to inspection and copying by any person. Vendor(s) are advised that once a proposal is received by the State of Delaware and a decision on contract award is made, its contents will become public record and nothing contained in the proposal will be deemed to be confidential except proprietary information.

Vendor(s) shall not include any information in their proposal that is proprietary in nature or that they would not want to be released to the public. Proposals must contain sufficient information to be evaluated and a contract written without reference to any proprietary information. If a Vendor feels that they cannot submit their proposal without including proprietary information, they must adhere to the following procedure or their proposal may be deemed unresponsive and will not be recommended for selection. Vendor(s) must submit such information in a separate, sealed envelope labeled "Proprietary Information" with the ITB number. The envelope must contain Attachment H describing the documents in the envelope, representing in good faith that the information in each document is not "public record" as defined by 29 *Del. C.* § 10002, and briefly stating the reasons that each document meets the said definitions.

Upon receipt of a proposal accompanied by such a separate, sealed envelope, the State of Delaware will open the envelope to determine whether the procedure described above has been followed.

If the Vendor does not have any documents it declares confidential or proprietary, Attachment H should be completed by checking the appropriate box found at the top of the attachment.

### **37. NUMBER OF COPIES WITH MAILING OF PROPOSAL**

To be considered, all proposals must be submitted in writing and respond to the items outlined in this ITB. The State reserves the right to reject any non-responsive or non-conforming proposals. Each proposal must be submitted with two (2) paper copies of the Bid Form. Paper copies must contain original signatures in all locations requiring signatures.

Title: PORTABLE DYNAMIC MESSAGE SIGNS

**III. TECHNICAL SPECIFICATIONS**

**1. Description**

Supplying trailer-mounted, full matrix, LED (light emitting diode) Portable Dynamic Message Signs (DMS), training and warranty. The portable DMS shall be provided with one LED configuration comprising three (3) lines with eighteen (18) inch characters and twelve (12) characters per line.

Name	Lines / Characters Per Line	Letter Height	Quantity	Access
Portable DMS	3 x 12	18"	20	Front

This work shall involve supplying portable DMS statewide during the contract term. These portable DMS signs will be controlled both from the Department's Transportation Management Center (TMC) in Smyrna, DE, and locally via the local interface provided as part of the supplied on-site field controllers.

The new portable DMS must fully comply with the National Transportation for ITS Communications Protocol (NTCIP) standards specified in this Contract. As directed under this Contract, the Contractor must supply the NTCIP Management Information Base (MIB) for the portable DMS. Additionally, the Contractor shall provide one copy of the vendor's DMS control software to control the DMS, as defined herein. All portable DMS shall be equipped with both standard RS-232 and standard Ethernet interfaces, as defined herein.

This contract and prices submitted will include the fabrication, shipping, acceptance testing, technical support, and training for an estimated twenty (20) portable DMS of Amber LED technology; along with communications equipment, and other associated equipment.

Various requirements and responsibilities within the context of this project shall be assumed by The Department and the Contractor, as specified herein. All acceptance testing, testing documentation development and activities shall be performed by the Contractor (and witnessed by The Department or its representative); all installation, operations, and maintenance training shall be provided by the Contractor.

**1.1 Concept of Operations**

The portable DMS defined in this Specification will be used to relay real-time traveler information from the Transportation Management Center to motorists. The portable DMS shall be controlled either locally at the sign controller or remotely from the Department Central System.

The primary form of controlling portable DMS signs will be either manually via the field controller or direct connection with a laptop computer in the field. Additionally, the DMS controller shall be equipped with an RS-232 port to facilitate communications over an alternative topology.

In order to allow for independent operations, the portable DMS shall provide the capability for operators at the Central System to download messages, to define schedules within the DMS, and to activate those pre-defined message based on date/day/time. Additionally, it shall be possible to define, download, and activate manual ad-hoc messages from both local and remote/central locations.

In order to avoid legibility problems, the portable DMS must provide the capability to enable automatic dimming of the sign display so that the light output is appropriate for various visibility conditions. For example, the light

output shall be dimmable at night, but be bright during sunny days, fog, and other limited visibility conditions. The operators shall also be provided with the capability to manually manipulate, download, and store a matrix defining which ambient light conditions should create a particular light output.

In order to ease troubleshooting, the portable DMS must also provide the capabilities to record any activities performed locally and remotely such as recording user, date/time, locally performed actions, remotely performed actions, any failures, and any failure recoveries. In addition, the local or remote operators are to be provided with the capability to manually activate tests and to obtain the test results for items such as fan operations, pixel operations, and power supply operations.

## **2. Requirements**

Each portable DMS unit shall contain the sign panel assembly, structural support system, lift mechanism, trailer, power supplies, sign-mounted controller, communications interface, and ancillary equipment described herein necessary for proper operation.

The portable DMS shall be compatible with the following:

1. NTCIP requirements defined in this Contract
2. Existing Dynamic Message Sign NTCIP software at the TMC, which is compatible with the defined NTCIP requirements.
3. Serial (RS-232) communications or cellular telephone wireless modem
4. Ethernet communications

### **2.1 DMS Remote Access Requirements**

Portable DMS shall provide at least three levels of access and authentication: This requirement is in addition to any central system access security that is provided via the ITMS or 3<sup>rd</sup> party software.

1. Users with low level access clearance will only be able to monitor the sign's displayed messages and other non-access level related information.
2. In addition to Low Level Access capabilities, Users with medium level access clearance will also be able to download messages, activate downloaded or stored messages, activate diagnostic tests and obtain the results, and other non-access level related information.
3. In addition to Medium Level Access capabilities, users with high level access clearance are to be provided with access to the DMS' database parameters, communications parameters (drop address, telephone numbers, baud rates, etc) as well as access level assignments, user names and passwords.

### **2.2 DMS Firmware / Software Requirements**

The complete DMS software system shall contain five software components described herein:

1. Communication Software
2. Control Software
3. Character Set Software
4. Message Capabilities
5. Diagnostic Software

#### **2.2.1 Communication Software**

The DMS complying with these specifications shall respond to any communications from the central software using the NTCIP requirements as defined herein.

## **2.2.2 Control Software**

The control software shall:

1. Have all features accessible from both the local controller and remote access (i.e., the central control software).
2. Access from either point shall be password-protected with different levels.
  - a. Configuration items pertaining to application functions and communications configurations as well as all passwords shall be accessible by one level.
  - b. Control functions such as defining scheduling functions, message display requests, and diagnostics controls shall be accessible by another level.
  - c. Monitoring functions such as monitoring the message displays and obtaining diagnostics results shall be accessible by another level.
3. Be non-copy-protected, and shall not use any form of a hardware key.
4. Be supplied on CD-ROM.
5. Be menu-driven with all operations of the software grouped under logical sub-menus. These menus shall be presented and accepted by The Department prior to delivery.
6. Have the following adjustable parameters:
  - a. Selection of messages.
  - b. Selection of on/off time for each page of a message.
  - c. 40 character location description.
7. Provide the capability from the local controller to modify the following parameters (Note: the central system software will need to provide the same capabilities):
  - a. Serial port and modem parameters (baud rate, stop bits, parity, tone/pulse dial, landline/cellular connection, dialed phone number, non-connect timeout (0-255 seconds), and number of retries until error).
  - b. Sign number / Drop address of the sign.
  - c. Phone number of DMS unit.
  - d. Allow the central system to obtain these parameters remotely.

## **2.2.3 Character set software**

Provide signs that are capable of displaying American Standard Code for Information Interchange (ASCII) characters 32 through 126, including all uppercase and lowercase letters and digits 0 through 9, at any location in the message line.

## **2.2.4 Message Capabilities**

The DMS shall support the following modes of operation and message capabilities:

1. Modes of Operation - Signs shall be able to display a static message or a multiple page message, as described below.
2. Static Message - The message chosen shall be displayed constantly on the sign face until the sign controller is instructed to do otherwise.
3. Multi Page Messages - The chosen message shall display up to two different pages in increments set by the user. The user shall have the ability to set the increment for each page can be configured to display between 0.5 and 9.9 seconds.
4. The sign shall be able to show a default message following a communication failure. Communication failure shall be defined as no communication within a time period that can be specified by The Department.
5. In the event of communication errors or controller lock-ups, the sign shall display a blank message.
6. In the event of a power failure, sign shall display the current message upon restoration of power.
7. Accommodate up to 300 pre-programmed messages and at least 200 user-definable messages. The

Contractor shall propose 7 pre-programmed messages, which are to be used for testing purposes, to The Department, who will review and accept them or provide alternative messages. The purpose of those pre-programmed messages is to test the entire sign display using different patterns.

8. Each message shall be definable with up to six (6) pages.
9. On/off time for each page within a message shall be user adjustable within a range of zero to five seconds in 0.1 second increments.
10. Be able to retrieve all messages stored in temporary memory.
  - a. Temporary memory shall be nonvolatile.
  - b. All messages and program shall remain resident in the controller's memory in the event of a power failure.

### **2.2.5 Diagnostic software**

The sign controller shall provide for diagnostics software that enables an authorized user to perform certain tests.

1. The controller shall provide the capability to execute pixel tests and obtain the results.
2. The controller shall provide the capability to execute fan tests and obtain the results.
3. The controller shall provide the capability to execute power supply tests and obtain results.
4. The controller shall provide the capabilities to obtain any other failures.
5. The user shall be able to perform the following message display tests that will demonstrate that all pixels are properly working and that the column and row assignments for each pixel are correct.
  - a. SET TEST: All pixels are on.
  - b. RESET TEST: All pixels are off.
  - c. SET RESET TEST: Set and resets all pixels continuously.
  - d. COLUMN TEST: Walking set column.
  - e. ROW TEST: Scrolling set row.
  - f. FLASH PIXEL: Flash lower right hand pixel.
  - g. ALL CHARACTERS: display all ASCII Characters supported on several pages within a message.

## **3.0 Generic Requirements for DMS**

### **3.1 Communications Interfaces**

The Department shall supply all modems, transceivers, and other hardware required to provide communications via the Contractor supplied serial RS-232, fiber optic or Ethernet interfaces. In addition, each portable DMS Sign Controller (see *Section 4.4 of the Technical Specifications, DMS Controller*) shall be outfitted with a serial RS-232 port which may be used by The Department to communicate with each sign using an alternate topology, possibly including one of the following:

1. Private and leased fiber optics—routed/switched Internet Protocol (IP) based network, which uses IEEE standard Ethernet connections at end devices
2. Private and leased copper lines—carrying either serial or Ethernet, or other
3. Leased line network services—both serial and Ethernet, among others
4. Leased cellular network services—cellular modem (CDMA or GPRS) to serial or Ethernet
5. Wireless Ethernet

These communications components are defined to achieve compatibility between the existing communications system and the delivered equipment. The communications requirements for the portable DMS are contained in the special provisions.

### **3.2 Communications Protocol – NTCIP Requirements**

This Contract requires compliance to the NTCIP standards for portable DMS. The applicable standards for the portable DMS signs are contained in Section 4.8 of the Technical Specifications, Transportation Management Center Communications.

### **3.3 Software Interfaces**

This Contract requires NTCIP Compliance, delivery of the installed NTCIP MIB for each delivered portable DMS, and delivery of the Contractor's commercial-off-the-shelf (COTS) central system software with unlimited usage license for The Department. This Contract will not require integration with any existing ITMS software systems.

#### **3.3.1 Integration with the ITMS at the TMC**

The Department's TMC provides a central location to control and monitor the DMS. The TMC will utilize an existing NTCIP-compliant control system and existing communications network to operate the existing portable DMS and the new portable DMS acquired under this Contract.

The Contractor shall be responsible for supplying the ordered portable DMS and associated equipment once executed by individual Purchase Orders. The ordered and installed portable DMS shall be able to be controlled via the communications system provided by The Department and using open, non-proprietary standards as defined in these specifications. The Contractor shall be responsible for ensuring that all software applications supplied under this Contract shall incorporate a published database (NTCIP compatible MIB) that can be accessed by both the supplied COTS and by The Department's customized user interface, which is NTCIP compatible.

The Department's System Integrator (under separate contract) shall be responsible for developing and providing the appropriate software interface for the portable DMS into The Department's central system software, called ITMS. The Contractor shall supply the necessary information directly to The Department's System Integrator when The Department's System Integrator is ready to integrate the portable DMS into ITMS. The Contractor and The Department's System Integrator shall coordinate appropriate times and dates to accomplish this work, if appropriate, and notify The Department's Manager of Traffic Information Systems who shall approve all such activity.

#### **3.3.2 NTCIP MIB Delivery**

The Contractor shall provide the complete NTCIP MIB, as installed within each purchased portable DMS, sufficient to describe how the system can be operated, including any specific details relating to operations with the supplied models of the portable DMS. The NTCIP MIB shall be provided within twenty (20) business days after the request of The Department, or if not requested, within two (2) business days after delivery of the Contract items. The Contractor shall provide the NTCIP MIB and instructions sufficient for the system integrator to achieve operations of the system.

The NTCIP MIB for each purchased portable DMS shall be provided in two (2) copies in both paper and electronic format. The Contractor shall provide the electronic NTCIP MIB on Compact Disc (CD-ROM) to The Department containing ASCII versions of the following Management Information Base (MIB) files in Abstract Syntax Notation 1 (ASN.1) format with the following information:

1. The relevant version of each official standard MIB Module referenced by the device functionality.
2. If the device does not support the full range of any given object within a Standard MIB Module, a



manufacturer-specific version of the official Standard MIB Module with the supported range indicated in ASN.1 format in the SYNTAX and/or DESCRIPTION fields of the associated OBJECT TYPE macro will be provided. The filename of this file shall be identical to the standard MIB Module, except that it will have the extension ".man".

3. A MIB Module in ASN.1 format containing any and all manufacturer-specific objects supported by the device with accurate and meaningful DESCRIPTION fields and supported ranges indicated in the SYNTAX field of the OBJECT-TYPE macros.
4. A MIB containing any other objects supported by the device.

The manufacturer shall allow the use of any and all of this documentation by any party authorized by the Procuring Agency for systems integration purposes at any time initially or in the future, regardless of what parties are involved in the systems integration effort.

### **3.3.3 COTS Software Delivery**

The Contractor shall provide the complete manufacturer specific COTS central system software application sufficient to operate, control, and diagnose any delivered DMS, including any specific details relating to operations with the supplied models of the DMS. The COTS software shall be provided within twenty (20) business days after the request of The Department, or if not requested, within two (2) business days after delivery of the Contract items. The Contractor shall provide the COTS central system software application and/or installation files and instruction documentations sufficient for the system integrator to establish control. The Contractor shall provide two (2) copies in electronic format of the COTS central system software. The Contractor shall provide the electronic COTS software in a format suitable for delivery on Compact Disc (CD-ROM) to The Department.

The manufacturer shall allow the use of any and all of this documentation by any party authorized by the Procuring Agency for systems integration purposes at any time initially or in the future, regardless of what parties are involved in the systems integration effort.

### **3.4 Acceptance Testing**

The Contractor shall develop an Acceptance Test Plan (ATP) to ensure the each feature is fully operational and fulfills each and all requirements of the Project Specifications. The ATP shall be broken down into test scripts, each of which shall clearly identify the requirements defined in these Project Specifications are to be addressed by a particular test script. The test scripts shall test only logically connected requirements, otherwise a new test script shall be defined to address requirements not logically connected. For example, a test script demonstrating the functionality associated with automatic dimming shall not also attempt to demonstrate the legibility distance requirements.

The Plan shall be submitted to the TMC Manager for review and approval within forty-five (45) working days after issuance of NTP. The TMC Manager may review and respond in writing on the submitted ATP within fifteen (15) business days from the date of receipt of the submission (*NOTE: this includes the ATP for any modified portable DMS type/models purchased later in the project via an individual Purchase Order*). The Contractor shall be required to resubmit any revisions requested by The TMC Manager to the ATP to be fully compliant with the requirements of the Contract within fifteen (15) business days for approval, unless otherwise noted by The TMC Manager. The Contractor shall clearly note any deviations, changes, additions, or other modifications.

The ATP shall cover all equipment items and shall include the following individual tests:

1. Factory Acceptance Test
2. Communication System Test

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3. Unit Test
4. Final Acceptance Test

The Department reserves the right to add/delete individual tests to/from the ATP.

The Contractor under supervision by The Department or its representative shall conduct the tests. The test results must be documented and the documentation delivered to The Department. Any failures during the testing process must be documented and then fixed by the Contractor and the test repeated. All tests must be documented by the Contractor and delivered to The Department. Pay items are dependent on observed, successful documented tests.

The Contractor shall provide all necessary testing equipment required to successfully complete all tests. The Contractor shall provide written verification to the TMC Manager that the equipment is properly calibrated and is in sound working order prior to conducting all tests. The TMC Manager reserves the right to examine and test any or all materials and equipment (including testing equipment) furnished by the Contractor for this project to determine if they meet the Project Specifications or to have a third party examine and test any or all materials and equipment (including testing equipment) furnished by the Contractor.

As a minimum, the test shall include:

1. Demonstration of remote and local operations
2. Demonstration of software functionality
3. Demonstration of compliance to the NTCIP statements provided and referenced in these special provisions
4. Demonstration of all other requirements contained in this Contract including hardware requirements according to NEMA TS 4-2005
5. Any additional testing to comply with the manufacturer's warranty requirements

The Contractor may provide documentation from 3<sup>rd</sup> party certifications and/or from other acceptance tests that shows that certain requirements have been previously tested independently; however, this form of acceptance is only acceptable, if a.) The exact same requirements were tested, and b.) If those certifications/prior test results are acceptable to The Department's TMC Manager.

The TMC Manager reserves the right to add/delete requirements. The TMC Manager shall have the option of asking the Contractor to provide The Department a quotation for any additional requirements not contained within these specifications. If The Department approves the quotation, it shall issue a change order and the Contractor shall be required to demonstrate that the system fulfills the additional requirements. Testing shall be in accordance with the approved test plan documentation and shall be conducted in the presence of a Department representative. Testing shall not commence without the written consent of the TMC Manager.

Two (2) copies of a completed report of each test performed shall be submitted to the TMC Manager following completion of the test. The report shall include all actions and results and all failures and corrective actions or preventive measures taken including:

1. Date and time of any malfunction, when and what response efforts commenced, and when the malfunction was restored to proper operating order
2. The nature of the malfunction
3. Equipment, at the component level, on which work was performed
4. The type of work performed to correct the identified defect or malfunction

If any of the items fail to meet the requirements of the Project Specifications or malfunctions during the test period, the sub-system and/or its components shall be repaired or replaced at no additional cost to The Department. Equipment that has failed or malfunctioned may be offered again for re-testing, providing that all

defects that resulted in the initial failure or malfunction have been rectified by the Contractor and the detailed maintenance activity report has been approved by the TMC Manager. Re-testing of a sub-system or its components that has failed or malfunctioned shall be at the discretion of the TMC Manager. Re-testing of any sub-system or its components shall commence from the initial test steps, and shall be re-tested until successfully completed.

In the event a failure or malfunction is the result of activities performed by The Department or its designated contractors, power surges, or acts of nature, all testing shall be suspended until corrective actions are completed by The Department or its designated contractors, which will allow for the continuation of proper testing. Upon the completion of corrective actions, the Contractor shall continue testing; beginning at the point the testing was terminated. All previously completed testing will not require to be re-tested, unless a failure or malfunction is identified during the remainder of the testing.

If the TMC Manager identifies a particular component failure or malfunction pattern of the equipment, the TMC Manager may direct that the equipment or its components be replaced in its entirety without additional cost to The Department. All replaced equipment and components shall be re-tested to demonstrate their conformance with the Project Specifications.

### **3.4.1 Factory Acceptance Tests**

The DMS manufacturer must provide self-certification, including a statement of conformance and copies of test reports, indicating that the following tests have been performed and passed.

Product test reports must be submitted for testing of the following National Transportation Communication for ITS Protocol (NTCIP) standards:

- a. NTCIP 1201: NTCIP Global Object Definitions
- b. NTCIP 1203: Object Definitions for Dynamic Message Signs (including Amendment 1)
- c. NTCIP 2101: Point to Multi-Point Protocol Using RS-232 Subnetwork Profile.
- d. NTCIP 2103: Point-to-Point Protocol Over RS-232 Subnetwork Profile.
- e. NTCIP 2104: Protocol Over Ethernet Subnetwork Profile.

The NTCIP testing must have been completed using industry accepted test tools such as the NTCIP Exerciser, Trevilon's NTester, Intelligent Devices' Device Tester, and/or Frontline's FTS for NTCIP. The NTCIP test report(s) must include testing of sub-network communications functionality, all mandatory objects in all mandatory conformance groups, and a subset of the remaining objects.

### **3.4.2 Communication System Test**

Upon delivery of the communication equipment as specified in this Contract, the Contractor shall work with The Department to obtain the communications system's configuration data for the to-be-provided communications equipment. After equipment configuration, the Contractor shall utilize the developed and accepted test plans to conduct a series of communication tests designed to prove that the communication equipment can properly carry and pass through all the messages required to operate the system. These communication tests shall include end-to-end Bit Error Rate tests, data and message integrity tests, and other tests that demonstrate the proper operation of the provided communication equipment.

*Please Note: The Contractor shall not be held accountable for delays in the testing procedures if the delays are due to The Department not having communications equipment or a communications service available. However, The Contractor shall be responsible for notifying The Department at least 30 days prior to scheduled testing to allow adequate time for purchase of the appropriate communications equipment and communications service.*

The Department may duplicate these tests at any future time and obtain the same results. A Test document, describing the means and methodology of the communication tests shall be presented to The Department for approval no later than thirty (30) days prior to the commencement of testing. Testing shall not commence until The Department has approved the testing plan. All testing procedures shall be documented as testing takes place. All test results shall be documented by the Contractor. Upon failure, the Contractor shall be responsible for the required remedial action and for retesting until the tests are passed.

### **3.4.3 Unit Test**

Upon request by The Department through a purchase order, the manufacturer shall provide one (1) unit of each item for testing.

1. The equipment submitted by a prospective Contractor shall be complete with all components called for as per the specifications. The Department will not initiate the evaluation of the equipment until all components are provided and the portable DMS device is complete as per the specifications and ready for testing/evaluation. No partial submittals of the equipment shall be permitted.
2. The technical evaluation by The Department will be for a period of forty-five (45) calendar days.
3. If the device submitted fails to perform for the complete 45-day period, the Contractor will be notified by The Department, at which time, the Contractor shall make necessary repairs within seven (7) calendar days at no expense to The Department.
4. The Department will have sole discretion in determining if there is substantial need to re-initialize or "restart" the evaluation period after repairs are performed by the Contractor.
5. If the device fails three (3) times, as identified by The Department, the device will be disqualified from further consideration for the current Contract. All devices not meeting these requirements will be considered a non-compliance device and removed from the facility. No Department employee will be required to make any modifications for the manufacturer/Contractor to the device while being evaluated.
6. The equipment will be physically examined by The Department TMC Manager or authorized representative to determine compliance with the specifications
7. Portable DMS Units will be fully charged when delivered.
8. Portable DMS Photovoltaic panels will be disconnected from the battery source.
9. Portable DMS Units will be required to satisfactorily operate a 21-day continuous burn period at maximum output.
10. Portable DMS Units will operate at its brightest intensity during daytime hours, and shall dim automatically 50% during nighttime hours.

### **3.4.4 Final Acceptance Test**

The final acceptance test shall commence after delivery of the equipment and will be performed for each delivered portable DMS. The TMC Manager shall inform the Contractor in writing whether the portable DMS has passed the acceptance test.

Additionally, each DMS shall be exposed to a final acceptance test periods of thirty (30) days. In the event of a malfunction, the final acceptance test period shall be terminated. The Contractor shall respond to malfunctions within 24 hours of identification and notification by the TMC Manager. The Contractor shall be responsible for restoring systems, sub-systems, or sub-system components to a fully functional and operational order within five (5) calendar days from the notification at no additional cost to The Department. Failure to do so shall extend the final acceptance test period by an amount equal to the period that the equipment is malfunctioning beyond the specified five (5) calendar days. However, the 30-day test period shall be re-started from the test day that the DMS failed.

To accommodate unusual circumstances, a written request for an extension of the five (5) day response period with justification shall be forwarded to the TMC Manager for approval. Delivery time for replacement parts shall not be accepted as justification for an unusual circumstance. The replacement of any item or part shall result in the complete re-testing of the appropriate on-site stand-alone tests at no additional cost to The Department.

The Department will NOT accept the portable DMS unless a certificate of origin and proper invoicing materials for the trailer mounted Portable DMS is provided and delivered to The Department, for EACH delivered Portable DMS.

#### **4.0 Materials**

The equipment described shall be a standard model produced by a manufacturer with experience in the production of portable traffic control products of this type. All workmanship, materials, and assembly procedures shall be of quality design. Each component of the complete unit shall be adequate for and compatible with all structural and performance requirements of the complete unit.

All materials for DMS shall be new, corrosion resistant, and unaffected by water spray (including high pressure washing equipment used for cleaning the DMS Sign Panel), salt, oil, gasoline and all other contaminants in the quantities normally found along the edge of the traveled roadway for a period of at least ten (10) years. The Contractor shall identify any equipment provided as part of this Contract whose life cycle is shorter than ten (10) years. The DMS construction, materials, and operation shall conform to all National Electric Code (NEC) and National Fire Protection Association (NFPA) standards.

All electronic equipment shall be solid-state design.

The Portable DMS and all associated control equipment and electronics equipment, including DMS controller, local control panels and DMS control software shall all be furnished by the same manufacturer.

The Portable DMS and all associated control and electronics equipment, and enclosures shall be designed for outdoor installation and use and conform to the requirements of current NEMA Standard No. TS2-2003, Section 2, "Environmental Requirements", except as amended and supplemented herein. All environmental testing shall be successfully performed prior to installation of the Portable DMS equipment in the field. The manufacturer shall supply certification for equipment and compliance with NEMA environmental standards in accordance with NEMA testing procedures.

##### **1. Environmental:**

- a. All equipment shall be mounted in enclosures to ensure that water, dust and other contaminants cannot enter internal assemblies. All enclosures shall provide suitable protection of equipment within for both traffic roadway and marine environments.
- b. All LED DMS equipment shall operate over an outside ambient temperature range from  $-35^{\circ}$  to  $+120^{\circ}$ F and humidity of 0% to 100%, non-condensing. The inside of the sign housing and the inside of the external cabinet shall be adjusted automatically to keep the contained equipment within their operating environmental ranges.
- c. The Contractor shall demonstrate that the utilized temperature sensors are correctly calibrated by showing that events such as automatic shutdown (see below) will happen at the temperatures defined.
- d. Operation of the Portable DMS equipment shall not be degraded by sun, heat, rain, snow, fog, ambient humidity, or other weather conditions normally encountered in the installation area.
- e. All equipment shall operate without degradation or damage under all weather conditions, vibration, lightning, and electromagnetic/electrical interference existing at the location where the Portable DMS is deployed.

2. Vibration: Conform to NEMA TS4-2005, Section 2.1.6 and 2.2.5.
3. Shock: Conform to NEMA TS4-2005, Section 2.1.7 and 2.2.6.
4. Power Service Transients: Conform to NEMA TS4-2005, Section 2.1.4.

All electrical materials and equipment used for which there are established Underwriters Laboratories (UL) and Electrical Testing Laboratories (ETL) standards shall bear the UL and ETL labels.

#### **4.1 Sign Panel**

The variable message sign panel and integral equipment will meet the following requirements:

1. The DMS technology shall be light emitting diodes. Other technologies will not be considered.
2. The design of the displays shall be modular in construction to facilitate easy field replacement of component parts.
3. All routinely serviced components shall weigh 50 pounds or less. This shall include the DMS front face panel / DMS front window.
4. The design life of each sign, including all sign components, operating 24 hours a day shall be at least 10 years within environmental conditions (see temperature and humidity ranges defined in other sections, as well as salt and slush and other spray material typically found on roadsides). The Contractor shall deliver to The Department a list containing the manufacturer certified design life for all components of the sign display. The list shall include but not be limited to the number of pixel operations and the longevity of luminous intensity.
5. The DMS shall have the ability to provide internal temperature, control cabinet intrusion, and photocell monitoring. The Contractor shall specify the cabinet door sensors can be utilized with the DMS controller(s).
6. All components of the DMS (internal sign components, controller, communications equipment, etc.) shall operate effectively in all weather conditions. All electronics, electric, mechanical, and all other parts and accessories of the DMS shall operate effectively within the following limits:
  - a. Operating temperature range: -35° to 120° F during all levels of sunlight.
  - b. Humidity: 100%
7. The performance of all delivered equipment shall not be impaired due to vibration caused by wind, traffic, or normal transportation.
8. The presence of ambient radio frequency, magnetic or electromagnetic interference, including that from Department and other mobile radios, power lines, transformers, and motors within the proximity of any components of the DMS, shall not affect the operation or impair the performance of the DMS. The DMS shall not conduct or radiate signals that will adversely affect other electrical or electronic equipment.
9. All plastic materials and the sign face shall be made of UV stabilized materials
10. All components performing similar functions shall be similar and interchangeable.
11. Sign panel dimensions shall not exceed a 144 in. length; 90 in. height; and 12 in. depth.
12. Character height shall be at least 18".
13. The Portable DMS shall be able to display three lines of text with the following characteristics:
  - a. Each line of text shall be constructed using a continuous or discrete matrix display.
  - b. The sign shall be able to display a minimum of eight (8) characters per line.
    - i. There shall be a minimum of four (4) LED's per pixel.
    - ii. There shall be a minimum of 5x7 pixels per character.

#### **4.2 LED / Pixel Specifications**

LED illumination for each matrix element shall have the following characteristics:

1. Provide LEDs based on AlInGaP technology. Provide diodes with a minimum 30 degree viewing angle centered around the optical axis, or zero point, of the pixel, with an amber color and a peak wavelength of

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- 590 nanometers. The peak wavelength must not vary by more than  $\pm 2$  nanometers. Provide pixels on the DMS and in the catalog parts to have equal color and on-axis intensity.
2. Each display pixel shall be comprised of multiple amber LED's to achieve the required brightness output.
  3. Each pixel shall be rated with a mean time between failures of 100,000 hours of elapsed time calendar hours use in a test environment with a high ambient temperature of 131<sup>0</sup> F, based on an average daily on-time usage factor of 50%, when driven at the specific forward current recommended by the LED manufacturer for normal daylight LED DMS display operation. As part of the LED manufacturer's technical specification sheet submittal, the specific forward current shall be noted and the test results for the LED tested using the above environmental parameters shall be provided.
  4. If any pixel within any module fails within the warranty period (see *Section 2.23 of the Special Provisions, Warranty*), that display module shall be replaced at no cost to The Department.
  5. The LED's used in the display shall be obtained from batches sorted for luminous output, where the highest luminosity LED in the batch shall not be more than fifty percent (50%) more luminous than the lowest luminosity LED in the batch. To ensure uniformity of display and operational life, all LED's used to make up a display module shall be obtained from the same manufacturing batch.
  6. Sign display luminance levels measured over the entire face of the sign display shall not degrade more than 15% from original luminescence over the entire 10 year life cycle of the DMS. Further, the luminescence from pixel assembly to pixel assembly shall not vary by more than 15% over the ten year period. In the event of greater than 15% degradation, the display module shall be replaced at no cost to The Department.
  7. Materials used in the fabrication of LEDs shall contain UV light inhibitor and shall be designed for direct exposure to sunlight.
  8. Each LED shall be rated for outdoor use over the environmental range expected for the sign locations (including heat absorption due to sunlight).
  9. LED pixels shall be attached to the display panel with a secure fastening system.
  10. LED pixels shall be mounted perpendicular to the display panel.
  11. Visors shall be installed above each pixel or row of pixels for maximum contrast and legibility.
    - a. Visors shall extend out from the display panel and over the pixel(s) as far as needed to provide maximum contrast and legibility without interference to LED display.
    - b. Alternate methods may be utilized upon approval by the TMC Manager. The Contractor shall submit complete descriptive literature to the TMC Manager to substantiate alternate method.
  12. The replacement of any display module shall not require the use of any complex tools.
  13. All wiring interconnecting individual display modules shall be made into modular harness assemblies with latching industry standard connectors not requiring special tools.
  14. Each pixel board shall be attached to an aluminum mounting grid, which forms the display face.
  15. Each pixel board shall be easily removed using simple screwdrivers or pliers, i.e., without the use of special tools.
  16. All display modules shall be labeled for positive identification.
  17. All display modules shall be wired so that the failure of any one pixel assembly will not affect the operation of any other.
  18. Each pixel board shall be controlled by the sign controller separately so that the removal of a particular pixel board does not affect the operation of any other.
  19. All display and diagnostic modules (if separate modules are used) shall be interchangeable and replaceable.
  20. The LED display modules shall have a minimum refresh rate of 60 times per second to prevent visible flicker.

#### **4.2.1 Minimum Visibility Distance**

1. DMS messages shall be legible from all lanes within a distance range of 150 feet to 720 feet under both day and night conditions when it is displaying alphanumeric text that is 18 inches high when viewed by motorists and travelers that have 20-40 corrected vision.

2. The DMS shall conform to the 'cone of vision' requirements defined in NEMA TS4-2005, Section 5.3
3. The sign shall incorporate an automatic control feature in order to keep the LED lamp matrix intensity constant with fluctuations in power.
4. The intensity control shall be monitored and adjusted by a photocell, which shall reduce glare by reducing the lamp intensity at night.

#### **4.3 Power Supplies**

1. The portable DMS shall operate from a solar powered electrical system and/or existing commercial electrical service.
2. The power source shall allow the system to accept existing 120V commercial electrical service.
3. A regulated AC power supply shall provide reliable DC power.
4. Short circuit and over-current protection shall be integral to the power supply.
5. The power source shall be enclosed in a protective housing.
6. Power supplies shall operate within a temperature range of -22° to +120°F. The lower temperature range when compared with the overall ambient temperature range is explained by the fact that the power supplies are placed inside of the environmentally controlled sign housing and/or sign controller housing.
7. Power supply shall be UL listed if the power supply is manufactured by specific power supply manufacturer
8. Sign controller shall be able to sense the failure of each individual power supply. When one of the power supplies in a group has failed, the status change of each power supply shall be reported to the central system and also be visible on the DMS controller's local display (upon request).

##### **4.3.1 Charger**

The portable DMS shall be equipped with an on-board charging system able to re-charge the battery banks using either a solar array and/or AC power.

##### **4.3.2 Solar Powered Electrical System**

This system shall consist of battery power system and solar array panels that shall be capable of being rechargeable in both full sun and cloudy conditions (The Department will ensure that the signs are placed at locations that have the best possible sky view).

1. The battery power system shall:
  - a. Provide sufficient power to drive the display matrix, lighting and all other portable DMS components.
  - b. Display a two-page message for 21 consecutive days without auxiliary charge assuming sufficient sun/cloud coverage to keep the battery charge.
  - c. Be rated at 1800 amp hours at 70°F.
  - d. Provide a minimum of 12 volts of operating voltage to the sign.
  - e. Consist of a minimum of 1 and a maximum of 16 marine-type deep cycle discharge (80%) batteries and be able to withstand a minimum of 500 deep cycle discharges. The minimum number of batteries shall be capable of fulfilling all other requirements stated herein.
  - f. Be charged from solar cells through a photovoltaic regulator with thermal compensation and have a low voltage shut-off to prevent battery depletion with an auto reset feature to allow solar charging system to resume when sufficient solar power is generated.
  - g. Have the ability to be charged from a 110 or 120 volt, regulated AC outlet and shall be charged to 95 100% of the total output voltage within 48 hours.
  - h. The charging device shall automatically shut off when the battery system is fully charged to prevent over-charging.



2. Solar array panels shall:

- a. Recharge in full sunlight at a rate of 6 hours of recharging per 24 hours of sign operation.
  - b. Be located at the highest point of the sign housing.
  - c. Be secured by locking bolts to prevent pilferage and vandalism.
  - d. Be able to rotate ("panning") independently of the sign panel assembly and be able to tilt from 0 degrees to 40 degrees (relative to the horizontal).
  - e. The array shall be able to be locked into any position.
  - f. Be secured by a locking mechanism that prevents rotation during transport of the sign from one location to another.
3. The Contractor shall provide documentation sufficient in guiding the technician setting up the signs to orient the solar panels so that the maximum solar power can be obtained and stored during a typical day.

#### **4.3.3 Electrical Connections and Gauges**

1. All wiring from power sources to portable DMS equipment shall use locking cable connectors.
2. Volt and amp gauges shall be provided for DC.
3. Standard negative ground system shall be tied to the sign chassis.
4. Lightning protection shall be supplied to the load side of the sign system's distributed power lines to withstand multiple surges in excess of 600 volts.
5. The power supply shall provide 12V automobile electrical service via a standard cigarette lighter socket for operating a laptop computer.

#### **4.4 DMS Controller**

The DMS sign shall be controlled in all functions by an on-board dedicated computer that shall:

1. Be a compact unit, with no dimension greater than 19 in. as mounted on the trailer.
2. Be located for easy access.
3. Be solid-state and removable
4. Be able to generate and store messages.
5. Include an LCD display screen upon which messages can be reviewed before display on the message sign
6. Have a keyboard that shall:
  - a. Allow operator to access, generate, and store messages in the controller.
  - b. Have tactile feedback (a membrane-type keyboard is not acceptable).
  - c. In lieu of a keyboard, a hand-held terminal may be used.
7. Be able to conduct automatic system recovery after communications outages to the central controller without operator intervention.
8. Be able to be controlled from one or more remote units. The controller shall be able to:
  - a. Accept a message for display.
  - b. Restart or sequence a display mode operation with currently stored RAM messages.
9. Be able to operate the matrix display panel within a temperature range of -35° to 120° F, and a non-condensing humidity range of twenty percent to ninety-five percent (20% - 95%). The lower humidity range when compared with the ambient humidity range is explained by the fact that the DMS controller will be placed inside of an environmentally controlled DMS controller housing.
10. Have an RS-232 port to facilitate connection of an external communication device.
11. Be able to monitor and display the status of the photocell and adjust the sign illumination to match the ambient light conditions.
  - a. With each DMS display and controller, the Contractor shall furnish and install a system which shall detect the background ambient light level and provide a minimum of eight adjustable ambient light input levels.

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- b. The controller shall have a minimum of ten (10) levels of light output (dimming) adjustable from 10% to 100% brightness in 5% increments.
  - c. Dimming shall be implemented with a mechanism such as high frequency variation of the display duty cycle (pulse width modulation) in order to minimize any detrimental flickering.
  - d. The dimming system shall conform to the requirements stated in NEMA TS4-2005, Section 8.8 plus the following additional requirements (which are stricter than those stated in TS4):
    - i. Photo-Electric Sensors - The dimming system shall contain a minimum of three commercially available photo-electric sensors.
    - ii. The photo-electric sensors shall be placed so that they detect the ambient light levels striking the top, front, and rear of each sign.
    - iii. Dimming Levels - Manual and automatic dimming modes shall be provided enabling the user to select the desired mode of operation.
    - iv. The dimming system shall select a minimum of one of eight levels from the detected ambient light. The set points for each of the eight ambient light levels shall be set within user adjustable software.
    - v. Manual dimming shall be accomplished locally and remotely.
      - 1) Local control shall be with a laptop computer connected to the port furnished in the field controller.
      - 2) Remote control shall be achieved by calling the field controller with the central or remote computers.
    - vi. The photo- electric system shall be capable of distinguishing between fog and nighttime light inputs.
      - 1) The dimming system shall be pre-programmed so that, if fog is present, over bright light output is turned on.
      - 2) If nighttime light input is detected, the dimming system shall be pre-programmed to output reduced light output.
    - vii. If either the upstream facing sensor or the downstream facing sensor's reading is greater than the day limit, the over bright level of pixel luminance shall be used; otherwise the daytime level shall be used.
    - viii. In case of luminance control system failure, the luminance level shall be designed to default to the night level.
    - ix. The controller shall automatically report any luminance/brightness failures to the control computer.
  - e. All light sensors shall be located in an easily accessible location for maintenance, as approved by the TMC Manager.
    - i. All light sensors shall be mounted in a way that permits adjustment of the aiming angle.
    - ii. For sign structures containing more than one LED DMS unit, one set of three light sensors shall be used per structure
12. Provide a calendar program within the controller that enables to automatically start and stop the display of messages at predetermined times.
- a. These scheduled messages shall work even when communication to the TMC is lost.
  - b. The scheduled messaged shall be able to be programmed both locally and remotely.
13. Provide a reporting mechanism that stores all events such as the actual times and dates when a message was displayed, where is originated (scheduler, manual local, manual central), any failures including communications failures, power failures, and any recoveries from failures.
14. Provide for the controller to be queried to check the display for pixel failures and to report the failures.
15. Report the ambient temperature and the sign housing temperature.
16. Monitor and display the battery output voltage and solar array activities (charging/discharging).
- a. The controller shall blank the sign when the output voltage drops below the manufacturer's recommended output level. In this case, the controller software automatically switches the trailer to a minimum power mode to preserve batteries.

- b. The portable DMS shall use the dms Power Loss Message data element to achieve this functionality.  
*Note: while this is a slight bending of the actual definition of the dmsPowerLossMessage data element, the intent of this parameter is still fulfilled (the power is theoretically insufficient to display the message)*

#### **4.5 Portable DMS Enclosures**

Each DMS enclosure and integral DMS display cover shall be designed and constructed to meet the following requirements:

1. The DMS enclosures shall be of such design and shape as to house all necessary LED display modules, LED display driver electronics, transformers and power.
2. The DMS Enclosure shall be weatherproof, that is, to protect the interior from moisture, dust dirt, and corrosion.
3. The DMS enclosures shall be constructed of corrosion resistant aluminum material conforming to the following:
  - a. Sheet aluminum shall be fabricated from aluminum alloy sheet meeting the requirements of ASTM B 209, Alloy 5052, Temper H3, or equivalent, minimum 0.125 inch thick.
  - b. Cast aluminum shall be fabricated from aluminum alloy meeting the requirements of ASTM B 686, Alloy A 356 (A 13560) or equivalent. Flat cast surfaces exceeding 12 inches in both directions shall have a minimum thickness of 0.25 inches. Flat cast surfaces not exceeding 12 inches in both directions shall have a minimum thickness of 0.187 inches
  - c. All DMS enclosures shall meet the requirements for TYPE 3R enclosures according to NEMA Standard Publication 250. All seams and openings shall be designed to prevent entry of water resulting from high pressure washing of the LED DMS enclosure.
  - d. Unpainted aluminum DMS enclosures shall be fabricated from mill-finish material and shall be cleaned using appropriate methods that will remove oil, film, weld black, and mill ink marks and render the surface clean, bright, smooth and non-sticky to touch
  - e. Corrosion protection shall be provided between dissimilar metals by isolating them.
  - f. Contractors that do not manufacture an aluminum enclosure may propose a powder coated steel enclosure, meeting the requirements of NEMA TS 4-2005 and for TYPE 3R enclosures according to NEMA Standard Publication 250 that meets or exceeds the corrosion resistance requirements of the aluminum enclosures specified herein
4. All welds shall be continuously welded. All corners and seams shall be professionally welded to provide a weatherproof seal around the entire case and to ensure that the housing is structurally sound. Welds using heli-arc, gas metal arc, gas tungsten arc and plasma arc welding processes, all allowable for aluminum welding, are acceptable.
5. All visible surfaces have a maintenance free protective treatment and/or paint coating.
  - a. The sign panel housing shall be painted or powder-coated Highway Safety orange in conformance with Federal Standard 595b, Color No. 12243 on the sides and back. The front shall be flat black in conformance with Federal Standard 595b, Color No. 37030.
6. The protective treatment and/or paint coating shall have a design life of at least 10 years.
7. All nuts and bolts used in the DMS assembly shall be stainless steel. All connecting surfaces shall be weatherproof and watertight when secured. All internal components shall be mounted so that there are no external protrusions.
8. Forged rings shall be provided for moving and positioning of the extendable sign housing.
9. Appropriate precautions, such as heating elements or ventilation fans or openings, shall be taken to ensure that condensation does not occur between the matrix elements and the DMS face, and that the environment inside all enclosures remains within the temperature and humidity limits required for proper operation of the sign's electronic components.
10. The dead load shall consist of the total weight as installed of the DMS enclosure and appurtenances. The point of application of weights of the individual items shall be their representative centers of gravity.

11. Ice load shall be as per AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals except that ice load shall be applied to all sides and top surfaces of the DMS enclosure simultaneously.
12. Wind load shall be as per AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals except as modified herein. The enclosure and their mountings shall withstand a sustained wind speed of 90 miles per hour (mph), with a gust factor of 1.3 when using the four 27" outriggers (*see Section 4.7 of the Technical Specifications, Portable DMS Trailer*)
13. Drain holes shall be provided and designed to remove any condensation that may form inside the DMS enclosure and allow any water that may have collected in the housing to escape. All holes shall be screened to prevent small objects, insects, and creatures from entering into the enclosure.
14. Border around the sign housing (referred to as 'legend' in NTCIP terms) on all four edges shall be within a range of 6 to 12 inches.
15. Locks for all DMS enclosures shall be of a type to be approved by The Department.
16. The cabinet shall have one or more lockable sign access cover latches and interior housing lighting that turns on when the sign access cover(s) is/are opened and that turns off when the sign access cover(s) is/are closed.
17. The controller cabinet shall provide a keyboard storage location. The keyboard shall be secured so that it is held securely in place during transport.
18. The controller cabinet shall be watertight to avoid that the sign controller, the keyboard, or any other sensitive equipment is exposed to any water or other particles that might negatively affect their operation.
19. Removal of any of the display modules or any other electronic or electrical component, shall not alter the structural integrity of the DMS display assembly or the DMS enclosure.

The Contractor shall submit fabrication and shop drawings and design calculations for all DMS enclosures, ventilation, and mounting, sealed by a Professional TMC Manager licensed in the state(s) where the sign(s) is to be installed.

#### **4.5.1 DMS Display Face Window**

The DMS display face window shall have the following characteristics:

1. Be optically clear, high impact, scratch resistant, low glare, and ultraviolet stabilized sheets of polycarbonate plastic (i.e., Lexan with stabilizer or approved equal) of not less than 3/16 of an inch in thickness.
2. Be manufactured from virgin materials by a major manufacturer.
  - a. Windows containing recycled materials are unacceptable.
  - b. The Contractor shall provide the Project TMC Manager with proof of compliance.
3. Have sufficient thickness and strength to withstand cleaning, installation, removal, sign vibration, and negative/positive pressure loading due to atmospheric wind as well as pressures created by the passage of large trucks.
4. Where possible, the display face window shall be one continuous sheet. Multiple sections with seams shall only be acceptable where the size of the sign will not allow for the installation of one continuous sheet, and only with the approval of the TMC Manager. The number of seams shall be kept to a minimum. Seams shall be water-tight, transparent and shall not obscure the viewing of the displayed message by oncoming traffic.
5. The display face window shall be shatter resistant.
6. The display face window shall be field replaceable with common hand tools and lifting equipment, if required, in less than four hours.
7. The display face window shall be anti-glare and positioned to minimize glare effects.
8. Have a light transmission degradation that is less than 10% from the original for ten years.

This shall be measured by determining the light transgression when the sign is provided and measuring it yearly. If the light transgression is greater than 10% within the time frame specified above, the DMS sign face window shall be replaced at no cost to The Department.

9. Removal of any combination of sign face windows shall not alter the structural integrity of the sign display cover nor the sign.
10. Attachment of all sign face windows shall utilize a reusable gasket for weatherproofing.
  - a. The usable life of all gaskets shall be at least ten (10) years.
  - b. Gasketing shall be closed cell neoprene, permanently bonded to the metal. The mating surfaces of the gasketing shall be covered with a silicon lubricant to prevent sticking. The lubricant used shall not degrade the neoprene over time.
  - c. If these requirements are not met, the Contractor shall replace the signs or faulty material at no cost to The Department.
11. The attachment mechanism for all sign face windows allows the window material to expand and contract (due to temperature fluctuations) yet retain a weatherproof seal.
12. The pigmentation of the polycarbonate and its optical characteristics shall be matched to the wavelength of the LED's to guarantee the transmission of at least 80% of the light emitted, as certified by the polycarbonate manufacturer.
13. The DMS face window shall be ultraviolet (UV) inhibiting, providing a minimum reduction of 80% of both UV type A and UV type B light that reaches the LED's, as certified by the polycarbonate manufacturer. Any substitutions must be approved by the TMC Manager.

#### **4.6 Mounting Requirements**

The structural support framework shall allow the system to be assembled into a unit and be mounted on the trailer, and shall provide the support mechanism between the sign panel assembly, the power supply and the controller.

The framework shall provide sufficient support to prevent damage to any portable DMS components when the sign is in down and locked position during normal highway travel up to 65 mph.

The deployed structure shall supply adequate support to allow complete sign operation, including rising and lowering of the sign panel and operations at maximum sign height, during maximum sustained wind speeds of 90 mph with a gust factor of 1.3 when using the four 27" outriggers (*see Section 4.7 of the Technical Specifications, Portable DMS Trailer*).

#### **4.7 Portable DMS Trailer**

The trailer shall conform to Delaware Law governing trailers. The trailer shall be primed and painted or powder-coated Highway Safety orange in conformance with Federal Standard 595b, Color No. 12243.

All equipment covers and storage boxes shall have a locking mechanism for security. All locks (Pad Locks and Locking Handles) for any and all units purchased under this contract shall be keyed the same for the life of the contract. The Transportable Trailer shall meet the following requirements:

1. Maximum Dimensions:
  - a. Length: 122 inches nominal. The length of the trailer shall conform to Delaware Law governing trailers and shall be transportable utilizing a vehicle with a load rating no greater than 3/4 ton.
  - b. Width: maximum of 96 inches overall
  - c. Travel height shall not exceed 112 inches
  - d. Operating height shall not exceed 204 inches
2. Materials utilized shall conform to NEMA TS4-2005, Section 3.3
3. Sign Panel Mast:
  - a. The lift mechanism shall be an electric or electrically-assisted hydraulic mechanism able to raise and lower the sign panel.
  - b. The mechanism shall have a manual pump jack mechanism able to raise and lower the sign panel in

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- case of failure of the hydraulic jack.
- c. A safety bolt, hot dipped galvanized in accordance with ASTM A153 or made of stainless steel, shall be provided to prevent the sign panel from lowering once in the raised position. A self-locking mechanism shall be incorporated into the safety bolt that prevents it from being inadvertently dislodged.
  - d. The lift mechanism shall allow the raised sign panel to rotate 360 degrees about the vertical axis.
    - i. Rotation shall be possible in either a clockwise or counter-clockwise direction.
    - ii. A locking mechanism shall be provided to prevent rotation of the sign panel assembly once the sign panel is in place, at any position.
4. Battery Box utilized shall conform to NEMA TS4-2005, Section 3.3.5.2 plus the following requirements:
- a. #14 Gauge Steel, Hinged Telescoping Door Support
  - b. Battery Lock Down Assembly
5. Mechanical requirements shall conform to NEMA TS4-2005, Section 3.3 plus the following requirements:
- a. Provide extendable Stabilizers: Four 27" adjustable outriggers (see NEMA TS 4-2005, Section 3.3.3.4 Leveling)
  - b. Hitch: Tow Ready Adjustable Lunette Ring with Channel
    - i. Compatible with all pintle hooks
    - ii. Heavy Duty Design
    - iii. Forged Alloy Steel with a black powder coat finish
    - iv. Inner diameter: 3 inches
    - v. Outside diameter: 6 inches
    - vi. Capacity: 12,000 GTW
  - c. Roller Bearings: Yes
  - d. Fenders: 16 Gauge Rolled Steel with a non-skid upper surface
  - e. Safety Chains: Two 3 ft. long (as measured from the end of the trailer tongue) galvanized steel ¼ Inch, with 2,500 lb Slip Safety Hooks
  - f. Reflectors: One on each side, two amber at front, two at rear
6. Frame providing a safe, non-skid upper standing surface suitable for accessing the sign panel assembly.
- a. The trailer shall have a spare tire and wheel mounted to the unit for each trailer supplied. The tire shall be of the same size and load rating as the one supplied on the trailer.
  - b. The trailer frame and tongue shall be outlined in its entirety with Red and White DOT retroreflective tape.
7. Auxiliary Storage:
- a. Ability to securely carry 6 standard traffic barrels with bases.
  - b. Mounted to the side or back of the trailer without extending into the roadway or the blocking the license plate.
  - c. Contractor must submit detailed design drawing for approval.
8. Electrical requirements shall conform to NEMA TS4-2005, Section 3.3, as a minimum, plus the following requirements:
- a. Six pin (R.V. type) trailer electrical connector with 3 ft. long cable, as measured from the end of the hitch.
  - b. Connectors shall be locking electrical connector type.
  - c. All wiring connections or splices on the trailer shall be soldered with a sealant encapsulated heat shrink tube installed over the splice or connection.
  - d. All lighting supplied for the trailer such as the Stop/Tail/Turn signals and marker lights Shall be LED.
  - e. All wiring shall be contained within tubular framing (preferred) or contained within conduit secured to the trailer frame. Wiring should not be directly lashed to the frame.
  - f. The trailer axle shall have electric brakes at each wheel. The battery for the emergency break away shall be wired as to allow the vehicle to charge the battery when towing and also have a solar powered trickle charger to keep the battery fully charged when not in use.

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The Transportable Trailer shall consist of complete units, including installed sensors, signs, and power supplies delivered on-site in accordance with delivery instructions from The Department and to the satisfaction of the TMC Manager, complete and accepted.

#### 4.8 Transportation Management Center Communications

1. Provide all communications equipment, cables, wires, interfaces, and appurtenances to establish a connection to the DelDOT TMC using a specified communications method. The possible communications methods may include, but are not limited to, digital wireless, cellular, and fiber optics.
2. Provide DMS that complies with the NTCIP 1201 v03, 1203 v03, 2101 v01.19, 2102 v01.09, 2103 v02.07, 2104 v01.11, 2201 v01.15, 2202 v01.05, and 2301 v02.19 standards. Provide documentation that NTCIP testing has been completed at the factory for each DMS provided by the manufacturer.
3. Furnish DMS meeting all mandatory requirements contained in NTCIP 1203 v03 Protocol Requirements List (PRL) contained in Sections 3.3.8 and 3.3.9. Provide additional conformance to the following "Optional" User Needs (UN) and Functional Requirements (FR), as described in NTCIP 1203 v03.

UN	FR	DESCRIPTION
2.3.2.1.3.	N/A	DMS Type: Variable Message Sign (VMS)
2.3.2.2.2.	N/A	DMS Technology: LED
2.3.2.3.2.1.	N/A	DMS Display Matrix Configuration: Full Matrix
2.4.2.2.	All Mandatory Items	Logged Data Exchange
2.5.1.2.	All Mandatory Items	Determine the Sign Display Capabilities
	3.5.3.2.1	Monitor Information about the Currently Displayed Message
	3.5.1.3.5	Configure a Font
	3.5.1.3.6	Delete a Font
	3.5.1.3.7	Validate a Font
2.5.1.3	All Mandatory Items	Manage Fonts
	3.5.1.3.5	Configure a Font
	3.5.1.3.6	Delete a Font
	3.5.1.3.7	Validate a Font
2.5.1.4.	All Mandatory Items	Manage Graphics
	3.5.1.4.5	Store a Graphic Definition
	3.5.1.4.6	Delete a Graphic
	3.5.1.4.7	Validate a Graphic
2.5.1.5.	All Mandatory Items	Manage Automatic Brightness
2.5.2.2.	All Mandatory Items	Remotely Reset the Sign Controller
2.5.2.3.3	Mandatory	Define a Message
	3.5.1.2.4	Delete All Messages of a Message Type with One Command
	3.5.2.3.2.3	Configure Default Flash-On and Flash-Off Times
	3.5.2.3.2.4	Configure Default Font
	3.5.2.3.2.5	Configure Default Line Justification

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UN	FR	DESCRIPTION
	3.5.2.3.2.6	Configure Default Page Justification
	3.5.2.3.2.7	Configure Default Page On-Time and Page Off-Time
	3.5.2.3.2.8	Configure Default Character Set
	H.2.2.1.	Set Time
2.5.2.3.5.	All Mandatory Items	Schedule Messages for Display
2.5.3.1.1.	Mandatory	Determine Sign Error Conditions - High Level Diagnostics
	3.5.3.1.1.3	Execute Climate Control Equipment Testing
2.5.3.1.2	Mandatory	Monitor Subsystem Failure Details - Mid-Level Diagnostics
	3.5.3.1.3.8	Monitor Humidity Warnings
2.5.3.1.3	Mandatory	Monitor Subsystem Failure Details - Low-Level Diagnostics
	3.5.3.1.4.8	Monitor Sign Housing Humidity
2.5.3.1.8	All Mandatory Items	Monitor Door Status
2.5.3.1.9	All Mandatory Items	Monitor Controller Software Operations
2.5.3.1.10	All Mandatory Items	Monitor Automatic Blanking of Sign
	3.5.3.2.1	Monitor Information about the Currently Displayed Message
2.5.3.1.11	All Mandatory Items	Monitor Power Source
2.5.3.1.12	All Mandatory Items	Monitor Power Voltage
2.5.3.2	Mandatory	Monitor Current Message
3.6.6.	3.5.3.2.1	Monitor Information about the Currently Displayed Message
	Mandatory	Supplemental Requirements for Message Definition
	3.6.6.2.1	Support Multi-Page Messages
	3.6.6.2.2	Support Page Justification
	3.6.6.2.2.1	Support for One Page Justification Within a Message
	3.6.6.2.2.2	Support for Multiple Page Justification Within a Message
	3.6.6.2.3	Support Multiple Line Messages
	3.6.6.2.4	Support Line Justification
	3.6.6.2.4.1	Support for a Single Line Justification within a Message
	3.6.6.2.4.2	Support Line Justification on a Page-by-Page Basis
	3.6.6.2.4.3	Support Line Justification on a Line-by-Line Basis
	3.6.6.2.6	Support Font Commands
	3.6.6.2.6.1	Support One Font within a Message
	3.6.6.2.6.2	Support One Font per Page within a Message
	3.6.6.2.10	Support Flashing
	3.6.6.2.10.3	Support Page-by-Page Flashing



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UN	FR	DESCRIPTION
	3.6.6.2.14	Support of Graphics
3.6.13	All Mandatory Items	Supplemental Requirements for Line Justification
	3.6.13.1	Support Left Line Justification
	3.6.13.2	Support Center Line Justification
	3.6.13.3	Support Right Line Justification
	3.6.13.4	Support Full Line Justification

#### 4.9 Catalog Parts

The Contractor shall submit with his/her bid proposal a price list for recommended spare parts for all DMS components typically required for the proposed Portable DMS signs. In addition, the Contractor shall specify a percentage discount from the list prices for all catalog parts. Attached to the Bid Proposal Forms shall be the initial list prices for the catalog parts as required below. All catalog parts shall be identical to the installed components to enable The Department or its agent to readily replace defective components. The Department may review the suggested minimum stocked catalog parts and cost estimates, and modify/negotiate the terms with The Contractor on those items.

The catalog parts shall be provided as a complete assembly with all items necessary for replacement. The catalog part replacement should not require any specialized tools; however, if uncommon tools are necessary, those tools shall be provided with the spare parts. The Contractor shall be required to provide repair parts to The Department within fifteen (15) business days after receipt of an approved purchase order, for a period of three (3) years from Initial Purchase Order.

The Catalog Parts Price List shall be included with the final bid package and shall include but not be limited to the following:

##### DMS

- Sign Controllers.
- Portable Display Face.
- LED Display Module.
- LED Display Module Driver Board.
- Power Supply.
- Photoelectric Sensor.
- Temperature Sensor.
- Air Filters.

##### Trailer

- Tires.
- Cable/Winch Mechanism Spare Parts

For the duration of this Contract, when the Contractor discontinues or improves any spare parts or equipment, the Contractor shall submit an updated spare parts list including the list price for each item.

#### 5.0 Training

The Contractor shall submit a system training plan to The TMC Manager for review and approval within thirty (30) business days after issuance of NTP. Once the training plan is approved, The Contractor shall use it to provide formal system training to The Department's staff. This work is to provide The Department's personnel

and/or its representative with installation training, operations training, and maintenance training support programs including courseware, material, and services for the Portable DMS system.

The TMC Manager may review and respond in writing on all submitted training plans within fifteen (15) business days from the date of receipt of the submission (*NOTE: this includes the training for any modified Portable DMS type/models purchased later in the project via an individual Purchase Order*). The Contractor shall be required to resubmit training plans that have not been approved by The TMC Manager within fifteen (15) business days for approval, unless otherwise noted by The TMC Manager. The Contractor shall clearly note any deviations, changes, additions, or other modifications.

The contractor shall provide on-site operations and maintenance training to Department personnel. This shall include installation, operations, maintenance, and support training program including courseware, material, and services for the Portable DMS. The contractor shall provide each training course in a single day.

The training requirements defined herein shall consist of, but not be limited to, furnishing ALL labor, materials, and transportation for the planning, organizing, and executing of training. The Contractor shall provide an instructor at a location of The Department's choice to conduct the training courses described herein.

## **5.1 Training Course Requirements**

1. The Contractor shall provide a training plan and schedule for The Department's approval prior to performing any training.
2. Provide an instructor at a location of The Department's choice to conduct "classroom and "hands-on" training.
3. Conduct training following the successful completion of the system performance test of the first sign of a particular DMS Type and at additional times as requested by The Department.
4. Submit to the TMC Manager a schedule for approval at least 21 calendar days prior to conducting the training program so that attendance of staff can be coordinated.
5. Provide sufficient copies of training manuals for each participant's use during the training program and for back-up (i.e., one (1) complete set of approved training materials to each participant). In addition, the Contractor shall submit one copy of all final text-based workshop materials and visual aids on CD- ROM to the TMC Manager. The training material shall include detailed installation, operation, and maintenance procedures for the operation of hardware and software associated with the DMS and its components.
6. At a minimum, training session shall be conducted in a single day for four (4) hours of classroom/hands-on training. Bidders should assume that each training session will occur on separate days; however, the Department and the Contractor may be able to determine a more advantageous schedule.
7. The Department and the Contractor shall coordinate a time to conduct each Training Course, but the first course should commence within thirty (30) business days following the successful completion of the system performance test of the first Detector type/model. Additional courses may be requested at other time(s) as requested by The Department.

## **5.2 Installation Training Requirements**

The portion of the training session covering System Installation shall cover the proper installation techniques for the installation of Portable DMS equipment. The installer training shall include as a minimum:

1. DMS handling
2. DMS installation
3. DMS communications
4. DMS software
5. DMS safety

The training shall include all materials and manuals required for a complete installation of the equipment.

### **5.3 Operations Training Requirements**

This portion of the training session shall cover, as a minimum, the following:

1. Basic operational procedures and instructions for the field controller and remote operations
2. Software features
3. Equipment manuals
4. System and software trouble shooting

The training shall include all materials and manuals required for a complete demonstration of the system, procedures, operation, and equipment operation. This training shall stress the day-to-day operation of the completed system, its capabilities, and troubleshooting techniques.

### **5.4 Maintenance Training Requirements**

This portion of the training session shall cover, as a minimum, the following:

1. Review of basic system configuration and operation
2. Review of preventative maintenance procedures
3. Review of system and software trouble shooting procedures
4. Theory of operation, circuit description
5. Calibration, alignment, and adjustment procedures for all sensors
6. Wiring diagrams
7. Complete schematics and sub-component parts listing

The training shall include all materials and manuals required for The Department to maintain and repair all field equipment. The training shall include theory of operation, circuit description, preventive maintenance procedures, troubleshooting, field adjustments, and/or calibration of the sensors and repair of all equipment.

### **5.5 Technical Assistance**

The Contractor shall provide a manufacturer-authorized service center staff to provide technical assistance and telephone support if needed. This office shall provide a phone number that can be contacted for this purpose and be available on-call Monday through Friday starting at 5:00 AM on Monday until 7:00 PM on Friday Eastern time for service calls and parts as needed. This service shall be provided within 4 hours after a call has sent during the above hours. If a call has been sent during any other times, the return call shall be placed within 4 hours after 5:00 AM of the next business day (after a weekend or any Federal and State holidays).

The manufacturer shall have trained vendor-certified technical personnel to assist the Contractor in the event assistance is needed at each/any sign installation site and to assist with the installation, deployment, and operation of the DMS. The manufacturer's representative shall provide assistance in the following areas:

1. Sign Panel
2. Sign Controller
3. Electrical and communication systems/software
4. Sign to trailer installation.
5. Solar Panels and Batteries and connections
6. Switch-over problems from Solar/Batteries to AC/Batteries power

## **6. Delivery**

The items and/or products shall be delivered to The Department of Transportation, within ninety (90) working days from date of the individual Purchase Order. All work will be ordered by Purchase Order, receipt of which shall be promptly acknowledged in writing. Notification must be given at least three (3) days prior to the delivery of any item and confirmed in writing by the Department. Documentation shall be provided to the following facility as indicated in the individual Purchase Orders:

Delaware Department of Transportation – Transportation Management Center  
ATTN: Jim Clacher, TMC Manager  
169 Brick Store Landing Road  
Smyrna, DE 19977  
Phone: 302-659-2400

No Trailer Mounted units shall be accepted for delivery by The Department without a Certificate of Origin and the proper invoicing materials. Within the individual Purchase Orders, all portable DMS signs will be delivered to the above location.

All Trailer mounted DMS units shall be delivered with a Certificate of Origin with the owners name completed as follows:

Delaware Department of Transportation  
P.O. BOX 778  
Dover, DE. 19903

No Trailer Mounted DMS units shall be accepted for delivery by The Department without a Certificate of Origin and the proper invoicing materials.

### **6.1 Factory Direct Shipments**

Units drop shipped from the factory directly to The Department shall be inspected by the Contractor within a maximum of five (5) working days of delivery, by appointment, with the TMC Manager.

No payment shall be made and time charges will continue, until the Contractor and the Equipment Management staff together has determined the equipment supplied meets all of the specified requirements of this contract. If the equipment supplied is to be attached to existing Department owned vehicles, a sample vehicle will be on site to determine if the equipment supplied properly fits and functions as required. If a determination is made that the equipment requires modifications to meet the specification, or shipment of accessories is incomplete, the Contractor will have a maximum of five (5) working days from date of inspection, to cure the deficiencies identified. If after the five (5) day time period all problems have not been corrected, time charges and liquidated damages will be assessed. Time charges will continue until all defects are cured and the delivery is fully accepted by The Department.

### **6.2 Materials and Fabrication**

All equipment and component parts furnished shall be new, be of the latest design and manufacture, and be in an operable condition at the time of delivery. No part or attachment shall be substituted or applied contrary to the manufacturer's recommendations and standard practices.

All electronic equipment shall be of solid-state design and modular construction. Individual electronic modules shall provide easy service access and shall be field replaceable. The design shall be such as to prevent incorrect assembly or installation of connectors, fasteners, etc., where possible malfunction or personnel

hazards might occur. Each item of equipment shall be designed to protect personnel from exposure to high voltage during equipment operation, adjustments, and maintenance.

### **6.3 Regulations and Codes**

All electrical equipment shall conform to the standards of National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), and the Electronic Industries Association (EIA) where applicable.

All system wiring, conduit, grounding hardware, and circuit breakers shall be in conformance with the issue of the National Electrical Code in effect on the date of the bid. All electrical conductors shall be copper.

Whenever references are made in these provisions, they are considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

### **6.4 Reference Publications**

The publications listed below, of the issue in effect on the date of the bid, form a part of these technical specifications to the extent referenced. The publications are referred to in the text by basic designation only. In the event of a conflict between the publications referenced and the detailed content of the technical specification sections that follow, the latter shall be considered a superseding requirement.

1. National Electrical Manufacturers Association (NEMA):
  - a. Standards Publications/No. 250 Enclosures for Electrical Equipment (1000 Volts Maximum)
  - b. NEMA TS 4-2005 – Hardware Standards for Dynamic Message Signs (DMS) with NTCIP Requirements.
2. Electronics Industries Association (EIA):
  - a. EIA/TIA-232-E Interface between Data Terminal Equipment and Data Circuit Terminating Equipment Employing Serial Binary Data Interchange.
  - b. EIA-310-C Racks, panels, and Associated Equipment.
  - c. EIA-359-A Colors for Color Identification and Coding.
  - d. EIA-422-A Electrical Characteristics of Balanced Voltage Digital Interface Circuits.
3. Delaware Standard Specifications, for Road and Bridge Construction, August, 2001 or Latest Edition.
4. Supplemental Specifications to the Delaware Standard Specifications for Road and Bridge Construction.
5. National Electric Code (NEC), 2011 or Latest Edition.
6. Federal standard 595B, Color No 12243
7. Delaware Manual on Uniform Traffic Control Devices (MUTCD) for Temporary Traffic Control Devices, 2011 or Latest Edition.
8. American Association of State Highway and Transportation Officials (AASHTO), Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, 5<sup>th</sup> Edition or Latest Edition, including 2010 and 2011 Interim Revisions.

### **6.5 Quality Assurance**

The Contractor shall develop a quality control program and submit it to the TMC Manager for review and approval within twenty (20) business days after issuance of a Notice to Proceed (NTP). The Contractor shall be required to resubmit a quality control program that has been rejected by the TMC Manager within seven (7) calendar days for approval, unless otherwise noted. The Contractor shall follow the approved quality control program for the duration of the Contract. The Contractor shall not deliver equipment without an approved quality control program. At a minimum the quality control program shall include:

1. At a minimum the Project Manager and Technical Lead, along with any other key staff, as well as their responsibilities
2. A description of the manufacturing environment and process used to ensure delivery of equipment consistent with the technical specifications
3. Delivery time after receipt of Purchase Order

## **6.6 Materials**

The bidder shall include in the bid cost, all cables and incidental items necessary for complete operation of each portable DMS.

All hardware furnished by the Contractor shall be new and of recent manufacture; no used or refurbished hardware is allowed. Furthermore, firmware and software must be tested and in working order; neither prototype firmware, nor prototype software will be permitted.

The Contractor shall register with the manufacturer(s) all equipment and software in the name of The Department. Photocopies of the registration forms shall be forwarded to the TMC Manager.

The Contractor shall store and handle all materials and equipment in a clean, dry location, free from construction dust, precipitation and excess moisture in such a manner as not to degrade quality, serviceability or appearance.

## **6.7 Plans and Specifications**

Along with the requirements of the Bid Submission, The Contractor shall submit for approval two (2) copies of catalog cuts, diagrams, shop drawings, schematics, and descriptions for all equipment (including communications equipment) required for delivery to the Engineer. Descriptive literature should be adequate to determine if the equipment meets the requirements set forth in the technical specifications. Additionally, as part of the response to the individual Purchase Orders, the Contractor shall provide individual packages for different DMS types, if the ordered DMS type has changed from the initially accepted specification. The Contractor shall be required to provide an advanced written notification prior to any delivery of any DMS, if modifications to a particular DMS type/model previously approved require different spare parts. Regardless of this last requirement, updated documentation shall be provided by the Contractor for each delivered DMS. *NOTE: the reason for this additional requirement is that The Department recognizes that vendors continually improve their DMS models; however, The Department needs to have the correct and most-up-to-date documentation for any purchased equipment.*

Shop drawings shall be submitted to The Department in accordance with Standard Specification Section 105.04 Plans and Working Drawings. Shop drawings shall clearly indicate all information pertaining to a comprehensive installation and shall include the following information at a minimum:

1. Complete specifications on the Portable DMS, enclosure, sensor, field controllers, power supply, and other associated equipment to be provided.
2. Material specifications for the transportable trailer and solar panel mast structure shall be provided. This shall include references to all applicable standards organizations recognized by The Department (ASTM, ANSI, AASHTO, or others).

The TMC Manager may review and respond in writing on all submitted plans and specifications within fifteen (15) business days from the date of receipt of the submission (*NOTE: this includes the documentation for any modified DMS models purchased later in the project via an individual Purchase Order*). The Contractor shall be required to resubmit plans and specifications that have not been approved by the TMC Manager within fifteen (15) business days for approval, unless otherwise noted by the TMC Manager. The Contractor shall

clearly note any deviations, changes, additions, or other modifications. No equipment shall be delivered by the Contractor until catalog cuts have been approved by the TMC Manager.

## **6.8 User Manuals and System Administrator Manuals**

The Contractor shall provide operator user manuals sufficient to describe how the system can be deployed, operated, and maintained.

The Contractor shall provide manuals for the system administrator sufficient to describe how the system can be administered, including setup, installation, configuration and testing.

After individual Purchase orders have been made, The Department may request user manuals and system administrator manuals, and shall be provided by The Contractor to The Department within twenty (20) business days after the request has been made. If The Department does not request the user manuals and system administrator manuals, The Contractor shall provide these within two (2) business days after delivery of the Purchase Order items. Two (2) copies of each type of manual (users and system administrator) shall be provided in both paper and electronic format with each Purchase Order. Separate manuals shall be provided for each DMS type ordered; The Department may choose to request the provision of these manuals only the first time a particular DMS type is ordered. The Contractor shall provide the electronic manuals in a format suitable for delivery on Compact Disc (CD-ROM) to The Department (e.g.: Adobe Portable Document Format (PDF), Microsoft Word (doc), Hypertext Markup Language (html), or other common format).

## **6.9 Warranty**

### **6.9.1 Component Warranty**

The Contractor shall extend to The Department a policy guarantee on equipment and/or services against defective material and workmanship for a period of three (3) years from date of final acceptance. Any item that is normally covered by the warranty policy but is determined to have been damaged through misuse or operator neglect shall be exempt from coverage. If any part of the unit is normally covered by a warranty policy for more than the minimum warranty period, the full period of warranty policy shall be provided to The Department. The warranty period shall begin from the date of final acceptance by the TMC Manager for each complete unit. The Contractor shall be solely responsible for the warranty of equipment by other vendors, but that are provided by the Contractor as part of this Contract including parts and labor for removal and re-installation of a failed component.

The Contractor shall comply with the manufacturer's warranty or authorize a qualified dealer in the locality in which the unit is assigned to do whatever is required to comply with the manufacturer's warranty without cost to The Department. When warranty work is required, The Department shall notify the Contractor and/or his designated maintenance facility. Upon notification that warranty work is required, the Contractor shall be required to respond either by telephone or in person within five (5) business days after notification by The Department. If The Department and the vendor determine that an on-site visit is necessary, the Contractor shall provide the necessary labor force (technicians) necessary within five (5) business days after notification from The Department to perform the necessary repairs and/or adjustments to be accomplished (*Note: if the provision of replacement parts requires more time, the Contractor shall inform The Department immediately with a corresponding timetable*). The Contractor shall bear the cost of transporting the equipment both to and from the site as well as any labor and other direct costs to perform these activities.

The warranty period shall also cover the supply and installation of any and all software upgrades for the DMS, including COTS, MIBs, and firmware.

The Contractor shall be responsible to insure that work required on any unit component covered by this warranty is accomplished within limits prescribed herein. If required repairs are not accomplished within the prescribed limits established above, The Department shall have the right to make any necessary repairs and/or adjustment, and to charge the Contractor the cost of all labor, materials, equipment, and all other incidental costs necessary to affect such repairs.

#### **6.9.2 Service Operation Warranty**

The following service operation warranty shall apply:

1. A portable DMS system service operations warranty period shall be provided for three (3) years on both the mechanical components and on the electrical components.
2. These periods start from the date an entire portable DMS unit has been accepted by The Department.
3. The service operations warranty period shall apply to the entire portable DMS system and shall include replacement of any part used during the service operations period at no cost to The Department. This shall include all parts and labor for the successful vendor to visit the location of the portable DMS (regardless of the current location within the State of Delaware) and to perform any replacement or repair activities.
  - a. The Contractor shall acknowledge any warranty claims within five (5) business days of receipt of an e-mailed warranty claim, either in writing or via e-mail.
  - b. If the Contractor or The Department determine (only one party shall be required to determine this need) that on-site assistance is necessary to fix a problem, a trained Contractor-certified technician shall be dispatched within five (5) business days to the location of the sign in question. The five (5) business days shall begin when the written or e-mail request is made.
  - c. If the Contractor and The Department mutually determine that The Department can make a particular repair but a part is needed (i.e., not existing in The Department's spare part collection), this part shall be sent via FedEx and arrive at The Department's Smyrna TMC within five (5) business days after the determination has been made.
4. The Department reserves the right to require the replacement of the whole DMS under the following circumstances:
  - a. If one particular component fails more than three (3) times on the same portable DMS within a period of 3 months, the whole portable DMS shall be replaced without any costs to The Department.
  - b. If several different components such as sign controller and LED modules and power supplies and board drivers fail more than four (4) times on the same portable DMS within a period of 3 months, the whole portable DMS shall be replaced without any costs to The Department.
5. The service operations warranty item does not include the normal usage wear and/or costs of electrical energy from local power companies.

### **7. Intellectual Property/ Software Documentation and Ownership**

#### ***Intellectual Property Rights***

The Contractor shall license all software provided as part of the DMS to The Department and all information and printed graphs, tables and reports from the DMS shall be the property of The Department and may be used and/or distributed at The Department's discretion for its purposes as defined in Appendix A, Intellectual Property/Software Author Agreement.

The Contractor shall be required to submit a copy of Appendix A, Intellectual Property/Software Documentation and Ownership signed by an authorized officer of the firm, after the award of the Contract.



***Software Documentation***

The Contractor shall deliver to The Department all Contractor-provided central system software executables used in this project to control the delivered DMS Types. The Contractor must deliver a statement giving The Department unrestricted use of this software within the State of Delaware.

Copies of the utilized firmware, i.e., the software running in the DMS controller, do not need to be provided. However, copies of the utilized NTCIP Management Information Base (MIB) shall be provided for each DMS separately. Additionally, each sign shall be provided with an operational description describing how to initialize the sign (including initialization of the communications), how to reboot the sign, etc.

The Contractor will provide valid licenses to The Department for all applications that are used in the DMS.

Title: PORTABLE **DYNAMIC MESSAGE SIGNS**

#### **IV. BID QUOTATION REPLY SECTION**

Please fill out the attached forms fully and completely and return with your bid in a sealed envelope clearly displaying the contract number, by the date and time bids will be opened.

**Bids shall be submitted to:**



State of Delaware  
**DEPARTMENT OF TRANSPORTATION**  
**Administration Building**  
**Contract Administration**  
**800 Bay Road, Dover, DE 19901**



#### **PUBLIC BID OPENINGS**

The public bid opening insures the citizens of Delaware that contracts are being bid fairly on a competitive basis and comply with Delaware procurement laws. The agency conducting the opening is required by law to publicly open the bids at the time and place specified and the contract shall be awarded within thirty (30) days thereafter. The main purpose of the bid opening is to reveal the name(s) of the bidders(s), not to serve as a forum for determining the apparent low bidders. The disclosure of additional information, including prices, shall be at the discretion of the contracting agency until such time that the responsiveness of each bid has been determined.

After receipt of a fully executed contract(s), the Delaware public and all bidders are invited to make an appointment with the contracting officer in order to review pricing and other non-confidential information.

**NOTE: ONLY THE BIDDER'S NAME MAY BE READ AT THE BID OPENING**

STATE OF DELAWARE  
Department of Transportation

*Informational Document- Sample Report 1.*

STATE OF DELAWARE  
MONTHLY USAGE REPORT

FOR ILLUSTRATION PURPOSES ONLY

State of Delaware									
Monthly Usage Report									
Supplier Name:				Insert Contract No.	Report Start Date:				
Contact Name:					Report End Date:				
Contact Phone:					Today's Date:				
Agency Name or School District	Division or Name of School	Budget Code	<a href="#">UNSPSC</a>	Item Description	Contract Item Number	Unit of Measure	Qty	Contract Proposal Price/Rate	Total Spend
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00
									\$0.00

**Note:** A copy of the Usage Report will be sent by electronic mail to the Awarded Vendor. The report shall be submitted electronically in **EXCEL** and sent as an attachment to [vendusage@state.de.us](mailto:vendusage@state.de.us). It shall contain the six-digit department and organization code for each agency and school district.

STATE OF DELAWARE  
Department of Transportation

Informational Document- Sample Report 2.

FOR ILLUSTRATION PURPOSES ONLY

State of Delaware																		
Subcontracting (2nd tier) Quarterly Report																		
Prime Name:							Report Start Date:											
Contract Name/Number							Report End Date:											
Contact Name:							Today's Date:											
Contact Phone:							*Minimum Required		Requested detail									
Vendor Name*	Vendor TaxID*	Contract Name/Number*	Vendor Contact Name*	Vendor Contact Phone*	Report Start Date*	Report End Date*	Amount Paid to Subcontractor*	Work Performed by Subcontractor UNSPSC	M/WBE Certifying Agency	Veteran/Service Disabled Veteran Certifying Agency	2nd tier Supplier Name	2nd tier Supplier Address	2nd tier Supplier Phone Number	2nd tier Supplier email	Description of Work Performed	2nd tier Supplier Tax Id	Date Paid	

**Note:** A copy of the Subcontracting Quarterly Report will be sent by electronic mail to the Awarded Vendor.

Completed reports shall be saved in an Excel format, and submitted to the following email address: [vendorousage@state.de.us](mailto:vendorousage@state.de.us)

Informational Document- 3.

## **State of Delaware**

### **Office of Supplier Diversity Certification Application**

The most recent application can be downloaded from the following site:

<http://gss.omb.delaware.gov/osd/certify.shtml>

Submission of a completed Office of Supplier Diversity (OSD) application is optional and does not influence the outcome of any award decision.

The minimum criteria for certification require the entity must be at least 51% owned and actively managed by a person or persons who are eligible: minorities, women, veterans, and/or service disabled veterans. Any one or all of these categories may apply to a 51% owner.



**Complete application and mail, email or fax to:**

Office of Supplier Diversity (OSD)  
100 Enterprise Place, Suite 4  
Dover, DE 19904-8202  
Telephone: (302) 857-4554 Fax: (302) 677-7086  
Email: [osd@state.de.us](mailto:osd@state.de.us)  
Web site: <http://gss.omb.delaware.gov/osd/index.shtml>

**THE OSD ADDRESS IS FOR OSD APPLICATIONS ONLY.  
NO BID RESPONSE PACKAGES WILL BE ACCEPTED BY THE OSD.**

STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS  
Contract Title: PORTABLE DYNAMIC MESSAGE SIGNS

Informational Document- 4.

**NO BID REPLY FORM**

To assist us in obtaining good competition on our Request for Bids, we ask that each firm that has received an invitation, but does not wish to bid, state their reason(s) below and return in a clearly marked envelope displaying the contract number. This information will not preclude receipt of future invitations unless you request removal from the Bidder's List by so indicating below, or do not return this form or bona fide bid.

Unfortunately, we must offer a "No Bid" at this time because:

- \_\_\_\_\_ 1. We do not wish to participate in the bid process.
- \_\_\_\_\_ 2. We do not wish to bid under the terms and conditions of the Request for Bid document. Our objections are:
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_ 3. We do not feel we can be competitive.
- \_\_\_\_\_ 4. We cannot submit a Bid because of the marketing or franchising policies of the manufacturing company.
- \_\_\_\_\_ 5. We do not wish to sell to the State. Our objections are: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_ 6. We do not sell the items/services on which Bids are requested.
- \_\_\_\_\_ 7. Other: \_\_\_\_\_

\_\_\_\_\_  
FIRM NAME

\_\_\_\_\_  
SIGNATURE

STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS  
Contract Title: PORTABLE DYNAMIC MESSAGE SIGNS

Informational Document- 5.

**PROPOSAL REPLY REQUIREMENTS**

The response should contain at a minimum the following information:

1. One (1) complete, signed and notarized copy of the non-collusion agreement (See Attachment A).  
**MUST HAVE ORIGINAL SIGNATURES AND NOTARY MARK**
2. One (1) complete and signed copy of the Subcontractor Information Form (See Attachment B) for each subcontractor – only provide if applicable.
3. One (1) completed Business Reference form (See Attachment C) – please provide references other than State of Delaware contacts. Form must be included.
4. One (1) completed Confidential Information form (See Attachment D) – please check box if no information provided will be considered confidential or proprietary. Form must be included.
5. Two (2) paper copy of the properly completed **Bid Form** (See Attachment E) for each
6. Reference Section 4.9, submit with bid proposal a price list for recommended spare parts for all DMS components typically required for the proposed Portable DMS signs.
7. Reference Section 4.9, attach to the Bid Proposal Forms the initial list prices for the catalog parts as required.
8. **NUMBER OF COPIES WITH MAILING OF PROPOSAL:**

To be considered, all proposals must be submitted in writing and respond to the items outlined in this ITB. The State reserves the right to reject any non-responsive or non-conforming proposals. Each proposal must be submitted with the above required forms and submittals. Paper copies must contain original signatures.

The items listed above provide the basis for evaluating each vendor's proposal. **Failure to provide all appropriate information may deem the submitting vendor as “non-responsive” and exclude the vendor from further consideration.** If an item listed above is not applicable to your company or proposal, please make note in your submission package.

STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS  
Contract Title: PORTABLE DYNAMIC MESSAGE SIGNS

**Attachment: A**

**NON-COLLUSION STATEMENT**

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this bid submitted this date to the Department of Transportation.

It is agreed by the undersigned bidder that the signed delivery of this bid represents the bidder's acceptance of the terms and conditions of this solicitation including all specifications and special provisions.

**NOTE:** Signature of the authorized representative **MUST** be of an individual who legally may enter his/her organization into a formal contract with the State of Delaware, Department of Transportation.

<input type="checkbox"/>	Corporation
<input type="checkbox"/>	Partnership
<input type="checkbox"/>	Individual

COMPANY NAME \_\_\_\_\_ (Check one)

NAME OF AUTHORIZED REPRESENTATIVE \_\_\_\_\_

**SIGNATURE** \_\_\_\_\_ **TITLE** \_\_\_\_\_

COMPANY ADDRESS \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_ FAX NUMBER \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

FEDERAL E.I. NUMBER \_\_\_\_\_ STATE OF DELAWARE  
LICENSE NUMBER \_\_\_\_\_

COMPANY CLASSIFICATIONS:  CERT. NO.: _____	Certification type(s)	Circle all that apply	
	Minority Business Enterprise (MBE)	Yes	No
Woman Business Enterprise (WBE)	Yes	No	
Disadvantaged Business Enterprise (DBE)	Yes	No	
Veteran Owned Business Enterprise (VOBE)	Yes	No	
Service Disabled Veteran Owned Business Enterprise (SDVOBE)	Yes	No	

[The above table is for informational and statistical use only.]

**PURCHASE ORDERS SHOULD BE SENT TO:**  
(COMPANY NAME) \_\_\_\_\_

ADDRESS \_\_\_\_\_

CONTACT \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_ FAX NUMBER \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

**AFFIRMATION:** Within the past five years, has your firm, any affiliate, any predecessor company or entity, owner, Director, officer, partner or proprietor been the subject of a Federal, State, Local government suspension or debarment?  
YES \_\_\_\_\_ NO \_\_\_\_\_ if yes, please explain \_\_\_\_\_

**THIS PAGE SHALL BE SIGNED, NOTARIZED AND RETURNED FOR YOUR BID TO BE CONSIDERED**

SWORN TO AND SUBSCRIBED BEFORE ME this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

Notary Public \_\_\_\_\_ My commission expires \_\_\_\_\_

City of \_\_\_\_\_ County of \_\_\_\_\_ State of \_\_\_\_\_



STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS  
Contract Title: PORTABLE DYNAMIC MESSAGE SIGNS

**Attachment: B**

**SUBCONTRACTOR INFORMATION FORM**

<b>PART I – STATEMENT BY PROPOSING VENDOR</b>		
1. CONTRACT NO.	2. Proposing Vendor Name:	3. Mailing Address
4. SUBCONTRACTOR		
a. NAME	4c. Company OSD Classification:  Certification Number: _____	
b. Mailing Address:	<div style="display: flex; justify-content: space-between;"><div>4d. Women Business Enterprise</div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div> <div style="display: flex; justify-content: space-between;"><div>4e. Minority Business Enterprise</div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div> <div style="display: flex; justify-content: space-between;"><div>4f. Disadvantaged Business Enterprise</div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div> <div style="display: flex; justify-content: space-between;"><div>4g. Veteran Owned Business Enterprise</div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div> <div style="display: flex; justify-content: space-between;"><div>4h. Service Disabled Veteran Owned Business Enterprise</div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div>	
5. DESCRIPTION OF WORK BY SUBCONTRACTOR		
6a. NAME OF PERSON SIGNING	7. BY ( <i>Signature</i> )	8. DATE SIGNED
6b. TITLE OF PERSON SIGNING		
<b>PART II – ACKNOWLEDGEMENT BY SUBCONTRACTOR</b>		
9a. NAME OF PERSON SIGNING	10. BY ( <i>Signature</i> )	11. DATE SIGNED
9b. TITLE OF PERSON SIGNING		

STATE OF DELAWARE  
Department of Transportation  
Contract No. DOT1414-PORT\_DMS  
Contract Title: PORTABLE DYNAMIC MESSAGE SIGNS

**Attachment: C**

**BUSINESS REFERENCES**

List a minimum of three business references, including the following information:

- Business Name and Mailing address
- Contact Name and phone number
- Number of years doing business with
- Type of work performed

Please do not list any State Employee as a business reference. If you have held a State contract within the last 5 years, please list the contract.

1.	<b>Contact Name &amp; Title:</b>	
	<b>Business Name:</b>	
	<b>Address:</b>	
	<b>Email:</b>	
	<b>Phone # / Fax #:</b>	
	<b>Current Vendor (YES or NO):</b>	
	<b>Years Associated &amp; Type of Work Performed:</b>	
2.	<b>Contact Name &amp; Title:</b>	
	<b>Business Name:</b>	
	<b>Address:</b>	
	<b>Email:</b>	
	<b>Phone # / Fax #:</b>	
	<b>Current Vendor (YES or NO):</b>	
	<b>Years Associated &amp; Type of Work Performed:</b>	
3.	<b>Contact Name &amp; Title:</b>	
	<b>Business Name:</b>	
	<b>Address:</b>	
	<b>Email:</b>	
	<b>Phone # / Fax #:</b>	
	<b>Current Vendor (YES or NO):</b>	
	<b>Years Associated &amp; Type of Work Performed:</b>	

**STATE OF DELAWARE PERSONNEL MAY NOT BE USED AS REFERENCES.**

**Attachment: D**

☐ **By checking this box**, the Vendor acknowledges that they are not providing any information they declare to be confidential or proprietary for the purpose of production under 29 Del. C. ch. 100, Delaware Freedom of Information Act.

[illegible]

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STATE OF DELAWARE  
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**Attachment: E**

BIDDER: \_\_\_\_\_

**BID FORM**

\*\* ALL COLUMNS MUST BE COMPLETED AS INDICATED \*\*  
**ALL FIGURES MUST BE TYPEWRITTEN OR HANDWRITTEN IN INK**

ITEM NO.	QUANTITY	UOM	ITEM DESCRIPTION	UNIT PRICE	TOTAL
01	20	EA	Supply & Deliver Portable Dynamic Message Signs  <b>Discount percentage from catalog list prices:</b> %  	\$ _____	\$ _____
<b>TOTAL BID:</b>					\$ _____