State of Illinois

Department of Transportation

Bureau of Business Services

**Specifications and Questionnaire for a Solar Powered, Trailer-Mounted, Full-Matrix, LED Style, Changeable Message Board**

August 2019

This specification and questionnaire covers a solar powered, trailer-mounted, FULL MATRIX, LED style, changeable message board for use in Department of Transportation highway maintenance operations. The Department of Transportation is specifying acceptable units by required components and accessories as outlined below.

Each bidder shall submit with their bid**two sets** of descriptive literature and specifications describing**all** the **equipment** and **options**proposed. This information shall be clearly marked to indicate the make, model, and accessories proposed to be furnished.

Bidders quoting on thisequipment must submit with their bid written proof of the following:

* The equipment proposed equals or exceeds that specified in all respects including capacity, operating features, and accessory items.
* The manufacturer of the equipment proposed has been actively involved in the manufacture of the equipment called for in the questionnaire for a period of not less than 5 years.

It is the responsibility of each bidder to complete and return this questionnaire with the bid.

**Unless otherwise specified, the proposed equipment shall be complete in all parts and ready for immediate use upon delivery.**

**Bidders are advised to carefully read these specifications as changes have been made since the last solicitation issue.**

|  |
| --- |
| **Proposed with this Bid:** |
| Make: |       |
| Model: |       |
| Manufactured By: |       |
| Bidder: |       |
|  |       |
|  |       |
| Telephone: |       |
| Contact Name: |       |
| Email: |       |

The Illinois Department of Transportation reserves the right to waive minor informalities, deficiencies or technical variances which by their nature are restrictive to a given manufacturer, if in its’ judgement, it would be in the best interest of the State to do so and it would not prejudice the rights of other bidders.

Serviceability will be a factor in award. Successful bidder shall either be able to provide service after purchase or shall indicate other qualified service facilities able to service equipment, within a reasonable period of time at agency locations. Bidder shall provide documentation and enumerating service locations. A Review of the bidder's ability to provide prompt parts and service to the State of Illinois and in particular to the delivery location, will be considered in determining award.

Bids will only be accepted from established manufacturers or their authorized dealers. Any dealer submitting a bid hereby guarantees that it is an authorized dealer of the manufacturer and that the manufacturer has agreed to supply the dealer with all quantities of products required by the dealer in fulfillment of its obligations under any resultant contract with the State. Bidder must submit authorized dealer letter upon request.

**Warranty:**

Unless otherwise specified, Manufacturers’ standard warranty shall be provided. **Bidder shall attach copies of warranty with their bid****. Warranty shall commence at the Illinois Department of Transportation in-service date.** If any equipment fails to conform to the warranties during the applicable warranty period, the Vendor or Manufacturer will adjust, repair or replace the equipment at no charge to the Department as soon as possible upon notice from the Department. Equipment shall be repaired on-site and will be performed at no additional cost to the Department.

The Vendor may provide or perform warranty service at a dealer location within the Districts geographic region if on-site repair is not possible. Vendor shall facilitate pickup and delivery of equipment at Vendor's cost if warranty repair(s) are made off-site during the warranty period. The contract Vendor is responsible for any failure of their allied or sub-contractors’ fulfillment of said warranties. Failure to provide this service shall result in a “Complaint to Vendor” that could affect future bid awards.

**Delivery:**

It will be the responsibility of the successful vendor to guarantee delivery within the quoted time and to require allied manufacturers or suppliers to complete the installation of auxiliary equipment in accordance with the quoted delivery time.

Failure to comply with the quoted delivery time because of delays resulting from the inability of suppliers of allied equipment such as bodies, snowplows, spreaders, etc., may be reason to refuse to consider similar items from those suppliers on future bids.

All equipment provided by the Vendor and the sub-contractor(s) shall be fully operational when delivery is made. Any noted defects at the time of delivery shall be addressed by Vendor in the first 30 days of in-service.

Bidder/Vendor acknowledges the requirements above. Yes [ ]  No [ ]

|  |  |  |  |
| --- | --- | --- | --- |
| Bidder/Vendor Initials: |       | Date: |       |

**Note: If the equipment proposed exceeds the minimums called for in the specification please do not mark NO. Mark YES and explain with a short comment on how it exceeds**

This specification is intended to describe a solar powered, trailer-mounted, programmable, changeable, FULL MATRIX, LED message sign that will be used to display a variety of traffic advisory, warnings, and traffic control messages.

Complies: [ ]  Yes [ ]  No

These message boards will be used and must function during all forms of inclement weather to alert the traveling public.

Complies: [ ]  Yes [ ]  No

The major components of the message board shall be compatible as a part of the whole and include Message Sign Panel, Control System, Power Source, and Mounting & Transporting Equipment.

Complies: [ ]  Yes [ ]  No

The following accessories and options shall be included:

**Message Sign Panel:**

The sign shall display a minimum 18” characters and the sign panel message shall be visible and legible from 1000' minimum in both direct sunlight and night conditions.

Complies: [ ]  Yes [ ]  No

|  |  |  |
| --- | --- | --- |
| Visible distance: |       | Feet |

A photocell will adjust the light source intensity to maintain legibility in all light conditions.

Complies: [ ]  Yes [ ]  No

The message panel shall be full-matrix.

Complies: [ ]  Yes [ ]  No

The board shall be capable of presenting graphic symbols.

Complies: [ ]  Yes [ ]  No

The message panel shall be formed of reinforced aluminum and shall be approximately 134"x76"x5". Each line shall be of an angled design to provide the optimum visibility and reduce glare.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| If NO, describe: |       |
|       |

The front face of the board shall be protected with a UV inhibited material (i.e. Lexan™ solar-grade polycarbonate).

Complies: [ ]  Yes [ ]  No

**Control System:**

All programming, hardware and software shall meet National Transportation Communications for ITS Protocol (NTCIP). Information to comply with these requirements may be obtained at “www.ntcip.org.”

The system shall be capable of being re‑configured in case all memory fails. Two (2) copies of any software to perform this re‑configuration shall be included.

Complies: [ ]  Yes [ ]  No

The Control System shall include any software (2 copies) necessary to design graphic displays and apply to message board.

Complies: [ ]  Yes [ ]  No

The programmable message board shall be controlled in all functions by an industrial rated, IBM computer running compatible, Windows driven programming and software.

Complies: [ ]  Yes [ ]  No

Component:

|  |  |
| --- | --- |
| Make: |       |
| Model: |       |

The computer will:

1. Be operator programmable to display multiple messages in sequence with variable timing.
2. Include keyboard capability to enter and manipulate data.
3. Include a LCD high contrast display screen to display, compose, and review messages prior to display on the sign.
4. The system shall store 200 pre-programmed messages for display.
5. Store up to 50 messages composed by the operator.
6. Maintain a list of stored messages for review and display by the operator before they are displayed on the sign.
7. Provide controls to sequence messages with various display timing.
8. Provide controls for graphic symbols.
9. Provide control to blink all messages.

Complies: [ ]  Yes [ ]  No

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| --- | --- |
| If NO, describe: |       |
|       |

The computer used shall be password protected but easily used by personnel after minimal training.

Complies: [ ]  Yes [ ]  No

The successful vendor shall provide the training necessary to make field personnel proficient in the operation of the message board.

Complies: [ ]  Yes [ ]  No

The computer shall be equipped with a back-up battery to maintain memory and other necessary functions.

Complies: [ ]  Yes [ ]  No

A weather and vandal-proof housing shall protect the computer and all switches and control indicators.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe: |       |
|       |

The instrumentation and controls shall be illuminated for night vision.

Complies: [ ]  Yes [ ]  No

The controller shall be equipped with a time clock operation that can be preprogrammed for automatic operation for any period of operation from minutes to one hundred years.

Complies: [ ]  Yes [ ]  No

The programmed messages can be set for display on different days of the week and at different times during the day.

Complies: [ ]  Yes [ ]  No

All messages and sequences shall be independent and capable of "nesting" one within the other.

Complies: [ ]  Yes [ ]  No

**Power Source:**

The entire message display system and computer shall be capable of operation from both the solar/battery source and 120-volt AC electrical power source. When fully charged, the message board shall have enough capacity to operate autonomously for 30 days.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe the solar power source: |       |
|       |

The battery charge shall be provided by a charger capable of completely recharging the battery pack in 24 hours.

Complies: [ ]  Yes [ ]  No

The solar panel shall be located at the highest point on the message board capable of full charge battery within 4 hours.

Complies: [ ]  Yes [ ]  No

The message board shall rotate 360 degrees and be lockable in any position.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe rotation: |       |
|       |

**Note:** If hydraulic rotational device is used 270-degree rotation is acceptable.

**Mounting & Transporting Equipment:**

The trailer and all mounted equipment shall be capable and tested to withstand 80 MPH winds with all outriggers deployed in normal operating mode. The unit shall meet current AASTHO Standards for Structural Highway Signs, Luminaries, and Traffic Signals.

Complies: [ ]  Yes [ ]  No

***Note:*** Outriggers are not required if the trailer can withstand the conditions described above. Proof of testing shall accompany the bid.

The trailer shall be designed and equipped for highway operation at speeds up to and exceeding 65 MPH.

Complies: [ ]  Yes [ ]  No

The trailer shall incorporate all structural fully welded members and be designed for a single person to transport and deploy.

Complies: [ ]  Yes [ ]  No

The trailer shall be cleaned, prepped and powder coated manufactures standard safety orange.

Complies: [ ]  Yes [ ]  No

A sight gauge, level and compass shall be provided to aid in set-up. If available a video camera shall be used for alignment.

Complies: [ ]  Yes [ ]  No

The axle, suspension, tires and wheels shall be rated to include 400 Lbs. of additional weight.

|  |  |  |
| --- | --- | --- |
| GAW Rating: |       | Pounds |

The axle shall be a drop style.

Complies: [ ]  Yes [ ]  No

An emergency break-away braking system shall be provided.

Complies: [ ]  Yes [ ]  No

Component:

|  |  |
| --- | --- |
| Make: |       |
| Model: |       |

Four (4) outrigger or leveling jacks shall be provided. They shall be located at each corner of the trailer deck. Each jack shall be secured with chain attached pins or spring loaded locking pin and capable of swiveling into a horizontal position for travel.

Complies: [ ]  Yes [ ]  No

They shall all be screw style jacks with a minimum capacity of 2000 Lbs. each

Complies: [ ]  Yes [ ]  No

Component:

|  |  |
| --- | --- |
| Make: |       |
| Model: |       |
| Weight rating: |       | Pounds |

The trailer lighting shall be LEDwith a sealed and grommeted wiring harness.

Complies: [ ]  Yes [ ]  No

The lighting and trailer markings shall conform to the requirements of the latest **Illinois Vehicle Code** edition.

Complies: [ ]  Yes [ ]  No

A 3" pintle ring style hitch with a 6,000 Lb. capacity shall be provided.

Complies: [ ]  Yes [ ]  No

All safety chains and hooks shall be rated according to the GVW of the loaded trailer.

Complies: [ ]  Yes [ ]  No

The message board shall be supported by a telescoping up-right that permits the raising, lowering and rotation of the sign.

Complies: [ ]  Yes [ ]  No

The sign shall be lockable at any juncture and operational when so locked.

Complies: [ ]  Yes [ ]  No

When stowed for transport, the sign shall be parallel to the longitudinal axis of the trailer and secured.

Complies: [ ]  Yes [ ]  No

The raising and lowering of the sign panel shall be accomplished using an electric/hydraulic pump driving a hydraulic cylinder.

Complies: [ ]  Yes [ ]  No

When fully raised the bottom of the sign shall be approximately 7' from the ground.

Complies: [ ]  Yes [ ]  No

**Miscellaneous Equipment:**

Auxiliary hand pump to raise and lower the sign panel in the event of a battery failure.

Complies: [ ]  Yes [ ]  No

**Compliance:**

* NTCIP compliant
* Meets MUTCD
* Meets NEMA TS 4-2005 Section 2 for ambient temperature, vibration, shock, electro-static discharge (ESD), and radio interference

Complies: [ ]  Yes [ ]  No

**Optional Equipment and Features:**

The following optional equipment shall only be quoted when specifically called for in the **“Bid”**.

**Remote Access:** [ ]

The message board shall have the capability of being remotely operated utilizing internet based remote communications through NTCIP compatibility.

Complies: [ ]  Yes [ ]  No

**Cellular/GPS Access:** [ ]

The message board shall have the capability of being remotely monitored and operated via cellular telephone.

Complies: [ ]  Yes [ ]  No

This monitoring shall include the ability to change messages, sequence, and program. This shall be complete with any required cables modems etc. for operation.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe: |       |
|       |

**Traffic / Speed Warning:** [ ]

The message board shall be equipped with a device that detects the speed and pattern of approaching traffic and can be programmed to interrupt the message with a special default message and store data.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe: |       |
|       |

**General:**

The vendor shall furnish the machine in first class operating condition with all lubrication completed and the machine ready for operation.

Complies: [ ]  Yes [ ]  No

Two (2) copies of all operators’ manuals, parts lists, electrical schematics, and warranty information shall be provided at time of delivery.

Complies: [ ]  Yes [ ]  No

***Note:*** The manuals, parts lists, and service or shop manuals listed above may be furnished on CD/DVD or flash drive in lieu of paper.

**Training:**

Instruction must be provided by qualified factory or dealer personnel covering operation and maintenance of the unit. This training shall be provided for a minimum of two (2) IDOT representatives at the time of delivery. Training not meeting these requirements will be cause for a “Complaint to Vendor”.

 Complies: Yes [ ]  No [ ]

**Requirements Covering Items Detailed Above:**

All equipment cataloged as standard or safety related shall be furnished and in place and shall be included in the purchase price of the unit. Any parts, tools, and/or accessories not specifically called for but required for proper operation shall be provided.

Complies: [ ]  Yes [ ]  No

The vendor or manufacturer of the unit considered for award shall, at the request of the State of Illinois, demonstrate this equipment at a location chosen by the state and in the presence of authorized state personnel to prove out any features in question.

Complies: [ ]  Yes [ ]  No

**Warranties, Coverage and Duration:**

Full coverage warranty on all components and installation for a minimum 12 months shall be provided.

Complies: [ ]  Yes [ ]  No

|  |  |
| --- | --- |
| Describe warranty: |       |
|       |
| If NO to any portion, please explain: |       |
|       |
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|       |

Since the continuous operation of this equipment is of the utmost importance and generally of an emergency nature, it is necessary that the successful bidder be in a position to render prompt parts and service.

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| --- | --- |
| List sources for service: |       |
|       |
|       |

**Bid Package:**

If not quoting in BidBuy, bidders will need to send two copies of each of the following with their bid response.

a) Specification Questionnaire

b) Descriptive Literature