

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

May 2018

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 this equipment 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: _____

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

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' 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.

Complies: Yes No

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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 industrially 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

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

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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.

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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: _____ lbs.

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

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

Complies: Yes No

Component:

Make: _____

Model: _____

Weight rating: _____ lbs.

The trailer lighting shall be LED-with 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 7' from the ground.

Complies: Yes No

Miscellaneous Equipment:

Auxiliary hand pump to raise and lower the sign panel.

Complies: Yes No

Full instrumentation and instrument panel.

Describe: _____

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Optional Equipment and Features:

The following items shall be provided only if called for in the bid proposal.

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

Complies: Yes No

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: _____

The message board shall be equipped with a device that detects the speed of approaching traffic and can be programmed to interrupt the message with a special default message or provide a remote warning.

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 DVD in lieu of paper.

One session of instruction and training by qualified factory and dealer personnel covering operation and maintenance of the machine shall be provided.

Complies: Yes No

Requirements Covering Items Detailed Above:

All equipment cataloged as standard 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

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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: _____

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.

List sources for service: _____

Bid Package:

Bidders will need to send two copies of each of the following with their bid response.

- a) Specification Questionnaire
- b) Descriptive Literature