# Radar Speed Advisory System NJSP 21-06

**1.0 General.** The Radar Speed Advisory System (RSAS) shall be a portable, automated and solar powered system that displays real-time speed data in operation 24 hours per day, seven days per week during active work zones for the duration of this contract.

**2.0 Description.** This item shall consist of furnishing, installing, relocating, operating, and removing a RSAS meeting the requirements noted herein, and providing a work zone specialist responsible for maintaining the system during the duration of this contract. The contractor shall assume responsibility for any damaged equipment due to crashes, vandalism, adverse weather, etc. that may occur during the system’s deployment.

**2.1** The Contractor shall furnish and maintain this system for measuring and delivering real-time messages for the work zone.

**2.2** The contractor will be responsible to relocate the devices as directed by the engineer. When the equipment is not in use, it shall be turned away from traffic. When the equipment is no longer required for longer than a 24-hour period, the RSAS shall be stored in accordance with Section 107.5. When the equipment is no longer required for this contract, the contractor shall remove it and retain ownership.

 **3.0 System Requirements.** The RSAS shall include a trailer with a 36”x24” Work Zone Plaque with a 36”x48” R2-1 sign that reflects the work zone speed limit. The signs shall be in accordance with Section 903. The trailer shall be marked with red and white conspicuity tape along the flat edges of the trailer tongue and framing.



**3.1** The RSAS shall be equipped with a radar unit equipped with a data logger designed to detect speed and quantity of approaching vehicles. It shall meet the following requirements:

* The radar unit shall detect approaching vehicles at a minimum of 1000 feet.
* The radar is accurate to plus or minus one mile per hour

**3.2** The RSAS display shall be at a height visible for situations where the trailer is behind a temporary barrier. The display shall meet the additional following requirements:

* Amber display with an automatic brightness control for high visibility in both daytime and nighttime situations.
* The display shall have a minimum character height of 18 inches.
* The display shall be legible at a minimum distance of 750 feet.
* The display allows input of the work zone speed in multiples of 5 miles per hour
* The display shall indicate the speed of the approaching vehicle when the speed is less than or equal to the work zone speed limit (Non-Flash Mode)
* The display shall indicate the speed of the approaching vehicle when the speed is 1-10 miles per hour greater than the work zone speed limit (Flash Mode)
* The display shall indicate “SLOW DOWN” when the speed of the approaching vehicle is greater than 10 miles per hour of the work zone speed limit.

**3.3** The RSAS shall include a self-contained electrical power source that, with or without maintenance, will ensure continuous operation of the RSAS throughout the duration of this contract.

**DRAFTERS NOTES: ADD PARAGRAPH 3.4 AS REQUIRED WHEN REMOTE MANGEMENT AND DATA RETENTION ARE NEEDED.**

**3.4** The RSAS may be equipped with a high-speed Global Positioning System (GPS) and a cellular device to connect for remote management and data retention. If optioned for, the remote management and data application must provide the following:

* Allow users to configure, update, and monitor the operation of the RSAS, including review of the data collected in real-time, for the duration of this contract.
* The application shall display the specific project the RSAS is deployed on and the specific location of the RSAS on a map interface.
* Store and maintain traffic volume and speed data collected throughout the duration of this contract in a secure location.
* Allow users to download the data in an approved format

**3.5** The RSAS’s sensors shall be side-fired microwave radar type whose accuracy is not degraded by inclement weather and visibility conditions including precipitation, fog, darkness, excessive dust and road debris. These sensors shall be capable of acquiring traffic data from up to three (3) lanes of traffic on a lane-by-lane basis.

**3.6** The RSAS shall be National Transportation Communications for ITS Protocol (NTCIP) compliant.

**3.7** The RSAS may be equipped with Red or Red and Blue Warning Lights that are in accordance with Section 616.5.1.1.

**4.0 Construction.** Install the RSAS in accordance with the manufacturer’s recommendations and the following requirements:

**4.1** Locate the RSAS downstream of the initial sign package, as shown in the plans or as directed by the engineer. Relocation of the trailer should be considered every two weeks or

as required by the engineer.

**4.2** Orient the RSAS so the digital display and any other signing are fully visible to oncoming traffic.

**4.3** Ensure the RSAS is not obstructed by other traffic control devices, construction materials, or equipment and is able to detect traffic.

**4.4** Ensure the RSAS trailer is level while the wheels are elevated from the ground.

**4.5** Adjust the display brightness for maximum visibility.

**4.6** Ensure the controller is locked at all times and default passwords are not used.

**4.7** Update the R2-1 sign as necessary to reflect any changes in the speed throughout the project.

**4.8** If the RSAS malfunctions, it shall be turned away from traffic.

**5.0 Method of Measurement.** Measurement of Radar Speed Advisory System will be per each individual Radar Speed Advisory System.

**6.0 Basis of Payment.** The accepted quantity of Radar Speed Advisory System will be paid for at the contract unit price for item number 616-10.95, “Radar Speed Advisory System” per each in accordance with Section 616.12.