**Wrong Way Vehicle Detection System**

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Approved/Issued by: Jeff Morgan, Product Certification Manager

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| REV. | DATE | DESCRIPTION | AUTHORED  BY | REV MORE STRINGENT? |
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| 1.0 | 9/27/2019 | New compliance matrix for WWVDS | William Geitz | NA |
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|  | FDOT Traffic Engineering Research Laboratory (TERL)  Wrong Way Vehicle Detection System (WWVDS) Compliance Matrix | By signing this form, the applicant declares that he/she has read and understands the provisions of Section 995 of the FDOT *Standard Specifications for Road and Bridge Construction* and all implemented modifications. The requirements listed on this matrix are derived from Section 995, and are the basis for determining a product’s compliance and its acceptability for use on Florida’s roads. |

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| --- | --- | --- | --- |
| Date: | Click here to enter a date. | Applicant’s  Name (print): |  |
| Manufacturer: |  |  |  |
| Item, Model No.: |  | Signature: |  |

| **ID No** | **Section** | **Requirement** | **Item Comply? (Yes/No)** | **Comments (Applicant must provide information as indicated)** | **TERL Evaluation Method** |
| --- | --- | --- | --- | --- | --- |
| 1 | 995-2.1 | All equipment is permanently marked with, manufacturer name or trademark, part number, and date of manufacture or serial number. |  | *Applicant may provide comments in this field.* | Physical Inspection |
| 2 |  | All parts are constructed of corrosion-resistant materials, such as UV stable plastics, stainless steel, anodized aluminum, brass, or gold-plated metal. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Physical Inspection |
| *Indicate location of requested information in submittal.* |
| 3 |  | All fasteners exposed to the elements are Type 304 or 316 passivated stainless steel. |  | *Provide statement of conformance from hardware supplier that shows the product meets this requirement.* | Document Review and Physical Inspection |
| *Indicate location of requested information in submittal.* |
| 4 |  | The WWVDS meets the environmental requirements of NEMA TS-2-2016*.* |  | *Provide a third party test report that demonstrates the device performs all required functions during and after being subjected to the environmental testing as described in NEMA TS2 2016 Sections 2.2.7, 2.2.8, and 2.2.9. The test report must meet the requirements of FDOT PCH, section 7.2.* | Document Review |
| *Indicate location of requested information in submittal.* |
| 5 | 995-2.7.1 | The WWVDS is provided with software that allows local and remote configuration and monitoring |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 6 |  | The WWVDS has the capability to display detection zones and detection activations. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 7 |  | WWVDS controller supports either an on-board real-time clock/calendar with on-board battery backup, or is configured to synchronize to a time server using the network time protocol (NTP) to maintain the current local date/time |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 8 |  | If using NTP, the synchronization frequency is user configurable and permits polling intervals from once per minute to once per week in one-minute increments. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 9 |  | If using NTP, the controller allows the user to define the NTP server by internet protocol (IP) address. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 10 |  | User can edit previously defined configuration parameters, including size, placement, and sensitivity of detection zones. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 11 |  | WWVDS programming is retained in nonvolatile memory |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 12 |  | The detection system configuration data can be saved to a computer and restored from a saved file. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 13 |  | All communication addresses are user programmable. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 14 |  | An open Application Programming Interface (API) or software development kit is available to the Department at no cost for integration with third party software and systems. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Functional Inspection |
| *Indicate location of requested information in submittal.* |
| 15 | 995-2.7.2 | Major components of the WWVDS (such as the sensor and any separate hardware used for contact closures) include a minimum of one serial or Ethernet communications interface |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and Physical Inspection |
| *Indicate location of requested information in submittal.* |
| The following compliance matrix criteria are for WWVDS with Serial Interface | | | | | |
| 16 |  | Serial interface and connector conforms to TIA-232 standards. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review |
| *Indicate location of requested information in submittal.* |
| 17 |  | Serial ports support data rates up to 115200 bps; error detection utilizing parity bits (i.e., none, even, and odd); and stop bits (1 or 2). |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Functional Inspection |
| *Indicate location of requested information in submittal.* |
| The following compliance matrix criteria are for WWVDS with Ethernet Interface | | | | | |
| 18 |  | Wired Ethernet interfaces provides, at a minimum, a 10/100 Base TX connection. |  | *Applicant may provide comments in this field.* | Functional Inspection |
| 19 |  | All unshielded twisted pair/shielded twisted pair network cables and connectors comply with TIA‑568. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.*  *Indicate location of requested information in submittal.* | Document Review |
| The following compliance matrix criteria are for WWVDS with Wireless Communications | | | | | |
| 20 |  | WWVDS wireless communications are secure and FCC certified.  The FCC identification number is displayed on an external label and all WWVDS devices operate within their FCC frequency allocation. |  | *Provide FCC certificate that shows the product meets this requirement.* | Document Review |
| *Indicate location of requested information in submittal.* |
| The following compliance matrix criteria are for WWVDS with Cellular Communications | | | | | |
| 21 |  | Cellular communications devices are compatible with the cellular carrier used by the agency responsible for system operation and maintenance. |  | *Provide product literature, specifications, user manual, or similar information that describes any cellular devices that are part of the system and indicates carrier(s) supported.* | Document Review |
| *Indicate location of requested information in submittal.* |
| The following criteria is for all WWVDS | | | | | |
| 22 |  | The WWVDS is compatible with the Department’s SunGuide software at the time of installation. |  | *Applicant may provide comments in this field.* | Functional Inspection |
| The following compliance matrix criteria are for WWVDS installed on ramps | | | | | |
| 23 |  | WWVDS sends an alert and a sequence of images for up to ten seconds to the SunGuide® software that covers a configurable time before and after the wrong-way vehicle detection. |  | *Applicant may provide comments in this field.* | Functional Inspection |
| 24 |  | WWVDS activates all highlighted signs associated with the WWVDS. |  | *Provide product literature, specifications, user manual, or similar information that shows the product meets this requirement.* | Document Review and  Functional Inspection |
| *Indicate location of requested information in submittal.* |
| The following compliance matrix criteria are for all WWVDS | | | | | |
| 25 | 995-2.11 | WWVDS is capable of meeting the detection accuracy of 100% and zero false positive readings, using a sample size of 200 vehicles under controlled conditions at the TERL facility. |  | *Applicant may provide comments in this field.* | Functional Inspection |