STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS DIVISION
SUITE 1800, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 253-1122

CLAY BRIGHT
COMMISSIONER

BILL LEE
GOVERNOR

TO: Will Reid, Assistant Chief Engineer of Operations

FROM: Brad Freeze, Director of Traffic Operations

SUBJECT: **Proprietary Item Request and Justification**
City of Hendersonville
Traffic Signal Vehicle Detection

Traffic Signal Detection: The City of Hendersonville is requesting that the Wavetronix traffic signal radar detection be used in all signalization projects within the City over the next three years where Federal and/or State funding is used. The Wavetronix radar detection includes both SmartSensor Matrix for stop bar detection and the SmartSensor Advance for advanced approach detection. The following are justification items for this request:

The City of Hendersonville currently maintains 36 signalized intersections with one of them already changed out to Wavetronix radar detection and there are two additional signalization projects currently underway of being converted to Wavetronix radar detection making a total of three traffic signal intersections being changed out to this type of radar detection and 31 more intersections in the process of being converted to Wavetronix radar detection. The City of Hendersonville recently experienced an 80% failure in loop detection along Indian Lake Boulevard. In order to avoid loop detection failures in the future and as a cost savings over time, the City has standardized plans to install the Wavetronix Radar detection system on all new signal installations and convert existing detection as the current detection fails and budget allows. The City's traffic signal standards and specifications can be found on their website: https://www.hvilletn.org/departments/public-works/transportation-542. This standardization of Wavetronix radar detection will provide highly reliable detection for the existing traffic signal systems operated and maintained by the City. The use of Wavetronix radar detection increases the reliability of vehicle, bicycle, and pedestrian detection and directly relates to the overall full functionality operation and synchronization of signalized intersections network.

I, Brad Freeze, Director of the Traffic Operations Division of the Tennessee Department of Transportation, do hereby certify that in accordance with the requirements of 23 CFR 635.411(a) (2) that the patented or proprietary items listed above are essential for the synchronization of existing facilities.

Will Reid
Digitally signed by Will Reid
DN: cn=Will Reid, o=TDOT, ou=TDOT Administration, email=will.reid@tn.gov, c=US
Date: 2020.08.07 09:11:28 -05'00'

Assistant Chief Engineer of Operations _____ Date _____

City of Hendersonville

101 Maple Drive North • Hendersonville, TN 37075 • Telephone (615) 822-1000
www.hvilletn.org

July 8, 2020

Mr. Steve Bryan, P.E.
TDOT Traffic Operations Division
James K. Polk Building, Suite 1800
505 Deaderick Street
Nashville, TN 37243

RE: Request for Proprietary Traffic Signal Products Certification

Dear Mr. Bryan:

The City of Hendersonville would like to request the use of the **Wavetronix Smart Sensor Matrix** and the **Smart Sensor Advance Radar** detection on all Traffic Signal projects maintained by the City of Hendersonville which are Federally and/or State funded for the next three years. This request is founded upon the need to provide highly reliable and efficient detection for the synchronization of Hendersonville's traffic signal system. Many of Hendersonville's traffic signals are located within the state route system and use of these proprietary items would allow the City to maintain and operate the signal systems in a more efficient and effective manner.

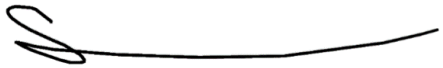
Currently loop detection operates 35 of 36 signalized intersections operated and maintained by the City of Hendersonville. The loop detection has become increasingly problematic, especially as it relates to milling and resurfacing. In 2019, Indian Lake Boulevard was milled and resurfaced and, as a result, 80% of the loops along this corridor have been damaged. Half of the damaged loops had been repaired within year prior. In order to avoid this in the future, the City has standardized plans to install the Wavetronix Radar detection system on all new signal installations and convert existing detection as the current detection fails and budget allows. We currently have one (1) newly signalized intersection that is operated by Wavetronix Radar detection. Since the installation of Wavetronix with this signalized intersection last year, the detection has been simple to adjust as necessary and has worked flawlessly. As a result, the City is in the process of installing 2 additional Wavetronix Radar detection systems at 2 intersections which are currently running inefficiently as a result of multiple failed loop detectors. The City also has a new traffic signal installation in the design stages, which will utilize Wavetronix. The City also has a CMAQ project in the early stages which will upgrade loop detection to Wavetronix Radar detection for 31 intersections. Wavetronix is non-intrusive detection which is a cost savings over time as this system will not have to be replaced with maintenance activities as compared to loop installations. This detection system also increases the reliability of the vehicle and bicycle detection, which results in improved overall operation of the City's signalized intersections.

The technicians for the City's on-call contractor have been trained, have on-the-job experience, and are familiar with the operation of the Wavetronix Smart Sensor Matric and Smart Sensor Advance Radar detection. Additionally, Wavetronix local representatives provide a high level of support for troubleshooting, which has been a great benefit to the City of Hendersonville through the installation process.

Traffic signal specifications for the City of Hendersonville have been prepared and posted on the City website. All traffic signal projects will be required to adhere to those specifications, which include the requested proprietary items. The City of Hendersonville believes that using the proprietary products, as specified in the Traffic Signal Specifications, that the City will be able to better maintain Hendersonville's Traffic Management System, reducing downtime and inefficiencies. The specifications can be found by following this link: https://www.hvilletn.org/departments/public-works/transportation-542

Thanks for your consideration concerning this request as the City of Hendersonville upgrades and enhances the operation of the City's traffic signal system. If you have any questions, please contact me by phone at (615) 590-4640 or email at slock@hvilletn.org.

Sincerely,



Sarah Y. Lock, PE
Traffic Engineer