FDOT

To: Jim Stroz, P.E.   Date: 1/15/2019
Design Engineer

Financial Project ID: 440900-1&2-52-01   New Const. ☒   RRR ☐
Federal Aid Number: N/A
Project Name: I-75 Florida's Regional Advanced Mobility Elements
State Road Number: SR 93   Co. / Sec. / Sub.: City of Ocala
Begin Project MP: 22.607   End Project MP: 36.745
Full Federal Oversight: No ☒ Yes ☐   Note: If Yes, submit to FHWA Director.

A justification and all supporting documents must be attached to this document.
Mark the appropriate certification:

"I,____Dale W. Cody, P.E., PTOE____ , ___Senior Vice President___, of the ___Metric Engineering, Inc.___,
   Print Name of Initiator   *Position Title*   *Name of Agency*

do hereby certify that in accordance with the requirements of 23 CFR 635.411(a)(2),
Mark appropriately (choose only one option):

☒ *that this patented or proprietary item is essential for synchronization with existing highway facilities.*
☐ *that no equally suitable alternative exists for this patented or proprietary item."*

_____ , ___1/15/19___
Signature   *Date*

For Department Use Only

"I,___JAMES S. STROZ, JR.___ , ___DISTRICT TRAFFIC OPS. ENGINEER___
   Print Name   *Position Title*

of the Florida Department of Transportation, do hereby approve this certification request made in accordance with the
requirements of 23 CFR 635.411(a)(2),
Mark appropriately (choose only one option):

☒ *that this patented or proprietary item is essential for synchronization with existing highway facilities.*
☐ *that no equally suitable alternative exists for this patented or proprietary item."*
Identify any conditions and limitations:

_____ , ___1/16/19___
Signature   *Date*

Financial Project ID: 440900-1-52-01 and 440900-2-52-01

Federal Project Number: N/A

Name of Initiator: Tom Casey, City of Ocala Infrastructure Operations Division Head

ITEM	Patented or Proprietary Item is Essential for Synchronization with Existing Highway Facilities	No Equally Suitable Alternative Exists for this Patented or Proprietary Item	APPROVED	NOT APPROVED
Trafficware Group, Wired Cabinet Assembly TS-2 Size 6 model 70006-TS2/FL	☒	☐	☒	☐
Trafficware Group, Controller NEMA TS2 Type 1 ATC w/Ethernet	☒	☐	☒	☐
Trafficware MMU Type 16 model MMU-516L	☒	☐	☒	☐
Trafficware Group, Vehicle Detector – Loop 2 Channel LCD Detector	☒	☐	☒	☐
Temple, UPS model FXM 1100 with 4 Alphacell 100 XTV 12-volt batteries with Temple FL08 cabinet	☒	☐	☒	☐
Polara Bulldog Series Push Button Detector	☒	☐	☒	☐
Cyberlock, Traffic Cabinet Lock – Electronic Cylinder Description Part Number: CL-TCI	☒	☐	☒	☐
Iteris, Vehicle Detector video model Vantage Edge 2	☒	☐	☒	☐
Iteris, Bluetooth and Wi-Fi Travel Time System Vantage Velocity	☒	☐	☒	☐

ITS Express, Managed Field Ethernet Switch model 8012-24 (fiber optic Ethernet switch)	☒	☐	☒
Siqura H.264 CCTV Camera HSD820H3-E with power supply PA-02-US and bracket adapter PTM01	☒	☐	☒

James S. Stroz, Jr, P.E.

District Traffic Operations Engineer

January 15, 2019

Mr. Jim Stroz, P.E.
District 5 District Traffic Operations Engineer
Florida Department of Transportation
719 South Woodland Blvd
DeLand, FL 32720-6800

Subject: **Justification for Preferred Use of Proprietary Products for Traffic Signal and ITS Equipment by City of Ocala for I-75 FRAME – FPN: 440900-1-52-01 and 440900-2-52-01**

Dear Mr. Stroz:

As a part of the above referenced project, we are requesting approval of the attached, signed and completed Proprietary Product Certification Form 630-020-07 for the following proprietary products for the City of Ocala Traffic Operations Division:

1. Trafficware Group, Wired Cabinet Assembly TS-2 Type 6 model 70006-TS2/FL
2. Trafficware Group, Controller NEMA TS2 Type 1 ATC controller with Ethernet
3. Trafficware Group, Malfunction Management Unit (MMU) Type 16 model MMU-516L
4. Trafficware Group, Vehicle Detector – Loop 2 Channels LCD detector
5. Temple, UPS model FXM 1100 with 4 Alphacell 100 XTV 12-volt batteries and these items shall be housed in a separate Temple FL08 cabinet that is attached to the Trafficware type 6 cabinet
6. Polara Bulldog Series Push Button Detector
7. Cyberlock, Traffic Cabinet Lock – Electronic Cylinder Description Part Number: CL-TCI
8. Iteris, Vehicle Detector Video model Vantage Edge 2
9. Iteris, Bluetooth and Wi-Fi Travel Time System Vantage Velocity
10. ITS Express, Managed Field Ethernet Switch model 8012-24 (fiber optic Ethernet switch)
11. Siqura H.264 CCTV Camera HSD820H3-E with power supply PA-02-US and bracket adapter PTM01

This equipment is being requested for the traffic signal and ITS equipment installation along corridors: US 441, US 301, US 27, SR 40, SR 44, SR 200, SR 326, SR 464 and I-75. Approval of these proprietary products will allow consistency with existing equipment within the City providing synchronization and reducing cost by eliminating the need for additional training and inventory. Please find further justification for the use of these products on the following pages.

1. Trafficware Group, Wired Cabinet Assembly TS-2 Type 6 model 70006-TS2/FL
   Evidence for Synchronization:
   a. Function: The Trafficware TS-2 Type 6 Cabinet is consistent with the existing traffic signal cabinets in the City of Ocala and is compatible with the traffic controller and MMU used by the City. The City has been using Trafficware cabinets since 2003 and has 15 years of experience with Trafficware cabinets.
   b. Logistics: City staff is familiar with the Trafficware cabinet and able to quickly identify, repair and maintain the equipment reducing impacts to the traveling public. In addition, the City stocks and maintains spare Trafficware cabinets and parts, which provides interchangeable parts for their entire traffic signal system reducing overall costs and requiring no additional training. Using this cabinet provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

2. Trafficware Group, Controller NEMA TS2 Type 1 ATC controller with Ethernet
   Evidence for Synchronization:
   a. Function: The Trafficware TS-2 Type 1 ATC controller with Ethernet is consistent with the existing traffic signal controllers and is compatible with the Trafficware cabinet and MMU used throughout the City of Ocala. This controller is compatible with the Traffic Management Center's (TMC) Trafficware ATMS.now central software and the Trafficware cabinet. The 16-line display screen and menu navigation panel allow City staff to efficiently troubleshoot and program in the field. The City installed its first Trafficware controller in 2003 and converted its entire traffic signal system to the Trafficware equipment in 2008 giving them 15 years of experience with Trafficware controllers.
   b. Logistics: City staff is familiar with the software and programming the Trafficware controller allowing them to quickly identify, program and maintain the equipment reducing impacts to the traveling public. In addition, the City stocks and maintains spare Trafficware controllers and can quickly replace any failing or damaged controllers. The City has been utilizing the Trafficware ATMS.now system for over 10 years and has in depth knowledge of the controller hardware and software requiring no additional training. Using this controller provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

3. Trafficware Group, Malfunction Management Unit (MMU) Type 16 model MMU-516L
   Evidence for Synchronization:
   a. Function: The Trafficware Group MMU Type 16 Model MMU-516L is consistent with the existing MMUs used throughout the City of Ocala. The MMU monitors the traffic signal system for conflict, improper sequencing, incorrect timing and

improper signal voltage levels. This MMU can be configured to the Trafficware NEMA TS2 Type 1 controller and is compatible with the Trafficware TS-2 Size 6 cabinet. The full LCD screen and menu-driven display is ideal for programming and updating the MMU in the field. The City has been using the Trafficware MMU for over 10 years.

b. Logistics: City staff is familiar with the Trafficware MMU allowing them to quickly identify problems and maintain the equipment reducing impacts to the traveling public. In addition, the City stocks and maintains spare Trafficware MMUs and can quickly replace any failing or damaged MMUs. The City has been utilizing the Trafficware MMUs for over 10 years with minimal issues and is familiar with the checks and diagnostics it runs to troubleshoot problems and no additional training is required. Using this MMU provides consistency and the most efficient use of the City's limited staff and resources while minimizing delay and increasing safety for the traveling public.

4. Trafficware Group, Vehicle Detector – Loop 2 Channels LCD detector
Evidence of Synchronization:

a. Function: The Trafficware Group Loop 2 Channels TS2 Type C with Timings Detector Model 722L is consistent with the existing traffic signal system deployment along this corridor. This detector can be configured for compatibility with the City of Ocala's Traffic Operations Center software and is compatible with the existing traffic signal infrastructure and functionality.

b. Logistics: The Trafficware detector is utilized throughout the City's traffic signal system and compatible with the existing traffic signal network. City staff is experienced with this detector and the features it provides.

5. Temple, UPS model FXM 1100 with 4 Alphacell 100 TV 12-volt batteries and these items shall be housed in a separate Temple FL08 cabinet that is attached to the Trafficware Type 6 cabinet
Evidence for Synchronization:

a. Function: The Temple UPS Model FXM 1100 is consistent with the existing traffic signal system used throughout the City of Ocala. This UPS and associated Alphacell batteries are contained within the Temple FL08 UPS cabinet which attaches to the side of the Trafficware cabinet mentioned previously, reducing the footprint of the assembly. The City has been utilizing this UPS for 10 years with minimal issues.

b. Logistics: City staff is familiar with the Temple UPS hardware and the installation of the batteries and UPS cabinet allowing them to quickly troubleshoot problems reducing impacts to the traveling public. In addition, the City stocks and maintains spare Temple UPS assemblies and can quickly replace any failing or damaged UPS assemblies. The City has been utilizing the Temple UPS for over 10 years has in depth knowledge of the equipment and no additional training is required. Using this UPS provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

6. Polara Bulldog Series Push Button Detector

Evidence for Synchronization:
   a. Function: The Bulldog Series Push Button Detector is consistent with all the push buttons used throughout the City of Ocala. The City uses the Bulldog detector because they are ADA compliant providing a two-tone audible, as well as, visual confirmation. They are a more durable and reliable product than all previous micro-switch push-button detectors previously used by the City. The Bulldog detector has a 5 year warranty. The City has been using this Bulldog detector for 5 years.
   b. Logistics: City staff is familiar with the Bulldog detector at allowing them to quickly troubleshoot problems reducing impacts to the traveling public. In addition, the City stocks and maintains spare Bulldog detectors and can quickly replace any failing or damaged switches. The City has been utilizing the Bulldog detector for over 5 years and has in depth knowledge of the hardware and requires no additional training. Using this Bulldog detector provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

7. Cyberlock, Traffic Cabinet Lock – Electronic Cylinder Description Part Number: CL-TCI
   Evidence for Synchronization:
   a. Function: The Cyberlock, Traffic Cabinet Lock is consistent with the smart mechanical key system recently installed in over 240 existing cabinets throughout the City of Ocala. This Cyberlock provides accountability by auditing authorized and unauthorized entry attempts to all traffic controller cabinets and UPS cabinets. The City has recently switched all the existing traffic control cabinet and UPS cabinet locks to the Cyberlock Traffic Cabinet lock Electronic Cylinder.
   b. Logistics: City staff has recently installed the CyberLock smart mechanical key system allowing them to maintain interoperability and access to equipment between agencies (City of Ocala keys working with the FDOT system and FDOT keys working with the City of Ocala System), it is imperative to use the same product. In addition, the City stocks and maintains spare Cyberlock Traffic Cabinet locks and can quickly replace any failing or damaged locks. The City is now using this lock throughout its entire traffic signal system and requires no additional training. Using this Cyberlock provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

8. Iteris, Vehicle Detector Video model Vantage Edge 2
   Evidence for Synchronization:
   a. Function: The Iteris Vehicle Detector Video Model Vantage Edge 2 System is consistent with the existing video detection used throughout the City of Ocala. The system includes a cabinet processor and video cameras. The City has been utilizing the Iteris Vehicle Detector Video model Vantage Edge 2 for the past 15 years with minimal issues.
   b. Logistics: City staff is familiar with the equipment, software and hardware for the Iteris Vehicle Detector Video model Vantage Edge 2 allowing them to quickly replace, program and troubleshoot problems reducing impacts to the traveling public. In addition, the City stocks and maintains spare Iteris parts such as processor and camera equipment and can quickly replace any failing or damaged equipment.

The City has been utilizing the Iteris Vehicle Detector Video Vantage Edge 2 for over 15 years and has in depth knowledge of the Iteris equipment, hardware and software and requires no additional training. Using this Iteris Vehicle Detector Video model Vantage Edge 2 system provides the most efficient use of the City's limited staff and resources while minimizing delay to the traveling public.

9. Iteris, Bluetooth and Wi-Fi Travel Time System Vantage Velocity
   Evidence for Synchronization:
   a. Function: The Iteris Bluetooth and Wi-Fi Travel Time System Vantage Velocity is consistent with the existing Travel Time System that is used throughout the City of Ocala. The system is made up of Field Processing Units, Antennas and Host Software with a minimum of two field deployment sites. The system collects Media Access Control (MAC) addresses and derive, through the System's address- matching capability, discrete travel time data for tracked & matched vehicles between field units and provide for processing and analysis. The City has been utilizing this Bluetooth system for the past 10 years with minimal issues.
   b. Logistics: City staff is familiar with Vantage Velocity system and can quickly troubleshoot issues and reduce downtime. Vantage velocity is already part of the city's traffic system. Additional Velocity units would enhance the ability to deliver real time network with the city's communication system. The City of Ocala's existing Bluetooth readers are Vantage Velocity and consistency of the system provides interoperability with the existing devices and the existing host software. This allows the City to perform TT and 0-D analysis between the new devices and the existing. This product is interchangeable with products in the City of Ocala's maintenance inventory. The City of Ocala Traffic Division maintenance staff is already trained and use of a new system would require signification training to operation and maintain. The City of Ocala will maintain and operate the system after installation and approval. The following products are needed for the system:
      i. Rack mount Velocity field unit, Ethernet connection with a Bluetooth reader and field software for collection of MAC addresses
      ii. Vantage Velocity antenna w/ short 9" mounting bracket, 3/4" feed through bulkhead mount, dual connection 800-2700 MHz (3-5dBi) & 2400-2485 MHz (5dBi)

10. ITS Express, Managed Field Ethernet Switch model 8012-24 (fiber optic Ethernet switch)
    Evidence for Synchronization:
    a. Function: The ITS Express Managed Field Ethernet Switch Model 8012-24 is consistent with the existing network deployment along these corridors and links traffic signal Ethernet devices. This switch is compatible with the TMC's central software as well as the previously mentioned products. The City has been using ITS Express Switches for the past 10 years with minimal issues.
    b. Logistics: This ITS Express switch is compatible with the existing traffic signal network. City staff is experienced with ITS Express Switches. The City of Ocala Traffic Division maintenance staff is already trained and the use of a new family of switches would require significant training for operations and maintenance. A new

family of switches could also create integration and interoperability issues.

11. Siqura H.264 CCTV Camera HSD820H3-E with power supply PA-02-US and bracket adapter PTM01
    Evidence for Synchronization:
    a. Function: The Siqura H.264 CCTV Camera HSD820H3-E with power supply PA-02-US and bracket adapter PTM01 is consistent with the CCTV deployment along these corridors. This camera is compatible with the TMC's central software as well as the previously mentioned products. The City has been using H.264 CCTV Cameras for the past 10 years with minimal issues.
    b. Logistics: The Siqura H.264 CCTV Camera is compatible with the existing traffic CCTV system. City staff is experienced with Siqura H.264 CCTV Cameras. The City of Ocala Traffic Division maintenance staff is already trained and the use of a new CCTV system would require significant training for operations and maintenance.

In conclusion, the City of Ocala is requesting that the proprietary products listed in this document be furnished for this project. If you have any questions, please feel free to contact me at (352) 351-6733 or via email at tcasey@ocalafl.org.

Sincerely,

Tom Casey
Infrastructure Operations
Division Head