



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN DIVISION**

SUITE 1800, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 253-1122

WILL REID
COMMISSIONER

BILL LEE
GOVERNOR

TO: Shane Hester, Chief of Engineering

FROM: Andy Barlow, Director of Traffic Design Division

SUBJECT: **Proprietary Item Request and Justification**
City of Cleveland and Bradley County

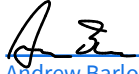
The City of Cleveland and Bradley County is requesting the following items be used in all signalization projects within their jurisdiction over the next three years where Federal and/or State funding are used.

- 1) **Traffic Signal Controllers:** Q-Free ATC Controllers including the XN-2 (NEMA Cabinets) and 2070 LDX (ATC Cabinets).
- 2) **Malfunction Management Units (MMU):** EDI MMUs including the EDI MMU2-16LE(ip) MMU.
- 3) **Traffic Signal Radar Detection:** Wavetronix Smartsensor Matrix and Advance Radar Detection.
- 4) **Traffic Signal Video Detection:** Miovision.
- 5) **Emergency Pre-Emption System:** GTT Opticom GPS System.
- 6) **Accessible Pedestrian Signals (APS):** Polara APS.
- 7) **Traffic Signal Communications:** Cisco Ethernet Switches including the Cisco IE-3400-8T2S-E Industrial Ethernet Switch.

The above items are essential for synchronization with existing facilities. The City of Cleveland and Bradley County staff has been extensively trained to install, operate, maintain, program, troubleshoot, and repair these items. This allows technicians to quickly diagnose issues which reduces the time required to maintain the system overall and helps keep the system operational during heavy traffic times to ensure maximum capacity of the synchronized system. By utilizing these items as the standard for the City of Cleveland and Bradley County, there will be a cost savings in stocking replacement equipment and will result in faster and less costly repair. See attached letter for additional justification details of this request.

Approval of items for proprietary use does not guarantee state or federal reimbursement on the project. The local government agrees to comply with all current, applicable provisions of the Build America Buy America (BABA) requirements established under 23 USC 313 and 23 CFR 635.410.

I, Andy Barlow, Director of Traffic Design Division of the Tennessee Department of Transportation, do hereby certify that in accordance with the requirements of Procedures for Using Patented or Proprietary Products (SOP 1-5) that the patented or proprietary items listed above are essential for the synchronization of existing facilities.



Andrew Barlow (Sep 19, 2025 15:37:44 CDT)

Director of Traffic Design Division



Chief of Engineering

09/22/2025

Date

September 8th, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Engineer Section Manager, Signal Design
TDOT Traffic Operations Division
James K. Polk Building, Suite 1200
505 Deaderick Street
Nashville, TN 37243

Re: Request for renewal of Proprietary Traffic Signal Products Certification
City of Cleveland – Bradley County

Dear Mr. Bryan:

The City of Cleveland and Bradley County would like to renew proprietary product certifications for several items and request a change to our controllers. Cleveland Utilities is responsible for the maintenance, timing, and design of all traffic signals in the City of Cleveland and Bradley County.

The requested proprietary items are listed below:

- **Controller** – Q-Free XN-2 (NEMA cabinets), Q-Free 2070 LDX (ATC cabinets)
- **MMU** – Eberle Design Inc. (EDI) MMU2-16LE(ip)
- **Preemption** – GTT Opticom GPS
- **Radar Detection** – Wavetronix radar Smart Sensor Matrix and Smart Sensor Advance
- **Video Detection** – Miovision
- **Communications** – Cisco IE-3400-8T2S-E Industrial Ethernet Switch
- **Accessible Pedestrian Signals** – Polara APS

The following contains a brief description of each item and the number of intersections where they are installed:

Controllers:

The City of Cleveland/Bradley County is in the process of phasing out Oriux (Peek) ATC-1000 controllers for Q-Free's XN-2 in all our NEMA cabinets. The Q-Free 2070 LDX controller is the rack mounted model installed at all six of our ATC cabinets. The Q-Free controllers are the native solution to our central software Kinetic Signals / Mobility.

MMU:

The City of Cleveland/Bradley County has been using EDI's MMU2-16LE(ip) exclusively in conjunction with flashing yellow arrows. We currently have 20 installed and have standardized this MMU for all new installations. Our staff has been trained with the EDI unit and will phase out our stock of Peek DD's over time.

Preemption:

The City of Cleveland/Bradley County has 30 intersections currently using GTT's Opticom GPS system and 14 Fire Department vehicles equipped. The cabinet equipment utilizes the 764 Multimode phase selector, 768 Auxiliary Interface Panel, 760 card rack with P1 harness, and a 1010 GPS radio. Equipment ordered for future projects should match the model suggested by the manufacturer to ensure maximum performance and compatibility with the existing preemption network.

Radar Detection:

The City of Cleveland/Bradley County has 200+ Wavetronix radar sensors installed at 52 intersections. The Matrix sensor is used for stop bar detection and the Advance sensor is used for advance detection with dynamic dilemma zone protection. We have seen an excellent performance record with these units with very little maintenance. Wavetronix radar detection has shortened down time during construction, created flexibility for lane changes, and is not affected by re-surfacing projects.

Video Detection:

The City of Cleveland has invested in Miovision's products for video detection, real time counts, and ATSPM data. Miovision is currently installed at 14 intersections.

Communications:

The City of Cleveland/Bradley County is in the process of converting all serial modem communications to Ethernet. The Cisco IE-3400-8T2S-E Industrial Ethernet Switch and earlier models are the only Ethernet switches used on our system.

Accessible Pedestrian Signals (APS):

The City of Cleveland/Bradley County installed two different vendor's APS products in 2017 and 2018 and evaluated them for performance and maintenance over the last few years. We would like to request that only Polara APS be used on future projects.

Thank you for your consideration of this request,

A handwritten signature in black ink, appearing to read 'Tad Bacon', with a stylized, flowing script.

Tad Bacon
Cleveland Utilities
Traffic Signals Coordinator
tbacon@clevelandutilities.com
(423) 478-9397