



**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 Knoxville**

The City of Knoxville 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:** Cubic/Trafficware Naztec ATC Controllers.
- 2) **Malfunction Management Units (MMU):** Cubic/Trafficware Naztec MMUs.
- 3) **Traffic Signal Light Emitting Diode (LED) Vehicular and Pedestrian Heads:** GE Gelcore LED Luminaires.
- 4) **Traffic Signal Video Detection:** Core DCM and SmartView 360 Detection.
- 5) **Emergency Pre-Emption System:** Sonem System including the Sonem 2000 Devices.
- 6) **Spread Spectrum Radio System:** Microhard System.
- 7) **Traffic Signal Communications:** AMG Systems Ethernet Switches.
- 8) **Traffic Signal Central Software and Server:** Cubic/Trafficware Naztec ATMS Central Software and Server.
- 9) **Pedestrian Pushbuttons:** Polara Accessible Pedestrian Signal (APS).
- 10) **Battery Backup System:** TechPower Developments.
- 11) **Roadway Lighting Poles, Arms, and Fixtures:** Holophane and United Lighting Standards Poles/Arms; American Electric Lighting and Holophane Fixtures (See attached letter for specific facility usage).

The above items are essential for synchronization with existing facilities. The City of Knoxville 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 Knoxville, 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 \(Oct 8, 2025 09:59:06 CDT\)](#)

Director of Traffic Design Division



Chief of Engineering

10/08/2025

Date

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION
 CITY OF KNOXVILLE –
 CUBIC/TRAFFICWARE – NAZTEC ATC CONTROLLER EQUIPMENT
 CUBIC/TRAFFICWARE – NAZTEC MALFUNCTION MANAGEMENT UNITS (MMU) EQUIPMENT
 CUBIC/TRAFFICWARE –ATMS CENTRAL SOFTWARE AND SERVER**

Dear Mr. Bryan:

The City of Knoxville Engineering Department is requesting that Cubic Transportation Systems, Trafficware/Naztec ATC controllers, Malfunction Management Units (MMU), and Advanced Traffic Management System (ATMS) central control software be certified as patented or proprietary products (PPP) and used in all signalization projects within the City where Federal and/or State funding are used. Justification for this request includes the extensive training we have using this equipment, ability to diagnose & repair problems, increased roadway safety, and synchronization of new equipment into the systems we are currently purchasing and using.

This proprietary request is for Trafficware Series 900 ATC Model Number 980 controller, MMU Model Number MMU2-16LEip, and ATMS central software and related software modules. All equipment specified and installed must be manufactured by Trafficware and be 100% compatible with these model numbers should they be renamed or branded differently (or otherwise not supported) by Trafficware.

This equipment is required by the City for new construction and maintenance projects. The City currently has 280 ATC Controllers and 398 MMUs meeting these specifications at various intersections throughout Knoxville. We used local procurement processes to select and purchase Trafficware ATC Controllers and MMUs.

Our staff is extensively trained to operate, repair, and diagnose problems with this equipment. We maintain an inventory of this equipment to allow quick swap outs when an intersection has an equipment failure. Minimizing the time an intersection is not in normal operation increases roadway safety for all.

The City completed a Request for Information (RFI) process to evaluate features and specifications from multiple vendors of central software as well as ATC controller interfaces and interoperability on September 28, 2021. The City's RFI evaluation committee chose to have Trafficware software and related modules be our ATMS software server / provider. Trafficware ATMS software demonstrated the highest level of synchronization with our existing ATC systems. The City requests that this software (and related software licenses & servers) be approved as a PPP for the City of Knoxville for projects funded by Federal and/or State sources. ATMS central software will be implemented on PIN 127958.00 (Middlebrook Pike ATMS) that received an executed contract in August 2025.

We request that this PPP certification be granted by TDOT to progress Knoxville's standardization of traffic control technology, software, and equipment to facilitate synchronization and the reliable and safe operation of Knoxville's Transportation and Traffic Management System.

Sincerely,

Thomas V. Clabo

Digitally signed by Thomas V.
Clabo
Date: 2025.09.16 19:33:12 -0400

Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
GE BRAND GELCORE LIGHT EMITTING DIODE (LED) TRAFFIC LUMINAIRE**

Dear Mr. Bryan:

The City of Knoxville Engineering Department would like to request proprietary product certification for the GE Gelcore Light Emitting Diode (LED) vehicular and pedestrian traffic luminaires. Currently the City is installing this type of equipment with new development, new City projects / upgrades, and TDOT funded projects for the reasons listed below.

The City of Knoxville currently uses this type of LED luminaire Citywide which is approximately 14,000 luminaires. Based on independent testing in our initial purchases, the City found that this type of LED performed as per the ITE specifications where others did not. The City's over 15 years of experience with other traffic signal LED luminaires that have been installed on various projects, as compared to the GE Brand, has proven that GE is the most reliable brand. The GE Brand has been proven to reduce maintenance cost and provide continuous operation of the luminaires.

Sincerely,

Thomas V. Clabo Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:33:58 -0400
Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
MIOVISION VIDEO DETECTION WITH DATA PROBING CAPABILITIES**

Dear Mr. Bryan,

The City of Knoxville Engineering Department is requesting that Miovision Video Detection with data probing be used in all signalization projects with City over the next three years where Federal and/or State funding are used.

The video detection equipment is the Miovision Core DCM and SmartView 360 Camera(s). The purchasing package allows for the purchase of one or two camera systems. Currently the City is installing this type of equipment with new developments, new City projects, Federal and/or State projects for the reasons listed below:

The City has a sole source with our Purchasing Department for Miovision and currently have 32 units installed within the City. The City plans, as funding becomes available, the upgrading of existing detection technology at our signalized intersections with Miovision video detection with data probing. The need for current information that can be provided by the data probing capabilities of these units will help provide the needed tools to develop and maintain the most efficient up to date traffic signal timing based on real-time information.

As we move forward with the Advanced Transportation Management System (ATMS) for the City of Knoxville, it is our desire to have Miovision units with data probing capabilities to gather up-to-date, reliable traffic information for Broadway, Chapman Highway, Kingston Pike, and the area surrounding the University of Tennessee Knoxville.

As part of this deployment, our staff have been trained on the installation and maintenance procedures by Miovision staff to insure their continued operation and data reliability. This standardization with the proprietary products means the City can better maintain Knoxville's ATMS.

Sincerely,

Thomas V. Clabo Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:34:40 -04'00'

Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
 SONEM EMERGENCY VEHICLE PREEMPTION EQUIPMENT**

Dear Mr. Bryan:

The City of Knoxville Engineering Department would like to request proprietary product certification for Sonem Emergency Vehicle Preemption Equipment. Currently, the City is installing this type of equipment with new development, new City projects, and TDOT funded projects for the reasons listed below.

The City of Knoxville, in an effort to provide emergency vehicle preemption, has utilized Sonem 2000 preemption equipment over the last 13 years. We currently operate 80 intersections that have Sonem 2000 preemption equipment. The need for emergency preemption is evident in all emergency response situations where time is of the essence and can mean the difference between life and death. The desire of the City is to increase the efficiency of the signal system as part of the City-wide Advanced Transportation Management System while providing more efficient movement of the emergency vehicle through the system when needed.

Also, as part of the City-wide deployment of emergency vehicle preemption systems our staff has been exclusively trained in the programming, maintenance, and troubleshooting of these units. Standardization with these proprietary products means the City can better maintain Knoxville's Transportation Management System and reduce emergency vehicle travel times through the system.

Sincerely,

Thomas V. Clabo Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:35:58 -04'00'
Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
MICROHARD SYSTEM SPREAD SPECTRUM RADIOS**

Dear Mr. Bryan:

The City of Knoxville Engineering Department would like to request proprietary product certification for Microhard System Spread Spectrum Radio Equipment. The spread spectrum radio equipment includes Microhard System Nano Series (n920 and newer) radio system and antenna configurations. Currently, the City is installing this type of equipment with new development, new City projects, and TDOT funded projects for the reasons listed below.

The City of Knoxville currently operates and maintains Microhard System spread spectrum radios at 140 signalized intersections within the City's jurisdiction. The City of Knoxville has several systems that are using Microhard System spread spectrum radios to communicate from the local controller to the master control in the system. For the system to communicate properly the same type of radio needs to be used between these two critical units. As the City expands its spread spectrum communications networks in these areas, we will need to have reliable communications to maintain the coordination along these critical corridors. This will require that radio communication is of the same type.

The City of Knoxville staff has been extensively trained to install, operate, maintain, and troubleshoot Microhard System spread spectrum radios. This allows our technicians to quickly diagnose problems with field units, which reduces the time required to maintain the system overall and helps keep the system operational during heavy traffic times to insure maximum capacity of the synchronized system. By utilizing the Microhard System spread spectrum radios as the standard for the City, there will be cost savings in stocking replacement equipment which will result in faster and less costly repair.

Sincerely,

Thomas V. Clabo

Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:36:58 -04'00'

Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
AMG SYSTEMS ETHERNET SWITCH**

Dear Mr. Bryan:

The City of Knoxville Engineering Department is requesting proprietary product certification for the AMG Systems Industrial Grade AMG570-8G-3S Series ethernet switches. Currently, the City is installing this type of equipment with new developments and new City projects/upgrades.

The City of Knoxville for the past three years has operated 150 intersections with ComNet Environmentally Hardened Manage Ethernet Switch CNGE5MS System Equipment. With the expanding ATMS and ITS landscape of various devices, the City has moved to the AMG570-8G-3S for more ports to communicate with field equipment.

Sincerely,

Thomas V. Clabo
Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:32:11 -0400
Thomas V. Clabo, P.E.
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE –
 POLARA ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTONS**

Dear Mr. Bryan:

The City of Knoxville Engineering Department is requesting that Polara Accessible Pedestrian Signal (APS) buttons are used as a proprietary product in all signalization projects within the City where Federal and/or State funding are used. With the published final ruling of Public Right-of-Way Accessibility Guidelines (PROWAG) in the Federal Register in August 2023, the City continues to move forward in implementation of APS devices. The City is operating with Polara APS buttons as progress continues installing this type of equipment with new development and new City projects.

Our staff is extensively trained to operate, repair, and diagnose problems with this equipment. We maintain an inventory of this equipment to allow quick swap outs when an intersection has an equipment failure. Minimizing the time an intersection is not in normal operation increases roadway safety for all.

Sincerely,

Thomas V. Clabo
Thomas V. Clabo, P.E.
Engineering Director

Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:35:19 -04'00'

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

**RE: REQUEST FOR PROPRIETARY TRAFFIC SIGNAL PRODUCTS CERTIFICATION CITY OF KNOXVILLE-
TECHPOWER DEVELOPMENTS TRAFFIC UPS SYSTEM EQUIPMENT**

Dear Mr. Bryan:

The City of Knoxville Engineering Department would like to request proprietary product certification for the TechPower Developments DBL MXU-36 Series UPS equipment. Currently, the City is installing this type of equipment with new developments and new City projects/upgrades.

The City of Knoxville currently operates 23 intersections with the TechPower Developments DBL MXU-36 Series Battery Back-up System. The battery back-up provides for continuous operation of the traffic signal even during times of power outages from thunderstorms, utility interruption during utility maintenance and during times of emergency management when power is not available to reduce the potential for crashes but also to maintain preemption for emergency vehicle for up to four hours of operation. Also, as part of the City-wide deployment of battery back-up systems, our staff has been exclusively trained in the programming, maintenance, and troubleshooting of these units. Standardization with these proprietary products means the City can better maintain Knoxville's Transportation Management System and reduce equipment damage and down time.

Sincerely,

Thomas V. Clabo Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:38:19 -04'00'

Thomas V. Clabo, PE
Engineering Director

August 29, 2025

Stephen K. Bryan, P.E., PTOE
Traffic Operations Division
James K. Polk Bldg., Suite 1800
505 Deaderick St.
Nashville, TN 37243

RE: REQUEST FOR PROPRIETARY STREET LIGHTING PRODUCTS CERTIFICATION CITY OF KNOXVILLE – LIGHTING FIXTURES, POLES, AND ARMS

Dear Mr. Bryan:

The City of Knoxville is requesting approval of proprietary material for street lighting fixtures and poles. The City has established the use of Acuity Brands Lighting for luminaires, poles, and pole arms as the street lighting standard for use city-wide. Acuity Brands owns American Electric Lighting and Holophane as brands. The above-mentioned fixtures are currently in use within the City's street lighting system and continued use of these products will provide for synchronization with existing facilities.

In consideration of the statements presented, the City of Knoxville requests that PPP certification be granted by TDOT to progress Knoxville's standardization of street lighting equipment and infrastructure. It is necessary to specify product numbers to ensure continuity of features and appearance. The product numbers requested for approval are the following:

STREET LIGHT FIXTURES -

- AMERICAN ELECTRIC LIGHTING 245L-P201-MVOLT-30K-R2-AY-BK-PR7-SD-SS-TL-NL1X1-DD
- AMERICAN ELECTRIC LIGHTING ARDL-P201-MVOLT-30K-R2-AY-BK-PR7-TL-NL1X1-SCC
- AMERICAN ELECTRIC LIGHTING ATB0-P201-347-R2-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATB0-P201-480-R2-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATB0-P202-MVOLT-R2-3K-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBL-C-480-R3-3K-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBL-C-MVOLT-R3-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBM-P20-480-R3-3K-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBM-P20-MVOLT-R3-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBM-P40-480-R3-BZ-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBM-P40-MVOLT-R3-BZ-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBS-P10-480-D3-3K-MP-NL-P7-AO
- AMERICAN ELECTRIC LIGHTING ATBS-P10-480-R2-3K-BZ-MP-NL-P7-AO
- AMERICAN ELECTRIC LIGHTING ATBS-P10-480-R2-3K-MP-NL-P7-AO
- AMERICAN ELECTRIC LIGHTING ATBS-P20-480-R3-3K-BZ-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBS-P20-480-R3-3K-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBS-P20-MVOLT-R3-3K-BZ-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBS-P20-MVOLT-R3-3K-BZ-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBS-P20-MVOLT-R3-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBX-P40-MVOLT-D3-3K-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBX-P40-MVOLT-R2-3K-BZ-MP-NL-P7
- AMERICAN ELECTRIC LIGHTING ATBX-P40-MVOLT-R2-3K-MP-NL-P7
- HOLOPHANE ARUE3-P20-30K-MVOLT-GL3-BK-BL-PR7
- HOLOPHANE HMLED4-P1-30K-HVOLT-HGR-AW-PR7
- HOLOPHANE HMLED4-P2-30K-HVOLT-HGR-AW-PR7
- HOLOPHANE HMLED4-P2-30K-HVOLT-HGR-AW-PR7

- HOLOPHANE MGLEDM-P22-30K-HVOLT480-ZT-MG-VH-GRSD-PR7-NBR-NL
- HOLOPHANE MGLEDM-P22-30K-MVOLT-ZT-MG-VH-GRSD-PR7-NBR-NL
- HOLOPHANE MGLEDM-P24-30K-HVOLT480-ZT-MG-VH-GRSD-PR7-NBR-NL
- HOLOPHANE MGLEDM-P24-30K-MVOLT-ZT-MG-VH-GRSD-PR7-NBR-NL
- HOLOPHANE WAERETRO3-P20-30K-MVOLT-MS-GL3-BK-PR7-NL1X1
- HOLOPHANE WAERETRO3-P30-30K-MVOLT-MS-GL3-BK-PR7-NL1X1
- HOLOPHANE WCNG-P2-30K-T3M-MVOLT-ZT-10KV-GYSDP-LTCH-PR7
- HOLOPHANE WCNG-P4-30K-T3M-480-ZT-10KV-GYSDP-LTCH-PR7
- HOLOPHANE WCNG-P4-30K-T3M-MVOLT-ZT-10KV-GYSDP-LTCH-PR7
- HOLOPHANE WCNG-P4-30K-T3M-MVOLT-ZT-10KV-GYSDP-LTCH-PR7

STREET LIGHT POLES –

- HOLOPHANE CLA-14-SL5-17D-C03-BK-ABG
- UNITED LIGHTING STANDARDS – RTA-845394

STREET LIGHT POLE ARMS -

- HOLOPHANE FSMAW SERIES, T20, US6, GREY
 - 2-3/8" O.D. (2" NPS), 6 FT ARM LENGTH

Sincerely,

Thomas V. Clabo Digitally signed by Thomas V. Clabo
Date: 2025.09.16 19:37:40 -04'00'

Thomas V. Clabo, P.E.
Engineering Deputy Director