



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

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NASHVILLE, TENNESSEE 37243  
(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:** SWARCO McCain Controllers including the ATC Flex Series.
- 2) **Cabinet Monitor Units (CMU):** Eberle Design Inc. (EDI) including the MMU2-16LE(ip) Series.
- 3) **Traffic Signal Vehicular and Pedestrian Heads:** GE Gelcore Light Emitting Diode (LED) Luminaires.
- 4) **Traffic Signal Video Detection:** Miovision 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 including the Nano Series (n920 and newer).
- 7) **Traffic Signal Communications:** AMG Systems Ethernet Switches including the AMG570-8G-3S Series.
- 8) **Traffic Signal Central Software and Server:** MyCity Central Software and Server.
- 9) **Pedestrian Pushbuttons:** Polara Accessible Pedestrian Signal (APS).
- 10) **Battery Backup System:** TechPower Developments including the DBL MXU-36 Series.
- 11) **Roadway Lighting Fixtures, Poles, and Pole Arms:** American Electric Lighting, Cooper Lighting, Holophane, and Lumec Fixtures; Hapco, Holophane, Lumec, and United Lighting Standards Poles; Holophane and Lumec Pole Arms (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 (Jul 8, 2026 12:36:39 CDT)

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Director of Traffic Design Division



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Chief of Engineering

07/10/2026

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Date



# CITY OF KNOXVILLE

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**Engineering**  
Thomas V. Clabo, PE  
Director of Engineering

May 8, 2026  
Stephen K. Bryan, P.E., PTOE  
Traffic Operations Division  
James K. Polk Building, Suite 1800  
505 Deaderick Street  
Nashville, TN 37243

## **Re: Requests for Proprietary Signal Products Certification – City of Knoxville**

Dear Mr. Bryan:

The City of Knoxville Engineering Department is requesting that the following equipment be certified as patented or proprietary products (PPP) and be used in all signalization or street lighting projects within the City where federal and/or state funding is used.

- Traffic Signal Central Software, Server, and Controllers: SWARCO McCain MyCity Software and FLeX Controllers.
- Malfunction Management Units (MMU): Eberle Design, Inc. MMU2-16LE(ip).
- Traffic Signal Light Emitting Diode (LED) Vehicular and Pedestrian Heads: GE Gelcore LED Luminaires.
- Traffic Signal Video Detection: Miovision Core DCM and SmartView 360 Detection.
- Emergency Pre-Emption System: Sonem System including the Sonem 2000 Devices.
- Spread Spectrum Radio System: Microhard System.
- Traffic Signal Communications: AMG Systems Ethernet Switches.
- Pedestrian Pushbuttons: Polara Accessible Pedestrian Signal (APS).
- Battery Backup System: TechPower Developments.
- Roadway Lighting Poles, Arms, and Fixtures: Hapco, Holophane, Lumec, and United Lighting Standards Poles/Arms; American Electric Lighting, Cooper, Holophane, and Lumec Fixtures.

This equipment is required by the City to support new construction and maintenance projects that demand advanced functionality, interoperability, and long-term system flexibility. The narratives below provide a concise explanation of each item and its specific application within the City's operations.

**Central Software, Server, and Controllers:** The City completed an evaluation process that reviewed features and specifications from multiple vendors of central software, as well as controller interfaces and interoperability. Based on a comprehensive assessment of Technical Functionality and Features, Interoperability and Vendor Neutrality, System Scalability and Architecture, Licensing Model and Long-Term Flexibility, Implementation and Transition Approach, Support, Maintenance and Responsiveness, and Vendor Experience and Proven Performance, the City's evaluation committee selected SWARCO McCain software and related modules, as the solution demonstrated clear superiority across all required criteria and represents the option that best meets the City's operational, technical, and long-term future needs. Future SWARCO McCain controllers will be fully and cohesively integrated with the MyCity central software, which was a key factor in the City's decision to adopt these controllers. The SWARCO McCain ATC FLeX Controllers provide a modern, standards-based platform capable of operating within a multi-vendor traffic signal environment while maintaining full compatibility with existing traffic management systems and field infrastructure. These controllers support industry-standard



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**Engineering**  
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Director of Engineering

communications, cabinet interfaces, and software protocols, allowing them to integrate seamlessly with the City's existing signal system and interoperate with a variety of other ATC controllers, including those currently used by state agencies. This capability enables the City to deploy new equipment without disrupting existing operations, supports phased implementation, and ensures continuity, reliability, and efficient system performance across the transportation network.

**Malfunction Management Units (MMU):** The City's current MMU2-16Leip units carry the Cubic/Trafficware brand. These are manufactured by Eberle Design, Inc. (EDI). To eliminate intermediary branding and maintain hardware uniformity, the City would like to source MMUs from the manufacturer.

**Traffic Signal Light Emitting Diode (LED) Vehicular and Pedestrian Heads:** The City currently uses this type of LED luminaire citywide, which is approximately 14,000 luminaires.

**Traffic Signal Video Detection:** The City currently has 38 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.

**Emergency Pre-Emption System:** The City has utilized Sonem 2000 preemption equipment over the last 13 years. We currently operate 80 intersections that have Sonem 2000 preemption equipment.

**Spread Spectrum Radio System:** The City 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. The spread spectrum radio equipment includes Microhard System Nano Series (n920 and newer) radio system and antenna configurations.

**Traffic Signal Communications:** For the past three years, the City 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.

**Pedestrian Pushbuttons:** 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.

**Battery Backup System:** The City currently operates 25 intersections with the TechPower Developments DBL MXU-36 Series Battery Back-up System.

**Roadway Lighting Poles, Arms, and Fixtures:** The pole, arm, and fixture product numbers mentioned below are currently in use within the City's street lighting system, and continued use of these products will provide for synchronization with existing facilities.



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## 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
- COOPER LIGHTING - NVN-SA1B-740-U-T3-BK-10K-PR7-U132986
- COOPER LIGHTING - NVN-SA2C-740-U-T3-BK-10K-PR7-U132987
- COOPER LIGHTING - NVN-SA3B-740-U-T3-BK-10K-PR7-U132988
- 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
- LUMEC CAND1 SERIES



# CITY OF KNOXVILLE

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Director of Engineering

## STREET LIGHT POLES –

- HAPCO 14.5'-50' ROUND TAPERED ALUMINUM (RTA) ALUMINUM BREAKAWAY
- HAPCO 14.5'-50' DECORATIVE ROUND TAPERD ALUMINUM (RTA) BLACK ALUMINUM BREAKAWAY
- HOLOPANE CLA-14-SL5-17D-C03-BK-ABG
- LUMEC SM6 SERIES
- 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
- LUMEC CN5 SERIES

Sincerely,

Thomas V. Clabo  
Digitally signed by Thomas V. Clabo  
Date: 2026.05.12 18:56:54 -04'00'  
Thomas V. Clabo, P.E.  
Engineering Director