Advances in Remote Monitoring for Roadway Lighting Applications

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Presentation Focus

- Control Capabilities of Roadway Lighting
  - Past & Present
- Lighting Technological Advances
- Remote Monitoring Capabilities
- Budgeting for Controls
Lighting Controls (Historical)

- In the past, relied solely on community, police, city personnel to relay info of light outages
Lighting Controls (Present Day)

- Many cities still rely on community/city workers to notify of light outages
- Luminaire-based systems
- Pedestal-based systems
- Overhead systems
Community Expectations

- Outages are unacceptable
- 24/7 Operational insight resulting from personal experience with IIoT
- Liability Concerns
  - Lawsuits from death/injuries
  - Copper theft
Modern Communication & Control Options

- Advanced Communication Options
  - Wireless
  - Cellular
  - Ethernet
  - Fiber

- Advanced Control Solutions
  - Nodes
  - Mechanical Control Systems
  - Pedestal-based Control Systems
  - Hybrid Deployments
Roadway Lighting Remote Monitoring Capabilities

- Current Draw
- Lights on/lights off controls (dusk/dawn)
- Lights on/Lights off controls (special events)
- Circuit-level controls (pedestal-based controller)
- Dimming controls
- Lighting Uniformity
- Wire theft/damage notifications
  - Copper Theft
  - Damage inflicted by other trades
- Pole-based GPS
- Metering - runtime/savings calculators
- Maintenance logs/reporting features/data collection
Alert Notifications

- Immediate alerts can be received depending on notification and thresholds settings
- Routed into existing control system (Ethernet)
- Routed through external web interface and notifications sent via email/text
Budgets

- Budget Constraints
- Pedestal vs. Luminaire-based system costs
- Communication Costs
  - Is there an option for annual charges vs. monthly?
Controller-based systems / Luminaire-based systems

**Controller-based system**

- Pedestal light control system: ~$2,000
- CT coils per circuit (quantity 6): $25
- Annual comms fees: ~$150

**TOTAL COST**

$2,300

**Luminaire-based system**

- Pedestal light control system: ~$2,000
- ~10 nodes per circuit @ ~$150 per node: $9,000
- Annual comms fees: $150

**TOTAL COST**

$11,150
Future/Cutting Edge Advances in Technology

- Air Quality, Waste, and Traffic Analytics
- Remote Gun Shot Detection
- Camera and Light Control Integration with Pole
- Pedestrian/Traffic Counts
Thank You