Streetlight Design Practices
SWEDE – May 4, 2017

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Kerrville Public Utility Board Introduction

- 22,929 Customers
- 144 MW Demand
- 9 Distribution Substations
- 660 miles of Distribution
- <65 Employees
- Serve 147 square miles
- Started in 1987
Current Street Light Design Criteria

- Dark Sky Compliant
  - Full Cutoff
  - Flat Glass
  - Minimize Trespass

- APPA Best Practices
  - AASHTO GL-6 Roadway Lighting Design Guide
  - ANSI/IESNA RP-8

- Other Design Concerns
  - Mounting Height
  - Uniformity
  - Spacing
  - Lumens
Construction Standards

- Create Simple Application
- Group streets
  - Residential/Local Roadway
  - Collector Roadway
  - Major/Arterial Roadway
- Different Throw Patterns Based Upon Part Number
- Simple Field Sheet Distributed
  - Mounting Height
  - Arms
  - Size
- Field Labeling

<table>
<thead>
<tr>
<th>Application</th>
<th>Stock #</th>
<th>Label on Light</th>
<th>Maker/ Model</th>
<th>Mounting Height (ft)</th>
<th>Arm (ft)</th>
<th>Replaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>#3409</td>
<td>51, T2</td>
<td>Cooper CRTK-R-A08-E-120-2-10K-UL</td>
<td>30</td>
<td>6</td>
<td>100 W HPS</td>
</tr>
<tr>
<td>Collector</td>
<td>#3407</td>
<td>107, SL2</td>
<td>Cooper: NVN-AE-02-E-U-SL2-10K-4-AP</td>
<td>30</td>
<td>6</td>
<td>250 W HPS</td>
</tr>
</tbody>
</table>
Types of Lights Provided

- Request for Proposal
  - Vendor Evaluation/Selection
    - Lifespan
    - Ambient Operating Temperature
  - Color Temperature
  - Lumens

- Types
  - Street
  - Area/Security
  - Flood (Commercial Applications Only)

- Cost Evaluation/Adjustment to Rates
- Coordination with Design Required
Experience with LED Street Lights

- Contacts within Utility Industry
  - Peer Recommendations
  - Established Manufacturers
- Staff Experience
- Energy Efficiency Program
  - LED Lighting Rebates
- Assessment Assistance for Customer Conversions
Responsibilities to Municipalities Served

- City of Kerrville
  - Primary Customer
  - Largest Number of Lights
- Other Municipalities
  - Not Large Entities
- TxDOT Governance
  - IES Files
- Community Input
  - Color Temperature
  - Dark Sky Compliance
  - Ordinance
  - Enforcement
Automation

- Inclusion into the Photocell
  - Standard - 3 pin vs 7 pin
- Utilization as Communication Point
- Software Management
  - Dimming
  - Remote Activation
  - Day Burners
  - Outage Notification
  - Troubleshooting
Project Management

- System Wide Conversion
  - Design Staff Workload
  - Familiarity with Existing Equipment
  - Opportunity to Cleanup Customer Records

- ROI Optimization
  - Contractor vs Internal
  - Budgetary Constraints

- Equipment Forecasting
  - Job Packaging and Equipment Storage
  - Manufacture Defects
  - Shipment Tracking
Questions

Open to audience comments, questions, and discussion