Chicago Smart Lighting Project

Pre-Submittal Conference & Networking Event

Tuesday May 3, 2016
Chicago Smart Lighting Project

Welcoming Remarks
Kurt Summers
Treasurer of the City of Chicago
Board Chairman of the Chicago Infrastructure Trust
Introductions

- Chicago Infrastructure Trust
- City of Chicago
  - Chicago Dept. of Transportation (CDOT)
  - Dept. of Innovation and Technology (DoIT)
- Chicago Park District
• Nothing said today supersedes what is written in RFQ/P document.
• Any changes resulting from today’s conference will be officially incorporated into the procurement documents as a written addendum or clarification and posted on the CIT website
• Hold all questions to the end of the presentation
• Write all questions on provided index cards
A list of today’s conference attendees, and their contact information will be posted on CIT’s website.

Guests must validate parking ticket at security desk before exiting garage.
Chicago Smart Lighting
Project Overview
Chicago Smart Lighting Project

Value Proposition

• Upgrade more than 270,000 of Chicago’s street, alley, and park lights to more reliable and higher-quality lighting

• Improve nighttime visibility on streets, sidewalks, alleys, and bike paths; giving neighborhoods throughout Chicago a greater sense of safety and higher quality-of-life

• >50% reduction in electricity consumption

• Utilize future cost savings to leverage a large-scale LED conversion
Chicago Smart Lighting

Main Project Objectives

Higher Quality Lighting

- Superior light technology – better visibility, control of light direction, rendering of color, resulting in more pleasant, safer streets

More Reliable Lighting

- LED lights typically last three times longer than current HPS lights, reducing the number of outages
- Targeted repairs or replacement of poles and wiring

More Responsive City Services

- Lighting management system’s “real time” information improves efficiency of City crews to respond proactively when outages occur and restore service quickly
Smart Light Project Description

- Large Scale LED Fixture Conversion
  - ~85% of Chicago’s lights (City & Parks)
  - Maximizes energy cost reductions
  - Defers higher cost ornamental fixture conversions

- Targeted Infrastructure Stabilization Repairs (e.g. pole and wiring repairs as needed)
  - Extends useful life of existing infrastructure
  - Reduces liability and increases reliability
  - Budget Driven Scope

- Lighting Management System – city-wide
  - Real time lighting information & control
  - Future “Smart City” technology platform
Mayor Emanuel’s Technology Plan
a city where technology fuels, opportunity, inclusion, engagement, and innovation for all

Platform for Innovation

- Leverage lighting grid as a platform for connected, or smart city, technologies
- Spur economic development, improve safety, service delivery, communications, and responsiveness
- Utility meter reading
Chicago Outdoor Lighting Context
Chicago’s Existing Outdoor Lighting

Inventory Summary

- 338,000 total light fixtures (City and Parks)
- 92% High Pressure Sodium (yellow/orange light)
  - Requires 50-75% more electricity than LED
- >75% Cobra head fixture type
  - Most cost effective to convert to LED
- Current inventory provides accurate information on location, fixture type, & wattage
- >60% City infrastructure “legacy”
  - Poles & wiring more than 15 years old; most 50+ years old
### Chicago’s Existing Outdoor Lighting Inventory

<table>
<thead>
<tr>
<th>City Light Fixtures By Location</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street fixtures</td>
<td>218,776</td>
<td>68.8%</td>
</tr>
<tr>
<td>Alley fixtures</td>
<td>72,402</td>
<td>22.8%</td>
</tr>
<tr>
<td>Underpass fixtures</td>
<td>26,722</td>
<td>8.4%</td>
</tr>
<tr>
<td>Total fixtures</td>
<td>317,900</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City Light Poles</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street poles</td>
<td>177,179</td>
<td>71%</td>
</tr>
<tr>
<td>Alley poles (ComEd owned)</td>
<td>72,402</td>
<td>29%</td>
</tr>
<tr>
<td>Total Poles</td>
<td>249,581</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Street Light Circuits</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Circuits</td>
<td>22,753</td>
</tr>
<tr>
<td>Total Number of Controllers</td>
<td>12,478</td>
</tr>
</tbody>
</table>
### Chicago’s Existing Outdoor Lighting Inventory

#### City Light Fixtures by Light Type

<table>
<thead>
<tr>
<th>Light Type</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPS (Yellow/Orange Light)</td>
<td>290,000</td>
<td>92%</td>
</tr>
<tr>
<td>CMH (White Light)</td>
<td>23,800</td>
<td>7%</td>
</tr>
<tr>
<td>LED</td>
<td>4,100</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>317,900</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

#### City Lights By Fixture Type

<table>
<thead>
<tr>
<th>Fixture Type</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobra</td>
<td>243,746</td>
<td>77%</td>
</tr>
<tr>
<td>Viaduct</td>
<td>26,683</td>
<td>8%</td>
</tr>
<tr>
<td>Coach</td>
<td>32,978</td>
<td>10%</td>
</tr>
<tr>
<td>Ornamental</td>
<td>12,047</td>
<td>4%</td>
</tr>
<tr>
<td>Flood</td>
<td>2,446</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>317,900</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Chicago’s Existing Outdoor Lighting

2015 Street Lighting Utility Spend
• 369,442,022 kilowatt hours (kWh)
• Approximately $0.05 per kWh

Total Electric Utility Cost
$18,429,000
Park’s Existing Outdoor Lighting Inventory Summary

- 19,813 park and pathway light fixtures owned and operated by Chicago Park District
  - 38% High Pressure Sodium
  - 55% Metal Halide
- Project does not include field or stadium lighting
- All lighting infrastructure “modern”
- Park District interested not only in more efficient lighting, but also lighting management system for all its lighting assets
### Park’s Light Fixtures by Light Type

<table>
<thead>
<tr>
<th>Light Type</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPS (Yellow/Orange Light)</td>
<td>7,550</td>
<td>38%</td>
</tr>
<tr>
<td>Metal Halide (White Light)</td>
<td>11,027</td>
<td>56%</td>
</tr>
<tr>
<td>LED</td>
<td>1,236</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>19,813</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### Park’s Lighting By Fixture Type

<table>
<thead>
<tr>
<th>Fixture Type</th>
<th>Quantity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>5,002</td>
<td>25%</td>
</tr>
<tr>
<td>Cobra</td>
<td>4,768</td>
<td>24%</td>
</tr>
<tr>
<td>Sport</td>
<td>3,639</td>
<td>18%</td>
</tr>
<tr>
<td>Acorn</td>
<td>2,746</td>
<td>14%</td>
</tr>
<tr>
<td>Globe</td>
<td>1,720</td>
<td>9%</td>
</tr>
<tr>
<td>Pendant</td>
<td>904</td>
<td>5%</td>
</tr>
<tr>
<td>Shoebox</td>
<td>807</td>
<td>4%</td>
</tr>
<tr>
<td>Round</td>
<td>227</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>19,813</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
RFQ / RFP
Procurement
Two Part Procurement

- Part I – RFQ Request for Qualifications
  - Type I – City Lighting Services
  - Type II – Technology Providers
- Part II – RFP Request for Proposals
Procurement Timeline

- RFQ/P Part I Responses Due – May 20, 2016
- Shortlist Selection – June 30, 2016
- Draft RFP(s) Issued to Short-listed Teams - July 2016
- Part II Final RFP(s) Issued - August 2016
- Part II RFP Proposals Due - October 2016
- Selection - December 2016
Statement of Qualifications (SOQ) Submission

- Responses Due: **2:00 pm Friday May 20, 2016**
- Delivered to:
  The Chicago Infrastructure Trust
  35 E. Wacker Drive, Suite 1450
  Chicago, Illinois 60601

- Submittal Package:
  - 1 original SOQ submittal
  - 1 unbound printed copy of SOQ submittal
  - 10 electronic copies on separate USB memory sticks.

- All documents in sealed envelopes or packages, the outside of each must be labeled:
  Chicago Smart Lighting RFQ/P; Part I RFQ
  Statement of Qualifications Submittal Enclosed
  Due 2:00 p.m. CDT, May 20, 2016
  Submitted by: __________________________
  (Name of Respondent)
  Package ______ of ______

- Clearly specify Type I and/or Type II
• One SOQ Submission Per Team
• Two Separate Volumes
  • Volume I – Statement of Qualifications
  • Volume II – Representations & Certifications
• Volume I – 50 Page Limit – Resumes Not Included
• Written Material Only – No Videos
• 8 ½” X 11” Letter Size Pages
• Printed Double-sided
• Electronic Copies – Searchable PDFs (not scans)
Volume I SOQ

Required Content

- Administrative Check-list (one page)
- Cover Letter (one page)
- Executive Summary (five pages)
- Team Organization (one page)
- Project Understanding and Approach (ten pages)
- Qualifications & Experience (two pages per Type)
- Project Reference Forms (ten pages)
- Key Individuals Qualifications (three pages)
  - Two Page Resumes (not included in pg. count)
  - Staff Organization Chart (one page)
• Wherewithal to Provide Project Services (one page)
• Technology Services (one pg. for Type I) (four pages for Type II)
• Manage Construction Safety Risks (one page)
• Establish Budgets and Control Costs (two pages)
• Create & Maintain Schedules (one page)
• Meet MBE/WBE Participation Goals (two pages)
Volume II

Required Content

- Conflict of Interests
- Corporate History
- Legal Actions
- Financial Statements
- Insurance
Smart Lighting Project
Additional Information
Procurement and installation will be complemented by a parallel community outreach and public communication process.

Public preferences will inform decisions during RFP development and lighting specification process.

Short-listed teams will be asked to provide resources to assist in the public outreach plan throughout the project’s implementation.
Lighting Specification Process

- Define the term “well-lit” for the City of Chicago
- Provide performance specifications for the typical Chicago outdoor contexts
- Chicago lighting technical experts with decades of Chicago experience working together with national LED experts provided by the U.S. Dept. Of Energy
- Informed by public and industry input
- Proof of concept test installations and real life comparisons
Lighting Specification
Objectives

• Light where you need it
• Light when you need it
• Shield light and direct it downward
• Select lighting with warmer colors
• Use minimum amount of light necessary
• Select the most energy efficient and reliable fixture(s)
• Maximize color rendering
City Lighting Database

- Accurate information on quantity, type, and wattage of light fixtures
- All assets geo coded with accurate GIS location information along with nearest address
- Good information on circuits and controller layouts
- Need additional information on structural condition of pole and reliability of wiring
Smart Lighting Project RFQ/P

Questions and Clarifications
Smart Lighting Project
Networking Session