

Citywide Street-Lighting Master Plan

by

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What is the Master Plan?

► What is the Street-Lighting the Master Plan?

A comprehensive review and analysis of the City's roadway street lighting system to develop strategic short-term and long-term plans for upgrading and improving the system over time

► What are the Goals of the Master Plan?

To ensure that all roadway lighting ***meets current standards*** while also enhancing the ***overall aesthetics*** and ***safety*** of the City's lighting infrastructure.





How was the Plan completed?

- Create a lighting inventory and management software to track and maintain these assets.
- Create a digital map within the software to locate these assets.
- Conduct detailed inventory of all the street lighting along city streets and alleys
- Create a database of lighting infrastructure by identifying and mapping assets in the field and recording their condition
- Perform engineering analysis of existing conditions against established City standards and identify areas that do not meet them.



Plan completion (continued)

- Determine the infrastructure or fixture upgrades necessary to bring the non-conforming areas or sections up to City standards.
- Prepare a cost estimate associated with these upgrades and seek SCE input.
- Prepare a list of short-term (approximately within one year) and long-term (within approximately five years) improvements and an associated budget.
- Prepare final report with recommendations on future of lighting.

What is there in the City?

- The City has a total of 77.7 miles of centerline roadway and a total of 3,094 street lights
- 2,407 lights owned by SCE (78%), 549 owned by the City, and 138 by adjoining agencies
- A mix of various types of poles (e.g. wood, concrete, steel, etc.) and lighting technology (e.g. LED, high pressure sodium vapor, etc.)
- Adjoining agencies – Caltrans, LA County, Cities of Montebello, Bell, and Bell Gardens



What is there (continued)?

FIXTURE TYPE

Ownership	LED Count	HPS Count	Total
SCE	2336	71	2407
City	373	176	549
Adjoining Agencies	121	17	138
Totals	2830	264	3094

POLE TYPE

Ownership	Pole Type	Count
CITY	Aluminum	14
CITY	Concrete	54
CITY	Decorative	189
CITY	Safety Light	228
CITY	Steel	57
CITY	Wood	7
Adjoining Agencies	Aluminum	2
Adjoining Agencies	Concrete	2
Adjoining Agencies	Decorative	3
Adjoining Agencies	Safety Light	127
Adjoining Agencies	Steel	4
SCE	Aluminum	10
SCE	Concrete	549
SCE	Decorative	17
SCE	Steel	19
SCE	Wood	1812
Totals		3094



What do they look like?



WOOD POLE (SCE)

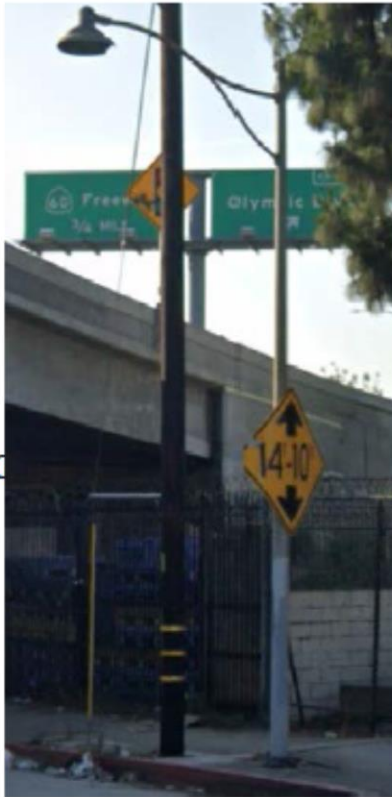


CONCRETE POLE (SCE)



DECORATIVE POLE (CITY)

What do they look like (continued - 1)?



STEEL POLE (VARIOUS)



OTHER TYPE (VARIOUS)



HID FIXTURE



LED FIXTURE

What do they look like
(continued - 2)?



SAFETY LIGHT AT INTERSECTION



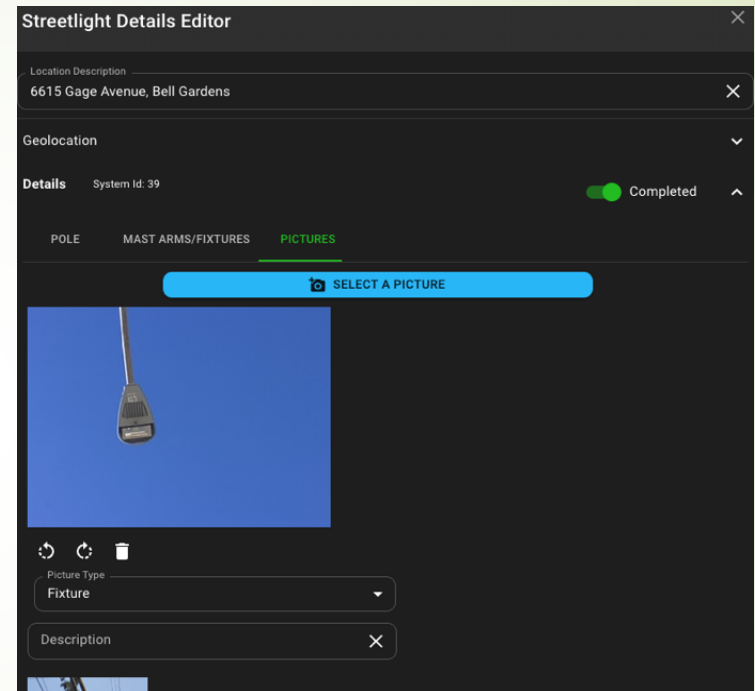
How was the database built?

- Phone app developed to collect, collate, sort, and store street-light data from the field
- Data like pole height, type, fixture type, mast arm length, Lat./Long. etc. collected in the field
- The data was made available in a web-browser-based application
- The app provided editable information in both spreadsheet/list and map-based format
- The data is stored in an AWS Cloud Server
- City personnel will have different access levels

What does the app look like?



STREET LIGHT MANAGER
SHOWING MAP



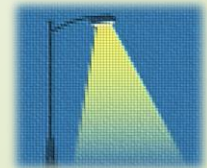
STREET LIGHT MANAGER
SHOWING DETAILS EDITOR

<https://streetlightscommerce.com/>

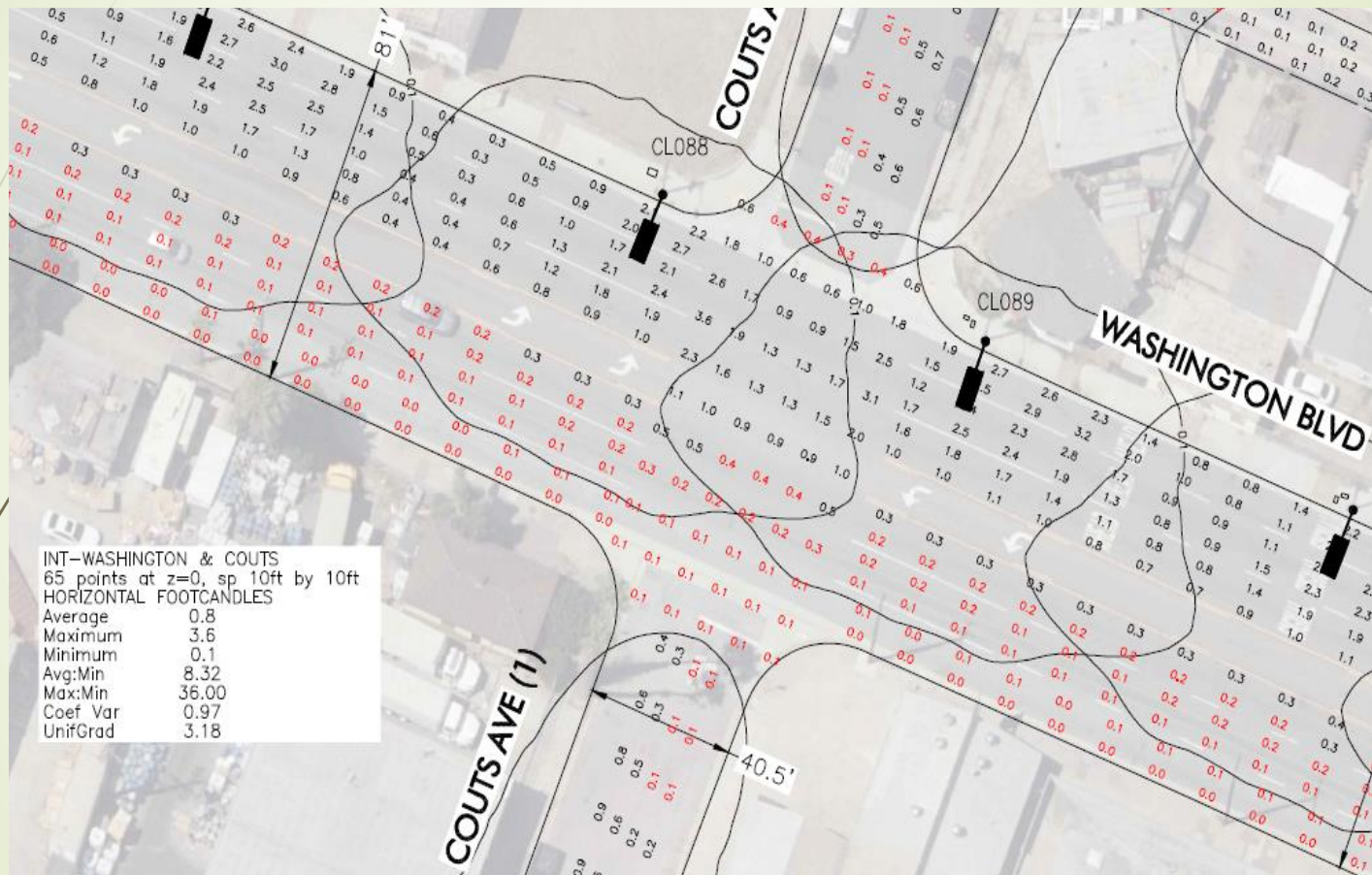
How was the analysis done?

- Photometric analysis was conducted using a method patterned after IES RP8-22*
- Illuminance method used to for intersections (amount of light falling on the surface)
- Luminance method used to for street sections (reflected light from street)
- Software used to model light patterns of existing inventory and review deficits (existing condition)
- Based on deficiencies, lights/poles were added and new analysis done (recommended condition)

*IES – Illuminating Engineering Society



The analysis (Continued)



SAMPLE EXISTING CONDITION ILLUMINANCE
ANALYSIS AT INTERSECTION

What are the recommendations?

- To keep costs reasonable, improvements were mostly recommended for SCE existing light/poles instead of adding many City poles/lights
- Recommendations were for short term (within 1 year) and long term (within 5 years)
- Short term recommendations included:
 - Fixture replacements
 - New mast arm/fixture on existing poles
- Long term recommendations included:
 - New poles, conduits and power source



What are the recommendations (continued - 1)?

- 742 locations total were identified for improvements
- 60 locations City owned and 682 are SCE
- Included a number of alleyways currently unlit
- Short term Improvement Estimate : \$660K
 - City: \$244K and SCE \$398K
- Long term Improvement Estimate : \$3.32 mill
 - City: \$991K and SCE \$2.33 mill
- Total Estimate: \$3.98 mill (based on 2025 costs)



What are the recommendations (continued - 2)?

- Maintain, monitor and update the City's street lighting database via the Street Light Manager
- Implement annual software maintenance contract with app developers (LenioLabs)
- Use City's current lighting standards for all future upgrades
- Review City lighting and fixture standards periodically as technology improves



Questions and Answers

