Quarterly Infrastructure Presentation for NCs

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Bureau of Street Lighting

Some history

LA's first streetlights were gas lamps in 1860 with "moonlights" being the first electrical system in 1886

Much of the system grew similarly to how Los Angeles itself had grown (through developments)

The oldest lights tended to be in downtown and on major streets and neighborhoods moving westward towards the Pacific coast

Lighting in the valley mostly developed during 1940's and 1950's, and in south, central and west L.A. during the 1960's and 1970's

New streetlights continue to be added through or grant-funded projects (e.g.: CDBG)

LA LIGHTS Today

- 223,000 streetlights throughout the City – half a billion dollars of investment in poles alone – with over 400 distinct styles

- 4,500 miles of streets are illuminated, in other words, ⅔ of the City

- More than 9,000 miles of conduit with 27,000 miles of copper wires

- Half a million access points via handholes and pullboxes

FIELD OPERATIONS

- Main yard, located in East Hollywood, houses the majority of our staff/fleet

- 5-acre property

- 217 Field Staff & Crew

- Fleet of 150 Vehicles

- Field office has 2 Warehouse (Maintenance & Construction), and a Weld Shop

- Share yard locations with other City Departments, in the Valley and West LA

It's more than just a light…

… a streetlight is a neighborhood asset, far more valuable than it initially seems. And with new investments and technology being adapted into our infrastructure, it will be an integral part of solutions that aim to solve Los Angeles' most pressing issues

…With great opportunities and a big challenge

Theft and vandalism has reached a new all-time high leaving some of our communities in the dark for months while the growing backlog of deferred maintenance increases the risk of more and more outages every year. Without the resources to implement a strategic response, the problem will continue to worsen.

"Bright Lights, Safe Nights"

–BSL Motto from the early 60s

The lights study found that the developments that received new lights experienced crime rates that were significantly lower than would have been the case without the new lights. Among other findings, the study concluded that increased levels of lighting led to a 36% reduction in "index crimes" — a subset of serious felony crimes that includes murder, robbery and aggravated assault, as well as certain property crimes — that took place outdoors at night in developments that received new lighting, with an overall 4% percent reduction in index crimes.

Typical Streetlight Setup

Luminaries have a sensor that determines day or night and a single light out is usually a failure of that sensor.

Fuses that protect the luminaires have been moved up to the top of the light to reduce the need of hand holes; however, this increases the need for special equipment (bucket trucks) and labor.

Electroliers (poles) usually contain thinner wires branching out from the pull boxes.
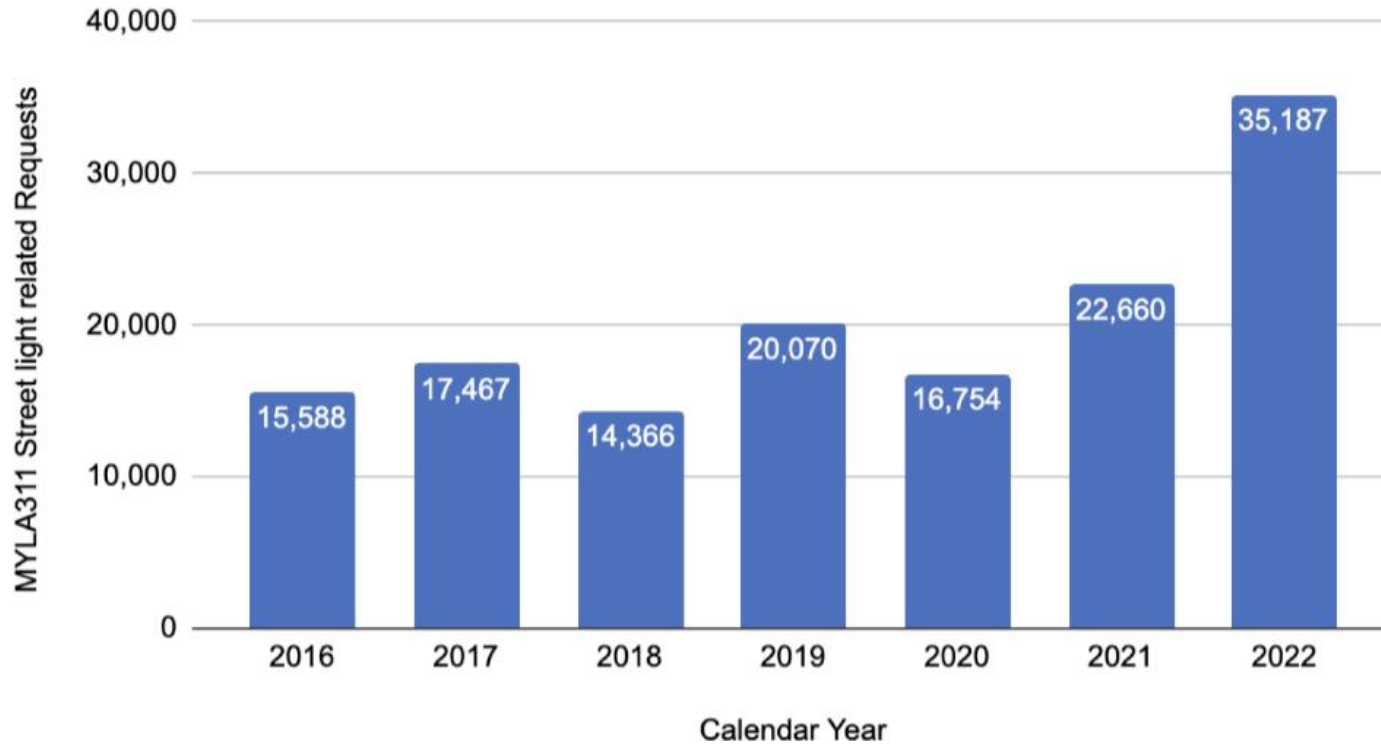
Hand-holes (access points) at the base of the light were used for maintenance but are now vulnerabilities. Except for recently purchased electroliers, every pole has a hand-hole (200k poles).

13,000 DWP Service Points/Drops power the lighting system and tend to be vulnerable because we cannot fortify it as it affects multiple systems and departments.
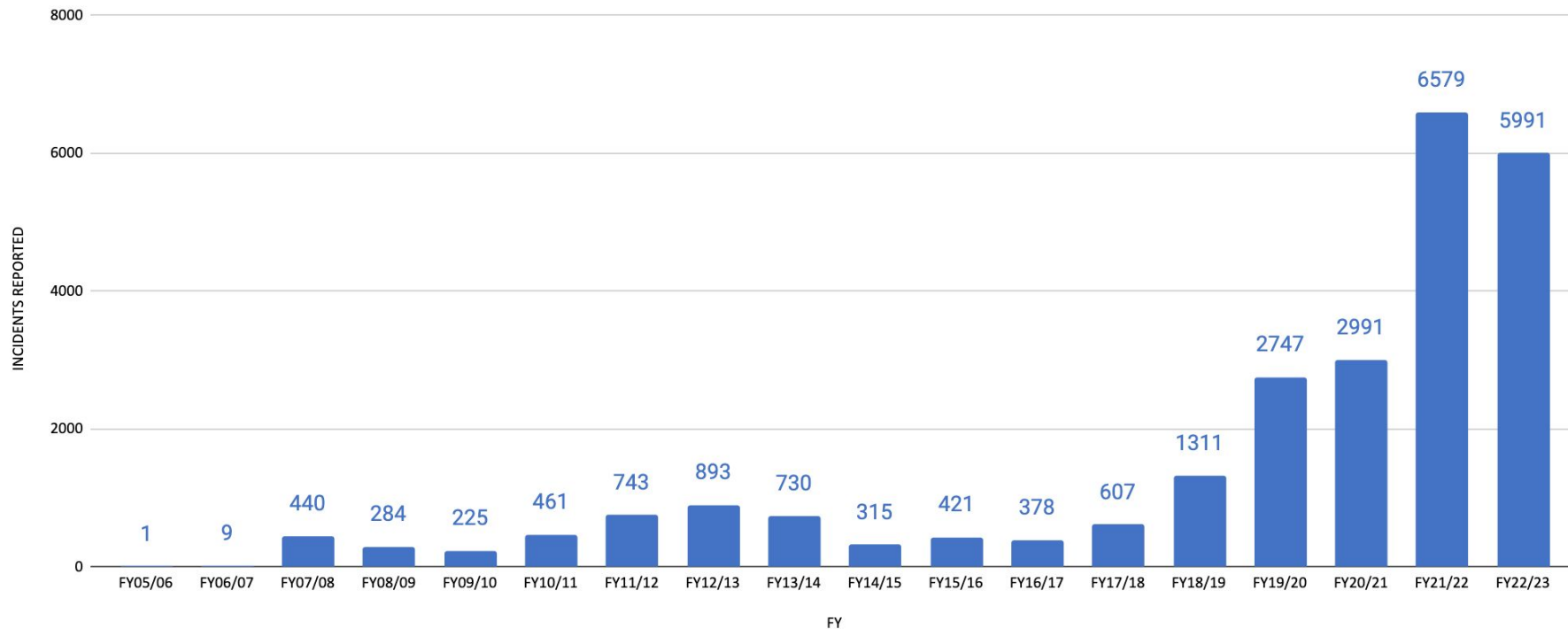
Pullboxes (access points) is where the light connects to the circuit and are usually found behind or nearby a streetlight. Unfortunately, wires can be cut here and pulled out of the conduit in between lights, called "spans".
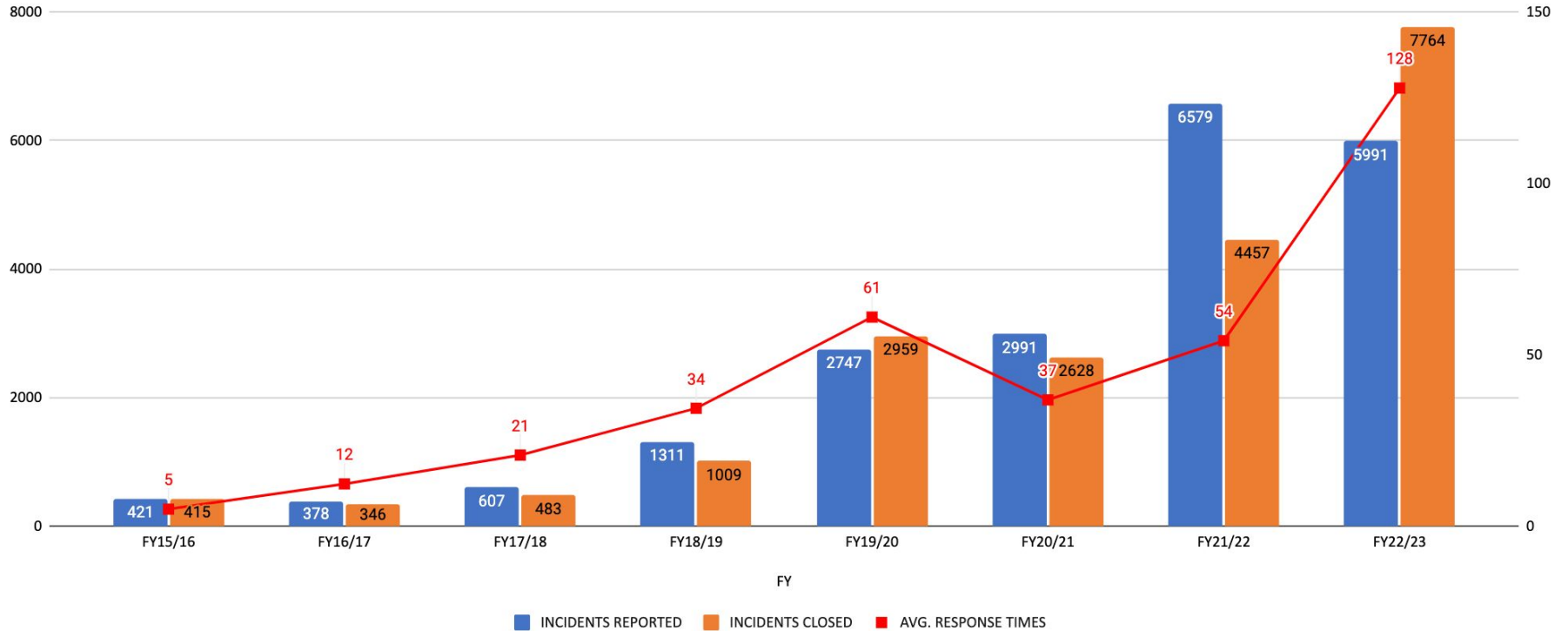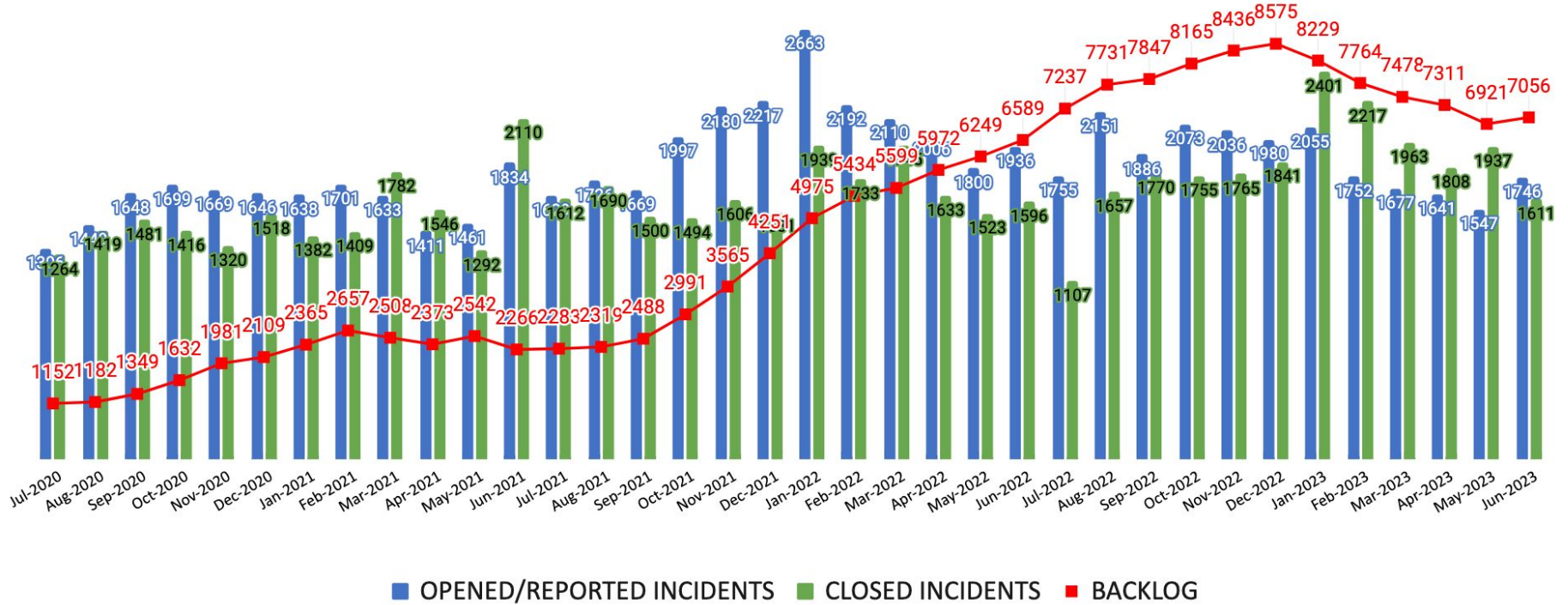
MYLA311 Streetlighting related requests

COPPER WIRE AND POWER THEFT HITTING NEW ALL TIME HIGHS

CWPT INCIDENTS PER FY

Chart showing incidents reported, incidents closed, and average response times per fiscal year.

FY	INCIDENTS REPORTED	INCIDENTS CLOSED	AVG. RESPONSE TIMES
FY15/16	421	415	5
FY16/17	378	346	12
FY17/18	607	483	21
FY18/19	1311	1009	34
FY19/20	2747	2959	61
FY20/21	2991	2628	37
FY21/22	6579	4457	54
FY22/23	5991	7764	128

INCIDENTS REPORTED   INCIDENTS CLOSED   AVG. RESPONSE TIMES

STREET LIGHTING INCIDENTS

Legend: OPENED/REPORTED INCIDENTS (blue), CLOSED INCIDENTS (green), BACKLOG (red)

BSL Operational Changes and Improvements

Changed Valley Yard to house only Theft & Vandalism Crews (heavy crews)

Added additional maintenance districts to Valley (East, Central, West V / West LA)

Just from December, we hired an additional 40 staff,

Hired a dedicated superintendent this past week dedicated to theft and vandalism

Issued Bureau-wide directive changing design and construction to incorporate all latest fortification specifications for new construction

Discussed with Mayor's Office the formation of a theft and vandalism working group

Testing and purchasing of Solar Fixtures for deployment

Deployment of new cameras in the field

New Field Work Done To Safeguard Lights

|	
Restoration Lvl 1	Repair and restore lights on the circuit, epoxy pullboxes and/or handholes at vandalized location(s) only (Avg ($500 / light)
Restoration Lvl 2	Repair and restore lights on the circuit, bury pullboxes and weld handholes at vandalized streetlight(s) only. (between $300 - $900 / light)
Fortification F22	The new baseline fortification includes burying pullboxes, welding handholes, and relocating fuses to the top of the pole for ALL LIGHTS connected to a service point. (Between $800 - $2,000 / light)
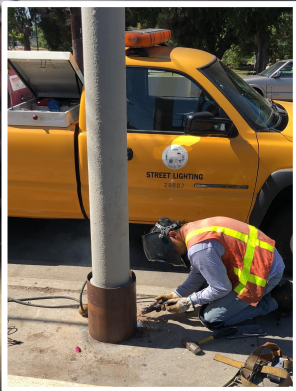
Theft and Vandalism Focus Areas

- Map illustrates areas with the highest volume and recurrence of CWPT and our current fortified circuits

- The profiles for the incidents are DIFFERENT depending on the area. For example:

 - Valley tends to have thieves that roam or migrate to adjacent, vulnerable areas

  - DTLA / commercial / industrial areas see fast, repeat offenders in the same locations

  - Areas with persistent encampments are most difficult to fix in a timely manner requiring other department's assistance

- Bureau is developing tactical plans for each area aligned with recent strategies (fortification, solar, etc)

🟣 - Areas with highest volume and recurrence of CWPT

🟢 - Fortified Circuits
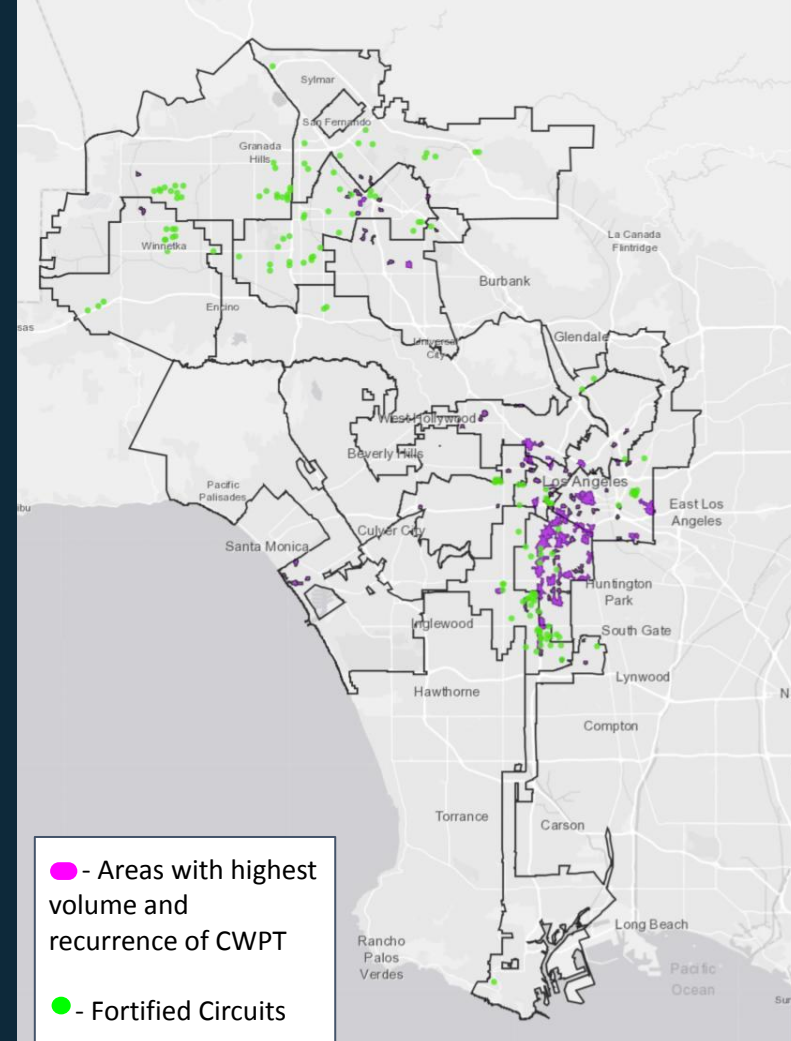
Solar Lighting Pilots

BSL is currently piloting three different Solar Lighting Units

Working with the vendors to complete testing so they become BSL Approved Fixtures

Cuesta Sol
- All-In-One Integrated Units
- No need for external battery packs

Fonroche Lighting
- Minimal Components
- Battery Pack integrated with Solar Panel

First Light Technologies
- Minimal Components
- Battery Pack integrated with Solar Panel

Eliminates the use of copper wire in street lighting system
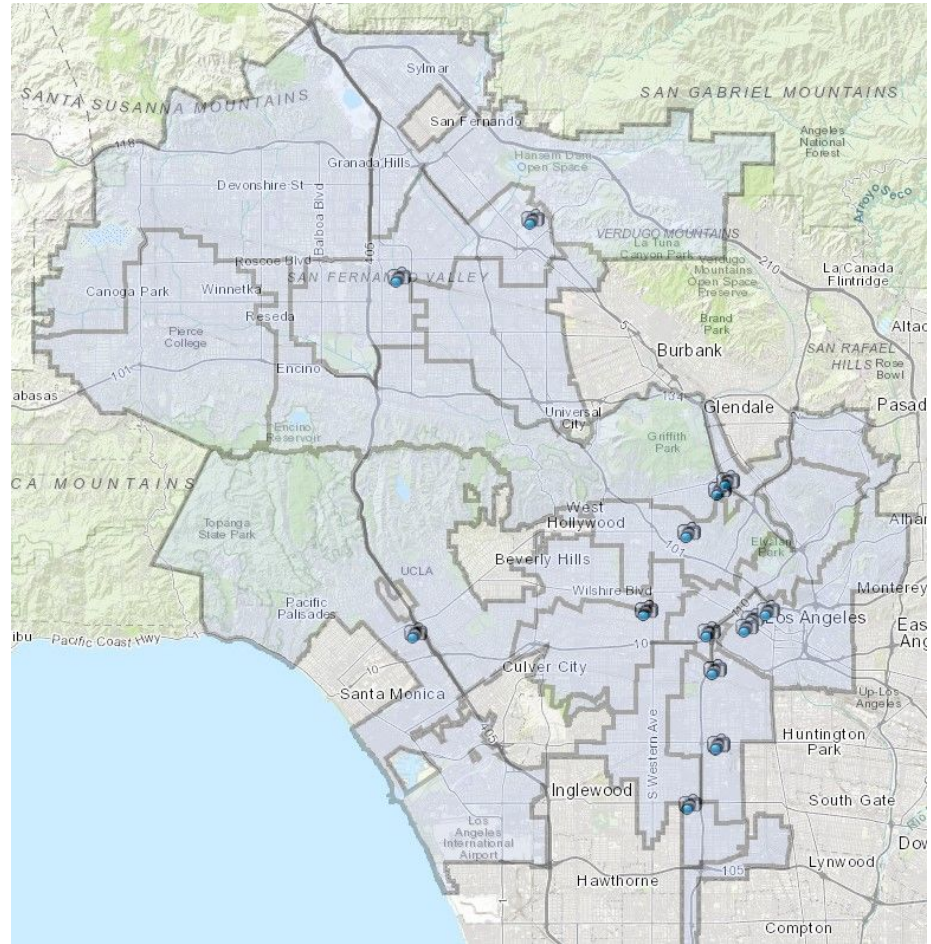
No copper wire means no copper wire theft!

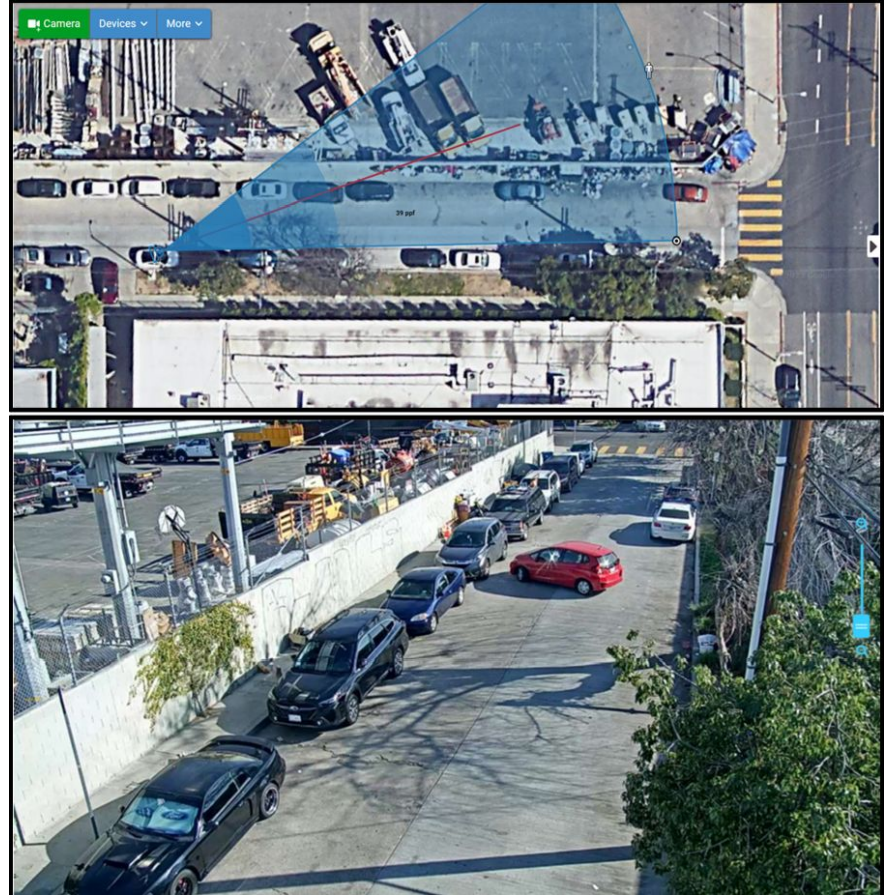**Cuesta Sol Lighting - All in One Lighting Fixture**

Fonroche Lighting - Multicomponent Fixtures

Security Cameras

Security Cameras

What is the Assessment?

- The Assessment is a charge levied on a property based off a benefit (e.g.: streetlights)
- The City's Charter and State Law provides the authority to establish assessments in the City of Los Angeles
- Prop 218 restricts the city's ability to levy an Assessment on properties and requires a vote of the property owners to establish or change.

CWPT Expenditures Compared to Assessment Revenue

FISCAL YEAR	ASSESSMENT REVENUE (M)	CWPT EXPENDITURES	AS % OF REVENUES	CWPT INCIDENTS
FY 16-17	$45.0	$1,104,926	2.4%	378
FY 17-18	$45.4	$1,218,017	2.6%	603
FY 18-19	$45.5	$1,666,883	3.7%	1,282
FY 19-20	$45.9	$3,910,478	8.5%	2,692
FY 20-21	$43.8	$4,180,755	9.6%	2,878
FY 21-22	$44.6	$6,159,000	13.9%	6,579
FY 22-23	$44.4	$9,916,542	22.3%	5,991

The Street Lighting Assessment is the Bureau's main source of revenue, but unfortunately 90% of that revenue has been locked at the same rate since 1996. The Bureau is NOT funded by taxes like sales tax, property tax, business tax, etc. In recent years, however, the Council and Mayor have added other flexible dollars to our budget in order to address lighting outages.

For comparison, when analyzing the Bureau of Labor Statistics' information on CPI in the Los Angeles-Long Beach-Anaheim Area in the same time period of 1996 to 2022 (24.5 years), there is a 98.99% increase in CPI. In other words, had BSL just kept up with CPI, it would be collecting around $90M instead of $45M.

Assessment Revenue FY 22	44,500,000	
Eenrgy Costs	(14,400,000)	
Estimated Related Costs	(17,000,000)	based upon FY 24 Estimate
Payments to ITA, Finance, GSD, Personnel, Board, BCA, BOE)	(2,000,000)	
Balance	11,100,000	
Percentage of Original Assessment	24.94%	

		Parcels per Light		
		4	5	6
	$55	220	275	330
Assessmment	$58	232	290	348
	$73	292	365	438
	$88	352	440	528
		Total Assessment Per Light		

Annual Assessment/Light	% Leftover	Restoration Cost/Light	Fortification Cost/Light
	24.94%	$285	$740
$198	$49	5.77	14.98
$220	$55	5.19	13.48
$275	$69	4.15	10.79
$330	$82	3.46	8.99
$232	$58	4.92	12.79
$290	$72	3.94	10.23
$348	$87	3.28	8.52
$292	$73	3.91	10.16
$365	$91	3.13	8.13
$438	$109	2.61	6.77
$352	$88	3.25	8.43
$440	$110	2.60	6.74
$528	$132	2.16	5.62

Greatest Opportunities:

- The "penultimate" communications and electrical grid
- Shared Platform for the next generation / iteration of city services

Greatest Challenges:

- Theft and Vandalism
- Fiscal Sustainability