

South Bay Cities Energy Efficiency Program Quarterly Update

**Board of Directors Meeting
October 27, 2016**

Presented by the Energy Efficiency Team:

Greg Stevens

Contract Energy Engineer
GSE Solutions



Overview

- SCE ELP Tier Level Update
- New Energy Legislation – SB 350
- Investing in Energy Efficiency
- Municipal Project Case Studies
- Energy Management Working Group (EMWG)



SCE Energy Leader Partnership (ELP) Program

- SCE ELP Incentives are decreasing beginning in 2017.
- City Tier Levels – End Q3 2016
 - Platinum  Lawndale, Lomita, Manhattan Beach (\$0.18/kWh incentive)
 - Gold  Carson, El Segundo, Hawthorne, Inglewood, Rancho Palos Verdes, Torrance (\$0.135/kWh incentive)
 - Silver  Gardena, Hermosa Beach, Redondo Beach (\$0.09/kWh incentive)
 - Valued  Palos Verdes Estates, Rolling Hills Estates, Rolling Hills (\$0.045/kWh incentive)
- Cities Likely Moving Up in 2016
 - Gold  Hermosa Beach, Redondo Beach

City Projects in the Pipeline

City	Facility	EEMs	Est kWh Svgs	Est therms Svgs	Est Incentives (\$)	Est Cost Savings (\$)
Carson	Carson Park	Lighting/Pool Boiler/Water Heater/VFD	28,578	7,040	\$13,185	\$10,986
Carson	Hemingway Park	Pool pump VFD	51,758	-	\$11,646	\$8,421
Carson	City-owned Street Lights (Phase 1)	LED lighting	78,720	-	\$38,144	\$6,564
Carson	City-owned Street Lights (Phase 2)	LED lighting	590,882	-	\$118,176	\$49,274
Carson	Dolphin Park	Exterior lighting	96,907	-	\$17,907	\$11,221
Carson	Community Parks	Exterior / Interior lighting	688,002	-	\$108,758	\$71,259
Gardena	Rush Gym+Rowley Park	Interior/Exterior lighting	284,534	-	\$24,626	\$45,526
Gardena	Mas Fukai Park	Interior/Exterior lighting	78,125	-	\$13,281	\$12,500
Gardena	Transit Center	LED lighting	52,429	-	\$8,913	\$8,389
Hawthorne	Police Department	LED lighting	50,320	-	\$11,284	\$8,051
Hermosa Beach	Multiple Facilities	Exterior/Interior Lighting	316,925	-	\$44,798	\$66,922
Hermosa Beach	Pier	Exterior Lighting	22,677	-	\$3,175	\$1,543

City Projects in the Pipeline (cont'd)

City	Facility	EEMs	Est kWh Svgs	therms Svgs	Incentives (\$)	Est Cost Savings (\$)
Inglewood	Street Lights (Phase 2-LS2)	LED lighting	852,689	-	\$450,079	\$96,073
Inglewood	City Hall	Elevator motor-generator set	121,900	-	\$26,208	\$19,504
Inglewood	City Hall	T8 relamp	29,751	-	\$10,363	\$4,760
Inglewood	City Hall	Chiller VFD / HVAC Controls	291,870	11,035.0	\$115,022	\$57,513
Manhattan Beach	Live Oak Park, El Porto Parking Lot, Manhattan Heights Park	Exterior LED Lighting	62,825	-	\$16,335	\$22,282
Rancho Palos Verdes	Street lights (LS-2)	LED lighting	38,269	-	\$6,506	\$3,568
Redondo Beach	Library Parking Structure	LED lighting	112,128	-	\$16,978	\$12,670
Redondo Beach	Decorative street lights Catalina Ave	LED lighting	123,820	-	\$21,049	\$12,382
Torrance	Toyota Meeting Hall	LED lighting	16,741	-	\$4,604	\$2,679
Torrance	Wilson Park Gym	Interior LED lighting	26,718	-	\$10,482	\$4,716
Torrance	Transit Center	Exterior / Interior LED lighting	125,300	-	\$21,301	\$15,708
Torrance	City Hall, Library, PD	LED lighting	837,954	-	\$164,370	\$98,711
Torrance	Plunge Pool	VFD and Pump Motor	172,003	-	\$29,240	\$18,920
		Total	5,151,826	18,075	\$1,306,430	\$670,143

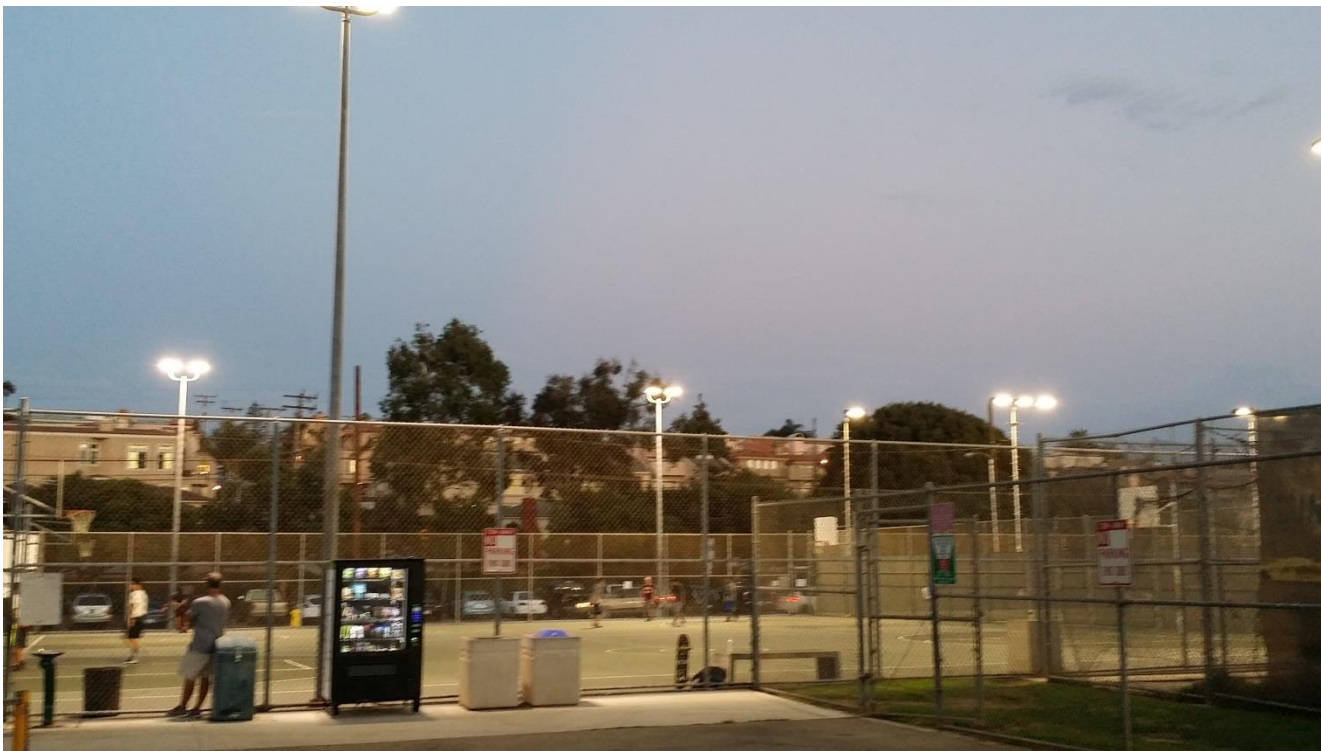
SB 350 - Clean Energy and Pollution Reduction Act

- CA state legislature passed SB 350 on September 11, 2015.
- CA now has 3rd highest renewable energy requirements in US, just behind Hawaii (100% by 2045) and Vermont and (75% by 2032).
- SB 350 Goals by 2030...
 - **50%** electricity comes from **renewable energy** sources.
 - **50%** greater **energy efficiency** of existing buildings.
 - **50%** reduction in **petroleum used in cars and trucks**.

Investing in Energy Efficiency (EE)

- South Bay cities need to increase investment in EE 3x above current level to meet SB 350 goal by 2030.
- Current energy profile for all South Bay Cities municipal facilities:
 - Electricity - 82M kWh per year
 - Natural Gas - 1M therms per year
 - Expenditure - \$14M per year
- Strong business case for investing in EE to meet 50% goal by 2030:
 - Annual Investment in EE – \$2.6M
 - Annual Energy Cost Savings – \$538k
 - Utility Incentives – \$704k
 - Return-on-Investment (ROI) – 28%

Hermosa Beach City-wide Lighting Project

**Project Description:**

Upgrade Interior/Exterior Lighting 15 Facilities

Project Completion:

November 2016

Project Cost: \$484,981

SCE Incentive: \$47,973

SCE OBF Repayment:

\$274,310

Annual Energy Savings:



339,602 kWh

Annual Energy Cost

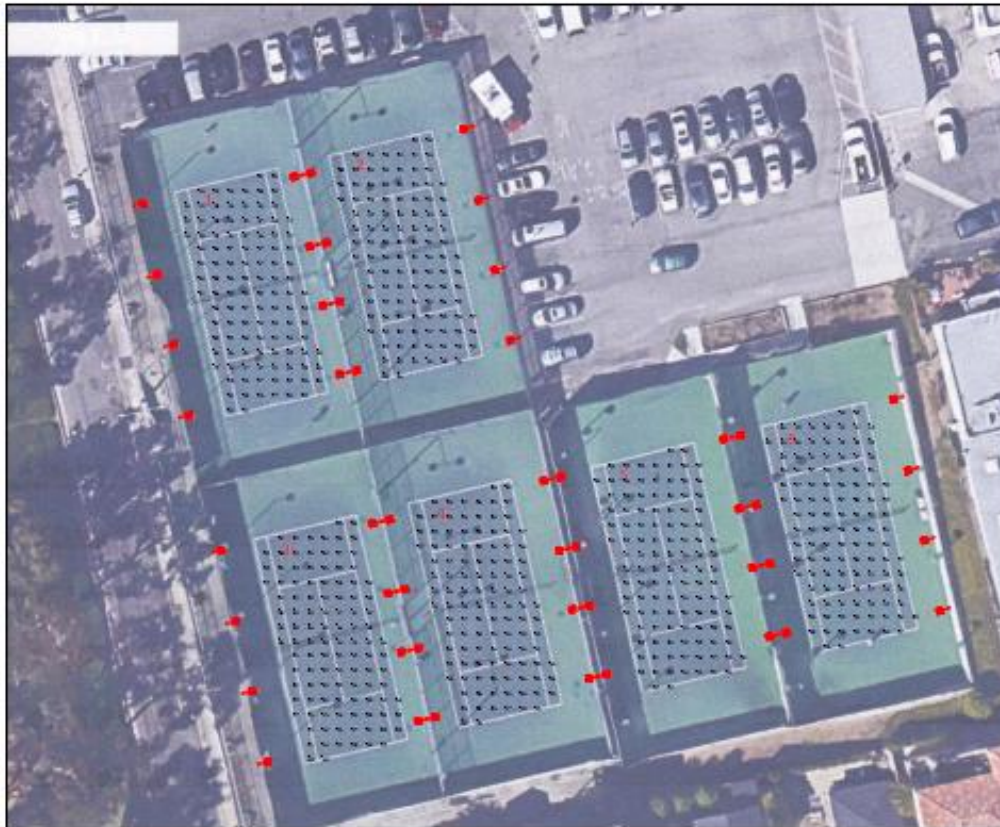
Savings: \$68,465

Simple Payback: 6.4 years

Hermosa Beach City-wide Lighting Project

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lumens/Lamp	LLF	Total Watts	Description
	16	EHO-4M	SINGLE	45687	0.950	8528	ARE-EHO-4M-HV-24-E-UL-BZ-700-40K
	16	EHO-4M (2)	BACK-BACK	45687	0.950	17056	ARE-EHO-4M-HV-24-E-UL-BZ-700-40K

Footcandles calculated using predicted lumen values after 50K hours of operation					
Label	Avg	Max	Min	Avg/Min	Max/Min
Court 1	45.49	53	30	1.52	2.10
Court 2	44.12	53	28	1.52	2.25
Court 3	45.59	54	28	1.63	2.29
Court 4	51.36	55	35	1.47	1.85
Court 5	47.51	51	30	1.59	2.03
Court 6	42.99	52	27	1.59	2.30



Mounting Height: 25'

Layout utilizes existing poles and pole locations.



1200 30th Street - Starbuck, WI 53177
www.cree.com - (800) 236-6800

Project Name: Hermosa Tennis Courts

Customer No: 01C4H

Date: 2/4/2015

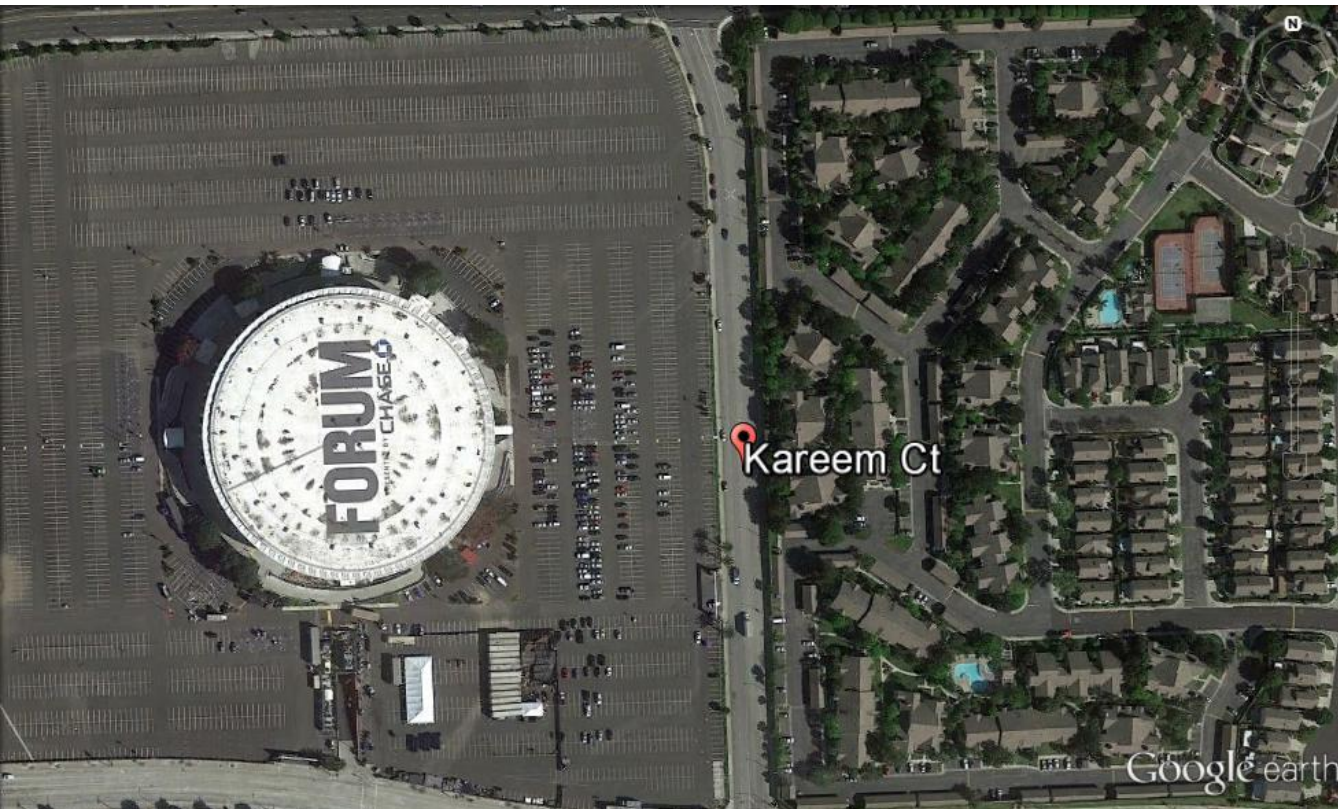
Scale: 1"=40'

Footcandles calculated at 3' above court

Filename: 150204TC1TDLA.GI

Layout by: TRAVIS LINDBLUM

City of Inglewood Streetlight Upgrade



Project Description: 1,550 LED Streetlights

Project Completion: Q2 2017

Project Cost: \$1.15M

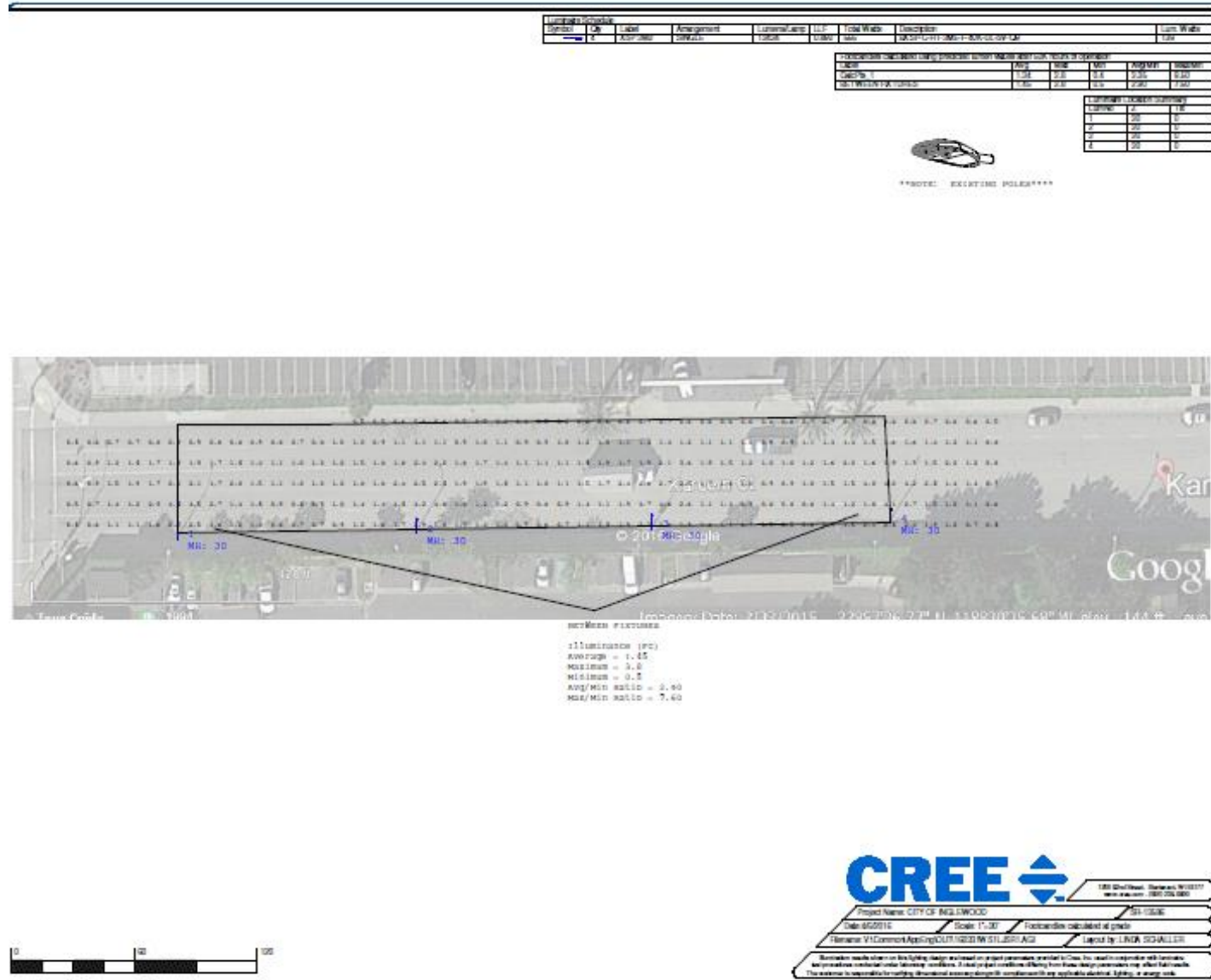
SCE Incentive: \$450k

Annual Energy Savings: 852,689 kWh

Annual Energy Cost Savings: \$96k

Simple Payback: 7 years

City of Inglewood Streetlight Upgrade



Energy Management Working Group (EMWG)

- SBCCOG Energy Efficiency Team, SCE, SCG and South Bay city staff meet once every two months.
- Discuss challenges and successes of energy management within their city.
- Helps to identify energy efficiency projects to ensure cities receive maximum cash incentives available.
- Industry experts present latest technologies and programs that offer cost savings and incentives:
 - Renewable Energy
 - Energy Storage
 - LED Lighting and Controls
 - Natural Gas Vehicles

QUESTIONS?

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Visit our SBCCOG energy management website at:
<http://www.southbaycities.org/programs/energy-management>