

**CITY OF OAKLAND**  
**AGENDA REPORT**

FILED  
OFFICE OF THE CITY CLERK  
OAKLAND

2011 DEC -1 PM 5: 20

TO: Office of the City Administrator  
ATTN: Deanna J. Santana  
FROM: Public Works Agency  
DATE: December 13, 2011

RE: A Report Providing 1) Analysis Of The Pacific Gas And Electric (PG&E) Turnkey Lighting Replacement Program, The California Energy Commission (CEC) Financing Program And A Turnkey Replacement Program Offered by The Energy Store And Service Pros (ESSP) And 2) A Recommendation For Installation Of Lighting In East Oakland Locations Identified As Crime Hot Spots

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## SUMMARY

This report presents an analysis of three potential funding sources which could be used to finance High Pressure Sodium (HPS) lighting replacement projects and evaluates five locations, totaling 46 blocks, identified by the Oakland Police Department as areas in East Oakland where improved lighting could benefit the community and help reduce crime.

## FISCAL IMPACT

Implementation cost of the proposed East Oakland lighting upgrades is estimated to be \$195,000. There are no resources identified in the current City budget to fund this project.

## BACKGROUND

At the Public Safety Committee meeting of November 8, 2011, staff was requested to provide an analysis of financing offered through PG&E and the CEC for Light Emitting Diode (LED) street light projects. Staff was also asked to make a recommendation on lighting installations at those locations in East Oakland identified by the Oakland Police Department as "Crime Hot Spots."

## KEY ISSUES AND IMPACTS

Analysis Of The Pacific Gas And Electric (PG&E) Turnkey Lighting Replacement Program, The California Energy Commission (CEC) Financing Program And A Turnkey Replacement Program Offered by The Energy Store And Service Pros (ESSP):

- 1) Staff was supplied the following information from PG&E for participation in the "On Bill Financing" (OBF) streetlight replacement process and the estimated cost for a citywide street light replacement project:

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- A. Zero percent (0%) financing is available for qualified projects under the \$250,000.00 level and achieving energy savings equal to payback of the loaned amount over a 10-year period.
- B. \$250,000.00 maximum loan per project, which must be repaid before new financing requests will be accepted.
- C. Project price includes purchase of requested street lights, installation and field verification of installed lights, rate change and rebate application processing.
- D. Project price assumes all lights to be replaced will be cobra head fixtures and will not include post top, shoe box, tear drop or decorative fixtures.
- E. Project price does not include disposal of replaced streetlights.
- F. Project price does not include costs to add and/or adjust pole spacing to meet required lighting levels.
- G. Project price assumes no restrictions on installations will be made. (e.g., heavy traffic area, special hours for installation, etc.)
- H. Projects not qualifying for OBF require 50% payment up front for materials and engineering costs, with full payment due upon completion of work.

Staff evaluated the OBF program and has determined that the initial 11 locations identified in West Oakland as crime hot spots do not meet the energy reduction criterion because brighter lights have been requested as replacements for existing units. The five locations identified in East Oakland may qualify for OBF funding based on the use of low-energy LED lights in lieu of the current high energy commercial zone lighting level in use.

- 2) A proposed PG&E turnkey project for a complete citywide replacement of existing HID lighting with LED units is estimated at \$26.7 million dollars with a simple payback period of 15.28 years. PG&E has proposed CEC financing for this size project.
- 3) California Energy Commission Financing Program: Staff has completed an analysis of the financing program available through the CEC and verified that there is a \$3 million dollar ceiling per project and that funds are subject to other restrictions as follows:
  - A. Projects funded by ARRA loans must be completed and loans fully disbursed (i.e., all invoices must be submitted and paid) on or before March 31, 2012.
  - B. The current loan interest rate is 3% and is fixed for the life of the loan.

- C. ARRA loan funds may only be used to supplement and may not be used to supplant funds already committed or expected to be received in support of the loan-funded project.
- D. Loans for energy projects must be repaid from energy cost savings within 15 years, including principal and interest (approximately 11 years simple payback). Simple payback is calculated by dividing the dollar amount of the loan by the anticipated annual energy cost savings.
- E. ARRA funded loans will be amortized on the estimated annual energy cost savings achieved by the loan-funded project.
- F. The loan term cannot exceed the useful life of loan-funded equipment.
- G. Only approved project-related costs with invoices dated after loans are officially awarded by the Energy Commission at a Business Meeting are eligible to be reimbursed from loan funds. If the application is not approved for any reason, the Energy Commission is not responsible for reimbursement of any costs.

Based on the required March 31, 2012, time frame for completion of the project and disbursement of funds, it is uncertain that staff can produce a viable project in time to take advantage of this financing. Per CEC staff, there is an expectation of new state-sponsored funding coming available in January 2012, for energy efficiency projects which Electrical Services will be monitoring for potential use.

- 4) Energy Store and Service Pros Super Efficiency LED Lighting System Upgrade: Staff also evaluated a third-party agent who has proposed a turnkey LED replacement service, along with the required financing to fund the project. This is typically done through a revenue neutral lease back program which is paid for by savings realized from reduced energy costs.
  - A. Energy Efficient Lighting LED Conversion Program – No out of pocket cost. Positive cash flow from month one. Ten-year financing is available through a cost-effective lease program.
  - B. Full turnkey package (LED product, construction labor and financing) without impacting current capital projects.
  - C. Finance energy efficient lighting conversion, typically to long life LED, over a 7-10 year period, with low interest rates. (Current rate 3.95%)
  - D. Allows an entity to experience positive cash savings from the energy reduction. The lease cost will be less than current monthly energy costs.

- E. Energy rebates can be used to reduce lease obligation. (Estimated rebate \$3 million)
- F. Reduced maintenance costs with long life LED products.
- G. Program uses local labor forces to accomplish work.
- H. Proposed turnkey project for citywide street light replacement is estimated at \$18.7 million dollars. (Rebate not included)
- I. Current estimated citywide monthly lighting cost is \$295,502.00 and estimated cost for lease and operation after conversion is \$289,154.00.

Staff has not been able to verify all cost savings claims, but the savings listed are comparable with estimates provided for the PG&E turnkey program. Both programs assume repayment of loans through energy savings without impacting current operational costs negatively.

Recommendation For Installation Of Lighting In East Oakland Locations Identified As Crime Hot Spots:

Staff received five additional East Oakland crime hot spot locations from OPD totaling 46 blocks and was able to identify 195 lights for upgrade as listed in *Attachment A*.

1. Havenscourt
  - International Blvd. (5900 – 6800) Ten Blocks
  - Seminary (International – Avenal Streets) Nine Blocks
2. Elmhurst
  - International Blvd (8200 – 9700) Fifteen Blocks
3. Parker
  - Macarthur Blvd. (7600 – 7800) Two Blocks
4. Fruitvale
  - International Blvd. (Fruitvale to 42<sup>nd</sup> Ave.) Ten Blocks

Staff estimates a cost of \$195,000.00 to upgrade the evaluated lighting in East Oakland and \$278,000.00 for lighting previously identified in West Oakland, which totals \$473,000.00 in project funding need.

## **SUSTAINABLE OPPORTUNITIES**

Economic: It is generally perceived that lighting enhancement projects can revitalize commercial business districts, increase pedestrian traffic and potentially mitigate criminal activity.

Environmental: Lighting enhancements using low-energy-use technology would help reduce the carbon footprint of the City.

Social Equity: Lighting devices which provide a uniform and usable output will benefit all community members who patronize locations enhanced in this manner.


## **DISABILITY AND SENIOR CITIZEN ACCESS**

Enhanced lighting systems will provide better visual referencing and sight definition, allowing seniors and people with disabilities to move with increased confidence along walkways.

**RECOMMENDATIONS AND RATIONALE**

Staff recommends acceptance of this report and upon determination of funding, the implementation of the evaluated lighting enhancements.

Respectfully submitted,

  
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Vitaly B. Troyah, P.E.  
Public Works Agency Director

Reviewed by:  
David Ferguson, Assistant Director – Public Works Agency  
Daniel Clanton, Manager, Electrical Services Division –  
Public Works Agency

Prepared by:  
Paul Chan, Engineer, Electrical Services Division – Public  
Works Agency

Attachment A: Crime Street Lighting Additional Areas

**APPROVED AND FORWARDED TO  
THE PUBLIC SAFETY COMMITTEE:**

  
\_\_\_\_\_  
Office of the City Administrator

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	A	B	C	D	E	F
1	Area No.	Four Additional Areas Designated for the Implementation of Crime Street Lighting	Street Light Number	Existing HPS Wattage	Number of Street Lights	
2	1	Havenscourt Area			79	
3		International Bl - start at 5900 block	A6537	250		
4		International Bl	A6538	250		
5		International Bl	A6539	250		
6		International Bl	A6540	250		
7		International Bl	A6541	250		
8		International Bl	A6542	250		
9		International Bl	A6543	250		
10		International Bl	A5544	250		
11		International Bl	A5545	250		
12		International Bl	A6546	250		
13		International Bl	A6547	250		
14		International Bl	A6548	250		
15		International Bl	A6549	250		
16		International Bl	A6550	250		
17		International Bl	A6551	250		
18		International Bl	A6552	250		
19		International Bl	Missing number	250		
20		International Bl	A6553	250		
21		International Bl	A6554	250		
22		International Bl	A6555	250		
23		International Bl	A6556	250		
24		International Bl	A5557	250		
25		International Bl	A5558	250		
26		International Bl	A6559	250		
27		International Bl	A5560	250		
28		International Bl	A6561	250		
29		International Bl	A6552	250		
30		International Bl	A6553	250		
31		International Bl	A6564	250		
32		International Bl	A6565	250		
33		International Bl	A6566	250		
34		International Bl	A6567	250		
35		International Bl	A6568	250		
36		International Bl	A6569	250		
37		International Bl	A6570	250		
38		International Bl	A6571	250		
39		International Bl	A6572	250		
40		International Bl	A6573	250		
41		International Bl	A6574	250		
42		International Bl	A6575	250		
43		International Bl	A6576	250		
44		International Bl	A6577	250		
45		International Bl	A6578	200		
46		International Bl	A6579	200		
47		International Bl	A6580	250		
48		International Bl	A5581	250		
49		International Bl	A6582	250		
50		International Bl	A6583	250		
51		International Bl	A6584	250		
52		International Bl	A6585	250		
53		International Bl	A6586	250		
54		International Bl	A6587	250		
55		International Bl	A6588	250		
56		International Bl	A6589	250		
57		International Bl - End at 6800	A6590	250		
58		Seminary Av - Start at E 14th St	N1659	200		
59		Seminary Av	13057	200		
60		Seminary Av	11248	200		
61		Seminary Av	13048	200		
62		Seminary Av	11094	200		
63		Seminary Av	13015	200		
64		Seminary Av	N1661	200		
65		Seminary Av	N1660	200		
66		Seminary Av	13012	200		
67		Seminary Av	12954	200		

	A	B	C	D	E	F
68		Seminary Av	11626	200		
69		Seminary Av	12953	200		
70		Seminary Av	A4818	200		
71		Seminary Av	12952	200		
72		Seminary Av	N1942	200		
73		Seminary Av	11625	200		
74		Seminary Av	12950	200		
75		Seminary Av	12498	200		
76		Seminary Av	11093	200		
77		Seminary Av	12949	200		
78		Seminary Av	11501	200		
79		Seminary Av	12948	200		
80		Seminary Av	17904	200		
81		Seminary Av - End at Avenal St	11624	200		
82						
83	2	Elmhurst Area			86	
84		International Bl - start at 8200 block	A6661	250		
85		International Bl	A6662	250		
86		International Bl	A6663	250		
87		International Bl	A6664	250		
88		International Bl	A6665	250		
89		International Bl	A6666	250		
90		International Bl	A6811	250		
91		International Bl	A6812	250		
92		International Bl	A6813	250		
93		International Bl	A6814	250		
94		International Bl	A6815	250		
95		International Bl	A6816	250		
96		International Bl	A6817	250		
97		International Bl	A6818	250		
98		International Bl	A6819	250		
99		International Bl	A6820	250		
100		International Bl	A6821	250		
101		International Bl	A6822	250		
102		International Bl	A5823	250		
103		International Bl	A5824	250		
104		International Bl	A6825	250		
105		International Bl	A6826	250		
106		International Bl	A6827	250		
107		International Bl	A6828	250		
108		International Bl	A6829	250		
109		International Bl	A6830	250		
110		International Bl	A6831	250		
111		International Bl	A6832	250		
112		International Bl	A6833	250		
113		International Bl	A6834	250		
114		International Bl	A6835	250		
115		International Bl	A6836	250		
115		International Bl	A6837	250		
117		International Bl	A6835	250		
118		International Bl	A6839	250		
119		International Bl	A6840	250		
120		International Bl	A5841	250		
121		International Bl	A6842	250		
122		International Bl	A6843	250		
123		International Bl	A6844	250		
124		International Bl	A6845	250		
125		International Bl	A6846	250		
126		International Bl	A6847	250		
127		International Bl	A6848	250		
128		International Bl	A6849	250		
129		International Bl	A6850	250		
130		International Bl	A6851	250		
131		International Bl	A6852	250		
132		International Bl	A6853	250		
133		International Bl	A6854	250		
134		International Bl	A6855	250		
135		International Bl	A6856	250		
136		International Bl	A6857	250		
137		International Bl	A6858	250		



	A	B	C	D	E	F
138		International Bl	A6859	250		
139		International Bl	A6860	250		
140		International Bl	A6861	250		
141		International Bl	A6862	250		
142		International Bl	A6863	250		
143		International Bl	A6864	250		
144		International Bl	A6865	250		
145		International Bl	A6866	250		
146		International Bl	A6867	250		
147		International Bl	A6868	250		
148		International Bl	A6859	250		
149		International Bl	A6870	250		
150		International Bl	A6871	250		
151		International Bl	A6872	250		
152		International Bl	A6873	250		
153		International Bl	A6874	250		
154		International Bl	A6875	250		
155		International Bl	A6876	250		
156		International Bl	A6877	250		
157		International Bl	A6878	250		
158		International Bl	A6879	250		
159		International Bl	A6880	250		
160		International Bl	A6881	250		
161		International Bl	A6882	250		
162		International Bl	A6883	250		
163		International Bl	A6884	250		
164		International Bl	A6885	250		
165		International Bl	A6886	250		
166		International Bl	A6887	250		
167		International Bl	A6888	250		
168		International Bl	A6889	250		
169		International Bl - Ends at 9700 block	A6890	250		
170						
171	3	Parker Area			9	
172		MacArthur Bl - Start at 7600 block, Ocean Side of Street	N9203	250		
173		MacArthur Bl	N9197	250		
174		MacArthur Bl	N9191	250		
175		MacArthur Bl - End at 7800 block, Ocean Side of Street	N9187	250		
176		MacArthur Bl - Start at 7800 block, Mountain Side of Street	N9146	250		
177		MacArthur Bl	N9150	250		
178		MacArthur Bl	N9152	250		
179		MacArthur Bl	N9156	250		
180		MacArthur Bl - End at 7600 block, Mountain Side of Street	N9160	250		
181						
182	4	Fruitvale Area			21	
183		International Bl - Start at Fruitvale	A3209	250		
184		International Bl	A3210	150	Candelabra	
185		International Bl	A3211	250	Candelabra	
186		International Bl	A3212	250	Candelabra	
187		International Bl	A3213	250	Candelabra	
188		International Bl	A3214	250	Candelabra	
189		International Bl	A3215	250	Candelabra	
190		International Bl	A3216	250	Candelabra	
191		International Bl	A3217	250	Candelabra	
192		International Bl	A3218	250	Candelabra	
193		International Bl	A3219	250	Candelabra	
194		International Bl	A3220	250	Candelabra	
195		International Bl	A3221	250	Candelabra	
196		International Bl	A3222	250	Candelabra	
197		International Bl	A3223	250	Candelabra	
198		International Bl	A3224	250	Candelabra	
199		International Bl	A3225	250	Candelabra	
200		International Bl	A3226	250	Candelabra	
201		International Bl	A3227	250	Candelabra	
202		International Bl	A3228	250	Candelabra	
203		International Bl	A3229	250	Candelabra	
204		International Bl	A3230	250	Candelabra	
205		International Bl	A3231	250	Candelabra	
206		International Bl	A3232	250	Candelabra	
207		International Bl	A3233	250	Candelabra	

	A	B	C	D	E	F
208		International Bi	A3234	250	Candelabra	
209		International 9i	A3235	250	Candelabra	
210		International Bi	A3236	250	Candelabra	
211		International Bi	A3237	250	Candelabra	
212		International Bi	A3238	250	Candelabra	
213		International Bi	A3239	250	Candelabra	
214		International Bi	A3240	250	Candelabra	
215		International Bi	A3241	250	Candelabra	
216		International Bi	A3242	250		
217		International Bi	A3243	250	Candelabra	
218		International Bi	A3244	250	Candelabra	
219		International Bi	A3245	250	Candelabra	
220		International Bi	A3246	250		
221		International Bi	A3247	250		
222		International Bi	A3248	250		
223		International Bi	A3249	250		
224		International Bi	A3250	250		
225		International Bi	A3251	250		
226		International Bi	A3252	250		
227		International Bi	A3253	250		
228		International Bi	A3254	250		
229		International Bi	A3255	250		
230		International Bi	A3256	250		
231		International Bi	A3257	250		
232		International Bi	A3258	250		
233		International Bi	A3259	250		
234		International Bi	A3260	250		
235		International Bi	A3261	250		
236		International Bi	A3262	250		
237		International Bi	A3263	250		
238		International Bi	A3264	310		
239			Total		195	
240						
241	Notes:					
242	1	The methodology is to replace existing HPS cobrahead with a new GE LED cobrahead on the same pole.				
243	2	All new GE LED street lights will be of the same wattage on each street to meet the overall crime lighting level.				
244	3	Due to physical limitations, candelabra and ornamental pedestrian lights will not be raised.				
245	4	A street light survey will be needed to verify the data base information.				
246	5	Arterial/collector street lighting that were raised by recent streetscape projects may exceed crime lighting level.				
247		These streets will be raised as per OPD request, but subject to equipment limitation.				