Agenda Item Number: _____

Agenda Report Reviewed by:
City Manager: _____

CITY OF SEBASTOPOL
CITY COUNCIL
STAFF REPORT

Meeting Date:	October 30, 2018
To:	Honorable Mayor and City Councilmembers
From:	Public Works Superintendent, Dante Del Prete
Subject:	Consideration of Approval of PG&E-owned Street Lights to be Replaced with Warmest Available Color Option, 2700 Kelvin LED Fixtures by PG&E
Recommendation:	Consider the PG&E LED Streetlight Replacement Program with Warmest Available Color option 2700 Kelvin LED fixtures and provide staff direction on participation in the LED Streetlight Upgrade Program installed by PG&E.
Funding:	Currently Budgeted: _____ Yes __X__ No _____ N/A Net General Fund Costs: $0 This program will have no upfront costs to the City. The capital costs are paid for by PG&E. The program is cash-flow positive from the onset.

INTRODUCTION:

This item is returning to the Council with additional information to request that the City Council authorize the City Manager to opt into PG&E's LED Streetlight Replacement Program utilizing the warmest available color 2700 Kelvin LED fixtures and to execute any necessary paperwork for the agreement.

BACKGROUND:

At the December 5, 2017 City Council meeting, staff presented information on the PG&E LED streetlight retrofit program for retrofitting the streetlights in Sebastopol from high pressure sodium (HPS) to light emitting diode (LED). During the Council discussion, several questions were asked that required additional information from PG&E.

Staff returned to Council on January 16, 2018 with PG&E representatives to address questions relating to the availability of shielding options, a breakdown of potential energy savings, and a request for a continuous street installation as a second trial location. PG&E provided a detailed response to the shielding questions that basically placed the responsibility on the City to review each location and attempt to predict potential shielding needs. Lighting shields requested before the installation would be installed with no additional labor costs, while the cost of the shields would be paid by the City. Additional shields requested after the installation would be at a cost of $200 per location.

Regarding lower wattage and 2700K color options, PG&E responded by stating there are no plans at this time to offer anything of a lower wattage than 32 watts for residential areas or a color option below 3000K.

No action was taken at the January 16, 2018 meeting, and the consensus of the Council was to wait until new technology became available.

DISCUSSION:
PG&E is in the process of phasing out HPSV (High Pressure Sodium Vapor) from new installations and repairs. It is likely that sometime in 2019, PG&E will begin replacing burned out and poorly performing HPSV fixtures with LEDs. The PG&E replacement fixtures would be based on our then current standard (which today is 4000K/3000K). This would quickly result in an assortment, checkerboard effect of old HPSV fixtures adjacent to the brighter LED's.

This is the final progression offering of these new, warmer color streetlights. There is no evidence that 2700K is just another next step in the evolution of streetlight color temperature, and the industry has not shown signs of market pressure or activity that would lead to future streetlight offerings with lower Kelvin values. The point is that despite the current pattern, PG&E has indicated that they will not be coming back to the City touting a new 2300K (or other) fixtures in the near future.

Financially, the $2.81/month/fixture temporary Incremental Facility Charge (IFC) that PG&E previously indicated would offset the majority of the City's savings for a period of time but is now slated for elimination in Q1 of 2019, possibly as soon as January 1. As a result, the City of Sebastopol would benefit from the full energy savings almost immediately after installation (which PG&E would like to complete this year).

TRIAL LOCATIONS:
To present the public an opportunity to view the 2700 Kelvin light fixtures at 15 watts, 32 watt and 93 watt examples in four (4) sample viewing locations.

Zimpher Drive - This location was selected as a representative section of three (3) consecutive 2700K, 15W streetlights and one (1) 32W at the Zimpher Drive - Covert Lane Crosswalk as an example of what a residential street would look like with the warmer, lower wattage option.

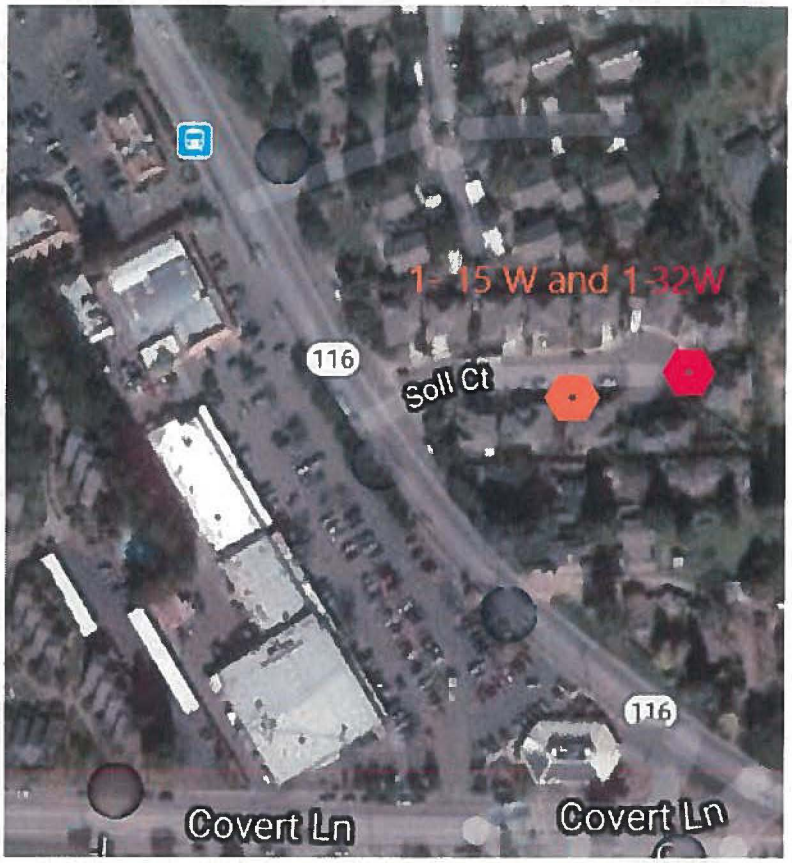
Soll Court - This location utilizes a 2700K, 15W on the street section and a 2700K, 32W in the end court area.

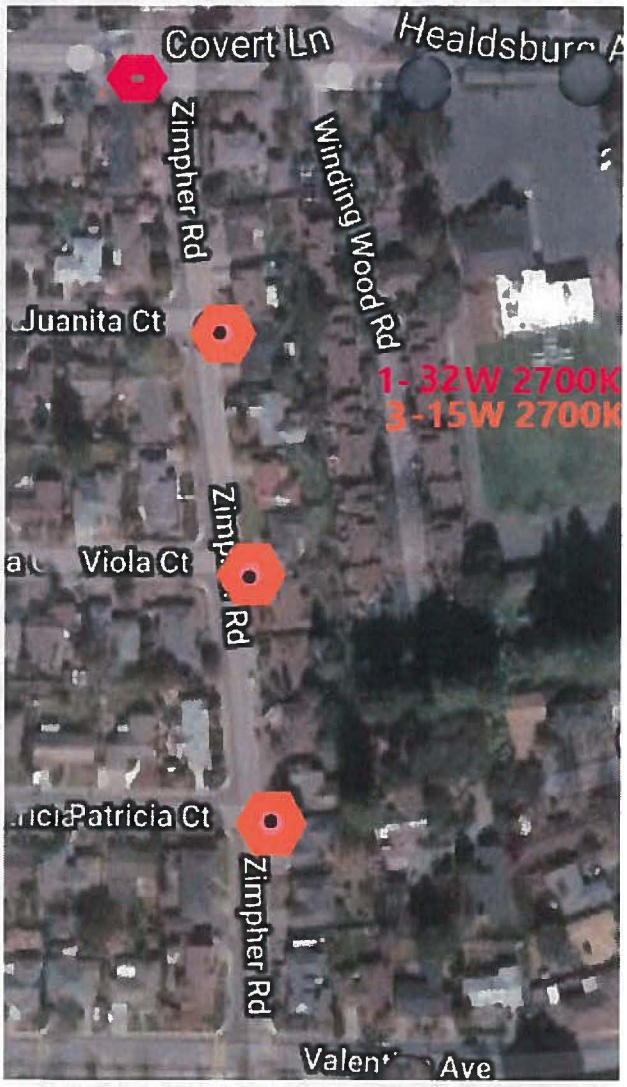
Gwendolyn Place - This sample location is toward the southeast area of the City and utilizes a 2700K, 15W on the street section and a 2700K, 15W in the end court area.

Morris Street - This location consists of two (2) consecutive lights across the street from the Sebastopol Community and Cultural Center as a representation of a higher wattage commercial application of the 2700K, 93W units.

RECOMMENDATION:
That the City Council consider the PG&E LED Streetlight Replacement Program with the warmest available color option 2700 Kelvin LED fixtures and provide staff direction on participation in the LED Streetlight Upgrade Program installed by PG&E.

ATTACHMENTS:
Trial Location maps of wattage
PG&E Energy Savings and Carbon Footprint Reduction Estimates
Public Responses from Media Outreach (to be delivered to City Council on or before October 29, 2018)



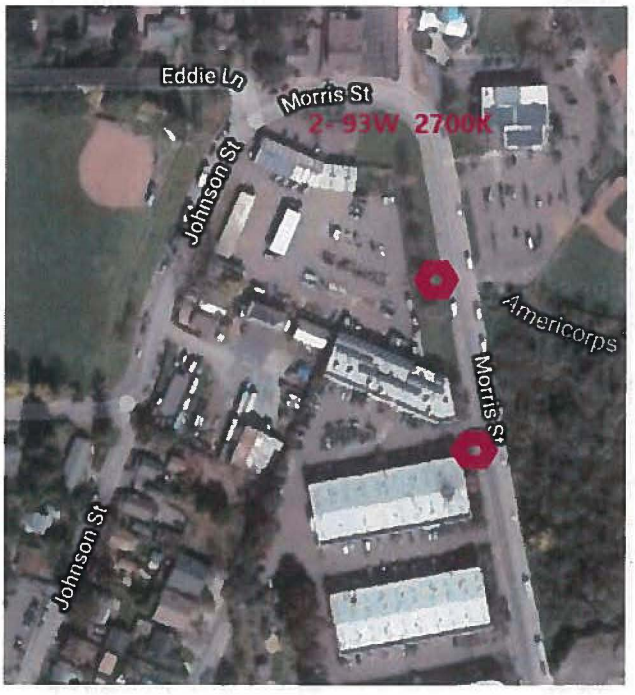


Locations of the Trial Installations of LED Streetlights are indicated as follows:

Orange Hexagon (15W)

Red Hexagon (32W)

Burgundy Hexagon (93W)



2700K Savings Model ~ HPSV to LED replacement for LS1 Streetlights

Illustration of Monthly Savings Per Lamp using PG&E's Proposed LED Replacement Program for Non-Decorative LED Fixtures.
March 1, 2017 Tariffs, Model assumes LS1-A 120Volts

HPSV Light Annual Charge							
LS1-A Existing HPS Sizes	Current Monthly Facility Charge	kWh per Month	Current Monthly Energy Charge	Current Monthly Total Charge	Quantity of each fixture type	Annual kWh by fixture type	Annual $ cost by fixture type
70	$6.51	29	$ 4.83	$11.34	395	137,460	$ 53,762.08
70	$6.51	29	$ 4.83	$11.34	0	-	$ -
100	$6.51	41	$ 6.83	$13.34	96	47,232	$ 15,367.78
150	$6.51	60	$ 9.99	$16.50	44	31,680	$ 8,713.80
200	$6.51	80	$ 13.32	$19.83	26	24,960	$ 6,187.96
250	$6.51	100	$ 16.65	$23.16	0	-	$ -
400	$6.51	154	$ 25.64	$32.15	2	3,696	$ 771.68
					563	245,028	$ 84,803

NOTE: All rates and charges current as of September 1st 2018

LED Light Annual Charge								
Proposed LED Size Watts	Current Monthly Facility Charge	kWh per Month	Temporary Incremental Facility Charge	Current Monthly Energy Charge	Proposed Monthly Total Charge	Quantity of each fixture type	Annual kWh by fixture type	Annual $ Cost by fixture type
15	$6.51	4.3	$2.81	$ 0.716	$10.04	395	20,382	$ 47,608.56
32	$6.51	11.1	$2.81	$ 1.848	$11.18	0	-	$ -
42	$6.51	14.5	$2.81	$ 2.414	$11.74	96	16,704	$ 13,526.90
56	$6.51	19.6	$2.81	$ 3.263	$12.59	44	10,349	$ 6,648.16
84	$6.51	28.2	$2.81	$ 4.695	$14.02	26	8,798	$ 4,375.18
93	$6.51	31.6	$2.81	$ 5.261	$14.59	0	-	$ -
133	$6.51	45.3	$2.81	$ 7.542	$16.87	2	1,087	$ 404.88
						563	57,320	$ 72,563.68

% energy & GHG reduction

76.6%

LS1-A Existing HPSV Sizes	LED Like-for-Like Wattage	Per Fixture Annual Savings	NEW Quantity by fixture type	Annual kWh reduction by fixture type	Annual $ savings by fixture type	Additional Savings Post IFC	Total Savings Post IFC
70 Watt	15	$15.58	395	117,078	$ 6,153.52	$13,338	$19,492
70 Watt	32	$25.97	0	-	$ -	$0	$0
100 Watt	42	$57.14	96	30,528	$ 1,840.88	$3,242	$5,083
150 Watt	56	$86.90	44	21,331	$ 2,065.64	$1,486	$3,551
200 Watt	84	$109.68	26	16,162	$ 1,812.78	$878	$2,691
250 Watt	93	$210.77	0	-	$ -	$0	$0
400 Watt	133	$183.40	2	2,609	$ 366.80	$68	$434
			563	187,708	$ 12,239.61	$ 19,011	**$ 31,251**

Instructions

1.) Enter quantity of each wattage of existing HPSV fixtures in col H
2.) Enter quantity of each wattage of LED fixture in column S (totals should be equal)

NOTE: Shown facility charges are for LS1-A's. While facility charges vary for other LS1 rates, the net dollar and energy savings are accurate for all LS1 rates.

The IFC is expected to be eliminated by Jan 1, 2019

This projected savings is calculated on changing all of the 395 70W HPSV to 15W 2700K LED Fixtures

2700K Savings Model ~ HPSV to LED replacement for LS1 Streetlights

Illustration of Monthly Savings Per Lamp using PG&E's Proposed LED Replacement Program for Non-Decorative LED Fixtures.
March 1, 2017 Tariffs, Model assumes LS1-A 120Volts

HPSV Light Annual Charge

LS1-A Existing HPS Sizes	Current Monthly Facility Charge	kWh per Month	Current Monthly Energy Charge	Current Monthly Total Charge	Quantity of each fixture type	Annual kWh by fixture type	Annual $ cost by fixture type
70	$6.51	29	$ 4.83	$11.34	100	34,800	$ 13,610.65
70	$6.51	29	$ 4.83	$11.34	295	102,660	$ 40,151.42
100	$6.51	41	$ 6.83	$13.34	96	47,232	$ 15,367.78
150	$6.51	60	$ 9.99	$16.50	44	31,680	$ 8,713.80
200	$6.51	80	$ 13.32	$19.83	26	24,960	$ 6,187.96
250	$6.51	100	$ 16.65	$23.16	0	-	$ -
400	$6.51	154	$ 25.64	$32.15	2	3,696	$ 771.68
					563	245,028	**$ 84,803**

NOTE: All rates and charges current as of September 1st 2018

LED Light Annual Charge

Proposed LED Size Watts	Current Monthly Facility Charge	kWh per Month	Temporary Incremental Facility Charge	Current Monthly Energy Charge	Proposed Monthly Total Charge	Quantity of each fixture type	Annual kWh by fixture type	Annual $ Cost by fixture type
15	$6.51	4.3	$2.81	$ 0.716	$10.04	100	5,160	$ 12,052.80
32	$6.51	11.1	$2.81	$ 1.848	$11.18	295	39,294	$ 39,563.18
42	$6.51	14.5	$2.81	$ 2.414	$11.74	96	16,704	$ 13,526.90
56	$6.51	19.6	$2.81	$ 3.263	$12.59	44	10,349	$ 6,648.16
84	$6.51	28.2	$2.81	$ 4.695	$14.02	26	8,798	$ 4,375.18
93	$6.51	31.6	$2.81	$ 5.261	$14.59	0	-	$ -
133	$6.51	45.3	$2.81	$ 7.542	$16.87	2	1,087	$ 404.88
						563	81,392	$ 76,571.10

% energy & GHG reduction

66.8%

LS1-A Existing HPSV Sizes	LED Like-for-Like Wattage	Per Fixture Annual Savings	NEW Quantity by fixture type	Annual kWh reduction by fixture type	Annual $ savings by fixture type	Additional Savings Post IFC	Total Savings Post IFC
70 Watt	15	$15.58	100	29,640	$ 1,557.85	$3,377	$4,935
70 Watt	32	$25.97	295	63,366	$ 588.25	$9,962	$10,550
100 Watt	42	$57.14	96	30,528	$ 1,840.88	$3,242	$5,083
150 Watt	56	$86.90	44	21,331	$ 2,065.64	$1,486	$3,551
200 Watt	84	$109.68	26	16,162	$ 1,812.78	$878	$2,691
250 Watt	93	$210.77	0	-	$ -	$0	$0
400 Watt	133	$183.40	2	2,609	$ 366.80	$68	$434
			563	163,636	$ 8,232.20	$ 19,011	**$ 27,244**

Instructions

1.) Enter quantity of each wattage of existing HPSV fixtures in col H
2.) Enter quantity of each wattage of LED fixture in column S (totals should be equal)

NOTE: Shown facility charges are for LS1-A's. While facility charges vary for other LS1 rates, the net dollar and energy savings are accurate for all LS1 rates.

The IFC is expected to be eliminated by Jan 1, 2019

This projected savings is calculated on changing 100 of the 70W HPSV to 15W 2700K LED Fixtures and 295 of the 70W HPSV to 32W 2700K

2700K Savings Model ~ HPSV to LED replacement for LS1 Streetlights

Illustration of Monthly Savings Per Lamp using PG&E's Proposed LED Replacement Program for Non-Decorative LED Fixtures.
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HPSV Light Annual Charge							
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70	$6.51	29	$ 4.83	$11.34	395	137,460	$ 53,762.08
100	$6.51	41	$ 6.83	$13.34	96	47,232	$ 15,367.78
150	$6.51	60	$ 9.99	$16.50	44	31,680	$ 8,713.80
200	$6.51	80	$ 13.32	$19.83	26	24,960	$ 6,187.96
250	$6.51	100	$ 16.65	$23.16	0	-	$ -
400	$6.51	154	$ 25.64	$32.15	2	3,696	$ 771.68
					563	245,028	$ 84,803

NOTE: All rates and charges current as of September 1st 2018

LED Light Annual Charge								
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15	$6.51	4.3	$2.81	$ 0.716	$10.04	0	-	$ -
32	$6.51	11.1	$2.81	$ 1.848	$11.18	395	52,614	$ 52,974.42
42	$6.51	14.5	$2.81	$ 2.414	$11.74	96	16,704	$ 13,526.90
56	$6.51	19.6	$2.81	$ 3.263	$12.59	44	10,349	$ 6,648.16
84	$6.51	28.2	$2.81	$ 4.695	$14.02	26	8,798	$ 4,375.18
93	$6.51	31.6	$2.81	$ 5.261	$14.59	0	-	$ -
133	$6.51	45.3	$2.81	$ 7.542	$16.87	2	1,087	$ 404.88
						563	89,552	$ 77,929.55

% energy & GHG reduction

63.5%

LS1-A Existing HPSV Sizes	LED Like-for-Like Wattage	Per Fixture Annual Savings	NEW Quantity by fixture type	Annual kWh reduction by fixture type	Annual $ savings by fixture type	Additional Savings Post IFC	Total Savings Post IFC
70 Watt	15	$15.58	0	-	$ -	$0	$0
70 Watt	32	$25.97	395	84,846	$ 787.65	$13,338	$14,126
100 Watt	42	$57.14	96	30,528	$ 1,840.88	$3,242	$5,083
150 Watt	56	$86.90	44	21,331	$ 2,065.64	$1,486	$3,551
200 Watt	84	$109.68	26	16,162	$ 1,812.78	$878	$2,691
250 Watt	93	$210.77	0	-	$ -	$0	$0
400 Watt	133	$183.40	2	2,609	$ 366.80	$68	$434
			563	155,476	$ 6,873.75	$ 19,011	**$ 25,885**

Instructions

1.) Enter quantity of each wattage of existing HPSV fixtures in col H
2.) Enter quantity of each wattage of LED fixture in column S (totals should be equal)

NOTE: Shown facility charges are for LS1-A's. While facility charges vary for other LS1 rates, the net dollar and energy savings are accurate for all LS1 rates.

The IFC is expected to be eliminated by Jan 1, 2019

This projected savings is calculated on changing all of the 395 70W HPSV to 32W 2700K LED Fixtures.