MEETING: January 16, 2018

TO: The Board of Supervisors

FROM: Mike Healy, Public Works Director

RE: Authorize Public Works to Opt-In to the PG&E LED Streetlight Conversion Program

RECOMMENDATION AND JUSTIFICATION:
Authorize the Director of Public Works & Transportation to Opt-In to the PG&E LED Street Light Conversion Program.

PG&E approached the County seeking our participation in their Street Light Conversion Program which will retrofit all of the County maintained Street Lights from old Sodium Vapor Lighting to new LED Street Lighting. This conversion will also reduce the energy use for street lighting and place the County at the reduced LED Tariff rate for energy costs. The current Sodium Vapor lights in general require maintenance replacement of light or ballast every 5 years on average whereas LED Street Lighting Technology maintenance free lifecycle is 20 years.

Presently, the County pays for the energy and operation of 111 street lights. The construction and equipment costs associated with this Opt-In conversion program is funded through energy savings with no money changing hands. The current estimate by PG&E is that in the initial year we will realize a savings of $904.01 and that the construction costs will be paid off within a year which barring any rate increases will result in a total program savings of roughly 30,000.00 annually.

BACKGROUND AND HISTORY OF BOARD ACTIONS:
The Board has a long history of approving energy savings and sustainable initiatives.

ALTERNATIVES AND CONSEQUENCES OF NEGATIVE ACTION:
This program expires at the end of the 1st Quarter of 2018 and these savings will be unavailable to us should the Board not grant approval to opt in to this program.

ATTACHMENTS:
LED Streetlight - County of Mariposa (PDF)
Resolution - Action Requested 2018-27

RESULT: ADOPTED [UNANIMOUS]
MOVER: Marshall Long, District III Supervisor
SECONDER: Kevin Cann, District IV Supervisor
AYES: Rosemarie Smallcombe, Marshall Long, Kevin Cann, Miles Menetrey
EXCUSED: Merlin Jones
LED Streetlight Upgrade
County of Mariposa

December 4, 2017
Program Overview

LED Streetlight Upgrades

- CPUC approved Program to replace approximately 150,000 PG&E owned, High Pressure Sodium (HPS), non-decorative fixtures with high efficiency LED fixtures
- 50,000,000 kWh estimated annual energy savings across PG&E Territory
- Voluntary Program – Customer of Record must opt-in to participate
- May change fixture wattage – PG&E to provide inventory
- Expected annual savings of about 29,310 kWh and $904.01

<table>
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<tr>
<th>LS1-A Existing HPSV Sizes</th>
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<td>$142.75</td>
</tr>
<tr>
<td>Total Savings</td>
<td></td>
<td></td>
<td>111</td>
<td>29,310</td>
<td>$904.01</td>
</tr>
</tbody>
</table>

*Estimated saving based on LS1-A rate
Schedule

Opt-in Meeting
Program review and discussion

Kick Off Meeting
Kickoff meeting scheduled to finalize start date and review logistics.

Letters Sent
Informational letters sent to residents near fixtures to be upgraded

Installation
Fixture replacement work begins

Completion
Postcards sent to residents indicating installations have been completed

Opt-In
Returned inventory with light level adjustments completes the formal "opt-in"
**LED Light Fixtures**

- Manufactured by CREE
- Substantial energy & GHG reductions
- Long life (20 years vs. 5 years)
- Stable light output
- 4,000 Kelvin CCT, CRI 70
- Full cutoff, low glare and minimal light trespass
- 26, 33, 53, 65, 76, 120 Watt fixtures
Opting-in

✓ Review and accept proposed adds to streetlight bill, indicate acceptance on tab 2, under "CUSTOMER ACCEPT PROPOSED ADD" column.

✓ Determine if you want to change any wattages from our default values (in the table below). If no wattage changes, send an email indicating you are opting-in with "like for like" to the address below. For changes, input desired LED wattage in tab 2 "DESIRED SIZE IF NOT LIKE FOR LIKE" column.

✓ Return updated spreadsheet to PG&E

Wattage changes go Here
Accept Proposed Adds Here

<table>
<thead>
<tr>
<th>DESC_ADDR</th>
<th>MAP NUMBER</th>
<th>LITE_SIZE</th>
<th>LITE_TYPE</th>
<th>SPECIAL ATTENTION LIGHTS</th>
<th>CUSTOMER ACCEPT PROPOSED ADD Y OR N</th>
<th>DESIRED LED SIZE IF NOT LIKE FOR LIKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 Main St.</td>
<td>P2107</td>
<td>70</td>
<td>HIGHPRESSURE</td>
<td>Tree Trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 Main St.</td>
<td>P2107</td>
<td>70</td>
<td>HIGHPRESSURE</td>
<td>ADD TO BILLING, LIGHT IN FIELD, NOT IN BILLING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 Main St.</td>
<td>P2107</td>
<td>70</td>
<td>HIGHPRESSURE</td>
<td>Locked Gate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 Main St.</td>
<td>P2107</td>
<td>100</td>
<td>HIGHPRESSURE</td>
<td>Tree Trimming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 Main St.</td>
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<td>70</td>
<td>HIGHPRESSURE</td>
<td>Tree Trimming</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"Like for Like" Wattage Table

<table>
<thead>
<tr>
<th>HPS Wattage</th>
<th>LED Wattage</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>26</td>
</tr>
<tr>
<td>100</td>
<td>33</td>
</tr>
<tr>
<td>150</td>
<td>53</td>
</tr>
<tr>
<td>200</td>
<td>65</td>
</tr>
<tr>
<td>250</td>
<td>76</td>
</tr>
<tr>
<td>400</td>
<td>120</td>
</tr>
</tbody>
</table>
Special Attention Lights

- Collected during inventory in 2016
- City is responsible for any tree trimming or vegetation issues which may impact installation
- Details in column “Special Attention Lights” eligible lights tab in your workbook
- Map located on tab 5
Installation of LED Lights

- Approximately 111 PG&E owned lights (LS1) (Does not include decorative or any City owned lights (LS2))
- Bucket trucks with 1 or 2 person crews
- Less than 10 minutes per lamp fixture
- No parking and traffic impacts are anticipated
- Special cases (school zones, etc.) will be coordinated
- Completion within 1-2 weeks (weather pending)
## Outreach Strategy

<table>
<thead>
<tr>
<th>Method</th>
<th>Audience</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-installation letter &amp; fact sheet</td>
<td>Direct to Residents</td>
<td>Mailed 1 to 2 weeks in advance of work</td>
</tr>
<tr>
<td>Website</td>
<td>Self Service</td>
<td>Ongoing at: pge.com/streetlightupgrade</td>
</tr>
<tr>
<td>Videos</td>
<td>Self Service</td>
<td>Ongoing at: pge.com/streetlightupgrade</td>
</tr>
<tr>
<td>Social Media – Facebook, Twitter, Instagram</td>
<td>Broad</td>
<td>Content Available</td>
</tr>
<tr>
<td>Post-installation post card</td>
<td>Direct to Residents</td>
<td>2 weeks post completion</td>
</tr>
</tbody>
</table>
Inquiry Management

Kristen Jordan, a local PG&E specialist will receive and manage inquiries.

Typical inquiries include:
- General information request
- Too bright
- Light intrusion
- Not enough light
- Dark sky concerns

Adding shields or changing wattage is up to the Customer.

Specialist will review inquiries with staff.

Post installation field changes are $200 per fixture while we are still in the area.
LED Outreach Resources

Visit our website at: www.pge.com/streetlightupgrade
Email Us at: Streetlightupgrade@pge.com
Call Us at: (877) 743-2677

Geoff Pollard
Local Customer Experience Program Manager
G1P9@pge.com
415-535-7045

Kristen Silva
Service Solutions Specialist
k1cp@pge.com
925-586-4417

Tim Kingsbury
Installation Program Manager
tlka@pge.com
415-973-8396
Appendix
Streetlight Locations

COUNTY OF MARIPOSA LS1 LIST 111017

These lights represent all eligible candidates for the LS1 LED conversion project.
March 2, 2016

PG&E will be upgrading streetlights in your community soon.

Dear [Customer Name],

In collaboration with the [City or County], Pacific Gas and Electric Company (PG&E) will be upgrading streetlights in your community. As part of our commitment to provide you with safe, reliable, and affordable energy, PG&E is replacing its PG&E-owned non-decorative streetlights with energy efficient and longer lasting Light-Emitting Diode (LED) fixtures.

Why LEDs?
LED streetlights use 50-75% less energy than the current High Pressure Sodium Vapor (HPSV) bulbs and significantly reduce greenhouse gas emissions. New LED streetlights provide a more natural-looking light, which will last up to four times longer than HPSV bulbs. The optical technology of LED luminaires creates more evenly distributed light, resulting in greater visibility for pedestrians and drivers alike.

What you can expect
Our work is expected to begin [in approximately two weeks/actual date]. We will be replacing [number of PG&E-owned streetlights in the City of XXX]. The installation will take approximately 10 minutes per lamp fixture. Please keep in mind that our schedule is dependent on safe weather and field conditions.

PG&E will not need to enter your property, and you do not need to be present while we complete this work. There will be no disruption to your electrical service. All PG&E and contractor personnel are required to carry valid photo identification and are happy to provide it upon request.

How can I learn more?
If you have any questions about this work, please contact your local Customer Outreach Specialist, [Specialist Name] at [Specialist number] or send an email to streetlightupgrade@pge.com. We will make every attempt to respond to your inquiry within one to two business days. More information is also available online at www.pge.com/streetlightupgrade.

Thank you for your cooperation as we work to enhance the safety and reliability of electric service in your community.

Pacific Gas and Electric Company estará modernizando el alumbrado público en su comunidad

En colaboración con la ciudad o el condado donde usted vive, Pacific Gas and Electric Company (PG&E, por sus siglas en inglés) estará modernizando el alumbrado público en su comunidad. Como parte de nuestro compromiso de proveerle energía segura, confiable y asequible, PG&E está reemplazando su propio alumbrado público no decorativo, con dispositivos de diodo emisores de luz (LED, por sus siglas en inglés) que son más eficientes y de mayor duración.

PG&E no tendrá que entrar a su propiedad, y usted no necesita estar presente mientras completamos el trabajo. No habrá interrupción en su servicio eléctrico. Todo el personal de PG&E y sus contratistas tienen la obligación de portar una identificación con foto vigente y facilitarla cuando sea solicitada.

Gracias por su cooperación mientras efectuamos nuestro trabajo para mejorar la seguridad y la confiabilidad del servicio eléctrico en su comunidad.

Si usted tiene alguna pregunta acerca de este proyecto o cuando se llevará a cabo esta obra, por favor llame a nuestro número de programa gratuito 877-743-2677 y déje un mensaje. Nosotros le devolveremos la llamada tan pronto como sea posible.
Social Media

ILLUMINATING THE IMPACT OF LED STREETLIGHTS

LED FIXTURES USE 50-75% LESS ENERGY THAN TRADITIONAL HPSV® BULBS

THIS TRANSLATES INTO POTENTIAL ENERGY SAVINGS OF MORE THAN

50 MILLION KWH PER YEAR

THAT'S ENOUGH ENERGY TO POWER:

2,337 HOMES FOR ONE YEAR OR

IT'S THE ENERGY EQUIVALENT OF:

248,313 TREE SEEDLINGS WOULD CONSUME OVER 10 YEARS

SAVING THE SAME AMOUNT OF CARBON THAT

THE YEARLY AMOUNT OF POLLUTION GENERATED BY 2,035 CARS

LEARN MORE ABOUT THE LED STREETLIGHT UPGRADE PROGRAM AT PGE.COM/STREETLIGHTUPGRADE

SWITCHING TO LED STREETLIGHTS COULD SAVE THE SAME AMOUNT OF POLLUTION THAT 2,035 CARS GENERATE ANNUALLY

2,337 HOMES FOR ONE YEAR

THE ENERGY SAVED BY SWITCHING TO LED STREETLIGHTS COULD POWER 2,337 HOMES FOR ONE YEAR

248,313 TREE SEEDLINGS WOULD CONSUME OVER 10 YEARS

SWITCHING TO LED STREETLIGHTS COULD SAVE THE SAME AMOUNT OF CARBON THAT 248,313 TREE SEEDLINGS WOULD CONSUME OVER 10 YEARS

THE ENERGY SAVED BY SWITCHING TO LED STREETLIGHTS IS EQUAL TO BINGE-WATCHING 33 SEASONS OF YOUR FAVORITE TV SHOW WITH ONE MILLION OF YOUR CLOSEST FRIENDS
# 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

<table>
<thead>
<tr>
<th>HPSV Light Annual Charge</th>
<th>LED Light Annual Charge</th>
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<tr>
<td><strong>LS1-A Existing HPS Sizes</strong></td>
<td><strong>Proposed LED Size</strong></td>
</tr>
<tr>
<td>70 Watt HPS @ $6.51</td>
<td>26 Watt</td>
</tr>
<tr>
<td>100 Watt HPS @ $6.51</td>
<td>33 Watt</td>
</tr>
<tr>
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<td>400 Watt HPS @ $6.51</td>
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**NOTE:** All rates and charges current as of March 1st 2017

% energy & GHG reduction

**68.8%**

**Instructions**
1. Enter quantity of each wattage of existing HPSV fixtures in column H
2. Enter quantity of each wattage of LED fixture in column S

**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.

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<td>$43.19</td>
<td>0</td>
<td>-</td>
<td>-</td>
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<td>65 Watt</td>
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<td>76 Watt</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>400 Watt</td>
<td>120 Watt</td>
<td>$170.05</td>
<td>0</td>
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**Additional Savings Post IFC**

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<tr>
<td>400 Watt</td>
<td>120 Watt</td>
<td>$170.05</td>
<td>0</td>
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**Total Savings Post IFC**

$3,748.25 $4,652