



OPEN MEETING

REGULAR MEETING OF THE VILLAGE ENERGY TASK FORCE

**Wednesday, November 7, 2018 - 1:30 PM
Laguna Woods Village Community Center Willow Room
24351 El Toro Road**

NOTICE and AGENDA

This Meeting May be Recorded

1. Call to Order
2. Acknowledgment of Media
3. Approval of the Agenda
4. Approval of Meeting Report for September 12, 2018
5. Chairman's Remarks
6. Member Comments (*Items Not on the Agenda*)
7. Department Head Update

Consent:

All matters listed under the Consent Calendar are considered routine and will be enacted by the Task Force in one motion. In the event that an item is removed from the Consent Calendar by members of the Task Force, such item(s) shall be the subject of further discussion and action by the Task Force.

8. Project Log
9. SCE Street Light Outage Report

Reports:

10. TEC Energy Priority Work Plan Update
11. LED Fixture Pilot for Street Lights
12. Field Trip to UCI (oral discussion – Bert Moldow)
13. Officer Selections for Energy Task Force

Items for Future Agendas:

Third Mutual:

- Electric Vehicle History Report
- Golf Cart Report
- Additional Solar Installations
- LED Solar Street Lights (low priority)
- 2-story Buildings LED Lighting Pilot Program (low priority)



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United Mutual:

- Electric Vehicle History Report
- Golf Cart Report

GRF:

- Install Level II EV Bollard Chargers (on the streets)
- 2-3 Year Energy Plan: (Oral Discussion)
 - a) Distributed Energy Resources Contract
 - b) Microgrid Investigation

Concluding Business:

Date of next meeting – January 2, 2019 (Sycamore Room)
Adjournment

Bill Walsh, Chair
Ernesto Munoz, Staff Officer
Telephone: 268-2281



OPEN MEETING

REPORT FOR REGULAR MEETING OF THE VILLAGE ENERGY TASK FORCE

**Wednesday, September 12, 2018 - 9:30 A.M.
Laguna Woods Village Community Willow Room
24351 El Toro Road**

MEMBERS PRESENT: Bill Walsh – Chair, John Frankel, Burt Baum, Carl Randazzo, Juanita Skillman, Bert Moldow, Jim Juhan

Voting Advisor: Steve Leonard

MEMBER ABSENT: None

OTHERS PRESENT: Pat English, Judith Troutman, Annette Sabol-Soule, Yori Neumark, Frank Tybor, Doug Rook

STAFF PRESENT: Ernesto Munoz - Staff Officer, Brad Hudson, Laurie Chavarria

1. Call to Order

Chair Walsh called the meeting to order at 9:30 A.M.

2. Acknowledgment of Media

Chair Walsh noted no members of the media were present.

3. Approval of the Agenda

Director Moldow added Community EV Charging Strategy as agenda item 12. The agenda was approved as amended.

4. Approval of Meeting Report for August 1, 2018

The Meeting Report of August 1, 2018, was approved as written.

5. Chairman's Remarks

Chair Walsh remarked that he was happy to see a lot of interest in energy issues from members of the community. He hopes to see more as the Task Force moves forward.

6. Member Comments (*Items Not on the Agenda*)

- Pat English (2022-D) commented on the various energy efficient vehicles she has owned, including her current hydrogen fueled car.
- Frank Tybor (5529-N) commented on hydrogen fueled cars.
- Judith Troutman (3011-B) commented that her son manages a Toyota dealership and will provide additional information on hydrogen cars to the Task Force.

Advisor Leonard, Chair Walsh and Director Moldow briefly responded to the members comments.

7. Department Head Update

Staff Officer Ernesto Munoz provided an update on the Third Mutual walkway lighting upgrades in Gates 5, 6, 7 & 8.

Discussion ensued regarding the concrete bases, additional lighting for walkways, motion sensor lights, walkway light installation program in United, the upcoming inventory of street lights by SCE, and the scope of work to be completed by Siemens.

Consent:

All matters listed under the Consent Calendar are considered routine and will be enacted by the Task Force by one motion. In the event that an item is removed from the Consent Calendar by members of the Task Force, such item(s) shall be the subject of further discussion and action by the Task Force.

The Project Log was pulled for discussion. A motion was made and unanimously carried to approve the remainder of items under the consent calendar.

8. Project Log

Director Randazzo asked about completion dates on the Project Log.

Director Frankel asked if the new EMS system and future generator replacement will efficiently run the Community Center in a disaster.

Discussion ensued regarding solar, wind generators, and portable energy.

Staff Officer Ernesto Munoz briefly responded to questions from the Task Force.

9. SCE Street Light Outage Report

Reports:

10. Energy Efficient Accomplishments

Staff Officer Ernesto Munoz summarized the report and answered questions from the Task Force.

Discussion ensued regarding lighting timers in Third, solar generation in United, and GRF pagoda lights at Clubhouse 1.

11. Field Trip to UCI (oral discussion)

Director Moldow briefly summarized the reason for the field trip to UCI. He hopes the trip will educate staff and Board members on energy alternatives such as microgrids, fuel cells and wind power.

Discussion ensued regarding energy alternatives and other possible dates for the tour. Director Moldow will work with UCI to offer additional tour dates in October that are convenient for the Board and will send the information out to the Task Force via email.

By consensus, the Task Force decided that the energy consultant need not attend the UCI trip.

12. Community EV Charging Strategy

Director Moldow discussed the future of electric vehicles, and the need for charging stations throughout the community.

Discussion ensued regarding solar panels for EV charging at carports, quotes from Voltaic for EV charging at GRF facilities, single EV charging bollards at laundry rooms in United Mutual and infrastructure upgrades.

Items for Future Agendas:

- Officer Selections for Energy Task Force
- Electric Vehicle History Report with VIN Numbers
- Golf Cart Report
- EV Charging Stations at Stand Alone Laundry Rooms
- LED Solar Street Lights (low priority)
- 2-story Buildings LED Lighting Pilot Program (low priority)
- Costs for Level 2 Charging Stations at Stand-alone Laundry Rooms (low priority)
- Investigate the installation of conduit from the electric panels in GV to service the carports
- Install Level II EV Bollard Chargers (on the streets)
- 2-3 Year Energy Plan: (Verbal Discussion)
 - a) Distributed Energy Resources Contract
 - b) Microgrid Investigation
 - c) Street Light LED Replacement Program

Village Energy Task Force
September 12, 2018
Page 4 of 4

d) Street Light Maintenance Contract

Member Comments:

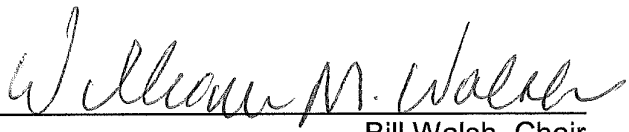
There were no member comments.

Concluding Business:

Date of next meeting – November 7, 2018

Adjournment

This meeting was adjourned at 11:39 AM

A handwritten signature in cursive script, reading "William M. Walsh", is written over a horizontal line.

Bill Walsh, Chair
Third Laguna Hills Mutual

Energy Task Force Project Log (October 2018)						
United Mutual						
#	Name	Description	Status	Estimated Completion	Budget	Project Lead
1	Walkway Lighting Program	This program is dedicated to improving walkway lighting through additional fixture installation, or the upgrade of existing ones. Alternatives to the existing pagoda style fixtures are evaluated as needed. Requests for additional lighting are received from residents on an ongoing basis. Those requests are vetted and additional lighting is installed if it meets the program requirements.	Staff processes additional walkway lighting requests as they are received. 37 additional lights have been added to date. The Committee awarded an "as needed" contract to US Energy for lighting consultant services. US Energy has performed an audit of the walkway lighting in Gates 5 and 6. The Committee decided not to move forward with any additional walkway lighting improvements in this area at this time.	December 2018 Annual	Budget: \$38,408 Invoiced: \$35,237 Balance: \$3,171 Cumulative Expenditures 2010 through 2017: \$295,748	Mark Stal 1-Oct
2	Energy Consultant Services	An Energy Consultant will be used as needed in order to advance United's and the Community's future energy initiatives.	The Board awarded a contract to an energy consultant for a not to exceed amount of \$50,000. The Energy Task Force assigned the consultant the following tasks: 1. Determine present and future electric loads at residential facilities, including carports. 2. Review and propose electric infrastructure upgrades to meet the anticipated loads. 3. Prepare a strategic plan for electric infrastructure upgrades to include EV charging, solar, and other potential upgrades to reduce the Mutual's operating costs. Staff will be presenting the consultant's work plan/proposal at a future M&C Committee Meeting for direction to move forward with the work.	On-going	Supplemental Appropriation: \$50,000 Invoiced: \$0 Balance: \$50,000	Cyrus Nasser 1-Oct
3	2018 Pushmatic Electrical Panel Replacement	This project is dedicated to replacing 2,750 Pushmatic electric panels over a 10 Year period. The Pushmatic panels are obsolete and their replacement parts are no longer manufactured or supported. The Board entered into a five year contract with Coastal Current Electric Corp. to install 1,375 Pushmatic electric panels. This contract expires in May 2021; at which time a new five year contract will be required to complete the remaining 1,375 electric panels. Estimated Project Completion: Year 2026	In 2016 and 2017 a total of 387 Pushmatic panels were installed. The 2018 Pushmatic Replacement Program has been completed for the year. A total of 244 panels were installed through October 10, 2018. Invoices are pending. Emergency Electric Panel Replacements were completed at Buildings 765 & 766 with supplemental funding.	October 2018 Annual	2018 Budget: \$371,250 Supplemental: \$48,000 Invoiced: \$397,448 Balance: \$21,802 Corrected Cumulative Expenditures 2016 through 2017: \$584,224	Cyrus Nasser 12-Oct

Third Mutual						
1	Solar Street Light Pilot Program	The Energy Committee directed staff to install a solar powered street light as a pilot project. The Committee's goal was to determine whether the solar street light was an economical option to improve street lighting levels without trenching for new conduits.	The pilot installation was completed approximately one year ago on Del Faro. The Board has expressed interest in keeping this fixture and requested a quote to install it permanently. A quote was procured and provided to the Committee for use of a marbleite pole to match others in the community. The Committee directed staff to ask the contractor to wait until Siemens completes the light assessment to determine whether this pilot should be installed permanently.	N/A	Not Budgeted	Mark Stal 29-Oct
2	2018 Electrical Systems	This program is dedicated to repairing or replacing electrical equipment as needed.	Funding for this program is provided as a contingency to address electrical panel failures and emergency maintenance. Two replacements have occurred this year at Buildings 3366 and 3242. It has been determined by staff that the grounding at some Garden Villa panels are not up to code and should be improved for safety reasons. Staff has performed grounding improvements to the panels at the following 12 GV buildings: 2387, 2388, 2369, 2384, 2385, 2386, 2389, 2390, 2391, 2369, 2370 & 2381.	December 2018 Annual	Budget: \$50,000 Invoiced: \$33,150 Balance: \$16,850	Mark Stal 29-Oct
3	Energy Consultant Services	An Energy Consultant will be used as needed in order to advance Third's and the Community's future energy initiatives.	A contract was awarded to The Energy Coalition. The Energy Task Force provided their top priorities to the energy consultant. Staff will be presenting the consultant's work plan/proposal at a future M&C Committee Meeting for direction to move forward with the work.	December 2018	Budget: \$50,000 Invoiced: \$0 Balance: \$50,000	Cyrus Nasser 29-Oct

4	Exterior Lighting In 2018 funding for this program will be allocated towards the purchase of the Southern California Edison street light infrastructure. a contract with Siemens in the amount of \$843,857 was executed. The scope of work is to assist with the street light acquisition, retrofit of the existing lighting fixtures, and to perform the operations and maintenance of the asset for three years. Additionally, it will offset the cost of consulting services to assist with the acquisition, and the upgrade of other exterior lighting. This program also includes funding for walkway lighting needs.	Street Lights: On May 30, the CPUC approved the sale and transfer of streetlights from SCE to Third. The Siemens team will be working with SCE during the transfer process of surveying, tagging, and auditing the assets that will be purchased from SCE (street light pole, lighting fixtures, above-ground equipment, and underground conduits/wiring). Once the assets have been identified SCE will invoice Third Mutual. The transfer process was originally scheduled to be completed in November 2018. However, SCE has recently informed our consultant that the process will be extended into December 2018, and the invoice will be sent out in January 2019. Once the transfer of assets is completed, staff will implement a pilot program to evaluate the selected pilot LED fixtures. Once a fixture is selected, the LED retrofit of 788 fixtures is scheduled to be conducted in February-March 2019. Walkway Lighting: A contract was awarded for walkway lighting upgrades in Gates 5, 6, 7 & 8 and work is currently underway. During the installation process an additional 34 bollards were identified that were not on the original map. There were fewer concrete bases that needed to be replaced than estimated, and thus the additional bollards were able to be replaced within the original budget. The project was recently completed.	March 2019	Budget: \$500,000 Invoiced: \$42,455.83 Balance: \$457,544.17 Supplemental walkway lighting budget: \$124,907 Invoiced: \$105,300.80 Balance: \$19,605.60	Angel Fuertes	29-Oct
GRF						
1	Energy Consultant Services An Energy Consultant will be used as needed in order to advance GRF's and the Community's future energy initiatives.	A contract was awarded to The Energy Coalition, for a not to exceed amount of \$50,000 and was approved at the July 3, 2018, Board meeting. The Village Energy Task Force provided their top priorities to the energy consultant. The consultant is currently working on a proposal which will be presented to the Village Energy Task Force in November.	On-going	Contingency Fund Supplemental Appropriation: \$50,000 Invoiced: \$0 Balance: \$50,000	Cyrus Nasser	1-Oct

2	Community Center HVAC and Controls Upgrade	This project is dedicated to making the facility more energy efficient by engineering and retrofitting the Community Center with a new Heat Ventilation Air Conditioning (HVAC) system and upgraded controls being integrated to the existing Energy Management System (EMS).	A design-build contract was awarded to AMS at the July 3, 2018, Board meeting. A pre-construction meeting was held with AMS and the 'Bridging Document' consultant on August 3. AMS submitted a schedule indicating design preparation in September; the building permit will be obtained in November; HVAC fabrication will take 4 months from November 2018 to February 2019; and HVAC will be installed February - April 2019. On-site installation of the digital controllers will start October 15 and will last approximately 4 weeks. The Contractor will start on the third floor and will work from 9:00 pm to 6:00 am. The project in its entirety is scheduled to be completed by the end of May 2019. The M&C Committee will recommend the Board award a contract for construction inspection and third-party commissioning at the November 6, 2018 Board meeting.	May 2019	Facilities Fund Contract: \$1,447,163 Invoiced: \$0 Balance: \$1,447,163	Angel Fuertes	4-Oct
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Street Light Outage Report

Facility	Request Date	Completed Date	Status	Note
B3072	6/22/2017	1/8/2018	Completed	Concrete post light out <UNKNOWN POST #>
B3222	7/21/2017	2/6/2018	Completed	edison light out <unknown number> Manor Bldg 3222-B & 3223-A
B5525	8/2/2017	10/3/2018	Completed	"Is located between 5525 and 5527 Via La Mesa"
B5296	8/29/2017	2/16/2018	Completed	light on the street near gate 11 is out
CH5 Facility	9/11/2017	1/3/2018	Completed	East side Edison lightpole #405503E bulb out, adjacent Monte Hermoso and south of stairwell, tagged
B3265	9/26/2017	1/8/2018	Completed	Mutual Street Light Out - Alert Edison - SCE # 1961895E
CuiDeSac 344	10/24/2017	3/13/2018	Completed	street light in center of CDS is out <unknown #>
B3154	11/6/2017	2/23/2018	Completed	light post is turning off and on Post#: 1961840E
B3468	11/6/2017	2/13/2018	Completed	Concrete post light out by mnr# A driveway <#2044552E>
B4006	11/7/2017	2/13/2018	Completed	Light pole looks damaged has wires hanging ID 2118725E
B3270	11/7/2017	2/13/2018	Completed	Edison lighting pole # 1961891E by building 3270 turns off & on / YT tagged.
B3171	11/15/2017	2/13/2018	Completed	1961804E is out outside manor street side
B3135	11/15/2017	3/13/2018	Completed	Edison Light # 1961550E1 is out
CH1 Facility	11/19/2017	4/25/2018	Completed	Bus stop - Street light does not turn on- no number assigned to the light pole/ marked with tape
B3270	11/28/2017	2/13/2018	Completed	Street light blinking // northside // 1961892E
B3281	11/28/2017	1/18/2018	Completed	Street light blinking // northside // 2008654E
B3191	11/28/2017	1/15/2018	Completed	Light #1974302E out by B3191
B5232	11/28/2017	1/18/2018	Completed	Edison light out; #2030730E, marked with caution tape
B3501	12/4/2017	1/18/2018	Completed	**light not working/flickering on and off/ never on for extended time <# 4679659E> **
B5179	12/5/2017	1/18/2018	Completed	Edison lighting pole # 2050651E turns off & on / YT tagged.
B3162	12/5/2017	1/15/2018	Completed	SCE Light Out - # 873664E
B3280	12/7/2017	1/18/2018	Completed	SCE Light Flickering- Pole # 2008654E
B3415	12/11/2017	1/18/2018	Completed	light not working #2030024-E on CDS 336
B5358	12/13/2017	1/29/2018	Completed	street light is out #2030024E
B3020	12/19/2017	1/15/2018	Completed	Edison Light out - # 1873943E
B3154	12/23/2017	1/15/2018	Completed	Light # 1961840E in front of manor 3154-B burned out
B5480	12/27/2017	1/18/2018	Completed	city light #2118534E goes out intermittently, area gets pitch black
B5531	12/30/2017	2/26/2018	Completed	SCE Pole # 2184888E. Light Out. Located in front of B-5531, Via La Mesa. Tagged w/ Yellow Tape.
Monte Hermos	12/30/2017	2/26/2018	Completed	SCE Light Pole # 4229322E. Light Out. Located at corner of CDS 334 and Monte Hermoso. Tagged w/ Y
B3156	12/30/2017	2/26/2018	Completed	SCE Light Pole # . Light Out. Located west of B-3156, at intersection of Ave. Pico and Alt
B3501	1/1/2018	3/16/2018	Completed	Edison lightpole #2070024E light on, during daylight hours, possible timer or sensor issue.
B3070	1/2/2018	3/22/2018	Completed	Light Pole, Light OUT. Concrete pole, NO SCE number on pole. Tagged. Located south of B-3070.
B3340	1/3/2018	1/18/2018	Completed	street light at CDS340 is out
B3020	1/3/2018	1/15/2018	Completed	street light in front of bldg 3020 reported by resident walking
Gate-12	1/8/2018	1/8/2018	Pending	Edison lamp post out last four digits are # 938-k. Right behind gatehouse.
B3301	1/8/2018	1/29/2018	Completed	Edison lighting # 4468424E turning on-off every 1-2 minute / YT tagged.
B3111	1/8/2018	8/29/2018	Completed	Edison lighting # 1961519E out / YT tagged.
B3123	1/8/2018	1/29/2018	Completed	Edison lighting # 1961870E out / YT tagged.
B3154	1/8/2018	1/29/2018	Completed	Edison lighting # 1961843E out / YT tagged
B5497	1/8/2018	8/29/2018	Completed	Edison lighting # 2118593E out / YT tagged.
B5490	1/8/2018	1/29/2018	Completed	Edison lightpole #2118528E light on, daylight hours, adjacent Paseo Del Lago West, possible timer or
B5380	1/8/2018	1/29/2018	Completed	Edison lightpole #2258601E light on, daylight hours, southeast of building, adjacent Paseo Del Lago
B5381	1/8/2018	1/29/2018	Completed	Edison lightpole #2030043E light on, daylight hours, east of building, adjacent Paseo Del Lago West,
B5509	1/8/2018	7/29/2018	Completed	Edison lightpole #2030044E light on, daylight hours, west of unit C, adjacent Paseo Del Lago West, p
B5378	1/8/2018	1/25/2018	Completed	Edison lightpole #2044070E light on, daylight hours, west of building, adjacent Avenida Sosiega, pos

Avenida Sosieg.	1/17/2018	2/26/2018	Completed	SCE Pole #2195151E. Light Out. Located at intersection of Portora and Sosiega West. Tagged.
B5206	1/23/2018	2/26/2018	Completed	edison light not working properly #e1270502 in front of unit
B3366	1/25/2018	2/26/2018	Completed	SCE Light # 2043927 E
B489	1/25/2018	2/26/2018	Completed	Edison Light Out - Unknown # - end of CDS 14
B5529	1/30/2018	2/26/2018	Completed	street light in front of building is out
B5348	1/31/2018	2/26/2018	Completed	Light # 2008541E - Missing Label < Tagged with Caution Tape >
B3437	2/1/2018	2/26/2018	Completed	Blinking light Edison pole - # 2043909E
B3491	2/1/2018	3/13/2018	Completed	Concrete light pole - Edison- #4468416E Light flickering
B3252	2/2/2018	2/26/2018	Completed	SCE Light 1953834E
B3092	2/5/2018	3/5/2018	Completed	SCE Light Out - # 1961272E
B3429	2/7/2018	2/26/2018	Completed	Edison Lighting Pole # 2043903E turns off & on every 1-2 minutes / YT tagged.
B5331	2/13/2018	2/26/2018	Completed	FRONT OF MANOR EDISON LIGHT OUT #2030748E
B2389	2/13/2018	2/26/2018	Completed	SCE Light # 1879900E is out
B5128	2/15/2018	2/26/2018	Completed	Light out at end of street <tripping hazard> unknown pole #
B5557	2/26/2018	9/16/2018	Completed	Edison light pole # 2070014E turns off / on continuous on Bahia Blanca West near building 5557 / YT
B3071	3/1/2018	3/16/2018	Completed	SCE Light # 1961379E
B5596	3/8/2018	3/16/2018	Completed	Unknown pole #. Does not turn on most of time
B5114	3/13/2018	3/22/2018	Completed	Edison lightpole #2030687E light on, daylight hours, possible timer or sensor issue.
B5261	3/13/2018	3/22/2018	Completed	Edison lightpole #2030680E light on, daylight hours, possible timer or sensor issue.
B5138	3/13/2018	3/22/2018	Completed	Edison lightpole #2030683E light on, daylight hours, possible timer or sensor issue.
B5130	3/13/2018	3/22/2018	Completed	Edison lightpole #2030685E light on, daylight hours, possible timer or sensor issue.
B5179	3/13/2018	3/22/2018	Completed	Edison lightpole #2030651E light on, daylight hours, possible timer or sensor issue.
B5180	3/13/2018	3/22/2018	Completed	Edison lightpole #2030712E light on, daylight hours, possible timer or sensor issue.
B5167	3/13/2018	3/22/2018	Completed	Edison lightpole #2030677E light on, daylight hours, possible timer or sensor issue.
B5170	3/13/2018	3/22/2018	Completed	Edison lightpole #2030676E light on, daylight hours, possible timer or sensor issue.
B5200	3/13/2018	3/22/2018	Completed	Edison lightpole #2030717E light on, daylight hours, possible timer or sensor issue.
B5296	3/13/2018	3/22/2018	Completed	Edison lightpole #2030724E light on, daylight hours, possible timer or sensor issue.
B5297	3/13/2018	3/22/2018	Completed	Edison lightpole #2030681E, between buildings 5297 & 5298, light on, daylight hours, possible timer
B3115	3/13/2018	3/22/2018	Completed	SCE Light # 1961505E is out
B3133	3/14/2018	3/22/2018	Completed	SCE Light Out - Edison # 1961545E
B5165	3/20/2018	3/22/2018	Completed	Edison lightpole #2030878E light on, daylight hours, possible timer or sensor issue.
B3117	3/20/2018	3/21/2018	Completed	SCE Lightpole # 1961508E is out
B2405	3/22/2018	4/20/2018	Completed	Edison light (#1879802E) near building burning out, marked w/ YT
B2398	3/23/2018	4/20/2018	Completed	Edison light flickers, pole #1879781E, by 2398 Via Mariposa West CDS 221
B2397	3/23/2018	4/23/2018	Completed	Edison light out, pole #1379770E, by 2397 Via Mariposa West. Tagged with yellow tape. CDS 219
B2384	3/23/2018	4/23/2018	Completed	Edison light out, pole #1879736E, by 2348 Via Mariposa West. Tagged with yellow tape. CDS 203
B5190	3/23/2018	4/4/2018	Completed	concrete pole light near blng flickering
B3071	3/26/2018	4/4/2018	Completed	Post light on side of B3071 near laundry room - not working
B3354	3/26/2018	4/6/2018	Completed	Edison street light out # 4229322E at the intersection of Monte Hermoso & CDS 334 / YT tagged.
B3117	3/28/2018	4/4/2018	Completed	Edison Light # 1961511E is out
B2397	3/29/2018	4/5/2018	Completed	SCE Light # 1870770 is out
B3070	3/30/2018	4/5/2018	Completed	Contact Edison - Path Light # 1981379E between B3071 & B3074 is Out
B2397	3/30/2018	4/5/2018	Completed	Contact Edison - Path Lights Out: 1879779E, 1879784E & 1879781E
B2218	4/2/2018	4/5/2018	Completed	Concrete pole nrt to the gate <Mnr A> flickering - mem also requesting to get it replaced <old/dirty
B3384	4/3/2018	4/23/2018	Completed	street edison pole light # 2043935E near 3384-A is out
B3242	4/3/2018	4/5/2018	Completed	Edison Light # 1873691E is out in front of Bldg 3242

Monte Hermos	4/4/2018	4/23/2018	Completed	SCE light 2070028E out on Bahia Blanca West & Monte Hermoso
Bahia Blanca Ee	4/7/2018	4/20/2018	Completed	**Edison light out tagged with tape <possibly purple & unknown #> on corner of avenida sosiega & mont
B3123	4/11/2018	4/20/2018	Completed	Edison Light 1961870E out by building 3123 / YT tagged
B3277	4/12/2018	4/23/2018	Completed	Contact Edison - Path Light # 1974544E is out
B3510	4/15/2018	4/23/2018	Completed	Edison lightpole #2070043E light on, daylight hours, possible timer or sensor issue.
B3338	4/23/2018	5/22/2018	Completed	Southwest of building, adjacent cul de sac roadway, Edison lightpole # 2044082E light on, daylight h
B5497	4/25/2018		Pending	Light not working <pole # 21185935>
B3003	4/25/2018	5/2/2018	Completed	Street light is out between 3004-D & 3003-D <no pole #>
B5497	4/25/2018	9/4/2018	Completed	Light not working <pole # 21185935>
B3407	4/26/2018	5/2/2018	Completed	Edison pole light flickering on/off - #1961011E in front of manor 3407 at the sidewalk.
B3168	4/26/2018	7/12/2018	Completed	The post light is blinking east of 3168 Via Vista Unit D. CDS 303
B5509	4/26/2018	6/14/2018	Completed	Edison light pole #2118824E, light on during daylight hours, possible timer or sensor issue.
B2218	4/26/2018	6/15/2018	Completed	Concrete light post next to Mnr A still flickering - light housing old/dirty req replacement
B3152	4/30/2018	6/15/2018	Completed	Edison Light # 1961839E (light pole IFO MNR (B) is out
B5282	4/30/2018	6/25/2018	Completed	street light is out btwn manor 5283 and 5284
B2404	5/4/2018	6/25/2018	Completed	Edison Lights 1879789E & 189790 E are both out < on grass area by Bldg 2404 >
B3162	5/7/2018	7/9/2018	Completed	LIGHT ON PASEO DE LAGO #2118594 is out
B5337	5/8/2018	6/25/2018	Completed	2008533E / light tagged with caution tape.
B3499	5/11/2018	5/14/2018	Completed	El Toro hi conduit blew out lights 2070028E
B3499	5/11/2018	5/14/2018	Completed	CONDUIT WIRING DAMAGED BY ETW 2070029E
B3499	5/11/2018	5/14/2018	Completed	CONDUIT WIRING DAMAGED BY ETW 2072030E
B3071	5/16/2018	5/22/2018	Completed	#1961382E not working, has a tag on it
Pina	5/21/2018	6/25/2018	Completed	Near B5284 - Edison light out - #2030728E.... Marked with yellow tape.
B592	5/25/2018	7/5/2018	Completed	**lampost on walkway by creek behind bldgs 592 & 591 knocked down <unknown #> **
B5323	5/28/2018	6/25/2018	Completed	Edison light pole #2008563E is blinking.
B5541	5/30/2018	6/22/2018	Completed	street light in front of manor not working at all <unknown #>
B3061	6/4/2018	6/25/2018	Completed	solar light #1961369-E btw bldg 3061 & 3062
B5327	6/5/2018	6/25/2018	Completed	street light on Bahia Blanca in front of bldg 5327 & 5328 is always on
B2384	6/10/2018	6/22/2018	Completed	Flickering Edison Lighting pole 1879761E south of building 2384 / YT tagged.
B2391	6/10/2018	6/25/2018	Completed	Flickering Edison Lighting Pole 1879777E east of building 2391 / YT tagged.
B2395	6/10/2018	6/22/2018	Completed	Flickering Edison Lighting Pole 1879740E west of building 2395 / YT tagged.
B5328	6/10/2018	6/25/2018	Completed	Edison pole light #2088561E, light on during daylight hours, tagged with yellow caution tape.
B3138	6/12/2018	6/22/2018	Completed	entrance to the cul de sac
B3071	6/21/2018	9/19/2018	Completed	**1961382E - light has never been fixed per resident - reopened with SCE**
B3415	6/21/2018	6/27/2018	Completed	<2043929E>Edison light post comes on and off in front of manr N
B5518	6/24/2018		Pending	Edison light pole is out-Pole# 4252363E between B s 5518 and 5519
B308	6/25/2018		Pending	Behind Gate 1
B5148	6/25/2018	7/9/2018	Completed	Edison lightpole #203088E, light on during daylight hours, possible timer issue.
B3244	6/27/2018	7/3/2018	Completed	2 concrete lights in front of mnr out 1953854E 1953855E
B5499	6/28/2018		Pending	Edison lighting 2070030E out by B5499 / YT tagged.
B3532	6/28/2018	7/9/2018	Completed	Edison Lighting 2070016E outside B3532 is flickering / YT tagged.
B3306	7/2/2018	8/9/2018	Completed	Edison light in front of building // 2008731E
B3190	7/2/2018	7/12/2018	Completed	SCE Light Pole 1974321E outside of MNR (C) flickering
B5529	7/3/2018	7/9/2018	Completed	street light in front of Mnr O out <unknown pole number>
B5535	7/5/2018	8/9/2018	Completed	Edison light out in front of manor #4229333-E
B3056	7/9/2018	8/9/2018	Completed	SCE Light # 1961359E and/ or # 1951359E in front of MNR (D) is out

B3003	7/17/2018	8/9/2018	Completed	Contact SCE - Two (2) Path Lights Out - # 1873952E & 1873954E
B4008	7/21/2018		Pending	Edison pole #2118315E leaning due to moving van hitting it/in fron of B4008
B3132	7/24/2018	8/9/2018	Completed	Edison Light # 1961545E between B3131 & B3132 needs repair
B3224	7/29/2018	8/9/2018	Completed	SCE Street Light Out: #19746345E, Near 3224-A At NE Corner of Carrizo and CDS 24. Tagged w/ Yellow
B3134	7/31/2018	8/9/2018	Completed	Edison Light # 1961550E is out
B5518	8/2/2018		Pending	**leaning at 30 or so degrees on the walkway to the front entrance**
B5357	8/2/2018	8/9/2018	Completed	light bulb flickering in front of building/ edison pole 2008546E
B3301	8/3/2018		Pending	Edison Light # 1961045E at Carport 3047 near Bldg 3301 is out
B3384	8/6/2018	8/15/2018	Completed	in front of manor A SCE pole 2043935E light out
B5519	8/7/2018		Pending	Two unknown pole # s not turning on in front of B5519
B5212	8/8/2018	8/22/2018	Completed	light out/ light# 2030718E/ marked with caution tape.
B3383	8/8/2018	8/15/2018	Completed	B3383 Punta Alta – Edison light – 2042935E
B3401	8/8/2018	8/15/2018	Completed	B3401 Punta Alta – Edison light – 2008606E
B5185	8/8/2018	8/15/2018	Completed	5185 Duenas – Edison light – 2030715E
B5108	8/8/2018	8/15/2018	Completed	@ 5108 Duenas – Edison light – 2030712E
B3031	8/17/2018	8/22/2018	Completed	Light turns on & off between 3031-B & 3029-A - has yellow tape on it <unknown street number>
B3175	8/21/2018		Pending	SCE Light Pole 1961602E Light out. Located N of B-3175, CDS 303. Tagged.
B3173	8/21/2018	9/5/2018	Completed	SCE Light Pole 1961805E Light out. Located SW of B-3173, CDS 303. Tagged.
B3044	8/24/2018	9/4/2018	Completed	Edison Lamp Out - Fixture # 1961364E < Left Side of Walkway by Manor (A)
B3156	8/27/2018		Pending	Light pole was knocked down near B3156. Pole # 1961821E
B5282	8/31/2018		Pending	street light is out btwn manor 5283 and 5284 since April
B5283	9/6/2018		Pending	Edison lighting pole # 2030728E out by building 5283.
B3112	9/10/2018	9/11/2018	Completed	SCE Pole #1961864E Light Out. Located just north of Entrance to CDS 310. No. of B-3112. Tagged
B3131	9/12/2018	9/14/2018	Completed	**Edison has a leaning light pole #E5451691 located at 3131-B**
B3194	9/17/2018	9/19/2018	Completed	Light between unit B & C flickering <Unknown pole #>
B3071	9/19/2018		Pending	SCE Light # 1961379E light out on the east side of building
Gate-07	10/18/2018		Pending	Light pole #187368E is out- Marked with tape.
B3155	10/19/2018		Pending	SCE Light Fixture Repair - # 1961841E
B3249	10/25/2018		Pending	NO # found, on patch of grass between B3249 and B3250, caution tape has already been placed
B3064	10/26/2018		Pending	SCE Light Post # 19613750E inside of garden area leaning heavily



STAFF REPORT

DATE: November 7, 2018
FOR: Village Energy Task Force
SUBJECT: TEC Energy Work Plan Update

RECOMMENDATION

Authorize The Energy Coalition (TEC) to begin their work effort towards the specific priorities established by each of the Corporations.

BACKGROUND

At the August 1, 2018 Village Energy Task Force meeting, staff summarized the work priorities provided by the three corporations for the energy consultant. A motion was made, and unanimously approved to develop a scope of work for the chosen energy priorities as listed below, in order for the consultant to develop and execute said priorities.

United Mutual:

1. Review the current United Mutual electric infrastructure with an eye toward the current, 5 and 10 year load capacity needs for electric panels, transformers etc.
2. Perform an analysis and report on the findings of the electric infrastructure review.
3. Prepare a strategic action plan for recommended electric infrastructure upgrades, as well as EV charging, solar and any other recommended upgrades that will make our systems more efficient and thus reduce our operating costs.

Third Mutual:

1. Review the current Third Mutual electric infrastructure with an eye toward the current, 5 and 10 year load capacity needs for electric panels, transformers etc.
2. Perform an analysis and report on the findings of the electric infrastructure review.
3. Prepare a strategic action plan for electric infrastructure upgrades, particularly in the multi-story building garages and carports, as well EV charging, solar and other efficiencies.

Golden Rain Foundation:

1. Research the feasibility for alternative energy & micro grids for electrical energy generation.
2. Develop a Community Strategy for EV Charging Stations.

DISCUSSION

On August 7th staff met with TEC to discuss the Third, United and GRF's priorities, expectations, and the preparation of a work plan to serve their needs. TEC have since provided two strategies (Attachment 1 – Scope of Work for GRF) & (Attachment 2 – Scope of Work for United & Third Mutuals).

United & Third Mutuals:

The TEC team immediately commenced on data collection and worked with staff to compile various sets of data. This step is important as understanding the community's energy consumption and existing infrastructure will allow for the team to determine the scope of electrical infrastructure upgrades needed in the next 5-10 years. Staff is working diligently with Southern California Edison (SCE) and Southern California Gas (SCG) to collect all possible crucial information but there are numerous regulations and privacy laws which delayed the release of over 800 accounts. Additionally Edison has denied our request for specifics on grid and supply side electrical infrastructure which may cause additional delays. TEC has been studying facility information, electric plans and developing an understanding of the electric meter configurations and ownership. On a daily basis staff and TEC are sharing ideas, strategies, and data to help complete the attached scope of services.

Golden Rain Foundation:

GRF selected a slightly different set of priorities which set a stronger focus on alternative energy. While the TEC team is completing nearly identical preliminary tasks as United and Third Mutual, they will also be researching the feasibility for energy generation. Along with the TEC's extensive knowledge, staff has performed preliminary exploration on dozens of possibilities. Staff has noted an immense amount of correspondence between Task Force members and the executive team regarding the adaptation of a micro grid solution and has concentrated their effort in this area. Research has shown that there is a positive trend in the evolution of micro grid technology as an energy solution.

Electric Vehicle Charging

All three Corporations have expressed interest in developing the community's EV charging capabilities. Staff has been analyzing the past and present vehicle decal registrations to develop future demand models while TEC has been attempting to obtain SCE's transformer infrastructure. The combination of the data will generate a picture of community's need versus possibilities to better select potential pilot sites.

A substantial amount of research has already been conducted in regards to obtaining grant or rebate funds. While staff and the TEC team will continue to explore this option it should be understood that these subsidies are typically earmarked for the public good which is challenging to show for at a private and gated community. In GRF there are a few exceptions that do qualify for public funds and staff has recently had an application for the Southern California Incentive Project approved. Staff is evaluating options for utilizing the rebate and will provide the Task Force with a list of options soon.

Notable Comments Pertaining to all Corporations:

- a) The current strategy does not include pricing or estimated timeline beyond Phase 1 as the community Master Plan will need to be developed first.
- b) The strategy is subject to change based on direction from the Task Force.
- c) Staff will be providing subsequent updates as the project progresses.

FINANCIAL ANALYSIS

The estimated cost for the GRF work plan is \$58,000 for Task 1 and \$24,000 for Phase 1 of Task 2. The costs of subsequent phases will be determined based on the findings of Phase 1 & the Master Plan. In order to move forward with this work plan a supplemental appropriation will be required.

The estimated cost for the United & Third work plan is \$77,000 for Task 1. This amount can be equally split between both Mutual's and no additional funding will be required at this time.

Prepared By: Christopher Naylor, Senior Management Analyst

Reviewed By: Ernesto Munoz, P.E., Maintenance and Construction Director

ATTACHMENT(S)

Attachment 1 – Scope of Work for GRF

Attachment 2 – Scope of Work for United & Third Mutual

10/18/2018

Ernesto Munoz
VMS
24351 El Toro Road
Laguna Woods, CA 92636

Subject: Proposed Scope of Work for Golden Rain Foundation

Dear Ernesto,

The Energy Coalition (TEC), with support from TRC, would like to provide Golden Rain Foundation (GRF) the below Scope of Work for approval prior to moving forward on implementation and to ensure we are all aligned with expectations on scope and budget should we be approved to proceed. We have summarized our plans to address the priorities identified by the Mutuals in the two (2) tasks below. We have also included any key assumptions made to arrive to these budget estimates.

This task order will evaluate the condition of the existing electrical infrastructure in order to determine what scenarios may be feasible in developing a community-wide strategy for electric charging stations as well as microgrids and alternative energy systems for electrical energy generation. Within this task order, the team will investigate the feasibility of alternative energy systems to help the community achieve their sustainability goals.

Task 1. Community-wide Electric Vehicle Implementation Strategy

Budget: \$58,000 (approximately 420 hours)

Timing: Q4 2018 - Q1 2019

This task will encompass the following subtasks:

Subtask 1.1 Perform assessment of community's electrical infrastructure

The Team's approach will be to perform a baseline assessment, including a holistic review of the community's electrical systems and infrastructure for the current state. The scope of this task will include systems that are relevant to developing both a community-wide electric vehicle charging station strategy and integration of microgrids and alternative energy systems for electrical energy generation.

This subtask will include, but is not limited to the following:

- Establish existing energy demand and infrastructure baseline.
 - Review SCE utility data including: electrical loads on feeders and lateral lines, existing single line diagram to determine existing power service capacity and configuration.
 - Review existing facility information.
 - Develop understanding of ownership for grid and supply side electrical infrastructure
 - Conduct field visits of the community to fill in gaps in facility and infrastructure data
 - Review of previous energy studies and completed projects
- Interview staff to confirm understanding of previous, current, and planned infrastructure upgrades.
 - Collect information on Pushmatic Panel Replacement project & schedule.
- Assess power-critical assets, load sizes and profiles, the location to supply and storage infrastructure necessary to support a microgrid. This may include conducting load studies to confirm that adequate capacity exists in the existing service and distribution switchgear. The load study may involve metering up to two points for power, amps and volts over at least a week long period.

Assumptions

- Utility data will be provided in Excel format
- Utility infrastructure will be provided in Facility Maps
- Assumes that current load information will not be available from the utility and as a result, in-field load studies will be performed.

Deliverable

- Develop report with findings from infrastructure assessment.

Subtask 1.2 Develop a Community-wide strategy for EV Charger Station Installation

The team will develop an EV charging station roadmap that will analyze EV charging options, locations and financial models to develop a plan for implementation. The resulting strategy will serve as a vision for the community with quantitative goals and a practical guide for how to achieve these goals.

This task will include, but is not limited to the following:

- Develop understanding of the community's adoption of electric vehicles
 - Collect data on growth of EV & golf cart use in community
 - Collect and review previous EV studies completed for community
 - Identify locations of existing EV charging infrastructure

- Understand current usage
 - Analyze growth curves and make projections for increases in EV use community wide
 - Collect feedback from boards on preferred charging types
 - Survey stakeholders to gain insight into interest in purchasing EVs, understand driving patterns
- Understand existing rules in the covenants, conditions and restrictions (“CC&Rs”) that would affect the installation of charging stations in common areas and private areas
- Provide high level information on available chargers in the market
- Compare and contrast charging infrastructure implementation options including financial implications to HOAs and residents
- Identify local, state and federally-funded charger deployment projects
- Assess grant, rebate, and financing opportunities
- Optimal EV charging station locations will be identified based on the following:
 - Availability of power - review location of existing electrical service with respect to the proposed location of the EV chargers and assess extent of work related to new electrical conduits, panels and transformer for feeding new loads. The total available capacity on circuits for additional EV will be evaluated to identify maximum number of chargers. Energy efficiency improvements for other power consumptions may be identified to free up service capacity in constrained situations.
 - Constructability - minimize disturbance to existing infrastructure (i.e., cutting, trenching, and drilling required for new conduit).
 - Mounting - wall vs. dual mount
 - Environmental conditions - minimize exposure of charging equipment to the elements, if possible.
 - Confirm community rules and regulations for siting EV charging stations to integrate into any recommendations

Assumptions

- No additional community solar installations
- No scenarios of significant additional residential solar installations
- Growth curves of EV adoption based on community-wide EV data and market studies to inform a strategy for optimal installation of EV charging stations
- Identification of recommended electric infrastructure upgrades is not included. The strategy will be based on the additional load for the EV chargers that the existing infrastructure can accommodate.
- Assumes that a portion of site work and interfacing with stakeholders will be done in parallel between the Mutuals and GRF scope.

Deliverable

- Roadmap for Electrical Infrastructure Upgrades & EV Charger Installation

Task 2. Investigate the feasibility of a microgrid and alternative energy systems for electrical energy generation.**Budget:**

- Phase 1: \$24,000 (approximately 172 hours)
- Phase 2: TBD
- Phase 3: TBD

Timing:

- Phase 1: Q4 2018 - Q1 2019
- Phase 2: TBD
- Phase 3: TBD

Prior to integrating a microgrid, a number of factors should be considered to ensure the right system and approach are used to meet the application requirements. One of the first steps of the task will be to identify the main objective driving the decision to implement a microgrid. Factors such as size (community-wide microgrid vs. facility-level) and the grid interface (islandable or grid-connected) should be considered in the objectives. With objectives clearly laid out, the team will complete a Microgrid Feasibility Analysis in three key phases as identified below.

In this task, the team will investigate the feasibility of alternative energy systems to help the community achieve their sustainability goals. This task will leverage any work completed through Task 1 in the identification of suitable locations for alternative energy systems. Further, the team will assess any benefits of co-locating EV charging stations outlined in Task 1 with alternative energy systems.

Phase 1: Scoping Review. During this phase, the team will determine whether or not the microgrid is right for a Laguna Woods Village community centers. The following tasks will be performed to determine this:

- Interface with key stakeholders at Laguna Woods Village to identify expectations of the system.
- Determine size based on objectives (community-wide vs. facility-level)
- Determine grid interface based on objectives (grid-connected or islandable)
- Review site data (previous energy efficiency work, utility data, identify critical loads, findings from Task 1 existing electrical infrastructure assessment, etc.)
- Review and consider existing or potential renewable energy assets for incorporation into a microgrid design.

Based on the outcome of this pre-review, the team will develop a scoping report and make recommendations to GRF whether or not it makes sense to proceed into the subsequent phases of the microgrid feasibility analysis. *If it is recommended to pursue the microgrid further, the scope of work for Phases 2 and 3, as identified below, will be refined and a budget will be provided at that time.*

Phase 2: Technical Feasibility Review. In Phase 2, we will develop and analyze operating scenarios to address short term and long term microgrid system configurations including:

- Assess critical loads required for providing all minimum and desired capabilities to satisfy the needs of the system identified.
- Critical load uptime and black start capabilities
- Extended outage capabilities
- Harmonics and power quality issues and transient response and system restoration
- Microgrid conceptual design - preliminary sizing and siting of Distributed Energy Resources (DERs) and energy storage. DERs will be evaluated for inclusion including solar, energy storage, combined heat and power, and fuel-cells.
- Operation of the advanced microgrid under normal and emergency conditions and the loads served by the microgrid (i.e., Peak kW, Average kW, annual/monthly/weekly kWh (consumed and recovered)).
- Preliminary electrical single lines and control system architecture

Phase 3: Development of Feasibility Study. This study will outline short term reliability improvement recommendations along with future long term conceptual design criteria. The feasibility study may include the following elements:

- A cost benefit analysis of various DERs and energy storage options including optimal sizing for minimized levelized cost of electricity.
- Specific financial and economic analyses including: peak shaving, load shifting/shedding, demand charge management, net metering, ancillary services, frequency regulation, demand response program participation, overall return on investment.

Assumptions

- TBD after Phase 1 Scoping Review

Deliverables

- Microgrid Scoping Study & Presentation
- Microgrid Feasibility Analysis



TEC and TRC have already initiated the data collection and review process. Should the work plan be approved, we will move forward on Tasks 1 and 2.

We look forward to your feedback and please let us know if you have any questions.

Thank you,

A handwritten signature in blue ink that reads 'Rebecca Hausheer'.

Rebecca Hausheer

10/18/2018

Ernesto Munoz
VMS
24351 El Toro Road
Laguna Woods, CA 92636

Subject: Proposed Scope of Work for United Mutual and Third Mutual

Dear Ernesto,

The Energy Coalition (TEC), with support from TRC, would like to provide United Mutual and Third Mutual the below Scope of Work for approval prior to moving forward on implementation and to ensure we are all aligned with expectations on scope and budget should we be approved to proceed. We have summarized our plans to address the priorities identified by the Mutuals below. We have also included any key assumptions made to arrive to these budget estimates.

Task 1. Community-wide Electric Vehicle Charging Station Implementation Strategy

Budget: \$77,000 (approximately 565 hours)

Timing: Q4 2018 - Q1 2019

This task order will evaluate the condition of the existing electrical infrastructure and identify potential upgrades that may be needed to serve current, 5 and 10-year load requirements. A community-wide strategy for recommended electrical infrastructure upgrades, as well as EV charging, and any other recommended upgrades will be developed. A community-wide strategy for EV charging will enhance the Community's energy profile and reduce its carbon footprint.

This task will encompass the following subtasks:

Subtask 1.1 Perform assessment of community's electrical infrastructure

The Team's approach will be to perform a baseline assessment, including a holistic review of the community's electrical systems and infrastructure for the current state. This subtask will include, but is not limited to the following:

- Establish existing energy demand and infrastructure baseline.
 - Review SCE utility data including: electrical loads on feeders and lateral lines, existing single line diagram to determine existing power service capacity and configuration.
 - Review existing facility information.

- Develop understanding of ownership for grid and supply side electrical infrastructure
- Conduct field visits of the community to fill in gaps in facility and infrastructure data
- Review of previous energy studies and completed projects
- Interview staff to confirm understanding of previous, current, and planned infrastructure upgrades
 - Collect information on Pushmatic Panel Replacement project & schedule
- Conduct load studies to confirm that adequate capacity exists in the existing service and distribution switchgear. The load study may involve metering up to two points for power, amps and volts over at least a week long period.

Assumptions

- Utility data will be provided in Excel format
- Utility infrastructure will be provided in Facility Maps
- Assumes that current load information will not be available from the utility and as a result, in-field load studies will be performed.
- Assumes that a portion of site work and interfacing with stakeholders will be done in parallel between the Mutuals and GRF scope.

Deliverable

- Develop report with findings from infrastructure assessment.

Subtask 1.2 Develop a Community-wide strategy for electrical infrastructure upgrades & EV Charger Station Installation

Based on the assessment of the community's electrical infrastructure, the team will develop a community wide strategy for potential upgrades needed to serve current, 5 and 10-year load requirements and the corresponding electrical infrastructure to meet those demands. Electrical facility upgrades to serve increased system loads from additional electric vehicle charging will be included within the plan. The plan will include both a technical solution and a financial assessment of the recommendations.

The team will develop an EV charging station roadmap that will analyze EV charging options, locations and financial models to develop a plan for implementation. The resulting strategy will serve as a vision for the community with quantitative goals and a practical guide for how to achieve these goals.

This task will include, but is not limited to the following:

- Develop understanding of the community's adoption of electric vehicles

- Collect data on growth of EV & golf cart use in community
- Collect and review previous EV studies completed for community
- Identify locations of existing EV charging infrastructure
 - Understand current usage
- Analyze growth curves and make projections for increases in EV use community wide
- Collect feedback from boards on preferred charging types
- Survey stakeholders to gain insight into interest in purchasing EVs, understand driving patterns
- Understand existing rules in the covenants, conditions and restrictions (“CC&Rs”) that would affect the installation of charging stations in common areas and private areas
- Provide high level information on available chargers in the market
- Compare and contrast charging infrastructure implementation options including financial implications to HOAs and residents
- Identify local, state and federally-funded charger deployment projects
- Assess grant, rebate, and financing opportunities
- Develop a 10 year energy load forecast including the additional of EV charging stations at the residential and community level.
- Optimal EV charging station locations will be identified based on the following:
 - Availability of power - review location of existing electrical service with respect to the proposed location of the EV chargers and assess extent of work related to new electrical conduits, panels and transformer for feeding new loads. The total available capacity on circuits for additional EV will be evaluated to identify maximum number of chargers. Energy efficiency improvements for other power consumptions may be identified to free up service capacity in constrained situations.
 - Constructability - minimize disturbance to existing infrastructure (i.e., cutting, trenching, and drilling required for new conduit).
 - Mounting - wall vs. dual mount
 - Environmental Conditions - minimize exposure of charging equipment to the elements, if possible.
 - Confirm community rules and regulations for siting EV charging stations to integrate into any recommendations
- Determine the estimated cost, sequencing and timelines of upgrades to inform capital improvement upgrades
- Present infrastructure assessment and proposed improvement schedule to stakeholders

Assumptions

- No additional community solar installations
- No scenarios of significant additional residential solar installations

- Growth curves of EV adoption based on community-wide EV data and market studies to inform a strategy for optimal installation of EV charging stations
- Assumes recommended medium and long term infrastructure upgrades are pursued to ensure electric infrastructure could accommodate additional load

Deliverable

- Roadmap for Electrical Infrastructure Upgrades & EV Charger Installation

TEC and TRC have already initiated the data collection and review process. Should the work plan be approved, we will move forward on subtasks 1 and 2.

We look forward to your feedback and please let us know if you have any questions.

Thank you,



Rebecca Hausheer



STAFF REPORT

DATE: November 7, 2018
FOR: Village Energy Task Force
SUBJECT: LED Fixture Pilot for Street Lights

RECOMMENDATION

Receive and file.

BACKGROUND

In Third Laguna Hills Mutual (the Mutual) there are a total of 788 street light fixtures on 768 street light poles currently owned and operated by Southern California Edison (SCE). The fixtures are high-pressure sodium (HPS). Third Mutual pays SCE to maintain and energize the fixtures.

In July, 2015, Third Mutual purchased an option to be placed in the Street Light Valuation Queue for the Southern California Edison (SCE) Street Light Acquisition Program. The option allowed the Mutual to purchase SCE's street light infrastructure which services the 788 street lights fixtures in Third Mutual. SCE conducted the street light valuation process and a report was presented to the Mutual on October 12, 2016.

At the November 7, 2016 M&C Committee meeting, staff was directed to begin negotiations with SCE to acquire all 788 street lights fixtures within the Mutual which are currently owned and operated by SCE. The Committee also directed staff to initiate the process to retain a consulting firm to facilitate the street light acquisition process with SCE; retrofit 788 luminaires from existing HPS to LED after the acquisition; and provide maintenance and operation services.

On September 19, 2017, the Board approved a Purchase and Sale Agreement in the amount of \$232,058 for the acquisition of the SCE street light infrastructure located within Third Mutual and a No-fee Light Pole License Agreement for Wireless Attachments. The California Public Utility Commission approved the sale on May 30, 2018.

On February 20, 2018, the Board awarded a contract to Siemens Industry (Siemens) in the amount of \$843,857. Siemens will facilitate the street light acquisition process with SCE, convert 788 HPS fixtures to LED fixtures, and provide 3-year of maintenance for the street lights.

SCE originally represented to staff that the audit of the existing streetlights that will be purchased and maintained by the Mutual would be scheduled to start in October 2018, but it has since been pushed back to November 2018. After the audit SCE will provide to the Mutual revised maps, an inventory list of all assets to be purchased, and a bill of sale. After SCE receives the payment they will change the electricity rate for the unmetered service to the

streetlights from SCE-owned to Customer-owned. The transfer process (inventory, invoice, payment, rate change) should take approximately eight months from when CPUC approved the sale of the SCE assets.

DISCUSSION

Part of Siemens scope is to assist the Mutual with the transfer of the street light assets (above-ground street light equipment, fixtures, poles, and underground conduits and wiring) from SCE. Before the transfer can be completed SCE will identify, audit, and invoice Third Mutual for the SCE assets. Siemens has maintained open communications with SCE to establish a schedule to survey and tag the transferred assets. Once the SCE invoice is paid by Third Mutual, the pilot program can be initiated by changing the HPS fixtures to LED fixtures.

There are approximately 65 cobra head style and 723 mushroom head style HPS fixtures in Third Mutual, usually located around the gate houses. Cobra head fixtures are affixed on mast arms. Some of the poles have dual mast-arms to handle two cobra head fixtures. Top-mounted mushroom head fixtures are located in residential streets away from gate houses. Siemens has provided the attached analysis of the proposed fixtures to execute the conversion of the HPS fixtures to LED (Attachment 1).

There are two products that convert the Cobra head fixtures from HPS to LED, the GE Cobra Head and Acuity Cobra Head. The GE Cobra Head has higher performance levels than the Acuity; however the Acuity (\$260/fixture) has a lower cost per fixture than GE (\$349/fixture).

There are three products available to convert the existing 723 mushroom head fixtures from HPS to LED.

1. Full replacement. The King Luminaire product is a full replacement of the top fixture with LED elements (luminaire and ballast)
2. Retrofit. The Simply LED product reuses the existing fixture exterior housing and replaces the HPS elements with LED elements
3. Plug and Play. Truly Green Solutions LED elements fit into the existing socket in the existing fixture. Bypasses the ballasts used for the HPS lamps. Siemens is recommending against this option due to their poor optical performance, lack of optical control, and the high potential for maintenance issues.

Based on their analysis, Siemens is recommending three options to convert 723 HPS Mushroom fixtures to LED fixtures.

Option 1 – Full replacement using a new King Luminaire mushroom head LED fixture.

Option 2 - Use Simply LED retrofit kits and keep the existing mushroom head fixture.

Option 3 - Change the mushroom head fixture to cobra head using a mast arm and the GE Cobra Head product. This option would require a structural analysis to determine whether the pole and its foundation can handle the additional load from the new configuration.

As part of the contract, Siemens will conduct a pilot program where up to ten fixtures are temporarily installed to determine which LED product will be used to replace the existing HPS

fixtures. Siemens is recommending that the three options (full replacement; retrofit; and cobra head) be included in the pilot program by installing them all on a long straight street with consistent pole spacing such as Avenida Sosienga or Via Carrizo. A suggested installation would be to install three King Luminaire fixtures; skip two existing HPS fixtures; install three Simply LED fixtures; skip two existing HPS fixtures; and install three GE Evolve cobra head fixtures. The sequences will allow the Board and residents to easily see and compare the various LED options. Once a product is selected, staff will direct Siemens to begin the product procurement.

Recommendations:

1. Use GE Cobra Head over Acuity Cobra Head because of better light performance and light distribution
2. Do not consider the plug and play option (Truly Green) because poor optical performance, lack of optical control, and high potential for maintenance issues.
3. The 65 existing cobra head fixtures should be replaced with an LED cobra head fixture (GE Evolve) for better coverage, and safety around gate houses
4. Pilot Program - On either Avenida or Via Carrizo install LED fixtures in the following sequence:
 - a) Replace three existing fixtures with King Luminaire fixtures (Option 1).
 - b) Skip two existing HPS mushroom head fixtures.
 - c) Retrofit three existing fixtures with Simply LED (Option 2).
 - d) Skip two existing HPS mushroom head fixtures.
 - e) Remove three existing mushroom heads and replace with (GE) cobra head fixtures (Option 3).

While the pilot program cannot be initiated until the asset transfer occurs, staff wanted to provide this analysis to the Village Energy Task Force representatives to gain consensus on the proposed options, and the strategy to move forward with the selection process. The intent is to be ready to deploy the pilot program shortly after the asset transfer takes place to accomplish the Third Board's direction in a timely manner.

Financial Analysis:

Funding for the street light acquisition and associated costs in the amount of \$249,634 will be funded from the 2018 Reserves Fund appropriated for Exterior Lighting in the amount of \$500,000. The Board appropriated adequate funding for the 2019 Fiscal Year in Exterior Lighting to implement any of the outlined LED upgrade options in this report.

Prepared By: Angel Fuertes, P.E., Project Manager

Reviewed By: Guy West, Projects Division Manager
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ATTACHMENT(S):

Attachment 1 – Siemens Preliminary Fixture Analysis



PRELIMINARY FIXTURE ANALYSIS

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Analysis Summary

Siemens performed an initial review of the roadway streetlight system to be purchased by Third Laguna Hills Mutual utilizing the data provided by agency Staff. By looking at the system configuration and developing typical roadway geometries, a photometric analysis was performed. In addition, energy consumption and cost savings analysis were also performed.

Table 1 – Quantitative Results Summary

Option	Description	HPS Wattage	Quantity	Unit Cost	Total Installation Cost	Annual Savings
King Luminaire	Replace existing with new King Mushroom Top	70	723	\$ 986.00	\$776,968	\$71,083
		150	65	\$ 986.00		
Simply LED	Retrofit Mushroom Tops with kit from Simply LED	70	723	\$ 306.00	\$245,418	\$71,083
		150	65	\$ 372.00		
GE Cobra	Replace Mushroom Tops with GE Cobra head - add mast arm	70	723	\$ 941.25	\$746,645	\$76,302
		150	65	\$ 1,017.25		
Acuity Cobra	Replace Mushroom Tops with Acuity Cobra head - add mast arm	70	723	\$ 852.25	\$676,903	\$76,190
		150	65	\$ 934.25		
Truly Green Solution	Replace lamps with TGS LED lamp	70	723	\$ 174.00	\$139,777	\$72,869
		150	65	\$ 215.00		

Siemens staff then created the table below which ranks the options in order of highest performing to lowest performing and highlights the results with a list of pro's and con's for the agency to consider. The end result of this analysis is to provide the agency with information to recommend fixtures to be installed in a pilot, which will then lead the agency to a final material selection. Siemens recommends that the agency select two or three of the following options for consideration.

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Table 2 – Qualitative Results Summary

Rank	Option	Pro's	Con's
1	GE Cobrahead	• Great light performance • Better distribution of light • Increased driver/pedestrian safety • Good cost savings	• Very different look than current fixture • Mast arm configuration
2	King Luminaire	• Good light performance • Same style as existing fixture	• Less light performance than the GE cobrahead • Limited optical control
3	Simply LED	• Lower installation cost • Reuse of the current fixture	• Less energy savings than other options • Potential maintenance issue • limited optical control • Concern with compatibility with all units-potential odd sizes.
4	Acuity Cobrahead	• Good light performance • Good cost savings • Increased driver/pedestrian safety	• Slightly higher glare rating • Very different look than current fixture • Mast arm configuration
5	Truly Green Solution	• Cheapest installation cost	• Less energy savings than other options • Poor optical performance • No optical control • Potential maintenance issue • Limited warranty • Siemens does not recommend this option

Engineering Approach and Process

The majority of the roadway lights in the Third Laguna Hills neighborhoods are a 70 watt Mushroom style post top. Siemens has presented the Mutual with several upgrade options for these lights including:

- All new King LED Mushroom top
- Simply LED retrofit kit; existing housing remains
- New LED GE cobra head and new mast arm
- New LED Acuity cobra head and new mast arm
- Truly Green Solutions lamp only LED replacement

Photometric calculations have been performed for each of these options, with the exception of the Truly Green Solutions lamp replacement. The LED lamps do not have a photometric test report in a mushroom or similar style luminaire that would allow for calculations to be done.



The purpose of this document is to summarize the calculations for the 70w HPS Mushroom Post Top luminaires. The results of the calculations are compared to the recommended practice luminance levels published by the Illuminating Engineering Society of America.

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It should be stated that Section 1.1 of the introduction of RP-8-14, it specifically states that “...the primary purpose is to provide recommended practices for designing new continuous lighting systems for roadways and streets. It is not intended to be applied to existing lighting systems until such systems are completely redesigned.”

The processes and lighting analysis outlined below were conducted to identify the most practical lighting solution, under existing conditions, and is not to be considered a complete redesign, as it is using existing luminaire locations and equipment.

The average values below are in luminance. Luminance is an indicator of how bright a surface will appear, in this case the roadway. Luminance is measured in candelas per square meter.

Calculation software typically places 20 measurement points in between each pole spacing. The average / minimum ratio is the ratio between the average of these points and the minimum point in the measurement area. The maximum / minimum ratio is the ratio of the maximum and the minimum of the points in the area of analysis. These ratios help set recommended levels of lighting uniformity.

The veiling luminance is a measure of disability glare produced by the lighting system.

Table 3 – RP-8-14 Recommended Levels for Local Road with Low Pedestrian Conflict

AVG (cd/m ²)	AVG/MIN UNIFORMITY	MAX/MIN UNIFORMITY	VEILING LUMINANCE
.3	6.0	10.0	0.4

Table 4 – RP-8-14 Recommended Levels for Walkways with Low Pedestrian Conflict

AVG HOR (FC)	AVG/MIN UNIFORMITY
.2	10.0

Existing Lighting Conditions

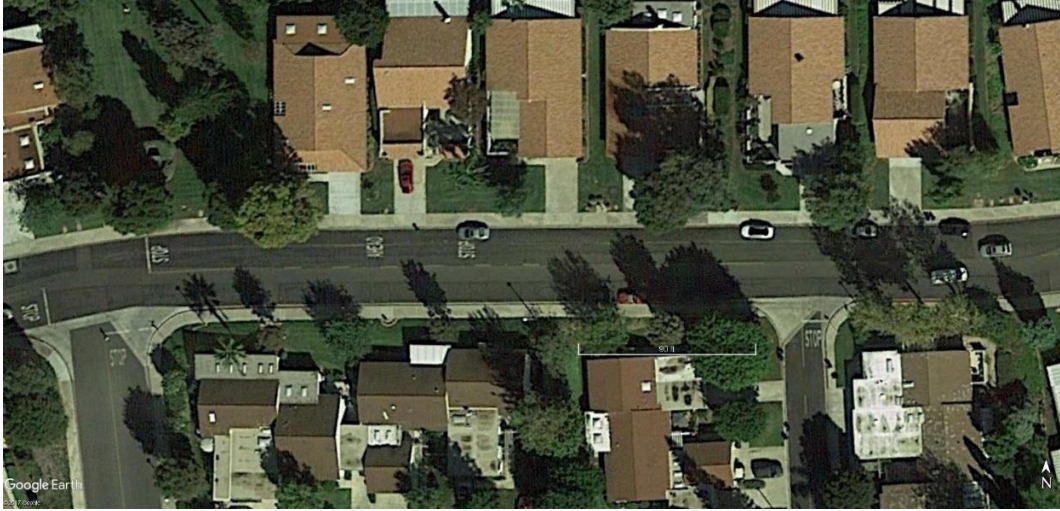
The existing lighting conditions consist of approximately 720 mushroom head post top luminaires located mostly on residential streets with some located in alleys and toward parking areas.

There are also approximately 65 cobra head style fixtures on 45 poles (20 dual arms) that are located near the gate houses.

A small quantity of shoebox style luminaires are also found near the entrance to the mutual.

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Typical Geometry



Siemens chose the most common fixture wattage and style for the calculations. A review was done, and the most common typical geometry was chosen for each of the calculations.

The following typicals were used:

- Pole spacing = 170'
- Road width curb to curb = 36', 2 lanes
- Pole setback = 7'
- Sidewalk width = 6' on both sides of road, no setback
- Pole height = 16' (17' used for cobra due to mast arm height)
- Lights are all on one side of the road

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New King Luminaire Option

This option is a full new King K427 luminaire, which would provide almost the same look and feel but in a new 40 watt LED fixture.



Table 5 – King K427 Calculation Results

Roadways	AVG (cd/m ²)	AVG/MIN UNIFORMITY	MAX/MIN UNIFORMITY	VEILING LUMINANCE
IES RP-8 Target	.3	6.0	10.0	.4
Results - Near Lane	.3	16.5	49.5	.8
Results - Far Lane	.1	6	13	.4

Table 6 – King K427 Calculation Results

Sidewalks	AVG HOR (FC)	AVG/MIN UNIFORMITY
IES RP-8 Target	.2	10.0
Results - Near SW	.8	81
Results - Far SW	0	0

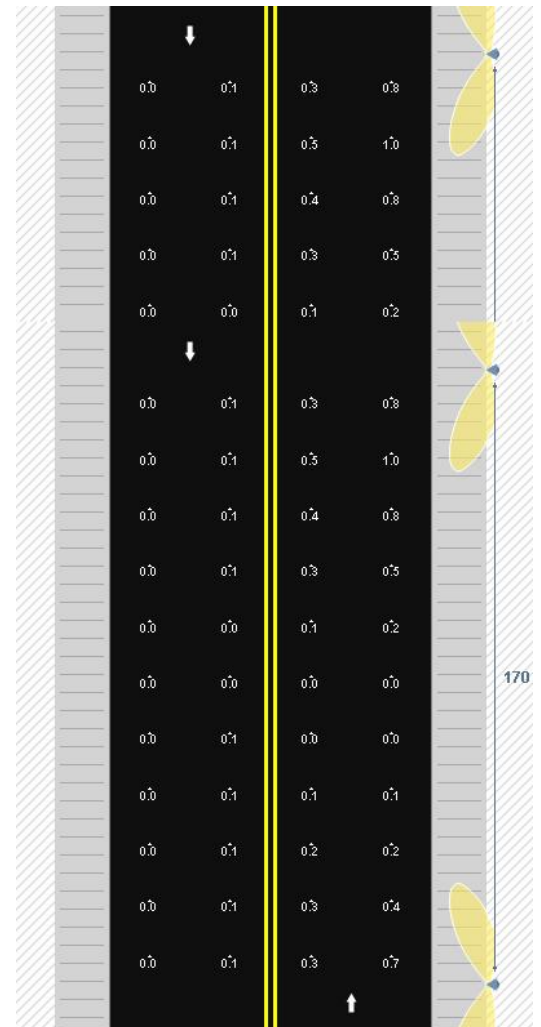
This option provides some optical control. The 170' pole spacing is a bit too far for the lateral spread, however, with no light reaching the middle of the poles.

The lane nearest the luminaires is meeting the RP-8 targeted luminance values. In between the fixtures, however, there is an area that is getting almost no light. This is also causing the uniformity ratios to be high.

The far lane from the lights is getting very little light, with most areas receive less than .1 cd/m². The ratios look artificially low here, as the software is using only the numbers greater than 0 for the ratio.

The sidewalk that is on the same side of the street as the poles is getting illuminance levels that are appropriate, though the uniformity is higher than desired. The far sidewalk is not getting any light.

This option would provide the mutual with an appearance and light levels that are similar to the existing fixtures. The 3000K LED lights will provide improved visibility and visual acuity, however.



Simply LED Retrofit Option

For this option the existing housing would be reused, though the existing lens would be removed and replaced with a new 40 watt LED retrofit kit.



Table 7 –Simply LED ALD-40 Calculation Results

Roadways	AVG (cd/m ²)	AVG/MIN UNIFORMITY	MAX/MIN UNIFORMITY	VEILING LUMINANCE
IES RP-8 Target	.3	6.0	10.0	.4
Results - Near Lane	.2	18	81	.4
Results - Far Lane	.1	5	15	.2

Table 8 –Simply LED ALD-40 Calculation Results

Sidewalks	AVG HOR (FC)	AVG/MIN UNIFORMITY
IES RP-8 Target	.2	10.0
Results - Near SW	.6	59
Results - Far SW	0	0

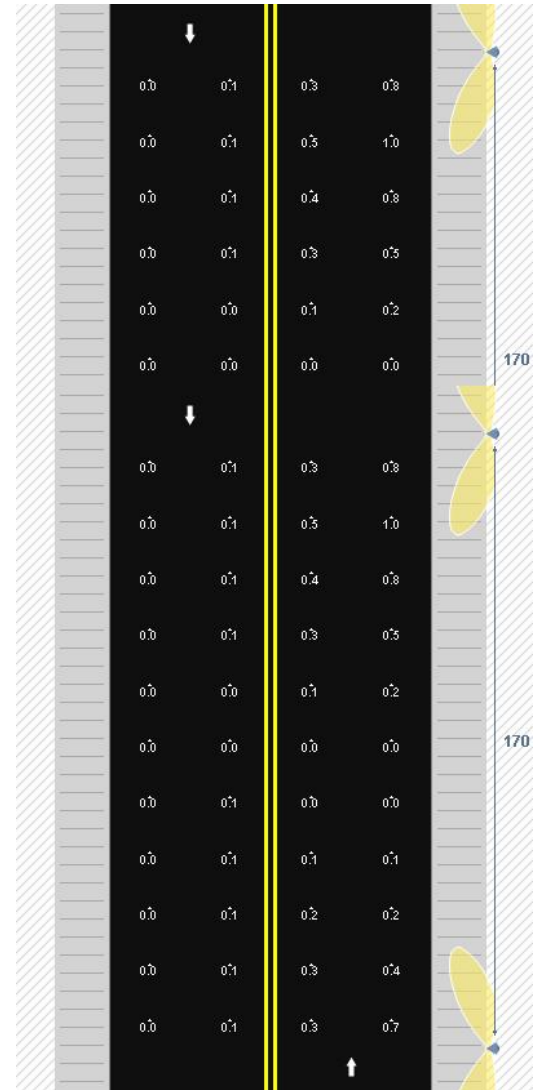
There is some control of the distribution with this kit, though it is limited.

The 40 watt Simply LED kit does not quite meet RP8 recommended levels in the near lane. The veiling luminance in the

near lane is within targeted range, which is a measure of glare.

The results in the far lane are much lower, with only a little light making across the road right in front of the luminaire. The uniformity ratios in this far lane and far sidewalk are artificially low (good) due to the software disregarding the areas with a zero.

A second asymmetric distribution option was also calculated, with results that were poorer than the ones above.



GE Cobra Head Option

Another option for the existing Mushroom Top fixtures is to remove the fixtures and add a new mast arm similar to the one shown in the picture to the right. This picture is a GE luminaire that we installed on a similar concrete pole in Rialto, CA.

This option would put the optical center closer to the roadway, and ultimately put more light onto the streets and sidewalks.



Table 9 –GE Cobra Head Calculation Results (22w luminaire)

Roadways	AVG (cd/m ²)	AVG/MIN UNIFORMITY	MAX/MIN UNIFORMITY	VEILING LUMINANCE
IES RP-8 Target	.3	6.0	10.0	.4
Results - Near Lane	.4	3.6	10.3	.6
Results - Far Lane	.1	3.5	8.5	.4

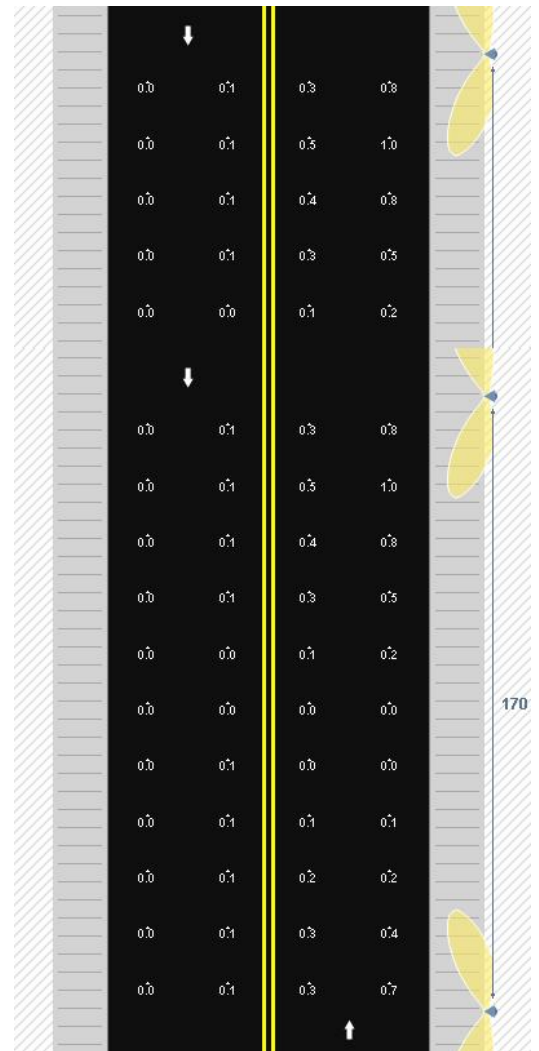
Table 10 –GE Cobra Head Calculation Results (22w luminaire)

Sidewalks	AVG HOR (FC)	AVG/MIN UNIFORMITY
IES RP-8 Target	.2	10.0
Results - Near SW	.4	9
Results - Far SW	0	0

The GE is provided good light coverage over the near lane, meeting most RP-8 criteria.

The far lane is getting some light but would not meet the levels needed for RP8. These results are likely better than the existing.

The uniformity ratios in this far lane and far sidewalk is artificially low (good) due to the software disregarding the areas with a zero.



Acuity Cobra Head Option

A second cobra head vendor, Acuity, was chosen as a mushroom top replacement option. The Acuity product would also require a new mast arm.



The model chosen has similar lumen and wattage values to the GE.

Table 11 –Acuity Cobra Head Calculation Results (24w luminaire)

Roadways	AVG (cd/m ²)	AVG/MIN UNIFORMITY	MAX/MIN UNIFORMITY	VEILING LUMINANCE
IES RP-8 Target	.3	6.0	10.0	.4
Results - Near Lane	.4	0	0	1
Results - Far Lane	0	4	12	.4

Table 12 –Acuity Cobra Head Calculation Results (24w luminaire)

Sidewalks	AVG HOR (FC)	AVG/MIN UNIFORMITY
IES RP-8 Target	.2	10.0
Results - Near SW	.2	0
Results - Far SW	0	0

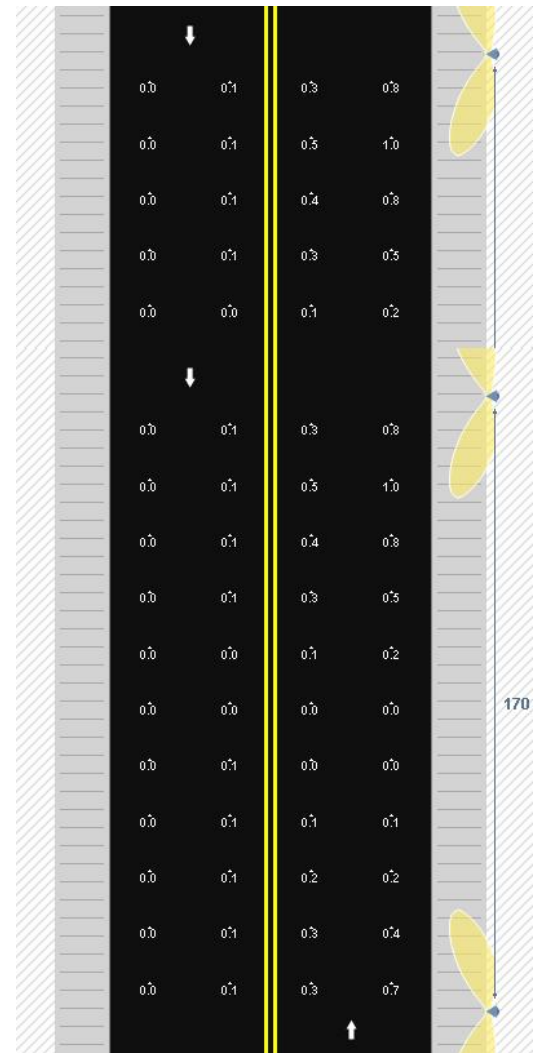
The results of the Acuity calculation are mixed.

The near lane is achieving RP-8 luminance levels, but there is a noticeable 30-50' dark spot in between the luminaires. As a

result, the ratios are dividing by zero and do not compute the total.

The overall distribution is similar to the new King results, despite having the lamp center closer to the roadway.

When compared to the GE, the Acuity is not providing the same coverage and uniformity. The illuminance levels on the near sidewalk are half of the GE results. GE is clearly the superior performer in this model.



Truly Green Solution LED Lamp

The Truly Green Solution lamp is a low-cost LED lamp that is installed into the existing mogul base socket. The existing ballast is bypassed, but otherwise the existing fixture remains in place.

There is no practical way to run photometric calculations with this option, as there is not photometric file with this lamp inside of the mushroom top fixture.

The expected results from this option would be very poor optical control, and limited coverage of the light output. Any existing luminaire depreciation of the housing and lens would remain.



Siemens does not recommend this option for Third Laguna Hills Mutual.

Additional Outdoor Fixture Type- Shoebox

Siemens is aware that there are additional Shoebox style fixtures within the Community. As such we have recommend the NLS Vue area light for the parking lot lights in the Third Mutual.

These fixtures are designed to provide a wide spread of light directly under the light pole and are specified for parking lot, park and walkway applications. These fixtures are not typically used in a roadway lighting application.

Siemens does not recommend this option for the roadway lighting throughout Third Laguna Hills Mutual.



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Energy Savings Comparison

Siemens has created an energy calculation for options and compared them to the existing HPS luminaires.

The comparison uses 723 70w HPS luminaires, and 65 150w HPS luminaires in the analysis.

Existing luminaires are assumed to all be on the LS-1 SCE rate for 2018.

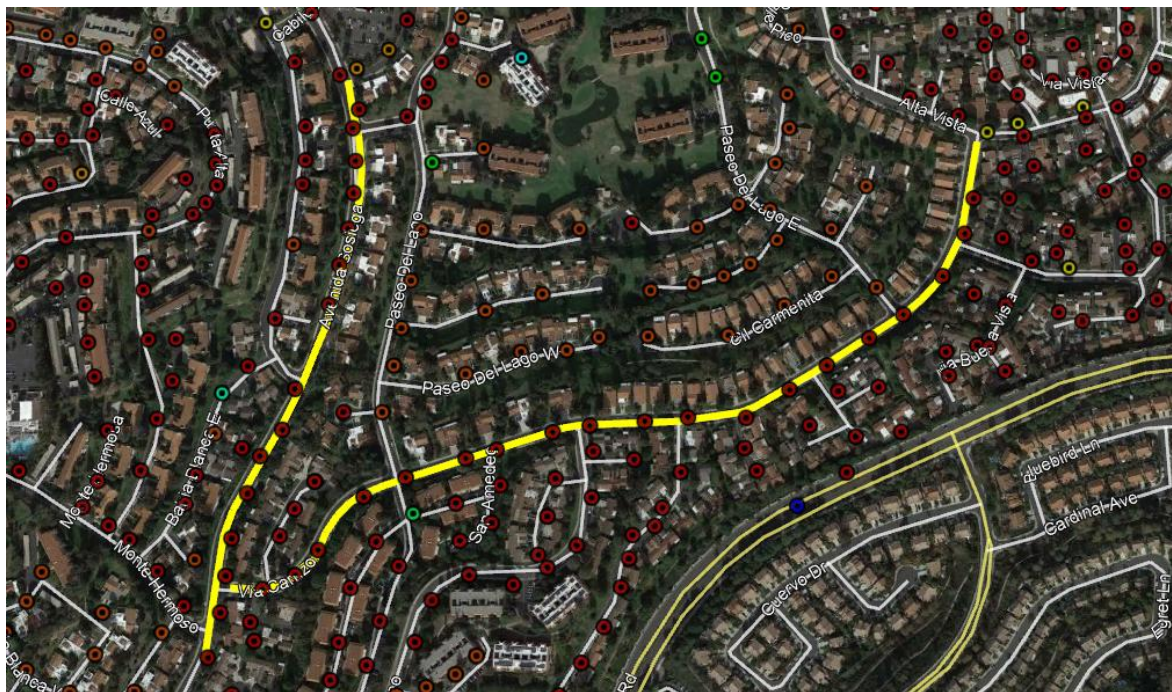
Proposed LED options are assumed to all be on the LS-2 SCE rates for 2018.

Both the energy and service rates are calculated.

Table 13 –Cost Savings Estimate

Option	Description	Total Installation Costs	Total Annual Estimated Costs	Annual Savings
Existing – baseline LS-1	(723) 70w HPS & (65) 150w HPS Mushroom Top	N/A	\$104,982.96	
King Luminaire	Replace existing with new King Mushroom Top	\$776,968	\$33,900.05	\$71,082.91
Simply LED	Retrofit Mushroom Tops with kit from Simply LED	\$245,418	\$33,900.05	\$71,082.91
GE Cobra	Replace Mushroom Tops with GE Cobra head - add mast arm	\$746,645	\$28,680.99	\$76,301.97
Acuity Cobra	Replace Mushroom Tops with Acuity Cobra head - add mast arm	\$676,903	\$28,793.30	\$76,189.66
Truly Green Solution	Replace lamps with TGS LED lamp	\$139,777	\$32,114.29	\$72,868.67

Pilot Location Recommendation



Siemens recommends two possible streets for the installation of pilot luminaires: Avenida Sosiega, and Via Carrizo. Both of these are relatively long and straight streets with consistent pole spacing which would allow for optimal assessment of light output.

A simple design for these installations would be to install 3 LED fixtures in a row, skip 2-3 existing fixtures, and then installing the next set of LED fixtures. This will allow the residents to easily see the visibility impact of the various LED options.

Siemens would recommend the pilot consist of 2-3 fixture types considering the results above.