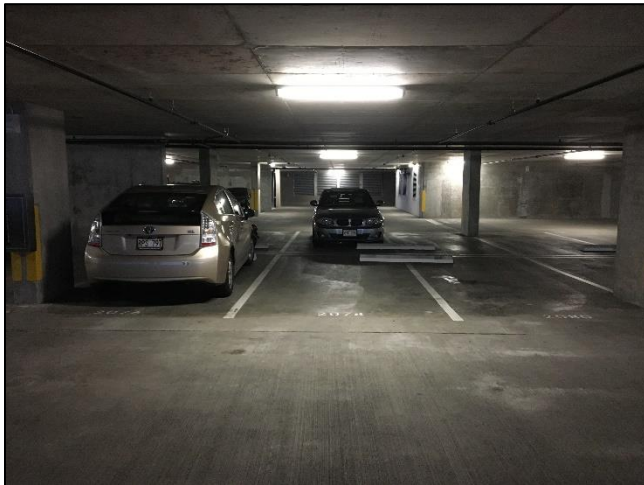


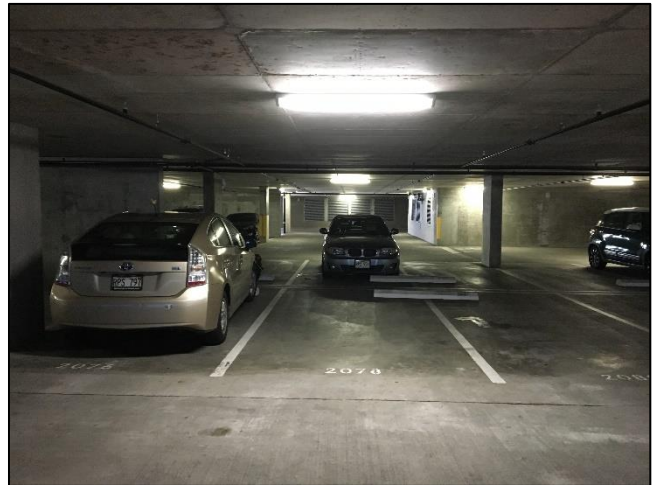
The following contractors were contacted to provide proposals to retrofit the frequently used fluorescent lamps to LED lamps.

- A1A Lectric (Electrical Contractor that help build The Collection)
- Nakata Electrical
- AE Solutions
- Energy Industries
- Paradise Lighting
- Pono Solutions
- Siu's Electric
- Pioneer Electric

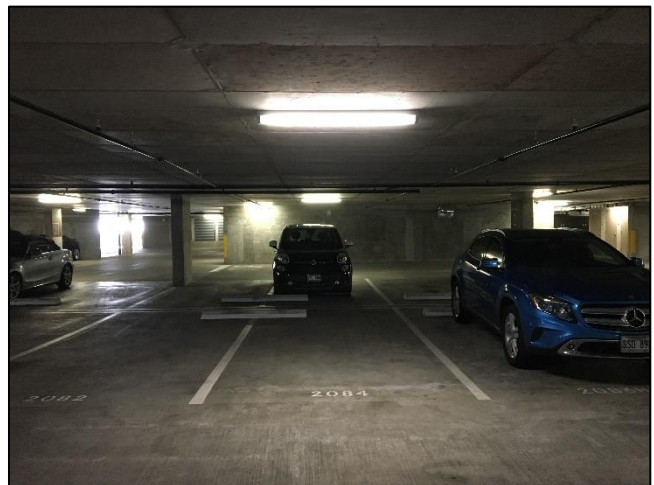
Of these, AE Solutions, Energy Industries, Paradise Lighting and Siu's Electric repsonded. And of these, Pardise Lighting installed two sample LED bulbs in the garage.



Existing 32 Watt Fluorescent Bulb



Proposed 15 Watt LED Bulb





Existing 32 Watt Fluorescent Bulb
Proposed 11 Watt LED Bulb

The Proposed 15 watt LED Bulb was very bright. It may be blinding to some drivers. The Proposed 11 watt LED bulb cast the same color and brightness as the existing 32 watt fluorescent lamp.

Retrofitting older fluorescent light fixtures also requires the replacement of the older ballasts to accommodate the newer LED technology. Since the ballasts currently being used in the existing fluorescent fixtures are up to date, replacing them won't

be necessary. They would be compatible with the proposed LED lamps.

Chart 2 below is a summary of the contractors submitting proposals. The cost of each contractor includes, lamp purchase, installation, proper disposal of fluorescent lamps, a 5 year warranty and lamp life of 50,000 hours. For complete proposals, see Exhibits A through D.

CHART 2 Contractor	Existing Annual Utility Cost	Proposed Annual Utility Cost	Annual Savings	Cost to Wait per Month	Cost	Rebates	Net Cost	ROI (years)	Proposed LED Lamp
Paradise Lighting LAMP ONLY	\$51,460	\$23,571	\$27,889	\$2,324	\$13,711	\$0	\$13,711	0.49	Lunera T8 LED
AE Solutions LAMP AND BALLAST	\$39,041	\$14,315	\$24,726	\$2,061	\$33,549	\$9,904	\$23,645	0.96	Phillips InstantFIT
Energy Industries LAMP ONLY	\$60,665	\$32,228	\$34,122	\$2,844	\$64,838	\$2,632	\$62,206	1.82	Phillips InstantFIT
Energy Industries LAMP AND BALLAST	\$60,665	\$31,280	\$35,135	\$2,928	\$76,735	\$10,520	\$66,215	1.88	Phillips InstantFIT
Siu's Electric LAMP ONLY	didn't provide	didn't provide	didn't provide	didn't provide	didn't provide	didn't provide	\$74,000	didn't provide	didn't provide
Siu's Electric LAMP AND BALLAST	didn't provide	didn't provide	didn't provide	didn't provide	didn't provide	didn't provide	\$85,000	didn't provide	didn't provide

Rachel Fukumoto of Hawaii Energy was consulted. She reviewed the various proposals and data and had the following comments:

“Paradise Lighting

- Close to Hawai'i Energy's #s
- Slight discrepancy in fixture quantity
- Slight discrepancy in wattage

Energy Industries

- Hours of operation not disclosed – can lead to discrepancy in kWh and kW usage/savings
- Slightly more conservative than Hawai'i Energy estimates
- Use of Philips Instantfit as T8 LED (instead of Lunera T8) – Wattage difference

AESolutions

- Hours of operation not disclosed – can lead to discrepancy in kWh and kW usage/savings
- More conservative than Hawai'i Energy estimates
- Use of Philips Instantfit as T8 LED (instead of Lunera T8) – Wattage difference
- Proposal includes LED Driver (Type C) – more expensive upfront, but provides best system capability and performance (higher efficiency, may provide longer lamp life rating), and may integrate controls later

That being said, with the differences accounted for I would consider the proposals to be reasonable (at least on the energy claims side). Definitely make sure that the fixture quantities remain consistent with your actual counts. But other than that, I don't see evidence of overestimating energy savings. I did check all of the proposals against your actual energy use (both the J and P schedule meters), and saw it to be within a reasonable range estimated for lighting.

We have worked with all three contractors in the past as well, but in terms of choosing it will depend on what type of equipment the Board wants, which contractor to work with and at what price point."

RECOMMENDATION

That the Board of Directors select Paradise Lighting to retrofit 619 Fluorescent Lighting Fixtures at a cost of \$13,711 as recommended by the General Manager and the Building Grounds & Design Committee.

RATIONALE

1. Retrofitting the lamps would save the association approximately \$27,925 annually (\$2,327 monthly).
2. The return on investment would be about 6 months, upon which the association would be saving money.
3. The lower wattage LED lamps would prolong the life of the 619 existing ballasts (\$40 each).

4. The LED lamps would emit lower greenhouse gasses and would require less fuel to create the electricity they consume.

Exhibits (If applicable)	Index	Title
	A	Proposal Paradise Lighting
	B	Proposal Energy Industries
	C	Proposal AESolutions
	D	Proposal Siu's Electric Corporation

FOR BOARD USE ONLY

CERTIFICATE OF BOARD ACTION

X Approved Declined Noted Returned Deferred Withdrawn

Stipulations

Coordinating Instructions

Distribution Instructions

Recording Secretary	Ryan Kamo	Action Date	5/24/18	RFA No.	17-2018
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