



MARK PESTRELLA, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

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IN REPLY PLEASE
REFER TO FILE: **BRC-1**

November 19, 2019

REQUEST FOR PROPOSALS - ADDENDUM 2 ON-CALL LIGHT EMITTING DIODE STREETLIGHT CONVERSION AND MAINTENANCE SERVICES (BRC0000103)

Thank you for attending our mandatory proposers' conference for On-Call Light Emitting Diode Streetlight Conversions and Maintenance Services (BRC0000103) held on Thursday, October 24, 2019.

Please note that the deadline for proposal submission is **Monday, November 25, 2019, by 5:30 p.m.**

- An updated Form PW-2.2 Schedule of Prices has been attached as Enclosure A. Please use Form PW-2.2 when submitting your proposal. (Proposals submitted with PW-2 or PW-2.1 may be rejected as nonresponsive.)
- An updated Form PW-20.2 Minimum Requirements Affirmation has been attached as Enclosure B. Please use Form PW-20.2 when submitting your proposal. (Proposals submitted with PW-20 or PW-20.1 may be rejected as nonresponsive.)

All addenda and informational updates will be posted at <http://pw.lacounty.gov/brcd/servicecontracts>. Please check the website frequently for any changes to this solicitation.

Please take note of the following revisions to the Request for Proposals (RFP). (Note that the changes that have been added are in **boldface** and deleted languages are ~~strikethrough~~.)

A. Addendum

1. Any and all reference to Form PW-2.1, Schedule of Prices, referenced in the RFP has been deleted in its entirety and replaced with **Form PW-2.2**, Schedule of Prices (**Enclosure A**). The following item was added:

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	PROPOSED TOTAL PRICE (Estimated Quantity x Unit Price)
E.1	Maintenance Customer Service (Per Exhibit A, Scope of Work, Section E.4, a.)	12/Year***	\$ MONTH	\$

2. Any and all reference to Form PW-20.1, Minimum Requirements Affirmation, referenced in the RFP has been deleted in its entirety and replaced with **Form PW-20.2**, Minimum Requirements Affirmation (**Enclosure B**). The following changes were made:

Section 8 EQUIVALENCY TABLE

Equivalent	Minimum Energy Savings	Maximum Wattage*	Minimum Efficacy	Maximum Weight	Maximum BUG Rating	Distribution Type
100W	60%	43W	75 lm/W	18 lbs	B1 U0 G2	II**
150W	60%	62W	80 lm/W	22 lbs	B2 U0 G2	III***
200W	35%	107W 111W	80 lm/W	24 lbs	B2 B3 U0 G3	III***
250W	40%	121W 122W	80 lm/W	28 lbs	B3 U0 03	III***
310W	40%	121W 122W	80 lm/W	30 lbs	B3 U0 G3	III***
400W	50%	122W	75 lm/W	30 lbs	B3 U0 G3	III***

B. Informational Update

- In regard to Addendum 1, Page 3, Item 6, the correct reference is, "Part I, Section 4.D **4.E**. Evaluation Criteria, 1. Proposed Price."
- In regard to Addendum 1, Page 8, Item 9, Footnote 3, "All LED fixtures shall be manufactured with an over-current in-line fuse device installed," is clarified as follows:

The language is referring to a separate fuse device to be included as part of the LED fixture, not a fixture's built-in surge protection device. This fused disconnect insures that the maintenance worker does not

get electrocuted when doing work in the fixture. The one built-in fixture is usually not a disconnect.

3. In regard to Addendum 1, Page 12, Item 11, 4.p., "Conduct annual inspections of steel, concrete, fiberglass, and wood poles," this refers to visual inspection only.
4. In regard to Addendum 1, Page 13, Item 12, the Recycling and Reuse Plan application does not need to be completed as part of your proposal submission. The application will be a requirement for the awarded contractor.
5. In regard to the RFP, Part I, Section 2.B. Proposal Submission, 1. "Proposals shall be submitted with seven complete sets of the proposal that includes all related information in the following formats," to clarify, the total paper copies to submit are five and the total electronic copies to submit are two, which are the seven complete sets of the proposal.

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If you have any questions concerning the above information, please contact Mr. Case at (626) 458-2575 or Ms. Leung at (626) 458-4072, Monday through Thursday, 7 a.m. to 5 p.m.

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Very truly yours,

MARK PESTRELLA
Director of Public Works



For: JOSE QUEVEDO
Assistant Deputy Director
Business Relations and Contracts Division

DC

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Enc.

SCHEDULE OF PRICES

FOR

LED STREETLIGHT CONVERSION AND ON-CALL MAINTENANCE SERVICES (BRC0000103)

The undersigned Proposer offers to perform the work described in the Request for Proposals (RFP) for the following price(s). The Proposer rates (hourly, monthly, etc.) shall include all administrative costs, labor, supervision, materials, transportation, taxes, equipment, and supplies unless stated otherwise in the RFP. It is understood and agreed that where quantities, if any, are set forth in the Schedule of Prices, they are only estimates, and the unit prices quoted, if any, will apply to the actual quantities, whatever they may be.

TURNKEY SERVICES				
ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	PROPOSED TOTAL PRICE (Estimated Quantity x Unit Price)
A.1	Streetlight Audit (Per Exhibit A, Scope of Work, Section E.1)	42,000	\$ EACH	\$
B.1	50W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	2	\$ EACH	\$
B.2	70W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	367	\$ EACH	\$
B.3	100W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	28,255	\$ EACH	\$
B.4	150W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	4,923	\$ EACH	\$
B.5	200W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	6,433	\$ EACH	\$
B.6	250W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	1,831	\$ EACH	\$
B.7	400W HPSV Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	20	\$ EACH	\$
B.8	Other Uncommon Fixture Types/Wattages (MV, MH, LPS, etc.) Streetlight Conversion* (Per Exhibit A, Scope of Work, Section E.2)	17	\$ EACH	\$
C.1	Streetlight Over-Current Device Installation** (Per Exhibit A, Scope of Work, Section E.2)	22,000	\$ EACH	\$
D.1	Streetlight Pole Tagging (Per Exhibit A, Scope of Work, Section E.3)	42,000	\$ EACH	\$
A. TOTAL PROPOSED PRICE FOR TURNKEY SERVICES				\$

ENCLOSURE A (FORM PW-2.2)

ONGOING MAINTENANCE SERVICES				
ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	PROPOSED TOTAL PRICE (Estimated Quantity x Unit Price)
E.1	Maintenance Customer Service (Per Exhibit A, Scope of Work, Section E.4, a.)	12/Year***	\$ MONTH	\$
E.2	Ongoing Maintenance (Per Exhibit A, Scope of Work, Section E.4, b.& c.)	1,000/Year	\$ EACH	\$
E.3	Emergency Response (Pole Knockdown Repair) (Per Exhibit A, Scope of Work, Section E.4, d.i.)	160/Year	\$ EACH	\$
E.4	Emergency Response (Exposed or Damaged wiring) **** (Per Exhibit A, Scope of Work, Section E.4, d.ii & q.)	200/Year	\$ EACH	\$
E.5	Emergency Response (Equipment Damage) (Per Exhibit A, Scope of Work, Section E.4, d.iii.)	100/Year	\$ EACH	\$
E.6	Emergency Response (Multiple Streetlights Out) (Per Exhibit A, Scope of Work, Section E.4, d.iv.)	200/Year	\$ EACH	\$
E.7	Maintenance Updates (Per Exhibit A, Scope of Work, Section E.4, e. & f.)	12/Year*****	\$ MONTH	\$
E.8	Administrative Services (Claims Processing) (Per Exhibit A, Scope of Work, Section E.4, h.)	500/Year	\$ EACH	\$
E.9	Administrative Services (Warranty Processing) (Per Exhibit A, Scope of Work, Section E.4, i.)	500/Year	\$ EACH	\$
E.10	Maintenance Coordination (Per Exhibit A, Scope of Work, Section E.4, j.)	200/Year	\$ EACH	\$
E.11	Maintenance Part Replacements (Hand Hole Covers) (Per Exhibit A, Scope of Work, Section E.4, k.)	2,000/Year	\$ EACH	\$
E.12	Maintenance Part Replacements (Pole Tags) (Per Exhibit A, Scope of Work, Section E.4, l.)	2,000/Year	\$ EACH	\$
E.13	House Side Shield Installation (Per Exhibit A, Scope of Work, Section E.4, m.)	200/Year	\$ EACH	\$
E.14	Streetlight Operation Inspection (Per Exhibit A, Scope of Work, Section E.4, o.)	42,000/Year	\$ EACH	\$
E.15	Pole Inspection (Per Exhibit A, Scope of Work, Section E.4, p.)	42,000/Year	\$ EACH	\$
E.16	Dig Alert response (Per Exhibit A, Scope of Work, Section E.4.r)	1,500/Year	\$ EACH	\$
B. TOTAL PROPOSED PRICE FOR ONGOING MAINTENANCE SERVICES				\$

ENCLOSURE A (FORM PW-2.2)

*Cost includes material, labor, equipment, and services listed in Exhibit A, Scope of Work, Section E.2. Proposer shall select a single LED fixture manufacturer for each roadway classification. If the selected fixture(s) is not listed on Public Works' Qualified Product List (QPL), Proposer must identify an alternate manufacturer and/or catalog number and include photometric performance results and product specifications that demonstrate the ability of the chosen fixture(s) to meet LA County street lighting guidelines as shown on Form PW-20.2, Minimum Requirements Affirmation. All documentation submitted by the Proposer for LED fixture qualification will be reviewed and verified by Public Works. Failure to meet LA County street lighting guidelines may result in Proposer disqualification. For fixture types and wattages not listed in the QPL (i.e. 50W, 70W, MH, MV), the Proposer shall use its own expertise and replace with a fixture of similar illumination/color temperature.

**The quantity provided represents the installation of over-current in-line fuse devices installed at the hand hole cover of all underground fed streetlights only. All LED fixtures shall also be manufactured with an over-current in-line fuse device installed.

***The quantity provided represents the monthly costs associated with providing services listed in Exhibit A, Scope of Work, Section E.4, a.

****Includes overhead wiring replacement/repair. Length between streetlight poles averages approximately 100'.

*****The quantity provided represents the start-up/monthly costs associated with providing services listed in Exhibit A, Scope of Work, Section E.4, e. &f.

LEGAL NAME OF PROPOSER		
SIGNATURE OF PERSON AUTHORIZED TO SUBMIT PROPOSAL		
TITLE OF AUTHORIZED PERSON		
DATE	STATE CONTRACTOR'S LICENSE NUMBER	LICENSE TYPE
PROPOSER'S ADDRESS:		
E-MAIL		
PHONE	MOBILE	FACSIMILE

PROPOSER'S COMPLIANCE WITH THE MINIMUM REQUIREMENTS

ON-CALL LIGHT EMITTING DIODE STREETLIGHT CONVERSION AND MAINTENANCE
SERVICES (BRC0000103)

PROPOSER MUST CHECK A BOX IN EVERY SECTION

Important Note: The information on this form is subject to verification and may not be used for scoring purposes.

Completing this form by itself without including detailed narrative(s) in your proposal to support the minimum mandatory requirement(s) of this RFP, any inconsistencies or inaccuracy in the information provided on this form, and/or your Proposal, may subject your Proposal to disqualification or other actions, at the sole discretion of the County.

At the time of proposal submission, Proposer must meet the following minimum requirements:

1. The Proposing entity must have a minimum of 5 years of experience performing streetlight retrofits or conversions and/or on-call streetlight maintenance services as the prime contractor for one or more government agencies (**Subcontracting is not allowed for this minimum requirement**).

Proposer's Name	Dates of Experience (Mo./Yrs. to Mo./Yrs.)	Description of Services/Experience	Page Number*

*List the page number in the proposal containing the Proposer's resume/experience. (Please attach additional pages if needed.)

- ☐ Yes. Proposer does meet the experience requirement stated above. (In addition to responding on this form, as specified in Part I, Section 2.A.5, Experience, please provide a detailed narrative in your proposal to validate this minimum mandatory requirement.)
- ☐ No. Proposer does not meet the experience requirement stated above. **If you check this box, your proposal will be immediately disqualified as nonresponsive.**

2. The proposing entity's experience performing streetlight retrofits or conversions and/or on-call streetlight maintenance services for one or more government agencies must be more than or equal to 10,000 streetlights; however, proposer may use a subcontractor's experience to collectively meet the 10,000 streetlights requirement. If subcontractor's experience is used for this purpose, contractor must keep the services of the said subcontractor throughout the term of contract including any option years, unless prior written approval is obtained from the Contract Manager.

Proposer's Name	Description of Services/Experience	Number of Streetlights	Type of Experience (Check all that apply)	Page Number*
			<input type="checkbox"/> Streetlight Retrofits or Conversions <input type="checkbox"/> On-Call Streetlight Maintenance Services	
Subcontractor's Name	Description of Services/Experience	Number of Streetlights	Type of Experience (Check all that apply)	Page Number*
			<input type="checkbox"/> Streetlight Retrofits or Conversions <input type="checkbox"/> On-Call Streetlight Maintenance Services	
			<input type="checkbox"/> Streetlight Retrofits or Conversions <input type="checkbox"/> On-Call Streetlight Maintenance Services	

*List the page number in the proposal containing the proposer's/subcontractor's resume/experience. (Please attach additional pages if needed.)

- ☐ Yes. Proposer does meet the experience requirement stated above. (In addition to responding on this form, as specified in Part I, Section 2.A.5, Experience, please provide a detailed narrative in your proposal to validate this minimum mandatory requirement.)
- ☐ No. Proposer does not meet the experience requirement stated above. **If you check this box, your proposal will be immediately disqualified as nonresponsive.**

3. The Proposing entity must submit a copy of their valid and active State of California C-10, Electrical Contractor's License. **Subcontracting is not allowed to meet this requirement.**

☐ Yes. Proposer has submitted a copy of a valid and active State of California C-10 Electrical Contractor's License. Please complete the chart below.

Type of License	License No.	Name of License Holder	Valid/Active Dates

☐ No. Proposer does not have the license as stated above. **If you check this box, your proposal will be immediately disqualified as nonresponsive.**

4. The proposer's lead technician and subcontractor must each have a minimum of 5 years of experience performing streetlight retrofits or conversions.

Proposer's Lead Technician/ Subcontractor Name	Dates of Experience (Mo/Yrs to Mo/Yrs)	Description of Services/Experience	Page Number*

*List the page number in the proposal containing the Proposer's resume/experience. (Please attach additional pages if needed.)

☐ Yes. Proposer does meet the experience requirement stated above. (In addition to responding on this form, as specified in Part I, Section 2.A.5, Experience, please provide a detailed narrative in your proposal to validate this minimum mandatory requirement.)

☐ No. Proposer does not meet the experience requirement stated above. **If you check this box, your proposal will be immediately disqualified as nonresponsive.**

5. Proposer and its subcontractors performing prevailing wage work, must submit proof of a valid and active State of California Department of Industrial Relations Public Works Contractor Registration pursuant to Labor Code 1725.5. **Pending registrations will not be accepted.**

☐ Yes. Proposer and its Subcontractor(s), if performing prevailing wage work, has submitted proof of a valid and active State of California Department of Industrial Relations Public Works Contractor Registration pursuant to Labor Code 1725.5

Name of Registration Holder	Registration No.	Registration Dates	Expiration Dates

☐ No. Proposer and its Subcontractor(s) has NOT submitted proof of a valid and active State of California Department of Industrial Relations Public Works Contractor Registration

6. Proposer has selected a single LED fixture manufacturer for each roadway classification from Public Works' Qualified Product List (QPL) or Proposer has identified an alternate manufacturer and/or catalog number for each roadway classification and included photometric performance results and product specifications that demonstrate the ability of the chosen fixture(s) to meet LA County street lighting guidelines on this Form PW-20.2, Minimum Requirements Affirmation. All documentation submitted by the Proposer for LED fixture qualification will be reviewed and verified by Public Works. Failure to meet LA County street lighting guidelines may result in Proposer disqualification. For fixture types and wattages not listed in the QPL (i.e. 50W, 70W, MH, MV), the Proposer shall use its own expertise and replace with a fixture of similar illumination/color temperature.

PUBLIC WORKS LED ROADWAY LIGHTING QUALIFIED PRODUCT LIST

Instructions: Proposer shall select an option for each Roadway Classification (RC)¹ listed OR Identify an alternate Manufacturer and/or Catalog Number ²

RC	HPS	Manufacturer	Catalog Number ³	Power		
Local	100W	Eaton Cooper Lighting	ARCH-N-PA1-40-730-U-T3-AP-10MSP-PR7	41	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLC005B430AGRAYGL	43	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBX P50 MVOLT R3 MP NL P7 3K	41	Option 3	<input type="checkbox"/>
		Leotek	GCJ1-20H-MV-WW-2R-GY-580-PCR7	39	Option 4	<input type="checkbox"/>
Collector	150W	Eaton Cooper Lighting	ARCH-N-PA1-60-730-U-T3-AP-10MSP-PR7	62	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLC006B430AGRAYGL	55	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBX P70 MVOLT R3 MP NL P7 3K	60	Option 3	<input type="checkbox"/>
		Leotek	GCM2-30H-MV-WW-3R-GY-610-PCR7	58	Option 4	<input type="checkbox"/>
Major	200W	Eaton Cooper Lighting	ARCH-M-PA2-90-730-U-T3-AP-10MSP-PR7	92	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLH013C330AGRAYGL	111	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBM P20 MVOLT R3 4B MP NL P7 3K	94	Option 3	<input type="checkbox"/>
		Leotek	GCM2-40H-MV-WW-3R-GY-850-PCR7	107	Option 4	<input type="checkbox"/>
Major	250W	Eaton Cooper Lighting	ARCH-M-PA2-100-730-U-T3-AP-10MSP-PR7	101	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLH014C330AGRAYGL	122	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBM P30 MVOLT R3 4B MP NL P7 3K	118	Option 3	<input type="checkbox"/>
		Leotek	GCM2-40H-MV-WW-3R-GY-950-PCR7	121	Option 4	<input type="checkbox"/>
Major	310W	Eaton Cooper Lighting	ARCH-M-PA2-100-730-U-T3-AP-10MSP-PR7	101	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLH014C330AGRAYGL	122	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBM P30 MVOLT R3 4B MP NL P7 3K	118	Option 3	<input type="checkbox"/>
		Leotek	GCM2-40H-MV-WW-3R-GY-950-PCR7	121	Option 4	<input type="checkbox"/>
Major	400W	Eaton Cooper Lighting	ARCH-M-PA2-100-730-U-T3-AP-10MSP-PR7	101	Option 1	<input type="checkbox"/>
		General Electric (GE)	ERLH014C330AGRAYGL	122	Option 2	<input type="checkbox"/>
		Holophane & American Lighting	ATBM P30 MVOLT R3 4B MP NL P7 3K	118	Option 3	<input type="checkbox"/>
		Leotek	GCM2-40H-MV-WW-3R-GY-950-PCR7	121	Option 4	<input type="checkbox"/>
Identify alternate Manufacturer and/or Catalog Number (Must complete the following tables and attach supporting documentation)						<input type="checkbox"/>

¹ A single LED Manufacturer shall be selected for all RC's.

² Proposer must demonstrate the ability of the alternate LED fixture(s) to meet LA County street lighting guidelines

³ Type II distribution shall be utilized in alley ways and Type III distribution shall be utilized on roadways

Alternate Manufacturer and/or Catalog Number

HPS	Manufacturer	Catalog Number	Power
100W			
150W			
200W			
250W			
310W			
400W			

Roadway LED Summary*****				
	Case 1A	Case 1B	Case 2	Case 3
HPS Equivalent	100W HPSV LED Equivalent Mounting Height 25' Mast Arm 4' Width 40', spacing 140' one side Avg fc > 0.4, avg/min < 6 (2 streetlights) Use LLF =0.9 For calculation points, add an extra 10 feet to both sides for an extra 20 feet.	100W HPSV LED Equivalent Mounting Height 25' Mast Arm 4' Width 40', spacing 170' staggered Avg fc > 0.4, avg/min < 6 (3 streetlights) Use LLF =0.9 For calculation points, add an extra 10 feet to both sides for an extra 20 feet.	150W HPSV LED Equivalent Mounting Height 30' Mast Arm 6' Width 64', spacing 70' Staggered Avg fc > 0.9, avg/min < 3 (3 streetlights) Use LLF =0.9 For calculation points, add an extra 10 feet to both sides for an extra 20 feet.	200W HPSV LED Equivalent Mounting Height 30' Mast Arm 6' Width 84', spacing 70' Staggered Avg fc > 1.4, avg/min < 3 (3 streetlights) Use LLF =0.9 For calculation points, add an extra 10 feet to both sides for an extra 20 feet.
250W HPSV LED Equivalent Mounting Height 30' Mast Arm 6' Width 92', spacing 70' Staggered Avg fc > 1.4, avg/min < 3 (3 streetlights) Use LLF =0.9 For calculation points, add an extra 10 feet to both sides for an extra 20 feet.				
Type				
ma (input current)				
Suggested Model				
FOOTCANDLE (Fc) AVG				
FOOTCANDLE (Fc) MIN				
UNIFORMITY RATIO AVG/MIN				
Voltage				
Flux (lm)				
WATTAGE (W)				
Luminaire Efficacy (lm/W)				
Color Temperature - K				
Bug Rating				
LM-70				
LM-80				
LM-90				

LED ROADWAY LUMINAIRE SPECIFICATIONS

Section 1 SCOPE

- 1.1 The intent of this specification is to establish the minimum acceptable electrical, mechanical, design, and performance requirements within which all equipment must operate satisfactorily and reliably. All items supplied shall be new and unused.
- 1.2 This specification establishes minimum standards for LED luminaire designed for use in County maintained streetlights and highway safety lights in place of traditional High Pressure Sodium (HPS) luminaires.
- 1.3 The County remains the sole judge on the ability of each device to meet specifications.

Section 2 GENERAL

- 2.1 LED equivalents were developed to allow a one-for-one replacement of HPS luminaires with the objective that those equivalents:
 - Meet or exceed the energy savings established by the Engineer in Section 8 of these specifications.
 - Perform at a comparable level in terms of illuminance and uniformity ratio to HPS luminaires.
 - Are suitable for use at signalized intersections and roadways.
- 2.2 Luminaires shall be complete units designed for LED technology and shall not be standard luminaires retrofitted with LED lamps.
- 2.3 Luminaires shall consist of an assembly that utilizes LED's as the light source and shall consist of a housing, LED array, and electronic driver (power supply).

Section 3 OPERATION

- 3.1 The effective life of a luminaire is expected to be a minimum of 15 years (63,000 hours), assuming nighttime operation only.
- 3.2 Luminaires shall be able to operate in temperatures ranging from -20°C to 50°C.
- 3.3 Efficacy shall meet requirements set forth in Section 8 of this specification for the different LED equivalents.
- 3.4 Luminaires shall have a minimum Color Rendering Index (CRI) of 70.
- 3.5 Luminaires shall have a Correlated Color Temperature (CCT) of 3000K +/- 275K.
- 3.6 Distribution type shall meet requirements set forth in Section 8 of this specification for the different LED equivalents.
- 3.7 BUG Rating shall meet requirements set forth in Section 8 of this specification for the different LED equivalents.

equivalents.

3.8 The failure of individual LED's shall not result in a loss of the distribution pattern.

3.9 Luminaire shall avoid visible flicker to the unaided eye by maintaining the proper output frequency.

Section 4 ELECTRICAL

4.1 Power consumption of the luminaire shall not exceed the maximum set forth in Section 8 of this specification for the different LED equivalents.

4.2 Operating voltage for all luminaires shall be 120V-277V.

4.3 Operating frequency for all luminaires shall be 60Hz.

4.4 Output frequency for all luminaires shall be a minimum of 120Hz.

4.5 Power supplies shall have a minimum power factor of 0.90.

4.6 Power supplies shall meet FCC 47 CFR Part 15/18 for interference.

4.7 Power supply shall be rated a minimum ingress protection of IP54.

4.8 Power Supply drive current shall have an option for field adjustable current.

4.9 Total Harmonic Distortion (THD) shall not exceed 20%.

4.10 All luminaires shall include surge protection devices (SPD) to protect it from damage and failure

for transient peak currents of 10kA minimum.

4.11 SPD's shall be tested in accordance with IEEE C62.41.2 and ANSI standard 62.41.2.

4.12 The luminaire must have a standard 3 prong, 7-pin twist-lock photocell receptacle per ANSI/NEMA C-136.41. The receptacle must rotate.

4.13 Option for ANSI 5-wire and 7-wire PCR shall be available.

4.14 Option for shorting caps shall be available.

4.15 All electrical components shall be UL approved.

4.16 The driver and LED arrays shall be designed for multi-current input operation.

Section 5 MECHANICAL

5.1 Maximum weight of the fixtures shall meet the requirements set forth in Section 8 of this specification for all LED equivalents.

5.2 Housing shall be of die cast aluminum, epoxy primed with silver powder coat except for heat sink which can remain unpainted.

5.3 Housing shall be rated a minimum ingress protection of IP54.

5.4 Optical assembly shall be mounted parallel to the ground and the mast arms and brackets shall be perpendicular to the curb face.

5.5 Luminaire shall mount on 2.375" horizontal tenon with universal 2-bolt slip and vertical adjustment of +/-5°.

- 5.6 Luminaire shall be cooled through the use of heat sinks that resist dirt and water build-up. No fans.
- 5.7 Access to electrical components shall not require the use of tools (tool-less entry).
- 5.8 OPTIONAL: Quick electrical disconnects shall be attached to power door.
- 5.9 Optical assembly of the luminaire shall be protected against dust and moisture intrusion per the requirements of IP-66 (minimum) to protect all optical components.
- 5.10 LEDs shall be provided with discreet over optical elements to provide an IESNA II or III distributions. All LEDs and optical assemblies shall be mounted parallel to the ground. All LEDs shall provide the same optical pattern such that catastrophic failures of individual LEDs will not constitute a loss in distribution pattern.

Section 6 ADDITIONAL COMPLIANCE

- 6.1 Luminaires shall be a DesignLights Consortium (DSL) qualified product.
- 6.2 Luminaire shall be listed under UL 1598 in the U.S. for wet locations.
- 6.3 Luminaire shall be RoHS Compliant.
- 6.4 Luminaire shall meet CalTrans 611 vibration testing and GR-63-CORE section 4.4.1/5.4.2 earthquake zone 4.
- 6.5 Luminaire shall be certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards.
- 6.6 Vendor shall provide independent laboratory certified iso-candela curves. Photometry must be compliant with IESNA LM-79, approved Electrical and Photometric Measurement of Solid State Street Lighting Products. The test laboratory must hold National Voluntary Laboratory Accreditation Program (NVLAP) accreditation for the IESNA LM-79 test procedure or must be qualified, verified, and recognized through the US Department of Energy's CALIPER program.
- 6.7 Manufacturers' LM-80 LED test report shall show a minimum of 10,000 hours.
- 6.8 IES files must be provided prior to submittal of sample fixture.
- 6.9 There should be no significant backlight, uplight, or glare.
- 6.10 LED luminaires used must be uniform throughout the midblock roadways and intersections.
- 6.11 Calculation points for lighting analysis must use a 10'x10' grid. (10 feet left-to-right and 10 feet top-to-bottom).

Section 7 WARRANTY

- 7.1 It is the responsibility of the vendor to ensure that all equipment provided have been thoroughly tested prior to shipment and that each shipment conforms to these specifications.
- 7.2 The minimum warranty for any equipment or material shall be for a period of 10 years from the date of Agency acceptance or the date received by the Agency, whichever is later.
- 7.3 The warranty shall cover all manufacturers' defects, parts, labor, and shipping costs.

Section 8 EQUIVALENCY TABLE

Equivalent	Minimum Energy Savings	Maximum Wattage*	Minimum Efficacy	Maximum Weight	Maximum BUG Rating	Distribution Type
100W	60%	43W	75 lm/W	18 lbs	B1 U0 G2	II**
150W	60%	62W	80 lm/W	22 lbs	B2 U0 G2	III***
200W	35%	111W	80 lm/W	24 lbs	B3 U0 G3	III***
250W	40%	122W	80 lm/W	28 lbs	B3 U0 G3	III***
310W	40%	122W	80 lm/W	30 lbs	B3 U0 G3	III***
400W	50%	122W	75 lm/W	30 lbs	B3 U0 G3	III***

Illuminance for Roadways			
Street Classification	Curb-to-Curb Width	Minimum Average Footcandles	Maximum Uniformity Ratio
1. Major Intermediate	84'	1.40	3.00
2. Collector Intermediate (Secondary)	64'	0.90	3.00
3. Local Residential	40' or less	0.40	6.00

Illuminance for Intersections				
Functional Classification	Average Maintained Illumination at Pavement by Pedestrian Area Classification (fc)			Uniformity (avg/min)
	High	Medium (Preferred)	Low	
Major/Major	3.4	2.6	1.8	3.0
Major/Collector	2.9	2.2	1.5	3.0
Major/Local	2.6	2.0	1.3	3.0
Collector/Collector	2.4	1.8	1.2	4.0
Collector/Local	2.1	1.6	1.0	4.0
Local/Local	1.8	1.4	0.8	6.0

* Including driver

** Type 3 is acceptable if Type 2 not available. Type 2 is preferred.

*** Type 2 is acceptable if Type 3 is not available. Type 3 is preferred.

Proposer declares under penalty of perjury that the information stated above is true and accurate. Proposer further acknowledges that if any false, misleading, incomplete, or deceptively unresponsive statements in connection with this proposal are made, the proposal may be rejected at the sole discretion of the County.

Signature	Title
Firm Name	Date