

REQUEST FOR QUOTATION

No. 17-09

Western Riverside County Streetlight LED Procurement

September 21, 2017



Western Riverside Council of Governments 4080
Lemon Street, 3rd Floor, MS-1032 Riverside, CA
92501
(951) 955-7985
www.wrcog.us



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1. INTRODUCTION

The Western Riverside Council of Governments (WRCOG) is releasing this Request for Quotation (RFQ) No. 17-09 to solicit suppliers interested in providing WRCOG's member jurisdictions with LED lights for replacement of jurisdiction-owned streetlights. The LED replacement will include the entire fixture as described herein. The installation component of this LED replacement is not included as part of this RFQ.

In December 2014, WRCOG staff received direction from the WRCOG Executive Committee to develop and administer a Regional Streetlight Program for interested member jurisdictions. In January 2015, WRCOG entered into a contract to conduct a streetlight audit and to create an accurate regional inventory. To date, over 63,000 SCE-owned and operated streetlights have been inventoried in the WRCOG subregion, identifying pole and lamp types, wattages, material types, ages, and other general pole conditions. Of the 63,000 SCE-owned streetlights, approximately 48,000 will be acquired by 11 jurisdictions within Western Riverside County (Streetlight Inventory available in Attachment A). After acquisition, these streetlights will be retrofitted with LED fixtures. Additionally, there are around 7,000 streetlights that are currently owned by the participating jurisdictions. Upon their request, these streetlights can be added to the overall inventory count, increasing the LED fixture count to approximately 55,000.

WRCOG is a joint powers authority whose purpose is to unify Western Riverside County so that it can speak with a collective voice on important issues that affect its members. Representatives from eighteen (18) cities in Western Riverside County, the County of Riverside, Morongo Band of Mission Indians and the Eastern and Western Municipal Water Districts have seats on the WRCOG Executive Committee, the policy setting Board for the Agency. The Riverside County Superintendent of Schools is an ex-officio member of the Executive Committee. As a joint powers authority, WRCOG examines a range of regional matters critical to Western Riverside County's future. For more information about WRCOG please visit the website at www.wrcog.us.

2. SUBMISSIONS

All quotes must be submitted electronically. Quotes must be received by the deadline listed in this RFQ and submitted to:

Name	Western Riverside Council of Governments
Address	4080 Lemon Street, 3 rd Floor, MS 1032, Riverside, CA 92501
Attn:	Tyler Masters, Program Manager
Email	tmasters@wrcog.us

See Section 15 for proposal information, organization, and content guidance. It shall be the responsibility of the Proposer to submit the proposal and all other required items specified in this RFQ by or before **5:00 p.m.** Pacific Standard Time (PST) on **Wednesday, October 18, 2017**. WRCOG will not accept any quotes received after the proposal submission time and date.

3. QUESTIONS AND ANSWERS REGARDING THIS RFQ

Questions can be directed to the attention of:

Name	Tyler Masters, Program Manager
Address	4080 Lemon Street, 3 rd Floor, MS 1032, Riverside, CA 92501
Phone	(951) 955-8378
FAX	(951) 787-7991
Email	tmasters@wrcog.us

4. PRICING PARAMETERS

Suppliers must provide complete cost itemizations in the format prescribed in Exhibits C and D.

5. DUE DATES

All proposals are due by **5:00 p.m.** PST on **Wednesday, October 18, 2017**. Any proposal received after the required time and date specified for receipt shall be considered late, and will not be evaluated for award.

6. SCHEDULE OF EVENTS

Event	Date
1. RFQ distribution	September 21, 2017
2. Questions from Vendors about scope or approach due	October 4, 2017
3. Responses to questions posted on website	October 11, 2017
4. Quotation due date	October 18, 2017
5. Review of quotes	Week of October 23, 2017
6. Anticipated decision and selection of fixture(s)	Week of November 20, 2017

WRCOG retains the sole discretion to adjust the above schedule. Nothing set forth herein shall be deemed to bind WRCOG to award a contract for the above-described professional Services and WRCOG retains the sole discretion to cancel or modify any part of or all of this RFQ at any time.

7. WRCOG RIGHTS

Award of the contract(s) resulting from this RFQ will be based upon the most responsive proposal whose offer will be the most advantageous to WRCOG in terms of cost, functionality, effectiveness in meeting goals and objectives, and other factors as specified elsewhere in this RFQ.

A. WRCOG reserves the right to:

1. Disqualify any and all proposals that are not submitted in accordance with the required format described in this RFQ
 2. Reject any and all proposals submitted
 3. Request additional information
 4. Issue Addenda to this RFQ
 5. Award all or part of the work contemplated in this RFQ
 6. Remedy errors in the RFQ
 7. Cancel the entire RFQ
 8. Issue a subsequent RFQ
 9. Approve or reject the use of a particular subcontractor/supplier
 10. Negotiate with any, all, or none of the Proposers. If WRCOG is unable to negotiate final contract Terms and Conditions that are acceptable to WRCOG, WRCOG reserves the right to award the contract to another Proposer
 11. Accept other than the lowest priced proposal
 12. Award a contract without interviews, discussions, or negotiations
 13. Award a contract to one or more Proposer
- B. All Proposers should be aware of the insurance requirements for Contract Award. The Certificate of Insurance must be provided by the successful Proposer prior to Contract Award. A contract may not be awarded if insurance requirements are not met.
- C. WRCOG does not reimburse for the cost of proposal preparation, even in the event of RFQ cancellation.
- D. Communication between the Proposer and any member of the proposal Review Committee during the selection process is prohibited, except when and in a manner expressly authorized in this RFQ. Violation of this restriction is grounds for disqualification of the communicating Proposer's proposal.
- E. Every proposal submitted is considered a firm offer that must be valid for a minimum of ninety (90) calendar days.

8. ADDENDA

WRCOG reserves the right to revise the RFQ documents. Any WRCOG changes to the requirements will be made by written addenda to this RFQ. Any written addenda issued pertaining to this RFQ shall be incorporated into the terms and conditions of any contract resulting from this RFQ. Addenda will be posted on the WRCOG website. It is the responsibility of the Proposer to check the WRCOG website to determine if any addenda have been issued. WRCOG will not be bound to any modifications to or deviations from the requirements set forth in this RFQ as the result of oral instructions. Proposer shall acknowledge receipt of addenda in their proposal. Failure to acknowledge receipt of all addenda may cause the proposal to be deemed non-responsive to this RFQ and be rejected without further evaluation.

9. NOTIFICATION OF RIGHT TO PROTEST CONTRACT AWARD

Proposer has the right to protest the contract award. A written protest must be filed with WRCOG's Chief Financial Officer within five (5) working days after posting of award decision. WRCOG will not accept any verbal protests. The protest must be a detailed, written statement of the protest grounds and reference the RFQ number and name of the designated Contracts Administrator. Grounds for a

protest are that WRCOG failed to follow the selection procedures and adhere to requirements specified in this RFQ or any addenda or amendments; there has been a violation of conflict of interest as provided by California Government Code section 87100 et seq.; or violation of State or Federal law. WRCOG will only consider those specific issues addressed in the written protest. The protest must be submitted to WRCOG's Chief Financial Officer via 1) certified mail and 2) either fax or e-mail using the contact information provided below. Any matters not set forth in the protest shall be deemed waived.

Name	Ernie Reyna, Chief Financial Officer
Address	4080 Lemon Street, 3 rd Floor, MS 1032, Riverside, CA 92501
Phone	(951) 955-8432
FAX	(951) 787-7991
Email	ereyna@wrcog.us

A written response from WRCOG will be directed to the protesting Proposer within fourteen (14) calendar days of receipt of the protest, advising of the decision with regard to the protest and the basis of the decision. Action by WRCOG relative to the protest will be final and not subject to appeal or reconsideration. The procedure and time limits set forth in this Section are mandatory and are the Proposer's sole and exclusive remedy in the event of protest. Failure to comply with these procedures will constitute a waiver of any right to further pursue the protest, including filing a Government Code claim or legal proceedings.

10. CONFLICTS OF INTEREST

All Proposers responding to this RFQ must avoid organizational conflicts of interest which would restrict full and open competition in this procurement. An organizational conflict of interest means that due to other activities, relationships, or contracts, a Proposer is unable, or potentially unable, to render impartial assistance or advice to WRCOG; a Proposer's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or a Proposer has an unfair competitive advantage.

11. CONTACTS

Any questions concerning technical specifications or Scope of Work requirements must be submitted in writing by **Wednesday, October 4, 2017** and directed to:

Name	Tyler Masters, Program Manager
Address	4080 Lemon Street, 3 rd Floor, MS 1032, Riverside, CA 92501
Phone	(951) 955-8378
FAX	(951) 787-7991
Email	tmasters@wrcog.us

Answers to questions will, at minimum, be posted on WRCOG's website at

<http://www.wrcog.us/253/Bid-OpportunitiesRFPs> no later than **Wednesday, October 11, 2017**.

12. TERMS AND CONDITIONS

Any Proposer submitting shall state their willingness to agree to the following terms and conditions:

- A. The awardee must be fully committed to the mission of WRCOG.
- B. Oral Presentations - Any Proposer who submits a proposal in response to this RFQ must be willing to make oral presentations related to contract-related activities at the request of the WRCOG Executive Committee or Management.
- C. Compensation - The total value of this contract is undetermined. The schedule of compensation will be mutually negotiated. The compensation plan will include payment based upon an assessment of the Proposer's attainment of specific, measurable outcomes or "performance benchmarks," which will be mutually developed between WRCOG and the selected Proposer.

13. WRCOG STANDARD EQUIPMENT PURCHASE AGREEMENT

In submitting a proposal in response to this RFQ, Proposer is certifying that it takes no exceptions to this RFQ unless such concerns or objections are identified in the proposal. The successful Proposer will be required to sign WRCOG's Standard Equipment Purchase Agreement, which is made a part of this RFQ by this reference, in order to receive the contract award. Proposer must identify in their proposal any concerns or objections they would have with any of the Agreement's terms and conditions if selected for contract award. Proposer shall propose alternative language for consideration in their proposal. Any concerns or objections with the RFQ or Agreement that are not raised in the proposal are deemed waived. If WRCOG is unable to negotiate Agreement terms and conditions that are acceptable to WRCOG, WRCOG reserves the right to award the contract to another Proposer. The Agreement may be viewed on WRCOG's website at <http://wrcog.us/253/Bid-OpportunitiesRFPs>. To the extent this RFQ, and the criteria included herein, directly conflict with WRCOG's Standard Equipment Purchase Agreement, this RFQ will prevail.

14. EVALUATION CRITERIA

Evaluation of proposals will be based upon each Proposer's responsiveness to Section 15 and Attachments B, C and D. The following elements will be the primary considerations in evaluating all submitted proposals and in the selection of a Proposer:

- Completion of all required responses in the correct format.
- The extent to which Proposer's proposed solution fulfills the stated requirements of WRCOG, as set forth in this RFQ.
- The Proposer's stability, experience, and record of past performance in supplying products for similar projects.
- Overall cost of Proposer's proposal.
- Warranty
- Qualified Design Lights Consortium (DLC) lighting product.

WRCOG may, at its discretion, and without explanation to prospective Proposer, at any time, choose to discontinue this RFQ without obligation to such prospective Proposer.

15. PROPOSAL INFORMATION, ORGANIZATION, AND CONTENT

Proposer's response to this RFQ will be incorporated into the Standard Equipment Purchase Agreement identified in Section 13 between WRCOG and the selected Proposer. All proposals shall contain, at a minimum, the following information:

1. Cover Letter

The cover letter should be brief (two pages maximum), and provide a short synopsis of the Proposer's approach to completing tasks and delivering project final products.

2. Title Page

The following must be provided on the title page:

- RFQ number
- Title of the project
- Name and address of proposing firms and/or individuals
- Phone/Fax of Proposer
- Primary contact person
- Email address and phone number of the primary contact person

3. Table of Contents

This section should include a clear identification of the materials by section and page numbers.

4. Proposer's Capabilities

All proposals must provide a comprehensive description of the Proposer's capabilities including the following:

- Demonstrates direct experience with providing LED products for streetlighting projects

5. Scope of Work

Proposer shall:

- Provide a narrative, which addresses the Scope of Work, and shows ability to provide product on the schedule set forth in Section 15.6 – Schedule.
- Provide all requested product submittal information identified in Exhibits C and D.

6. Schedule

The eleven (11) participating jurisdictions identified in the Introduction and in Exhibit A are working with SCE to acquire all streetlights within each cities boundaries and will be acquiring their streetlights by quarter one of 2018, with retrofit to LED luminaries starting as early as December 2017. Streetlights would be acquired and transitioned to jurisdictional ownership in phases of roughly 3,000 per month per City. As part of this phasing, the selected vendor would need to ship upwards of 19,000 LED streetlights between December 2017 and March 2018, with remaining 31,000 streetlight shipping in phases during the remainder of 2018. The types and amounts of lights requested for each delivery phase will be based on need at the time of WRCOG, and each jurisdiction's request.

7. Detailed and Itemized Pricing

Please include a fee itemization for phases found in Attachment D. Include all costs that may be relevant to the project. Also include, at a minimum, three scenarios of service levels and associated costs that account for a mix of jurisdictional participation. Please provide scenarios where jurisdictions comprising roughly 10%, 50%, and 100% of the streetlight inventory participate.

Prices provided by Proposers in response to this RFQ are valid for 120 days from the proposal due date. WRCOG intends to award the contract within this time but may request an extension from the Proposers to hold pricing, until negotiations are complete and the contract is awarded.

8. Confidentiality

Pursuant to *Michaelis, Montanari, & Johnson v. Superior Court* (2006) 38 Cal.4th 1065, proposals submitted in response to this RFQ shall be held confidential by WRCOG and shall not be subject to disclosure under the California Public Records Act (Cal. Government Code section 6250 et seq.) until after either WRCOG and the successful Proposer have completed negotiations and entered into an Agreement or WRCOG has rejected all proposals. All correspondence with WRCOG including responses to this RFQ will become the exclusive property of WRCOG and will become public records under the California Public Records Act. Furthermore, WRCOG will have no liability to the Proposer or other party as a result of any public disclosure of any proposal or the Agreement.

If a Proposer desires to exclude a portion of its proposal from disclosure under the California Public Records Act, the Proposer must mark it as such and state the specific provision in the California Public Records Act which provides the exemption as well as the factual basis for claiming the exemption. For example, if a Proposer submits trade secret information, the Proposer must plainly mark the information as "Trade Secret" and refer to the appropriate section of the California Public Records Act which provides the exemption as well as the factual basis for claiming the exemption. Although the California Public Records Act recognizes that certain confidential trade secret information may be protected from disclosure, WRCOG is not in a position to establish that the information that a Proposer submits is a trade secret. If a request is made for information marked "Confidential", "Trade Secret" or "Proprietary", WRCOG will provide Proposers who submitted the information with reasonable notice to seek protection from disclosure by a court of competent jurisdiction.

9. Appendix A: References

Please provide three (3) references, including names and contact information, for which you have performed similar work. References should not include any WRCOG staff or WRCOG Executive Committee Members.

10. Appendix C: Company Overview

Please provide the following for your company:

- Official registered name (Corporate, D.B.A., Partnership, etc.), Dun & Bradstreet Number, Primary and secondary Standard Industrial Classification (SIC) numbers, address, main telephone number, toll-free number(s), and fax number(s).

- Primary key contact name, title, address (if different from above address), direct telephone and fax number(s).
- Person authorized to contractually bind the organization for any proposal against this RFQ.
- Brief history, including year established and relevant experience with streetlight retrofit and maintenance.

Please note that the 57,000 is an estimate; the total number of assets could change during the process of acquiring assets from SCE based upon the number of jurisdictions participating in the Program.

Exhibit A

Regional Streetlight Inventory*

	Newly Acquired Streetlights	Jurisdiction-owned-streetlights**
Eastvale	11	192
Hemet	2,196	3,098
Jurupa Community Services District	6,091	TBD
Lake Elsinore	3,480	300
Menifee	6,250	TBD
Moreno Valley	10,004	1,657
Murrieta	6,520	368
Perris	4,611	20
San Jacinto	2,346	794
Temecula	7,531	488
Wildomar	1,408	TBD
Total	50,448	6,917

* Regional Streetlight Inventory count is subject to change during the Acquisition post-inventory inspection and cut-over process.

** A portion of the jurisdiction-owned streetlights have already been retrofit to LED luminaires

		Eastvale	Hemet	JCSD	Lake Elsinore	Meniffee	Moreno Valley	Murrieta	Perris	San Jacinto	Temecula	Wildomar	Regional Total
HPS	4000L (50W)		1					84	1	11	767		864
	5800L (70W)		1578	61	177	199	307	198	92	389	41		3042
	9500L (100W)		93	4800	2595	1948	7441	2	3182	1369	143	218	21791
	16000L (150W)		138	2			1	6	1	13			161
	22000L (200W)	11	45	1226	626	202	2244	25	1299	355	42	34	6109
	27500L (250W)		32	2	1		9	0	1		1		46
	50000L (400W)		1					22	2				25
LPS	4800L (35 W)							21			8		29
	8000L (55 W)		202		77	3283	1	5269	20	100	5059	1001	15012
	13500L (90 W)		60			15		2		2	3	7	89
	22000L (135 W) *22500L		45		4	603	1	888	13	107	1466	146	3273
	33000L (180 W)		1									1	2
MH	8500L (100 W)							2					2
	19500L (250 W)										1		1
MV	4000L (100 W)							1					1
	7900L (175 W)											1	1
													50448
		11	2196	6091	3480	6250	10004	6520	4611	2346	7531	1408	

Exhibit B

Criteria for Products Requested

QUALITY ASSURANCE

- A. Before approval and purchase, furnish luminaire sample(s) identical to product configuration(s) submitted for inspection. Furnish IES LM-79 testing of luminaire sample(s) to verify performance is within manufacturer-reported tolerances.
- B. Product shall be specified as a qualified lighting project on the Design Lights Consortium (DLC).

LIGHTING SYSTEM PERFORMANCE

- A. Energy Conservation
 - 1. Lighting Controls
 - a. See section 2.1-B below for driver control interface and performance requirements.
 - b. See section 2.1-K below for photocontrol receptacle requirements.
- B. Photometric Requirements
 - 1. Luminaires shall meet the general criteria provided in the body of this specification and the criteria for each luminaire type defined in Table B(Exhibit C).

REQUIRED SUBMITTALS FOR EACH LUMINAIRE TYPE DEFINED IN TABLE A AND EACH PROPOSED MANUFACTURER

- A. Use Table B(Exhibit C) attached hereto for each proposed luminaire.
- B. General submittal content shall include
 - 1. Completed Table B(Exhibit C) submittal form
 - 2. Luminaire cutsheets
 - 3. Cutsheets for LED light sources
 - 4. Cutsheets for LED driver(s)
 - a. If dimmable LED driver is specified, provide diagrams illustrating light output and input power as a function of control signal.
 - 5. Cutsheets for surge protection device, if applicable.
 - 6. Instructions for installation and maintenance
 - 7. Summary of luminaire recycled content and recyclability per the FTC Green Guides, expressed by percentage of luminaire weight
- C. LM-79 luminaire photometric report(s) shall be produced by the test laboratory and include name of test laboratory
 - 1. Name of test laboratory
 - a. The test laboratory must hold National Voluntary Laboratory Accreditation Program (NVLAP) accreditation for the IES LM-79 test procedure.
 - 2. Report number

3. Date
 4. Complete luminaire catalog number
 - a. Provide explanation if catalog number in test report(s) does not match catalog number of luminaire submitted
 - i. Clarify whether discrepancy does not affect performance, e.g., in the case of differing luminaire housing color.
 - ii. If nominal performance of submitted and tested products differ, submit additional LM-79 report(s) and derivation as indicated in Appendix C
 5. Description of luminaire, LED light source(s), and LED driver(s)
 6. Goniophotometry
 7. Colorimetry
 8. IES TM-21-11 calculations that derive the lumen maintenance (lamp lumen depreciation or LLD) factor applied to photometric calculations specified herein. TM-21 calculations must apply to the maximum LED case temperature from ISTMT, shall not extrapolate beyond six times the duration of available LM-80 test data, and submitted in the spreadsheet format of the ENERGY STAR TM-21 calculator.
- D. Predicted dirt depreciation per IES RES-1-16 Page 72 Tables 7 and 8 for the optical system used.
- E. Computer-generated point-by-point photometric analysis of maintained photopic light levels.
1. Calculations shall be for maintained values, i.e. Light Loss Factor (LLF) < 1.0, where $LLF = LLD \times LDD \times LATF$, and
 - a. Lamp Lumen Depreciation (LLD)
 - i. Shall be 0.8 (L80) for all luminaires
 - b. Luminaire Dirt Depreciation (LDD) per IES RES-1-16 and assuming 5-year cleaning cycle.
 - c. Luminaire Ambient Temperature Factor (LATF) = 1.00
 2. Use of IES HB-10 mesopic multipliers
 - a. Shall be disallowed herein, by assuming an S/P ratio of 1.00 for all luminaires.
 3. Calculation/measurement points shall be per IES RP-8.
 4. Software shall be AGI32 using roadway methods and insofar as possible, on WRCOG standard test designs.
- F. Summary of Joint Electron Devices Engineering Council (JEDEC) or Japan Electronics and Information Technology Industries (JEITA) reliability testing performed for LED packages
- G. Summary of reliability testing performed for LED driver(s)
- H. Written product warranty as per 'Warranty' section below
- I. Safety certification and file number
1. Applicable testing bodies are determined by the US Occupational Safety Health Administration (OSHA) as Nationally Recognized Testing Laboratories (NRTL) and include: CSA (Canadian Standards Association), ETL (Edison Testing Laboratory), and UL (Underwriters Laboratory).

WARRANTY

- A. Provide a minimum ten-year warranty covering maintained integrity and functionality of:

1. Luminaire housing, wiring, and connections
 2. LED light source(s)
 - a. Negligible light output from more than 10 percent of the LED packages constitutes luminaire failure.
 3. LED driver(s)
 - a. Failure to dim if connected to a control system and using proper components constitutes luminaire failure.
- B. Warranty period shall begin upon installation, or as negotiated by owner such as in the case of an auditable asset management system.
- C. Warranty to provide for replacement of product with new product of equivalent appearance, CCT, CRI, and photometric performance.
- D. Upon request prior to approval, manufacturer may be required to provide proof of financial viability which may include any information deemed necessary to determine the manufacturer's ability to fully service their warranty.

PART 2 - PRODUCTS

LUMINAIRES

- A. General Requirements
1. Luminaires shall be as specified for each type in Table B(Exhibit C).
 2. Luminaire shall be specified as a qualified lighting project on the DesignLights Consortium (DLC).
 3. Luminaire shall have an external label per ANSI C136.15
 4. Luminaire shall have an internal label per ANSI C136.22.
 5. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
 6. Luminaires shall start and operate in -20°C to +40°C ambient.
 7. Electrically test fully assembled luminaires before shipment from factory.
 8. Effective Projected Area (EPA) of the luminaire shall not exceed the EPA of the luminaire being replaced.
 9. Luminaires shall be designed for ease of component replacement and end-of-life disassembly.
 10. Luminaires shall be rated for the ANSI C136.31 Vibration Level indicated in Table B (Exhibit C).
 11. LED light source(s) and driver(s) shall be RoHS compliant.
 12. Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the thermal/mechanical/chemical environment.
- B. Driver
1. Rated case temperature shall be suitable for operation in the luminaire operating in the ambient temperatures indicated in section Part 2-Luminaires.A above.
 2. Shall operate at 100 to 277 volts AC at 50/60 Hz, and shall operate normally for input voltage fluctuations of plus or minus 10 percent
 3. Shall have a minimum Power Factor (PF) of 0.90 at full input power and across specified voltage range.
 4. Control signal interface
 - a. Table B (Exhibit C) submittal should indicate whether the driver is dimmable.
 - b. If dimmable, it should further indicate "0-10", "1-10", "DALI", or "other".

- C. Electrical transient and surge immunity
 - 1. Luminaire shall meet the "Elevated" requirements. Manufacturer shall indicate on submittal form Table B (Exhibit C).
- D. Electromagnetic interference
 - 1. Shall have a maximum Total Harmonic Distortion (THD) of 20% at full input power and across specified voltage range.
 - 2. Shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards.
- E. Electrical safety testing
 - 1. Luminaire shall be listed for wet locations by an OSHA NRTL.
 - 2. Luminaires shall have locality-appropriate governing mark and certification.
- F. Painted or finished luminaire components exposed to the environment
 - 1. Shall exceed a rating of six per ASTM D1654 after 1000hrs of testing per ASTM B117.
 - 2. The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
- G. Thermal management
 - 1. Mechanical design of protruding external surfaces (heat sink fins) for shall facilitate hose-down cleaning and discourage debris accumulation.
 - 2. Liquids or other moving parts shall be clearly indicated in submittals, shall be consistent with product testing, and shall be subject to review by Owner.
- H. IES TM-15 limits for Backlight, Uplight, and Glare (BUG Ratings) shall be as specified for each luminaire type in Table A.
 - 1. Calculation of BUG Ratings shall be for initial (worst-case) values, i.e., Light Loss Factor (LLF) = 1.0.
- I. Minimum Color Rendering Index (CRI): 70.
- J. Correlated Color Temperature (CCT)
 - 1. Nominal 2700K (3000K for certain applications only).
 - 2. Allowable 2580 to 2870K per IES LM-79.
 - 3. Allowable -.006 to .006 D_{uv} per IES LM-79.
- K. The following shall be in accordance with corresponding sections of ANSI C136.37
 - 1. Wiring and grounding
 - a. All internal components shall be assembled and pre-wired using modular electrical connections.
 - 2. Mounting provisions
 - 3. Terminal blocks for incoming AC lines
 - 4. Photocontrol receptacle
 - 5. Latching and hinging
 - 6. Ingress protection
- L. Luminaire Construction
 - 1. Weight
 - a. The net weight of each luminaires less than 46 (21 kg) pounds including mounting devices and backlight shields.
 - 2. Housing
 - a. Tool-less entry
 - b. Die-cast aluminum alloy meeting ASTM Specification A380. Alternate materials may be considered but shall be submitted to the Owner for

review and approval. For alternate materials, provide appropriate accelerated age and material tolerance testing documentation.

- c. Encloses the mounting hardware, LED arrays, control receptacle, terminal board, and electronic driver.
- d. Includes a surface to facilitate leveling with a spirit level.
- e. Integral heat sink characteristics, such that all enclosed components will operate within their designed operating temperatures under expected service conditions. No external or removable heat shields or heat sinks are permitted.
- f. Designed to encourage water shedding.
- g. Designed to minimize dirt and bug accumulation on the optic surface.
- h. Permanently affixed easily-viewable nameplate inside of each luminaire housing containing the manufacturer's name, manufacturer's catalog number, date of manufacture (month and year), plant location, input power consumption, driver output current, IEC IP Rating, correlated color temperature (CCT), IES light distribution type, IESNA TM-15 BUG ratings, and serial number.
- i. City approved luminescent name plate meeting American National Standard for Roadway and Area Lighting Equipment-Luminaire Field Identification (ANSI C136.15-2015) shall be permanently affixed on the exterior of the Luminaire to be visible from the ground. In addition, the name plate shall indicate nominal lumen package rounded to the nearest thousand lumens, e.g. 2800 lumens would read as "3KL" and 11200 lumens would read as "11KL".

3. Mounting Provisions

- a. Standard heavy gauge slip fitter clamping assembly suitable for secure attachment over the end of a nominal two 2" IP (2.375" OD) steel pipe with an approved means of clamping it firmly in mounting bracket. The slip fitter mounting clamp must contain an approved shield around the pipe entrance to block the entry of birds.
- b. Leveling adaptor to permit at least 15 degrees of correction to level luminaire with respect to normal to photometric nadir (straight down).
- c. Adaptor fittings for nominal 1.5 inch IP, 1.75 inch IP, 2.25 inch IP and 2.5 inch IP mast arms.

4. Access Door-Panel

- a. Die-cast aluminum door-panel composed of aluminum alloy A380. Alternate materials may be considered but shall be submitted to the Owner for review and approval.
- b. Provides access to the terminal strip and LED driver
- c. Hinged to the luminaire housing and suitably latched and fastened at the closing end.
- d. Easily removed.
- e. Captive hardware for the hinge and fastening devices.

5. Hardware

- a. Machine screws, locknuts, pins and set screws necessary to make a firm assembly, and for its secure attachment to the mast arm, must be furnished in place.
- b. Hardware must be of stainless steel, zinc plated steel, copper silicon alloy or other non-corrosive metal, and where necessary must be suitably

plated to prevent electrolytic action by contact with dissimilar metals.

6. Finish
 - a. Polyester powder coat with a minimum 2.0 mil thickness.
 - b. Surface texture and paint quality subject to approval.
 - c. Color must be as specified in the order.
 - d. Finish must exceed a rating of six per ASTM D1654 after 1000 hours of testing per ASTM B117.
 - e. The coating must exhibit no greater than 30% reduction of gloss per ASTM D523 after 500 hours of QUV testing at ASTM G154 Cycle 6
7. Ingress Protection
 - a. Electric compartment housing must have an ingress protection rating of IP54 or better as described in ANSI C136.25-2013.
 - b. The optical system must have a minimum rating of IP 66.
 - c. Listed for wet locations by a U.S. Occupational Safety Health Administration (OSHA) Nationally Recognized Laboratory (NRTL) and have a safety certification and file number indicating compliance with UL 1598.
8. LED Optical Arrays
 - a. Factory installed.
 - b. No required field adjustment for specified photometric performance.
9. Terminal Block
 - a. High grade molded plastic of the barrier or safety type.
 - b. Within the water tight part of the housing in a readily accessible location.
 - c. Pre-wired to all luminaire components
 - d. Copper plated clamp-type pressure connector approved type for "line" connections, to accommodate wire sizes from #14 to #6 A.W.G.
 - e. Internal component connections either the screw-clamp or quick disconnect type.

PRODUCT MANUFACTURERS AND APPROVED PRODUCTS

- A. Minimum photometric performance of products shall comply with Table A.
- B. Select products to replace existing luminaires using Tables A and B (Exhibit C).
- C. Specific products proposed for a specific project should be submitted using Table B (Exhibit C) along with a physical sample.
- D. Optimize performance for the existing conditions. For illuminating engineering, WRCOG will provide access to AGI32 models to determine best possible performance under common circumstances found throughout Western Riverside County.

Table A – Minimum Photometric Performance Requirements

Less than 5 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	67% min.		
Backlight (B)	0 or1		
Uplight (U)	0		

Glare (G)	0 or 1
House Side shield Required ¹	If B1, otherwise by request
Cul-de-sac shield required ²	By request

Nominal 5 to 7.5 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	73% min.	70% min.	63% min.
Backlight (B)	0 or 1		
Uplight (U)	0		
Glare (G)	0 or 1		
House Side shield Required ¹	If B1, otherwise by request		
Cul-de-sac shield required ²	Yes		

Nominal 7.5 to 12.5 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	76% min.	74% min.	70% min.
Backlight (B)	0, 1 or 2		
Uplight (U)	0		
Glare (G)	0, 1, or 2	0, 1, 2 or 3	0, 1, 2 or 3
House Side shield Required ¹	If B2, otherwise by request		
Cul-de-sac shield required ²	Yes		

Nominal 12.5 to 17.5 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	80% min.	76% min.	75% min.
Backlight (B)	0, 1 or 2		
Uplight (U)	0		
Glare (G)	0, 1, or 2	0, 1, 2 or 3	0, 1, 2 or 3

House Side shield Required ¹	If B2 or B3; otherwise by request
Cul-de-sac shield required ²	Yes

Nominal 17.5 to 30 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	80% min.	76% min.	75% min.
Backlight (B)	0, 1 or 2		
Uplight (U)	0		
Glare (G)	0, 1, or 2	0, 1, 2 or 3	0, 1, 2 or 3
House Side Shield Required ¹	If B2 or B3; otherwise by request		
Cul-de-sac shield required ²	Yes		

Footnotes for all luminaires:

- 1 If installed on a residential street or residential collector; optional to install by request by Jurisdiction or as additional service
- 2 If installed on a residential cul-de-sac or L intersection
- 3 Without detachable shields

MANUFACTURER SERVICES

- A. The manufacturer shall provide full support for the project including, but not limited to, AGI-32 lighting calculations, required tests and certifications, and all other services necessary to permit products to be applied as intended by these specifications.
- B. The manufacturer shall notify the contractor immediately of product changes and bulletins and provide new specifications and test reports.
- C. Manufacturer or local sales representative shall provide installation and troubleshooting support in person and shall identify the name of a factory trained sales agent in Riverside County to service the Project.

Exhibit C

Product Submittal Form
(Use separate form for each light type)

Luminaire designation				
Luminaire manufacturer				
Luminaire model number				
DLC listing and date				
Pricing for individual luminaire				
Nominal IES TM-15 BUG ratings		B =	U =	G =
Total Lumens				
Lumen to Watt ratio				
Housing finish color				
Tenon nominal pipe size			inches	
Nominal luminaire weight			lb	
Nominal luminaire EPA			ft ²	
Nominal luminaire input voltage			V	
Control interface	<input type="checkbox"/> Non e	<input type="checkbox"/> ANSI C136.10 (3-pin)	<input type="checkbox"/> ANSI C136.41, 5-pin	<input type="checkbox"/> ANSI C136.41, 7-pin
LED driver	<input type="checkbox"/> Not dimmable	<input type="checkbox"/> Dimmable, 0-10V (IEC 60929)	<input type="checkbox"/> Dimmable, DALI (IEC 62386)	
Electrical immunity—ANSI C136.2 combination wave test level	<input type="checkbox"/> Basic (6kV / kA)	<input type="checkbox"/> Enhanced (10kV / 5kA)	<input type="checkbox"/> Elevated (20kV / 10kA)	
Upon failure of electrical immunity system	<input type="checkbox"/> Possible disconnect		<input type="checkbox"/> No possible disconnect	
ANSI C136.31 vibration test level	<input type="checkbox"/> Level 1 (Normal)		<input type="checkbox"/> Level 2 (bridge/overpass)	
Thermal management	<input type="checkbox"/> Liquids or moving parts		<input type="checkbox"/> No liquids or moving parts	
Luminaire warranty period				Years
Rated life of LED driver(s)				Hours
IES LM-80 test duration				Hours
LED lumen maintenance *	<input type="checkbox"/> Reported (restricted)		<input type="checkbox"/> Calculated (unrestricted)	
Make/model of LED light source(s)				
Make/model of LED Driver				
	Nominal value		Tolerance (%)	
Luminaire input power—initial	W		W	
Luminaire input power—maintained **	W		W	
LED drive current—initial	mA		mA	
LED drive current—maintained **	mA		mA	
Lamp lumen depreciation				
In-situ LED T _s	°C		°C	
LED lumen maintenance **	%		%	

CCT	K	K
CRI per IESNA LM-79-16		
NVLAP facility Name		
Light Pattern / Distribution Type	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Street-side coefficient of Utilization		
Operational Life per LM-80-16	Hrs.	
External Label per ANSI C136.15	<input type="checkbox"/> Yes <input type="checkbox"/> No	
External Label per ANSI C136.22	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Slip Fitter Adjustment Range Increments	° to °	°
Range of Tenon Sizes	Inches to	inches
Field installable Light Shields Capability	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Housing IP Rating		
Lens material		
NRTL Rated Wet Locations	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Power Supply Field setting		
Power Supply Adjustable/Range	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Power Supply IP rating		
Total Harmonic Distortion		
Average Night Time Temperature	°F	
Start and Operate range	°F to °F	
Additional product description		

Exhibit D

Product Pricing Sheet

(All pricing should include any applicable taxes, charges, and shipping)

Luminaire Designation	Existing Wattage	Proposed Luminaire	Quantity	Unit Price	Total Price
	50W HPS		864		
	70W HPS		3042		
	100W HPS		21791		
	150W HPS		161		
	200W HPS		6109		
	250W HPS		46		
	400W HPS		25		
	35W LPS		29		
	55W LPS		15012		
	90W LPS		89		
	135W LPS		3273		