



Western Riverside Council of Governments Planning Directors' Committee

AGENDA

**Thursday, May 11, 2017
9:00 a.m.**

**Riverside Transit Agency
1825 Third Street
Riverside, CA 92517**

Please Note Meeting Location

In compliance with the Americans with Disabilities Act and Government Code Section 54954.2, if special assistance is needed to participate in the Planning Directors' Committee meeting, please contact WRCOG at (951) 955-8515. Notification of at least 48 hours prior to meeting time will assist staff in assuring that reasonable arrangements can be made to provide accessibility at the meeting. In compliance with Government Code Section 54957.5, agenda materials distributed within 72 hours prior to the meeting which are public records relating to an open session agenda item will be available for inspection by members of the public prior to the meeting at 4080 Lemon Street, 3rd Floor, Riverside, CA, 92501.

The Planning Directors' Committee may take any action on any item listed on the agenda, regardless of the Requested Action.

- 1. CALL TO ORDER (Matt Bassi, Chair)**
- 2. SELF INTRODUCTIONS**
- 3. PUBLIC COMMENTS**

At this time members of the public can address the Planning Directors' Committee regarding any items with the subject matter jurisdiction of the Committee that are not separately listed on this agenda. Members of the public will have an opportunity to speak on agenda items at the time the item is called for discussion. No action may be taken on items not listed on the agenda unless authorized by law. Whenever possible, lengthy testimony should be presented to the Committee in writing and only pertinent points presented orally.

- 4. CONSENT CALENDAR**

All items listed under the Consent Calendar are considered to be routine and may be enacted by one motion. Prior to the motion to consider any action by the Committee, any public comments on any of the Consent Items will be heard. There will be no separate action unless members of the Committee request specific items be removed from the Consent Calendar.

- A. Summary Minutes from the March 9, 2017, Planning Directors' Committee meeting are available for consideration. P. 1

Requested Action: 1. Approve Summary Minutes from the March 9, 2017, Planning Directors' Committee meeting.

- B. WRCOG Committees Update Andrea Howard, WRCOG P. 9

Requested Action: 1. Receive and file.

- C. Active Transportation Plan (ATP) Update Christopher Gray, WRCOG P. 19

Requested Action: 1. Receive and file.

5. REPORTS/DISCUSSION

- A. Riverside Transit Agency Updates Rohan Kuruppu, Riverside Transit Agency P. 21

Requested Action: 1. Receive and file.

- B. Regional Streetlight Program Activities Update Tyler Masters, WRCOG P. 23

Requested Action: 1. Discuss and provide input.

- C. Transportation Uniform Mitigation Fee (TUMF) Calculation Handbook Update Daniel Ramirez-Cornejo, WRCOG P. 105

Requested Action: 1. Discuss and provide input.

- D. Work Plan for Grant Writing Assistance Program for Local Jurisdictions Christopher Tzeng, WRCOG P. 117

Requested Action: 1. Approve Work Plan for the Grant Writing Assistance Program.

- E. Planning Directors' Committee Video Conferencing Options Christopher Gray, WRCOG P. 121

Requested Action: 1. Discuss and provide input.

- F. Request for Proposal Review Committee Members for On-Call Planning Services Christopher Tzeng, WRCOG P. 127

Requested Action: 1. Identify volunteers to assist WRCOG with the review of proposals and assist with interviews for On-Call Transportation Planning, Grant Writing, and Clean Cities Activities.

6. ITEMS FOR FUTURE AGENDAS Members

Members are invited to suggest additional items to be brought forward for discussion at future Planning Directors' Committee meetings.

7. GENERAL ANNOUNCEMENTS Members

Members are invited to announce items/activities which may be of general interest to the Planning Directors' Committee.

8. NEXT MEETING: The next WRCOG Planning Directors' Committee meeting is DARK in June.

The next Planning Directors' Committee meeting is scheduled for Thursday, July 13, 2017, at 9:00 a.m. at the City of Moreno Valley Council

Chambers, 14177 Frederick Street, Moreno Valley, CA 92553.

9. ADJOURNMENT

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1. CALL TO ORDER

The meeting of the Planning Directors' Committee (PDC) was called to order at 9:12 a.m. by Chair Matt Bassi at the Murrieta City Hall, Veteran's Room.

2. SELF INTRODUCTIONS

Members present:

Cathy Perring, City of Eastvale
Nancy Gutierrez, City of Hemet
Richard MacHott, City of Lake Elsinore
Rick Sandzimier, City of Moreno Valley
Cynthia Kinser, City of Murrieta
Clara Miramontes, City of Perris
Luke Watson, City of Temecula
Matt Bassi, City of Wildomar
Lauren Sotelo, March Joint Powers Authority
Kristin Warsinski, Riverside Transit Agency

Staff present:

Jennifer Ward, Director of Government Relations
Christopher Gray, Director of Transportation
Christopher Tzeng, Program Manager
Tyler Masters, Program Manager
Andrea Howard, Staff Analyst

Guests present:

Aaron Pfannenstiel, Michael Baker, Intl.
Marco Anderson, Southern California Association of Governments
James Filanc, Southern Contracting
James "Jim" Benya, PE, Benya Burnett Consultancy

3. PUBLIC COMMENTS

There were no public comments.

4. CONSENT CALENDAR - (MacHott/Sandzimier) 10 yes; 0 no; 0 abstentions. Items 4.A through 4.C were approved by a vote of those members present. The Cities of Banning, Calimesa, Canyon Lake, Corona, Eastvale, Jurupa Valley, Menifee, Norco, Riverside, San Jacinto, and the County of Riverside were not present.

A. Summary Minutes from the February 9, 2017, Planning Directors' Committee meeting were available for consideration.

Action: 1. *Approved Summary Minutes from the February 9, 2017, Planning Directors' Committee meeting.*

B. WRCOG Committees Update

Action: 1. *Received and filed.*

C. Transportation Uniform Mitigation Fee (TUMF) Nexus Study Update

Action: 1. *Received and filed.*

5. REPORTS AND DISCUSSIONS

A. SCAG Sustainability Planning Grants Debrief

Marco Anderson, Planner at SCAG, provided an overview of the determination process for awarding the 2016 Sustainability Planning Grants (SPG). This round, SCAG received 136 applications requesting a total of \$35.6 million, compared to approximately 80 applications, requesting \$12 million in 2013.

On average the call for proposals is released every three years, making the next cycle likely to be released in 2019.

For the 2016 SPG, SCAG integrated the active transportation (AT) category of funding with the State's AT funding. As the State's program includes a regional equitability requirement, projects competing for AT SPG funds were compared against AT projects within the same county and scored by representatives for the county transportation commissions and SCAG staff. Projects competing for funding in the Integrated Land Use (ILU) and Green Region Initiative (GRI) categories were scored by evaluation committees and stakeholders including outside agency representatives and academics, and were then ranked by project type across the region.

SCAG has not released a full list of the rankings, partly because of the complexities of the ranking process which meant that a single ranking taken out of context may mislead stakeholders to believe that the project would be higher or lower on the overall funding priorities list than others. Once projects were scored, SCAG staff exercised some discretion to ensure regional equity.

Six projects were awarded in the WRCOG subregion: two in the AT category and four in the ILU category.

Committee Chair Matt Bassi asked how projects were scored.

Mr. Anderson stated that scoring was based on a quantitative process using the specific metrics listed on the application form.

Committee Member Nancy Gutierrez asked what percentage of projects were awarded funding.

Mr. Anderson stated that SCAG funded 40 percent of project applications.

Christopher Gray asked what percentage of money requested was funded.

Mr. Anderson stated that of the \$35 million requested, SCAG has committed to awarding \$9.7 million, approximately 27 percent of the total ask. He continued by noting that SCAG also has an additional \$2 million in MSRC clean transportation funding that will be awarded later in the year for Go Human events and/or projects. SCAG is contacting applicants who were not awarded funding, but who requested funding in the AT category or previously expressed

interest in such a project to offer funding now. If jurisdictions elect not to accept the funds, then they will be placed on a prospective future projects list to be awarded funds *when* funding becomes available.

Action: 1. *Received and filed.*

B. Regional Streetlight program Activities Update

Tyler Masters and consultants to the Regional Streetlights Program, James Filanc and Jim Benya provided an update on the program. Beginning with a brief recap, Mr. Masters reminded the Committee that the Program includes three primary tasks: supporting cities to assess the feasibility of streetlight ownership, identifying opportunities for retrofitting the lights following acquisition from Southern California Edison, and a potential update to lighting standards. This presentation focused on the third task, updating the lighting standards. The same presentation will be delivered to the Public Works Committee (PWC) for input.

Mr. Masters noted that WRCOG staff and consultants have arranged meetings with staff in planning and public works from most WRCOG member jurisdictions to identify the need for new or updated lighting ordinances. These meetings revealed that the majority of jurisdictions have used a version of the Riverside County lighting Ordinance 655, written in 1988. WRCOG has worked with representatives from Palomar Mountain and received a letter of support from them for the Program.

Once an updated lighting ordinance is endorsed by the WRCOG PDC and PWC and adopted by the Executive Committee, member jurisdictions will be encouraged to adopt a version of the updated ordinance, tailored to fit the jurisdiction.

Jim Benya provided an overview of the need for lighting regulation. When Riverside County adopted Ordinance 655, it became one of the first jurisdictions in the world to regulate lighting. The ordinance was brought on by the needs of the Mt. Palomar Observatory for minimized light pollution to enhance star visibility. Lighting ordinances are also beneficial by minimizing light trespass, glare, interruptions to human circadian rhythms, and effects on other living beings, in addition to reducing energy and utility costs. The American Medical Association (AMA) released a white paper in 2016 which identified significant negative health implications associated with lights exceeding threshold blue lighting levels. The AMA concluded the white paper by recommending use of LEDs equal to or less than 3000K in color.

WRCOG and our consultants recommend updates to two county lighting ordinances: Ordinance 655 (1988), and Ordinance 915 (2011) which was developed to control for light trespass from property to property. The proposed, modernized lighting ordinance would: (1) limit the color temperature to warm white lights (3000 Kelvins), complying with the recommendations of the AMA, (2) address LED technology updates, (3) be consistent with Illuminating Engineering Society terms and Recommended Practices, and (4) coordinate with and eliminate duplication with State Codes. The updated Ordinance 655, 655P, would be modernized, while maintaining format and appearance as well as the Palomar Zones. Updated Ordinance 915, 915P, would be a modernized version, maintaining the original format, but made consistent with Cal Green standards. Updated versions of these local ordinances, combined with state codes will provide a complete suite of regulation.

Committee Chair Bassi asked if the draft Ordinance 655P include streetlights.

Mr. Benya stated that draft Ordinance 655P does include provisions for streetlights.

Committee Member Richard MacHott said that he would like to see streetlight standards included in the updated Ordinance 655P including height and lighting specifications.

Mr. Benya stated that historically streetlights have not been incorporated into lighting ordinances, but they can be.

Mr. Benya asked the Committee to consider whether or not it would like to move forward with updating 655P independent of the County or wait for the County to adopt an updated ordinance.

Committee Chair Bassi noted that the Cities will be tailoring the ordinance regardless of whether it is WRCOG or the County that adopts an updated ordinance.

Mr. Masters noted that WRCOG has worked with the County on the draft lighting standards.

Mr. Gray noted that it may not be advisable to wait for the County to act on the lighting standards as it may not be high on their priorities list.

Mr. Filanc affirmed that it is important to update the ordinance as quickly as possible as the transition to LED lights absent updated regulations can result in ill-advised resulting lighting.

Committee Member Gutierrez asked for clarification regarding the process, if updating the ordinance would follow acquisition.

Mr. Masters responded that the order of operations is not critical for acquisition to versus the updated ordinance.

Committee Member Clara Miramontes asked whether it is feasible to move forward with adopting Ordinance 655P without the County.

Mr. Filanc confirmed that state law enables a local jurisdiction to adopt its own lighting zones.

Mr. Masters commented that the County does not have any specific timeline for when the County Ordinance will be updated.

Committee Member Richard Sandzimier asked whether considerations had been made for dark areas and crime and if any studies were available showing the correlation of crime and lighting.

Mr. Benya stated that though this is common question, there are no studies showing a direct correlation between lighting and crime. The City of Los Angeles recently completed a streetlights retrofit to LEDs which surpassed what are now known as the acceptable standards for brightness and color. Within one year of the transition, crime rates went up. The L.A. Times conducted a study which concluded that the most significant indicator of crime is the economy. However communities feel safer when lighting is brighter.

Action: 1. *Received and file.*

C. Work Plan for Proposed Grant Writing Assistance Program for Local Jurisdictions

Christopher Tzeng provided an update on WRCOG's progress toward developing the Grant Writing Assistance Program. The program was initiated in response to past requests for assistance writing grants. To develop the program, WRCOG convened a focus group with members from both the PDC and PWC. The focus group determined that, for this pilot round

of providing assistance, grant proposals must be in alignment with the WRCOG Sustainability Framework; and a regionally significant plan, such as the Subregional Climate Action Plan, the Western Riverside County Active Transportation Plan, or the Riverside County Transportation Commission Long-Range Plan. Additionally, preference will be given to projects which are multi-jurisdictional. Finally, the focus group agreed to limit the scope of eligible grants to a select number of opportunities including the CalTrans Sustainable Transportation Planning Grant Program, CalTrans Active Transportation Program, the State Affordable Housing and Sustainable Communities (AHSC) program, and any new planning grant opportunities which fund such activities as General Plans, Specific Plans, or Community Plans.

WRCOG will provide a brief application form to be completed by members seeking grant writing assistance to ensure minimum eligibility and to direct funding toward the most effective and efficient projects. A soft funding limit per jurisdiction will be instituted based on the number of applications received each fiscal year. As a complement to the program, WRCOG will be developing a grant opportunities repository which will serve as a reminder of upcoming grant opportunities and deadlines. WRCOG anticipates releasing a Request for Proposals (RFP) in March 2017. Consultants will then be selected to serve on a grant writing assistance bench. Once in place, WRCOG will release the application for grant writing assistance and work with applicants to select the appropriate consultant from the bench. Member agency applicants will then be responsible for providing requisite information to the consultant, to hold an informational meeting with the consultant, and for responding to consultant inquiries in a timely manner. The member agency will be responsible for ultimate grant submittal and be the application submission signatory.

Committee Member Gutierrez noted that some grants require significant research and asked what party would be responsible for collecting that information.

Mr. Gray responded that member jurisdictions will be charged with putting in approximately 5-10% of the work on the grant. Primary duties would include developing the project, reviewing the consultant's materials, and furnishing information to the consultant. Mr. Gray reiterated that the purpose of the program is to address the limited resources of jurisdictions.

Committee Member Luke Watson asked when the RFP process would be completed.

Mr. Gray responded that the RFP is being finalized, will be released in March, and consultants will be selected sometime before the end of June, 2017.

Committee Member Sandzimier referred to the criteria provided which highlights an interest in funding "innovative" and "multi-jurisdictional." Mr. Sandzimier asked whether applicants seeking basic support would be penalized.

Mr. Gray responded that the intention of the program is to be light handed. The reference to multi-jurisdictional projects was primarily directed toward active transportation projects.

Action: 1. *Discussed and provided input.*

D. Transportation Uniform Mitigation Fee (TUMF) Fee Calculation Update

Christopher Gray provided information on the WRCOG TUMF Fee Calculation update process, particularly in regards to the TUMF Fee assessed to existing uses. Per the administrative plan, a project is exempt from TUMF if the project is a rehabilitation and/or reconstruction of any habitable structure in use on or after January 1, 2000, provided that the same or fewer traffic trips are generated as a result thereof. Staff is now exploring

opportunities to provide clarifying language regarding this exemption to ensure that TUMF is implemented uniformly. Staff plans to release clarifying language for review and approval through by WRCOG's committees and then adopting correlating amendments to the Fee Calculation Handbook. Specific scenarios to be considered and the correlating WRCOG staff interpretation of each are as follows:

In the first scenario, a use changes from exempt to non-exempt. Currently neither the TUMF Ordinance nor the Administrative Plan addresses this scenario. As such, staff's interpretation is that the development should not be assessed TUMF.

Second, there is an occupant change within the same TUMF category, with no change in building square footage. Staff's interpretation is that this should result in the change being TUMF exempt.

Third, there is a change in TUMF category from a less intensive use to a more intensive use. Mr. Gray noted that the text for this point on the PowerPoint presentation is incorrect. The development in this scenario would be assessed TUMF on the delta of the fee in effect for both land use categories. The development would receive credit for the previous service land use against the new land use TUMF calculation for the development.

Finally, the type of land use is the same as the previous use and there is an increase in gross floor area. The development in this scenario would be assessed TUMF on the delta of TUMF calculated for the increase in gross floor area. The development would receive credit for the current gross floor area to be applied to the overall gross floor area.

Committee Chair Bassi asked whether Accessory Dwelling Units are exempt.

Mr. Gray confirmed that these are, as stated in the TUMF Administrative Plan.

Committee Member Sandzimier asked whether senior housing is addressed in the TUMF

Mr. Gray stated that staff is currently developing draft exemption policy regarding deed-restricted senior housing.

Committee Member Sandzimier asked what consideration has been given to projects built on speculation without a definitively known user.

Mr. Gray responded that staff's recommendation is to consider the potential range of uses for a new development and assess the highest fee for that site. Alternately, a second set of fees can be assessed after a new tenant moves in.

Action: 1. *Received and filed.*

E. BEYOND Framework Fund Program Activities Update

Andrea Howard provided an update on Round II of the BEYOND Program. BEYOND was developed to support the implementation of the six goal areas included in WRCOG's Economic Development and Sustainability Framework (the Framework): economic development, education, health, transportation, water and waste water, and energy and the environment.

This round, there are three distinct funding categories. The first, BEYOND Core, is functionally similar to the Round I program, in that it is a non-competitive fund offering a fixed, population-based allocation to each member agency. The two new funding categories are both competitive. The first, BEYOND Team, was created to incentivize collaborative projects

between member agencies and offers a total of \$175 thousand to collaborative projects undertaken by two or more agencies. The second competitive fund, BEYOND Health, is explicitly available for health promoting projects. For BEYOND Team, a total of \$75 thousand has been made available, for which each member agency may apply for a maximum of \$7,500.

WRCOG released the Round II Guidelines at the end of February, 2017. Per the Guidelines, the application process for BEYOND Core funding includes two steps. First, members must submit a brief concept proposal which staff will review to confirm that the proposed project aligns with the Framework. Once approved in concept, projects will be invited to submit a full application. The BEYOND Health and BEYOND Team funds will require an application only. WRCOG plans to notify all projects of approval status by May 12. The program Guidelines include a full program schedule with all note-worthy program dates and is available for download on the BEYOND webpage: wrcog.cog.ca.us/BEYOND.

Committee Member Gutierrez noted that the staff report indicates that if BEYOND Core applications are in alignment with the Framework goals that they will definitely be funded.

Ms. Howard confirmed that, so long as a project meets the funding criteria, staff will work with member agencies to ensure project applications are approved for funding.

Action: 1. *Received and filed.*

6. ITEMS FOR FUTURE AGENDAS

Committee Member Kristin Warsinski requested time at an upcoming meeting for Riverside Transit Agency to provide an update on projects.

Mr. Gray stated that the transportation department will be providing an update on the Active Transportation Plan.

7. GENERAL ANNOUNCEMENTS

Committee Chair Bassi shared that he recently attended the Planning Commissioners Conference, which included an exercise to illuminate commissioners on the development process that occurs prior to a development coming to the planning commission. Chairman Bassi encouraged others to send their planning commissioners to future Conferences.

Committee Member Kinser commented that she hosts three workshops for planning commissioners each July. These include information on what goes into a project from start to finish, in order to convey the complexities of the process.

Mr. Gray commented that the Inland Empire Selection of the American Planning Association (IES-APA) is looking to host a series of trainings geared toward planning commissioners in the coming months.

Mr. Gray stated that the 2017 Awards program for the IES-APA has opened the call for nominations and encouraged members to submit applications.

Committee Chair Bassi reminded committee participants to submit their Form 700.

8. NEXT MEETING: The next Planning Directors' Committee meeting is scheduled for Thursday, April 13, 2017, at 9:00 a.m. at a location to be determined.

9. ADJOURNMENT:

The meeting of the Planning Directors' Committee adjourned at 10:51 a.m.



Western Riverside Council of Governments

Planning Directors' Committee

Staff Report

Subject: WRCOG Committees Update

Contact: Andrea Howard, Staff Analyst, howard@wrcog.cog.ca.us, (951) 955-8515

Date: May 11, 2017

The purpose of this item is to update the Committee on noteworthy actions and discussions held in WRCOG's recent standing Committee meetings and general WRCOG project updates.

Requested Action:

1. Receive and file.

Below is an update on items that have been discussed at recent WRCOG standing Committee meetings.

General Assembly & Leadership Address

WRCOG's 26th Annual General Assembly will be held on Thursday, June 22, 2017, at the Morongo Casino, Resort & Spa. The keynote speaker for the event is former Secretary of Defense Dr. Robert Gates, who served in the position from 2006-2011. Tickets and sponsorships are now available; please contact Jennifer Ward at ward@wrcog.cog.ca.us for more information. The Save the Date flyer is attached.

Public Service Fellowship Round II

WRCOG launched the second round of its Public Service Fellowship in partnership with UC Riverside and California Baptist University. For the 2017-2018 Fellowship period, 24 Fellows will be working in WRCOG's various member agencies.

Community Choice Aggregation (CCA)

On Monday, May 1, 2017, the Executive Committee directed staff to continue exploring the implementation of a CCA through the development of a JPA that would be geographically focused on the western Riverside County subregion. This action allows for staff to develop more focused CCA cost estimates, particularly as it reviews responses from a recent RFP that was issued to solicit bids from the private sector pertaining to all aspects of CCA operations. Much work on CCA formation remains to be done, and ultimately the choice to participate in a CCA is at the sole discretion of the jurisdictions.

BEYOND Round II Funding Determinations

WRCOG received three applications for funding through BEYOND Team and 14 for funding through BEYOND Health, by the April 7 firm deadline for these competitive funds. To date, WRCOG has received 38 BEYOND Core project applications and anticipates receiving an additional 6+. Staff will present to the Administration & Finance (A&F) Committee on May 10, seeking approval for final allocations of the competitive fund. Staff will provide a verbal update to the PDC regarding the outcome of the A&F meeting.

Economic Development Initiative

WRCOG staff have been directed to explore opportunities for developing an economic development initiative to address shared economic challenges and develop regional solutions. To inform this initiative, Members of the Administration & Finance Committee directed staff to convene a working group with economic development representatives from WRCOG's member agencies. The meeting with economic development representatives is scheduled for Thursday, May 18 at 8:00 a.m. in Conference Room A on the third floor of the County Administrative Center building.

Upcoming standing committee meetings will take place on the dates listed below:

- **Administration & Finance Committee**
Next Meeting: Wednesday, May 10, 2017 at 12:00 p.m.
- **Public Works Committee**
Next Meeting: Thursday, May 11, 2017 at 2:00 p.m.
- **Executive Committee**
Next Meeting: Monday, June 5, 2017 at 2:00 p.m.
- **Technical Advisory Committee**
Next Meeting: Thursday, May 18, 2017 at 9:30 a.m.
- **Finance Directors' Committee**
Next Meeting: Thursday, May 25, 2017 at 10:00 a.m.

Prior Action:

None.

Fiscal Impact:

This item is informational only; therefore there is no fiscal impact.

Attachments:

1. WRCOG Executive Committee Recap: May 1, 2017.
2. General Assembly & Leadership Address Save the Date.

Item 4.B

WRCOG Committees Update

Attachment 1

WRCOG Executive Committee

Recap: May 1, 2017

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Western Riverside Council of Governments

Executive Committee Meeting Recap

May 1, 2017

Community Choice Aggregation (CCA)

- The Executive Committee directed staff to continue exploring the implementation of a CCA through the development of a JPA that would be geographically focused on the western Riverside County subregion. This action allows for staff to develop more focused CCA cost estimates, particularly as it reviews responses from a recent RFP that was issued to solicit bids from the private sector pertaining to all aspects of CCA operations.
- WRCOG has been working with the Coachella Valley Association of Governments and the San Bernardino Council of Governments on a joint feasibility study to examine CCA formation at various levels of geography, including combining the jurisdictions from both counties into a single CCA, creating county-level CCAs, and creating CCAs that generally mirror the boundaries of the COG subregions.
- Much work on CCA formation remains to be done, and ultimately the choice to participate in a CCA is at the sole discretion of the jurisdictions.

WRCOG Budget

- WRCOG presented a balanced draft budget to the Executive Committee showing the FY 2017/2018 budget is projected to be \$64,866,833 against total Agency expenditures of \$64,650,915.
- WRCOG's Agency-wide budget will be reviewed again by the Agency's various committees before being considered by the General Assembly on June 22, 2017.

Financial Audits

- WRCOG's auditors have provided an unmodified opinion on the FY 2015/2016 CAFR. An unmodified opinion is the highest form of assurance that an auditing firm can provide to their client, and means that the audit and associated agency financials are both in good form and the accounting practices are solid.
- WRCOG has received the distinguished "Certificate of Achievement for Excellence in Financial Report" (CAFR) from the Government Finance Officers Association (GFOA) for three consecutive years, and all signs indicate that Fiscal Year (FY) 2015/2016 will also produce this distinguished award. The award recognizes that the Agency is transparent and has provided full disclosure of its financial statements and that the readers of the CAFR have all the information needed to draw a financial conclusion of the Agency.

General Assembly & Leadership Address

- WRCOG's 26th Annual General Assembly will be held on Thursday, June 22, 2017, at the Morongo Casino, Resort & Spa. The keynote speaker for the event is Former Department of Defense Secretary Dr. Robert Gates, who served in the position from 2006-2011. Tickets and sponsorships are now available; please contact Jennifer Ward at ward@wrcog.cog.ca.us for more information. The Save the Date flyer is attached for your convenience.

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Item 4.B

WRCOG Committees Update

Attachment 2

General Assembly & Leadership
address Save the Date

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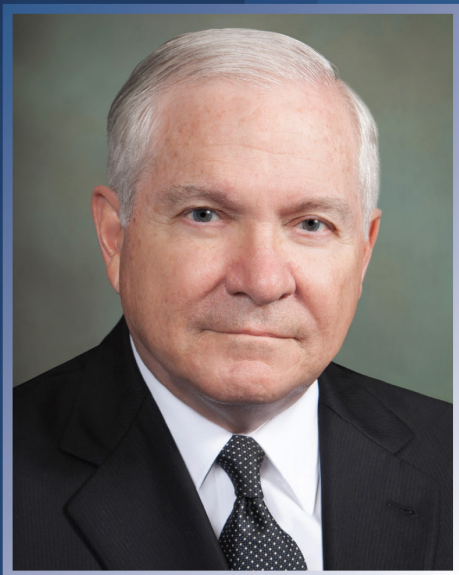


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26th Annual

GENERAL ASSEMBLY

& LEADERSHIP ADDRESS



Featuring Keynote Speaker

Robert Gates

Secretary of Defense
(2006-2011)

JUNE 22, 2017

MORONGO CASINO, RESORT & SPA
Cabazon, California

- 3:30 p.m. Check-In Opens
- 4:00 p.m. General Reception
- 4:00 p.m. VIP Reception with
Photo Opportunity
- 6:30 p.m. Dinner & Leadership Address

For more information or to sponsor our event, please contact
Jennifer Ward at ward@wrcog.cog.ca.us or (951) 955-0186

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Western Riverside Council of Governments

Planning Directors' Committee

Staff Report

Subject: Active Transportation Plan (ATP) Update

Contact: Christopher Gray, Director of Transportation, gray@wrcog.coq.ca.us, (951) 955-8304

Date: May 11, 2017

The purpose of this item is to provide an update to the Committee members on the western Riverside County Active Transportation Plan (ATP).

Requested Action:

1. Receive and file.

This report provides an update on the next steps that will finalize the proposed list of projects to be included in the ATP. The ATP will identify challenges to and opportunities for creating a safe, efficient, and complete active transportation network that will expand the availability of active modes of transportation for users both within the region and between neighboring regions.

Update

Staff will present the final draft list of projects in June for discussion, and request the Planning Directors' Committee approve the final list of projects in July.

The goal of presenting the final list of projects in June and voting in July is so that members can take back the list of projects to their respective jurisdictions for discussion with staff. The project team has received comments from various jurisdictions, and WRCOG staff and the project team have been conducting outreach with each jurisdictions to discuss and clarify the jurisdictions' comments. The project team is then incorporating any input that is a result of these discussions into the final list of projects. WRCOG staff is requesting that Committee members take the final list of projects presented in June back to their respective jurisdictions to discuss with the appropriate staff.

Staff wants to ensure that all member agencies have sufficient time to review the recommended list of projects. Therefore, staff would ask that any jurisdiction which has questions or comments about the Network to contact WRCOG so that staff can address those concerns. Our project team is also coordinating with a concurrent effort by the Riverside County Regional Park and Open-Space District as part of its effort to develop an updated Trails Master Plan.

The goal of the Western Riverside County ATP is to focus the regional ATP on a subset of high priority, regional projects. It is critical to conduct a thorough review and focus the ATP on regionally significant projects, because WRCOG staff is evaluating the option of including active transportation projects in future Nexus Studies, thereby potentially making them eligible for TUMF funding.

Prior Action:

None.

Fiscal Impact:

Transportation Department activities are included in the Agency's adopted Fiscal Year 2016/2017 Budget under the Transportation Department.

Attachment:

None.



Western Riverside Council of Governments Planning Directors' Committee

Staff Report

Subject: Riverside Transit Agency Updates

Contact: Rohan Kuruppu, Director of Planning, rkuruppu@riversidetransit.com, (951) 565-5130

Date: May 11, 2017

Requested Action:

1. Receive and file.

This item is reserved for a presentation by Rohan Kuruppu for an update on RTA's agency activities. The item will include information on the Downtown Riverside Bus Stop Improvement Project, Vine Street Mobility Hub Project, UCR Mobility Hub Project, Hemet Mobility Hub Project, Bus Stop Improvement Project, and the First-Last Mile Study.

Prior Action:

April 13, 2017: The Public Works Committee received report.

Fiscal Impact:

This item is for informational purposed only; therefore, there is no fiscal impact.

Attachment:

None.

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Western Riverside Council of Governments

Planning Directors' Committee

Staff Report

Subject: Regional Streetlight Program Activities Update

Contact: Tyler Masters, Program Manager, masters@wrcog.cog.ca.us, (951) 955-8378

Date: May 11, 2017

The purpose of this item is to provide the Committee with an update on the next steps that member jurisdictions are taking as they consider acquiring their streetlight and/or participating in the Program, the release of the Streetlight Retrofit, Operations and Maintenance Request for Proposals, logistics for the Streetlight workshop to assist member jurisdictions with new development and the Demonstration Area Tour results / Light Suite analysis.

Requested Action:

1. Discuss and provide input.

WRCOG's Regional Streetlight Program will assist member jurisdictions with the acquisition and retrofit of their Southern California Edison (SCE)-owned and operated streetlights. The Program has three phases, which include: 1) streetlight inventory; 2) procurement and retrofitting of streetlights; and 3) ongoing operations and maintenance. The overall goal of the Program is to provide significant cost savings to the member jurisdictions.

Background

At the direction of the Executive Committee, WRCOG is developing a Regional Streetlight Program that will allow jurisdictions (and Community Service Districts) to purchase the streetlights within their boundaries that are currently owned / operated by SCE. Once the streetlights are owned by the member jurisdiction, the lamps will then be retrofitted to Light Emitting Diode (LED) technology to provide more economical operations (i.e., lower maintenance costs, reduced energy use, and improvements in public safety). Local control of the streetlight system allows jurisdictions opportunities to enable future revenue generating opportunities such as digital-ready networks, and telecommunications and IT strategies.

The goal of the Program is to provide cost-efficiencies for local jurisdictions through the purchase, retrofit, and maintain the streetlights within jurisdictional boundaries, without the need of additional jurisdictional resources. As a regional Program, WRCOG is working with jurisdictions to move through the acquisition process, develop financing recommendations, develop / update regional and community-specific streetlight standards, and implement a regional operations and maintenance agreement that will increase the level of service currently being provided by SCE.

Regional Streetlight Acquisition Update: The following jurisdictions have approved City Council Action / Direction to acquire the SCE-owned streetlights in their Jurisdiction's boundaries (this accounts for approximately 47,000 of the 55,000 acquirable streetlights in the subregion):

October 18, 2016 / March 21, 2017: City of Moreno Valley
January 24, 2017: City of Lake Elsinore

February 15, 2017:	City of Menifee
February 28, 2017:	City of Temecula
March 7, 2017:	City of Murrieta
March 8, 2017:	City of Wildomar
March 13, 2017:	Jurupa Community Services District
March 14, 2017:	City of Hemet
March 28, 2017:	City of Perris
March 28, 2017:	City of San Jacinto
April 12, 2017:	City of Eastvale

Next Steps: As of August 2015, SCE is no longer allowing jurisdictions to start discussions to acquire the streetlights within their jurisdictional boundaries. All WRCOG member jurisdictions pre-dated this August 2015 deadline and were provided the opportunity to assess streetlight acquisition opportunities. The member jurisdictions listed above have deemed it feasible to move forward, have met all SCE deadlines, and will continue the streetlight acquisition process.

To date, eleven WRCOG member jurisdictions have approved the Agreement. Upon the signing of the Agreement by the City Manager, city staff will distribute the document to SCE where they will package the Agreement and send it to the California Public Utilities Commission (CPUC). This process can take anywhere from six to twelve months (depending on valuation price). Cities with estimated streetlight sales prices exceeding \$5 million will move forward in the CPUC as a “full filing,” which require CPUC action and can take upwards of 6 to 12 months for approval. For those cities with estimated streetlights sales prices of under \$5 million, those will move forward in the CPUC as an “advice filing,” and can be administratively approved within 2 to 6 months.

During this timeframe, WRCOG staff will be working with the member jurisdictions on identifying a regional financing option, preparing the member jurisdictions for the transfer of streetlights, hosting a workshop to assist interested jurisdictions with new development, and selecting a vendor to provide the services of ongoing retrofit, operation & Maintenance.

Request for Proposal (RFP) for Streetlight Retrofit, Operations & Maintenance

On March 10, 2017, WRCOG released an RFP for streetlight retrofit, operations & maintenance of the lighting fixtures that are going to be acquired on behalf of the participating jurisdictions. With several jurisdictions moving forward with the acquisition of the streetlights, SCE will no longer provide operations or maintenance on the acquired poles. SCE will continue to maintain any of the underground wiring that connects these streetlights to SCE’s grid; however, the city will own, and need to maintain and operate the streetlight fixture and pole from the base of the pole and up.

The purpose of releasing the RFP is to select a vendor that will provide cost effective retrofit, operation and maintenance needs to support the transition of current streetlight technologies (high and low-pressure sodium vapor) lights to LED lighting, maintain / respond to streetlight knockdown / damaged poles, keeping in account economies of scales and increasing the level of services to the participating jurisdictions in Western Riverside County. Furthermore, the selected vendor will work with WRCOG and jurisdictional staff to provide supplemental assistance with the recording documents of each streetlight, installation of housing shields, complying with all state mandated laws, and coordinating with the removal and disposal of any existing luminaire heads / hazardous materials.

WRCOG has posted two addenda to this RFP for the following reasons:

1. Amend Contractor License requirements to include General Contractor License A (General Engineering Contractor) and to remove contractor license requirements C-7 (Low Voltage System) and C-8 (Concrete Contractor).
2. Amend the Schedule of Events to extend the due date of ‘Responses to questions’ and ‘Proposal Due Date’ by one week.

The following updated schedule of events provide an outlook of the status of the Streetlight Retrofit, Operations & Maintenance RFP:

Event	Date
1. RFP Distribution	March 10, 2017
2. Questions from Vendors about scope or approach due	March 27, 2017
3. Responses to questions posted on website	March 31, 2017 April 7, 2017
4. Proposal Due Date	May 4, 2017 May 11, 2017
5. Review of proposals	Week of May 9, 2017 May 16, 2017
6. Potential Interviews	Week of May 22, 2017 May 29, 2017
7. Anticipated decision and selection of Vendor(s)	Week of May 29, 2017 June 5, 2017
8. Anticipated commencement date of work	Upon approval of contract by Executive Committee

The RFP can be found on the WRCOG website at <http://www.wrcog.cog.ca.us>.

Streetlight Workshop

At the request of member jurisdictions, WRCOG is developing a streetlight workshop that will assist jurisdictions to identify and understand SCE and city procedural differences between new streetlight developments as city-owned versus SCE-owned. Some member jurisdictions have developed policies requiring new developments plan / install streetlights under its ownership, and other jurisdictions are beginning to look into this. The workshop will allow WRCOG's members to share their jurisdictions' policies and procedures, while also hearing from SCE's planning department on the technical differences between the two processes so that jurisdictions can best plan new developments and articulate these changes to their developers.

This workshop is scheduled to be held at the City of Murrieta on Monday May 15, 2017 between the timeframe of 8:00 a.m. – 12:00 p.m. To RSVP to this workshop, please contact Tyler Masters, Program Manager, at (951) 955-8378 or masters@wrcog.cog.ca.us.

Demonstration Area Tour Results / Light Suite

Between the months of November 2016 and January 2017, WRCOG hosted five Streetlight Demonstration Area Tours in the City of Hemet to showcase interested attendees the various lighting fixtures at five different locations. These five Demonstration Areas represent different street and land use types, from school, residential, and commercial areas, to low, medium, and high traffic street areas. A total of 12 outdoor lighting manufacturers participated in these Demonstration Areas.

The attendees that took part of the tours included elected officials, city staff, astronomers, lighting connoisseurs, and residents throughout Riverside County & San Bernardino County. Over 100 attendees analyzed and provided their feedback about the lighting fixtures in which was compiled into report that illustrates the preferred lighting scenarios that the attendees rated. The results obtained from the tours will be analyzed to help identify proper lighting systems to be implemented throughout Western Riverside County.

Accordingly, based off of the results from these five Demonstration Area Tours, WRCOG and its consultants have also drafted a document known as the Light Suite (Attachment 1) which provides City staff with a guide on how to implement / regulate outdoor lighting within their community. The Light Suite contains seven sections and they are as follows:

- **Light Suite 1:** Specification of LED Cobra head Luminaires for New and Relocated Street Lighting Systems
 - Provides a review of luminaires to be used for new and relocated LED street lighting systems.
- **Light Suite 2:** Design Standards for New or Relocated Street lighting
 - Provides a reviews of standards for street lighting
- **Light Suite 3:** Specifications of LED Luminaires for Replacement of Cobra head Street Lighting Systems
 - Suggested luminaires used for replacement of legacy high intensity discharge street lighting systems
- **Light Suite 4:** Design Standards for LED Replacement Street Lighting
 - This section provides information on standards for street lighting that will help mitigate light pollution, reduce energy consumption, and minimizing light trespass.
- **Light Suite 5:** Proposed Riverside County Ordinance 655P Regulating Outdoor Lighting
 - Ordinance that helps to provide regulations for outdoor lighting
- **Light Suite 6:** Proposed Modernization of Riverside County Ordinance No. 915P Regulating Outdoor Lighting
 - Ordinance that illustrates requirements for outdoor lighting, health, property and residential areas.
- **Light Suite 7:** Suggested Community Outdoor Lighting Ordinance
 - Illustrates goals to promote and protect public health, safety, welfare, and quality of life by establishing regulations for outdoor lighting.

For additional information on these lighting documents, please contact Tyler Masters, Program Manager at (951) 955-8378 or masters@wrcog.cog.ca.us.

Prior Actions:

<u>May 1, 2017:</u>	The Executive Committee received report.
<u>April 20, 2017:</u>	The Technical Advisory Committee received report.

Fiscal Impact:

Activities for the Regional Streetlight Program are included in the Agency's adopted Fiscal Year 2016/2017 Budget.

Attachment:

1. Draft Light Suite.

Item 5.B

Regional Streetlight Program
Activities Update

Attachment 1

Draft Light Suite

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Streetlight Program

WRCOG LightSuite For Outdoor Lighting Regulations

March 31, 2017

Introduction

Most communities have some sort of outdoor lighting regulation. Older regulations tend to focus on preventing objectionable light trespass and overlighting of sites, but more recently ordinances strive to prevent environmental impacts and to preserve dark skies at night for astronomy and star-gazing. The urgency of creating modernized lighting regulations recently increased dramatically with the 2016 announcement by the American Medical Association of its concern about the impact on human health and the environment caused by some types of LED lighting.

Riverside County is one of the first governing bodies in the world to restrict outdoor lighting to preserve the dark night sky. While the intent was primarily to benefit the Palomar Observatory, it also served to maintain one of the largest areas of dark skies in populated areas of Southern California, considered by many to be a significant contribution to quality of life in the County. But the original ordinances have been rendered obsolete by LED technology. In fact, LED lighting is now being installed throughout the County and without modern regulations, years of care and concern will be quickly undone by the careless installation of LED's that don't meet the recommendations of the AMA

As part of the WRCOG LED Street Lighting Conversion project, a group of modern lighting regulation documents, called the LightSuite, has been developed for use by WRCOG member communities and Riverside County. In addition to ensuring that all LED lighting complies with AMA recommendations, LightSuite modernizes all existing ordinances and coordinates them with State of California outdoor lighting regulations put in place since 2006. Properly implemented, LightSuite will help improve planning, permitting and enforcement in every community

In addition, the technical aspects of LightSuite have been reviewed by Cal Tech's principal astronomers and scientists and determined to be consistent with best practices to mitigate light pollution that could affect the work of Palomar Observatory.

Regulating Outdoor Lighting

In California, outdoor lighting became restricted by the California Code of Regulations on January 1, 2006. Title 24 Part 1 instituted a statewide lighting zone system. It has default zones for the entire state, but communities can change the zones throughout their jurisdiction. Title 24 Part 6, the Energy Efficiency standards, restrict the amount of light by limited power (watts) and energy per zone and need – including, to a certain extent, signs. Title 24, Part 11, CAL Green, the statewide sustainability code, restricts upward light, glare and off-site impacts per the lighting zone using the BUG (Backlight Uplight Glare) rating system for outdoor lighting.

Communities already have these tools to regulate lighting through planning, permitting and inspection of all new buildings as well as for renovations, remodeling and additions.

But Title 24 alone is not adequate. It does not restrict residential lighting in specific important ways that have been proven to be needed for communities to resolve the common complaints among neighbors. It does not restrict streetlights. Communities must individually develop or modernize and implement several standards and regulations:

1. A **lighting ordinance** regulating lighting for buildings, site development such as parking lots and walkways, and other uses of outdoor lighting other than streets or signs.
2. A **design standard** that specifies the design of street lighting for developer projects that will become part of the community lighting system.
3. **Street lighting standards** for new roadways and intersections and for maintaining or revising existing street lighting.
4. **Specifications** for all LED street lighting products.

The WRCOG LightSuite

This suite of proposed ordinances and standards is provided free of charge for use by WRCOG communities and includes the following:

- LightSuite 1 - Specification of LED Cobrahead LUMINAIRES for New and Relocated Street Lighting Systems
- LightSuite 2 – Design Standards for New or Relocated Street Lighting
- LightSuite 3 – Specifications of LED luminaires for Replacement of Cobrahead Street Lighting Systems
- LightSuite 4 – Design Standards for LED Replacement Street Lighting
- LightSuite 5 – Proposed Riverside County Ordinance 655P Regulating Outdoor Lighting
- LightSuite 6 – Proposed Modernization of Riverside County Ordinance 915P Regulating Outdoor Lighting
- LightSuite 7 – Suggested Community Outdoor Lighting Ordinance

For questions concerning the WRCOG LightSuite or the LED Street Light Program, feel free to contact Tyler Masters, WRCOG Project Manager, at Masters@wrcog.cog.ca.us.

TABLE OF CONTENTS

Page

WRCOG LightSuite 1	
Specification of LED Cobrahead Luminaires for New and Relocated Street Lighting Systems ..	4
WRCOG LightSuite 2	
Design Standards for New or Relocated Street Lighting.....	18
WRCOG LightSuite 3	
Specifications of LED Luminaires for Replacement of Cobrahead Street Lighting Systems	25
WRCOG LightSuite 4	
Design Standards for LED Replacement Street Lighting	39
WRCOG LightSuite 5	
Proposed Riverside County Ordinance 655P Regulating Outdoor Lighting	49
WRCOG LightSuite 6	
Proposed Modernization of Riverside County Ordinance 915P Regulating Outdoor Lighting ..	59
WRCOG LightSuite 7	
Suggested Community Outdoor Lighting Ordinance	65

SPECIFICATION OF LED COBRAHEAD LUMINAIRES FOR NEW AND RELOCATED STREET LIGHTING SYSTEMS

PART 1 – GENERAL

1.1. SCOPE

Luminaires to be used for new and relocated LED street lighting systems.

1.2. REFERENCES

The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by their basic designation only. Versions listed shall be superseded by updated versions as they become available.

A. American National Standards Institute (ANSI)

1. C136.2-2004 (or latest), American National Standard for Roadway and Area Lighting Equipment—Luminaire Voltage Classification
2. C136.10-2010 (or latest), American National Standard for Roadway and Area Lighting Equipment - Locking-Type Photocontrol Devices and Mating Receptacle Physical and Electrical Interchangeability and Testing
3. C136.15-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment – Luminaire Field Identification
4. C136.22-2004 (R2009 or latest), American National Standard for Roadway and Area Lighting Equipment – Internal Labeling of Luminaires
5. C136.25-2009 (or latest), American National Standard for Roadway and Area Lighting Equipment – Ingress Protection (Resistance to Dust, Solid Objects and Moisture) for Luminaire Enclosures
6. C136.31-2010 (or latest), American National Standard for Roadway Lighting Equipment – Luminaire Vibration
7. C136.37-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment - Solid State Light Sources Used in Roadway and Area Lighting.

- 1 B. American Society for Testing and Materials International (ASTM)
- 2 1. B117-09 (or latest), Standard Practice for Operating Salt Spray (Fog) Apparatus
- 3 2. D1654-08 (or latest), Standard Test Method for Evaluation of Painted or Coated
- 4 Specimens Subjected to Corrosive Environments
- 5 3. D523-08 (or latest), Standard Test Method for Specular Gloss
- 6 4. G154-06 (or latest), Standard Practice for Operating Fluorescent Light Apparatus
- 7 for UV Exposure of Nonmetallic Materials
- 8 C. Council of the European Union (EC)
- 9 1. RoHS Directive 2002/95/EC, on the restriction of the use of certain hazardous
- 10 substances in electrical and electronic equipment
- 11 D. Federal Trade Commission (FTC)
- 12 1. Green Guides, 16 CFR Part 260, Guides for the Use of Environmental Marketing
- 13 Claims
- 14 E. Illuminating Engineering Society of North America (IESNA or IES)
- 15 1. DG-21-15, Design Guide for Residential Lighting
- 16 2. DG-4-03 (or latest), Design Guide for Roadway Lighting Maintenance
- 17 3. HB-10-11 (or latest), IES Lighting Handbook, 10th Edition
- 18 4. LM-50-99 (or latest), IESNA Guide for Photometric Measurement of Roadway
- 19 Lighting Installations
- 20 5. IES RES-1-16, Measure and Report on Luminaire Dirt Depreciation (LDD) in
- 21 LED Luminaires for Street and Roadway Lighting Applications
- 22 6. LM-61-06 (or latest), Approved Guide for Identifying Operating Factors
- 23 Influencing Measured Vs. Predicted Performance for Installed Outdoor High
- 24 Intensity Discharge (HID) Luminaires
- 25 7. LM-79-08 (or latest), IESNA Approved Method for the Electrical and
- 26 Photometric Measurements of Solid-State Lighting Products
- 27 8. LM-80-08 (or latest), IESNA Approved Method for Measuring Lumen
- 28 Maintenance of LED Light Sources
- 29 9. RP-8-14 ANSI / IESNA American National Standard Practice for Roadway
- 30 Lighting
- 31 10. RP-16-10 (or latest), ANSI/IES Nomenclature and Definitions for Illuminating
- 32 Engineering
- 33 11. TM-3-95 (or latest), A Discussion of Appendix E - "Classification of Luminaire
- 34 Lighting Distribution," from ANSI/IESNA RP-8-83
- 35 12. TM-15-11 (or latest), Luminaire Classification System for Outdoor Luminaires
- 36 13. TM-21-11 (or latest), Projecting Long Term Lumen Maintenance of LED Light
- 37 Sources.

- 1 F. Institute of Electrical and Electronics Engineers (IEEE)
 - 2 1. IEEE C62.41.2-2002 (or latest), IEEE Recommended Practice on
 - 3 Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits
 - 4 2. ANSI/IEEE C62.45-2002 (or latest), IEEE Recommended Practice on Surge
 - 5 Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power
 - 6 Circuits
- 7 G. National Electrical Manufacturers Association (NEMA)
 - 8 1. ANSI/NEMA/ANSI C78.377-2008 (or latest), American National Standard for
 - 9 the Chromaticity of Solid State Lighting Products
- 10 H. National Fire Protection Association (NFPA)
 - 11 1. NFPA-70-14 – National Electrical Code (NEC)
- 12 I. Underwriters Laboratories (UL)
 - 13 1. 1449, Surge Protective Devices
 - 14 2. 1598, Luminaires and Poles
 - 15 3. 8750, Light Emitting Diode (LED) Equipment for Use in Lighting Products
- 16 J. City Standards for Street Lighting
- 17 K. Southern California Edison
 - 18 1. Standards for services to customer-owned street lighting systems
 - 19 2. Standard specifications for Public Works Construction (Greenbook) (latest
 - 20 edition), Subsections 700 and 701 and all included cross references.

21 1.3. RELATED DOCUMENTS

- 22 A. LightSuite 2, Design Standards for New and Relocated Street Lighting Systems.

23 1.4. DEFINITIONS

- 24 A. Lighting terminology used herein is defined in IES RP-16. See referenced documents for
- 25 additional definitions.
 - 26 1. Exception: The term “driver” is used herein to broadly cover both drivers and
 - 27 power supplies, where applicable.
 - 28 2. Clarification: The term “LED light source(s)” is used herein per IES LM-80 to
 - 29 broadly cover LED package(s), module(s), and array(s).

30 1.5. QUALITY ASSURANCE

- 31 A. Before approval and purchase, furnish luminaire sample(s) identical to product
- 32 configuration(s) submitted for inspection. Furnish IES LM-79 testing of luminaire
- 33 sample(s) to verify performance is within manufacturer-reported tolerances.
- 34 B. After installation, Owner may perform IES LM-50 field measurements to verify
- 35 performance requirements outlined in Table A, considering measurement uncertainties
- 36 outlined in IES LM-61.

1.6. LIGHTING SYSTEM PERFORMANCE

A. Energy Conservation

1. Lighting Controls

- a. See separate controls specification identified in section 1.2 above, if applicable.
- b. See section 2.1-B below for driver control interface and performance requirements.
- c. 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 A.

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

A. Use Table D attached hereto for each proposed luminaire.

B. General submittal content shall include

1. Completed Appendix E 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

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 (L_{80}) 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 representative sections of all planned new or relocated 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 section 1.7 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).

1.8.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

2.1. LUMINAIRES

- A. General Requirements
 1. Luminaires shall be as specified for each type in Table B.
 2. Luminaire shall have an external label per ANSI C136.15
 3. Luminaire shall have an internal label per ANSI C136.22.
 4. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
 5. Luminaires shall start and operate in -20°C to +40°C ambient.
 6. Electrically test fully assembled luminaires before shipment from factory.
 7. Effective Projected Area (EPA) of the luminaire shall not exceed the EPA of the luminaire being replaced.
 8. Luminaires shall be designed for ease of component replacement and end-of-life disassembly.
 9. Luminaires shall be rated for the ANSI C136.31 Vibration Level indicated in Table A.
 10. LED light source(s) and driver(s) shall be RoHS compliant.
 11. Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the thermal/mechanical/chemical environment.

1 B. Driver

- 2 1. Rated case temperature shall be suitable for operation in the luminaire operating
3 in the ambient temperatures indicated in section 2.1-A above.
- 4 2. Shall accept the voltage or voltage range indicated in Table A at 50/60 Hz, and
5 shall operate normally for input voltage fluctuations of plus or minus 10 percent.
- 6 3. Shall have a minimum Power Factor (PF) of 0.90 at full input power and across
7 specified voltage range.
- 8 4. Control signal interface
- 9 a. Luminaire types indicated “Required” in Table A shall accept a control
10 signal as specified via separate controls specification referenced in section
11 1.2 above, e.g., for dimming.
- 12 b. Luminaire types indicated “Not Required” in Table A need not accept a
13 control signal.

14 C. Electrical transient and surge immunity

- 15 1. Luminaire shall meet the “Elevated” requirements in Appendix D. Manufacturer
16 shall indicate on submittal form (Appendix E) whether failure of the electrical
17 immunity system can possibly result in disconnect of power to luminaire.

18 D. Electromagnetic interference

- 19 1. Shall have a maximum Total Harmonic Distortion (THD) of 20% at full input
20 power and across specified voltage range.
- 21 2. Shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards.

22 E. Electrical safety testing

- 23 1. Luminaire shall be listed for wet locations by an OSHA NRTL.
- 24 2. Luminaires shall have locality-appropriate governing mark and certification.

25 F. Painted or finished luminaire components exposed to the environment

- 26 1. Shall exceed a rating of six per ASTM D1654 after 1000hrs of testing per ASTM
27 B117.
- 28 2. The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523,
29 after 500 hours of QUV testing at ASTM G154 Cycle 6.

30 G. Thermal management

- 31 1. Mechanical design of protruding external surfaces (heat sink fins) for shall
32 facilitate hose-down cleaning and discourage debris accumulation.
- 33 2. Liquids or other moving parts shall be clearly indicated in submittals, shall be
34 consistent with product testing, and shall be subject to review by Owner.

35 H. IES TM-15 limits for Backlight, Uplight, and Glare (BUG Ratings) shall be as specified
36 for each luminaire type in Table A.

- 37 1. Calculation of BUG Ratings shall be for initial (worst-case) values, i.e., Light
38 Loss Factor (LLF) = 1.0.

39 I. Minimum Color Rendering Index (CRI): 70.

1 J. Correlated Color Temperature (CCT)

- 2 1. Nominal 2700K (3000K for certain applications only).
3 2. Allowable 2580 to 2870K per IES LM-79.
4 3. Allowable -.006 to .006 D_{uv} per IES LM-79.

5 K. The following shall be in accordance with corresponding sections of ANSI C136.37

- 6 1. Wiring and grounding
7 a. All internal components shall be assembled and pre-wired using modular
8 electrical connections.
9 2. Mounting provisions
10 a. Specific configurations are indicated in Table A
11 3. Terminal blocks for incoming AC lines
12 4. Photocontrol receptacle
13 5. Latching and hinging
14 6. Ingress protection

15 L. Luminaire Construction

- 16 1. Weight
17 a. The net weight of each luminaire less than 46 (21 kg) pounds including
18 mounting devices and backlight shields.
19 2. Housing
20 a. Tool-less entry
21 b. Die-cast aluminum alloy meeting ASTM Specification A380. Alternate
22 materials may be considered but shall be submitted to the Owner for
23 review and approval.
24 c. Encloses the mounting hardware, LED arrays, control receptacle,
25 terminal board, and electronic driver.
26 d. Includes a surface to facilitate leveling with a spirit level.
27 e. Integral heat sink characteristics, such that all enclosed components will
28 operate within their designed operating temperatures under expected
29 service conditions. No external or removable heat shields or heat sinks
30 are permitted.
31 f. Designed to encourage water shedding.
32 g. Designed to minimize dirt and bug accumulation on the optic surface.
33 h. Permanently affixed easily-viewable nameplate inside of each luminaire
34 housing containing the manufacturer's name, manufacturer's catalog
35 number, date of manufacture (month and year), plant location, input
36 power consumption, driver output current, IEC IP Rating, correlated
37 color temperature (CCT), IES light distribution type, IESNA TM-15
38 BUG ratings, and serial number.

- 1 i. City approved luminescent name plate meeting American National
2 Standard for Roadway and Area Lighting Equipment-Luminaire Field
3 Identification (ANSI C136.15-2015) shall be permanently affixed on the
4 exterior of the Luminaire to be visible from the ground.

5 **3. Mounting Provisions.**

- 6 a. Standard heavy gauge slip fitter clamping assembly suitable for secure
7 attachment over the end of a nominal two 2" IP (2.375" OD) steel pipe
8 with an approved means of clamping it firmly in mounting bracket.
9 The slip fitter mounting clamp must contain an approved shield around
10 the pipe entrance to block the entry of birds.
11 b. Leveling adaptor to permit at least 15 degrees of correction to level
12 luminaire with respect to normal to photometric nadir (straight down).
13 c. Adaptor fittings for nominal 1.5 inch IP, 1.75 inch IP, 2.25 inch IP and
14 2.5 inch IP mast arms.

15 **4. Access Door-Panel.**

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

24 **5. Hardware.**

- 25 a. Machine screws, locknuts, pins and set screws necessary to make a firm
26 assembly, and for its secure attachment to the mast arm, must be furnished
27 in place.
28 b. Hardware must be of stainless steel, zinc plated steel, copper silicon alloy
29 or other non-corrosive metal, and where necessary must be suitably plated
30 to prevent electrolytic action by contact with dissimilar metals.

31 **6. Finish.**

- 32 a. Polyester powder coat with a minimum 2.0 mil thickness.
33 b. Surface texture and paint quality subject to approval.
34 c. Color must be as specified in the order.
35 d. Finish must exceed a rating of six per ASTM D1654 after 1000 hours of
36 testing per ASTM B117.
37 e. The coating must exhibit no greater than 30% reduction of gloss per
38 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.

2.2. PRODUCT MANUFACTURERS AND APPROVED PRODUCTS

- A. Approved manufacturers are listed in Table A.
- B. Select products to replace existing luminaires using Tables A, B and per project requirements, including application notes. See LightSuite 4 for a recommended system to minimize the number of different luminaires to be used on a project.
- C. Specific products proposed for a specific project should be submitted using Table D 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.

2.3. 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.

TABLE A
APPROVED MANUFACTURERS OF LIGHTING PRODUCTS

Candidate luminaires for street and roadway lighting products were tested and evaluated in the winter of 2016-2017. The following manufacturers' products were generally found to be of suitable quality and performance. However, specific products to be used shall meet the minimum performance requirements from Table B. Make necessary changes due to the nature of the specific project, changes due to product offerings, and/or changes required by the Owner. Listed alphabetically; no preference due to order is intended.

Acuity Brands Lighting (American Electric Lighting and other brands)
Hubbell Lighting (Beacon Lighting and other brands)
Cree Lighting
Eaton Lighting (Streetworks and other brands)
General Electric (Current and other brands)
Leotek Lighting
Philips Lighting (Lumec and other brands)

All the above manufacturers have demonstrated products that can meet the performance requirements of Table B, provide satisfactory results when used in non-RP-8 compliant installations in product testing, meet the requirements of these specifications, and passed a table top review.

Application Notes

- 1 Other products from these and other manufacturers meeting all project requirements and these specifications may exist. Careful comparison of proposed luminaires' goniophotometrics, colorimetry, photometric performance, and other project data, and tabletop disassembly and evaluation of construction is strongly urged.
- 2 Periodic review of the selection criteria and approved manufacturers is urged. LED lighting is a field of rapid change in technology and many new companies have entered the business, as well as the continued evolution of products by all manufacturers. Price alone should not be the deciding criterion.
- 3 Standard AGI-32 test designs for analysis and comparison are available through WRCOG to help assess candidate luminaires only. Actual proposed designs of each project should be analyzed to ensure proper performance in situ.
- 4 LightSuite 4 provides a Kilolumen classification system to minimize the number of different products (SKU's) to be used for community-wide conversion. Most manufacturers will be able to provide luminaires in each classification e.g. low, medium low, etc.

TABLE B
PHOTOMETRIC PERFORMANCE REQUIREMENTS
(Coordinate with LightSuite 4 Decisions)

Less than 5 Kilolumens

	Type II	Type III	Type IV
Street-side Coefficient of Utilization ³	67% 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	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		

1 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		

2

3 **Footnotes for all luminaires**

4 ¹ If installed on a residential street or residential collector; optional to install by request by
 5 Owner or as additional service

6 ² If installed on a residential cul-de-sac or L intersection

7 ³ Without detachable shields

8

THERE IS NO TABLE C

1
2
3

TABLE D
PRODUCT SUBMITTAL FORM

Luminaire Type ¹		
Manufacturer		
Model number		
Housing finish color		
Tenon nominal pipe size (inches)		
Nominal luminaire weight (lb)		
Nominal luminaire EPA (ft ²)		
Nominal input voltage (V)		
ANSI vibration test level	☐ Level 1 (Normal)	☐ Level 2 (bridge/overpass)
Nominal BUG Ratings		
Make/model of LED light source(s)		
Make/model of LED driver(s)		
Dimmability	☐ Dimmable	☐ Not dimmable
Control signal interface		
Upon electrical immunity system failure	☐ Possible disconnect	☐ No possible disconnect
Thermal management	☐ Moving parts	☐ No moving parts
Lumen maintenance testing duration (hr)		
Reported lumen maintenance life (hr) ²		
Warranty period (yr)		
Parameter	Nominal value	Tolerance (%)
Initial photopic output (lm)		
Maintained photopic output (lm)		
Lamp lumen depreciation		
Initial input power (W)		
Maintained input power (W)		
Initial LED drive current (mA)		
Maintained LED drive current (mA)		
Drive current used		
In-situ LED T _c (°C)		
CCT (K)		
Additional product description		

4

¹ See Table A, and attach supporting documentation as required.

² Value shall be no less than as specified in section 1.6-C, and shall not exceed six times the testing duration indicated in the row above. Value shall be consistent with values submitted in the rows below for maintained light output, maintained input power, and maintained drive current.

DESIGN STANDARDS FOR NEW OR RELOCATED STREET LIGHTING

Section 1. INTENT

The purpose of this Standard is to provide standards for street lighting that will:

- A. Provide high quality street lighting for the community meeting or exceeding minimum national recommendations.
- B. Help mitigate light pollution, reduce skyglow and improve the nighttime environment for astronomy and the Palomar Observatory and the overall enjoyment of the naturally dark night sky;
- C. Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- D. Help protect human health and wellness and the natural environment from the adverse effects of man-made outdoor lighting.
- E. Conserve energy and resources to the greatest extent possible.

Section 2. CONFORMANCE WITH APPLICABLE LAWS, CODES, REGULATIONS and STANDARDS

All street lighting shall be installed in conformance with the provisions of this standard and the applicable provisions of the standards of the community regulating the installation of such fixtures, the California Building Code Title 24 Part 1, the California Electrical Code Title 24 Part 3, the California Building Energy Efficiency Standards Title 24 Part 6, the California Sustainability Standards Title 24 Part 11 "CalGreen", and all other applicable requirements.

Section 3. SCOPE

This standard shall apply to the construction, alteration, movement, enlargement, replacement and installation of street lighting and its related electrical service throughout the community including but not limited to:

- A. Street lighting for public streets, roadways, alleys and other rights of way including walkways and bikeways.
- B. Street lighting for private roadways, walkways and bikeways.

- C. Street lighting for private developments where the street lighting will be deeded to the community at some time in the future.

Exceptions to Section 3

1. Facilities, sites or roadways under the sole jurisdiction of the Federal or State Governments or within the jurisdiction of a sovereign nation.
2. Lighting specifically governed by a Federal or State regulation or statute.
3. Lighting subject to the terms of a Special Plan approved by the community.

Section 4. ALTERNATE MATERIALS AND METHODS OF INSTALLATION.

This standard is not intended to prevent the use of any design, material or method of installation not expressly forbidden, provided any such alternate has been approved if it:

- A. Provides at least approximate equivalence to the applicable specific requirements of this standard; and
- B. Is otherwise satisfactory and complies with the intent of this standard.

Section 5. DEFINITIONS.

- A. **Street Lighting** means luminaire(s), installed outdoors, and used to illuminate a street or roadway and/or any part of the public right of way including but not limited to, sidewalks, bikeways, alleys, intersections, ramps, underpasses, overpasses, curbs, medians, or shoulders.
- B. **Street** means major, collector and local roads where pedestrians and bicyclists are generally present.
- C. **Roadway** means, freeways, expressways, limited access roads, and roads on which pedestrians, cyclists and parked vehicles are generally not present.
- D. **Residential street** means a street that is exclusively serving residential properties and for which the posted speed limit is 25 mph (40 kph) or less.
- E. **Luminaire** means a complete illuminating device, lighting fixture or other device that emits light, consisting of light source(s) together with the parts designed to distribute the light, to position and protect the light source(s), to regulate the electrical power, and to connect the light sources to the power supply.
- F. **IES** means the Illuminating Engineering Society of North America.

- 1 G. **RP-8** means the current version of the IES Recommended Practice for Roadway Lighting,
2 RP-8.
- 3 H. **RP-22** means the current version of the IES Recommended Practice for Tunnel Lighting
4 RP-22.
- 5 I. **DG-21** means the current version of the IES Design Guide for Residential Street Lighting.
- 6 J. **TM-15** means the current version of the IES Technical Memorandum, Luminaire
7 Classification System for Outdoor Luminaires
- 8 K. **Palomar Zone A** is established by Riverside County Ordinance 655 and means all
9 properties and land uses in plan view within the circular area fifteen (15) miles in radius
10 centered on Palomar Observatory.
- 11 L. **Palomar Zone B** is established by Riverside County Ordinance 655 and means all
12 properties and land uses in plan view the circular ring area between by two circles, one
13 forty-five (45) miles in radius centered on Palomar Observatory, and the other the
14 perimeter of Zone A.
- 15 M. **Palomar Zone C** means the remainder of Riverside County outside of the perimeter of
16 Zone B.
- 17 N. **BUG rating of an outdoor luminaire** means the ranking of the luminaire using a
18 photometric report to establish the Backlight (B), Uplight (U) and Glare (G) ranking per
19 IES TM-15.
- 20 O. **LED** means light emitting diode solid state lighting source.
- 21 P. **Dedicated LED** means a luminaire with a hard-wired LED light generating module and a
22 separate driver.
- 23 Q. **Photometric Report** means a complete photometric report from a NVLAP certified test
24 laboratory.
- 25 R. **AASHTO** means the American Association of State Highway Traffic Officials.

26 Section 6. TITLE 24 LIGHTING ZONES

- 27 A. For the purposes of complying California Code of Regulations, Title 24, Part 1, Section 10-
28 114 and Title 24, Part 11, Section 5.106.8, Zone A as defined above shall be Lighting Zone
29 1 (LZ-1), Zone B as defined above shall be Lighting Zone 2 (LZ-2). The balance of the
30 County shall be LZ-2 or LZ-3 per the statewide default zones or as set by the community.

- B. The community shall establish a method for applicant(s) to request and to set a different lighting zone per Title 24, Part 1 Section 10-114 for a specific parcel or project.

Section 7. GENERAL REQUIREMENTS.

- A. Streetlights shall utilize dedicated LED luminaries and shall be designed per these Standards, field inspected and approved prior to requesting energizing or acceptance.

- B. All wiring for street lighting shall be underground, per these standards and these specifications for power to be supplied from community owned service points from the utility.

- C. Street lighting on private roads shall be constructed per these Standards.

- D. Street lighting shall be designed and installed per the Title 24 Lighting Zones as described herein.

- E. Street lighting shall be fully shielded and emit no uplight (BUG rating U=0).

Exception to Section 7. (D.) Decorative street lights not meeting the BUG requirements for the Lighting Zone in which they are proposed and having uplight (BUG rating U≠0) are not permitted except by Special Plan or special permission of the community.

Section 8. ILLUMINATING ENGINEERING REQUIREMENTS FOR NEW STREET LIGHTING INSTALLATIONS

A. Scope

1. All streets and roadways unless otherwise directed by community.
2. Walkways and sidewalks directly associated with streets and roadways to be illuminated.

B. Not in scope

1. Walkways and bikeways not directly associated with a street or roadway.
2. Service roads for public facilities and parks, unless otherwise directed by community.

C. Street and Roadway lighting requirements

1. Lighting for all streets and roadways shall be per RP-8.

2. The community shall establish whether the street to be lighted is a “major”, “collector”, or “local” for the purposes of designing street lighting.
3. The pedestrian area classification shall be “LOW” conflict except for the following:
 - a. Within ¼ mile (400 m) of the property line of any school, library, city hall, retail shopping districts senior center, park, bus stop or hospital, the pedestrian area classification shall be “MEDIUM”.
 - b. Within 1/8 mile (200 m) of any transit station, the pedestrian area classification shall be “HIGH”
 - c. As determined by community.

EXCEPTION TO Section 8. (A.)

- 1) In Zone A and Lighting Zone 1 (LZ-1), for residential streets, street lighting shall be limited to (1) light at each residential street or residential street/residential minor collector intersection and (1) light mod block per DG-21. There shall be no requirements to meet illuminance, luminance or uniformity requirements. Lighting for walkways and sidewalks may be incidental because of the street lights.
- 2) Exception 1 to Section 8. (A.), may be applied to any residential street with the approval of community.

D. Intersection lighting requirements

1. Unless otherwise permitted by community, provide at least four pedestrian crossing safety lights at each signaled intersection.
2. Light levels shall be per RP-8.
3. The pedestrian area classification shall be the highest of any of the intersecting streets or roadways within 1/8 mile (200m) of the intersection.

EXCEPTION to Section 8. (D.)

- 1) Partial lighting for isolated intersections per RP-8 when permitted by community.

E. Other lighting requirements

1. The following shall be illuminated per RP-8 unless otherwise directed by community.
 - a. Railroad grade crossings
 - b. Overpasses and bridges
 - c. Roundabouts
 - d. Ramps and similar elements

2. The pedestrian area classification shall be the highest of any of the connecting streets or roadways.

3. Tunnels and underpasses shall be illuminated per RP-22.

F. Chromaticity

1. Per Table 8-1.

	Palomar Zone A and Lighting Zone LZ-1	Palomar Area B and C and Lighting Zones LZ-2 through LZ-4
Maximum Color Temperature		
Intersection Safety Lights	2700K	2700K or 3000K
Highways, Arterials and Major Collectors	2700K	2700K or 3000K
Minor Collectors and Streets	2700K	2700K
Residential Streets	2700K	2700K

Table 8-1. Maximum Allowed Color Temperature Per Lighting Zones

Application Notes

A. 2700K has been tested and accepted by WRCOG for intersection safety lights and highways, arterials and major collectors.

B. Per IES there no significant difference in any performance characteristic involving safety or security between 2700K and 3000K.

C. 2700K causes less light pollution per lumen than does 3000K.

Section 9. PRODUCT SPECIFICATIONS

A. Luminaires shall comply with the current WRCOG LightSuite 1, Specification of LED Cobrahead Luminaires for New and Relocated Street Lighting Systems.

B. Design shall include selection of luminaires, poles, mast arms, and other components affecting the performance of the street lighting system.

C. Poles, mast arms, bases, electrification and all other parts of the street lighting system shall meet engineering standards of the community.

Application Note: LightSuite 4 Table 7-2 suggests a system for minimizing the number of different types of luminaires (SKU's) in order to simplify product ordering, replacement and stock management.

Section 10.

SUBMITTALS FOR APPROVAL

A. Plan(s) of the proposed lighting installation clearly identifying:

1. The criteria for each roadway segment, intersection, and other elements as required in Section 8. (C.), (D.), and (E.), above. Information affecting criteria selection, such as proximity to a school or transit stop shall be included. Calculations representing typical stretches of roadways or streets may be permitted for each condition of Lighting Zone, pedestrian area classification, posted speed or other differences.
2. The AASHTO pavement type(s), e.g. R1, R2, etc.
3. Point-by point lighting calculations on a grid not larger than 2.5' x 2.5 (.75m x .75m).
4. Calculation summaries showing average, minimum, and maximum values and ratios as contained in the tables of criteria in RP-8.
5. Calculations to include roadways, intersections, walkways, and all other parts of the project for which criteria were developed under Section 9. (A.) 1.
6. Schedule of luminaires including mounting height, mast arm length, and pole base locations.

B. Specifications for each luminaire to include:

1. Product datasheet.
2. Photometric report.
 - a. Must clearly indicate BUG rating per TM-15.
3. Drawing of pole or standard including base details.
4. Drawing of mast arm if used.
5. Datasheet for driver and surge suppressor.
6. Datasheet for photocell.

END OF SECTION

SPECIFICATIONS OF LED LUMINAIRES FOR REPLACEMENT OF COBRAHEAD STREET LIGHTING SYSTEMS

PART 1 – GENERAL

1.1. SCOPE

Luminaires to be used for replacement of legacy high intensity discharge street lighting systems.

1.2. REFERENCES

The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by their basic designation only. Versions listed shall be superseded by updated versions as they become available.

A. American National Standards Institute (ANSI)

1. C136.2-2004 (or latest), American National Standard for Roadway and Area Lighting Equipment—Luminaire Voltage Classification
2. C136.10-2010 (or latest), American National Standard for Roadway and Area Lighting Equipment - Locking-Type Photocontrol Devices and Mating Receptacle Physical and Electrical Interchangeability and Testing
3. C136.15-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment – Luminaire Field Identification
4. C136.22-2004 (R2009 or latest), American National Standard for Roadway and Area Lighting Equipment – Internal Labeling of Luminaires
5. C136.25-2009 (or latest), American National Standard for Roadway and Area Lighting Equipment – Ingress Protection (Resistance to Dust, Solid Objects and Moisture) for Luminaire Enclosures
6. C136.31-2010 (or latest), American National Standard for Roadway Lighting Equipment – Luminaire Vibration
7. C136.37-2011 (or latest), American National Standard for Roadway and Area Lighting Equipment - Solid State Light Sources Used in Roadway and Area Lighting

B. American Society for Testing and Materials International (ASTM)

1. B117-09 (or latest), Standard Practice for Operating Salt Spray (Fog) Apparatus

- 1 2. D1654-08 (or latest), Standard Test Method for Evaluation of Painted or Coated
- 2 Specimens Subjected to Corrosive Environments
- 3 3. D523-08 (or latest), Standard Test Method for Specular Gloss
- 4 4. G154-06 (or latest), Standard Practice for Operating Fluorescent Light Apparatus
- 5 for UV Exposure of Nonmetallic Materials
- 6 C. Council of the European Union (EC)
- 7 1. RoHS Directive 2002/95/EC, on the restriction of the use of certain hazardous
- 8 substances in electrical and electronic equipment
- 9 D. Federal Trade Commission (FTC)
- 10 1. Green Guides, 16 CFR Part 260, Guides for the Use of Environmental Marketing
- 11 Claims
- 12 E. Illuminating Engineering Society of North America (IESNA or IES)
- 13 1. DG-21-15, Design Guide for Residential Lighting
- 14 2. DG-4-03 (or latest), Design Guide for Roadway Lighting Maintenance
- 15 3. HB-10-11 (or latest), IES Lighting Handbook, 10th Edition
- 16 4. LM-50-99 (or latest), IESNA Guide for Photometric Measurement of Roadway
- 17 Lighting Installations
- 18 5. IES RES-1-16, Measure and Report on Luminaire Dirt Depreciation (LDD) in
- 19 LED Luminaires for Street and Roadway Lighting Applications
- 20 6. LM-61-06 (or latest), Approved Guide for Identifying Operating Factors
- 21 Influencing Measured Vs. Predicted Performance for Installed Outdoor High
- 22 Intensity Discharge (HID) Luminaires
- 23 7. LM-79-08 (or latest), IESNA Approved Method for the Electrical and
- 24 Photometric Measurements of Solid-State Lighting Products
- 25 8. LM-80-08 (or latest), IESNA Approved Method for Measuring Lumen
- 26 Maintenance of LED Light Sources
- 27 9. RP-8-14 ANSI / IESNA American National Standard Practice for Roadway
- 28 Lighting
- 29 10. RP-16-10 (or latest), ANSI/IES Nomenclature and Definitions for Illuminating
- 30 Engineering
- 31 11. TM-3-95 (or latest), A Discussion of Appendix E - "Classification of Luminaire
- 32 Lighting Distribution," from ANSI/IESNA RP-8-83
- 33 12. TM-15-11 (or latest), Luminaire Classification System for Outdoor Luminaires
- 34 13. TM-21-11 (or latest), Projecting Long Term Lumen Maintenance of LED Light
- 35 Sources
- 36 F. Institute of Electrical and Electronics Engineers (IEEE)
- 37 1. IEEE C62.41.2-2002 (or latest), IEEE Recommended Practice on
- 38 Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits

2. ANSI/IEEE C62.45-2002 (or latest), IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power Circuits
- G. National Electrical Manufacturers Association (NEMA)
 1. ANSI/NEMA/ANSI C78.377-2008 (or latest), American National Standard for the Chromaticity of Solid State Lighting Products
- H. National Fire Protection Association (NFPA)
 1. NFPA-70-14 – National Electrical Code (NEC)
- I. Underwriters Laboratories (UL)
 1. 1449, Surge Protective Devices
 2. 1598, Luminaires and Poles
 3. 8750, Light Emitting Diode (LED) Equipment for Use in Lighting Products
- J. City Standards for Street Lighting
- K. Southern California Edison
 1. Standards for services to customer-owned street lighting systems
 2. Standard specifications for Public Works Construction (Greenbook) (latest edition), Subsections 700 and 701 and all included cross references.

1.3. RELATED DOCUMENTS

- A. LightSuite 2, Design Standards for New and Relocated Street Lighting Systems.

1.4. DEFINITIONS

- A. Lighting terminology used herein is defined in IES RP-16. See referenced documents for additional definitions.
 1. Exception: The term “driver” is used herein to broadly cover both drivers and power supplies, where applicable.
 2. Clarification: The term “LED light source(s)” is used herein per IES LM-80 to broadly cover LED package(s), module(s), and array(s).

1.5. 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. After installation, Owner may perform IES LM-50 field measurements to verify performance requirements outlined in Table A, considering measurement uncertainties outlined in IES LM-61.

1.6. LIGHTING SYSTEM PERFORMANCE

A. Energy Conservation

1. Lighting Controls

- a. See separate controls specification identified in section 1.2 above, if applicable.
- b. See section 2.1-B below for driver control interface and performance requirements.
- c. 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 A.

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

A. Use Table D attached hereto for each proposed luminaire.

B. General submittal content shall include

1. Completed Appendix E 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

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 (L_{80}) 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 section 1.7 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).

1 1.8.WARRANTY

- 2 A. Provide a minimum ten-year warranty covering maintained integrity and functionality of
 - 3 1. Luminaire housing, wiring, and connections
 - 4 2. LED light source(s)
 - 5 a. Negligible light output from more than 10 percent of the LED packages
 - 6 constitutes luminaire failure.
 - 7 3. LED driver(s)
 - 8 a.Failure to dim if connected to a control system and using proper
 - 9 components constitutes luminaire failure
- 10 B. Warranty period shall begin upon installation, or as negotiated by owner such as in the
- 11 case of an auditable asset management system.
- 12 C. Warranty to provide for replacement of product with new product of equivalent
- 13 appearance, CCT, CRI, and photometric performance.
- 14 D. Upon request prior to approval, manufacturer may be required to provide proof of
- 15 financial viability which may include any information deemed necessary to determine the
- 16 manufacturer's ability to fully service their warranty.
- 17

18 PART 2 – PRODUCTS

19 2.1. LUMINAIRES

- 20 A. General Requirements
 - 21 1. Luminaires shall be as specified for each type in Table B.
 - 22 2. Luminaire shall have an external label per ANSI C136.15
 - 23 3. Luminaire shall have an internal label per ANSI C136.22.
 - 24 4. Nominal luminaire input wattage shall account for nominal applied voltage and
 - 25 any reduction in driver efficiency due to sub-optimal driver loading.
 - 26 5. Luminaires shall start and operate in -20°C to +40°C ambient.
 - 27 6. Electrically test fully assembled luminaires before shipment from factory.
 - 28 7. Effective Projected Area (EPA) of the luminaire shall not exceed the EPA of the
 - 29 luminaire being replaced.
 - 30 8. Luminaires shall be designed for ease of component replacement and end-of-life
 - 31 disassembly.
 - 32 9. Luminaires shall be rated for the ANSI C136.31 Vibration Level indicated in
 - 33 Table A.
 - 34 10. LED light source(s) and driver(s) shall be RoHS compliant.
 - 35 11. Transmissive optical components shall be applied in accordance with OEM
 - 36 design guidelines to ensure suitability for the thermal/mechanical/chemical
 - 37 environment.

1 B. Driver

- 2 1. Rated case temperature shall be suitable for operation in the luminaire operating
3 in the ambient temperatures indicated in section 2.1-A above.
- 4 2. Shall accept the voltage or voltage range indicated in Table A at 50/60 Hz, and
5 shall operate normally for input voltage fluctuations of plus or minus 10 percent.
- 6 3. Shall have a minimum Power Factor (PF) of 0.90 at full input power and across
7 specified voltage range.
- 8 4. Control signal interface
- 9 a. Luminaire types indicated "Required" in Table A shall accept a control
10 signal as specified via separate controls specification referenced in section
11 1.2 above, e.g., for dimming.
- 12 b. Luminaire types indicated "Not Required" in Table A need not accept a
13 control signal.

14 C. Electrical transient and surge immunity

- 15 1. Luminaire shall meet the "Elevated" requirements in Appendix D. Manufacturer
16 shall indicate on submittal form (Appendix E) whether failure of the electrical
17 immunity system can possibly result in disconnect of power to luminaire.

18 D. Electromagnetic interference

- 19 1. Shall have a maximum Total Harmonic Distortion (THD) of 20% at full input
20 power and across specified voltage range.
- 21 2. Shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards.

22 E. Electrical safety testing

- 23 1. Luminaire shall be listed for wet locations by an OSHA NRTL.
- 24 2. Luminaires shall have locality-appropriate governing mark and certification.

25 F. Painted or finished luminaire components exposed to the environment

- 26 1. Shall exceed a rating of six per ASTM D1654 after 1000hrs of testing per ASTM
27 B117.
- 28 2. The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523,
29 after 500 hours of QUV testing at ASTM G154 Cycle 6.

30 G. Thermal management

- 31 1. Mechanical design of protruding external surfaces (heat sink fins) for shall
32 facilitate hose-down cleaning and discourage debris accumulation.
- 33 2. Liquids or other moving parts shall be clearly indicated in submittals, shall be
34 consistent with product testing, and shall be subject to review by Owner.

35 H. IES TM-15 limits for Backlight, Uplight, and Glare (BUG Ratings) shall be as specified
36 for each luminaire type in Table A.

- 37 1. Calculation of BUG Ratings shall be for initial (worst-case) values, i.e., Light
38 Loss Factor (LLF) = 1.0.

39 I. Minimum Color Rendering Index (CRI): 70.

1 J. Correlated Color Temperature (CCT)

- 2 1. Nominal 2700K (3000K for certain applications only).
3 2. Allowable 2580 to 2870K per IES LM-79.
4 3. Allowable -.006 to .006 D_{uv} per IES LM-79.

5 K. The following shall be in accordance with corresponding sections of ANSI C136.37

- 6 1. Wiring and grounding
7 a. All internal components shall be assembled and pre-wired using modular
8 electrical connections.
9 2. Mounting provisions
10 a. Specific configurations are indicated in Table A
11 3. Terminal blocks for incoming AC lines
12 4. Photocontrol receptacle
13 5. Latching and hinging
14 6. Ingress protection

15 L. Luminaire Construction

- 16 1. Weight
17 a. The net weight of each luminaire less than 46 (21 kg) pounds including
18 mounting devices and backlight shields.
19 2. Housing
20 a. Tool-less entry
21 b. Die-cast aluminum alloy meeting ASTM Specification A380. Alternate
22 materials may be considered but shall be submitted to the Owner for
23 review and approval.
24 c. Encloses the mounting hardware, LED arrays, control receptacle,
25 terminal board, and electronic driver.
26 d. Includes a surface to facilitate leveling with a spirit level.
27 e. Integral heat sink characteristics, such that all enclosed components will
28 operate within their designed operating temperatures under expected
29 service conditions. No external or removable heat shields or heat sinks
30 are permitted.
31 f. Designed to encourage water shedding.
32 g. Designed to minimize dirt and bug accumulation on the optic surface.
33 h. Permanently affixed easily-viewable nameplate inside of each luminaire
34 housing containing the manufacturer's name, manufacturer's catalog
35 number, date of manufacture (month and year), plant location, input
36 power consumption, driver output current, IEC IP Rating, correlated
37 color temperature (CCT), IES light distribution type, IESNA TM-15
38 BUG ratings, and serial number.
39 i. City approved luminescent name plate meeting American National
40 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.

2.2. PRODUCT MANUFACTURERS AND APPROVED PRODUCTS

- A. Approved manufacturers are listed in Table A.
- B. Select products to replace existing luminaires using Tables A and B, including application notes, as recommended in LightSuite 4.
- C. Specific products proposed for a specific project should be submitted using Table 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.

2.3. 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.

TABLE A
APPROVED MANUFACTURERS OF LIGHTING PRODUCTS

Candidate luminaires for street and roadway lighting products were tested and evaluated in the winter of 2016-2017. The following manufacturers' products were generally found to be of suitable quality and performance. However, specific products to be used shall meet the minimum performance requirements from Table B. Make necessary changes due to the nature of the specific project, changes due to product offerings, and/or changes required by the Owner. Listed alphabetically; no preference due to order is intended.

Acuity Brands Lighting (American Electric Lighting and other brands)
 Hubbell Lighting (Beacon Lighting and other brands)
 Cree Lighting
 Eaton Lighting (Streetworks and other brands)
 General Electric (Current and other brands)
 Leotek Lighting
 Philips Lighting (Lumec and other brands)

All the above manufacturers have demonstrated products that can meet the performance requirements of Table B, provide satisfactory results when used in non-RP-8 compliant installations when used per Table C, meet the requirements of these specifications, and passed a table top review.

Application Notes

- 1 Other products from these and other manufacturers meeting all project requirements and these specifications may exist. Careful comparison of proposed luminaires' goniophotometrics, colorimetry, photometric performance, and other project data, and tabletop disassembly and evaluation of construction is strongly urged.
- 2 Periodic review of the selection criteria and approved manufacturers is urged. LED lighting is a field of rapid change in technology and many new companies have entered the business, as well as the continued evolution of products by all manufacturers. Price alone should not be the deciding criterion.
- 3 Standard AGI-32 test designs for analysis and comparison are available through WRCOG.

TABLE B
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 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	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		

1 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		

2

3 Footnotes for all luminaires

4 ¹ If installed on a residential street or residential collector; optional to install by request by
 5 Owner or as additional service

6 ² If installed on a residential cul-de-sac or L intersection

7 ³ Without detachable shields

8

1
2
3

TABLE C
PRODUCT SUBMITTAL FORM

Luminaire Type ¹		
Manufacturer		
Model number		
Housing finish color		
Tenon nominal pipe size (inches)		
Nominal luminaire weight (lb)		
Nominal luminaire EPA (ft ²)		
Nominal input voltage (V)		
ANSI vibration test level	☐ Level 1 (Normal)	☐ Level 2 (bridge/overpass)
Nominal BUG Ratings		
Make/model of LED light source(s)		
Make/model of LED driver(s)		
Dimmability	☐ Dimmable	☐ Not dimmable
Control signal interface		
Upon electrical immunity system failure	☐ Possible disconnect	☐ No possible disconnect
Thermal management	☐ Moving parts	☐ No moving parts
Lumen maintenance testing duration (hr)		
Reported lumen maintenance life (hr) ²		
Warranty period (yr)		
Parameter	Nominal value	Tolerance (%)
Initial photopic output (lm)		
Maintained photopic output (lm)		
Lamp lumen depreciation		
Initial input power (W)		
Maintained input power (W)		
Initial LED drive current (mA)		
Maintained LED drive current (mA)		
Drive current used		
In-situ LED T _c (°C)		
CCT (K)		
Additional product description		

4

END OF SECTION

¹ See Table A, and attach supporting documentation as required.

² Value shall be no less than as specified in section 1.6-C, and shall not exceed six times the testing duration indicated in the row above. Value shall be consistent with values submitted in the rows below for maintained light output, maintained input power, and maintained drive current.

DESIGN STANDARDS FOR LED REPLACEMENT STREET LIGHTING

Section 1. INTENT

The purpose of this Standard is to provide standards for street lighting that will:

- A. Provide a high-quality conversion of existing street lighting that insofar as possible maintains essential qualities of the existing installation.
- B. Typically allow for reduced energy consumption of the existing street lighting by at least 50% compared to the existing legacy lighting system.
- C. Equip each luminaire with the means to communicate to a community-wide lighting network.
- D. Help mitigate light pollution, reduce skyglow and improve the nighttime environment for astronomy and the Palomar Observatory and the overall enjoyment of the naturally dark night sky;
- E. Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- F. Help protect human health and wellness and the natural environment from the adverse effects of man-made outdoor lighting.

Section 2. CONFORMANCE WITH APPLICABLE LAWS, CODES, REGULATIONS and STANDARDS

All street lighting shall be installed in conformance with the provisions of this standard and the applicable provisions of the standards of the community regulating the installation of such fixtures, the California Building Code Title 24 Part 1, the California Electrical Code Title 24 Part 3, the California Building Energy Efficiency Standards Title 24 Part 6, the California Sustainability Standards Title 24 Part 11 “CalGreen”, and all other applicable requirements.

Section 3. SCOPE

This standard shall apply the conversion of legacy street lighting systems employing high intensity discharge (HID) lighting sources to light-emitting diode (LED) light sources for:

- A. Street lighting for public streets, roadways, alleys and other rights of way including walkways and bikeways.
- B. Street lighting for private roadways, walkways and bikeways.
- C. Street lighting for private developments where the street lighting will be deeded to the community at some time in the future.

Exceptions to Section 3

1. Facilities, sites or roadways under the sole jurisdiction of the Federal or State Governments or within the jurisdiction of a sovereign nation.
2. Lighting specifically governed by a Federal or State regulation or statute.
3. Lighting subject to the terms of a Special Plan approved by the community.

Section 4. ALTERNATE MATERIALS AND METHODS OF INSTALLATION.

This standard is not intended to prevent the use of any design, material or method of installation not expressly forbidden, provided any such alternate has been approved if it:

- A. Provides at least approximate equivalence to the applicable specific requirements of this standard; and
- B. Is otherwise satisfactory and complies with the intent of this standard.

Section 5. DEFINITIONS.

- A. **Street lights** means luminaire(s), installed outdoors, and used to illuminate a street or roadway and/or any part of the public right of way including but not limited to, sidewalks, bikeways, alleys, intersections, ramps, overpasses, curbs, medians, or shoulders.
- B. **Street** means major, collector and local roads where pedestrians and bicyclists are generally present.
- C. **Roadway** means, freeways, expressways, limited access roads, and roads on which pedestrians, cyclists and parked vehicles are generally not present.
- D. **Residential street** means a street that is exclusively serving residential properties and for which the posted speed limit is 25 mph (40 kph) or less.
- E. **Luminaire** means a complete illuminating device, lighting fixture or other device that emits light, consisting of light source(s) together with the parts designed to distribute the

light, to position and protect the light source(s), to regulate the electrical power, and to connect the light sources to the power supply.

F. **Legacy luminaire** means an existing cobrahead luminaire using a high intensity discharge light source including high pressure sodium (HPS), low pressure sodium (LPS), metal halide (MH), ceramic metal halide (CMH), or mercury vapor (MV).

G. **IES** means the Illuminating Engineering Society of North America.

H. **RP-8** means the current version of the IES Recommended Practice for Roadway Lighting, RP-8.

I. **RP-22** means the current version of the IES Recommended Practice for Tunnel Lighting RP-22.

J. **DG-21** means the current version of the IES Design Guide for Residential Street Lighting.

K. **TM-15** means the current version of the IES Technical Memorandum, Luminaire Classification System for Outdoor Luminaires

L. **Palomar Zone A** is established by Riverside County Ordinance 655 and means all properties and land uses in plan view within the circular area fifteen (15) miles in radius centered on Palomar Observatory.

M. **Palomar Zone B** is established by Riverside County Ordinance 655 and means all properties and land uses in plan view the circular ring area between by two circles, one forty-five (45) miles in radius centered on Palomar Observatory, and the other the perimeter of Zone A.

N. **Palomar Zone C** means the remainder of Riverside County outside of the perimeter of Zone B.

O. **BUG rating of an outdoor luminaire** means the ranking of the luminaire using a photometric report to establish the Backlight (B), Uplight (U) and Glare (G) ranking per IES TM-15.

P. **LED** means light emitting diode solid state lighting source.

Q. **Dedicated LED** means a luminaire with a hard-wired LED light generating module and a separate driver.

R. **Photometric Report** means a complete photometric report from a NVLAP certified test laboratory.

S. **AASHTO** means the American Association of State Highway Traffic Officials.

T. Roadway lighting distribution types as defined by IES

- a. **Type I** is a long, narrow symmetrical distribution having a preferred lateral width of 15 degrees in the cone of maximum candlepower. Typically, luminaires are located in the center of a roadway, such as in a median, where the mounting height is approximately equal to the roadway width on either side.
- b. **Type II** is a mildly asymmetric distribution is used for wide walkways, on ramps and entrance roadways, and narrow streets. Typically, the width of the roadway does not exceed 1.75 times the mounting height.
- c. **Type III** is an asymmetric distribution commonly used for lighting streets and roadways. Typically, the width of the roadway does not exceed 2.75 times the mounting height.
- d. **Type IV** is the most asymmetric distribution, commonly used for intersection safety lighting and extremely wide roadways. Typically, the width of the roadway does not exceed 3.75 times the mounting height.

Section 6. TITLE 24 LIGHTING ZONES

- A. For the purposes of complying California Code of Regulations, Title 24, Part 1, Section 10-114 and Title 24, Part 11, Section 5.106.8, Zone A as defined above shall be Lighting Zone 1 (LZ-1), Zone B as defined above shall be Lighting Zone 2 (LZ-2). The balance of the County shall be LZ-2 or LZ-3 per the statewide default zones or as set by the community.
- B. The community shall establish a method for applicant(s) to request and to set a different lighting zone per Title 24, Part 1 Section 10-114 for a specific parcel or project.

Section 7. DESIGN OF REPLACEMENT LIGHTING

A. General

1. Obtain a GIS computer database of the community's street lighting system. Determine the extent to which the database is acceptably accurate for the determinations to be made in this section. If necessary, devise an alternative course of action acceptable to the community.
2. Determine whether any street lights are made unnecessary by an immediately adjacent street light. Typical situations include intersections where intersection safety lights were added after the street light system was already in place. As approved by the community, identify redundant lighting for removal.

3. Determine whether the community currently has street lighting standards, and determine the extent to which they are met.
4. Review the current lighting system's performance relative to RP-8. Discuss and determine the desired outcome with the community.
 - a. If the existing lighting system does not meet RP-8, it is unlikely that simply replacing legacy luminaires with LED luminaires will bring an existing installation into compliance without changing pole locations, mounting heights, or mast arm lengths.
 - b. If the existing lighting system exceeds RP-8, determine whether reducing light levels to RP-8 is acceptable.
5. Review a map of the community with the community. Make and confirm determinations of characteristics in RP-8 (regardless of whether complying or not) that are to be used to determine lighting levels, including but not limited to:
 - a. Which are streets and which are roadways.
 - b. Which streets and roadways are "major", "collector", or "local" as defined by RP-8.
 - c. Where pedestrian conflict levels are low, medium or high.
 - d. Which streets are adjacent to or share the ROW with mass transit stops or bicycle paths.
 - e. Other considerations used to establish lighting requirements at the discretion of the community
6. For each legacy luminaire in the system, determine the appropriate LED replacement per Section 7. (D.) or (E.) below.
 - B. Street lighting shall be fully shielded and emit no uplight (BUG rating U=0).
 - C. Street lighting chromaticity shall be determined from Table 7-1.
 - D. Typical procedure for selecting appropriate LED luminaires without RP-8 compliance.
 1. Determine each legacy luminaire's primary characteristics
 - a. Light Source
 - b. Wattage of lamp

- c. Photometric type (e.g. type II medium, type III short, etc.)
2. Determine whether replacement is to be type a, b, or c as follows:
 - a. Most energy efficiency – recommended for most applications, generally maintains existing minimum light levels, improves uniformity. Typically considered acceptable when replacing HPS or LPS legacy systems with 2700K or 3000K LED lighting.
 - b. Compromise between energy efficiency and higher light levels – recommended for certain applications where the pedestrian area classification or some other factor suggests a modestly higher light level.
 - c. Most lighting - provides average light levels higher than existing lighting – in locations where community needs transcend energy and cost savings.

Application Notes:

- Most WRCOG communities should use types (a.) for most of their luminaires to maximize payback.
 - Kilolumen classification system takes lumen maintenance into account.
3. For intersection safety lighting, type IV luminaires may be considered in place of existing Type III or Type II.
 4. Note nominal LED kilolumen classifications in Table 7-2. To minimize the number of different luminaires to stock and maintain, this system is based on nominal lumen packages for up to six lumen package groups (Small, Medium Small, Medium, Medium High, High, and Very High).
 5. Select nominal LED luminaire kilolumens of matching photometric type from Table 7-3, column (a), (b), or (c).

EXCEPTION TO Section 7. (D.)

In Zone A and Lighting Zone 1 (LZ-1), for residential streets, street lighting shall be limited to (1) light at each residential street or residential street/residential minor collector intersection and (1) light mod block per DG-21. There shall be no requirements to meet illuminance, luminance or uniformity requirements. Lighting for walkways and sidewalks may be incidental because of the street lights. This exception may be applied to any residential street with the approval of community.

- E. Procedure for selecting appropriate LED luminaires where RP-8 or another similar standard is preferred or required.

1. Refer to LightSuite 2

1 Table 7-1. Maximum Allowed Color Temperature Per Lighting Zones

	Palomar Zone A and Lighting Zone LZ-1	Palomar Area B and C and Lighting Zones LZ-2 through LZ-4
Maximum Color Temperature		
Intersection Safety Lights	2700K	2700K or 3000K
Highways, Arterials and Major Collectors	2700K	2700K or 3000K
Minor Collectors and Streets	2700K	2700K
Residential Streets	2700K	2700K

2 Application Notes

- 3 a) 2700K has been tested and accepted by WRCOG for intersection safety lights and
4 highways, arterials and major collectors.
5 b) Per IES there no significant difference in any performance characteristic involving
6 safety or security between 2700K and 3000K.
7 c) 2700K causes less light pollution per lumen than does 3000K.

8 TABLE 7-2

**9 SUGGESTED KILOLUMEN (KL) CLASS REPLACEMENT LUMINAIRE SYSTEM FOR
10 MINIMUM TYPES (SKU's) OF LED LUMINAIRES**

Light Output LED Kilolumen (KL) Class	Application Group (a.)	Application Group (b.)	Application Group (c.)
Low (L)	Nominal 2 KL (~20 watt)	Nominal 2.5 KL (~25 watt)	Nominal 3 KL (~30 watt)
Medium low (ML)	Nominal 4.5 KL (~45 watt)	Nominal 6 KL (~60 watt)	Nominal 7.5 KL (~75 watt)
Medium (M)	Nominal 7.5 KL (~75 watt)	Nominal 10 KL (~100 watt)	Nominal 12.5 KL (~125 watt)
Medium High (MH)	Nominal 10 KL (~100 watt)	Nominal 12.5 KL (~125 watt)	Nominal 15 KL (~150 watt)
High (H)	Nominal 12.5 KL (~125 watt)	Nominal 15 KL (~150 watt)	Nominal 17.5KL (~175 watt)
Very High (VH)	Nominal 17.5 KL (~175 watt)	Nominal 20 KL (~200 watt)	Nominal 25 KL (~250 watt)

11 Application Notes

- 12 • Wattage values assume 100 luminaire lumens per watt. Efficacy of products will probably
13 increase over time, reducing the watts for each KL package and increasing the energy savings.

TABLE 7-3

**RECOMMENDED NOMINAL DIRECT CONVERSION LED LUMINAIRE WHEN
REPLACING EXISTING LEGACY LUMINAIRES**

Refer to application notes, below and Section 7. (D.)

Incumbent Legacy Luminaire ¹				LED KL Class ⁵ of Replacement Luminaire			Approx. Watts Saved Each		
Source	Lamp Watts	System Watts ²	Luminaire Lumens ³	(a.)	(b.)	(c.)	(a.)	(b.)	(c.)
Low Pressure Sodium (LPS)	35	63	3360	L	L	L	43	38	33
	55	84	5600	L	L	L	64	59	54
	90	131	9450	ML	ML	ML	86	71	56
	135	182	15750	M	M	M	107	82	57
	180	229	23100	L	L	L	129	104	79
High Pressure Sodium (HPS)	70	83	4060	L	L	L	63	58	53
	100	117	6650	ML	ML	ML	72	57	42
	150	193	11200	M	M	M	118	93	68
	200	246	15400	MH	MH	MH	146	121	96
	250	313	19250	H	H	H	188	163	138
	400	485	35000	VH	VH	VH	310	285	235
Metal Halide (MH)	70	90	3960	L	L	L	70	65	60
	100	129	6120	ML	ML	ML	84	69	54
	175	210	10800	M	M	M	135	110	85
	250	295	15800	MH	MH	MH	195	170	145
	400	458	27300	H	H	H	333	308	283
Mercury Vapor (MV)	100	120	2880	L	L	L	100	95	90
	175	205	6040	L	L	L	185	180	175
	250	285	9000	ML	ML	ML	240	225	210
	400	454	16500	MH	MH	MH	354	329	304

Footnotes

¹ Most street luminaires in Western Riverside County are either LPS or HPS.

² Lamp + Ballast watts

³ Initial lamp lumens x luminaire efficiency (approximate, varies with fixture type)

⁴ Nominal luminaire watts (Total of LED and driver)

⁵ See Table 7-3

Application Notes

- Column (a.) will produce the fastest payback and is recommended for community projects in which the purchase cost of light poles must be amortized.
- This conversion table is suggested for general purpose use in replacing legacy lighting systems with 2700K to 3000K LED's available in the winter of 2016-2017. To adjust for future improvement in luminous efficacy, be sure to provide approximately the same number of LED lumens. LED watts are typical for products available in spring, 2017.

- LED luminaire lumens are generally lower than legacy luminaires because of the ability of LED optical systems to achieve a greater percentage of utilization than legacy luminaires.
- Acceptable results will generally occur if care is taken to replace luminaire distribution types (e.g. Type III medium) with like.
- All values are nominal and represent average expected outcomes. Differences of less than 15-20% are probably not significant for this table.
- Use of this table does not ensure compliance with IES RP-8-14. In many cases, pole height, mast arm length and/or pole spacing may not permit compliance with RP-8-14 regardless of existing legacy source luminaires. If compliance with RP-8-14 is required, lighting calculations will be necessary and may result in different LED luminaire watts and lumens. Analysis using WRCOG standard AGI32 street models is recommended. See LightSuite 3 for recommended illuminating engineering standards.
- Lumen maintenance of the legacy light source as compared to LED lighting has been considered for each lamp type. Some legacy light sources have less lumen depreciation than others.

Section 8. PRODUCT SPECIFICATIONS

- A. Luminaires shall comply with the current WRCOG LightSuite 3, Specification of LED Products for Replacement of Cobrahead Street Lighting Luminaires.

Section 9.

SUBMITTALS FOR APPROVAL

- A. Plan(s) of the proposed lighting installation clearly identifying:

1. The criteria for each roadway segment, intersection, and other elements as required in Section 8. (C.), (D.), and (E.), above. Information affecting criteria selection, such as proximity to a school or transit stop shall be included. Calculations representing typical stretches of roadways or streets may be permitted for each condition of Lighting Zone, pedestrian area classification, posted speed or other differences.
2. The AASHTO pavement type(s), i.e. R1, R2, R3, or R4.
3. Point-by point lighting calculations on a grid not larger than 2.5' x 2.5' (.75m x .75m).
4. Calculation summaries showing average, minimum, and maximum values and ratios as contained in the tables of criteria in RP-8.
5. Calculations to include roadways, intersections, walkways, and all other parts of the project for which criteria were developed under Section 9. (A.) 1.

- END OF SECTION

2 **PROPOSED RIVERSIDE COUNTY**
3 **ORDINANCE 655P**
4 **REGULATING OUTDOOR LIGHTING**

5 **Section 1. INTENT**

6 The purpose of this Ordinance is to provide regulations for outdoor lighting that will:

- 7 a. Ensure adequate outdoor illumination can be provided.
8 b. Help mitigate light pollution, reduce skyglow and improve the nighttime
9 environment for astronomy and the Palomar Observatory and the overall enjoyment
10 of the naturally dark night sky;
11 c. Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive
12 light.
13 d. Help protect human health and wellness and the natural environment from the
14 adverse effects of man-made outdoor lighting.
15 e. Conserve energy and resources to the greatest extent possible.

16 **Section 2. CONFORMANCE WITH APPLICABLE LAWS, CODES,**
17 **REGULATIONS and ORDINANCES.**

18 All outdoor luminaires shall be installed in conformance with the provisions of this ordinance
19 and the applicable provisions of the ordinances of the County of Riverside regulating the
20 installation of such fixtures, the California Building Code Title 24 Part 2, the California
21 Electrical Code Title 24 Part 3, the California Building Energy Efficiency Standards Title 24 Part
22 6, the California Sustainability Standards Title 24 Part 11 “CalGreen”, and all other applicable
23 requirements.

24 **Section 3. SCOPE**

25 The provisions of this code apply to the construction, alteration, movement, enlargement,
26 replacement and installation of outdoor lighting throughout the unincorporated areas of Riverside
27 County, including but not limited to:

- 28 A. Lighting on private property, such structures, areas, features, security and advertising.
29 B. Lighting for private roadways, walkways and bikeways.
30 C. Lighting for public property such as structures, areas, features, security and advertising.

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- 1 E. **Class III lighting** means that lighting not meeting Class I or Class II purposes and used
2 primarily for decorative effects. Examples of Class III lighting include, but are not
3 limited to, the illumination of flag poles, trees, fountains, statuary, and building walls.
- 4 F. **Planning Director** means the Director of Planning of the County of Riverside or
5 representative(s) designated by the Planning Director.
- 6 G. **IES** means the Illuminating Engineering Society of North America.
- 7 H. **Zone A** means the circular area fifteen (15) miles in radius centered on Palomar
8 Observatory.
- 9 I. **Zone B** means the circular ring area defined by two circles, one forty-five (45) miles in
10 radius centered on Palomar Observatory, and the other the perimeter of Zone A.
- 11 J. **Zone C** means the remainder of the County outside of the perimeter of Zone B.
- 12 K. **Individual** means any private individual, tenant, lessee, owner or any commercial entity,
13 including, but not limited to, companies, partnerships, joint ventures or corporations.
- 14 L. **Installed** means any installation of outdoor luminaires after the effective date of this
15 ordinance. Projects with construction plans approved by the County prior to the effective
16 date of this ordinance are excluded from installation in compliance with this ordinance.
- 17 M. **BUG rating of an outdoor luminaire** means the ranking of the luminaire using a
18 photometric report to establish the Backlight (B), Uplight (U) and Glare (G) ranking
19 according to IES TM-15-11.
- 20 N. **Fully Shielded Luminaire** means an outdoor luminaire where no light is emitted at or
21 above an angle of 90 degrees above the nadir as evidenced by a photometric test report
22 from a NVLAP accredited testing laboratory in which the uplight value (U) is 0. Any
23 structural part of the luminaire providing shielding shall be permanently attached.
- 24 O. **Partly Shielded luminaire** means outdoor luminaires that have a U (uplight) rating
25 between 1 and 4.
- 26 P. **Unshielded luminaire** means outdoor luminaires that are not Fully Shielded or Partly
27 Shielded and have a U (uplight) rating of 5 or no rating at all.
- 28 Q. **Outdoor Advertising Display** means advertising structures and signs used for outdoor
29 advertising purposes, not including onsite advertising signs, as further defined and
30 permitted in Article XIX of Ordinance No. 348.
- 31 R. **Outdoor Recreational Facilities** means public or private facilities designed and
32 equipped for the conduct of sports, leisure time activities and other customary and usual
33 recreational activities. Outdoor recreational facilities include, but are not limited to, fields
34 for softball, baseball, football, soccer, and any other field sports, courts for tennis,
35 basketball, volleyball, handball and other court sports, for which the level of play
36 according to IES RP-6-15 Section 4.4 is Class III or Class IV.
- 37 S. **Outdoor Sports Facilities** include fields for softball, baseball, football, soccer, and other
38 field sports, courts for tennis, basketball, volleyball, handball and other court sports, and
39 outdoor stadiums in which the level of play, according to RP-6-15 Section 4.4 is Class I
40 or Class II.

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Section 7.

GENERAL REQUIREMENTS.

Light sources are restricted by lighting zone according to the following Tables:

TABLE 7-1 Class I Lighting (color rendering is important)

ALL LUMINAIRES SHALL BE FULLY SHIELDED			
Source	Zone A and LZ-1	Zone B and/or LZ-2	Zone C and/or LZ-3
LED >3000K	Not allowed	Not allowed	Not allowed
LED 3000K	Allowed	Allowed	Allowed
LED 2700K or less	Allowed	Allowed	Allowed
Incandescent or 2700K or lower LED replacement lamps	Allowed	Allowed	Allowed
LED amber, hybrid or filtered	Allowed ¹	Allowed ¹	Allowed ¹
Metal halide, fluorescent, compact fluorescent, induction	Not allowed	Allowed if 3000K or less	Allowed if 3000K or less
High pressure sodium	Allowed ¹	Allowed ¹	Allowed ¹
Low pressure sodium	Allowed ²	Allowed ²	Allowed ²
Neon or cold cathode	Not allowed	Not allowed	Not allowed
Other light sources ³	Not allowed	Not allowed	Not allowed

Notes

¹ Not recommended due to poor color rendering

² Not recommended – source is obsolete and has no color rendering

³ For light sources not listed, applicants may appeal as provided under Section 3.

TABLE 7-2 Class II Lighting (color rendering is not important)

ALL LUMINAIRES SHALL BE FULLY SHIELDED			
Source	Zone A and LZ-1	Zone B and LZ-2	Zone C and LZ-3 or 4
LED >3000K	Not allowed	Not allowed	Not allowed
LED 3000K	Not allowed	Allowed	Allowed
LED 2700K or less	Allowed	Allowed	Allowed
Incandescent or 2700K or lower LED replacement lamps	Allowed	Allowed	Allowed
LED amber, hybrid or filtered	Allowed	Allowed	Allowed
Metal halide, fluorescent, compact fluorescent, induction	Not allowed	Not allowed	Not allowed
High pressure sodium	Allowed	Allowed	Allowed
Low pressure sodium	Allowed ¹	Allowed ¹	Allowed ¹
Neon or cold cathode	Not allowed	Not allowed	Not allowed
Other light sources ²	Not allowed	Not allowed	Not allowed

Notes

¹ Not recommended – source is obsolete and has no color rendering

² For light sources not listed, applicants may appeal as provided under Section 3.

1 **TABLE 7-3 Class III Lighting (decorative lighting)**

LUMINAIRES SHALL BE FULLY SHIELDED EXCEPT AS NOTED			
Source	Zone A and LZ-1	Zone B and LZ-2	Zone C and LZ-3 or 4
LED >3000K	Not allowed	Not allowed	Not allowed
LED 3000K	Not allowed	Allowed	Allowed
LED 2700K or less	Allowed	Allowed	Allowed
LED amber, hybrid or filtered	May be partly shielded or unshielded up to 450 lumens	May be partly shielded or unshielded up to 600 lumens	May be partly shielded or unshielded up to 1000 lumens
Incandescent or 2700K or lower LED replacement lamps			
Metal halide, fluorescent, compact fluorescent, induction	Not allowed	Not allowed	Not allowed
High pressure sodium	Allowed	Allowed	Allowed
Low pressure sodium ¹	Allowed ¹	Allowed ¹	Allowed ¹
Neon or cold cathode	Not allowed	Not allowed	Not allowed
Other light sources ²	Not allowed	Not allowed	Not allowed

2 Notes

3 ¹ Not recommended – source is obsolete and has no color rendering

4 ² For light sources not listed, applicants may appeal as provided under Section 3.

5 Section 8.

6 SUBMISSION OF PLANS AND EVIDENCE OF COMPLIANCE.

7 The application for any required County approval for work involving nonexempt outdoor
8 luminaires shall include evidence that the proposed work will comply with this ordinance. The
9 submission shall contain, but not be limited to, the following:

- 10 A. The location of the site where the outdoor luminaires will be installed;
- 11 B. Plans indicating the location and type of fixtures on the premises;
- 12 C. A description of the outdoor luminaires, including, but not limited to, manufacturer's
- 13 catalog cuts and drawings.
- 14 D. Photometric reports from a NVLAP accredited laboratory indicating luminaire light
- 15 source type, color temperature, and BUG rating.

16 The above required plans and descriptions shall be sufficiently complete to enable the County to
17 readily determine whether compliance with the requirements of this ordinance will be secured. If
18 such plans and descriptions cannot enable this ready determination, by reason of the nature or
19 configuration of the devices, fixtures or lamps proposed, the applicant shall submit further
20 evidence of compliance enabling such determination.

Section 9.
PROHIBITIONS.

- A. All lighting shall be off between 11:00 p.m. and one hour before sunrise, except as follows:
1. Motion sensors may be used for Class I lighting after 11:00 p.m.
 2. Class II lighting may remain on all night but shall employ motion sensors to turn lights off or dim lights when there is no motion after 11:00 p.m.
 3. On-premise advertising signs shall only be illuminated while the business facility is open to the public
 4. Outdoor advertising displays may remain lighted until midnight.
 5. Outside sales, commercial, assembly, repair, and industrial areas shall only be lighted when such areas are actually in use.
 6. Outdoor recreational facilities may remain lighted to complete recreational activities that are in progress and under illumination in conformance with this ordinance at 11:00 p.m.
- B. Operation of searchlights or aerial lasers for advertising purposes is prohibited.
- C. All external sign and billboard lighting shall be top-down. Bottom mounted signs are prohibited. Signs shall comply with the sign code.
- D. Use of mercury vapor lamps is prohibited.

Section 10.
PERMANENT EXCEPTIONS.

- A. Nonconformance. All outdoor luminaires existing and legally installed prior to the effective date of this ordinance are exempt from the requirements of this ordinance except that:
1. When existing luminaries are reconstructed or replaced, such reconstruction or replacement shall be in compliance with this ordinance.
 2. Sections 9 b, c, d and e regarding hours of operation shall apply.

- 1 B. Fossil Fuel Light. All outdoor luminaires producing light directly by combustion of fossil
2 fuels (such as kerosene lanterns, and gas lamps) are exempt from the requirements of this
3 ordinance.
- 4 C. Holiday Decorations. Lights used for holiday decorations are exempt from the
5 requirements of this ordinance.
- 6 D. Outdoor Sports Facilities may employ either:
- 7 a. Up to 6000K LED lighting systems provided (1) the lighting system employs
8 shielding to completely prevent uplight; (2) the lighting is controlled by motion
9 sensors or from a control booth; and (3) the lighting is dimmable and designed to
10 use the least amount of light necessary for the activity; and (4) the lighting system
11 has a fixed curfew of 11:00PM that can be overridden from the control booth.
- 12 b. Up to 5700K Metal halide lighting systems provided (1) the lighting system
13 employs shielding to completely prevent uplight; (2) the lighting is controlled
14 from a control booth and does not automatically turn on; (3) the lighting system
15 has a fixed curfew of 11:00PM that can be overridden from the control booth.

16 **Section 11.**
17 **TEMPORARY EXEMPTIONS.**

- 18 A. Information Required. Any individual may submit a written request to the Planning
19 Director for a temporary exemption from the requirements of this ordinance. The filing
20 fee for the temporary exemption shall be \$50.00. The Request for Temporary Exemption
21 shall contain the following information:
- 22 1. Name, address and telephone number of the applicant;
- 23 2. Location of the outdoor luminaires for which the exemption is requested;
- 24 3. Specific exemption(s) requested;
- 25 4. Use of the outdoor luminaires involved;
- 26 5. Duration of the requested exemption(s);
- 27 6. Type of outdoor light fixture to be used, including the light source and color
28 temperature, total lumen output, character of the shielding, if any;
- 29 7. Previous temporary exemptions, if any;
- 30 8. Such other data and information as may be required by the Planning Director. The
31 Planning Director shall have ten (10) business days from the date of receipt of the

Request for Temporary Exemption to approve or disapprove the request. The applicant will be notified of the decision in writing.

B. Duration of Approval. The exemption shall be valid for not more than thirty (30) consecutive days from the date of issuance of approval. Exemptions are renewable for a period of not more than fifteen (15) consecutive days. Requests for renewal of a temporary exemption shall be processed in the same manner as the original request. No outdoor luminaires shall be exempted from this ordinance for more than forty-five days during any twelve (12) month period.

Exception to Section 11 (B.): An exemption for portable lighting for construction shall be valid for one year and may be renewable on an annual basis.

C. Appeals. An applicant or any interested person may file an appeal from the decision of the Planning Director within 10 days of the date of mailing of the notice of decision to the applicant. The appellant may appeal that decision, in writing, to the Board of Supervisors, on forms provided by the Planning Department, which shall be accompanied by a filing fee of \$25.00. Upon receipt of a completed appeal, the Clerk of the Board shall set the matter for hearing before the Board of Supervisors not less than five days nor more than 30 days thereafter and shall give written notice of the hearing to the appellant and the Planning Director. The Board of Supervisors shall render its decision within 30 days following the close of the hearing on the appeal.

Section 12.

EMERGENCY EXEMPTIONS.

This ordinance shall not apply to portable temporary lighting used by law enforcement or emergency services personnel to protect life or property.

Section 13.

CONFLICTS.

Where any provision of the statutes, codes or laws of the United States of America or the State of California conflicts with any provision of this ordinance, the most restrictive shall apply unless otherwise required by law.

Section 14.

VIOLATIONS AND PENALTIES.

It shall be unlawful for any individual to operate, erect, construct, enlarge, alter, replace, move, improve, or convert any lighting structure, or cause the same to be done, contrary to or in violation of any provision of this ordinance.

Any individual violating any provision of this ordinance shall be deemed guilty of an infraction or misdemeanor as hereinafter specified. Such individual shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this ordinance is committed, continued, or permitted.

Any individual convicted of a violation of this ordinance shall be (1) guilty of an infraction offense and punished by a fine not exceeding one hundred dollars (\$100) for a first violation: (2) guilty of an infraction offense and punished by a fine not exceeding two hundred fifty dollars (\$250) for a second violation on the same site and perpetrated by the same individual. The third and any additional violations on the same site and perpetrated by the same individual shall constitute a misdemeanor offense and shall be punishable by a fine not exceeding one thousand dollars (\$1,000) or six months in jail, or both. Payment of any penalty herein shall not relieve an individual from the responsibility for correcting the violation.

Section 15.

VIOLATIONS CONSTITUTE PUBLIC NUISANCE.

Any lighting structure erected, constructed, enlarged, altered, replaced, moved, improved, or converted contrary to the provisions of this ordinance shall be, and the same is hereby declared to be, unlawful and a public nuisance and subject to abatement in the manner provided by law. Any failure, refusal or neglect to obtain a permit as required by this ordinance shall be prima facie evidence of the fact that a public nuisance has been committed in connection with the erection, construction, enlargement, alteration, replacement, improvement, or conversion of a lighting structure erected, constructed, enlarged, altered, repaired, moved, improved, or converted contrary to the provisions of this ordinance.

Section 16.

SEVERABILITY.

If any provision of this ordinance or the application thereof to any individual or circumstance is invalid, the invalidity shall not affect other provisions or applications of this ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are severable.

Section 17.

EFFECTIVE DATE.

This ordinance shall take effect and be in force thirty (30) days after the date of its adoption.

PROPOSED MODERNIZATION OF RIVERSIDE COUNTY ORDINANCE NO. 915P REGULATING OUTDOOR LIGHTING

Proposed changes are underlined and in bold.

The Board of Supervisors of the County of Riverside ordains as follows:

Section 1. FINDINGS

The Board of Supervisors finds that inadequately shielded outdoor lighting results in a waste of natural resources and **causes** light trespass. The Board of Supervisors further finds that ~~at certain levels,~~ light trespass, and associated glare, may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. **The Board of Supervisors also finds that these concerns are sufficiently different from the negative impacts of light pollution that are currently regulated by Ordinance 655 to warrant this specific Ordinance.**

Section 2. PURPOSE

The purpose of this Ordinance is to provide minimum requirements for outdoor lighting in order to reduce light trespass, and to protect the health, property, and well-being of residents in the unincorporated areas of the County.

Section 3. AUTHORITY

This Ordinance is adopted pursuant to the Board of Supervisors' police power as set forth under Article XI, section 7 of the California Constitution.

Section 4. DEFINITIONS

As used in this Ordinance, the following terms shall have the following meanings:

a. Adequately shielded. ~~Shielding of an outdoor luminaire by opaque components or materials, such that light rays are limited to the parcel of origin and the light source is not visible from another property or public right-of-way.~~ A luminaire using a combination of internal or attached shielding and/or aiming to control light radiation onto the property on which is it located.

b. Glare. Light emitting from an outdoor luminaire that causes ~~reduced vision or momentary blindness.~~ visual disability or discomfort.

c. Light source (lamp). An electrical bulb, tube, diode, or other device that produces artificial light or illumination.

d. ~~Light trespass.~~ **Trespassing Light.** Light falling across a property line onto another lot or parcel of land or onto a public right-of-way. The presence of ~~light trespass~~ **trespassing light** shall be determined in accordance with Section 7 of this Ordinance.

e. Luminaire. A complete lighting unit consisting of one or more lamps, **LED arrays or other light sources**, ~~the lamp~~ **light source mounting** or holder, any reflector or lens, and any other components or accessories.

f. Outdoor Luminaire. ~~Outdoor luminaires, A luminaire, whether permanent or portable, including general light fixtures, searchlights, spotlights, and floodlights; and the light cast by such fixtures installed outdoors.~~

Section 5. STANDARD

- a. All outdoor luminaires ~~in~~ shall be located, adequately shielded, and directed such that no direct light falls outside the parcel of origin, or onto the public right-of-way, **except as allowed in Section 7.** Outdoor luminaires shall not blink, flash, or rotate.

EXCEPTION TO Section 5.(a.). Less than fully shielded decorative luminaires permitted by Ordinance 655 Table 7-3.

- b. **All outdoor luminaires shall be rated 3000K or less correlated color temperature (CCT).**

EXCEPTION TO Section 5(b.) New luminaires shall comply with Ordinance 655.

- c. **All outdoor luminaires shall be turned off or dimmed at least 50% after a curfew time, defined as the later of either (1) 10:00PM or (2) 1 hour after the close of business. Luminaires may be controlled by motion sensors after curfew.**

Section 6. EXEMPTIONS

The following outdoor luminaires shall be exempt from the provisions of this Ordinance when properly installed and in compliance with all County ordinances:

- a. Luminaires used or otherwise required by law enforcement or other emergency personnel.
- b. Luminaires used to illuminate publicly-owned property, including but not limited to, parks, recreation areas, schools, streets, street signs and sidewalks.
- c. Luminaires used to illuminate authorized public and private monuments.
- d. Luminaires authorized by a provision of state or federal law as long as that lighting conforms to the requirements of the state or federal law.
- e. Luminaires used for holiday decoration.
- f. Luminaires producing light directly by the combustion of fossil fuels (such as kerosene lanterns, and gas lamps).
- g. Neon luminaires.
- h. Luminaires used to illuminate agricultural activities, operations or facilities as defined in Section 5 of Riverside County Ordinance No. 625.
- i. Luminaires used to illuminate for parking areas and other outdoor spaces directly serving a facility operating 24 hours are not required to be turned down or off as required under Section 5 (c.).**
- j. Luminaires used to illuminate sports courts and fields, provided that they are equipped with controls to prevent operation after 10PM Sunday through Thursday and 11PM Friday and Saturday.**

Section 7. DETERMINATION OF LIGHT TRESPASS

A determination of light trespass shall be made by ~~observation of the allegedly non-conforming luminaire(s)~~ **measurement of the allegedly trespassing light onto** ~~from the complaining party's~~ property. A "complaining party" may be either an owner or occupant of private property or a public entity. **Trespassing light occurs when the amount of light measured at the property line in any plane caused by one or more luminaires exceeds the following limits:**

<u>Maximum Light Limit</u>	<u>Pre-curfew</u>	<u>Post-curfew</u>
<u>Onto any residential property, in-patient health care facility, dormitory, hotel or motel</u>	<u>3 lux (0.3 foot-candle)</u>	<u>1 lux (0.1 foot-candle)</u>
<u>Onto any non-residential property or public right of way</u>	<u>8 lux (0.8 foot-candle)</u>	<u>3 lux (0.3 foot-candle)</u>

Section 8. SECURITY LIGHTING

Security lighting **solely** triggered by motion or noise shall be allowed subject to all of the provisions of this Ordinance except Section 5 (c.).

Section 9. NON-CONFORMING OUTDOOR LUMINAIRES

Outdoor luminaires existing on the effective date of this Ordinance that do not meet the requirements as set forth herein shall be brought into compliance or removed as follows:

- a. Within three (3) months of the effective date of this Ordinance, where redirection of the light fixture is feasible and will bring the light fixture into compliance; or
- b. Within six (6) months of the effective date of this Ordinance, in all other cases.

Section 10. COMPLIANCE METHODS

Outdoor luminaires not meeting the standards of Section 5 be brought into compliance in any of the following ways:

- a. Redirection of the luminaire;
- b. Shielding of the light source;
- c. Redesign or relocation of the luminaire;
- d. Replacement of the luminaire with a conforming luminaire; or
- e. Removal of the luminaire.

Section 11. ENFORCEMENT

The Riverside County Sheriff and Code Enforcement Departments shall have the primary responsibility for enforcing this Ordinance.

Section 12. VIOLATIONS AND PENALTIES

Any person who violates any provision of this Ordinance once or twice within a one hundred and eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this Ordinance more than twice within a one hundred and eighty (180) day period shall be guilty of a misdemeanor. Each day a violation is committed or allowed to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts.

a. For the first violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be one hundred dollars (\$100).

b. For the second violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be two hundred and fifty dollars (\$250).

c. For any further violations within a one hundred and eighty (180) day period the minimum mandatory fine shall be five hundred dollars (\$500) or imprisonment in the County jail for a period not exceeding six (6) months, or both.

Section 13. CONFLICT BETWEEN ORDINANCE REQUIREMENTS

This Ordinance shall neither replace the requirements of the zoning Ordinance or any other County ordinances, including but not limited to County Ordinance No. 655, nor supersede the terms of any private Covenants, Conditions and Restrictions (CC&Rs). However, when there is a conflict in the requirements of this and any other ordinance, the more stringent requirements shall apply. The County of Riverside does not enforce private CC&Rs.

Section 14. SEVERABILITY.

If any provision of this Ordinance or the application thereof to any person or circumstance, is held invalid, such invalidity shall not affect the remainder of the Ordinance or the application of such provision(s) to other persons or circumstances.

Section 15. SAVINGS CLAUSE

The adoption of this Ordinance shall not in any manner affect the prosecution of ordinance violations, which violations were committed prior to the effective date of this Ordinance, nor be construed as a waiver of any permit, license, penalty or penal provisions applicable to such violations. The provisions of this Ordinance, insofar as they are substantially the same as ordinance provisions previously adopted by Riverside County relating to the same subject matter, shall be construed as restatements and continuations, and not as new enactments.

Section 16. EFFECTIVE DATE

This Ordinance shall take effect 30 days after its adoption.

Suggested Community Outdoor Lighting Ordinance

Section 1. Purpose.

The purpose of this ordinance is to implement the goals of the General Plan and protect and promote public health, safety, welfare, and quality of life by establishing regulations and a process for review of outdoor lighting that will accomplish the following:

A. Protect against light pollution in all its forms, thereby reclaiming the ability to view the night sky and thereby help preserve the quality of life and scenic value of this desirable visual resource;

B. Help protect and enhance human health and wellness and wildlife habitation and migration by minimizing light pollution and its impact on all forms of life, consistent with the June 2016 position on outdoor lighting by the American Medical Association.

C. Promote lighting practices and systems to conserve energy, decrease dependence on fossil fuels and limit greenhouse gas emissions consistent with the California Global Warming Solutions Act and other applicable state and federal law.

D. Ensure that sufficient lighting can be provided where needed to promote safety and security on public and private property, and to allow for reasonable lighting for commercial properties and activities,

E. Provide easily understood regulations for residential lighting that help minimize obtrusive light and mitigate neighbor-to-neighbor lighting issues;

F. *Provide practical regulations for non-residential lighting that are consistent with the California Code of Regulations, Title 24, Parts 1, 2, 6 and 11.*

G. Allow reasonable flexibility in the style of lighting fixtures and the technology used to generate and control light; and,

H. Permit appropriate lighting employing historic and current technology, evolving advancements, energy use and economic needs.

Section 2. Applicability

A. Except as described below, all outdoor lighting installed or modified after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, additions and alterations, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.

Exception to Section 2. (A.): Any lighting-specific requirements in the following shall take precedence over this ordinance.

- a. Specific use permit.
- b. Federal, state, or county laws or regulations.

Exemptions from Section 2. (A.) The following are not regulated by this Ordinance:

1. Indoor lighting.
2. Lighting within public right-of-way or easement for the principal purpose of illuminating streets, roads, sidewalks, walkways, bikeways, bridges, tunnels and other public means of conveyance and travel.
3. Lighting permitted prior to the effective date of this Ordinance
4. Lighting solely for signs (lighting for signs is regulated by the Sign Ordinance).
5. Repairs to existing luminaires, but not including new replacement luminaires or modifications to existing luminaires.
6. Temporary lighting for one-time events.
7. Underwater lighting in swimming pools and other water features.
8. Temporary lighting and seasonal lighting, except that temporary lighting and seasonal lighting are not permitted in or within 100 feet (30.5 meters) of Public Open Space.
9. Short-term lighting associated with activities authorized by a valid temporary use permit, special event permit or film permit.
10. Construction or emergency lighting provided such lighting is temporary and is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.

B. Applications for land use entitlements after the effective date of this ordinance shall include compliance with this chapter as a condition of approval.

Section 3. General Requirements for all Outdoor Lighting.

A. Compliance with State Code All lighting and controls shall comply with the California Title 24 California Code of Regulations, Title 24, Parts 1, 2, 6 and 11.

B. Shielding All luminaires shall be fully shielded and shall not emit light into the upper hemisphere around the luminaire once installed. Support and mounting systems for luminaires shall not allow post-installation adjustments that could defeat compliance of this requirement.

Exceptions to Section 3. (A.)

- a. Decorative lighting as permitted herein.
- b. Landscape lighting as permitted herein.
- c. Architectural floodlighting and outlining as permitted herein.

C. **Turned off or reduced after curfew** Automated control systems, such as motion sensors, astronomic timer switches and lighting control systems, shall be used to meet the curfew requirements of 17.41.050 and the technical and energy efficiency requirements of California Code of Regulations Title 20 Section 1605.1(I) and Title 24 Part 6 Sections 130.2, 140.7 and 150.1. Manual initiation switches are permitted as long as they do not defeat the automatic shut off function.

Exceptions to Section 3. (B.)

- a. Egress lighting as required by Title 24 Part 2 Section 1006.
- b. Lighting for facilities having 24 hour operations or business.
- c. Lighting required for accessibility.
- d. Lighting required by statute, law or ordinance to operate all night.
- e. One luminaire per residence that illuminates the address or apartment number.
- f. Lighting by special permit.

D. **Lighting Color (Chromaticity).** The correlated color temperature of all outdoor lighting shall be 3000 Kelvin or less, with tolerance within the ANSI standard C78.377 of LED sources.

Exceptions to 17.41.040 (C.)

- a. Amber sources necessary to protect beach and environmentally sensitive habitat areas, as determined by the planning director.
- b. Legally required monochromatic light sources including but not limited to, aviation obstruction lighting, traffic signal lighting, and marine lighting
- c. As allowed by a special use permit.

E. **Prevention of Light Trespass** All lighting shall be designed and implemented to mitigate light trespass onto adjacent properties. The maximum allowable light trespass shall be per Table 1 and Table 2.

F. **Lighting Not Permitted** None of the following are permitted except by special permit:

- 1. Dynamic lighting, such as moving lights, color changing lighting,
- 2. Luminaires exceeding 500,000 peak candelas or 500,000 lumens
- 3. Laser lighting
- 4. Unshielded lighting such as string lights, light rope, neon lighting, or LED tubing.
- 5. Lighting within Public Open Space areas.

Section 4. Lighting Zones

A. Lighting Zones The Planning Director shall develop and maintain a lighting zone map of the community identifying the following zones as defined and required by the California Code of Regulations, Title 24, Part 1, Section 10-114 as follows:

Lighting Zone 0 (Zero), which shall include Environmentally Sensitive Habitat Area (ESHA), Public Open Space (POS) Area, and other areas within the community that are undeveloped or intended to be preserved in a natural state and for which lighting is only provided for safety or to meet applicable Federal, State or community requirements.

Lighting Zone 1 (One), which shall include all areas of the community that are adjacent to Lighting Zone 0, rural in character, and/or which are determined by the Planning Director to be suitable for low levels of exterior lighting at night.

Lighting Zone 2 (Two), which shall include all areas of the community that are semi-urban or urban in character, and/or which are determined by the Planning Director to be suitable needs for modest levels of exterior lighting at night.

Lighting Zone 3 (Three), which shall include all areas of the City that are urban in character or have high night light level requirements for specific property uses which are determined by the Planning Director to be suitable needs for medium to high levels of exterior lighting at night.

Lighting Zone 4 (Four) shall not be used in the community except by special permit.

B. Posting of Zoning Map The Lighting Zone Map shall be posted on the Web Site of the City and made available to the public.

C. Administration of Lighting Zones The Planning Director shall develop a process to review proposed changes and appeals to the Lighting Zone map, which shall be approved by City Council. Approved changes and appeals shall be updated onto the Lighting Zone Map. The Planning Director shall notify the California Energy Commission according to California Code of Regulations, Title 24, Part 1, Section 10-144(d).

Section 5. Lighting Zone Specific Lighting Requirements

A. Applicability In addition to the foregoing, all outdoor lighting must meet the following requirements per Lighting Zone and whether the property being lighted is residential or non-residential. Residential properties shall comply with Table 1 and non-residential properties shall comply with Table 2 as described below. For the purposes of these requirements, multi-family residential properties of 8 domiciles or more shall be considered non-residential.

B. Curfew

1. Residential lighting All exterior lighting shall be extinguished at the curfew time by an automatic shut off device. Motion sensor controlled lighting may used after curfew if it is fully shielded and located within 10 feet of a building entrance.

2. Non-residential lighting All exterior lighting shall be extinguished or dimmed 50% at the curfew time under the control of an automatic device. Motion sensor controlled lighting may be used to turn on or increase the light level for fully shielded lighting at building entrances, exits, parking lots and walkways.

C. Maximum Lumens For a dedicated fluorescent, LED or HID luminaire, the allowed maximum rated lumens per a photometric report or manufacturer's product literature. For a line voltage socket luminaire or a low voltage socket luminaire, the rated lumens of the lamp installed in it.

D. Maximum Mounting Height The maximum mounting height above adjacent grade. See Figure 2.

Exception 1 to 17.41.060 (D): There is no maximum mounting height for fully recessed luminaires.

Exception 1 to 17.41.060 (D): For multi-story residential buildings and motels with exterior entrance doors, the maximum mounting height shall be 8 feet above adjacent floor unless recessed into an adjacent ceiling, soffit or overhang.

E. Landscape lighting Landscape lighting is permitted per Table 1 and Table 2. Downlight only means that the luminaire emits no light above 90 degrees relative to nadir (no light upwards). Shielded uplight means a luminaire aimed upward within 30 degrees of straight up that employs a baffle or louver to prevent glare. See Figure 3.

F. Architectural Floodlighting and Outlining The use of lighting to illuminate building facades, statuary, and similar edifices for appearance or other needs not involving visual

tasks such as walking or driving may be permitted in lighting zones 2 and 3 if all the following conditions are met:

1. A plan and rendering is submitted for review and approval by the Planning Director.
2. The amount of exposed light sources does not exceed 20,000 lumens per acre of the site.
3. The average illumination of a façade or edifice shall not exceed 5 footcandles (50 lux).
4. Such lighting shall be extinguished at curfew.

No such lighting may be used without a permit, and shall not be allowed in lighting zones 0 and 1 under any conditions.

Section 6. Plan Review and Permitting

A. Plan Review All outdoor lighting installations or installations involving new lighting or the modification, alteration, or replacement of outdoor lighting shall submit plans and related information as listed below and receive a permit prior to proceeding with any work.

1. Plans depicting the proposed luminaires.
2. Product specification data such as manufacturer's data sheets for each luminaire and control device(s) or systems being used.
3. For non-residential properties, signed pages of required documents for Title 24 – Part 6 Section 140.7 and Title 24 – Part 11 Section 5.106.8 demonstrating compliance.
4. Details, elevations, summaries or calculations as required to demonstrate compliance with this Ordinance.

B. Alternative Means and Methods Deviations from the lighting standards provided in this chapter may be approved pursuant to a site plan review in accordance with Section 17.62.040. The request shall state the circumstances and conditions relied upon for the site plan review and shall be accompanied by accurate plans and a legal description of the subject property. In addition, the following information shall be submitted:

1. Plans depicting the proposed light fixtures;

2. Detailed description of the circumstances which necessitate the deviation;
3. Details on the use of the proposed light fixtures for which the deviation is requested, including the type of outdoor light fixture(s) to be used, the total light output and character of the shielding, if any; and
4. Such other data and information as may be required by the planning director.

C. Appeals The site plan review may be granted if the community makes the following findings:

1. There are special circumstances or conditions applying to the land, buildings or outdoor light fixtures for which the site plan review is sought, which are peculiar to the project and do not apply generally to the land, buildings, or outdoor light fixtures in the surrounding area.
2. The strict application of this chapter would deprive the applicant of the reasonable use of the land or buildings, and the proposed deviation is the most restrictive means that will accomplish the purpose.
3. The proposed deviation will achieve the purpose and intent of this chapter, including light trespass, and will not adversely affect neighborhood character or the public health, safety or welfare.
4. The proposed project will not be contrary to or in conflict with the general purposes and intent of this title, nor the goals, objectives and policies of the general plan.

Section 7. Lighting Allowed by Temporary Use Permit Only.

(RESERVED)

Section 8. Conflicts with other Laws.

In the event the provisions in this Ordinance conflict with other laws, this Ordinance shall be applied in a manner intended to carry out all provisions of law to the maximum extent feasible. When there is an irreconcilable conflict between the provisions of this Ordinance and the provisions of federal or state law, the provisions of federal or state law shall prevail over the provisions contained in this Ordinance only to the extent necessary to avoid a violation of those other laws or code provisions.

Section 9. Application of Ordinance to Legal Non-Conforming Lighting.

A. Amortization. A property owner shall comply with the requirements of this Ordinance by (date.) Any non-compliant lighting still in place after this compliance deadline shall become and remain extinguished. A property owner may apply for an extension of this deadline by submitting a request to the planning director thirty days before the compliance deadline detailing why an extension is needed. Any non-compliant lighting shall remain extinguished while the request is pending. Upon demonstration of good cause for providing a property owner additional time to comply with the requirements of this section, the planning director may extend the property owner's time to comply and/or may require a plan for compliance that required partial compliance in advance of full compliance. For purposes of this section, the term "good cause" shall mean a significant financial or other hardship which warrants an extension or conditional extension of the time limit for compliance established herein. In no instance, shall the planning director issue an extension of the compliance period in excess of one year's time. The planning director's decision shall be appealable.

B. Change of Use. If a property with non-compliant lighting changes use, then all outdoor lighting shall be brought into compliance with this chapter before the new use begins. Any uncorrected non-compliant lighting shall be removed or remain extinguished.

C. Resumption of Use after Abandonment. If a property with non-compliant lighting is abandoned for a period of six months or more, then all outdoor lighting shall be brought into compliance with this chapter before any resumption of use of the property occurs. Any uncorrected non-compliant lighting shall be removed or remain extinguished.

Section 10. Enforcement and Penalties. (RESERVED)

Section 11. Definitions.

For the purposes of this Chapter only, the following words and phrases are defined as follows:

"Curfew" means the time of day when lighting restrictions, based on zoning district, are in effect.

"Directional lighting" means methods of directing light downward, rather than upward or outward, with the intention of directing light where it is needed.

"Fully shielded" means a light fixture constructed and installed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the fixture's lowest light-emitting part.

1 “Glare” means lighting entering the eye directly from a light fixture or indirectly from reflective
2 surfaces that causes visual discomfort or reduced visibility.

3 “Hardscape” means permanent surface improvements to the site including parking lots,
4 driveways, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated
5 landscaping that is 10 feet or less in width, that are made of materials such as, but not limited to,
6 concrete, asphalt, stone and gravel.

7 “Lamp” means, in generic terms, a source of optical radiation (i.e., “light”), often called a
8 “bulb” or “tube”. Examples include incandescent, fluorescent, high-intensity discharge (HID)
9 lamps, and low pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and
10 arrays.

11 “Light pollution” means the material adverse effect of artificial light including, but not limited
12 to, glare, light trespass, sky glow, energy waste, compromised safety and security, and impacts
13 on the nocturnal environment, including light sources that are left on when they no longer serve a
14 useful function.

15 “Light trespass” means light that falls beyond the property it is located on. Permissible levels of
16 light trespass shall be limited to those specific, quantitative thresholds of light intensity set forth
17 in Tables 1 and 2. Light trespass shall be measured in the vertical plane of the property line on
18 which the lighting in question is located. Field measurements to determine light trespass
19 compliance shall not include the effect of light produced by street lights or other lighting not
20 produced by luminaires under the jurisdiction of this Ordinance or produced by luminaires on
21 other properties.

22 “Lumen” means the unit of measure used to quantify the amount of visible light produced by a
23 lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption).

24 “Luminaire” means outdoor electrically powered illuminating devices, including a light source,
25 outdoor reflective or refractive surfaces, lenses, electrical connectors and components, and all
26 parts used to mount the assembly, distribute the light and/or protect the lamp, whether
27 permanently installed or portable.

28 “Seasonal lighting” means lighting installed and operated in connection with holidays or
29 traditions. Seasonal lighting must be temporary lighting as defined herein and removed within 30
30 days of the date of installation, and shall not be re-installed within the same calendar year.

31 “Sky glow” means the brightening of the nighttime sky that results from scattering and
32 reflection of artificial light by moisture and dust particles in the atmosphere. Sky glow is caused
33 by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.

“Temporary lighting” means lighting that (a) employs a cord and plug and is not permanently wired and (b) is installed and removed when the temporary need is over, not to exceed 30 days without a special use permit.

“Shielded Uplighting” means landscape lighting illuminating trees and landscape features employing an extended tube baffle or louver and aimed at least 60 degrees above horizontal.

“Outlining” means exposed light sources attached to structures for the primary purpose of attraction, branding or decoration.

“Dynamic lighting” means lighting that flashes, chases, changes color, or changes intensity for any purpose other than serving as a traffic signal, safety light, or aviation or marine marker.

“Light trespass” means light from one property also lighting an adjacent property. The amount of trespass is calculated and measured in the vertical plane at 5’ above grade at the property line of the site on which the light(s) is located. If the adjacent property is a public street or sidewalk, then the point at which trespassing light is calculated and measured shall be the center of the public property or right-of-way between the property on which the light originates and any adjacent property.

Section 12 Tables

Continued on Next Page

1

Table 1 – Residential Lighting Limits

Restriction	Lighting Zone 0 (Zero)	Lighting Zone 1 (One)	Lighting Zone 2 (Two)	Lighting Zone 3 (Three)
Curfew	1 hour after sunset	11:00PM	11:00PM	11:00PM
Maximum lumens per fully shielded luminaire	600 Must be 2700K or lower	900	900	900
Unshielded and decorative lighting	None allowed	One per residence not to exceed 300 lumens	Two per residence not to exceed 300 lumens	Three per residence not to exceed 600 lumens
Maximum mounting height above adjacent grade	8 feet	12 feet	12 feet	15 feet
Landscape lighting	None allowed	Downlight only not to exceed 300 lumens	Downlight and/or shielded uplight not to exceed 450 lumens per luminaire	Downlight and/or shielded uplight not to exceed 600 lumens per luminaire
Maximum landscape lighting lumens per acre	0	6000	12000	18000
Maximum allowable light trespass pre-curfew	0	0.1 footcandle (1 lux)	0.2 footcandle (2 lux)	0.5 footcandle (5 lux)

2

1 **Table 2 – Non Residential and Multi-family Residential Lighting Limits**

Restriction	Lighting Zone 0 (Zero)	Lighting Zone 1 (One)	Lighting Zone 2 (Two)	Lighting Zone 3 (Three)
Curfew	1 hour after sunset	11:00PM	11:00PM	11:00PM
Maximum lumens per fully shielded luminaire	600	2500	5000	15000
Unshielded and decorative lighting	None allowed	None allowed	Maximum 600 lumens per luminaire not to exceed 12000 lumens per acre.	Maximum 900 lumens per luminaire not to exceed 18000 lumens per acre
Maximum mounting height above adjacent grade	8 feet	20 feet	25 feet	35 feet
Landscape lighting	None allowed	Downlight only not to exceed 450 lumens	Downlight and/or shielded uplight not to exceed 600 lumens per luminaire	Downlight and/or shielded uplight not to exceed 900 lumens per luminaire
Maximum landscape lighting lumens per acre	0	9000	12000	18000
Maximum allowable light trespass pre-curfew	0	0.1 footcandle (1 lux)	0.2 footcandle (2 lux)	0.5 footcandle (5 lux)

2 **END OF ORDINANCE**

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Western Riverside Council of Governments Planning Directors' Committee

Staff Report

Subject: Transportation Uniform Mitigation Fee (TUMF) Calculation Handbook Update

Contact: Daniel Ramirez-Cornejo, Staff Analyst, cornejo@wrcog.cog.ca.us, (951) 955-8307

Date: May 11, 2017

The purpose of this item is to provide an update to the Committee members on the TUMF Calculation Handbook to include a component for Active Senior Living developments.

Requested Action:

1. Discuss and provide input.
-

WRCOG's Transportation Uniform Mitigation Fee (TUMF) Program is a regional fee program designed to provide transportation and transit infrastructure that mitigates the impact of new growth in Western Riverside County. Each of WRCOG's member jurisdictions and the March JPA participates in the Program through an adopted ordinance, collects fees from new development, and remits the fees to WRCOG. WRCOG, as administrator of the TUMF Program, allocates TUMF to the Riverside County Transportation Commission (RCTC), groupings of jurisdictions – referred to as TUMF Zones – based on the amounts of fees collected in these groups, and the Riverside Transit Agency (RTA).

The TUMF Fee Calculation Handbook details the methodology for calculating the TUMF obligation for different categories of new development and, where necessary, to clarify the definition and calculation methodology for uses not clearly defined in the respective TUMF ordinances.

Background

During the development of the TUMF Program, it was recognized that certain land uses require special attention regarding the assessment / calculation of TUMF because of unique, site-specific characteristics. To address these special uses / circumstances, WRCOG developed a Fee Calculation Handbook to detail the methodology for calculating TUMF obligations for different categories of new development and, where necessary, to clarify the definition and calculation methodology for such uses. The fee calculations provide step-by-step work sheets on how fees are calculated for unique uses such as auto dealerships, fueling stations and high cube warehouses. The last update to the Fee Calculation Handbook occurred in October 2015, which included a revision to the government / public exemption language.

Currently, the TUMF Calculation Handbook does not have a designated component for Active Senior Living developments. WRCOG staff has discussed this with the Public Works Committee members and has received several requests from stakeholders regarding the potential for this type of land use to be included in the TUMF Calculation Handbook. Staff, in consultation with TUMF consultant, has prepared a draft component for inclusion in the TUMF Calculation Handbook, which acknowledges the reduced trip generation from this type of development than the standard residential land use category. The approach developed is as follows:

Senior adult housing (also commonly referred to as “active senior living”) is generally defined in the Trip Generation 9th Edition (Institute of Traffic Engineers, 2012) as detached and/or detached housing units in independent living developments, including retirement communities, age-restricted housing and active adult communities, that may include amenities such as golf courses, swimming pools, 24-hour security, transportation, and common recreational facilities, but generally lack centralized dining and on-site health facilities. Residents in active senior living communities live independently and are typically active (requiring little to no medical supervision), which differs from congregate care facilities (including senior assisted living facilities) and nursing homes that are specific types of group quarters (as described in **Section 5.3**) whose primary function is to provide care for elderly persons or other persons who are unable to adequately care for themselves.

Both detached and attached senior adult housing are typically built in higher density sole purpose developments with age restrictions or limitations on residents. As such, active senior living housing units typically demonstrate trip generation rates significantly below those of standard single-family and multi-family residential unit developments. Furthermore, according to Trip Generation 9th Edition, the trip generation rates for detached and attached dwelling units in active senior housing units are very similar, and more closely reflect the trip generation rates of multi-family dwelling units.

For the purpose of determining the TUMF obligation, all dwelling units in eligible active senior living developments (both detached and attached) regardless of density will be considered multi-family dwelling units. The methodology outlined in **Worksheet A.1.3** and described as follows will be applied to determine the equivalent number of multi-family dwelling units for all types of active senior living dwelling units.

1. Complete the active senior living qualification checklist and provide the required supporting documentation pursuant to Cal. Civ. Code § 51.11 and Cal. Bus. & Prof. Code § 11010.05 [2016].
2. Multiply the total number of eligible active senior living dwelling units (both detached and attached) by 0.53 to determine the equivalent number of multi-family dwelling units (*i.e. for the example facility it is $413 \times 0.53 = 218.9$ equivalent multi-family dwelling units*)
3. Use the resultant value as the number of multi-family dwelling units to calculate the TUMF obligation using **Worksheet A.1.1** for standard residential fee calculations.

Worksheet A.1.3 Active Senior Living TUMF Calculation Worksheet

1. Active Senior Living Characteristics Checklist

- ☐ **Minimum number of 20 dwelling units in community**
Submit Site Plan indicating the total number of associated dwelling units spaces
- ☐ **Local zoning and/or governing documents**
Submit local zoning and/or governing documents characterizing development as senior citizen housing (active senior living) pursuant to Cal. Civ. Code § 51.11
- ☐ **Occupancy restriction statement**
Submit Public Report with statement of occupancy restrictions pursuant to Cal. Bus. & Prof. Code § 11010.05 [2016]

2. Active Senior Living TUMF Calculation

X 0.53 =

Enter Total Number of Active Senior
Living Dwelling Units (both detached
and attached)

Prior Action:

None.

Fiscal Impact:

Transportation Department activities are included in the Agency's adopted Fiscal Year 2016/2017 Budget under the Transportation Department.

Attachment:

1. Active Senior Living Summary.

Item 5.C

Transportation Uniform Mitigation
Fee (TUMF) Calculation Handbook
Update

Attachment 1

Active Senior Living Summary

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1.1. Active Senior Living

1.1.1. Summary

Senior adult housing (also commonly referred to as “active senior living”) is generally defined in the Trip Generation 9th Edition (Institute of Traffic Engineers, 2012) as detached and/or detached housing units in independent living developments, including retirement communities, age-restricted housing and active adult communities, that may include amenities such as golf courses, swimming pools, 24-hour security, transportation, and common recreational facilities, but generally lack centralized dining and on-site health facilities. Residents in active senior living communities live independently and are typically active (requiring little to no medical supervision), which differs from congregate care facilities (including senior assisted living facilities) and nursing homes that are specific types of group quarters (as described in **Section 5.3**) whose primary function is to provide care for elderly persons or other persons who are unable to adequately care for themselves.

Both detached and attached senior adult housing are typically built in higher density sole purpose developments with age restrictions or limitations on residents. As such, active senior living housing units typically demonstrate trip generation rates significantly below those of standard single-family and multi-family residential unit developments. Furthermore, according to Trip Generation 9th Edition, the trip generation rates for detached and attached dwelling units in active senior housing units are very similar, and more closely reflect the trip generation rates of multi-family dwelling units. For this reason, all dwelling units in eligible active senior living developments (both detached and attached) regardless of density are considered multi-family dwelling units for the purpose of calculating the applicable TUMF obligation.

For the purpose of determining the TUMF obligation, all dwelling units in eligible active senior living developments (both detached and attached) regardless of density will be considered multi-family dwelling units. The methodology outlined in **Worksheet A.1.3** and described as follows will be applied to determine the equivalent number of multi-family dwelling units for all types of active senior living dwelling units.

1. Complete the active senior living qualification checklist and provide the required supporting documentation pursuant to Cal. Civ. Code § 51.11 and Cal. Bus. & Prof. Code § 11010.05 [2016].
2. Multiply the total number of eligible active senior living dwelling units (both detached and attached) by 0.53 to determine the equivalent number of multi-family dwelling units
(i.e. for the example facility it is $413 \times 0.53 = 218.9$ equivalent multi-family dwelling units)
3. Use the resultant value as the number of multi-family dwelling units to calculate the TUMF obligation using **Worksheet A.1.1** for standard residential fee calculations.

1.1.2. Detailed Narrative

Trip Generation 9th Edition (Institute of Traffic Engineers, 2012) includes two separate definitions for senior adult housing (commonly referred to as “active senior living”). Detached senior adult housing is defined as “detached independent living developments, including retirement communities, age-restricted housing and active adult communities. These developments may include amenities such as golf courses, swimming pools 24-hour security, transportation, and common recreational facilities. However, they generally lack centralized dining and on-site health facilities. Detached senior communities may or may not be gated.” Attached senior adult housing is similar to detached senior housing, “except they contain apartment-like residential units. Attached senior adult housing may include limited social and recreational services, but typically lacks centralized dining or medical facilities.” In both types of active senior living dwelling units, residents “live independently and are typically active (requiring little to no medical supervision)”, which differs from congregate care facilities (including senior assisted living facilities) and nursing homes that are specific types of group quarters (as described in **Section 5.3**) whose primary function is to provide care for elderly persons or other persons who are unable to adequately care for themselves.

Both detached and attached senior adult housing are typically built in higher density sole purpose developments with age restrictions or limitations on residents. As shown in **Table 4.3**, active senior living housing units typically demonstrate trip generation rates significantly below those of standard single-family and multi-family residential unit developments. Furthermore, according to Trip Generation 9th Edition, the trip generation rates for detached and attached dwelling units in active senior housing units are very similar, and more closely reflect the trip generation rates of multi-family dwelling units. For this reason, all dwelling units in eligible active senior living developments (both detached and attached) regardless of density are considered multi-family dwelling units for the purpose of calculating the applicable TUMF obligation.

Section 51.11 of the California Civil Code (Cal. Civ. Code § 51.11) defines a senior citizen housing development specifically in Riverside County as “a residential development developed with more than 20 units as a senior community by its developer and zoned as a senior community by a local governmental entity, or characterized as a senior community in its governing documents.” Additionally, Section 11010.05 of the 2016 California Business and Professions Code (Cal. Bus. & Prof. Code § 11010.05 [2016]) elaborates that any “person who proposes to create a senior citizen housing development, as defined in Section 51.3 or 51.11 of the Civil Code, shall include in the application for a public report a complete statement of the restrictions on occupancy that are to be applicable in the development. Any public report issued for a senior housing development shall also include a complete statement of the restrictions on occupancy to be applicable in the development.” To demonstrate a development qualifies as active senior living for the purposes of determining the TUMF obligation, applicants will be required to provide copies of local government zoning and/or governing documents, and the public report statement developed pursuant to Cal. Civ. Code § 51.11 and Cal. Bus. & Prof. Code § 11010.05 [2016], respectively.

In accordance with Section 6.1 and Appendix B of the Transportation Uniform Mitigation Fee Nexus Study 2009 Update Final Report (Western Riverside Council of Governments, As Amended September 12, 2011), and as discussed previously, both detached and attached senior adult housing, regardless of density, will be considered to be multi-family dwelling units for the purpose of calculating the applicable TUMF obligation. The TUMF obligation for multi-family (and all residential) land uses is based on the total number of dwelling units associated with the specific development and is calculated using **Worksheet A.1.1** for standard residential fee calculations. However, in the case of active senior living communities, vehicle trips generated to and from the site are typically lower than standard residential uses due to the age of the residents (who are typically retired from full time employment) and the provision of various ancillary recreational and entertainment amenities within the community. For this reason, it is necessary to determine the multi-family dwelling unit equivalency for the purpose of calculating the TUMF obligation.

A review of Trip Generation 9th Edition indicates the weekday average daily vehicle trip generation rate for detached senior adult housing is 3.68 trips per dwelling unit, while the rate for attached senior adult housing is 3.44 trips per dwelling unit (an average of 3.56 daily trips per dwelling unit). By comparison, standard multi-family uses have a weekday daily trip generation rate of 6.72 trips per dwelling unit. **Table 4.3** summarizes the various characteristics of senior active living, including trip generation rates, and establishes the equivalent multi-family dwelling units for the purpose of calculating the TUMF obligation for all senior active living dwelling units.

Table 4.3 – Characteristics of Senior Adult Housing in Active Senior Living Developments			
<i>Land Use Type (ITE Code)</i>	<i>Average Number of Dwelling Units</i>	<i>Average Daily Vehicle Trips per Dwelling Unit</i>	<i>TUMF Weighted Equivalent Multi-family Dwelling Unit*</i>
<i>Senior Adult Housing - Detached (251)</i>	780	3.68	
<i>Senior Adult Housing - Attached (252)</i>	46	3.44	0.53
<i>Median All TUMF Multi- Family Use Types</i>		6.72	

Source: Trip Generation 9th Edition, Institute of Traffic Engineers, 2012

Note: * - TUMF weighted equivalent multi-family dwelling units based on relative trip generation per dwelling unit for adult senior living and all TUMF multi-family use types.

The multi-family dwelling unit equivalency for active senior living dwelling units is based on the comparison of average daily trip generation characteristics for detached and attached senior adult housing as defined in the Trip Generation Manual in terms of trips per dwelling unit, and the median trip generation rate for all TUMF multi-family dwelling unit types. Based on this information, each active senior housing dwelling unit represents the equivalent of 0.53 multi-family dwelling units in terms of the relative trip generation rate.

For the purpose of calculating the TUMF obligation for *all types of qualifying active senior living dwelling units*, the total number of qualifying dwelling units in the development will be multiplied by 0.53 to determine the equivalent number of multi-family dwelling units. *The equivalent multi-family dwelling units will be used for the purpose of calculating the TUMF* at the rate prescribed by the respective local jurisdictions TUMF Ordinance and supported by the TUMF Nexus Study.

Application of this methodology will account for variations in the trip generation rates of senior active living dwelling units and standard multi-family dwelling units. For example, an average active senior living community with 413 detached and/or attached dwelling units would have the equivalent of 218.9 multi-family dwelling units (413×0.53).

Community facilities, including, but not limited to, recreation rooms, swimming pools, laundry facilities, security gatehouses, storage rooms, garages and maintenance buildings, that are provided for the sole and exclusive use of community residents (and their permitted guests) are considered to be ancillary to the primary multi-family residential land use of active senior living developments, and through their availability contribute to the lower trip generation rates observed. The development or expansion of these types of ancillary community facilities would not require separate payment of TUMF fees. However, the development of non-residential retail, service or industrial facilities (including, but not limited to, convenience markets, club houses, management offices and sales offices) that are developed conjunction with an active senior living community but are not limited to the sole and exclusive use of community residents (and their guests) and are available for use by or accessible to the general public would be considered as separate land uses and would require payment of the TUMF fee in accordance with Section 6.2 of the Nexus Study and the provisions of the respective local TUMF Ordinance.

A.1 Fee Calculation Worksheets for Residential Use Types

Worksheet A.1.3 Active Senior Living TUMF Calculation Worksheet

1. Active Senior Living Characteristics Checklist

- ☐ **Minimum number of 20 dwelling units in community**
Submit Site Plan indicating the total number of associated dwelling units
- ☐ **Local zoning and/or governing documents**
Submit local zoning and/or governing documents characterizing development as senior citizen housing (active senior living) pursuant to Cal. Civ. Code § 51.11
- ☐ **Occupancy restriction statement**
Submit Public Report with statement of occupancy restrictions pursuant to Cal. Bus. & Prof. Code § 11010.05 [2016]

2. Active Senior Living TUMF Calculation

X 0.53 =

Enter Total Number of Active Senior
Living Dwelling Units (both detached
and attached)

Enter this value as (part of) the Total
Number of Multi-Family Dwelling Units
in Worksheet A.1.1

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Western Riverside Council of Governments

Planning Directors' Committee

Staff Report

Subject: Work Plan for Grant Writing Assistance Program for Local Jurisdictions

Contact: Christopher Tzeng, Program Manager, tzeng@wrcog.cog.ca.us, (951) 955-8379

Date: May 11, 2017

The purpose of this item is to approve the Work Plan on the proposed Grant Writing Assistance Program WRCOG would like to commence to provide direct assistance to its member jurisdictions.

Requested Action:

1. Approve Work Plan for the Grant Writing Assistance Program.

WRCOG would like to commence the proposed Grant Writing Assistance Program since WRCOG has received requests to assist its member jurisdictions in grant writing. WRCOG has set aside funds to assist and is proposing to create a Grant Writing Assistance Program to assist member jurisdictions on an as-needed basis as funding is available. WRCOG convened a Focus Group for two meetings to discuss the parameters and guidelines for the program and drafted a Work Plan based off input from the Focus Group members and Committee members. The Work Plan was provided at the March PDC meeting for review and comment and is being forwarded to the May PDC meeting for approval.

WRCOG Grant Writing Assistance Program Work Plan

Expectation of Member Agency Accepting Assistance: In order for the Program to run effectively and utilize funds efficiently, the member agency accepting grant writing assistance must agree to the following:

- Define project parameters and provide consultant a basic project description
- Dedicate sufficient resources:
 - o Attain all the necessary material on the information checklist provided by the consultant
 - o Attend kick-off meeting to ensure consultant has needed information to prepare grant application
 - o Respond to inquiries from the consultant in a timely manner
- Be responsible party for grant submittal, including signatory on application and actual submittal of the application

It is expected that once the member agency is awarded the assistance on a grant application, and the consultant is selected to assist, all parties will conduct a kick-off meeting to discuss the proposal and attain necessary information to begin work on the grant application. The consultant will prepare the grant application, and all necessary exhibits, tables, etc., for review by the member agency staff. The member agency will then provide comments to be addressed by the consultant, and the consultant will then revise the application based on comments provided. Finally, the consultant will provide the member agency staff with a final draft for review and submittal.

If the member agency is willing after the results of the grant opportunities are provided, the consultant and the member agency may request a debrief from the grantor agency for a lessons learned opportunity. WRCOG

will encourage the member agency to participate in this opportunity so that the grant writing assistance Program can display an efficient and successful process in the long run.

Background: WRCOG has received requests to assist member jurisdictions in preparing proposals for grant opportunities, especially the Caltrans Active Transportation Plan. WRCOG has identified short-term funds to commence a grant writing assistance program for its member jurisdictions. In order to create a program that best assists WRCOG's member jurisdictions, WRCOG staff convened a Focus Group of member jurisdiction staff to provide feedback on program specifics, which are summarized in this document. WRCOG is proposing this work plan for the Grant Writing Assistance Program funds to be approved by the WRCOG committee structure.

WRCOG envisions that once the funds have been approved, WRCOG staff will proceed with a Request for Proposals (RFP) from consultants to serve on a "bench" to provide grant writing assistance to WRCOG member jurisdictions. The bench of consultants will then be made available to member jurisdictions on a first-come, first-served basis. The consultants will assist jurisdictions with the grant application process only.

Focus Group: WRCOG convened a Focus Group to examine the Program details and logistics, since no such program has been undertaken before, and to gather input and feedback from the member jurisdictions that would be utilizing the Program. WRCOG requested two members from the Public Works Committee (PWC), which are Dan York (City of Wildomar) and Nelson Nelson (City of Corona), and two members from the Planning Directors' Committee (PDC), which are Richard Sandzimier (City of Moreno Valley) and Steven Weiss (formerly of County of Riverside). WRCOG also included staff from Riverside County Transportation Commission (RCTC), which has indicated that it is also looking into implementing a similar program for grant opportunities that deal with capital projects; including RCTC in the Focus Group ensures there are no duplicative efforts. The Focus Group met twice – in November 2016 and February 2017 – to first establish details and logistics, and then to provide feedback for the Work Plan.

Grant Writing Assistance Program Criteria: A few central items are listed below for the Program:

- The Program is meant for direct assistance to WRCOG member agencies.
- WRCOG will hire the consultants to provide assistance on behalf of member agencies. No procurement or contracts are needed from the applicant.

After careful deliberation, the Focus Group identified specific criteria for projects to qualify for assistance through the Program. First, grant proposals receiving assistance must show a nexus to the core components of WRCOG's Sustainability Framework. The Sustainability Framework is a foundational document for planning in Western Riverside County as it consists of six core components adopted by the Executive Committee, a body made up of elected officials from every WRCOG member agency. In addition, grant proposals must also show a nexus to a regionally significant plan, such as WRCOG's Subregional Climate Action Plan (CAP), the Western Riverside County Active Transportation Plan, and/or the Riverside County Transportation Commission Long-Range Plan. Lastly, a grant proposal is preferred to be multi-jurisdictional, but is not mandatory – this is to align with a lot of grant opportunities that favor larger, regional projects. These criteria are proposed for the initial phase of the Program to ensure WRCOG and its member agencies show positive returns from funding for the Grant Writing Assistance Program.

Eligible Grants: For this pilot round of the Program, WRCOG is proposing to focus on a few main grant opportunities. Proposed grants are as follows:

- Active Transportation Program
- Caltrans Sustainable Transportation Planning Grant Program
- Affordable Housing and Sustainable Communities (AHSC) Program
- Clean Cities related grants
- New planning grant opportunities

To maintain flexibility with the Program, new planning grant opportunities are included so that other planning grant opportunities may be considered. It was discussed at length that planning grants are not as plentiful as

infrastructure / transportation (implementation / capital improvement) grants. Therefore, this category will provide assistance if any grant opportunities that focus on planning grants become available – such as ones that help fund General Plans, Specific Plans, or Community Plans. Based on previous experiences, WRCOG believes planning grant applications are not as resource intensive as infrastructure applications, thus allowing the Program funds to be utilized efficiently. The Program is not intended to assist on infrastructure grant opportunities, i.e., TIGER, HSIP, FASTLANE, etc.

Clean Cities grants would be for Clean Cities Coalition members only and focus on any grant opportunities related to Clean Cities activities, such as electric vehicle charging stations and City / County Fleet purchasing. Funds for assistance with these grants will be allocated from Clean Cities Coalition Program funds. WRCOG administers the Coalition on behalf of the jurisdictions and agencies that pay member dues, and would like to increase the Coalition's effectiveness by assisting Coalition member agencies attain grant funding.

Project Applicant Screening: In order to ensure funds for the Program are utilized effectively and efficiently, a screening application has been created to assess projects. This screening process is meant to ensure Program criteria, as outlined above, is met. It also will evaluate if the project proposed is the preferred multi-jurisdictional and “innovative” project.

Tentatively, there will be a soft limit on the assistance each jurisdiction receives – no jurisdiction will receive assistance on more than two grants. This is a soft limit as it will be based on the number of applications received.

After it is determined a proposed project meets the criteria, WRCOG staff will follow-up with the applicant and assign an appropriate consultant to begin assisting on the grant application.

Grant Opportunities Repository: Members of the Focus Group brought up the possibility of looking into a repository of information on grants. It was determined that there are grant opportunities that follow a similar timeframe from cycle-to-cycle; opportunities are released around the same time period each cycle. This repository would serve as a reminder to member jurisdictions of upcoming grant opportunities and deadlines. The repository would be updated twice a year and would extend its focus to include planning grant opportunities. Updates would be provided to the Planning Directors' and Public Works Committees on a quarterly basis. The consultant(s) hired to perform grant writing assistance will also be asked to contribute to regular updates of the repository. In addition, WRCOG will look into what other COGs and County Transportation Commissions have in place to achieve this function.

Grant Writing Consultant Requirements: As noted above, grant writing assistance to WRCOG member agencies will be provided by consultants.

Based on the discussion with Focus Group members, the grant writing consultant will need to display a familiarity with the WRCOG subregion so that they understand which grants apply best to the member jurisdictions and how the subregion / member jurisdictions can be most competitive. They should also have direct knowledge of planning grants that can be utilized for work on General Plans, Specific Plans, Community Plans, etc. Lastly, in order to ensure WRCOG member jurisdictions receive the most adequate assistance, the RFP will indicate specific categories for consultants to choose from.

The consultants will also be asked to create a checklist of information and needs from the member jurisdiction so the process of assisting can be more streamlined and efficient.

Steps to Attain Grant Writing Assistance: WRCOG released a Request for Proposal for On-Call Planning Services, and the RFP includes a Scope of Work for grant writing assistance. Proposals were due on May 8, 2017. WRCOG staff, along with staff from partner agencies, will review the proposals. After the review of proposals, consultants will be selected for the grant writing assistance “bench”.

1. At the appropriate time depending on available grant opportunities, the request for grant writing assistance application will be released to WRCOG member agencies.
2. WRCOG member agency submits request for grant writing assistance.

3. WRCOG staff will review the applications within seven calendar days.
4. If the applicant meets the criteria set in this Work Plan, WRCOG will work with the applicant to select a proper consultant.
5. Kick-off meeting will be held with agency and consultant.

The criteria set in this Work Plan and included on the application serve as basic standards for proposals to be evaluated. The selection of proposals for grant writing assistance will be at the discretion of WRCOG based on available funding, and WRCOG reserves the right to decide the proposals that receive grant writing assistance.

Prior Action:

March 9, 2017: The Planning Directors' Committee received report.

Fiscal Impact:

This item is included in the Agency's adopted Fiscal Year 2016/2017 Budget under the Transportation Department.

Attachment:

None.



Western Riverside Council of Governments

Planning Directors' Committee

Staff Report

Subject: Planning Directors' Committee Video Conferencing Options

Contact: Christopher Gray, Director of Transportation, gray@wrcog.cog.ca.us, (951) 955-8304

Date: May 11, 2017

The purpose of this item is to provide Committee members with information regarding possible options related to videoconferencing for Planning Directors' Committee (PDC) Meetings.

Requested Action:

1. Discuss and provide input.

WRCOG staff has received requests from member agencies to offer teleconference or video conferencing options for the monthly PDC meetings. WRCOG has researched this topic and has identified several options to provide this service.

Background

WRCOG staff and Legal Counsel have previously determined that all WRCOG regularly scheduled committee meetings, including the PDC, are subject to the provision of the Ralph M. Brown Act. The Brown Act has specific provisions regarding teleconferencing and video conferencing, as follows:

- All votes must be roll call votes
- All locations must be identified prior to the meeting
- All locations offering this service must have the agenda posted
- All locations must be publicly accessible

The portion of Section 54953 of the California Government Code documents these requirements (Attachment 1).

WRCOG staff notes that only regularly scheduled WRCOG Committee meetings are subject to this provision. Informal meetings with jurisdictions, meetings of Ad Hoc Committees, working groups, and other similar meetings, are not subject to these requirements.

Options

Based on these requirements, there appear to be two options. The first option would be to continue with in-person meetings with no video conferencing option offered. The second option would be to provide this service at regularly scheduled locations, if staff at those locations would be willing and able to meet the requirements above, primarily posting the agenda and allowing public access to the location.

If member agencies want to allow video conferencing, staff would suggest that one concept could be to designate a limited number of remote locations where video conferencing is available. Staff would also

suggest that this approach could focus on those areas that are the most remote from downtown Riverside such as the Pass Area, the Temecula Valley, and the Hemet/San Jacinto area.

Staff would appreciate any input from member agencies. Based on this input, staff would bring back this item for Committee approval if there is consensus on a preferred approach.

If implemented, staff would recommend that any implementation be implemented on a trial basis to evaluate the effectiveness.

Prior Action:

April 13, 2017: The Public Works Committee received report.

Fiscal Impact:

Transportation Department activities are included in the Agency's adopted Fiscal Year 2016/2017 Budget under the Transportation Department.

Attachment:

1. Excerpt of Section 54953 of the California Government Code.

Item 5.E

Planning Directors' Committee Video
Conferencing Options

Attachment 1

Excerpt of Section 54953 of the
California Government Code

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legislative body of a local agency may require that a copy of this chapter be given to each member of each legislative body all or a majority of whose members are appointed by or under the authority of the elected legislative body.

§ 54953. Meetings to be Open and Public; Attendance

(a) All meetings of the legislative body of a local agency shall be open and public, and all persons shall be permitted to attend any meeting of the legislative body of a local agency, except as otherwise provided in this chapter.

(b) (1) Notwithstanding any other provision of law, the legislative body of a local agency may use teleconferencing for the benefit of the public and the legislative body of a local agency in connection with any meeting or proceeding authorized by law. The teleconferenced meeting or proceeding shall comply with all requirements of this chapter and all otherwise applicable provisions of law relating to a specific type of meeting or proceeding.

(2) Teleconferencing, as authorized by this section, may be used for all purposes in connection with any meeting within the subject matter jurisdiction of the legislative body. All votes taken during a teleconferenced meeting shall be by rollcall.

(3) If the legislative body of a local agency elects to use teleconferencing, it shall post agendas at all teleconference locations and conduct teleconference meetings in a manner that protects the statutory and constitutional rights of the parties or the public appearing before the legislative body of a local agency. Each teleconference location shall be identified in the notice and agenda of the meeting or proceeding, and each teleconference location shall be accessible to the public. During the teleconference, at least a quorum of the members of the legislative body shall participate from locations within the boundaries of the territory over which the local agency exercises jurisdiction, except as provided in subdivision (d). The agenda shall provide an opportunity for members of the public to address the legislative body directly pursuant to Section 54954.3 at each teleconference location.

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Western Riverside Council of Governments Planning Directors' Committee

Staff Report

Subject: Request for Proposal Review Committee Members for On-Call Planning Services

Contact: Christopher Tzeng, Program Manager, tzeng@wrcog.cog.ca.us, (951) 955-8379

Date: May 11, 2017

The purpose of this item is to request members of the Planning Directors' Committee (PDC) to serve on Proposal Review Committee (PRC) to review proposals in response to WRCOG's On-Call Planning Services RFP. WRCOG will be asking WRCOG members, partner agencies, and other

Requested Action:

1. Identify volunteers to assist WRCOG with the review of proposals and assist with interviews for On-Call Transportation Planning, Grant Writing, and Clean Cities Activities.

WRCOG released a Request for Proposal for On-Call Planning Services in March 2017. Proposals were due on May 8, 2017. WRCOG identified eight disciplines to provide direct assistance to its member agencies. WRCOG staff would like to request member agencies' involvement in the proposal review process.

Review of the proposals will occur in May, with interviews occurring in June. The following is a timeline of events for reviewers:

- i. Review proposals – May 15-31*
- ii. Conference call to discuss evaluations and determine interviews – May 31*
- iii. Interview with consultants – week of June 5 and 12*

Background

WRCOG has historically hired consultants through specific RFP's. Over the past few years, the need to expand the breadth of consultants has become evident from a number of requests from WRCOG member agencies – requesting assistance in a variety of disciplines as they move forward with their jurisdiction's sustainable planning efforts. WRCOG also wanted to create efficiencies whereby we can allocate work without an RFP process.

Based on these requests and follow-up discussions with partner agencies, WRCOG released an On-Call Planning RFP in late March 2017. The RFP is contained eight separate disciplines/section including:

1. On-Call Transportation Planning – tasks may include:
 - a. RIVTAM operation – produce forecasts, plots, SED contained in RIVTAM
 - b. TUMF programmatic maintenance – Program visioning exercise
 - c. Active Transportation Program Development and Implementation – make recommendations on Program development, longevity and integration with TUMF
2. Clean Cities Activities – tasks may include:
 - a. Conduct meetings
 - b. Participate in trainings
 - c. Conduct research furthering advanced clean transportation in subregion

3. Climate Change/Sustainability – tasks may include:
 - a. WRCOG Subregion Climate Action Plan Update
 - i. Monitor Plan implementation
 - ii. Perform PEIR
4. General Plan/Sustainability Support – tasks may include:
 - a. Work with member agencies to update one or more elements of General Plan with respect to Sustainability Planning
 - b. Prepare feasibility study for a regional Sustainability Center
5. Healthy Communities
 - a. Produce health indicator data for WRCOG utilization
 - b. Develop one or more multi-jurisdictional healthy community initiatives
 - c. Facilitate Healthy Community Initiative(s)
6. Grant Writing Assistance
 - a. Provide technical grant writing assistance to WRCOG member agencies for the specific grants listed below:
 - i. ATP
 - ii. Caltrans Sustainable Transportation Planning Grant Program
 - iii. Affordable Housing and Sustainable Communities (AHSC) Program
 - b. Provide a grant repository of planning grants for WRCOG member agencies
7. Demographic and economic forecasting
 - a. Produce economic and demographic forecasting and research economic and demographic trends for WRCOG utilization
 - b. Develop subregional branding platform to attract specific industries to the subregion
 - c. Develop subregional economic development strategy
8. WRCOG General Support
 - a. Assist WRCOG with management of projects

The evaluation process will emphasize the key staff firms are proposing for the various efforts and the firms qualifications and experience with similar projects and clients. WRCOG is encouraging firms with offices located within Riverside County to apply even though WRCOG lacks a formal local preference policy.

After the RFP evaluation process, WRCOG will determine those firms/teams that will work on each specific section/discipline. Member agency assistance is requested to review proposals and participate in interviews.

Prior Action:

February 9, 2017: The Planning Directors' Committee received report.

Fiscal Impact:

This item is included in the Agency's adopted Fiscal Year 2016/2017 Budget under the Transportation Department.

Attachment:

None.