

COLUMBIA COUNTY BOARD OF COMMISSIONERS

PROCEDURE FOR

RESIDENTIAL STREET LIGHT DISTRICTS

&

INTERSECTION SAFETY LIGHTING



**Columbia County
Engineering Services Division
Traffic Engineering & Operations Department
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A. DEFINITIONS

The following words, terms, and phrases, when used in this procedure, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

County Definitions

- *Board* – the Columbia County Board of Commissioners.
- *Department* – the Columbia County Traffic Engineering and Operations Department.
- *Director* – the Columbia County Engineering Services Division Director or his or her duly appointed or assigned authorized representative.
- *Intersection Safety Lighting (ISL)* – lighting located at intersections of roadways, with the purpose of enhancing safety at these locations.
- *Power Provider* – the applicable utility company responsible for supplying electricity to the respective area within Columbia County.
- *Street Light District (SLD)* – a defined area of private property lots in Columbia County. The Street Light District is used to determine a special tax assessment on the property for the predetermined parties to pay for the cost of street lights.
- *Street Lighting* – general area lighting located on rights-of-way, including, but not limited to roadways, cul-de-sacs, and paths. Street lights are commonly associated with a Street Light District.

Technical Definitions

- *Backlight, Uplight, and Glare (BUG) Rating* – a rating based on directional lumen output used to evaluate luminaire optical performance related to the potential for light trespass, sky glow, and high-angle brightness control.
- *Color Rendering Index (CRI)* – the measurement of the ability of a light source to render colors. The higher the CRI, the better the rendering of color and the more accurately colors are reflected.
- *Correlated Color Temperature (CCT)* – the measurement of the visual “warmth” and “coolness” of a light bulb expressed in Kelvin. The higher the CCT, the cooler the light appears.
- *Foot-candle* – the unit of measure expressing the quantity of light received on a surface. One foot-candle is the illuminance produced by a candle that is one foot away from a surface that is one square foot.
- *Light Trespass* – light that falls beyond the area it is intended to illuminate.
- *Lumen Output* – the measurement of visible light from a light source.
- *Photometric Readings* – measurements of the brightness and quality of visible light emitted by a light source.
- *Photopic Light* – light that is perceived under well-lit conditions, such as in daylight. Higher photopic readings indicate higher lumen output, but not necessarily higher quality light.
- *Scotopic Light* – light that is perceived under poorly-lit conditions, such as in a dimly lit room. Higher scotopic readings indicate better quality of light.

B. GENERAL

The purpose of street lights and safety lights is to enhance lighting on the street for vehicular and pedestrian traffic. The **Residential Street Light Districts & Intersection Safety Lighting Procedure** details the Installation and Operations Standards, how to apply for the creation of a Street Light District (SLD), Intersection Safety Lighting warrants and procedures, street lighting standards, lighting fixture requirements, Power Provider responsibilities, and exclusions. Additionally, this document provides details on the associated costs, fees, and taxes.

C. INSTALLATION & OPERATIONS STANDARDS

1. All required street lighting as described in this procedure, shall be supplied, installed, owned, and maintained by the Power Provider, upon approval by the Board.
2. Street light fixtures installed within the public rights-of-way, or within acceptable utility easements, operated for the purpose of street illumination, shall comply with both the Department's and Power Provider's minimum standards.
3. In the event an existing subdivision/development is being extended, new poles, arms, housings, lamps and mounting heights shall match, or resemble as closely as possible, existing street light infrastructure specifications so as to maintain a uniform lighting pattern and aesthetics throughout the subdivision/development, unless otherwise approved by the Director.

D. PRE-EXISTING STREET LIGHT INFRASTRUCTURE CONVERSION

Requests for the County to acquire pre-existing street light infrastructure and convert to a County-maintained Street Light District (SLD) will only be considered if the pre-existing street light infrastructure is in compliance with the current **Residential Street Light Districts & Intersection Safety Lighting Procedure**. Additionally, any pre-existing financing agreements with the respective Power Provider for upfront infrastructure and installation costs must be reconciled as to ensure future billings for street lights are exclusively for energy costs and maintenance.

Should the applicant(s) wish to apply for and receive the Board's decision prior to modifying existing infrastructure and/or associated agreements with their Power Provider, they may apply first. If the Board chooses to accept, the acceptance will be conditioned on the Department's final approval, and will not become effective until all requirements established herein are met.

E. NEW STREET LIGHT DISTRICT

Applications for new Street Light Districts (SLDs) within an existing or new subdivision/development shall be submitted to the Department during the months of October through May. Requests are not accepted during the months of June through September.

A subdivision/development is considered "existing" once 50% or more of the lots within the subdivision/development are individually-owned. If less than 50% of the lots are individually-owned, and a single person or company (Developer) owns the majority of lots, the subdivision/development is considered "new." The determination of ownership majority is made at the time the application for the creation of a new SLD is submitted to the Department.

Once a SLD is created by the Board, the properties within the SLD will incur a special tax that will be assessed on the property tax bill. The rate may be evaluated by the Board annually, and is subject to increase or decrease as the cost of servicing changes. Collected street light taxes will be added to Columbia County's Street Light District Fund, which is utilized to operate, maintain, and upgrade street light infrastructure.

Please refer to the County's **Street Light Tax Assessment Fee Schedule** for current rates.

1. Creating a New Street Light District:

- (a) **New Street Light District in an Existing Subdivision/Development:** Any person (Lot Owner) in an **existing** residential subdivision/development **may** present an application for the creation of a new SLD to the Department.
- (b) **New Street Light District in a New Subdivision/Development:** Any company (Developer) developing a **new** residential subdivision/development **shall** submit an application and apply for the creation of a new SLD.

Exception: The mandatory SLD creation requirement does not apply to R-A, R-1, or R1-A zoning.

Any new SLD in which the proposed boundary abuts or is within 200 feet of the SLD's local road intersecting with a collector or arterial road shall include a street light at the intersection with the collector or arterial road in the SLD.

2. Upon receipt of an application for the creation of a new SLD, the Department shall determine, in conjunction with the requesting Lot Owner or Developer, the appropriate limits of the SLD:

- (a) **For Existing Subdivisions/Developments:** The Department will prepare a petition and exhibit showing the proposed SLD's boundary. The petition will include the current annual cost to each Lot Owner within the SLD to be assessed on their tax bill, and will provide a space for all Lot Owners within the proposed SLD to sign if it is their preference that the proposed SLD be created. The petition shall be circulated by the petitioning Lot Owner amongst all remaining Lot Owners in the proposed SLD.

A signature verification form will be required for each signature on the petition. Failure to return a completed verification form for a signature will result in the removal of that particular signature from the total. A minimum of 75% of the Lot Owners signing in favor of the creation of a new SLD is required for the application to receive further consideration.

Completed petitions must be returned within 90 days after being provided; however, the Director may, in his or her discretion, for good cause shown, extend the time for an additional 30 days, when a written extension request is made by the Petitioner to the Department prior to the expiration of the original 90 days.

Once the petition has been submitted to the Department and signatures validated, it will be attached to the original application for processing, and no signatures can be added or removed.

- (b) **For New Subdivisions/Developments:** The Department will prepare an exhibit showing the proposed SLD's boundary, and will include the annual cost to each parcel within the SLD to be assessed on each parcel's tax bill.

The exhibit and costs will be attached to the original application for processing.

The application should be completed by the Developer prior to the submittal of the Final Plat and Record As-Built to the County to avoid delays.

3. Once applications are completed, the Department will request a corresponding SLD Plan from the appropriate Power Provider. The Power Provider will, in accordance with this Procedure, determine the appropriate number of lights to be installed, as well as their location for adequate lighting, and will provide the Department a proposal detailing the upfront installation costs and annual cost of operation and maintenance of the proposed street lights.
4. Once the Power Provider's proposal is received by the Department, it will be reviewed for conformance with County standards. If the SLD is in a new subdivision/development, the Power Provider's proposal will be forwarded to the Developer. The Developer shall be responsible for paying all upfront costs for poles, fixtures, and any other related items or materials necessary for the installation of the street light infrastructure.

The upfront cost shall be based on the County's determined standard poles and fixtures. The cost for premium poles and fixtures shall be an additional expense that shall be paid upfront by the Lot Owners for existing subdivisions/developments or the Developer for new subdivisions/developments. All materials and fixtures must comply with the County's standards.

A check in the amount of the full upfront installation costs, must be received by the Department prior to the Director presenting the final application and Power Provider's proposal to the appropriate Committee.

Checks shall be made payable to: **COLUMBIA COUNTY BOARD OF COMMISSIONERS**

5. A public hearing to create a SLD and install street lights will be scheduled for the appropriate Committee meeting. A notice of the public hearing will be advertised in accordance with current Georgia State Law prior to the public hearing and will be sent to all Lot Owners or Developer affected within the proposed SLD.
6. At the Committee meeting, a public hearing will be held and the Committee will consider the petition for the proposed SLD. The Committee will then send its recommendation of the petition to the Board. If the Board is agreeable to the creation of the SLD, the Board will perform two separate readings of the resolution creating the SLD at consecutive Board meetings. Following a second affirmative reading of the resolution, the Power Provider will be notified by the Department that the SLD has been approved and will be authorized to proceed with the installation of the lights.

F. INTERSECTION SAFETY LIGHTING

Intersection Safety Lighting (ISL) shall be considered for the overall safety of the traveling public utilizing public rights-of-way at intersecting streets within Columbia County. Funds for this program shall be managed and budgeted by the Engineering Services Division as a budgeted program line item (Safety Street Lighting).

1. All requests for ISL shall be evaluated by the Department.
2. For consideration of the installation of safety lighting at an intersection, a minimum of one (1) of the following warrants must be met:
 - a. Four (4) or more nighttime accidents within a twelve 12-month period.
 - b. Restricted site distance or geometric configuration of the intersection or roadway.
 - c. High speed (equal to or greater than 45 mph) on at least one approach in addition to vehicle volumes in excess of 900 vehicles of average daily traffic.
 - d. High night-time pedestrian volume (equal to or greater than 50 per hour - minimum two (2) hours each day, at least five (5) days per week).
 - e. At the intersection of a local road and a collector or arterial road.
 - f. At roadway crosswalks.
 - g. At roadway / railroad grade crossings.
3. Upon the minimum warrant criteria being met, the Department will send a letter to the Power Provider requesting a cost proposal for the installation of safety lighting at the location(s). Once the quote has been received from the Power Provider, the warrant information and proposal will be sent to the Director for his or her consideration.
4. If determined by the Director that the ISL is necessary, the Director will present the warrant information, the Power Provider's proposal, and his or her recommendation to the appropriate Committee. The Committee will consider and send its recommendation of the safety light(s) to the Board. If the Board votes in favor of the safety light(s), the Power Provider will be notified by the Department that the request to install safety lights has been approved and the Power Provider will be authorized to proceed with the installation of the safety light(s).

If determined by the Director that the ISL is not necessary, the Director will send a letter to the requestor detailing their justification as to why the ISL is not necessary.

G. GENERAL STREET LIGHTING STANDARDS

All new residential street lighting for subdivisions/developments and all new intersection safety lighting improvements in the County incorporating street lights shall meet the following street lighting standards:

1. Lumen output; photometric measurements; Backlight, Uplight, and Glare (BUG) ratings; and mounting heights will adhere to the following table:

General Street Lighting Standards			
Requirement	Arterial	Collector	Local
Average Lumen Output Range [lumens]	8,000 – 12,000	4,500 – 7,000	2,500 – 3,500
Average Scotopic Reading [foot-candle]	1.75	1.5	1
Average Photopic Reading [foot-candle]	1.5	1	0.75
Minimum BUG Rating	B2-U0-G2	B1-U0-G2	B1-U0-G1
Mounting Height [feet]	≤ 40	≤ 40	≤ 25
Spacing [feet]	300 - 500	300 – 400	200 - 300

Illumination Levels for an exterior light or combination of exterior lights should not cast light exceeding zero point one (0.1) foot-candle onto an adjacent or nearby property.

2. Street lighting should be installed:
 - a. At signalized intersections, with the arm installed perpendicular to the primary flow of traffic.
 - b. Below underpasses with vehicular, pedestrian, or cycling traffic.
 - c. Along attached sidewalks, but not located in the sidewalk.
 - d. Along detached sidewalks. Street lights should be installed at minimum two (2) feet back from the curb, but not in the sidewalk.
 - e. At all crosswalks and intersections directly adjacent to schools or within designated school zones.
 - f. Along the perimeter of roundabouts. Roundabout lighting shall:
 - i. Have uniform mounting height and fixture wattages.
 - ii. Be designed to emit uniform lighting with no unlit areas.
 - iii. Be located about the center point of the roundabout, and equidistant along the entry/exit radii and from other lights along the perimeter.
 - iv. Extend at least two hundred (200) feet along each approach beyond the roundabout.
3. Street lights and safety lights shall be unobstructed. Trees intended to provide shading shall not be placed within forty (40) feet of a street light. Decorative trees shall not be placed within fifteen (15) feet of a street light.
4. Street lighting for residential areas shall be designed and installed to minimize light shining on or negatively affecting the neighboring residents. Low light trespass luminaires shall be utilized whenever possible.

5. In general, the ratio of street lights to lots within a Street Light District should be 1:4, spaced approximately 150-200 feet apart, and aligned with property lines of abutting parcels where possible.

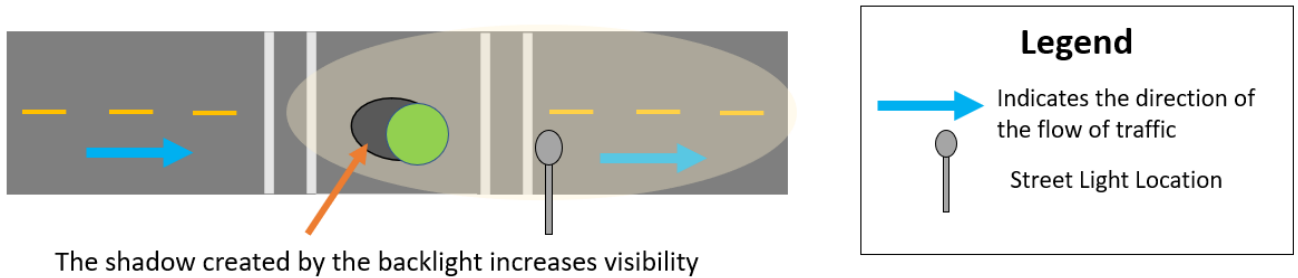
For new street light installations, a photometric plan prepared by a professional engineer, or someone qualified in outdoor lighting, is recommended to determine the exact spacing.

6. Where possible, street lights shall be installed on alternating sides of the roadway.
7. All newly developed street light systems shall be installed with underground electric service.
8. If lights are located on right-of-way owned and operated by Georgia Department of Transportation (GDOT), all GDOT requirements and standards shall be met and proper permits acquired. This includes, but is not limited to the lumen output, BUG ratings, fixture specifications, and mounting height requirements.
9. There are currently no Department lighting standards for rural roads. Lighting required on rural roads will depend on the roadway layout and traffic characteristics. Areas with multiple lanes and higher volume traffic should have street lights and safety lights installed.
10. In the event a Developer is unable to achieve the aforementioned General Street Lighting standards, they shall submit justification for any deviations, along with the photometric plan to the Department for review. The photometric plan shall include all relevant information and contain, at a minimum, parcel and roadway infrastructure data. The Director maintains the authority to approve or deny this request.

H. DEPARTMENT INTERSECTION STANDARDS

1. Street lights at intersections shall be placed on the downstream side of the intersection, as viewed by a motorist approaching the intersection, in order to maximize visibility of objects and pedestrians within the intersection. Higher contrast between an object and its surroundings typically improves the visibility of said object. The location of the intersection street light is intended to create shadows and silhouettes of objects to enhance visibility. See example below:

Figure 1 - *Visibility of an object in the intersection (represented by the green circle) is enhanced by the shadow created by the positioning of the street light.*



2. Intersection Light Locations:

Intersection Light Locations	
Intersection Type	Street Light Locations
Arterial roadway with any other roadway type	Two (2) lights on diagonal corners
Collector roadway with any other roadway type	Two (2) lights on diagonal corners
Local roadway with Local roadway	One (1) light
End of Cul-de-Sac	One (1) light at the end of the cul-de-sac
Roundabout	One (1) light at each inlet and outlet, located near crosswalks.

3. Lighting at a T-intersection shall be located on either corner of the intersection of the street that ends.

I. DEPARTMENT FIXTURE REQUIREMENTS

1. All street lights shall be manufactured specifically for outdoor roadway lighting purposes.
2. All street lights shall be installed in a manner such that all light emitted by the luminaire is directed downward to meet the particular need and away from adjacent properties and rights-of-way to avoid light trespass.
3. All street lights shall have a maintained correlated color temperature of 3,000 Kelvin or less and a color rendering index (CRI) of 70 or better.
4. All street lights shall be Design Lights Consortium (DLC) listed and/or Energy Star-qualified and International Dark Sky (IDA)-approved.
5. All new street light fixtures shall have a dimmable driver, aluminum housing, and include a seven-pin photocell receptacle.

J. MAINTENANCE & UPGRADES TO STREET LIGHTING

Street lights shall be maintained by the Power Provider. Light Emitting Diode (LED) street light fixtures require less energy and less maintenance than other lamp types. As LED technology has become more accessible and cost-effective, industry standard is that LED fixtures are utilized for any newly-installed street lights. The Department will work with the Power Provider(s) in coordinating the replacement of existing High Pressure Sodium, Metal Halide, Mercury Vapor, or other High Intensity Discharge lights with LED fixtures in strategic area groupings, as to maintain lighting uniformity and not create lumen deficiencies. All new light installations shall be LED and shall comply with the County's standards (or GDOT standards if located on a GDOT-owned right-of-way).

Any costs associated with new LED installation or LED conversions required by the County, and not borne by the Power Provider, shall be approved by the Board prior to work being performed.

K. POWER PROVIDER RECORD & DATA TRACKING

The Department will work with the Power Provider(s) to maintain and update street light data related to all street light infrastructure in the County. The data should include the following information at a minimum: Street Light District number (if applicable), spatial data (latitude, longitude) for each street light, identifying pole numbers, pole specifications, arm specifications, fixture specifications, billing schedule rate, and maintenance repairs that have been completed at each location. The Department will work with the Power Provider(s) on preparing and updated inventory annually. The Department and Power Provider(s) will use this inventory to verify that the street light energy and maintenance bills are accurate.