



City of Lake Geneva, 626 Geneva St, Lake Geneva, WI 53147- 262.248.3673- [www.cityoflakegeneva.gov](http://www.cityoflakegeneva.gov)

**AVIAN COMMITTEE AGENDA  
TUESDAY, OCTOBER 14, 2025 - 6:00 PM  
LAKE GENEVA CITY HALL; CONFERENCE ROOM 2A (UPPER LEVEL)**

**Members:**

President - Sarah McConnell; Members - Beverly Leonard, Jill Rodriguez, Karen Gallo, Victoria Ross, Kelley Happ, and Alderperson - JaNelle Powers

1. Call to Order
2. Roll Call
3. Approval of the minutes from September 9, 2025 Regular meeting and September 17, 2025 Special meeting
4. Comments from the public limited to 5 minutes, limited to items on this agenda
5. Financial Review and Update
6. Discussion/Recommendation regarding the proposed revisions to Sec. 98-707 Exterior Lighting Standards of the City of Lake Geneva's Municipal Code be sent to the Building & Zoning Director for consideration of adoption by the City of Lake Geneva
7. Discussion/Update Regarding Swift Night Out
8. Discussion/Update Regarding Bird City Application
9. Discussion/Update Regarding Hotel Birding Backpacks
10. Discussion Regarding Holiday Tree at Geneva Lake Museum
11. Discussion/Recommendation Regarding Climate Change Topics and Projects
12. Discussion Regarding Purple Martin Houses and other Birding Projects
13. Discussion/Recommendation Regarding Partnerships and Grants
14. Discussion/Recommendation Regarding Local Parks and Hillmoor Property Projects
15. Discussion Regarding Projects Relating to Educational Mission
16. Adjournment

*A quorum of the Council may be present; however, no official Council action will be taken.  
Requests from persons with disabilities who need assistance to participate in this meeting should be made to the City Clerk's office in advance so that the appropriate accommodations can be made.*



# **City of Lake Geneva Avian Committee Minutes**

## **Tuesday, September 9, 2005 6 p.m.**

### **Lake Geneva City Hall; Conference Room 2A**

**Members:** President – Sarah McConnell, Secretary – Kelley Happ, Jill Rodriguez, Beverly Leonard, Karen Gallo, Victoria Ross and Alderperson JaNelle Powers

**1. Call to Order:** 6:14 p.m. by Sarah McConnell

**2. Roll Call. The following members were present:** Sarah McConnell, Beverly Leonard, Kelley Happ, Victoria Ross and Karen Gallo. Alderperson JaNelle Powers and Jill Rodriguez were excused

Others present: Betty Volquardsen and David Winger

**3. Approval of minutes from August 12, 2025**

Motion by Ross, second by Gallo to approve the minutes. Voice vote, approved, motion carried.

**4. Comments from the public limited to 5 minutes, limited to items on this agenda**

Volquardsen spoke about a potential grant from Bird City/White Pelican Farms for no less than \$500 worth of native plants and encouraged the Avian City to pursue this opportunity. She also mentioned the Dark Skies Project and hoped the Avian Committee will propose this to city council.

**5. Financial Review and 2026 Budget Update:**

Leonard led a discussion about assuring enough in the budget to cover needed repairs, replacement items and power washing for the Purple Martin houses and supplies for Swift Night Out. It was suggested we add additional amount of \$500 to cover these items. Also suggested putting carry-over funds into a category of building partnerships. Rodriguez will get new numbers and hand in the budget request on Sept. 12. The Avian Committee is scheduled to meet for the request on Sept. 16.

**6. Discussion Regarding Membership:**

The Avian Committee has requested the Administration allow the committee to have a member-at-large.

**7. Discussion/Update Regarding Swift Night Out**

Agreed that this was the best SNO ever – probably the largest with at least 300 people estimated to have attended. Concern that the cold snap a few days before or the wildfires in Canada may have affected the number of swifts. Next year our usual first Thursday of September falls just before the Labor Day weekend. Discussion about moving the date from Sept. 3 to Sept. 10, but some concern that it will be late for migration. The committee will research what other events are happening that week throughout the city/county. We agreed to table the discussion until next month and will check with the Chimney Swift organization. Also, all agreed on requesting Schlitz Audubon to present their raptor program again next year.

**8. Discussion/Update Regarding Bird City Application**

McConnell had requested that Bird City consider smaller cities in a different category from large ones like Madison. Ross will update our application and have a first draft by the November meeting. Happ will provide photos of past events.

**9. Discussion/Update Regarding Hotel Birding Backpacks**

Several local hotels are now enjoying our birding backpacks. Agreed to schedule a photo shoot to publicize this project. Happ will arrange.

**10. Discussion Regarding Holiday Tree at Geneva Lake Museum**

Rodriguez has signed up the Avian Committee to participate. We will use our cardinal decorations from last year and will meet to help put it together on the designated day in November.

**11. Discussion Regarding Climate Change**

Discussion about the City of Lake Geneva's Dark Sky ordinance to reduce light pollution and preserve the quality of the night sky.

Motion by Ross to strengthen the exterior lighting portion of the Geneva Lake Dark Sky Initiative (98-707) to include some compliance methods. Second by Happ. Voice vote, approved, motion carried.

Ross will create a mock-up of new standards that we can suggest to the city.

**12. Adjournment**

Motion to adjourn by Gallo, second by Ross. Voice vote carried at 7:15 p.m.

Respectfully submitted, 10/6/2025

Kelley Happ

Secretary, Avian Committee

**City of Lake Geneva Avian Committee Minutes**  
**Special Meeting Wednesday, September 17, 2005 3 p.m.**  
**Lake Geneva City Hall; Conference Room 2A**

**Members:** President – Sarah McConnell, Secretary – Kelley Happ, Jill Rodriguez, Beverly Leonard, Karen Gallo, Victoria Ross and Alderperson JaNelle Powers

**1. Call to Order:** 3:05 PM by Sarah McConnell

**2. Roll Call. The following members were present:** Sarah McConnell, Jill Rodriguez, Kelley Happ, Victoria Ross and Karen Gallo. Alderperson JaNelle Powers and Beverly Leonard were excused

Also Present: David Winger

**3. Discussion/Recommendation regarding the Bird City**

Members discussed the opportunity to apply for this grant, which needs to be submitted by a current Bird City community by October 15. The Hillmoor Commission and the Friends of Hillmoor have approved this project and will be supporting our effort. Avian members discussed the considerable amount of work necessary for preparing the site if the grant would be approved, starting with prepping the site this fall. The Geneva Lake Conservancy has offered to help us make a site plan. Friends of Hillmoor will check with the DNR to see if the proposed site (the stream bed coming from under Route 50 across from the bowling alley) is a “navigable” waterway. Other suggestions were made for volunteers who might help with this project, including Rotary, Tree Board, Badger HS Ecology or environmental clubs. Winger suggested a city meeting Friday to talk about the multiple steps necessary.

**Vote:**

Ross moved that the Avian Committee apply for the Bird City/White Pelican Farm Grant by October 15. The motion was seconded by Rodriguez and approved unanimously.

**4. Adjournment:**

Rodriguez moved to adjourn, seconded by Ross and approved. Meeting adjourned at 3:25 p.m.

Respectfully submitted, 10/2/2025  
Kelley Happ

| Account Number          | Account Title            | 2025-25<br>Period<br>Actual | 2025-25<br>Current year<br>Actual | Current year<br>Budget | Variance<br>Current year | % of<br>Budget |
|-------------------------|--------------------------|-----------------------------|-----------------------------------|------------------------|--------------------------|----------------|
| <b>GENERAL FUND</b>     |                          |                             |                                   |                        |                          |                |
| <b>MISCELLANEOUS</b>    |                          |                             |                                   |                        |                          |                |
| <b>MISCELLANEOUS</b>    |                          |                             |                                   |                        |                          |                |
| 11-70-00-47300          | AVIAN DONATIONS          | .00                         | .00                               | 250.00                 | 250.00                   | .00            |
| Total MISCELLANEOUS:    |                          | .00                         | .00                               | 250.00                 | 250.00                   | .00            |
| <b>MISCELLANEOUS</b>    |                          |                             |                                   |                        |                          |                |
| 11-70-00-57800          | AVIAN COMMITTEE EXPENSES | 20.00                       | 2,436.27                          | 4,100.00               | 1,663.73                 | 59.42          |
| Total MISCELLANEOUS:    |                          | 20.00                       | 2,436.27                          | 4,100.00               | 1,663.73                 | 59.42          |
| Net Total GENERAL FUND: |                          | 20.00-                      | 2,436.27-                         | 3,850.00-              | 1,413.73-                | 63.28          |
| Net Grand Totals:       |                          | 20.00-                      | 2,436.27-                         | 3,850.00-              | 1,413.73-                | 63.28          |

| Date                         | Journal | Reference Number | Payee or Description                         | Account Number      | Debit Amount        | Credit Amount | Balance  |
|------------------------------|---------|------------------|--|---------------------|---------------------|---------------|----------|
| AVIAN DONATIONS              |         |                  | 08/31/2025 (08/25) Balance                   | 11-70-00-47300      |                     |               | .00      |
|                              |         |                  | 09/30/2025 (09/25) Period Totals and Balance |                     | .00 *               | .00 *         | .00      |
| YTD Encumbrance              |         | .00 YTD Actual   | .00 Total                                    | .00 YTD Budget      | -250.00 Unearned    | 250.00        |          |
| AVIAN COMMITTEE EXPENSES     |         |                  | 08/31/2025 (08/25) Balance                   | 11-70-00-57800      |                     |               | 2,416.27 |
| 09/22/2025                   | JE      | 9                | REC PARKING PERMIT FEE                       |                     | 20.00               |               |          |
|                              |         |                  | 09/30/2025 (09/25) Period Totals and Balance |                     | 20.00 *             | .00 *         | 2,436.27 |
| YTD Encumbrance              |         | .00 YTD Actual   | 2,436.27 Total                               | 2,436.27 YTD Budget | 4,100.00 Unexpended | 1,663.73      |          |
| AVIAN COMMITTEE DONATION EXP |         |                  | 08/31/2025 (08/25) Balance                   | 11-70-00-57810      |                     |               | .00      |
|                              |         |                  | 09/30/2025 (09/25) Period Totals and Balance |                     | .00 *               | .00 *         | .00      |
| YTD Encumbrance              |         | .00 YTD Actual   | .00 Total                                    | .00 YTD Budget      | .00 Unexpended      | .00           |          |

Number of Transactions: 1 Number of Accounts: 3

Total GENERAL FUND:

Number of Transactions: 1 Number of Accounts: 3

Grand Totals:

| Debit | Credit | Proof |
|-------|--------|-------|
| 20.00 | .00    | 20.00 |
| 20.00 | .00    | 20.00 |

## Sec. 98-707 Exterior lighting standards.

### 1.1 Purpose

- A.** This outdoor lighting standard is intended to protect the health and welfare of all residents within the City of Lake Geneva, enhance its character and quality of life, prevent inappropriate and poorly installed outdoor lighting, reduce lighting conflicts between property owners, prevent the increase of potentially harmful sky glow, and preserve the naturally dark sky for the benefit of residents, visitors, wildlife, and the environment. The *Five Principles for Responsible Outdoor Lighting* will guide the City of Lake Geneva's outdoor lighting decisions because:
1. Whereas, outdoor uses of *Artificial Light at Night (ALAN)* often include inappropriate and bright sources of light that cause an unsafe reduction in human visual performance; and
  2. Whereas, excessive, unnecessary, and misdirected *ALAN* contributes to *Light Pollution* and wastes energy resources that would, if corrected, generate tangible cost savings; and
  3. Whereas, increased use of *ALAN* has contributed to an escalation of *Light Pollution*, thus increasing the brightness of the night sky by 10% annually and rendering the current night sky orders of magnitude (often hundreds of times) brighter than the natural and original sky background; and
  4. Whereas, *Light Pollution* from *ALAN* is known to cause adverse effects on the health and well-being of birds, wildlife, nocturnal ecosystems, vegetation, and under certain circumstances, human health;
  5. Now, therefore, let it be resolved that the City of Lake Geneva, which has the authority to protect natural resources and maintain a healthy environment for present and future generations, chooses to enact this outdoor lighting standard

### 1.2 Applicability

- A.** This standard applies to all sources of outdoor lighting installed or replaced within the City of Lake Geneva after [enactment date]. This includes, but is not limited to, newly permitted development and construction projects involving homes, dwellings, roadways, public right-of-way, signage, billboards, buildings, facilities, properties, landscape, parking lots, hardscape, non-habitable structures, and monuments.
- B.** Existing outdoor lighting lawfully installed prior to [date] and not meeting the requirements of this standard shall be considered legal and repairable but non-conforming. All non-conforming *Luminaires* may continue to be used and maintained until one of the following occurs:
1. A determination by the Building & Zoning Director that an outdoor light source constitutes a hazard to public safety or constitutes a nuisance.
  2. When a property is re-zoned for a new land use, at which time all outdoor lighting on the property shall meet the requirements of this standard before the new use commences.

### 1.3 Exemptions

- A. Lawful:** Lighting requirements mandated by a legal jurisdiction with broader authority (e.g., federal, state, or territorial) than the City of Lake Geneva, including but not limited to:

1. Navigational lighting systems regulated by the Federal Aviation Administration and the US Coast Guard.
  2. Any contradictory building code or Department of Transportation illumination requirements.
  3. Lighting for worker safety as mandated by the Occupational Safety and Health Administration.
- B. Safety:** *Luminaires* installed for the benefit of public safety, including but not limited to:
1. *Security Lighting* as determined by a municipal official with authority.
  2. Temporary lighting used by authorized first responders during emergency procedures.
- C. Historic:** *Luminaires* replicating time period historical character and lighting effect that are protected by historical registration, or otherwise permitted by an authority having jurisdiction.
- D. Permitted:** Temporary and semi-permanent lighting approved by municipal permit for special events, festivals, and community benefit, provided the permitted lighting still meets light trespass requirements and does not add further disruption to ecological migration or habitat.
- E. Seasonal:** *Seasonal Lighting* used from October 20 and January 31 of the following year.

## 1.4 Prohibitions

- A.** *ALAN* must not interfere with the safe movement of motor vehicles. Any lighting that distracts or disables the vision of a motor vehicle operator (e.g., excessively bright or rapid blinking, flashing, and/or motion video) or contributes to traffic control confusion (e.g., sources resembling or imitating traffic or railroad signals) is prohibited.
- B.** Beacons and searchlights, except for emergency use by authorized first responders.

## 2.0 OUTDOOR LIGHTING REQUIREMENTS

### 2.1 General

- A. Legal:** All outdoor *Luminaires* and *Luminaire* installations shall comply with federal and state law; county and municipal codes; applicable energy and building codes; product safety labeling; the requirements of this standard; and shall be subject to the appropriate permit and inspection requirements thereof.
- B. Light Level:** Unless otherwise specified in this ordinance, lighting installed for an outdoor use shall not exceed 25% more than the *Light Level* recommended by the applicable *ANSI/IES Lighting Standard*, or a state approved alternate, as published by [enactment date].
- C. Distribution:** Unless otherwise specified in this ordinance, *Luminaires* emitting more than 1,000 *Lumens* shall be *Fully Shielded* and shall emit no more than 5% of their total *Lumen* output above 80 degrees from *Nadir*. Exceptions are:
1. Festoon string lighting where no individual lamp emits more than 50 lumens, and the lumen density of the string is no greater than 25 lumens per foot.
  2. Directional *Luminaires* used for façade illumination which are shielded and aimed to hit their target such that the light is contained by architectural elements.
- D. Trespass:** Unless otherwise specified in this ordinance, *Light Trespass* shall meet the following:

1. *Luminaire* light sources shall not be visible from federal or state designated wilderness, natural area, habitat, or reserves, and *Light Trespass* shall measure no greater than 0.1 *Lux*.
  2. *Light Trespass* onto Waters of the United States shall measure no greater than 1 *Lux*.
  3. *Light Trespass* onto *Residential Use* property shall measure no greater than 1 *Lux*.
- E. **Curfew:** *Non-essential* outdoor lighting, including but not limited to landscape and decorative lighting elements, shall be extinguished during *Nighttime Hours*.
1. When applicable, outdoor lighting shall dim or be extinguished during *Nighttime Hours* as prescribed by an adopted energy code.
- F. **Controls:** *Luminaires* activated by motion detection shall automatically turn off or return to their dimmed state no more than 5 minutes after activity is no longer detected.
- G. **Spectrum:** Unless otherwise specified in this ordinance, the maximum allowable correlated color temperature (*CCT*) for outdoor *Luminaires* is 3000 K.
1. Exception: *CCT* exemptions are allowed if a public safety need is documented.

## 2.2 Residential Use

The following requirements are supplementary to the General Outdoor Lighting Requirements (**Section 2.1** and its subsections) and shall further regulate outdoor lighting on *Residential Use* property:

- A. Lighting for *Residential Use*, excluding roadway, parking, and public right-of-way, shall be exempt from the requirement in **Section 2.1(B)** provided no single *Luminaire* exceeds 1,000 lumens and the total installed lumens per dwelling, prorated for multifamily, does not exceed the following:

| TABLE 2.2: PER DWELLING LUMEN ALLOWANCE<br>RESIDENTIAL USE |            |       |        |       |
|--|------------|-------|--------|-------|
| Property Size  |            | Lz0   | Lz1    | Lz2   |
| (acre)   | (sf)       |       |        |       |
| 1.33   | 58,000+ sf | 5,200 | 13,000 | 22800 |
| 1.00   | 43,000 sf  | 4,600 | 11,500 | 20200 |
| 0.75   | 32,000 sf  | 4,100 | 10,200 | 17900 |
| 0.50   | 21,000 sf  | 3,500 | 8,700  | 15300 |
| 0.33   | 14,000 sf  | 2,800 | 7,000  | 12300 |
| 0.25   | 10,800 sf  | 2,400 | 5,900  | 10400 |
| 0.20   | 8,700 sf   | 2,000 | 5,000  | 8800  |
| 0.13   | 5,400 sf   | 1,500 | 3,600  | 6300  |
| 0.05   | 2,100 sf   | 850   | 1,700  | 3000  |
| 0.03   | < 2,100 sf | 850   | 850    | 1500  |

Multi-Family Example: 32 townhome units on a 3.2-acre development equals .10 acres per dwelling. Therefore, each dwelling is allowed 1,700 lumens when located in Lz1.

- B. *Light Trespass* leaving *Residential Use* property shall be no greater than 1 *Lux*.
- C. When needed, *Residential Use* roadway *Luminaires* shall be a maximum *CCT* of [2400 K].

## 2.3 Non-Residential Use

The following requirements are supplementary to the General Outdoor Lighting Requirements (**Section 2.1** and its subsections) and shall further regulate outdoor lighting on non-residential property:

- A. *Non-Residential Use* lighting shall be exempt from the requirement in **Section 2.1(B)**, provided there is no *Luminaire* installed on the property capable of exceeding a total output greater than 3,000 *Lumens*.
- B. *Light Trespass* leaving *non-Residential Use* property onto adjacent public right-of-way shall be no greater than 3 *Lux* when measured 20 feet past the property line.

## 2.4 Sports Lighting

The following requirements are supplementary to the General Outdoor Lighting Requirements (**Section 2.1** and its subsections) and shall further regulate outdoor lighting for sports and recreational areas shall also meet the following requirements:

1. Eighty-five percent (85%) of the lumens generated by sports lighting luminaires shall be confined to within 10 meters (33 feet) or a distance of one pole height, whichever is greater, of the playing field or the spectator track or bleacher area, whichever is greater.
  2. Lighting installations for aerial sports are allowed a maximum of 8% of the total lumen output to be emitted above 80 degrees from *Nadir*.
  3. When the recommended sports field *Light Level* is higher than 100 lux, installed lighting shall not exceed 10% more than the *Light Level* recommended by the applicable *ANSI/IES lighting standard*, or a state approved alternate, as published by [enactment date].
  4. The maximum *CCT* for outdoor sports lighting should be the lowest possible for the sport, class of play, and viewing audience as defined by the relevant *ANSI/IES lighting standard*, or any state approved alternative, but never exceeding 5700 K.
  5. The maximum luminous intensity from any luminaire lighting a sports field shall not exceed 10,000 *candelas* (cd) as measured along a perimeter that is 46 meters (150 feet) from the edge of the field, at 1.5 meters (5 feet) above grade
- Sports lighting shall meet the requirements of the *DarkSky Approved Outdoor Sports Lighting Program*.
  - Sports lighting shall be certified by DarkSky International as meeting the DarkSky Approved Outdoor Sports Lighting Program.

## 2.5 [Additional Lighting Criteria Available:]

*[Supplemental outdoor lighting requirements are available for specialized uses and applications. These requirements can be found at <https://darksky.org>, and are intended for insertion into the ordinance starting with section 2.5. The specialized uses and applications that are available include:]*

- A. *[Seasonal Lighting]*
- B. *[Illuminated Signage]*
- C. *[Coastal Marine Turtle Habitat]*

## 3.0 ADMINISTRATIVE REQUIREMENTS

### 3.1 Permit Application

- A. Submittal:** Whenever a building, subdivision, site plan, or outdoor lighting permit is applied for, an outdoor lighting plan must be submitted along with a compliance statement that the proposed work will comply with all standards requirements. The outdoor lighting plan must follow one of the following:
1. **Schedule Method:** Only available for renovation and *Residential Use* lighting; projects to be documented using a spreadsheet format by listing the *Luminaire* identifications (i.e., manufacturer, model number, type), *Luminaire* quantities, installation locations, and *Lumen* outputs for each; or
  2. **Calculation Method:** Available for all project types but required for sports lighting and when specifically requested by the planning commission; an outdoor lighting design shall be prepared by a certified lighting professional or licensed professional engineer using lighting design software and *Luminaire* .ies files. This outdoor lighting plan shall include:
    - a) *Luminaire* identification (model number), installation locations, mounting heights, targeted directions, buildings, and other physical objects within the site that could affect the lighting outcome.
    - b) Site plan and *Illuminance* calculation plots demonstrating conformance with this ordinance, including the sports lighting luminous-intensity *Light Trespass* limit.
- B. Review:** Submitted spreadsheets, site lighting plans, and compliance affidavits shall be subject to review and approval by the [administrator], or designee. The [administrator] shall have the authority to refer an application to the [planning and zoning commission] or the [historic commission] if deemed appropriate.
- C. Appeals:** Any appeals related to decisions regarding outdoor lighting shall be made to the [administrator], or designee.

### 3.2 Enforcement and Penalty

*[Each municipality will have its own ordinance and regulations from which to cite specific references on enforcement and penalties. This section should be tailored to cite those specific sections as applicable to ensure enforcement and that penalties can be administered.]*

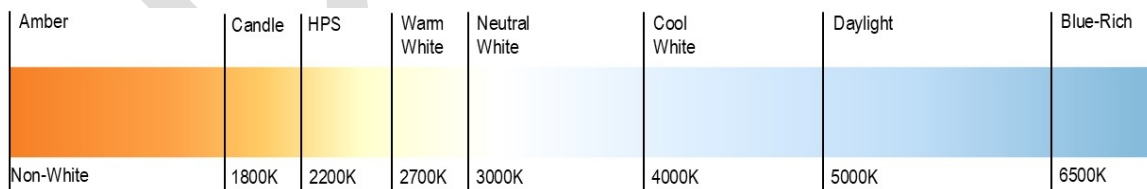
- A. Enforcement:** Unless otherwise noted in this standard, the [administrator], or designee, shall be responsible to implement, administer, and enforce this standard, including investigations of alleged violation. A private right of action may also constitute enforcement of the requirements within this standard.
1. The [administrator] charged with enforcing this chapter shall have the authority to grant partial waiver of specific standard requirements for up to one year if a property owner demonstrates that compliance creates unreasonable hardship, as balanced against the potential impacts of non-compliance, or results in conditions that are materially detrimental to health, safety or welfare.

- B. **Penalty:** Any property owner that does not meet the requirements of this standard shall be in violation. A person, firm, or corporation found to have violated, disobeyed, omitted, neglected, or refused to comply with any provisions of this standard shall be issued a notice and administrative citation as provided by the municipal code [appropriate section numbers]. Any person, firm, or corporation found to have violated any portion of this standard shall correct the violations within ninety (90) days of the citation date. Each day a violation continues beyond ninety (90) days of the citation date without having been corrected shall be a separate offense. *[For municipalities without standard citation penalties or injunctive relief, a monetary fine is recommended for each citation.]*
- C. *[Option]* **Private Action:** Any person adversely affected by lighting that does not meet the requirements of this standard shall have a private cause of action for nuisance against the person, firm, or corporation responsible for such lighting.

## 4.0 DEFINITIONS

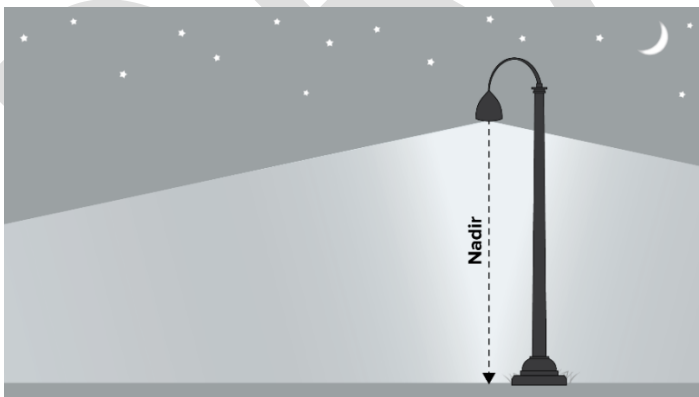
4.1 The following definitions apply to terms used in this ordinance:

- A. **ANSI:** American National Standards Institute.
- B. **ANSI/IES Lighting Standards:** Applicable outdoor lighting standards and metrics include but are not limited to:
  1. RP-2: outdoor retail spaces
  2. RP-6: outdoor sports and recreational areas
  3. RP-7: outdoor industrial areas
  4. RP-8: roadway and parking facilities
  5. RP-40: port terminals
  6. RP-43: outdoor pedestrian areas
- C. **ALAN (artificial light at night):** Light that is created from human technology, rather than a naturally occurring process. Also known as anthropogenic lighting.
- D. **Candela (cd):** The unit of measure for luminous intensity.
- E. **CCT (correlated color temperature):** The measured color appearance of light emitted by a light source described using a nominal value stated in kelvins (K). Lower CCTs (1800 K to 2200 K) appear very warm or amber. Medium CCTs (2700 K to 3000 K) appear “warm white,” similar to standard incandescent bulbs. High CCTs (4000 K and higher) appear “cool white” or “blue.”



- H. **DarkSky Approved Outdoor Sports Lighting:** A standalone program put forth by DarkSky International to guide and/or certify sports lighting that meets stringent glare and *Light Trespass* requirements.
- I. **Five Principles for Responsible Outdoor Lighting:** Co-authored and published by DarkSky International and the Illuminating Engineering Society: 1) Use light only if needed; 2) distribute light only where it is needed; 3) use light that is no brighter than needed; 4) control light so it is on only when needed; and 5) use warmer color light when possible.

- J. **Fully Shielded:** A *Luminaire* designed or shielded in such a manner that no light is emitted, either directly or indirectly, at or above a horizontal plane running through the lowest light-emitting part of the luminaire.
- K. **IES (Illuminating Engineering Society):** An ANSI-recognized Standards Development Organization. ANSI/IES Recommended Practices are universally recognized as authoritative references for lighting applications.
- L. **Illuminance:** Measured in *Lux* or footcandles, the total luminous flux incident at a point on a surface.
- M. **Light Level:** The maintained *Luminance* or *Illuminance* value.
- N. **Light Pollution:** *ALAN* traveling into areas where it is not needed or wanted. This can be in the form of *Light Trespass*, glare, or atmospheric sky glow.
- O. **Light Trespass:** *ALAN* illuminating past property lines without permission. Unless specified otherwise, light trespass limits are measured at any location along a property line both horizontally at the ground plane facing upward and vertically at 1.5 meters (5ft) above grade with the meter aimed toward the light source in question.
- P. **Lighting Zones:** An ANSI/IES/DarkSky system describing the luminous environment and related lighting conditions based on land uses and expected tasks. These range from natural and intrinsically dark zones to very bright zones.
- Q. **Lumen (lm):** A unit of measure of the *luminous flux* of a light source.
- R. **Luminaire:** A complete lighting unit, including the light source, housing, optics, electronics, and other necessary components for the purpose of providing outdoor illumination.
- S. **Luminance:** The intensity of light emitted from a surface per unit area in a given direction.
- T. **Lux (lx):** The SI metric system unit of measure for *Illuminance*.
- U. **Nadir:** A downward vertical vector directly beneath a luminaire, opposite to zenith.



- V. **Nighttime Hours:** The time between [10] PM and sunrise, or 7 AM (whichever comes earlier). For businesses and events with operating hours later than [10] PM, nighttime hours will begin one hour after closing.
- W. **Non-essential:** Lighting that is not directly associated with the physical safety of motor vehicle and pedestrian threats, including but not limited to: landscape lighting, illuminated signage or advertising after business hours, façade lighting, vacant sports fields, and seasonal lighting.
- X. **Residential Use:** Municipal zoning districts dedicated exclusively to places of low-rise (i.e., 3 stories or less) human residence and dwelling. Examples include single family, duplex, dual family, multi-

family, apartment, townhouse, and mobile home. This does not include mixed-use or commercial districts with combined dwellings.

- Y. Seasonal Lighting:** Outdoor or site lighting that is portable, temporary, decorative, and used in connection with holidays and traditions. This includes but is not limited to string lighting, icicle lighting, and lighted inflatables, none of which are intended for general illumination.
- Z. Security Lighting:** Illumination used specifically to protect people, property, and infrastructure from criminal threat.
- AA. Shielding:** A *Luminaire* design, optical intervention, or physical accessory (such as a louver) preventing light emission from traveling into a particular area, angle, or region.

**END OF TEMPLATE**

## ANNEX A – EXAMPLE FORMATS TO ASSIGN LIGHTING ZONES

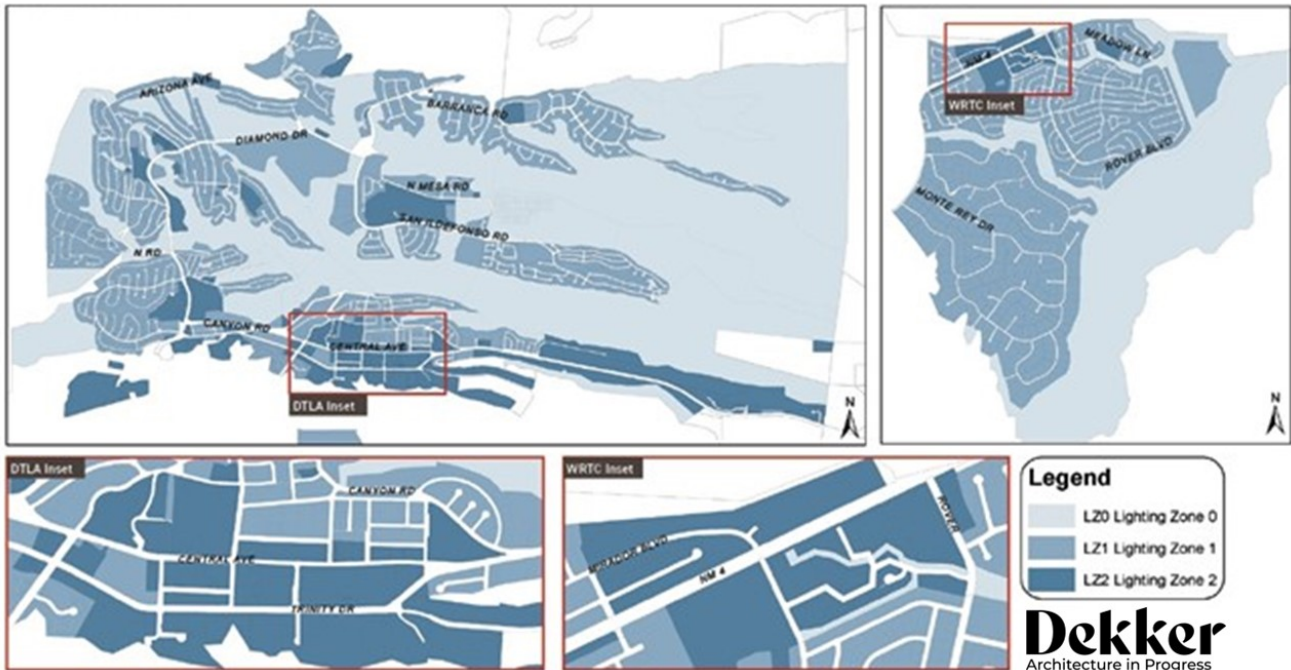
**Table Example**

| Lighting Zone Designations by Land Use |                |                |                |                |                |                |                |                |                |                |                 |       |       |                |                |                |                |                |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-------|-------|----------------|----------------|----------------|----------------|----------------|
| Zone District                          | Residential    |                |                |                |                |                | Mixed-Use      |                |                |                | Non-Residential |       |       |                |                |                |                |                |
| Lighting Zones                         | R-A            | R-1            | R-T            | R-MC           | R-ML           | R-MH           | MX-T           | MX-L           | MX-M           | MX-H           | NR-C            | NR-BP | NR-LM | NR-GM          | NR-PO          |                |                |                |
|  |                |                |                |                |                |                |                |                |                |                |                 |       |       |                | A              | B              | C              | D              |
| NLz                                    |                |                |                |                |                |                |                |                |                |                |                 |       |       |                |                | X <sup>1</sup> | X <sup>1</sup> |                |
| Lz0                                    | X <sup>3</sup> | X <sup>3</sup> | X <sup>3</sup> | X <sup>3</sup> | X <sup>3</sup> |                | X <sup>3</sup> |                |                |                |                 |       |       |                | X <sup>2</sup> | X <sup>2</sup> | X <sup>2</sup> | X <sup>2</sup> |
| Lz1                                    | X              | X              | X              | X              | X              | X <sup>4</sup> | X              | X <sup>4</sup> | X <sup>4</sup> | X <sup>4</sup> | X               | X     | X     | X              | X              |                |                | X              |
| Lz2                                    |                |                |                |                |                | X              |                | X              | X              | X              | X <sup>5</sup>  |       |       | X <sup>5</sup> | X <sup>6</sup> |                |                |                |
| Lz3                                    |                |                |                |                |                |                |                | X <sup>5</sup> | X <sup>5</sup> |                |                 |       |       |                | X <sup>7</sup> |                |                |                |

**Notes:**

- [1] NLz is required in NR-PO zones for open space where no anthropogenic light is allowed.
- [2] Lz0 is required in NR-PO zones for open space where artificial light is needed during nighttime hours.
- [3] A lower lighting zone is required on subject properties with sensitive lands.
- [4] A lower lighting zone is required on subject properties adjacent to low-density uses.
- [5] A higher lighting zone is allowed unless the subject property is adjacent to any residential zone district.
- [6] Lz2 is allowed in parks with high pedestrian activity and many amenities.
- [7] Lz3 is allowed in parks containing nighttime stadiums or entertainment activities.

## Overlay Map Example



## DARKSKY POLICY TEMPLATE: TERMS OF USE

**By downloading this document, you have agreed to the following:**

The International Dark-Sky Association, dba DarkSky International (“DarkSky”), is a 501c(3) nonprofit organization that works to raise awareness about the negative impacts of light pollution and preserve the nighttime environment through public education, conservation, and the certification of environmentally responsible outdoor lighting.

To further these goals, DarkSky has developed DarkSky Policy Templates (“DarkSky Templates”, or “Templates”) which provide particular provisions to be adopted by a municipality, village, city, county, state, province, or other government entity (“Government Entity”). When implemented, these provisions help mitigate light pollution and protect dark skies while maintaining illuminated conditions in accordance with appropriate standards. Upon incorporating the Template provisions into law in the Government Entity statutes (codes, standards, ordinances legislation, etc), the Government Entity may apply to have their final adopted language reviewed by DarkSky International for conformance, and, if approved, become “DARKSKY RECOGNIZED.”

DarkSky makes these Templates publicly available for download and use subject to these Terms of Use (“Terms”). Please read these Terms carefully to ensure you understand and comply with them in the use of the Templates.

### USE OF TEMPLATES

- 1. Format.** Upon agreeing to these Terms, you may download the DarkSky Templates in either a PDF or Word version. The PDF version must not be altered and used only as an official version from DarkSky; the Word

version is provided as an editable document to more easily incorporate the provisions into other statute formats subject to these terms.

2. **Use of DarkSky Templates and Designation.** You are free to use the Templates for incorporating the provisions contained therein into your local or regional statutes, however you may not use the DARKSKY RECOGNIZED designation unless authorized by DarkSky as provided for in Paragraph 3.
3. **Approval for DARKSKY RECOGNIZED status.** You may, for a fee and as instructed on the darksky.org website, submit draft versions of your proposed statutes to DarkSky for review and comment prior to final adoption. Upon receipt, and in due course, DarkSky will review the proposed version. DarkSky will designate statutes as DARKSKY RECOGNIZED only for final adopted statutes. Proof of final adoption must be submitted, including 1) final adopted language and 2) proof of adoption including official minutes confirming the adopted language. Any change to DARKSKY RECOGNIZED statutes must be recertified by DarkSky through this same process; changes made without DarkSky review and approval will have this designation revoked by DarkSky International.
4. **Representation of DarkSky International.** You may not represent yourself as a DarkSky International representative or agent at any time when advocating for the use of these Templates without the express written consent and approval of DarkSky International. If you modify the Templates in any way, you may not represent the altered document as a DarkSky approved document; only the unaltered PDF versions of the DarkSky Templates can be referred to as DarkSky approved Templates.

## GENERAL TERMS

5. **Acknowledgement.** Upon downloading any version of the DarkSky Templates, you acknowledge that you have read, understood, and agreed to all terms contained herein. Further, you represent that you have consulted, or have had the opportunity to consult with, your legal, tax, and financial advisors in connection with the execution and performance of the Agreement.
6. **Applicable Law.** These Terms of Use shall be construed and enforced in accordance with the laws of the State of Arizona without regard to its conflicts of laws provisions. Similarly, the laws of the State of Arizona (again without regard to its conflicts of laws provisions) shall also govern any dispute arising between you and DarkSky. You agree to submit to the personal and subject matter jurisdiction of the courts located within the State of Arizona. You also agree the venue for any action, dispute or proceeding with respect to this Agreement or any dispute between you and DarkSky shall be Maricopa County in the State of Arizona. You further waive all defenses to the contrary including, but not limited to, lack of personal jurisdiction or forum non-conveniens.
7. **Entire Agreement.** These Terms of Use, as they shall be modified from time to time, constitute the full and complete understanding among them with respect to the subject matter hereof and supersede and preempt any prior understandings, agreements, or representations by or among the Parties, written or oral, which may have related to the subject matter hereof in any way. You may not rely on any other statements, promises, or agreements by any party, whether written or oral, that alters or contradicts the terms of these Terms of Use. Indeed, you affirm that you are not relying upon any verbal or written representations whatsoever, except as expressly set forth in these Terms of Use.
8. **Modifications.** This Agreement may not be altered, amended, changed, waived, terminated, or modified in any manner unless the same shall be in writing and signed by or on behalf of both Parties.

9. **Paragraph and Section Headings.** Paragraph and Section headings are for convenience only and shall not be used to construe this Agreement or otherwise be given any legal effect.
10. **Reasonableness.** The Parties have read each of the terms in this Agreement and consider each of them, including all subparts, to be reasonable.
11. **Savings Clause.** In the event that any provision of these Terms of Use is held to be void or unenforceable by a Court of competent jurisdiction, the remaining provisions of these Terms of Use shall nevertheless be binding upon the Parties with the same effect as though the void or unenforceable part had been deleted. Further, any provision held to be void or unenforceable by a Court of competent jurisdiction shall be construed, if possible, to give effect to the Parties' intent. The Parties agree that any such provision, in its forms modified by the court, shall then be enforceable and shall be enforced.
12. **Waiver.** No waiver of any breach of any provision of these Terms of Use shall constitute a waiver of any prior, concurrent or subsequent breach of the same or any other provisions hereof, and no waiver shall be effective unless made in writing and signed by an authorized representative of the waiving party. The failure of DarkSky to insist, in any one or more instances, upon the performance of any of the terms of these Terms of Use or to exercise any right hereunder, shall not be construed as a waiver of the future performance of any such term or the future exercise of such right.

If you have any questions, please contact the [DarkSky Lighting Program Manager](#).

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