

VILLAGE OF LAKE BLUFF
ARCHITECTURAL BOARD OF REVIEW (ABR) &
JOINT PLAN COMMISSION & ZONING BOARD OF
APPEALS (PCZBA)
SPECIAL MEETING (WORKSHOP)

September 22, 2026 - 6:00 P.M.

Members of the public may view and participate in the meeting via:

- In person at the Village Hall Board Room, 40 E. Center Ave.
- Online: <http://www.lakebluff.org/VirtualPCZBA>
- Dial-in: [\(312\) 626-6799](tel:3126266799). Enter meeting ID [851 1676 1132](tel:85116761132). Press # when prompted for a Participant ID.
- The meeting will be live-streamed at lakebluff.org/Channel19

A G E N D A

1. Call to Order and Roll Call

2. Non-Agenda Items and Visitors (Public Comment Time)

The Architectural Board of Review and Joint Plan Commission & Zoning Board of Appeals allocate fifteen (15) minutes during this item for those individuals who would like the opportunity to address the Board on any matter not listed on the agenda. Each person addressing the Architectural Board of Review and Joint Plan Commission & Zoning Board of Appeals is asked to limit their comments to a maximum of three (3) minutes.

3. Presentation and Discussion Regarding Exterior Lighting Regulations

4. Presentation and Discussion Regarding R5 Residential Zoning District Multifamily Regulations Assessment & CBD Density / Design Expectations

5. Staff Report

6. Commissioners' Report

7. Adjournment

The Village of Lake Bluff is subject to the requirements of the Americans with Disabilities Act. Individuals who require accommodations in order to allow them to observe and/or participate in this meeting, may contact Max Morgan, Assistant to the Village Administrator, at (847) 283-6889 or TDD number (847) 234-2153 in advance to allow the Village of Lake Bluff to make reasonable accommodations.

VILLAGE OF LAKE BLUFF

Memorandum

TO: Chair Hunter and Members of the Architectural Board of Review, and Chair Peters Joint Plan Commission & Zoning Board of Appeals

FROM: Max Morgan, Assistant to the Village Administrator

DATE: September 15, 2026

SUBJECT: Agenda Item #3 – Work Session: **Exterior Lighting Regulations**

PURPOSE

One purpose of this joint work session is to introduce and discuss proposed regulations governing exterior lighting throughout the Village. John Barentine, Principal Consultant with Dark Sky Consulting, LLC, will present the draft regulations and assist the Architectural Board of Review (“ABR”) and Joint Plan Commission and Zoning Board of Appeals (“PCZBA”) in evaluating their scope, standards, and implementation. No formal recommendation or action is requested at this meeting. The work session is intended to gather initial feedback from both bodies and provide an additional opportunity for public discussion.

BACKGROUND

The Village’s [Sustainability Plan](#) identifies the consideration of zoning regulations addressing harmful and excessive outdoor lighting as a high-priority action item. Many comparable communities regulate exterior lighting through measurable performance standards applicable to both commercial and residential properties. Lake Bluff’s existing regulations are more limited. Exterior lighting on commercial properties is generally evaluated through the Village’s design-review process. New installations and substantial modifications are typically subject to review by the ABR. Residential exterior lighting, however, is generally not subject to design review or specific performance standards. The Zoning Code contains limited additional regulations applicable only to properties within the Light and Service Industry District. Those provisions establish a general performance standard requiring operations that produce intense light or heat to occur within an enclosed building and not be visible beyond the property line.

DEVELOPMENT OF THE PROPOSED REGULATIONS

At its March 18, 2025, meeting, the Sustainability and Community Enhancement Ad Hoc Committee (“SEC”) received a presentation from Mr. Barentine regarding responsible outdoor lighting practices. Working with Mr. Barentine, the SEC subsequently developed draft regulations tailored to Lake Bluff. On August 19, 2025, the SEC recommended that the Village Board consider the proposed ordinance.

The Village Board reviewed the draft regulations during its June 8, 2026, Committee-of-the-Whole meeting and received a presentation from Mr. Barentine regarding exterior lighting and potential local standards. Following its discussion, the Board expressed general support for building upon the Village's existing regulatory framework and referred the proposal to the ABR and PCZBA for further review and public dialogue.

PROPOSED REGULATIONS

The draft regulations are intended to:

- Minimize light pollution, glare, and unnecessary outdoor illumination.
- Reduce unwanted light trespass into neighboring homes and businesses.
- Provide appropriate lighting for safety and security.
- Promote efficient and cost-effective lighting and energy conservation.
- Preserve natural nighttime darkness to the greatest practical extent.
- Encourage high-quality lighting design and discourage inappropriate or poorly designed installations.
- Incorporate responsible lighting principles into new development and redevelopment.
- Accommodate appropriate holiday and special-event lighting.
- Align local regulations with the Five Principles for Responsible Outdoor Lighting developed by the Illuminating Engineering Society and DarkSky International, which recommend that lighting be useful, targeted, low-level, controlled, and warm-colored.

In addition to establishing performance standards, the draft regulations address:

- Activities and lighting installations subject to regulation.
- Luminaire and site-design requirements.
- Permit and review procedures for outdoor lighting projects.
- Standards and approval procedures for deviations.
- Treatment of existing nonconforming lighting, including grandfathering and amortization provisions.

Staff and Mr. Barentine will present the proposed framework and seek feedback regarding its applicability to residential and commercial properties, the proposed performance and design standards, the review process, and the treatment of existing lighting.

ATTACHMENTS

1. Sustainability Plan Excerpt Regarding Light Pollution
2. Draft Lighting Ordinance and Map
3. Review Memorandum from John Barentine, Dark Sky Consulting, LLC (prepared prior to revisions reflected in the current draft)
4. Comparison of Outdoor Lighting Standards in Neighboring Communities
5. SEC Meeting Minutes – [March 18, 2025](#) and [August 19, 2025](#)
6. Village Board COW Meeting Minutes – [June 8, 2026](#)



LIGHT POLLUTION

Balance economic and security needs with our small-town character and charm.

Light pollution is becoming the next “big” topic in sustainability, as recent research claims that 99% of the United States’ population lives under light polluted skies.⁷⁸ “We know a great deal now about the impact of rising carbon dioxide,” says Dr. Steve Long with the University of Illinois. “But how extensive are the impacts of light pollution? We’re gambling with our future in what we’re doing to the environment”.⁷⁹

A Sustainable Lake Bluff...

- **Recognizes Chicagoland has a light pollution problem and does not contribute to it.**
The nighttime light pollution level in Lake Bluff is among the lowest near Chicago; only the Fox River area, in western Lake County, is comparable.^{78,81} Even so, the Milky Way is only usually visible when looking directly up in the summertime.⁸² Because Lake Bluff is located so close to Chicago, this situation is unlikely to change absent larger shifts in the region.
- **Uses lighting to preserve our historic character and small-town charm.**
In the Village’s 2017 Community Survey, the second (tied) most commonly cited issue considered the “most important” by respondents was preserving the Village’s character and small-town image.⁴⁸ Lighting practices are an essential part of our character and sense of place.
- **Reduces energy usage spent on unnecessary nighttime lighting.**
Lighting less, and using light efficient fixtures, reduces energy consumption. About 16% of total U.S. electricity usage is for lighting, and about 5% is for outdoor lighting.⁸³ The three biggest outdoor uses include parking lots, roadway lighting, and building exteriors.⁸³
- **Stops lighting from disrupting wildlife habitats.**
Studies show artificial light interferes with insects, plant maturity, birds, bats, and pollination.⁷⁹

What We Will Do

- ✓ Street lighting is minimized, and public facilities are thoughtfully lit to minimize the impact upon adjacent residences.

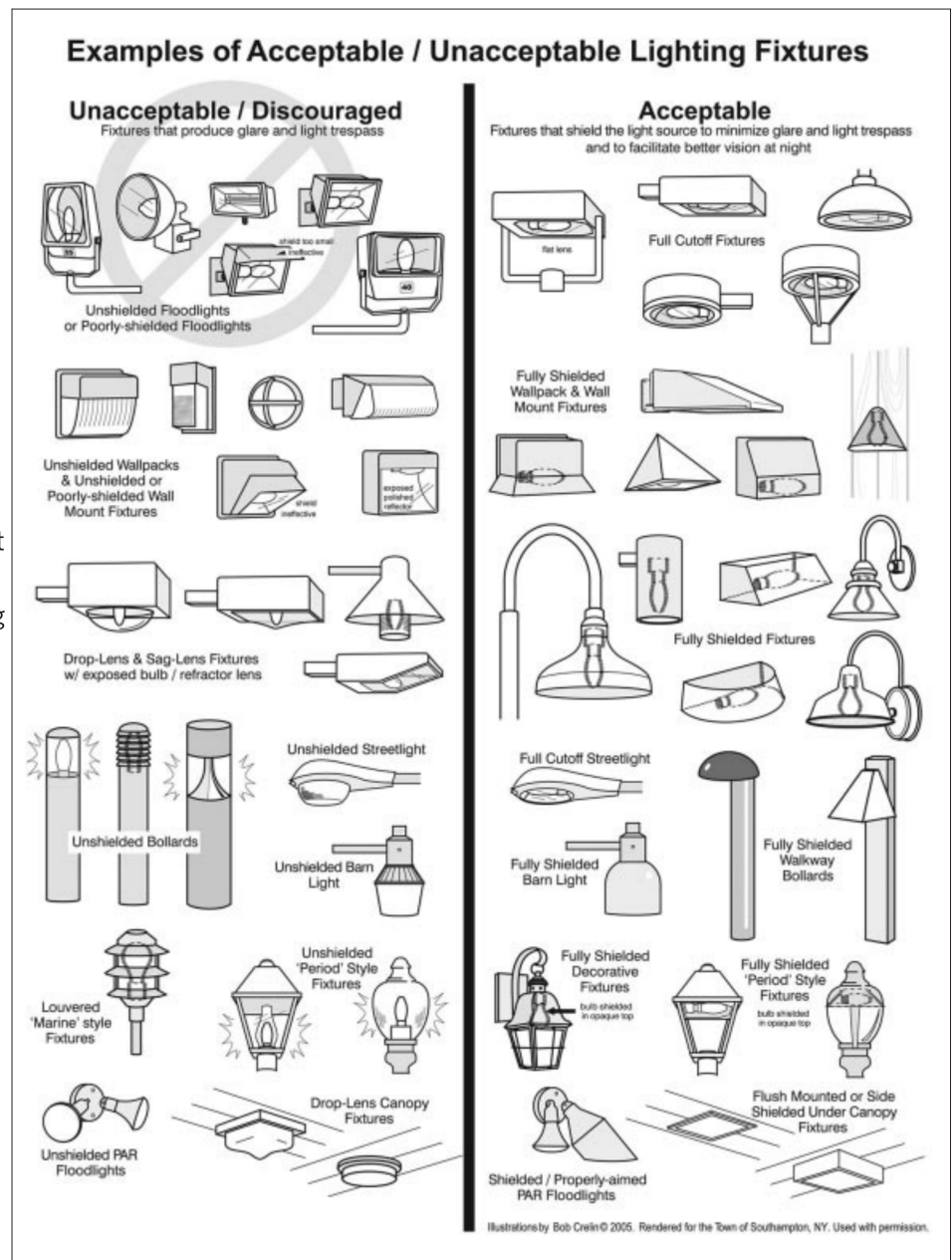
LP-1 Provide information about the [LEED-ND Light Pollution Reduction standard](#) to applicants for commercial site plan review.⁸⁴

LP-2 Provide for the Architectural Board of Review to consider LEED-ND lighting standards when evaluating commercial site plans.

LP-3 Consider recommendation of [a zoning code amendment](#) that restricts harmful and excessive private and public lighting.⁸⁵

What You Can Do

- Add a timer, light sensor, or motion sensor to exterior lights to reduce their operating time.
- Minimize architectural uplighting that sends light directly into the sky.
- When next replacing light fixtures or lightbulbs, select dimmer bulbs that cast yellow light. Color temperatures below 3000K (more yellow than white) are less likely to disrupt wildlife.
- Choose “full cutoff” fixtures that are shielded from sending light upwards, or add shields to existing fixtures. No light should be emitted above the plane of the fixture relative to the ground.⁸⁶



TITLE (9? 10?)

CHAPTER XX: OUTDOOR LIGHTING

10-XX-XX PURPOSE

This chapter governs lighting within the Village, in order to fulfill the objective identified in the Village's Sustainability Plan of combatting light pollution within the Village.

Objectives: The regulation of lighting also accomplishes the following objectives:

- A. Minimize light pollution and glare resulting from the use of outdoor lighting;
- B. Promote efficient and cost-effective lighting and to conserve energy;
- C. Encourage preservation, to the greatest practical extent, of natural nighttime darkness;
- D. Encourage quality outdoor lighting design and prevent inappropriate, poorly designed or installed outdoor lighting;
- E. Reduce unwanted light that would enter homes and businesses at night;
- F. Provide adequate light for safety and security;
- G. Incorporate responsible lighting design into all new construction projects;
- H. Recognize that certain holidays and special events may have unique lighting needs; and
- I. Follow the IES and International Dark-Sky Association's Five Principles for Responsible Outdoor Lighting:
 - 1. **Useful:** All light should have a clear purpose
Before installing or replacing a light, determine whether light is needed. Consider how the use of light will impact the area, including wildlife and the environment. Consider using reflective paints or self-luminous markers for signs, curbs, and steps to reduce the need for permanently installed outdoor lighting.
 - 2. **Targeted:** Light should be directed only to where it's needed
Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.
 - 3. **Low level:** Illumination should be no higher than necessary
Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than was intended.
 - 4. **Controlled:** Light should be used only when it is useful
Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.
 - 5. **Warm-colored:** Use warmer-color lights where possible
Limit the amount of shorter wavelength (blue-violet) light to the least amount needed. Light where you need it, when you need it, in the amount needed, and no more.

10-XX-XX DEFINITIONS

For the purposes of this title, the following terms, phrases, and words shall have the meanings given herein:

Correlated Color Temperature. The absolute temperature of a blackbody whose chromaticity most nearly resembles that of the light source. Correlated Color Temperature is typically expressed in units of kelvins (K).

Footcandle (FC). A quantitative unit measuring the amount of light (illumination) falling onto a given point. One footcandle equals one lumen per square foot.

Fully shielded. A light luminaire constructed, installed and maintained in such a manner that all light emitted from the luminaire, either directly from the light source or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaires lowest light emitting part.

IES. The Illuminating Engineering Society, a non-profit professional organization of lighting specialists that has established recommended design standards for various lighting applications.

Illuminance. The areal density of the luminous flux incident at a point on a surface.

Initial lumens. The number of lumens of light emitted by a luminaire when the lamp is new, not accounting for any depreciation due to the age of the lamp or environmental conditions that may be detrimental due to its performance.

Isocandle plan. A demonstration or topographic of light distribution over a given area.

Light source. The device in a lighting luminaire that provides illumination, typically a bulb, florescent tube, or light emitting diode (LED).

Light trespass. A condition in which light emitted from a luminaire on one property, not inclusive of light incidentally scattered or reflected from adjacent surfaces, is directed in such a manner that the light source is visible from any other property.

Lighting zones. Lighting zones reflect the base (or ambient) light levels desired by a community. The following lighting zones exist in Lake Bluff (definitions per the International Dark-Sky Association):

- **LZ0:** No ambient lighting. Areas where the natural environment will be seriously and adversely affected by lighting. Impacts include disturbing the biological cycles of flora and fauna and/or detracting from human enjoyment and appreciation of the natural environment. Human activity is subordinate in importance to nature. The vision of human residents and users is adapted to total darkness, and they expect to see little or no lighting. When not needed, lighting should be extinguished.
- **LZ1:** Low ambient lighting. Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety, security and/or convenience but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.
- **LZ2:** Moderate ambient lighting. Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety, security and/or convenience but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.

Luminaire. A complete lighting unit consisting of a light source(s) and ballast(s) (when applicable) together with the parts designed to distribute the light, to position and protect the light sources, and to connect the light sources to the power supply. A luminaire does not include any mounting hardware such as poles. Also commonly referred to as lighting fixture.

Lumen. A quantitative unit used to identify the amount of light emitted by a light source. A light source is generally rated in lumens. The luminous flux emitted within a unit solid angle (one steradian) by a point source having a uniform luminous intensity of one candela. Purchased fixtures typically include a lumen rating.

Mounting height. The vertical distance from the ground directly below the centerline of the luminaire to the lowest direct-light-emitting part of the luminaire.

10-XX-XX REGULATED ACTIVITIES

This Chapter shall apply to all exterior residential and non-residential (including public) lighting, including illumination from outdoor signs that impact the outdoor environment. No person shall install or maintain any light luminaire unless such luminaire meets the requirements of this Chapter. If an existing light luminaire is removed, replaced, moved, upgraded, or otherwise changed, it shall only be replaced with a conforming light luminaire.

10-XX-XX LUMINAIRE STANDARDS.

A. Maximum Luminaire Emissions.

1. Fully Shielded. For fully shielded building-mounted luminaires, the maximum permitted light output per luminaire and the maximum permitted luminaire height shall be:

Lighting Zone	Zoning District	Maximum Light Output (lumens)	Minimum Height (feet above grade)	Maximum Height (feet above grade)
LZ0	Parks	0	0	0
LZ1	Residential (Single Family)	1,400	N/A	20
LZ1	Residential (Other Than Single Family)	2,800	N/A	10
LZ2	Other (Non-Residential and Non-Park)	17,500	Greater than 10	30

2. Other Than Fully Shielded. For luminaires that are not fully shielded, the maximum permitted light output per luminaire and the maximum permitted luminaire height shall be:

Lighting Zone	Zoning District	Maximum Light Output (lumens)	Maximum Height (feet above grade)
LZ0	Parks	0	0
LZ1	Residential	700	10

LZ2	Other (Non-Residential and Non-Park)	1,000	15
-----	--------------------------------------	-------	----

- B. Color Temperature. The maximum correlated color temperature (CCT) of any light source shall be equal to or lower than 3,000 Kelvin degrees to help support the natural nighttime environment.
- C. Architectural Façade Lighting.
1. Upward-Aimed Façade Lighting. Upward-aimed façade lights are subject to the lumen output restrictions applicable to luminaires that are not fully shielded luminaires. However, Upward-aimed façade lights shall be fully shielded, fully confined from projecting into the sky by eaves, roofs, or overhangs; and will be mounted as flush to a wall.
 2. Downward-Aimed Façade Lighting. Downward-aimed façade lighting shall be fully shielded and mounted as flush to a wall as possible.
 3. No Reflective Surfaces. No light shall be aimed at any reflective architectural surface, such as polished metal or glass.
- D. Outdoor Sports Lighting.
1. IES lighting guidelines (RP-6) are followed according to the appropriate class of play.
 2. Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications.
 3. Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance).
 4. Off-site impacts of the lighting will be limited to the greatest practical extent possible.
 5. A strict curfew requirement (e.g., lights must be extinguished by 10pm/2200h or one hour after the end of play, whichever is later) is observed.
 6. Timers must be installed to prevent lights being left on accidentally overnight by automatically extinguishing them.
- E. Prohibited Luminaires. No luminaire may be installed that violates the standards of this Section or that:
1. Distracts by flickering, flashing, blinking, scrolling, rotating, or varying in intensity except in response to a time or motion lighting control.
 2. Is upward aiming above 90 degrees, except as otherwise permitted herein.
 3. Is a laser light source.
- F. Exempt Luminaires. The standards of this Section shall not apply to the following luminaires:
1. Regulatory Lighting. Any lighting required by local, state, or federal agencies, to the extent that such requirements are inconsistent with this Section.
 2. Temporary Lighting. Any lighting used for emergency, repair, construction, special events, or similar activities not to exceed thirty (30) days.
 3. Right-of-Way Lighting. Any public lighting **not owned by the Village** that is located within the right-of-way.

4. Underwater Illumination. Any underwater lighting used to illuminate swimming pools or fountains.
5. Landscape or Ornamental Lighting. Any lighting used to illuminate landscaping, paths, or similar outdoor features. After XX, XX 2028, a date 2 years subsequent to the adoption of this Chapter, landscape lighting must be controlled using timers during hours of operation and may not be upward facing. Self-contained solar-operated light luminaires where no luminaire emits more than 100 lumens do not require timers.
6. Seasonal Lighting Displays. Lighting displays during hours of operation from November 15 through January 30 of the following year.
7. Strings of Lights.
 - a. On a property used as a single-family dwelling, suspended strings of lights must be on a timer during the hours of operation after XX, XX 2028, a date 2 years subsequent to the adoption of this Chapter.
 - b. Around, in, or over outdoor dining areas for eating and drinking establishments, the following must be true after XX, XX 2028, a date 2 years subsequent to the adoption of this Chapter:
 - 1) Each bulb emits less than 50 lumens.
 - 2) The lights are only on when the outdoor dining area is in use.
 - 3) Each light must be shielded.
 - 4) The lights must be on a timer during hours of operation.
8. Security Lighting. After XX, XX 2028, a date 2 years subsequent to the adoption of this Chapter, any lighting used for security purposes must be controlled through the use of motion sensors subject to the following:
 - a. The duration of illumination upon each event triggering the motion sensor should not exceed five (5) minutes, after which the switch automatically shuts off;
 - b. The motion sensitivity is set so as to trigger only on the movement of large objects such as animals and people; and
 - c. The motion-sensing switch fails by default into the “off” setting.
- G. Lighting Controls. Outdoor lighting controls should conform with the Village’s latest adopted version of the International Energy Conservation Code (with Illinois Amendments).

10-XX-XX SITE STANDARDS.

- A. Maximum Total Light Emissions. The total light output from all luminaires on any zoning lot shall not exceed a certain ratio of lumens per acre (see chart below). Luminaires (other than fully shielded) may not exceed 10% of all installed lumens. A zoning lot used for single-family residential purposes shall be presumed to satisfy this requirement at the adoption of this Chapter and need not demonstrate conformity unless a major project threshold, as defined in section XX of this Chapter, is achieved.

Lighting Zone	Zoning District	Lumens Per Acre
LZ0	Parks	0
LZ1	Residential (Single Family)	10,000
LZ1	Residential (Other Than Single Family)	20,000
LZ2 or LZ3	Other (Non-Residential and Non-Park)	50,000

B. Light Trespass.

1. General Standard. All outdoor lighting shall be designed, installed, and maintained in order to minimize light trespass onto adjacent properties and rights-of-way.
2. Performance Standard.
 - a. The light source of a luminaire shall not be visible at the property line on which the luminaire is located;
 - b. For adjacent non-residential uses, the illuminance at the property line shall not exceed 1 foot-candle; and
 - c. At any property line “abutting a residential lot”, the illuminance at the property line shall not exceed 0.5 foot-candle.

- C. Hours of Operation. For zoning lots used non-residentially, hours of operation should conform with the Village’s latest adopted version of the International Energy Conservation Code (with Illinois Amendments). For residentially used lots, hours of operation shall be 11:00 pm to 5:00 am.

10-XX-XX SUBMISSION REQUIREMENTS.

- A. Required Technical Submissions. Applications for permits for projects involving outdoor lighting, except for single-family residential projects, shall contain documentation that demonstrates the proposed lighting complies with the provisions of this Chapter. Submission is required at the time of site plan or building permit application and shall contain, but not be limited to, the following, all or part of which may be part of or in addition to other required processes and permits until Titles 9, 10, and 11 of the Municipal Code:
1. Photometric Plan. A point-by-point footcandle array or isocandle plan in a printout format indicating the location and aiming of illuminating devices.
 2. Location and Height. The location and height above grade of all proposed and existing light luminaires on the subject property.
 3. Schedule of Luminaires. The type, initial luminaire lumen rating, color rendering index, correlated color temperature, and wattage of each light source.
 4. Technical Specifications. The general style of the light luminaire such as cutoff, lantern, coach light, globe, and a copy of the manufacturer's catalog information sheet and IES

photometric distribution type, including any shielding information such as house side shields, internal, and/or external shields.

5. Light Controls. Control descriptions including type of controls (timer, motion sensor, time clock, etc.), the light luminaires to be controlled by each type, and control schedule when required;
- B. Waiver for Minor Projects. The Building Commissioner may waive the requirements in subsection A of this Section for small independent projects on less than one-quarter acre, provided the applicant has provided all other required information and can otherwise demonstrate compliance with this article.

10-XX-XX DEVIATIONS.

- A. Purpose. The provisions of this Chapter cannot possibly address every specific situation to which they may have to be applied. Many such situations can be addressed by adjusting the specific provisions of this Chapter in light of the general and specific purposes for which the provisions have been enacted.
- B. Deviation Authority. In conjunction with approval of a site plan, deviations may be granted in implementing the strict standards of this Chapter. Said deviations do not require a finding of hardship or that the deviation will create compensating public amenities. Deviations shall be recommended and approved in the same manner as site plans pursuant to Section 10-2C-5.
- C. Criteria for Deviations. A deviation may be granted where any one of the following criteria is satisfied:
 1. Special Circumstances. There are special circumstances or conditions applying to the land, buildings, or outdoor light luminaires for which the deviation is sought, which circumstances or conditions are peculiar to such land, buildings or outdoor light luminaires and do not apply generally to the land, buildings or outdoor light luminaires in the vicinity.
 2. Professional Standards. Both:
 - a. The use is subject to a special use permit, or is a use that is otherwise rare or uncommon within the Village; and
 - b. The proposed lighting levels are consistent with recommendations from the IES for the use or activity to be undertaken.
 3. Historic Features. Where all of the following are true:
 - a. The lighting luminaire is located on a property designated as a landmark or recognized as a contributing property to a designated historic district;
 - b. The lighting luminaire is of historic significance to the property; and
 - c. Removal of or a modification to the lighting that would otherwise be required to come into compliance with the requirements of this Chapter would have an adverse impact on the historic character of the property.

10-XX-XX NON-CONFORMING LIGHTING; GRANDFATHERING; AMORTIZATION.

- A. Purpose. This Section is intended to (i) gradually eliminate inappropriate and substandard lighting practices throughout the Village in a manner that minimizes unnecessary costs to property owners; (ii) allow property owners to realize a reasonable value from existing lighting systems rendered non-conforming by this Chapter; and (iii) ensure that property owners who voluntarily choose to improve their lighting systems are not placed at a competitive disadvantage relative to the owners of non-conforming lighting systems.
- B. General Standard; Amortization. The outdoor lighting of all non-residential properties in the Village shall be brought into compliance with the standards of this section no later than XX XX 2029, a date 4 years subsequent to the adoption of this Chapter. Residential properties will need to comply in the event of that the Major Project Threshold is met after XX XX, 2026, the effective date of this Chapter.
- C. Fee Adjustments; Early Adoption Incentive. The following discounts shall apply wherever a non-residential property owner proposes to replace a non-conforming lighting system with a completely conforming lighting system:

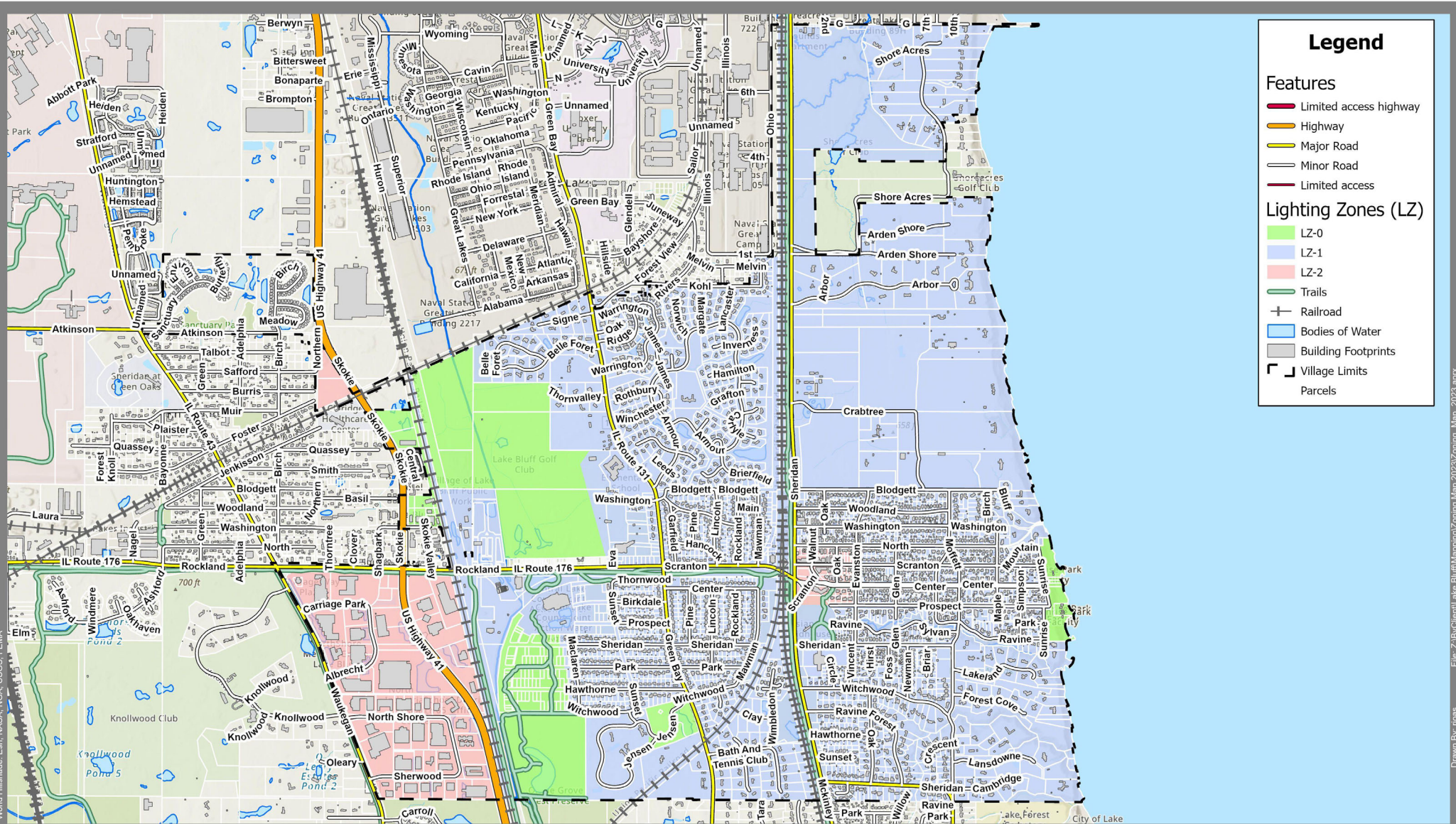
Complete Application Received:	Site Plan Review Fee Discount (if applicable):	Discount for Portion of Building Permit Fee Consisting Of Lighting:
Prior to XX XX 2028 (Less Than 2 Years)	50%	75%
Between XX XX 2029 and XX XX 2031 (Less Than 4 Years)	0%	25%
After XX XX 2031 (Overdue)	0%	0%

- D. Loss of Grandfathered Status.
1. No Replacement of Grandfathered Luminaires; Maintenance Exempted. Whenever a non-conforming luminaire is removed, replaced, moved, upgraded, or otherwise changed, the replacement luminaire must be brought completely into compliance with this Chapter. Routine maintenance is permitted for all existing luminaires, including changing the light source, ballast, starter, photo control, lens, and other required components.
 2. Percentage Replacement Threshold. Whenever more than 20 percent of the original luminaire count of a site is replaced or proposed for replacement with conforming luminaires, the owner shall be required to bring the entirety of the site into conformity with this Chapter.
 3. Major Project Threshold. Owners of residential properties in the Village shall be required to bring the entirety of their site into conformity with this Chapter where any of the following occur relative to a given lot's conditions after XX XX, 2026, the effective date of this Chapter:

- a. Renovation or addition with a total cost exceeding 25 percent of the assessed market value of the building.
 - b. Expansions or additions exceeding 25 percent of existing floor area.
 - c. Any combination of additions or reconstruction of 50 percent or more of the paved area used for on-site parking.
4. Cessation of Use. No lighting system that has been abandoned or willfully removed from operation for a period of longer than 30 days shall be restored to use unless in full compliance with this Chapter.

E. Extension of Amortization Schedule

- 1. Factors for Extension. It is anticipated that the general amortization period provided in this Section will be adequate to provide all property owners with a reasonable value from any non-conforming lighting improvements before they must be replaced. However, the Building Commissioner may extend the amortization period in order to avoid causing an economic hardship based on his consideration of the following factors:
 - a. The owner's investment in improvements and other assets on the property before the time the improvements became non-conforming.
 - b. Any costs that are directly attributable to the compliance date, such as demolition and reconstruction expenses.
 - c. Any return on investment since inception of the non-conforming systems, including net income and depreciation.
 - d. The anticipated annual recovery of investment, including net income and depreciation.
- 2. Extension Binding Upon Owner. The Building Commissioner may provide a date certain for the conclusion of the non-conforming lighting use. All non-conforming lighting systems on the site must cease operations on that day and may not operate thereafter except in complete conformity with this Section. The owner shall sign and acknowledge the revised amortization schedule in writing in a form provided by the Building Commissioner. Said document shall be filed with the Lake County Recorder of Deeds and any requirements, regulations, restrictions, or conditions thereto shall be a covenant running with the land benefitting from the extended schedule.
- 3. No Late Application. No application to extend the amortization schedule shall be accepted after the date listed for full compliance in subsection B of this Section.



Lighting Zones - DRAFT

Village of Lake Bluff, Illinois

GHA GEWALT HAMILTON
ASSOCIATES, INC.
CONSULTING ENGINEERS
www.gha-engineers.com

1 inch = 1,500 Feet





DARK SKY CONSULTING, LLC

MEMORANDUM

To: Drew Irvin, Administrator, Village of Lake Bluff, Illinois

From: John Barentine, Principal Consultant

Date: February 5, 2025

Subject: Lake Bluff draft lighting ordinance

1. Summary

This memorandum provides an analysis of an updated draft version of an outdoor lighting ordinance proposed for the Village of Lake Bluff, Illinois (hereinafter referred to as the “Village”). It identifies and describes the outdoor lighting regulation best practices used to evaluate the updated draft (Section [2](#)). These best practices center on eight core policy principles against which the 2024 and 2025 draft ordinance versions are compared (Section [3](#)). The memorandum concludes with recommendations for changes to the draft are included in order to better align the result with best practices (Section [4](#)). Where alternative options exist for various provisions, they are delineated and explained.

2. Policy and dark-sky best practice bases of this analysis

In order to properly evaluate the provisions in the draft ordinance in terms of their suitability toward the goal of reducing light pollution, we must first choose a reference of best practices. In the subsections that follow below, we identify a series of such best practices that relate to sustainable lighting design, installation and operation that are intended to reduce light pollution while providing for public safety and amenity. We used these references in analyzing the current version of the draft code update to make the recommendations specified in Section [4](#) of this document.

2.1. Five Principles for Responsible Outdoor Lighting

The [Illuminating Engineering Society](#) (IES) is a professional organization of lighting designers and engineers. [DarkSky International](#), formerly known as the International Dark-Sky Association

(IDA), is the world's premiere non-governmental organization advocating for light-pollution reduction and conservation of the natural nighttime environment. In June 2020, IES and IDA jointly published "Five Principles for Responsible Outdoor Lighting",¹ a set of five simple ideas to guide the use and regulation of outdoor lighting. The Five Principles, reproduced below, draw from the most effective, evidence-based lighting practices and distill this knowledge into a series of simple concepts cast in language that is accessible by the public.

1. **Useful:** All light should have a clear purpose
2. **Targeted:** Light should be directed only to where it's needed
3. **Low level:** Illumination should be no higher than necessary
4. **Controlled:** Light should be used only when it is useful
5. **Warm-colored:** Use warmer-color lights where possible

The organizations recommend that *"if light is deemed useful and necessary, follow these guidelines to prevent, or when that's not possible, minimize light pollution."*

2.2. 'Values-centered outdoor lighting'

In January 2021, the IDA Board of Directors adopted a resolution it referred to as "Values-centered outdoor lighting".² The resolution is an elaboration of the Five Principles and a clear statement that none should be considered in isolation from the others. The resolution states:

1. *Responsible outdoor lighting must consider all five principles in its design and installation and only through attention to all five principles will light pollution be minimized to its practical extent.*
2. *Where existing fixtures are replaced, the project should demonstrate how they will reduce light pollution, or at a minimum not increase it.*
3. *Where new installation or lighting retrofit projects are proposed, they should be guided by an assessment process to determine if such lighting is necessary and responsible.*
4. *To reduce skyglow, glare, spill light, and over-lighting, indoor and outdoor lighting should contain and minimize the emission of light beyond the intended target. Light emitted towards or above the horizon can have extraordinarily high environmental impacts.*
5. *To prevent overlighting, actual illumination levels should be as close as reasonably practical to the minimum values recommended by accredited professional bodies (such as IES and CIE) and appropriate for the task and environmental setting. IDA will collaborate with professional bodies to ensure that recommended illumination values are well-founded in science.*

¹ <https://darksky.org/resources/guides-and-how-tos/lighting-principles/>.

²

<https://darksky.org/app/uploads/bsk-pdf-manager/2021/08/BOARD-policy-application-of-light-FINAL-June-24-2021.docx.pdf>.

6. *New installations should have active controls to reduce illumination levels or extinguish lighting completely based on time of day or occupancy. Such controls are currently underutilized in outdoor lighting and can substantially reduce light pollution and save energy. Energy conservation codes are increasingly calling for active controls.*
7. *The spectral content, or color, of light should be limited to only what is necessary for the task. Because of the disproportionate impact on the nighttime environment, particular attention should be paid to reducing the total emissions of short-wavelength or “blue” light (defined for the purposes of this resolution between the wavelengths of 380 nm and 520 nm) through light source spectrum management.*
 - a. *To minimize negative environmental impacts, IDA recommends using lamps rated at 2200K CCT, Phosphor-Converted Amber LED, or some filtered LED.*
 - b. *When higher than 2200K CCT is necessary to meet lighting objectives, keep the total emission of blue light into the environment as low as reasonably possible through low intensities, careful targeting, and reduced operating times.*
 - c. *Near sensitive sites, such as conservation areas, sensitive wildlife habitat, ecological reserves, parks, astronomical observatories, or stargazing sites, IDA recommends that lighting installations use 0% blue light and a narrower spectrum of emission.*
 - d. *Critically sensitive environments should be kept naturally dark.*

2.3. Responsible Outdoor Lighting at Night (ROLAN) manifesto

In December 2022 IDA published the “Responsible Outdoor Lighting at Night” (ROLAN) manifesto.³ Building on the United Nations sustainable development goals (SDGs),⁴ the ROLAN manifesto “sets out ten core principles for external illumination and a plan of action to implement positive change in the lighting community to lead to a more sustainable, healthier, and safer future for all.”⁵

1. *Everyone should have the right to access darkness and quality lighting, and light needs to be used and distributed fairly without discrimination.*
2. *Start your design with darkness and only add light if it supports nocturnal placemaking and protects a view of the stars.*
3. *In all projects, strive to maximize the benefits of outdoor light at night by creating legible, safe spaces and journeys, simultaneously limiting each project’s environmental and financial costs.*
4. *Apply the Five Principles of Responsible Outdoor Lighting in all lighting projects.*
5. *Collaborate with researchers from different disciplines and specialties, such as astronomers, ecologists, biologists, lawyers, etc., so they can provide expertise on unfamiliar topics.*

³ https://darksky.org/app/uploads/bsk-pdf-manager/2022/12/ROLAN-manifesto-white-background_low-res.pdf.

⁴ <https://sdgs.un.org/goals>.

⁵ <https://darksky.org/news/responsible-outdoor-lighting-at-night-rolan-manifesto-for-lighting/>.

6. *Educate your clients about the importance of ROLAN.*
7. *Ensure the community you work with is an active stakeholder and participant in all lighting projects. Enquire about their needs and wishes at night, and provide them with access to information to make informed decisions.*
8. *Embrace technology by asking for support from the lighting industry to ensure that night-time biodiversity is sustained and energy consumption is reduced. Engage with the lighting design industry to deliver an appropriate lighting solution.*
9. *A circular economy should be integrated into the brief, design, specification, and manufacturing process of your project, as well as its installation.*
10. *After project completion, visit the site at night with community stakeholders, to verify that your lighting design was fully implemented and meets ROLAN principles.*

2.4. International Dark Sky Community program guidelines

Since 2001, when Flagstaff, Arizona, was designated by IDA as a “dark-sky city”, the organization has designated over 200 locations worldwide as International Dark Sky Places (IDSPs). The accreditation program “certifies communities, parks, and protected areas around the world that preserve and protect dark sites through responsible lighting policies and public education.”⁶ Its five categories include International Dark Sky Communities (IDSCs). It defines an IDSC as a “a town, city, municipality, or other legally organized community that has shown exceptional dedication to the preservation of the night sky through the implementation and enforcement of a quality outdoor lighting ordinance, dark sky education, and citizen support of dark skies.”⁷

The IDSC label applies specifically to the built environment, with outdoor lighting policy at its core. Its requirements in its program guidelines⁸ have come to be recognized as the ‘gold standard’ in nighttime preservation through municipal policy. Those requirements are reviewed and below.

1. **Shielding:** All lighting fixtures over 1000 initial lamp lumens should be fully shielded such that their light emissions are directed downward toward the intended target rather than shining up into the sky.
2. **Spectrum control:** The emission of short-wavelength light should be appropriately limited. DarkSky recommends that for general outdoor lighting applications the correlated color temperature of light not exceed 3000K.
3. **Unshielded lighting site limits:** The total amount of unshielded light on a given land parcel should be limited through means such as a limit on lumens per net acre or a total site lumen allowance in unshielded luminaires.

⁶ <https://darksky.org/what-we-do/international-dark-sky-places/>.

⁷ <https://darksky.org/what-we-do/international-dark-sky-places/dark-sky-place-types/>.

⁸ <https://darksky.app.box.com/s/o6c1d7o9axk19coocfr5rrk5i3qfh175/file/1327502581392> (PDF).

4. **Over-lighting prevention:** The total light emissions from luminaires in all shielding states should be limited based on developed acreage or by adhering to international standards for allowable illuminance values on a per-application basis. This reduces or even eliminates wasted light by prompting better design, installation and operation of outdoor lighting.
5. **Regulation of special lighting applications** such as publicly owned lighting, outdoor sports lighting, and illuminated signs. DarkSky suggests best practices for regulating each of these special uses of outdoor lighting.
6. **Amortization of existing, non-conforming outdoor lighting:** Lighting that does not comply with local regulations should be brought into full compliance with the law no more than ten years after its enactment.

2.5. The Model Lighting Ordinance

In response to requests from dark-sky advocates and the public for guidance on enacting quality, comprehensive outdoor lighting ordinances, in June 2011 the IES and IDA jointly published the Model Lighting Ordinance (MLO).⁹ Drawing on what was then understood about lighting research and best practices, the MLO aimed to function as model legislation that councils could adapt to their local circumstances. Its main features include:

- Introduction of five “lighting zones”¹⁰ to classify the intensity of land use, with appropriate lighting levels for each. Zones range from LZ0, designed for pristine natural environments and limited or no outdoor lighting, to LZ4, for limited application in areas of extensive development in the largest cities.
- Limits on the amount of light allowed for use on any particular land parcel
- Use of ANSI/IES TM-15-20’s “BUG” (Backlight, Uplight, and Glare) classifications for outdoor lighting fixtures to ensure that only well-shielded fixtures are used; no uplight for area and street lighting is allowed in any zone
- Two means of achieving technical benchmarks (the “prescriptive” and “performance” methods)

The MLO also implements the BUG (Backlight-Uplight-Glare) rating system introduced by IES in 2007 and amended in 2011.¹¹ This scheme assigns allowable light emissions in three broad volumes and replaces the earlier IES ‘cutoff’ nomenclature describing the emission pattern of luminaires; see Figure 1.

⁹ <https://darksky.org/resources/guides-and-how-tos/model-lighting-ordinances/>.

¹⁰ <https://darksky.org/resources/guides-and-how-tos/lighting-zones/>.

¹¹ Illuminating Engineering Society of North America, Luminaire Classification System For Outdoor Luminaires (IES TM-15-07), 2007; amended 2011 as IES TM-15-11. TM-15 was further modified in 2020 as [IES TM-15-20](#).

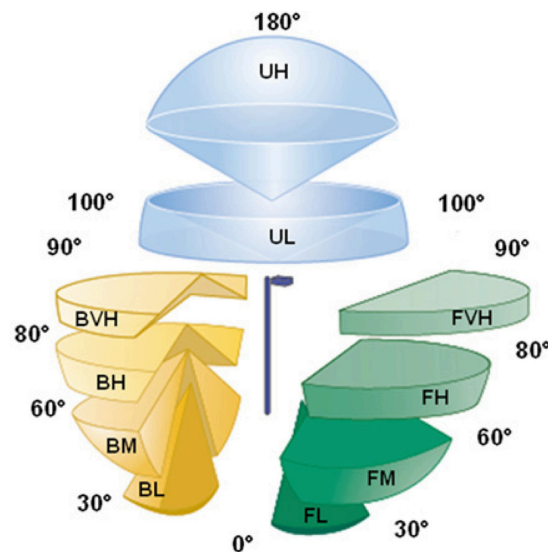


Figure 1. Graphical depiction of the IES 'BUG' Rating system consisting of backlight (yellow), uplight (blue) and glare (green) light emission zones in which acceptable values are given in IES TM-15-07. Each emission zone is further subdivided into regions defined according to the indicated angular ranges with respect to the local nadir (0°).

Further features and innovations of the MLO include:

- Lighting controls are required for all lighting, including both astronomic timers as well as dimming capabilities (Sec. III(C))
- Curfews for all lighting that involves lowering light levels at the curfew hour by at least 30% (Sec. III(C)(2))
- Total light emission restrictions for non-residential land parcels that can be determined using one of two methods (Sec. IV)
- Full shielding of all lighting and appropriate lumen limits for residential land parcels (Sec. V)
- Guidance for lighting types allowed by special permission only, such as high-intensity sources, lasers, searchlights, outdoor athletic facilities and parking structures (Sec. VI)
- An amortization schedule for existing, non-conforming lighting (Sec. VII)
- Street and roadway lighting is not addressed in the main body of the document, but rather in an annex that gives specific prescriptions for this type of lighting (Sec. IX)

2.6. Other examples of lighting policy best practice

Some ideas that are increasingly expressed in outdoor lighting ordinance provisions are not explicitly mentioned in the policy references above. However, they are consistent with the spirit of these recommendations. We briefly describe each below.

2.6.1. Statements of legislative intent

Recitations and other language in the preambles of outdoor lighting ordinances serve to establish the factors that motivated their enactment and the goals of the lawmakers who frame their provisions. Including these statements in ordinances guides their implementation and enforcement, and they can help judges to better interpret the intended meaning of ordinances.

2.6.2. Light trespass

“Light trespass” is a condition in which artificial light emitted from a luminaire on one property, not inclusive of light incidentally scattered or reflected from adjacent surfaces, is directed in such a manner that the light source is visible from any other property. Light trespass that diminishes the use or enjoyment of a property by its owner has been found to be a form of nuisance under the common law.¹²

2.6.3. General curfew

This idea proceeds from the presumption that most lighting is not needed and serves no practical purposes during the overnight hours when there is little or no human presence in an area. A general curfew calls for most outdoor lighting to be dimmed and/or extinguished between a particular hour of night and dawn or sunrise of the following day. The curfew hour can depend on lighting zone, land use, or other considerations, and certain situations (e.g., businesses open to the public 24 hours a day) can be exempted from this requirement.

2.6.4. Prohibitions

For a variety of reasons, codes sometimes completely prohibit certain types of lighting and/or lighting applications. Some examples are advertising searchlights; laser light sources; landscape/architectural uplighting; certain lamp types; and lighting that dynamically varies its output by intermittently fading, flashing, blinking, or rotating.

2.6.5. Exemptions

Similarly, certain kinds of lighting are granted exemption from the provisions of outdoor lighting ordinances. These exemptions may be total or partial. Common exemptions include holiday

¹² Johnson, A.L. “Blinded by the Light: Addressing the Growing Light Pollution Problem”. *Texas A&M Journal of Property Law*, Vol. 2, No. 3, pp. 461-480 (2015).
<https://scholarship.law.tamu.edu/cgi/viewcontent.cgi?article=1032&context=journal-of-property-law>.

lighting; lighting of swimming pools and similar water features; lighting used by emergency first responders; and lighting required by any legal jurisdiction higher than the municipality.

2.6.5. Permitting of temporary and permanent lighting installations

Whether an installation of light is temporary or permanent, it should be subject to some form of plan review that ensures that the law is followed. For temporary installations, permits should be limited in duration and the number of times that they can be renewed. These installations may be granted exemption from regulation by the outdoor lighting ordinance; however, the applicant should be required to show that the installation will adhere to the requirements of the ordinance to the greatest practical extent possible. Plan review for permanent installation should be conducted early in the permitting process, and it should be followed by inspections of lighting as installed to ensure compliance with the outdoor lighting ordinance before a certificate of occupancy is issued.

3. Comparison of the updated ordinance draft and dark-sky best practices

In the following subsections, the text of the ordinance draft is compared against light pollution reduction principles in the policy and practice sources described in Section [2](#). The findings inform a series of ten recommendations presented in Section [4](#). For each item, we reference our 2024 evaluation of the first version of the draft and compare it to what we found in the current (2025) version.

3.1. Shielding

2024: Subsection A of “Luminaire Standards” contained a prescription for light shielding that depended on both the intensity of the light source and the type of use (specifically, residential versus non-residential). Full cutoff shielding was required for individual sources exceeding 700 lumens on residential uses and 1400 lumens on nonresidential uses.

2025: This provision is unchanged since the earlier version.

3.2. Spectrum control

2024: Subsection C of “Luminaire Standards” set a correlated color temperature (CCT) limit of 4300 K for all sources, exceeding the recommended limit of 3000K for most lighting

applications in order to limit the emission of harmful short-wavelength (blue) light into the nighttime environment.

2025: Color temperature is now addressed in Subsection B of “Luminaire Standards” and sets a CCT limit of 3000 K for “any light source”. However, “Non-Conforming Lighting; Grandfathering; Amortization” Subsection D(1)(a) offers an exception to this requirement if *“the owner demonstrates to the satisfaction of the Building Commissioner that no light source with an acceptable color temperature is available for the luminaire.”*

3.3. Unshielded lighting site limits

2024: This draft version did not set any particular limit for the amount of unshielded lighting that can be installed on a parcel. Given that the draft allowed unshielded luminaires below the lumen thresholds stated above, a property owner could effectively thwart the intent of the ordinance by installing many individual luminaires, none of which individually reached the shielding threshold.

2025: Subsection A of “Site Standards” now provides that *“luminaires (other than fully shielded) may not exceed 10% of all installed lumens.”*

3.4. Over-lighting prevention

2024: Subsection A of “Site Standards” imposed a limit on the installed outdoor lighting of 100,000 lumens per acre irrespective of the shielding state of the lighting. For this purpose, the lumens used in the calculation were to be *“the manufacturer’s initial lumen rating at the end of 100 hours of operation”*.

2025: Subsection A of “Site Standards” now states limits on the number of installed lumens per developed acre in all shielding states: 10,000 lumens for single-family residential uses; 20,000 lumens for residential uses other than single-family; and 50,000 lumens for other “Non-Residential and Non-Park” uses. These figures are not inconsistent with typical allowances in other U.S. municipalities for comparable land-use zoning.

3.5. Light trespass prohibition

2024: Light trespass was defined in the Definitions section as *“unwanted light spilling onto an adjacent property and/or an excessive brightness (i.e. glare) is occurring in the normal field of vision.”* Subsection C of “Site Standards” stated a general policy that called for all outdoor lighting to be *“designed, installed, and maintained in order to minimize light trespass onto adjacent properties and rights-of-way.”* Three performance standards followed:

1. *The light source of a luminaire shall not be visible at the property line on which the luminaire is located;*
2. *For adjacent non-residential uses, the illuminance at the property line shall not exceed 1 foot-candle; and*
3. *At any property line “abutting a residential lot”, the illuminance at the property line shall not exceed 0.5 foot-candle.*

2025: The definition of light trespass in the 2024 version is dropped. The same trespass thresholds in that version are retained in Subsection B of “Site Standards”. We noted previously that the numbers quoted for each case are consistent with figures appearing in many other U.S. municipal ordinances.

3.6. General curfew

2024: This was addressed in Subsection D of “Site Standards” as “Hours of operation”. Exempting street lighting, it permitted all luminaires to be operated at maximum intensity from 30 minutes before sunset and the later of 10pm or one hour after the close of normal business hours. It did not include a parallel standard for lighting to be extinguished on the morning side after sunrise. After the evening curfew hour, lighting whose application is characterized as ensuring “safety and security” would have been allowed to remain on provided that it was dimmed to 25% of its maximum intensity.

2025: “Hours of Operation”, now Subsection C of “Site Standards”, now reads: *“For zoning lots used non-residentially, hours of operation should conform with the Village’s latest adopted version of the International Energy Conservation Code (with Illinois Amendments). For residentially used lots, hours of operation shall be midnight to 5 am.”* This wording makes it unclear whether any particular curfew hour exists.

3.7. Regulation of publicly owned outdoor lighting

2024: This draft version contained no such provision. Subsection F(c) of “Luminaire Standards” exempted “any public lighting that is located within the right-of-way”.

2025: The “Regulated Activities” section now states that the code is applicable to “*all exterior residential and non-residential (including public) lighting*”. However, “Luminaire Standards” Subsection E(3) exempts from regulation “[a]ny public lighting that is located within the right-of-way.” That sets up a direct conflict between the two provisions.

3.8. Amortization of existing, non-conforming lighting

2024: Subsection B of “Non-conforming lighting; grandfather; amortization” would have established a ten-year amortization period for existing non-conforming lighting in the Village, a time period consistent with best practice.

2025: Subsection B of “Non-conforming lighting; grandfather; amortization” now amortizes existing, non-conforming lighting on non-residential properties within four years of the enactment date of the updated code. A seven-year amortization period applies to residential properties only when the “Major Project Threshold” of “Non-conforming lighting; grandfather; amortization”, Subsection D(3) is triggered.

4. Recommendations

Based on the above analysis, we suggest the following improvements to the draft:

4.1. General recommendations

The following observations and suggested changes are noted:

- **Shorten all instances of “light luminaire” to simply “luminaire”.** The word “light” is redundant and unnecessary.
- **Drop mentions of “fixture” in the text in favor of “luminaire”.** These terms are used interchangeably, but they are not strictly interchangeable.
- **Clarify the intent of referring to “building-mounted luminaires”** in “Luminaire Standards” Subsection A(1) when stating the maximum per-luminaire light emission thresholds. It is currently unclear whether the same standard also applies to, e.g., pole-mounted luminaires.
- **Consider replacing the letter “X” in allowance tables with “0”,** or otherwise state in words that “X” means something is disallowed in the stated circumstances. “X” may not convey the intent to, for example, disallow permanently installed outdoor lighting in Lighting Zone 0.
- **Drop mention of Lighting Zone 3 (LZ3).** Lake Bluff really doesn't have any situations that would properly be labeled LZ3, which the IES defines as “Moderately High Ambient Lighting”. That would be something more like the downtown core or commercial district of a bigger U.S. city.
- **Consider instituting a formal process for permitting temporary lighting installations,** as exempted in “Luminaire Standards” Subsection E(2) for special events. Lighting used in true emergency situations can be entirely unregulated. For repair and construction work, the lighting should be permitted and the user should be obligated to comply with the ordinance to the greatest degree possible, to at least ensure that lighting does not shine directly onto adjacent properties or into public rights of way.

- **Place some reasonable restrictions on the use of “Landscape or Ornamental Lighting”,** which is otherwise exempted by “Luminaire Standards” Subsection E(5). At a minimum, this kind of lighting should be subject to site lumen limits specified in “Site Standards” Subsection A.
- **“Seasonal Lighting Displays”, exempted from compliance in “Luminaire Standards” Subsection E(6), should be subject to regulation beyond simply a range of permitted dates.** Reasonable limits could include lumen caps and a curfew hour. Regarding the permitted dates (November 15 through January 30), it is thought that setting date ranges like this may run afoul of First Amendment concerns.
- **We recommend against exempting string lighting from regulation in any particular situation,** as in “Luminaire Standards” Subsection E(7)(a) for residential uses. At a minimum, this lighting should be subject to curfews and limited in intensity. Otherwise it has a tendency, especially in residential zones, to be a source of nuisance. Fully exempting it also allows seasonal lighting to essentially become permanent, which conflicts with Subsection E(6).
- The prescription for string lighting lumen allowances “Luminaire Standards” Subsection E(7)(b)(1)-(2) allows different lumen values for different lamp types. There is no good reason for making such a distinction. **We recommend setting a single lumen threshold irrespective of the lamp type.** Furthermore, as written this allows for an unlimited amount of string lighting to be installed. We recommend capping this to some reasonable number, whether an absolute number of lumens or something like lumens per linear foot of string length.
- **To the items listed in “Submission Requirements” Subsection A(3) (“Schedule of Luminaires”) add “correlated color temperature”.**

4.2. Definitions

Certain changes to the definitions section are suggested:

1. **Add a definition of “Correlated Color Temperature”.** The IES [defines](#) CCT as *“the absolute temperature of a blackbody whose chromaticity most nearly resembles that of the light source.”* To this might be added language to the effect that “Correlated Color Temperature is typically expressed in units of kelvins (K).”
2. **Add a definition of “illuminance”.** This term is used in “Site Standards” Subsection B(2)(b)-(c). It is also implied in the definition of foot-candle: *“amount of light (illumination) falling onto a given point”*, which means the same thing as illuminance. The IES [definition](#) of illuminance is “The areal density of the luminous flux incident at a point on a surface.”

3. **Use “IES” instead of “IESNA”.** The organization has consistently discontinued the reference “of North America” since 2010 and is now known as “IES”. Instances of “IESNA” remain in the current draft.
4. **Return to a definition of “light trespass” dropped since the previous draft.** The IES [definition](#) is “*the encroachment of light, typically across property boundaries, causing annoyance, loss of privacy, or other nuisance.*” A more practical definition we suggest is “a condition in which light emitted from a luminaire on one property, not inclusive of light incidentally scattered or reflected from adjacent surfaces, is directed in such a manner that the light source is visible from any other property.”
5. **Consider adding IES definitions of Lighting Zones.** In order to make the intent behind matching the Lighting Zones to Zoning Districts, I recommend defining the Lighting Zones according to the definitions in the [Model Lighting Ordinance](#).
6. **Add a definition of “developed acre” if it does not appear elsewhere in the zoning code.** In the current draft lighting ordinance, the term is used in “Site Standards” Subsection A without a definition. If it is defined elsewhere, make sure a reference to that definition appears in the draft.
7. **Add a definition of “initial lumens”.** This is necessitated by the wording in “Submission Requirements” Subsection A(3) that refers to the “initial luminaire lumen rating” of lighting. There is no IES definition of this term. We suggest something like: “*the number of lumens of light emitted by a luminaire when the lamp is new, not accounting for any depreciation due to the age of the lamp or environmental conditions that may be detrimental to its performance.*”

4.3. Amortization of existing, non-conforming luminaires

“Non-Conforming Lighting; Grandfathering; Amortization” Subsection B in the current draft of the code update provides for amortization of existing, non-conforming luminaires on both residential and non-residential uses with specified sunset dates for the end of exemption from compliance. However, it limits the reach of this provision in the case of residential uses to situations where the Major Project Threshold is met. This seems to imply that unless that circumstance occurs, amortization does not apply to residential uses. To otherwise exempt residential properties from an amortization period except for situations such as major renovations is inconsistent with dark-sky best practice. **We recommend imposing an amortization period on residential uses, regardless of whether the Major Project Threshold is met, not to exceed ten years.**

We further note that “Non-Conforming Lighting; Grandfathering; Amortization” Subsection E allows for indefinite extension of the grandfathering period for legal non-conforming

luminaires “in order to avoid causing an economic hardship”. This is not unreasonable, but the current language is a blank check that potentially allows owners of such lighting to avoid replacing it until it fails. **We recommend stating an absolute upper limit to allowable extensions such that exemptions do not become effectively permanent.** Most outdoor lighting equipment will fail in place and require replacement on a timescale of roughly ten years. **We recommend that any extensions so granted not exceed that duration.**

4.4. Shielding

As an optional consideration, if Lake Bluff intended to apply for the the International Dark Sky Community designation at some later date, the shielding allowance for “Other Than Fully Shielded” lighting stated in “Luminaire Standards” Subsection A(2) exceeds that allowed by DarkSky International for unshielded lighting. **Consider lowering the shielding threshold for “Non-Residential and Non-Park” uses to no more than 1,000 lumens per luminaire.**

4.5. Security lighting and the use of motion sensors

Since the 2024 draft, the code language now refers explicitly to “Security Lighting” in “Luminaire Standards” Subsection E(9), requiring that “any lighting used for security purposes must be controlled through the use of motion sensors.” This is a reasonable position that enables lighting for this application in a way that is consistent with the Five Principles for Responsible Outdoor Lighting. That said, motion-sensing switches for outdoor lighting applications are often poorly deployed and regulated. To that end **we recommend that if security lighting is to be allowed with no other limitations, the motion-sensing requirement should be tightened up accordingly:**

1. The duration of illumination upon each event triggering the motion sensor should not exceed five (5) minutes, after which the switch automatically shuts off; and
2. The motion sensitivity is set so as to trigger only on the movement of large objects such as animals and people; and
3. The motion-sensing switch fails by default into the “off” setting.

4.6. Correlated color temperature limit exemption

Subsection B of “Luminaire Standards” in the current draft sets a CCT limit of 3000 K for “any light source”. But “Non-Conforming Lighting; Grandfathering; Amortization” Subsection D(1)(a) enables legal non-conforming luminaires to be re-lamped with sources exceeding 3000 K if “the owner demonstrates to the satisfaction of the Building Commissioner that no light source with an acceptable color temperature is available for the luminaire.” We feel that this kind of scenario is highly unlikely unless a property owner insists on using a particular kind of luminaire down to

the details of the manufacturer and model. 3000 K is now a standard product offering across a wide range of outdoor lighting products sold in the U.S., so it is difficult to imagine that a suitable alternative at an acceptable CCT would not be available for any particular luminaire. **We therefore recommend striking this provision.**

4.7. Lumens caps

The current draft imposes site limits in units of lumens per developed acre in “Site Standards” Subsection A. However, it seems to exempt residential uses from demonstrating compliance either in plan review or post-installation inspection: “*A zoning lot used for single-family residential purposes shall be presumed to satisfy this requirement and need not demonstrate conformity.*” It is unclear why residential uses should be exempted from demonstrating compliance with this provision when it would not be exempted from demonstrating compliance with other code elements as a matter of routine. It seems to imply the impossibility of enforcing this part of the code. **We recommend against this.**

4.8. Public lighting

In the current draft, “Luminaire Standards” Subsection E(3) continues to exempt “*any public lighting that is located within the right-of-way*” from adhering to the provisions of the ordinance. This is inconsistent with dark-sky lighting best practice and sets a bad example for the community when the ordinance obligates private property owners to follow the law. This does not mean that publicly owned lighting should be subject to all of the same requirements as private lighting, but it should observe at least the basics such as shielding and color temperature.

We again recommend that the Village remove the blanket exemption from the draft and consider replacing it with a statement that indicates where, when and under what circumstances it will install lighting on public properties. Ideally the default position of the Village would be to *not* use light unless it adheres to the Five Principles for Responsible Outdoor Lighting, including a clearly identifiable purpose. Its use should also be conditioned on the provision of adaptive controls that dim or extinguish the lighting at times when it is not needed.

Alternate option: The Village could choose not to codify a warranting statement in the ordinance itself but instead to affect one through a policy memo from the Village Administrator.

4.9. Outdoor sports lighting

The current draft version now deals with outdoor sports lighting only by exempting it in “Luminaire Standards” Subsection E(8) with the proviso that “*any lighting used for outdoor*

recreational facilities must be controlled using timers and may not be upward facing." This is a good start, but **we continue to recommend that the Village add comprehensive regulations for outdoor sports lighting to the ordinance consistent with DarkSky International guidance.** In particular, we recommend adopting the elements of the International Dark Sky Community guidelines specific to athletic field lighting:

1. *IES lighting guidelines (RP-6) are followed according to the appropriate class of play*
2. *Field lighting is provided exclusively for illumination of the surface of play and viewing stands, and not for any other applications*
3. *Illuminance levels must be adjustable based on the task (e.g., active play vs. field maintenance)*
4. *Off-site impacts of the lighting will be limited to the greatest practical extent possible*
5. *A strict curfew requirement (e.g., lights must be extinguished by 10pm/2200h or one hour after the end of play, whichever is later) is observed*
6. *Timers must be installed to prevent lights being left on accidentally overnight by automatically extinguishing them*

4.10. Sign code

The sign code (Chapter 10) regulates aspects of illuminated signs that may either conflict with the provisions of the draft lighting code or that otherwise do not follow best practice. **We recommend that the Village consider amending the sign code as needed to modernize it,** especially with respect to the regulation of electronic displays, and to harmonize its content with the lighting code.

Five Lighting Principles for Responsible Outdoor Lighting



Responsible outdoor lighting is

1 Useful

Use light only if it is needed

All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.



2 Targeted

Direct light so it falls only where it is needed

Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.



3 Low Level

Light should be no brighter than necessary

Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than intended.



4 Controlled

Use light only when it is needed

Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.



5 Warm-colored

Use warmer color lights where possible

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.



Outdoor Lighting Standards in Neighbor Communities		
<i>Municipality</i>	<i>Residential Standards</i>	<i>Commercial/Industrial Standards</i>
Lake Forest	Limits on glare and spillover; full cutoff fixtures near property lines; decorative fixture limits.	Full cutoff fixtures; max foot-candle at property line; parking lot lighting curfews.
Glencoe	Shielded fixtures required near neighbors; height limits for yard lighting.	Strict shielding; lighting plan required; max parking illumination levels.
Northfield	No glare onto adjacent properties; pole height limits.	Full cutoff fixtures; illumination caps; required lighting plans.
Libertyville	Downward-aimed or shielded fixtures; spillover limits; decorative lighting allowed.	Pole height limits; cutoff fixtures; measured foot-candle caps.
Highland Park	Shielding required; limits on accent lighting.	Strict illumination caps; detailed photometric plan; cutoff fixtures.
Evanston	Regulation of nuisance lighting; shielding required; dark-sky-friendly suggestions.	Full cutoff fixtures; max foot-candle limits; lighting plan required.
Wilmette	No glare or nuisance permitted; wattage limits in some districts.	Cutoff fixtures for parking and commercial uses; brightness limits.
Kenilworth	Low-intensity lighting; shielding required; historic district controls.	Shielded fixtures; strict spillover limits (limited commercial areas).
Winnetka	Shielding required; restrictions on up-lighting and landscape lighting.	Lighting plans required; cutoff fixtures; strict illumination caps.

VILLAGE OF LAKE BLUFF

Memorandum

TO: Chair Hunter and Members of the Architectural Board of Review, and Chair Peters and Members of the Joint Plan Commission & Zoning Board of Appeals

FROM: Max Morgan, Assistant to the Village Administrator

DATE: September 18, 2026

SUBJECT: Agenda Item #4 - Presentation and Discussion Regarding R5 Residential Zoning District Multifamily Regulations Assessment & CBD Density / Design Expectations

Summary

The Village's 2025 Comprehensive Land Use Plan ("Plan") implementation schedule includes goals and objectives related to multi-family housing, with particular focus on redevelopment in the R5 multi-family zoning district (R5) and Central Business District ("CBD") Block 2. More specifically, action items include:

1. Undertake a zoning assessment with a special focus on R-5 regulations to ensure the zoning code is transparent, current, and advances community values.
 - a. Identify and remove regulatory barriers to multifamily residential construction in the R-5 Multifamily District, the western commercial district of the Village, and appropriate portions of identified subareas.
 - b. Establish design guidelines for R-5 zoned properties.
2. Recruit a developer to the 611 Walnut and 33 East North properties.
3. Explore redevelopment and/or building addition options with CBD property owners of priority properties.
4. Retain the unique residential character of the neighborhood through design and land planning techniques.
5. Establish density and urban design expectations for future development.
6. Expand the scope of design guidelines to include commercial, industrial, mixed-use, and multifamily residential development across the Village.

Over the past several months, the PCZBA has initiated a zoning assessment of the R5 zoning district and (Item 1 above) reached a point where they believe bringing the ABR into the assessment will prove valuable. Currently, the Village's land use regulations do not completely align with goals for multi-family housing in the R5 district and CBD Block 2. In what we believe to be the first in a series of meetings, the purpose of this work session is to:

1. Review the background for multi-family housing goals in the R5 and Central Business districts.
2. Determine the Village's vision for multi-family housing in the R5 and CBD Block 2 with respect to look, feel, scale, and compatibility with neighboring properties.
3. Identify what additional information is needed for the Village to consider updates to land use regulations and design standards, that support appropriate redevelopment in the R5 zoning district and CBD Block 2.
4. Identify next steps to advance the vision for multi-family housing in the R5 and CBD Block 2.

Study Area

