Agenda
Village of Glen Ellyn
Environmental Commission
Tuesday, October 20, 2020
7:00 PM
Glen Ellyn Civic Center, Galligan Board Room
and Via Zoom

This meeting will be conducted by audio and video conference without a physically present quorum of the Commission because of a disaster declaration related to COVID-19 and public health concerns affecting the Village of Glen Ellyn. The Illinois General Assembly passed Senate Bill 2135 on May 23, 2020, which was signed by the Governor on June 12, 2020. Senate Bill 2135 (now Public Act 1010640) amends the Open Meetings Act and allows the Village Board and Commissions to participate electronically in Board and Commission meetings when it is not feasible due to a disaster such as COVID-19. The Village President has determined that an in person meeting at the Civic Center is not practical or prudent because of the disaster. Physical attendance at the Civic Center by the public is also not feasible because of the disaster. The Finance Director will be in attendance at the Civic Center in compliance with the Act.

To participate in the meeting at the appointed date and time, please click the link below to join the webinar:
https://us02web.zoom.us/j/83179808217?pwd=THlIczhwL0xPSVdJYzFHbXlndDgzZz09
Passcode: 852217
Telephone:
Dial(for higher quality, dial a number based on your current location):
US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 253 215 8782 or +1 346 248 7799 or +1 669 900 9128
Webinar ID: 831 7980 8217
Passcode: 852217

A. Call to Order

B. Public Participation

1) Dark Sky Presentation by Adam Kreuzer

C. Minute Approval

1) Regular Meeting Minutes - September 15, 2020

D. Announcements

E. Trustee Liaison's Report

F. Staff Liaison's Report

G. Commission Discussion and Reports

1) Tree Preservation Plan Discussion
2) Discuss Greenest Region Compact Initiatives
3) Report on Recycling Marketing
4) Report on Arts Initiatives
5) Report on Park District Initiatives

H. Next Meeting Date & Adjournment

1) The next Environmental Commission Meeting is planned for November 17, 2020 at 7:00pm.

2) Adjournment

Dear Chairperson Truitt,

First, on behalf of the International Dark-Sky Association (IDA), thank you for the invitation to chat with the Glen Ellyn Environmental Commission. The IDA very much appreciates the opportunity to discuss with the Commission Artificial Light at Night (ALAN), the significant consequences of ALAN and what municipalities and its residents can do to address the consequences of ALAN. Fortunately, unlike most forms of pollution, with a little education and better, affordable outdoor lighting design, ALAN is an easy fix.

For the most part, the many, significant consequences of ALAN arise from blue light emitted from outdoor LED lights that are not properly shielded. (The Promise and Challenge of LED Lighting: A Practical Guide, is attached.) While LEDs should be used in and outdoors, LEDs that have a Kelvin score greater than 3000K should never be used outdoors. Currently, 2700K LEDs with lumens at not more than 450 (40 watts) are preferred. These bulbs remove most of the blue light that harm humans and our wildlife friends. Also, IDA encourages municipalities and their residents to use fewer outdoors lights. For lights that must remain on during the night for security reasons or otherwise, IDA prefers that the LEDs be on a timer or a dimmer.

Most importantly, ALL outdoor lights must be properly shielded. Outdoor fixtures that properly shield light down to the ground are readily available to our municipalities and its residents. Properly shielded fixtures are more attractive than fixtures that do not shield the light to the ground and are very affordable. For residents, the fixtures can be found on IDA's website and at all local hardware stores, including Home Depot and Menards. Fixtures that do not shield light to the ground cause light trespass, glare and skyglow.

In the past, the Commission has stated recommendations to Public Works regarding proper outdoor LED lights and fixtures. Unfortunately, at some locations, the Village has installed LEDs that exceed 3000K and the Village continues to keep lighted the un-shielded tops of its otherwise Dark-Sky compliant fixtures within CBD. The Village has yet to consider an ordinance to address improper outdoor lighting. Certainly, the Village should consider addressing outdoor lighting with developers and builders when confronted with new commercial and residential construction.

Lastly, please recall that this year the Commission submitted for publication for the Spring Newsletter a guide on ALAN and how to address it. The Village published the Commission's guidelines. Moving forward, there may be additional opportunities to educate the Village's residents about ALAN, its consequences and how to best resolve outdoor artificial light at night.

Again, thanks!

Adam Kreuzer, International Dark-Sky Delegate, www.darksky.org

THE PROMISE AND CHALLENGE OF LED LIGHTING: A PRACTICAL GUIDE

A PUBLICATION OF THE
INTERNATIONAL DARK-SKY ASSOCIATION

The light-emitting diode (LED) is transforming the way we light our cities and towns, offering a once-in-a-lifetime chance to radically improve how we use energy and our outdoor spaces at night. With this opportunity comes an obligation to manage these changes responsibly and sustainably. The stakes are high and the potential rewards great, but outcomes depend critically on policymakers and the public having access to reliable information. IDA developed this document to provide planners, lighting designers and public officials an overview of the most important aspects of LED lighting and the choices and challenges involved in its municipal implementation.

What is LED?

LEDs use solid-state technology to convert electricity into light. Put simply, LEDs are very small light bulbs that fit into an electrical circuit. Unlike traditional incandescent bulbs, they don't have a filament that burns out and they don't get very warm. Initially, LEDs only emitted red, yellow, or green light, but now white LEDs are widely available. Early LEDs were also energy-inefficient and emitted little light, but due to technological advances LED efficiency and light output have doubled about every three years. Because of their improved quality and falling prices, LEDs are now replacing conventional high-intensity discharge (HID) lamp types for outdoor lighting in communities around the world.

Why Adopt This Technology?

The improved energy efficiency of LEDs means that, coupled with modern luminaire design, these lights allow for reduced illuminance without compromising safety. LEDs help lower carbon emissions by reducing the demand for electricity, which is still largely generated by burning fossil fuels. Another LED benefit is better control over the color content of light. Manufacturers now produce LEDs with "warm" color qualities at high energy efficiency, rendering old arguments about the perceived inefficiency of warm white LEDs moot. These same LED options also provide accurate color rendition without emitting excessive amounts of potentially harmful blue light (see below).

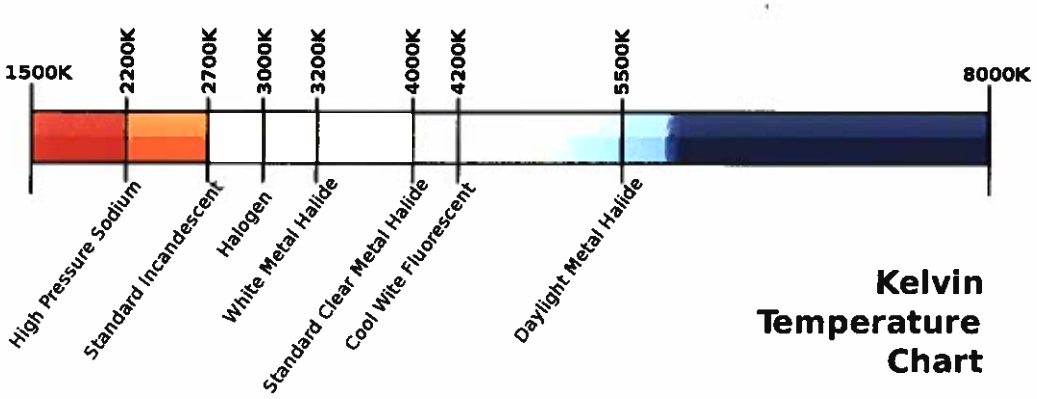
Relative to other outdoor lamps, LEDs are thought to be extremely long-lived. When switched on, LEDs are instantly at full brightness, unlike HID lamps that have a significant time delay to begin emitting light. LEDs also have very low minimum electricity thresholds to produce light, meaning they can be dimmed to much lower illumination levels when less light is needed and resulting in further energy savings.

Blue Light Is Bad

New technical capabilities often come with unanticipated challenges. Most white LED lighting has significant levels of potentially hazardous blue light. IDA published a report[1] in 2010 detailing the hazards of blue-rich white light sources. In the years since, scientific evidence has solidified around its conclusions. In June 2016, the American Medical Association (AMA) publicly concluded[2] that "*white LED street lighting patterns [may] contribute to the risk of chronic disease in the populations of cities in which they have been installed*." The AMA recommends "*minimizing and controlling blue-rich environmental lighting by using the lowest emission of blue light possible*" in order to reduce potential negative effects on human health.

Concerns about blue light reach far beyond our health. Outdoor lighting with strong blue content is likely to worsen skyglow because it has a significantly larger geographic reach than lighting consisting of less blue. According to the 2016 "World Atlas of Artificial Night Sky Brightness" street lighting and outdoor lighting retrofits using 4000K lamps could result in a factor of 2.5 increase in light pollution.[3] Given that the rate of increase of lighting as seen from Earth orbit is about 2 percent per year[4], and much of the increase is attributable to white LED, it is all the more important to address this problem.

Blue-rich white light sources are also known to increase glare and compromise human vision, especially in the aging eye[5,6]. These lights create potential road safety problems for motorists and pedestrians alike. In natural settings, blue light at night has been shown to adversely affect wildlife behavior and reproduction[7,8]. This particularly true in cities, which are often stopover points for migratory species.



[1] http://bit.ly/2gKiEfN
[2] American Medical Association Council on Science and Public Health Report 2-A-16: "Human and Environmental Effects of Light Emitting Diode (LED) Community Lighting", 2016 (PDF: http://bit.ly/1UzSqVQ)
[3] Falchi et al., *Science Advances* (10 Jun 2016) Vol. 2, no. 6, e1600377. 10.1126/sciadv.1600377
[4] Kyba et al., Artificially lit surface of Earth at night increasing in radiance and extent. *Science Advances* (22 Nov 2017) Vol. 3, no. 11, e1701528. 10.1126/sciadv.1701528
[5] Lin et al. Model predicting discomfort glare caused by LED road lights. *Optics Express* (2014) Vol. 22, no. 15, 18056-71. 10.1364/OE.22.018056
[6] Sweater-Hickcox et al. Effect of different coloured luminous surrounds on LED discomfort glare perception. *Lighting Research Technology* (2013) Vol. 45, no. 4, 464-75. http://lrt.sagepub.com/content/45/4/464
[7] Bennie et al. Ecological effects of artificial light at night on wild plants. *Journal of Ecology* (2016) Vol. 104, issue 3, 611-620. 10.1111/1365-2745.12551
[8] Hori and Suzuki. Lethal effect of blue light on strawberry leaf beetle, *Galerucella grisescens* (Coleoptera: Chrysomelidae). *Scientific Reports* (2017) Article 2694. https://www.nature.com/articles/s41598-017-03017-z

The promise of cheaper outdoor lighting based on electricity and maintenance savings from LED conversion should be weighed against other factors, such as the blue light content of white LEDs. Blue-rich sources are the most efficient LEDs in terms of the conversion of electricity to light, and therefore have the lowest electricity cost to produce a given amount of light compared to "warmer," less efficient white LED lamps. Every effort should be made to diminish or eliminate blue light exposure after dark.

Product Selection Considerations

Choosing LED products for outdoor lighting applications involves a series of considerations and tradeoffs. These include:

- **Luminous Efficiency** (Watts-to-lumens): How many lumens of light are produced per input Watt of electricity? More importantly, how many lumens from the light source are meeting the task ("Fixture Lumens" vs. "Lamp Lumens")
- **Lumen Output**: How much light is produced relative to the amount required for a particular task? When replacing existing fixtures, it is important to use the only level of illumination needed, and not to adopt unneeded increases in brightness.
- **Correlated Color Temperature** (CCT): Does the light have a "warm" or "cool" quality?
- **Color Rendering Index** (CRI): How accurately does the light render colors to the human eye? A high CRI is not needed for all situations. The need for good color rendition should be considered relative to the lighting application in question.
- **Adaptive Control Integration:** Does the lighting make use of adaptive controls such as dimmers, timers, and/or motion sensors? These controls are the wave of the future in outdoor lighting and achieve additional energy savings, improve light source efficacy and increase visual task performance. It is important to build in the ability to make use of adaptive controls during the adoption of designs for new lighting installations, even if they will not immediately be implemented.
- **Heat Mitigation**: Is the lamp housing designed to adequately dissipate heat? Because LED efficiency decreases with rising operating temperature, controlling heat emitted by LED lamps is critical in warm climates.
- **Lumen Depreciation**: How robust is the lamp against efficiency loss over time? Manufacturers typically quote "L70," the expected use time until a bulb reaches 70% of its initial light output.

Closely related to all these factors is expense: How much will LED replacement solutions cost? The price of commercial LED lighting products continues to drop, and capital cost recovery times for new LED street light installations, once 10 years or more, are now typically less than five years and continue to decline. As barriers to implementation fall, LED is gaining momentum as the lighting technology of choice in both new outdoor installations and existing replace-on-failure installations.

IDA Recommends

Already many white LED options are available on the outdoor lighting market and that number will only rise in the future. IDA has developed a set of recommendations for those choosing lighting systems. These suggestions will aid in the selection of lighting that is

energy and cost efficient, yet ensures safety and security, protects wildlife, and promotes the goal of dark night skies. These include:

- **Always choose fully shielded fixtures** that emit no light upward
- **Use "warm-white" or filtered LEDs** (CCT < 3000 K; S/P ratio < 1.2) to minimize blue emission
- **Look for products with adaptive controls** like dimmers, timers, and motion sensors
- **Consider dimming or turning off the lights during overnight hours**
- **Avoid the temptation to over-light** because of the higher luminous efficiency of LEDs.
- **Only light the exact space and in the amount required for particular tasks**

Learn more about outdoor lighting, blue light at night, and dark skies on the IDA website at www.darksky.org.

ENVIRONMENTAL COMMISSION

MINUTES

SEPTEMBER 15, 2020

Board or Commission:	Environmental	**Date:**	September 15, 2020
Meeting:	Regular	**Called to Order:**	7:04 p.m.
Quorum:	Yes	**Adjourned:**	9:18 p.m.

MEMBER ATTENDANCE:

Christie Truitt	Chairman	Present
Jeff D. Abeln	Commissioner	Present
Todd Birman	Commissioner	Present
Jacquelyn Casazza	Commissioner	Present
David Meehan	Commissioner	Present
Jennifer E. Umlauf	Commissioner	Present
Also Present:		
Christina Coyle	Finance Director Staff Liaison	Present
Craig Pryde	Liaison Trustee	Present
Elijah Bebora	Staff Intern	Absent
Elisa Pollina	Recording Secretary	Present
PUBLIC		

I. CALL TO ORDER

The September 15, 2020 regular meeting of the Environmental Commission was called to order by Chairman Truitt at 7:04 PM at the Glen Ellyn Civic Center via Zoom Call.

II. PUBLIC PARTICIPATION – None.

III. APPROVAL OF MINUTES FROM AUGUST 18, 2020 MEETING

MOVE TO APPROVE MINUTES OF REGULAR MEETING FROM 8/18/2020

RESULT: Motion unanimously carried

MOVER: Commissioner Umlauf

SECONDER: Commissioner Casazza

IV. ANNOUNCEMENTS

A. Chairman Truitt welcomes new commissioner Todd Birman to the Environmental Commission. Commissioner Birman states he is a 4-1/2 year Glen Ellyn resident. His work experience is in transportation and logistics and works on a lot of sustainability issues. He is excited to be a part of the Environmental Commission.

V. COMMISSION DISCUSSION AND REPORTS

A. Discuss Greenest Region Compact Initiatives: Chairman Truitt reports that we received the GRC framework from Director Coyle highlighting what the Village currently is doing. She thanks Director Coyle for her work on this. She asks the EC if there are any areas in this document we would like to focus on. The following are the items the EC has agreed to consider prioritizing:

Climate

C9- Discourage the use of high-emitting small engines, such as for landscaping

C16-Educate the public about climate change

C17- Participate in Cool Communities

C18- Inform the community about air quality index and air pollution action days

Economic Development

ED7- Recognize and support businesses who practice and promote sustainability

ED9- Create and promote a community brand featuring natural resources or cultural characteristics of community

ED10- Promote tourism featuring natural and cultural assets of the community

Energy

E13- Support the adoption of renewable energy technologies in the community

E25- Facilitate the adoption of renewable energy technologies (i.e. solar, geothermal) by adapting building and zoning codes

E29- Negotiate franchise agreement with utilities to exercise lump sum payment option to finance clean energy.

E30- Partner with electric and gas utilities to promote energy efficiency programs to the community

E32- Publicly recognize institutional and private buildings that achieve a specific energy efficiency targets

Land

L4- Encourage conservation design to protect natural resources

L5- Promote Sustainable Sites Certification for commercial and institutional landscapes

L10- Conserve key natural assets and open space

L11- Guide future development to conserve natural topography, views, drainage patterns, existing

vegetation, and historic or cultural assets
L14- Manage public and private landscapes to optimize ecosystem services and support biodiversty
L14B- >Monitor and control invasive species in natural areas and throughout the community
L18- Enhance parks, open space, and recreational opportunities accessible to all residents
L20- Conduct a community wide urban tree canopy assessment or collaborate on a regional study
L23- Maintain the health and integrity of existing trees
L28- Optimize tree planting and protect existing trees for maximum carbon storage/sequestration and energy savings
L29- Manage traditional, cultivated landscapes sustainably
L32B- Adopt codes and incentives that guide sustainable development that maximizes social benefits and minimizes infrastructure demands
L38- Engage the community in programs and special events to celebrate nature, such as Arbor Day and Earth Day
L42- Encourage beautiful, sustainable landscaping on private property

Leadership

L6- Advocate for state policies and investment that support municipal advances in sustainability
L9- Partner with other local governments to achieve efficiency and sustainability

Mobility

M5- Provide bicycle parking at municipal facilities, business districts and transit stations and in neighborhoods
M24- Designate no idling zones at schools, transit stations etc.
M37- Educate the community on the negative impacts of car idling

Municipal Operations

MO3- Leverage state/federal and private grants and resources to advance sustainability
MO11- Manage special events sustainably

Sustainable Communities

SC32- Enact policies to preserve dark skies
SC42- Develop/ distribute a green building manual
SC52- Promote green building practices to residents, businesses and developers

Waste and Recycle

WR5- Support exchange of goods and services among residents (i.e. Rummage Sale, Sporting Goods Swap)
WR8- Make public events "zero waste"
WR13- Collaborate to Support proper disposal
WR14- Collaborate to provide recycling service for items not suitable for curbside pickup e.g. clothing, shoes, Christmas
WR16- Require commercial & multi-family recycling
WR17- Establish a construction & demolition recycling policy
WR24- Organize a community wide clean-up day

Water

W9B-Resolve to eliminate unnecessary landscape pesticides and fertilizer use on municipal property
W23B- >Install and maintain bioswales, filter strips, trees, rain gardens, and other functional landscapes
W24- Encourage residents and businesses to adopt green infrastructure practices
W34- Incorporate conservation practices into new development guidelines and incentives
W53- Promote tap water over bottled water

Chairman Truitt adds we now have our list of items we want to consider. We want to continue to educate across several of these items/categories. The goal now is for the EC to vote on priorities and have members of the EC choose an item to champion. We will vote on these items at our next EC meeting. Commissioner Casazza adds perhaps we could look at what items other communities are working on that we should be doing. She adds, she will look into this. Chairman Truitt adds we will talk about the Tree Perseveration Policy at our next meeting. Next month Adam Kreuzer will come to discuss Dark Skies.

B. *Recycling Marketing* – Commissioner Casazza reports for the social media campaign she received a list from Meghan on what topics had been done in the past. Some of the topics include: getting household recyclables in the right place and specialty recycling items. She will meet with Elijah and Meghan to finalize the first campaign.

C. Arts Initiatives: Finance Director Coyle reports that we are still finalizing an agreement with COD to partner with Glen Ellyn on an art initiative. The Village Board approved a mural on the wall by Olive & Vinnie's.

Commissioner Umlauf reports she just found out there is an untapped grant through the Glen Ellyn fund for an art & environment initiative. The grant is for $12,000. The application must be submitted by this Wednesday. Director Coyle asks Commissioner Umlauf to send her the information on the grant.

D. Park District Initiatives: Chairman Truitt reports that orders are due Friday September 18th for the Native Tree and Shrub Sale.

VI. Trustee Liaison Report – Trustee Pryde reports the board continues to have discussions surrounding the closure of main street parking and the civic center parking lot construction. We are working on alternate parking and are keeping businesses up to date. We hope to get these projects finished by next summer in time for the Frida Kahlo exhibit. Construction to begin at the corners of Main & Crescent and Main & Pennsylvania; to install 3 options of streetscape mockups that we are considering for our 2022 CBD Streetscape project. We will be looking for public feedback on these mockups. Commissioner Casazza asks if any of the streetscape elements will be done during the Apex construction. Trustee Pryde replies yes. Those elements that need to be done near Apex, Apex will do to our specifications. We would not have to redo those areas when we start the CBD streetscape. Commission Casazza asks if the village will be offering valet parking this winter. Director Coyle replies we are going to try to offer valet parking. We were also considering trollies but that might not be possible due to COVID. We are encouraging customer parking behind Einstein Bagels, as well as the parking lots on Duane & Glenwood and Forest & Hillside. The Prairie Path lot behind U.S. bank is for employee parking. Please get the word out for these parking alternatives.

VII. Staff Liaison Report – Director Coyle reports we are focusing on helping businesses. The tent for outdoor dining will remain up until Nov 2nd. We are in the process of

recruiting an Assistant Village Manager. Chairman Truitt asks what the timeline is on upcoming projects/events. Director Coyle replies parking garage to be completed April 2021, Frida Kahlo June-August 2021, Streetscape Project to begin 2022.

VIII. Next Meeting & Adjournment

A. The next EC meeting will be held on October 20, 2020.

B. Commissioner Casazza motions and Commissioner Meehan seconds the motion to adjourn the meeting. The meeting was adjourned at 9:18 pm.

Submitted by Elisa Pollina, Recording Secretary

Reviewed by Staff Liaison, Coyle