

# Bringing Back Dark Skies to West Grey

the importance of preserving our night sky

PRESENTATION FOR WEST GREY COUNCIL

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# What is light pollution?

- ▶ Any excess/unnecessary lighting produced from artificial sources
- ▶ Generally, consists of four components:
  - ▶ Sky glow (a.k.a. urban sky glow)
  - ▶ Light trespass
  - ▶ Glare
  - ▶ Clutter



# Sky glow



- Brightening of the night sky over artificially lit areas

← Taken in Goodwood, ON looking towards Toronto before and during the Aug. 2003 blackout. Photos By Todd Carlson.

# Light Trespass

- ▶ Light where and when it is unneeded and unwanted
- ▶ People often don't realize just how the lighting on their houses affect the houses around them.



# Light Trespass

- ▶ The above slide is a picture of a BAS member's neighbours across the street in Hamilton. The porch light shines into their living room and bedroom. Luckily, the porch light on the house is on a sensor, but it is poorly adjusted and aimed. It goes on and off with the slightest movement and cars going by on the street can trigger the light.
- ▶ The light at the back of the house is lighting up another neighbour's shed and backyard. And, you can see there is light going into the windows of the two adjacent houses.
- ▶ The shaft of light across the road towards the red car is coming from the neighbours beside them and it shines into their bathroom and office. That particular light is on 24/7



# Glare

- ▶ Excessive brightness causing visual discomfort

Before

After



← Photos  
taken in  
Kincardine by  
BAS member

# Clutter



- ▶ Bright, confusing and excessive groupings of light sources
- ← Las Vegas strip

# Why should we care about dark skies?

- ▶ Negative impacts on human and animal health and welfare.
- ▶ Negative impacts on ecosystems and biodiversity.
- ▶ Unnecessary green house gas emissions.
- ▶ Negative impact on local economy and operational costs.
- ▶ Loss of common natural heritage: The night skies have been an inspiration for art, religion, science and literature through the entire history of humans.
  - ▶ Van Gogh's "Starry Night" was inspired by the Milky Way.
  - ▶ The unpolluted night sky allowed us to navigate the globe and land on the moon.
- ▶ A 2016 study<sup>4</sup> shows 80% of people in North America can't see the Milky Way at night and a study<sup>5,6,7</sup> reported Jan 2023 shows that light pollution is increasing at 7-10% per year.



- ▶ In the next slides there are references to the IDA, this is the International Dark-Sky Association. The IDA studies and advocates for the reduction of light pollution. They work with citizens, governments and the Illuminating Engineering Society of North America (IESNA) to promote better lighting solutions.



# Better lighting choices

- ▶ Shielding - Helps prevent light from trespassing where it is not needed. It should prevent all upward shining light, minimize glare and keep the lit area to the minimum required. IDA requires the Uplight to be 0 for dark sky approval.
- ▶ Colour - CCT is the colour correlation temperature in Kelvin. Higher numbers run into the blue white range, lower values to the amber and red part of the spectrum. Maximum IDA approved CCT is 3000K. IDA calls for a reduction in blue light to max 7% for innovative lighting.
- ▶ Reduce Illuminance - Measured in Lux it is the amount of light on the ground, this light can reflect outwards and upwards adding to pollution. This saves energy costs too. Note: The Full Moon provides less than 1 Lux.
- ▶ Careful aiming - Prevent light from shining into the sky, onto waterways and into natural areas. Prevent light from shining neighbours' properties, eyes of pedestrian or vehicular passersby.

# What can you do?

- ▶ Review your lighting. Can you use passive lighting (e.g., reflectors) instead? Or light coloured pathways to improve visibility after dark?
- ▶ Shield your outdoor lighting, and where possible keep it below eye level.
- ▶ Lower the wattage.
- ▶ Use longer wavelength light with amber to red tint to minimize impact. Avoid bright blue-white lights.
- ▶ Use timers, motion detectors and dimmers.
- ▶ Shut off lights when you can.
- ▶ Use only enough light to get the job done, when it is needed, and direct it only where needed.
- ▶ If you can't afford new dark sky approved fixtures, even changing bulbs can reduce impact. (e.g. install yellow bug lights)

# What else can you do?

- ▶ Choose dark sky friendly lighting when upgrading your home, business or municipal properties.
- ▶ Advocate for dark sky friendly materials during construction/development projects.
- ▶ Provide input to municipalities and counties regarding lighting concerns.
- ▶ If you see an issue, speak up! Your input might just be acted upon.
- ▶ See [www.darksky.org](http://www.darksky.org) (International Dark-Sky Association) to learn more.



# Successes

- ▶ 2015 - West Grey Council acknowledges light pollution as an environmental concern and agrees to form a Dark Sky Committee.
- ▶ 2016 - West Grey passes a resolution declaring the Municipality a Dark Sky Friendly Community, Resolution 162-16.
- ▶ 2019 - The Sunvale project in Durham's north east corner has chosen streetlights that meet the minimum requirements for IDA approval as dark sky compliant, they have a CCT of 3000K and an Uplight of 0.
- ▶ 2022 - Grey County includes new section 7.14 Dark Sky Protection in the Official Plan amendment #11. It was noted during proceedings that the inclusion of a Dark Sky policy received more community comments than any other item during the process.

# Future

- ▶ West Grey Official Plan is open for amendment, this is an opportunity to add a Dark Sky Protection Policy.
- ▶ Review and update the Dark Sky Friendly Community resolution to reflect an increased awareness of the need to protect the nighttime environment.
- ▶ West Grey addresses dark sky protection in the Engineering Standards. Review all standards for outdoor lighting at night.
- ▶ West Grey passes Outdoor Lighting at Night and Sign bylaws.
- ▶ Bruce County Official Plan is open for amendment, the BAS and other partners have already made contact with Staff to have Dark Sky policy included in their Official Plan.
- ▶ Changes at the Provincial level to lighting standards?

# Asks

- ▶ The dark sky committee be allowed to continue in a more effective form, e.g. project specific working groups.
- ▶ Funding for display posters and educational material to be handed out by municipal Staff or volunteers at events around West Grey. In 2020 Council approved \$1000 for this, but it was cancelled due to Covid. I would ask that Council consider reinstating this budget to return focus to this initiative, especially with the expected addition of a Dark Sky Protection policy in the upcoming Official Plan amendment.

# Resources

1. International Dark Sky Association (IDA) - [www.darksky.org](http://www.darksky.org)
2. Royal Astronomical Society of Canada (RASC) - [www.rasc.ca](http://www.rasc.ca)
3. Bluewater Astronomical Society (BAS) - [www.bluewaterastronomy.com](http://www.bluewaterastronomy.com)
4. Article: The new world atlas of artificial night sky brightness; 10 Jun 2016; [www.science.org/doi/10.1126/sciadv.1600377](http://www.science.org/doi/10.1126/sciadv.1600377)
5. Article: Light pollution is drowning the starry night sky faster than we thought; 19 Jan 2023; [www.science.org/content/article/light-pollution-drowning-starry-night-sky-faster-thought](http://www.science.org/content/article/light-pollution-drowning-starry-night-sky-faster-thought)
6. [Stars are rapidly disappearing from the night sky, study finds | CBC.ca](http://www.cbc.ca/player/play/2163430467724); <https://www.cbc.ca/player/play/2163430467724>; January 19 2023
7. [Light pollution is getting noticeably worse, study confirms | CBC.ca](http://www.cbc.ca/player/play/2163988547776); <https://www.cbc.ca/player/play/2163988547776> ; January 20 2023



# Questions?



# Thank you