

# Yukon Guidelines for Low-Impact Lighting



These guidelines generally follow the Illuminating Engineering Society's *Five Principles for Responsible Outdoor Lighting*<sup>1</sup>:

Five Lighting Principles for Responsible Outdoor Lighting			
Responsible outdoor lighting is	<b>1 Useful</b>	<b>Use light only if it is needed</b> All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.	
	<b>2 Targeted</b>	<b>Direct light so it falls only where it is needed</b> 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.	
	<b>3 Low Level</b>	<b>Light should be no brighter than necessary</b> Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than intended.	
	<b>4 Controlled</b>	<b>Use light only when it is needed</b> 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.	
	<b>5 Warm-colored</b>	<b>Use warmer color lights where possible</b> Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.	

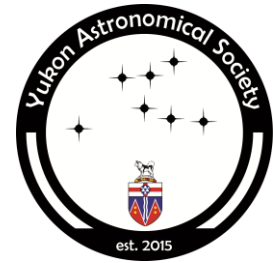
## 1. Useful

- Every exterior light shall have a written stated purpose. Use for architectural or decorative purposes alone should be avoided.
- Assess if lighting is actually necessary.
- Seasonal festive lighting is acceptable and exempt from these guidelines.
- So called "security" lighting is not a valid use as lighting alone does not increase security.<sup>2,3</sup>

## 2. Targeted

- All lighting shall be fully shielded and directed downward (see figure on page 2).
- No light shall be projected above the horizontal plane.
- Limit light trespass to 0.5 lux or less at the property line in rural areas and 2 lux or less at the property line in urban areas.<sup>4</sup>

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## 3. Low Level

- a) Design for minimum illumination levels. Do not exceed IES's *Recommended Practice: Lighting Roadway and Parking Facilities (RP-8)*<sup>5</sup> and *Transportation Association of Canada's*<sup>6</sup> minimum illumination levels by more than 15%.
- b) Roadway and intersection illumination shall provided only by warrant<sup>7</sup>.
- d) Average illumination for pathways and parking areas (if required) shall be 5 lux<sup>8</sup> or lower. If average illuminance and uniformity objectives cannot both be met, average illuminance takes precedence.
- e) Snow on ground increases reflected light significantly, as such lower illumination levels are viable in Yukon.
- f) Maximum site illuminance is 87,500 lumens / ha (35,000 lumens / acre) in urban areas and 43,750 lumens / ha (17,500 lumens / acre) in rural areas<sup>9</sup>.

## 4. Controlled

- a) Provide illumination only when needed. All exterior illumination shall be extinguished within 30 minutes of business closing or 11 pm<sup>10</sup>. Use of automated lighting control systems, including use of astronomical timers, is encouraged.
- b) Use of motion-controlled lighting is recommended.

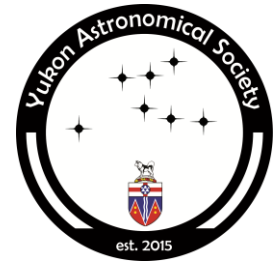
## 5. Warm-Coloured

- a) All exterior illumination should be 2,700K or warmer, and shall not exceed 3,000K nominal. "Warmer" means more red/orange coloured light, and less bright-white/blue.

### Examples of Acceptable / Unacceptable Lighting Fixtures



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## Supplemental Notes:

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<sup>1</sup> Five Principles for Responsible Outdoor Lighting, Illuminating Engineering Society and International Dark Sky Association 2022 : <https://www.ies.org/advocacy/light-at-night>.

<sup>2</sup> Evidence shows that illumination alone without presence of people does not increase security, see <https://darksky.org/resources/what-is-light-pollution/effects/safety/> for more information. Thus, the concept of “security lighting” without increased accompanying human presence is not valid.

<sup>3</sup> If illumination is needed for maintenance workers outside of normal business hours, use of motion-controlled lighting is acceptable.

<sup>4</sup> See [City of Toronto Best Practices for Effective Lighting](#) and [LEED Credit SS8: Light Pollution Reduction](#).

<sup>5</sup> [ANSI/IES RP-8-22: Design Of Roadway Facility Lighting](#)

<sup>6</sup> [Transportation Association of Canada: Guide for the Design of Roadway Lighting](#)

<sup>7</sup> See section 9.4 of [Transportation Association of Canada: Guide for the Design of Roadway Lighting](#) for acceptable warranting process.

<sup>8</sup> See [Transportation Association of Canada: Guide for the Design of Roadway Lighting](#)

<sup>9</sup> See [City of Flagstaff, Division 10-50.70: Outdoor Lighting Standards](#)

<sup>10</sup> See [City of Flagstaff, Division 10-50.70: Outdoor Lighting Standards](#)