# DISCUSSION ITEM: DARK SKIES PROGRAM

January 23, 2024

On November 14, 2023, the City Council made a Motion of Direction to add a future agenda item to discuss exploring the establishment of a Dark Skies program in Killeen.

- DarkSky International is a nonprofit organization dedicated to restoring the nighttime environment and protecting communities from the harmful effects of light pollution through outreach, advocacy, and conservation.
- DarkSky International administers the International Dark Sky Places (IDSP) program, which certifies communities, parks, and protected areas around the world that preserve and protect dark sites through responsible lighting policies and public education.

- A Dark Sky Community is 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.
- Dark Sky Communities excel in their efforts to promote responsible lighting and dark sky stewardship and set good examples for surrounding communities.

### Background

- □ There are seven (7) certified Dark Sky Communities in Texas:
  - Bee Cave (population 9,028)
  - Blanco (population 1,780)
  - Dripping Springs (population 5,787)
  - Fredericksburg (population 28,367)
  - Horseshoe Bay (population 4,490)
  - Lakewood Village (population 660)
  - Wimberley Valley (population 14,700)

### Principles for Responsible Lighting

#### USEFUL



#### ALL LIGHT SHOULD HAVE A CLEAR PURPOSE

Before installing or replacing a light, determine if 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.

#### **TARGETED**



#### LIGHT SHOULD BE DIRECTED ONLY TO WHERE 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.

#### LOW LIGHT LEVELS



#### 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.

#### **CONTROLLED**



#### Light should be used only when it is useful

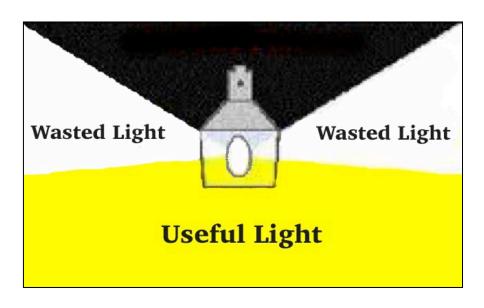
Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.

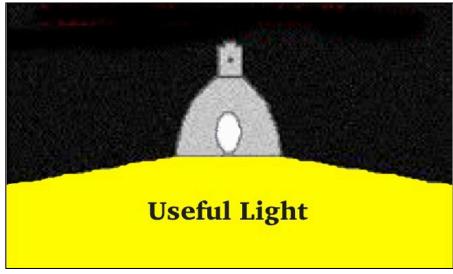
#### COLOR



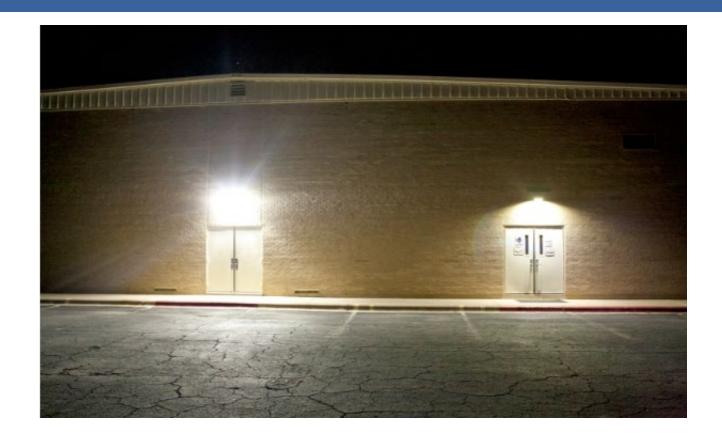
#### USE WARMER COLOR LIGHTS WHERE POSSIBLE

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





## Advantages of Dark Skies



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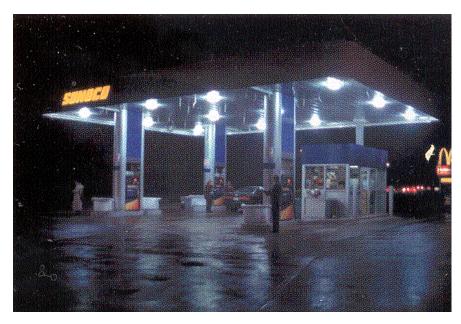




### Advantages of Dark Sky Designation

- Minimizes light pollution and glare.
- Reduces energy consumption and saves money on electric bills.
- Improves public safety.
- Improves overall health and wellbeing.

# Advantages of Dark Skies





### Certification Process & Criteria

- On average, the application process takes one (1) to three (3) years to complete.
- Requirements for certification include:
  - Adopting a comprehensive outdoor lighting ordinance.
  - Retrofitting all City owned lighting.
  - Planning and executing at least two (2) dark-sky events each year while the application is in process, with explicit plans to continue outreach after designation.
  - Establishing a sky brightness measurement program.

### **Current Lighting Standards**

- □ The City's zoning ordinance includes standards regarding outdoor lighting in the "UD" (University District) and "CD" (Cemetery District) that require shielding and prohibit light trespass (see Sec. 31-443 and 31-452).
- However, these standards are not applicable in other commercial zoning districts.

### Current Lighting Standards

- Sec. 31-487 includes requirements for all off-street parking areas that requires lighting to be reflected away from residential areas, but does not prohibit light trespass between commercial areas.
- This section also includes minimum (but not maximum) lighting requirements and hours for required parking lots for thirty (30) or more cars.

### **Alternatives**

- Pursue certification as a DarkSky Community;
- □ Update the City's outdoor lighting regulations by:
  - Expanding the lighting standards in the "UD" and "CD" zoning districts to apply to all zoning districts;
  - Requiring a photometric plan for all new commercial development; and
  - Updating the off-street parking regulations to include maximum (instead of minimum) lighting standards.