01

What is light pollution and how does it affect us?

What is light pollution? Light pollution is the brightening of the night sky through streetlights or other man made sources. It is a growing problem in urban areas, that negatively affects the environment, wildlife, and human health, and most importantly our climate. Over 80% of the world lives under light pollution. You may be wondering how light pollution would affect our climate. Well, streetlights are a main contributor to light pollution and of climate change. Streetlights, or just lights in general, generate almost 6% of greenhouse gasses every year.

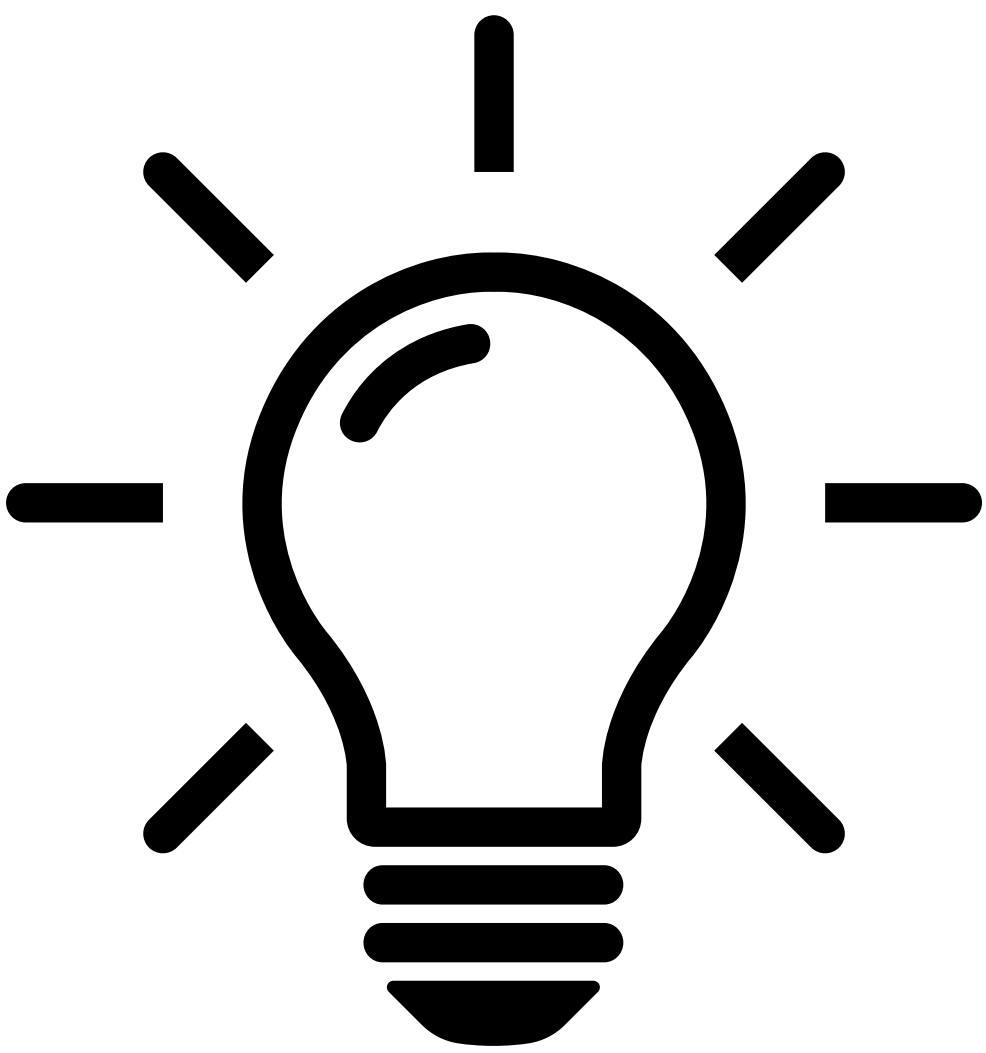## THE IMPACT

of Light Pollution on Our Planet

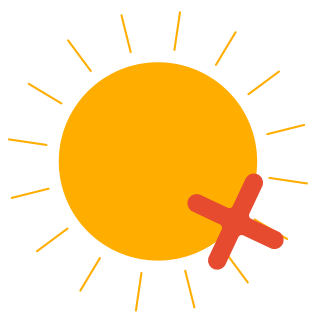Light pollution is increasing, and the results are devastating

02 Our Solution to Light Pollution

- Our solution to light pollution and to further improve climate change is to create a new and improved street light
- An innovative streetlight is a solution that can help reduce light pollution, overall helping reduce energy consumption and greenhouse gas emissions.

03 How It Works

- How It Works: Smart streetlights are connected to sensors that detect factors like ambient light, pedestrian or vehicle movement, and time of day. These sensors could send data to a control system that adjusts the brightness of the streetlights in real-time.
- In low-traffic areas, lights can be able to automatically dim to reduce unnecessary brightness.
- During peak hours or in high-traffic zones, the lights brighten for visibility.
  - The system can also adjust based on weather conditions like fog or rain.
- Technology Used: Motion sensors, ambient light sensors, control systems, and cameras used to oversee traffic.
- Benefits: This reduces excess lighting and ensures that lights are only as bright as necessary, cutting down on wasted energy and minimizing light
- Cons: It will be very expensive to manufacture and create, and mass production of these may take a very long time (years)

i² Inquiry & Innovation PROGRAM

SACRED HEART CATHEDRAL PREPARATORY