

# Smart Streetlight Project

## Group 12

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This capstone project focuses on the design and implementation of a newly developed streetlight management system to be used in the City of Regina. It is a pilot project initiated by SaskPower which aims to replace the current streetlight system.

## Background

SaskPower is in the ongoing process of converting all street lights in Regina from High Pressure Sodium Bulbs to LEDs. The transition to LEDs will provide more efficient lighting across the city and will allow for the installation of a management system. SaskPower does not currently have any sort of management system in place and on residents to call in and notify SaskPower when there is an outage. With this management system in place, assets such as radar, sensors, and surveillance equipment can be integrated into the system to collect data. The new technology relies on the use of energy-efficient LED lights that can be constantly monitored and controlled from a remote operation center. The technology is being piloted in Harbour Landing with expansion plans for the rest of the City of Regina.

## Objectives

- Ensure a user friendly Central Management System
- Monitor streetlight failures and outages
- Improve maintenance response time
- Control assets using dimming schedules and lighting planners
- Collect data about power consumption across the grid

## Results

- Pilot Project has been deployed in Harbour Landing area
- Pilot includes:
  - 1 mesh network
  - 50 controllers
  - 5 radar sensors
  - 5 air quality monitors
- Dynamic lighting has been designed and energy savings are being reported
- Automation is set to detect failures and send alerts to users
- Management system includes graphical interface of assets including significant attributes

## Conclusions and Future Works

Project has succeeded in providing a new smart central management system. Energy savings are being reported through the new streetlights. Discussions with SaskPower will continue in regards to the deployment of this technology across larger scales.

## Design Process

- Define design specifications
- Select appropriate vendor
- Coordinate installation in accordance to LED conversions
- Select locations for new technology
- Explore surveillance capabilities
- Design dimming schedules
- Design automated reporting and alert system
- Create deployment strategies across various scales
- Test and evaluate system
- Summarize findings

