

# Urban Services District Street Lighting Study



Public Works & Assets  
April 19, 2022



# Urban Services District Street Lighting Study

Funded in FY 22 with a budget of \$100,000, the LED lighting study in the Urban Services District (Project #31) determined areas within the Urban Service District that may benefit from additional lighting because of existing crime and crash trends. The study considered crash and crime data within the Urban Service District and compared it to the location of existing light pole locations to determine the areas that may benefit from increased or improved lighting levels.





# Problem Statement

The number of fatal vehicular crashes occurring in daylight is about the same as nighttime however the fatality rate is higher because only about a quarter of the vehicle miles traveled occur overnight.

Just like the trend in vehicular crashes, while most crimes take place during the day, serious crimes occur at a higher rate during overnight hours.



# Data Collection

- Light pole location data was provided by LGE and included fixture type and location
- Crash data downloaded from Kentucky State Police by month for the years of 2016 through 2020
- Crime data was obtained from LMPD



# Crash Data

Crash data was filtered in order to determine locations with a pattern of collisions in which lighting could have been a contributing factor.

Crash data reported with the following light conditions were excluded from the data set:

Daylight

Other

Unknown

Crash data reported with the following light conditions were included in the data set:

Dark – Highway Not Lighted

Dark – Highway Lighted/On

Dark – Highway Lighted/Off

Dark (unknown roadway lighting)

Dawn

Dusk

Interstate crashes were excluded from this study



# Crime Data

Crime data was filtered in order to determine locations that could be impacted by better street lighting.

Time of day the crime happened:

2016	Daylight Start	Daylight End
January Daylight Savings (March 13):	7:30	18:00
Daylight Savings to May:	7:00	20:30
June to July:	6:30	21:00
August to September:	7:15	20:15
October Daylight Savings (November 6):	8:00	19:00
Daylight Savings to December:	7:30	17:30

Crime types excluded from this study include:

DUI

Sex Crimes

Fraud

Weapons



# Crime Data

Crime types included in the study:

Arson

Burglary

Motor Vehicle Theft

Robbery

Vandalism

Disturbing the Peace

Assault

Homicide

Other

Theft/Larceny

Vehicle Break-In


Drug/Alcohol Violations

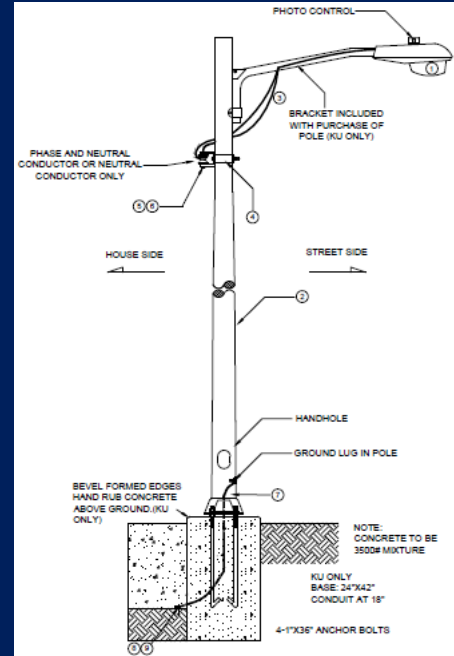




# Street Lighting Data

The majority of Louisville Metro's roadway lighting is leased Cobra head street lights from LGE. LGE owns and maintains the pole and lighting fixture and Metro pays a flat monthly rate depending on the wattage of the lamp. Metro currently leases about 20,000 street lights from LGE.

Fixture	Label	Wattage Equivalence
	Type D	70w
	Type E	100w
	Type A	150w
	Type B	250w
	Type C <sup>1</sup>	400w



# Heat Maps

Using the crime and crash data, heat maps were developed to identify locations where lighting improvements may mitigate existing issues associated with frequent incidents.



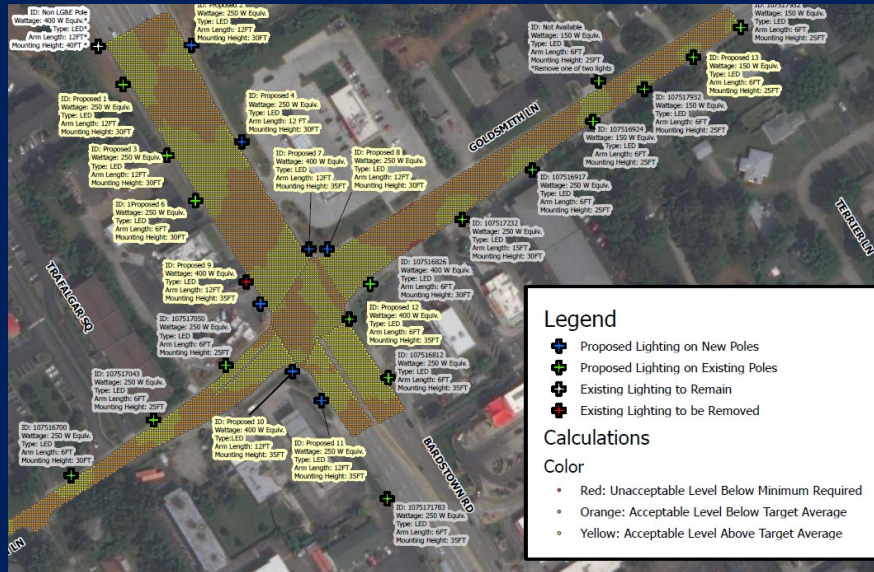
# Top Combined Crash & Crime Locations

Top 20 Locations			
Rank	Crash Location	Crime Location	Total
1	Bardstown Road and Goldsmith Lane	3306 Bardstown Road	11
2	Longfield Avenue and Taylor Boulevard	3400 to 3422 Taylor Boulevard	10
3	3rd Street Road/Southside Drive and New Cut Road	3rd Street Road/Southside Drive and New Cut Road and 7400 3rd Street Road	6
4	Algonquin Parkway and South 7th Street		6
5	Taylor Boulevard and Ashland Avenue/I-264 EB Ramps		6
6	Taylorville Road and Breckenridge Lane		6
7		Baxter Avenue and East Breckinridge Street	6
8		West Broadway and Southwestern Parkway	6
9	Palatka Road and New Cut Road	5400 New Cut Road	5
10	West Broadway and South 26th Street	728 South 26th Street	5
11	Eastern Parkway and Bradley Avenue		5
12	Taylor Boulevard and Bluegrass Avenue		5
13		1361 South Preston Street and South Jackson Street and South Preston Street	4
14	Central Avenue and Taylor Boulevard		4
15	East Broadway and South Hancock Street		4
16	West Broadway and South 22nd Street		4
17	West Broadway and South 28th Street		4
18	West Broadway and Drive W. J. Hodge Street		4
19		Algonquin Parkway and South 41st Street	4
20	Grade Lane and Preston Highway	4700 Preston Highway and 4800 Preston Highway	3



# Lighting Analysis

With the top 20 locations identified, existing and proposed lighting conditions were developed to improve high crash and crime areas.



# Plan Implementation

Public Works will continue to work with LGE, as part of the larger LED street light conversion, to implement the lighting recommendations for the identified locations.

Due to savings in street lighting costs with the LED conversion, this project will be revenue neutral.



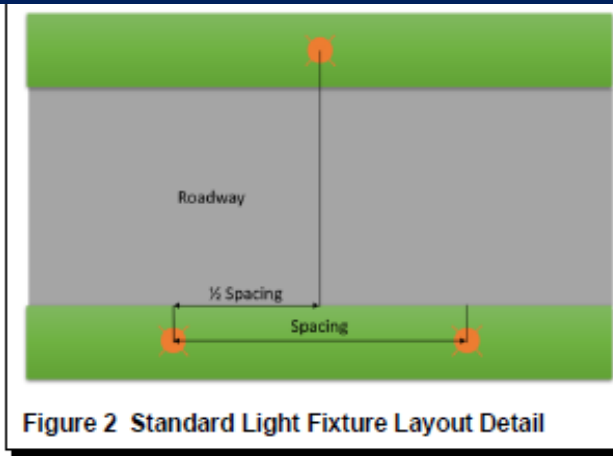
# PWA Street Lighting Guidelines

As part of this study, standard lighting levels and street light fixture spacing were developed for use around Louisville Metro based on the lighting types available for lease through LGE.

Fixture	Spacing*
Tariff Code 490	228 feet
Tariff Code 491	267 feet
Tariff Code 492	265 feet

\*See Figure 2 for Standard Light Fixture Layout Detail

**Table 2 Standard Spacing for  
Tariff Lights Along  
60-Foot-Wide  
Roadway**



## Contact:

Jeffrey Brown, PE  
Assistant Director  
Louisville Metro Public Works & Assets  
[Jeffrey.Brown@LouisvilleKY.gov](mailto:Jeffrey.Brown@LouisvilleKY.gov)

