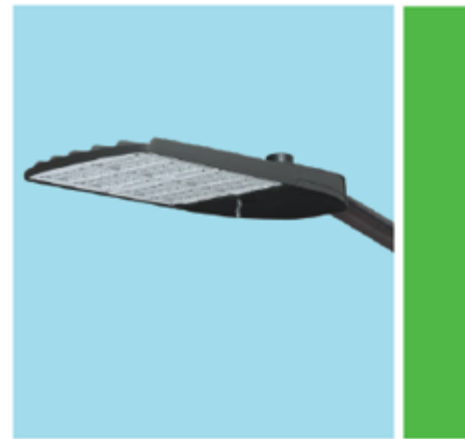




# **Consider Converting All Street Lights to Energy Saving LED Fixtures**

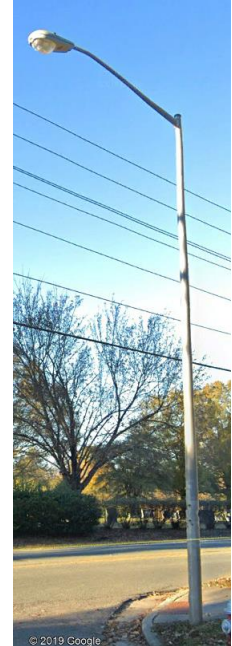
**September 25, 2019**



# Recommendation

Authorize the Town Manager to execute an agreement with Duke Energy to convert all street lights in Chapel Hill to energy-saving LED light fixtures under Option A described in both the Technical Memorandum and Resolution.

# Standard Street Light Examples



# Decorative Street Light Examples



# Total Street Light Count

Streetlight Type	Count
Mercury Vapor	500
High Pressure Sodium	2,577
Metal Halide	152
<b>LED</b>	<b>376</b>
Total	3,605



# Lighting Types

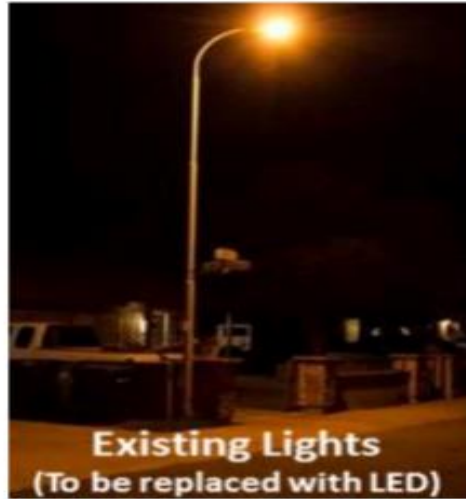


Before: High Pressure Sodium (HPS)



After: Light Emitting Diode (LED)

# Lighting Types



Existing 2200 Kelvin HPS



3000 Kelvin



4000 Kelvin

# Energy and Emissions

Category	Today	All LED	Change
Fixture Wattage	582,690 Watts	313,110 Watts	-269,580 Watts
Energy Usage/Month	209, 768 kWh	112,720 kWh	-97,048 kWh
Energy Usage/Year	2,552,182 kWh	1,371,422 kWh	-1,180,760 kWh
Carbon Reduction	1,805 metric tons	970 metric tons	<b>-835 metric tons</b>



# Benefits to Chapel Hill

- Reduce emissions by 830 metric tons
- Lower operational emissions by 5.5%
- Enhance visibility for community safety
- Focus streetlighting downward
- Provide uniform lighting across the town
- Minimize waste from lighting maintenance



# LED Conversion Costs

1. Increased monthly street light bills (service rate and fees)
2. Hardware transition cost for standard street lights (\$153,690\*)
3. Hardware transition cost for decorative street lights (\$365,234\*)

*\*Rounded to the nearest dollar*

# Monthly Bill with LEDs

Monthly Rate and Fee Type	Today's Rates	New LED Rates	Change
Base Rate	\$28,482	\$28,528	\$46
Decorative Light Fee	\$2,034	\$5,085	\$3,051
Other Charges	\$2,865	\$2,865	--
Monthly Total	\$33,381	\$36,478	\$3,097

# Hardware Transition Costs

Cost Type	Payment Options
Standard Street Light Hardware Transition Cost (\$153,690)	Pay up front <u>or</u> pay in equal annual installments over 4 years
Decorative Street Light Hardware Transition Cost (\$365,234)	Pay up front <u>or</u> pay as part of the monthly street light bill for as long as the lights are in place, raising the monthly bill from \$36,478 to \$38,788 per month

# LED Conversion Options

Option Details	Option A	Option B
Standard Street Light Installation Begins	January 2020	January 2020
Decorative Street Light Installation Begins	March 2020	TBD
Hardware Transition Cost for Standard Street Lights	\$153,690 (paid in equal annual installments over 4 years)	\$153,690 (paid in equal annual installments over 4 years)
Hardware Transition Cost for Decorative Street Lights	\$5,407 (added to monthly street light bill because funds not available for full cost)	\$365,234 (Council considers budgeting for one-time payment in future fiscal year)

## ***Option A – Begin Full LED Conversion in FY19-20***

Cost Type	Payment Plan	Total Transition Amount
Standard Light Transition Cost	\$38,423/year for four years	\$153,690
Decorative Light Transition Cost	\$2,310/month for April-June of FY19-20	\$6,930
	\$365,234 one time for FY20-21*	\$365,234
	Total Transition Cost	<b>\$525,854</b>

*\*For the Council's consideration as part of the FY20-21 budget*



## ***Option B – Full LED Conversion by FY20-21 at Earliest***

Cost Type	Payment Plan	Total Transition Amount
Standard Light Transition Cost	\$38,423/year for four years	\$153,690
Decorative Light Transition Cost	\$365,234 one time for FY20-21*	\$365,234
	Total Transition Cost	<b>\$518,924</b>

*\*For the Council's consideration as part of the FY20-21 budget*

# Timing for Option A

- September/October 2019
  - Council authorization
  - Manager signs agreement with Duke Energy
  - Duke Energy orders standard and decorative fixtures
- January to Summer 2020 (~6 months)
  - Duke Energy begins full lighting change-out, starting with standard lights and then decorative ones
  - Conversion occurs in sections across town

# Timing for Option B

- September/October 2019
  - Council authorization
  - Manager signs agreement with Duke Energy
  - Duke Energy orders standard and decorative fixtures
- January to Summer 2020 (~6 months)
  - Duke Energy begins standard lighting change-out only
  - Conversion occurs in sections across town
  - Decorative change-out delayed until all funds available

# Recommendation

Authorize the Town Manager to execute an agreement with Duke Energy to convert all street lights in Chapel Hill to energy-saving LED light fixtures under Option A described in both the Technical Memorandum and Resolution.

# Questions