

## **MEMORANDUM**

Date: December 6, 2021  
To: Max Royle, City Manager  
From: William Tredik, P.E., Public Works Director  
Subject: Phase 2 LED Streetlight Conversion

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### **BACKGROUND**

The City currently contracts with Florida Power and Light (FPL) to provide 386 existing streetlights on collector, arterial and local roadways within the City. As part of their move to energy efficient and lower maintenance lighting options, FPL has a program to convert high pressure sodium (HPS) to light emitting diode (LED) fixtures. Though the LED fixtures are more expensive than HPS fixtures, their longer life and reduced energy usage allow FPL to make the conversion at no cost to the City.

On May 24, 2021 the City Commission approved Phase 1 of the LED conversion, switching 183 HPS fixtures to LED on the following arterial and collector roadways.

- State Road A1A
- A1A Beach Boulevard
- Mickler Boulevard
- Pope Road
- 16th Street
- 11th Street
- A Street

Phase 1 LED fixtures have now been installed, leaving 203 HPS streetlights remaining on local roads throughout the City. The City is now ready to move to Phase 2, converting to LED streetlights along local streets west of A1A Beach Boulevard. As with collector streets, staff recommends a 3000 Kelvin color temperature be used for local streets.

### **DISCUSSION**

Though 203 HPS streetlights remain to be converted to LED, staff recommends that lights east of A1A Beach Boulevard (23 fixtures) be deferred until Phase 3. Staff will meet with FPL and St. Johns County to finalize the locations of turtle friendly “amber” lights east of the Boulevard. A turtle friendly street lighting plan (Phase 3) will be presented to the City Commission at an upcoming meeting.

FPL has provided the following cost analysis (Figure 1) for converting the remaining 180 HPS lights west of A1A Beach Boulevard to LED:

Phase 2 LED Streetlight Conversion  
December 6, 2021

# LED Lighting Plan

## City of Saint Augustine Beach Phase 2

### Going Green

This plan reduces power consumption by:  
and that eliminates:  
or removing:

49,268 kWh / year  
35 metric tons of CO<sub>2</sub> every year<sup>1</sup>  
7 cars from the road<sup>2</sup>

1. Based on 2015 National Energy Consumption Data (DOE) and 2015 National Emissions Inventory (EPA).  
2. Based on 2015 National Energy Consumption Data (DOE) and 2015 National Emissions Inventory (EPA).

TOTAL	180		\$ 1,626.34	\$ 1,494.81	\$ 1,632.49	\$ -
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#### Installation Details

1 CH70

select fixture:

Existing  
SL1 - HPS0070

Option 1  
RSW 28 Watt 3000K

Option 2  
RSW 45 Watt 3000K

Option 3

1

1

1

1

fixture / pole:  
select pole:

Fixture\*

\$ 418.14

\$ 642.87

\$ 642.87

Quantity:

101

Pole

FPL Conversion:

Yes

Maintenance

\$ 199.98

\$ 131.30

\$ 131.30

Full/Hybrid:

Full

Energy\*\*

\$ 318.23

\$ 45.91

\$ 83.59

Monthly Total

\$ 936.36

\$ 820.08

\$ 857.75

#### Installation Details

2 CH100

select fixture:

Existing  
SL1 - HPS0100

Option 1  
RSW 45 Watt 3000K

Option 2  
RSW 45 Watt 3000K

Option 3

1

1

1

1

fixture / pole:  
select pole:

Fixture\*

\$ 193.66

\$ 292.79

\$ 292.79

Quantity:

46

Pole

FPL Conversion:

Yes

Maintenance

\$ 91.54

\$ 59.80

\$ 59.80

Full/Hybrid:

Full

Energy\*\*

\$ 112.35

\$ 38.07

\$ 38.07

Monthly Total

\$ 397.55

\$ 390.66

\$ 390.66

#### Installation Details

3 CH150

select fixture:

Existing  
SL1 - HPS0150

Option 1  
ATBS 76 Watt

Option 2  
ATBS 76 Watt

Option 3

1

1

1

1

fixture / pole:  
select pole:

Fixture\*

\$ 4.34

\$ 6.37

\$ 6.37

Quantity:

1

Pole

FPL Conversion:

Yes

Maintenance

\$ 2.02

\$ 1.30

\$ 1.30

Full/Hybrid:

Full

Energy\*\*

\$ 3.57

\$ 1.54

\$ 1.54

Monthly Total

\$ 9.93

\$ 9.21

\$ 9.21

#### Installation Details

4 CH200

select fixture:

Existing  
SL1 - HPS0200

Option 1  
ATB2 133 Watt, Gray

Option 2  
ATB2 133 Watt, Gray

Option 3

1

1

1

1

fixture / pole:  
select pole:

Fixture\*

\$ 6.58

\$ 9.37

\$ 9.37

Quantity:

1

Pole

FPL Conversion:

Yes

Maintenance

\$ 2.57

\$ 1.30

\$ 1.30

Full/Hybrid:

Full

Energy\*\*

\$ 5.23

\$ 2.72

\$ 2.72

Phase 2 LED Streetlight Conversion  
December 6, 2021

		Monthly Total	\$	14.38	\$	13.39	\$	13.39	
Installation Details		Existing		Option 1		Option 2		Option 3	
5	70W Contempo	select fixture:		SL1 - HPS0070	Contempo 38 Watt 3000K	Contempo 38 Watt 3000K			
		fixture / pole:		1	1	1		1	
		select pole:							
		Fixture*	\$	20.70	\$	31.83	\$	31.83	
		Pole							
Quantity:	5	Maintenance	\$	9.90	\$	6.50	\$	6.50	
FPL Conversion:	Yes	Energy**	\$	12.63	\$	3.85	\$	3.85	
Full/Hybrid:	Full	Monthly Total	\$	43.43	\$	42.17	\$	42.17	
Installation Details		Existing		Option 1		Option 2		Option 3	
6	100W Contempo	select fixture:		SL1 - HPS0100	Contempo 38 Watt 3000K	Contempo 38 Watt 3000K			
		fixture / pole:		1	1	1		1	
		select pole:							
		Fixture*	\$	105.25	\$	159.13	\$	159.13	
		Pole							
Quantity:	25	Maintenance	\$	49.75	\$	32.50	\$	32.50	
FPL Conversion:	Yes	Energy**	\$	61.06	\$	19.25	\$	19.25	
Full/Hybrid:	Full	Monthly Total	\$	216.06	\$	210.87	\$	210.87	
Installation Details		Existing		Option 1		Option 2		Option 3	
7	100W PTT	select fixture:		SL1 - HPS0100	Traditional Carriage 39 Watt 3000K	Traditional Carriage 39 Watt 3000K			
		fixture / pole:		1	1	1		1	
		select pole:							
		Fixture*	\$	4.21	\$	6.37	\$	6.37	
		Pole							
Quantity:	1	Maintenance	\$	1.99	\$	1.30	\$	1.30	
FPL Conversion:	Yes	Energy**	\$	2.44	\$	0.77	\$	0.77	
Full/Hybrid:	Full	Monthly Total	\$	8.64	\$	8.43	\$	8.43	

Figure 1 - FPL Cost Analysis

Option 1 would replace all SL1-HPS0070 "cobra" fixtures with RSW 28 Watt 3000K LED fixtures. The 28 Watt LED is considered to have the same illumination as the HPS0070 fixture. This fixture is not commonly used, however, as the fixture cost is the same as the 45 Watt LED.

Option 2 would replace all SL1-HPS0070 "cobra" fixtures with RSW45 Watt 3000K LED fixtures. The 45 Watt fixture would provide an increase in the level of illumination on local roads and in neighborhoods. For comparison, the fixtures installed on Pope Road, 16<sup>th</sup> Street 11<sup>th</sup> Street and A Street used 45 Watt lamps. As the fixture price and maintenance cost is the same for the 28 Watt and 45 Watt lamps, the only increase in cost from Option 1 to Option is due to the higher energy usage. There are no changes in wattage between Option 1 and Option 2 for fixtures other than the HPS-0070.

The "Existing" option shown on the FPL cost analysis reflects the cost of remaining with HPS fixtures on the 180 streetlights west of A1A Beach Boulevard. Both Option 1 and Option 2 have a lower cost than remaining with the HPS fixtures. The monthly cost for the various options for the remaining 180 fixtures west of A1A Beach Boulevard is shown in Figure 2:

	Existing (HPS)	Option 1	Option 2
Estimated Monthly Cost	\$1,626.34	\$1,494.81	\$1,532.49
Estimated Monthly Savings	N/A	\$131.53	\$93.85

*Figure 2 - Monthly Cost Comparison Estimate (180 fixtures)*

### **ACTIONS REQUESTED**

The following actions are necessary to proceed with Phase 2 of the LED conversion:

1. Indicate preference for Option 1 (28 Watt) or Option 2 (45 Watt) for the Phase 2 Conversion
2. Authorize the City Manager to execute a LED Lighting Agreement with FPL to convert remaining existing 180 HPS streetlights west of A1A Beach Boulevard to LED streetlights.