

# CITY OF SAN ANTONIO



## City Wide Streetlight Program

City Council B Session  
January 17, 2018

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Presented by: Ben Gorzell, Chief Financial Officer



# City Streetlight Inventory

The City has 77,500 streetlights

## Types of Streetlights (Watts):

**Major Streets** (250W)

**Residential Streets** (100W)

**Downtown Streets** (400W)

**Expressways** (various)

**Decorative** (various)

**Mission Trails** (175W & 250W)

**Other**



# Streetlight Technologies

Incandescent



Metal Halide



High Pressure Sodium



Light Emitting Diode (LED)





# Benefits of LEDs



1. Reduced Energy Usage



2. Reduced Cost to Maintain



3. Reduced Cost of Fuel



# LED vs. HPS





# Funding from Savings

**Convert HPS streetlights to LED**



**Energy-efficient lights create savings**



**Devote funds saved on energy to debt service**

**\$ Savings → Pays Debt**



# Streetlight Retrofit Plan

## Original LED pricing cost effective for larger wattage lights



### Major Street Retrofit (Rates approved in 2012)

Complete October 2014

23,500 Streetlights – savings pay for cost of retrofit



### Downtown Lighting

1,500 Streetlights

Now part of Downtown Lighting Master Plan

Estimated Savings – 4.8MW equivalent to 1,500 homes per year



# Streetlight Retrofit Plan

## Revised LED pricing cost effective for smaller wattage lights



### Residential Retrofit (Rate Approved June 2016)

30,000 Streetlights – savings pay for cost of retrofit

Estimated Savings – 2.6MW equivalent to 806 homes per year



### 22,500 Remaining – Change out upon outage & availability

9,947 Expressway

11,853 Standard

340 Decorative

360 Mission Trails and Other





# D5 Streetlight Improvements

## Additional funding in D5 to add residential streetlights on existing CPS poles

- \$3M Funded through City's Budget Process
- Additional Infill lighting for increased security and public safety
- 3,806 new infill streetlights installed

Note: While installing new lights, completed retrofit of existing residential streetlights (2,075)



# D5 LED vs. HPS





# Streetlight Investments

**Retrofits** – Bond financed, paid by energy savings

- Major Streets - \$11.3M
- Downtown - \$3.0M
- Residential - \$9.9M

## **New Lights**

- District 5 infill - \$3M budget funded
- EastPoint - \$500K TIRZ/CDGB
- Councilmember discretionary funds - \$31K per District from FY16 Budget.



# Going Forward

## **Current Issues and Future Projects**



# Light Color Temperature

**COOL  
WHITE**

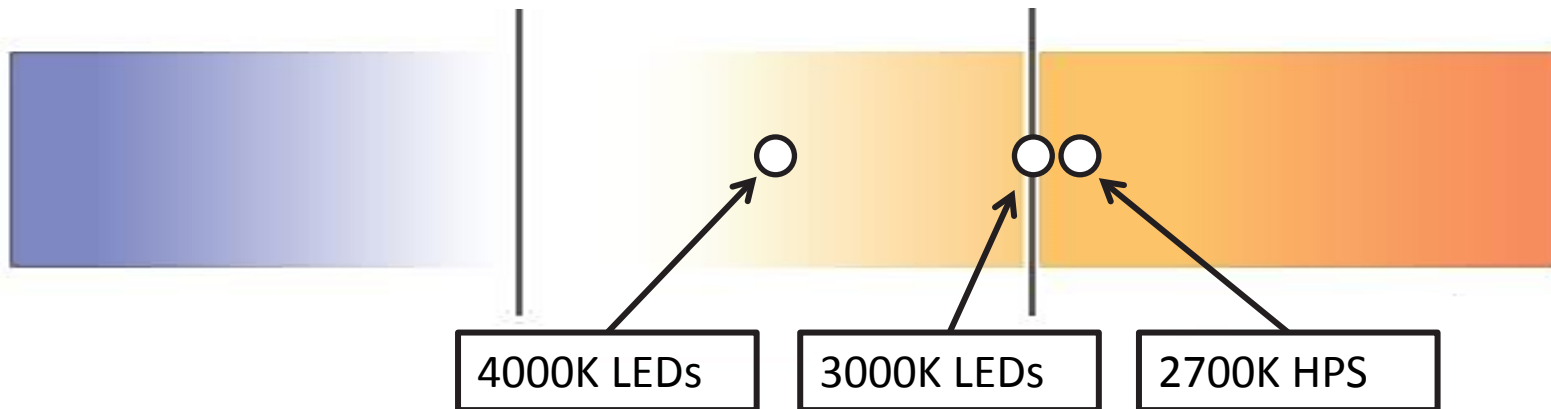
5000K – Above

**BRIGHT  
WHITE**

3000K – 4900K

**WARM**

0 – 2900K





# Streetlight Color

**4000K LED Light**



**3000K LED Light**



**2700K HPS Light**





# CPS LED Color Standard

4000K

- Highways and Major Roadways

3000K

- Residential Roadways

Exceptions: CPS will work with larger areas / neighborhoods to make exceptions for 4000K in residential areas to enhance safety and security or 3000K in historical/cultural areas.



# Downtown Lighting Project

- Retrofit 1,500 streetlights to LEDs
- Upgrade poles and bases along key streets
- Overhead retrofits completed (457)
- Pole upgrades on hold pending the Downtown Lighting Master Plan

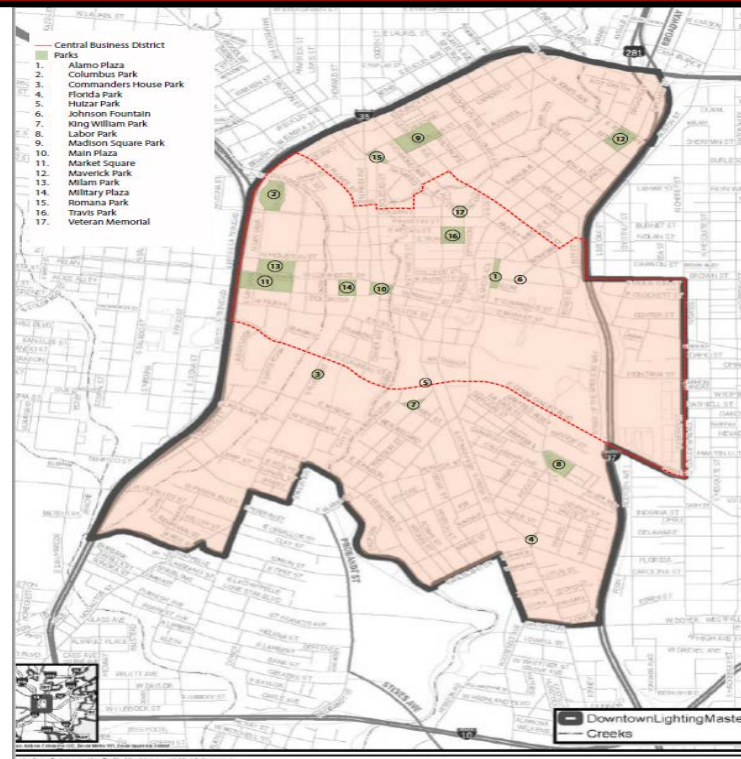






# Downtown Lighting Master Plan

- In 2016, an RFQ for a Downtown Lighting Master Plan (DLMP) RFQ was issued:
  - Assess downtown lighting performance
  - Seek lighting expertise
  - Gather stakeholder input
  - Create maps and standards
  - Includes parks & architectural lighting
- Cost \$500K
  - Funded by Downtown Lighting Project savings \$250K
  - CPS Energy funding \$250K





# RFQ Results

## Downtown Lighting Master Plan

		Max	Alderson & Associates	Terra Design Group	Citelum USA	Clanton & Associates
Overall Qualifications	35	28.38	31.88	24	15.63	
Experience - San Antonio Projects	20	16.88	18.75	12.13	10.75	
Proposed Plan	25	20.13	22.63	15.25	11.88	
SBEDA	20	20	0	0	0	
TOTAL SCORE		100	85.39	73.26	51.38	38.26
RANK			1	2	3	4



# Smart City Lighting

**City and CPS Energy have been working on a proposed Smart City Lighting Initiative to introduce smart street lights.**

- This began with a small 90 light pilot in District 5.
- The pilot allows for smart light features and controls to be evaluated, smart light costs to be finalized and analysis to be performed.

**Smart controls on LED street lights provide additional benefits:**

- Equipment Status: Is it working? Day burner? Lost power?
- Programmable scheduling and dimming, primarily for park lighting
- More accurate inventory with GPS (allows for real-time)
- Platform for other Smart Applications and Communication devices



# Conclusion & Next Steps

- **Deploy retrofit of 30,000 residential street lights**
- **Move forward with Downtown Master Plan Lighting Study**
- **Finalize Smart Light Pilot cost benefit analysis**

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