

Office of Capital Facilities

LOB #60:

STREETLIGHTS (INCLUDING UTILITIES)

Purpose

Streetlights (Including Utilities) manages the Streetlight Program, including monitoring the utility expenditures to ensure streetlight issues are adequately and fairly addressed across the County and to ensure timely/accurate utility payments are made to Dominion Virginia Power (DVP) and Northern Virginia Electric Cooperative (NOVEC). Streetlight staff continues to seek upgrades to gain efficient and environmentally-sound lighting systems. The Streetlight Program is required to ensure installation of streetlights as required by the County's Public Facilities Manual (PFM) and as part of various projects constructed throughout the County. This program also handles the coordination of streetlight issues with the County Board of Supervisors' offices and residents and is the main point of contact for issues of streetlight repair and damage, outages, etc.

Description

The Streetlight Program manages utility expenditures totaling \$8.2 million (4/4.0 FTE positions).

- Utility bills are paid and managed by Capital Facilities for streetlights countywide;
- New installations occur from private development activities, public development (County facilities), roadway projects, and select multiuse trails. The streetlight program works closely with DVP and NOVEC. These utility companies are responsible for streetlight installation and maintenance and the County streetlight program coordinates the work that needs to be performed; and,
- The Streetlight program manages the replacement of any non-standard special streetlight poles, fixtures and foundations due to damage.

The Streetlight program works closely with the Fairfax County Utility Coordinator and other County agencies to negotiate the Virginia Energy Purchasing Governmental Association (VEPGA) contract.

- Ensures streetlight issues are adequately and fairly addressed for utility billings.
- The Streetlight Program ensures the County adheres to the established contract which includes (a) Fuel Charge Rider A (fuel rate), (b) other applicable Riders, (c) new technology lighting schedules (i.e. LED lighting rates), (d) Terms and Conditions for repairs and maintenance, (e) responsibility for obtaining permits and easements, and (e) timelines on cost estimates and installation and construction schedules.
- The Streetlight Program staff works to ensure any price escalations for the fuel factor rate, the type of lights installed, and general contract rate increases are fair and reasonable.

The Streetlight Program reviews every development plan for the planning of streetlights and works closely with the BOS and citizens on streetlight issues.

- The Streetlight Program staff reviews all countywide streetlight installations; installations increase with the expansion of developments and roadway projects across the County.
- Provides expertise and guidance to developers on streetlight installations.
- Serves as the intermediary between DVP/NOVEC and private developers.
- Reviews development plans associated with greater urbanization and TOD. Streetlight requirements and designs are evaluated for select high volume walkways and bike trails as seen within the Tysons Corner urban redevelopment area. Illumination levels and photometrics are also

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evaluated to ensure safety of the residents and communities for walkers, school children at bus stops, and crime deterrence. Provides a resource for the resolution of resident streetlight complaints and for streetlight concerns and suggestions.

The Streetlight Program further seeks environmentally-sound lighting options and seeks to install lighting that is cost beneficial and environmentally friendly.

- The Dim Bulb Program provides for upgrading of existing lights, typically older Mercury Vapor (MV) source lights. Numerous MV source lights have depreciated in effective lighting distribution and are replaced with more efficient high pressure sodium vapor (HPSV) source lights. The monthly utility rate is less with similar HPSV light than the MV light. The VEPGA contract allows for a low flat rate conversion fee for changing MV to HPSV.

Benefits

- Streetlights staff provide coordinated management of the County streetlight system to ensure consistency in lighting approach, conformance with lighting standards and prompt resolution of lighting issues.
- Streetlights enhance vehicular and pedestrian safety; deter crime deterrence, and reduce nighttime crashes.
- Streetlights aid in nighttime vehicular navigation. A well-lit intersection provides a safe environment for all vehicular movements. In addition, a well-lit intersection will allow improved visibility for oncoming motorists to better see pedestrians as well to allow the pedestrians a well-lit path to cross the roadway.
- Fairfax County adheres to ANSI/IESNA RP-8 (American National Standards Institute/Illuminating Society of North America) Standard Practices. The benefit of utilizing standard practices is to encourage good consistent lighting performance for roadways and pedestrian areas though out the County, minimize dark spots and limit unwanted glare to the motorist. The RP-8 enhances design standards that encourage night time vehicular and pedestrian safety.
- Reduce nighttime crime incidents. Improved lighting deters potential offenders by increasing the risk that they can be seen committing a crime. Police can enforce crime prevention better at night when there is improved visibility. First responders are better protected at night under lit roadways. Children required to walk to school and events during dark hours are safer when walking along roadways that have well lit roadways and pedestrian areas.

The program provides an important review of lighting as urbanization continues to grow, working closely with the development community. Lighting is becoming more important in and around dense development, including transit oriented development (TOD) areas.

Mandates

In compliance with the Fairfax County Public Facilities Manual (PFM), all developers are required to provide streetlights along the frontage of their site. Capital Facilities streetlight staff provides the review of the developer streetlight plans to ensure compliance with the PFM.

Trends and Challenges

- Utilization of LED technology provides energy efficient white light. Lesser energy inefficient streetlights such as MV emits a bluish tint color and HPSV emits a yellowish tint color. The current challenge is that the cost of LED lighting technology is still at a premium. Plus, LED lights still do

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not currently have the lumens output (photometrics) required to properly light wider major roadways.

- Conversion of MV streetlights to HPSV streetlights. The United States Congress Energy Policy Act of 2005, effective January 1, 2008, mandated that the manufacturing and importation of Mercury Vapor ballasts (a key MV streetlight component) will no longer be permitted. No additional MV streetlights are being installed in the County. However, there are 21,931 existing MV streetlights countywide. Ideally, these lights should be converted to the more efficient and effective HPSV lights. The current VEPGA contract allows a flat rate conversion of \$149 per light; therefore, the replacement of 21,931 lights would cost the County \$3,267,719. Funding is not available for this effort. As existing MV ballasts malfunction, they are being replaced on a case-by-case basis with HPSV ballasts.
- The demand for decorative streetlights in new revitalized urban areas such as Tysons Corner has become a challenge since these lights are not a standard product offered by the VEPGA contract. Accordingly, a cost premium is required for decorative, non-standard lights. Decorative streetlight products can be used per VEPGA contract, but Dominion Virginia Power must approve the product and Fairfax County must store replacement products (10 percent of total non-standard inventory).
- Fairfax County has begun installing pedestrian lighting at select locations within Tysons. The DVP product offering is extremely limited for pedestrian lighting. In addition, DVP generally does not maintain pedestrian lighting.

Recently, there has been a new trend that is still being evaluated regarding the placement of Digital Antenna Systems (DAS) on streetlight poles. The mobile device industry has recognized the streetlight pole as a vehicle to secure small antennas to increase mobile signal strength and avoid the use of standalone monopoles. In some instances, a full streetlight pole and streetlight replacement using a non-standard proprietary pole and light has been requested. Discussion with DVP, DPWES and DPZ is ongoing to determine how to address this emerging issue.

Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
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FUNDING			
<u>Expenditures:</u>			
Compensation	\$402,155	\$402,154	\$0
Operating Expenses	7,833,659	7,945,253	8,670,613
Total Expenditures	\$8,235,814	\$8,347,407	\$8,670,613
General Fund Revenue	\$0	\$0	\$0
Net Cost/(Savings) to General Fund	\$8,235,814	\$8,347,407	\$8,670,613
POSITIONS			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	3 / 3	4 / 4	4 / 4
Total Positions	3 / 3	4 / 4	4 / 4

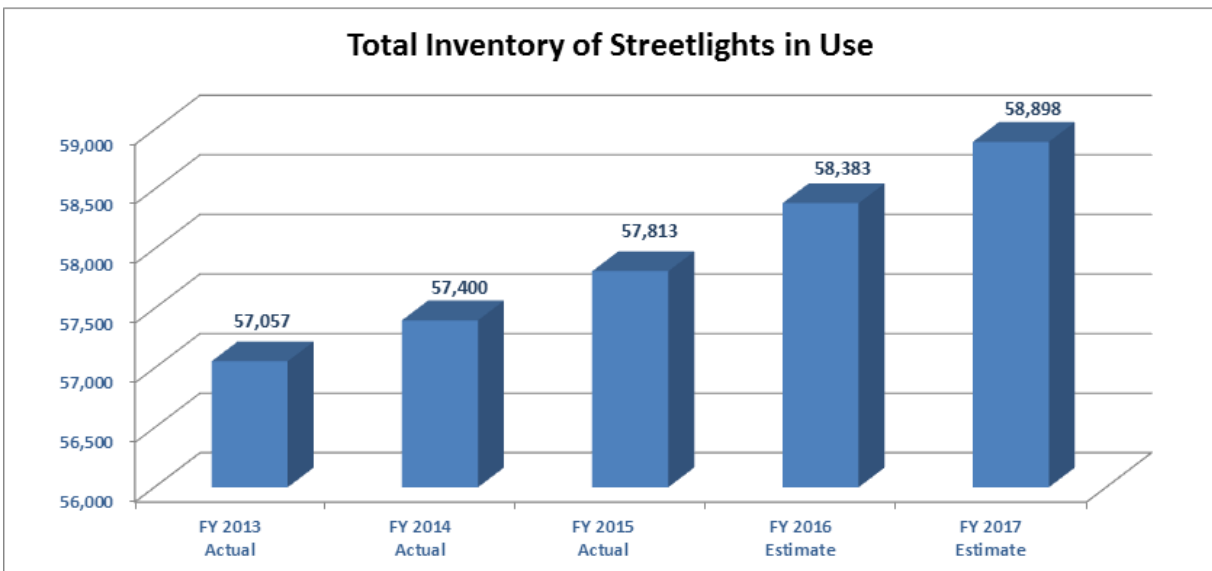
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Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Total Inventory of Streetlights in Use	57,057	57,400	57,813	58,383	58,898
Total Annual Utility Cost of Streetlights	\$8,142,874	\$8,235,813	\$8,347,407	\$8,564,351	\$8,787,858
Cost per Streetlight	\$143	\$143	\$144	\$147	\$149
Percent of increase in inventory	0.50%	1%	1%	2%	2%

Total Inventory of Streetlights in Use

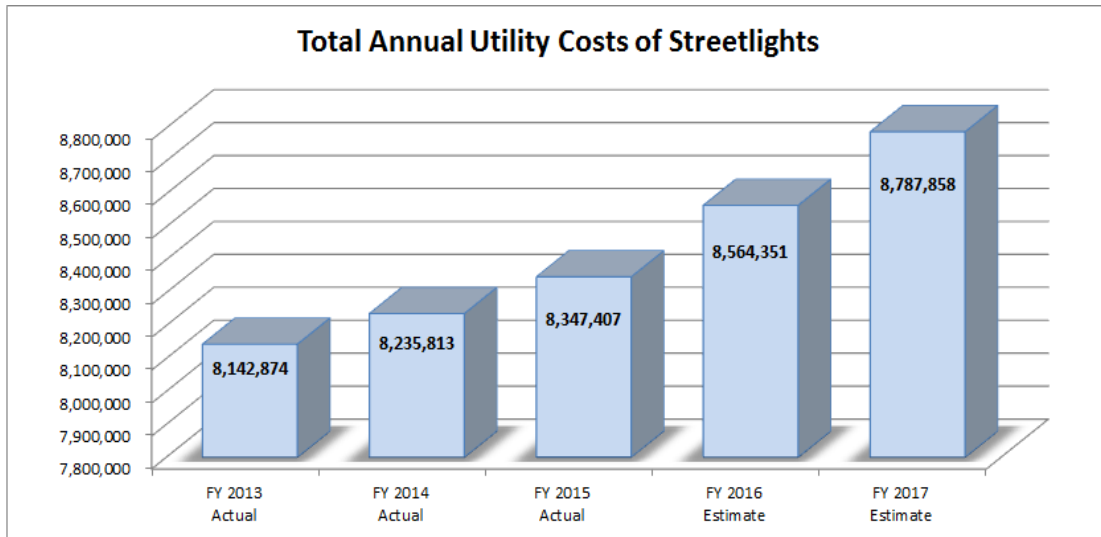
Total Inventory of Streetlights continues to increase each year with development activity across the County. Increases are primarily due to streetlights installed under the Developer Streetlight Program whereby developers are required to provide streetlights along the frontages of their sites in accordance with the Public Facilities Manual (PFM) requirements. In addition, a limited number of lights are added based on requests from residents through the Dim Bulb Streetlight Program and Board of Supervisor's request. Finally, streetlights are added to the inventory due to the completion of various County projects. Inventory estimates are projected to increase in FY 2016 and FY 2017 based on continued development primarily in the Tysons and Reston areas of the County.



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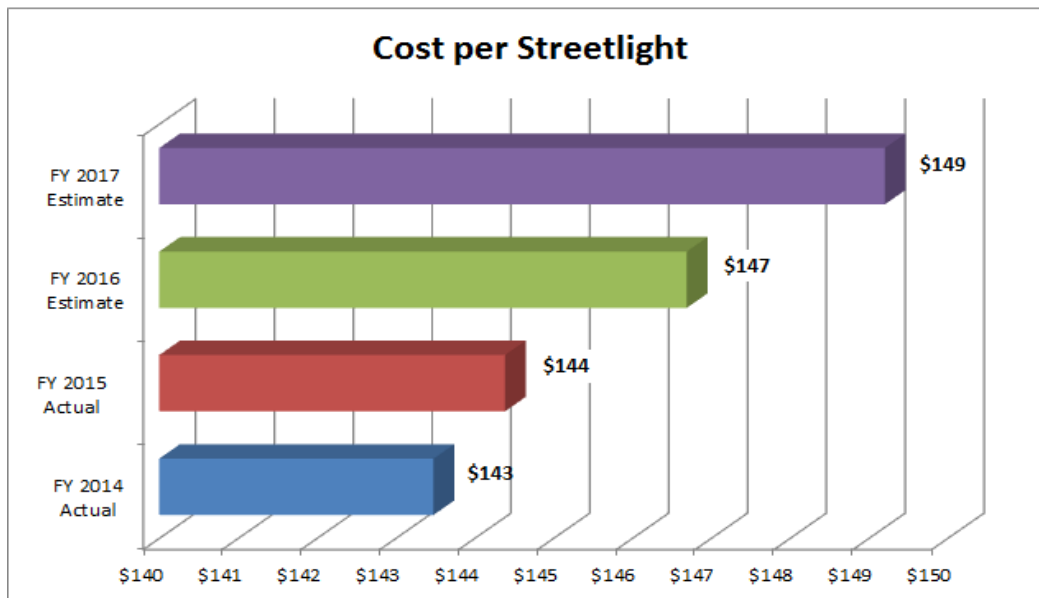
Total Annual Utility Cost of Streetlights

The Total Annual Utility Costs of Streetlights continue to rise as inventory is added each year. The majority of streetlights added each year is primarily driven by private development. Although, there has been a decrease in fuel rate, VEPGA Rider A, other smaller VEPGA Riders continue to increase which also contributes to the increase in the overall utility costs. The projections for FY 2016 and FY 2017 assume fuel costs remain relatively consistent. The graphic also reflects a steady increase in workload for the Streetlight Program staff as the inventory grows.



Cost per Streetlight

Cost per streetlight has escalated slightly from \$143 per light to \$144 per light and this is anticipated to increase primarily because of growing use of non-standard decorative light fixtures in dense urban centers (Tysons) as the County grows into a more urban-type environment.



Percent of increase in inventory

The information presented in the previous Metrics table demonstrates increased streetlight installations are anticipated associated with development activity. Continued development in Tysons Corner, Reston, and western areas of the County has fueled the growth in streetlight inventory. Additionally, urbanization is now driving a need for increased pedestrian lighting particularly near transit-oriented development areas (near the Silver Line).