ELECTRIC PROGRAM

The Electric Program is administered by the Utilities Department. The program is designed to achieve five primary strategic objectives:

1) Replace and/or rehabilitate aging infrastructure;
2) Maintain or increase system reliability;
3) Improve system efficiency;
4) Address system growth; and
5) Regulatory compliance.

The City owns and maintains the electric distribution system within the City limits. The electrical system consists of 205 miles of primary lines; 15,150 electric meters, 6 electric substations, and 31 diesel generators that are used to reduce electric costs in the City. The annual peak electric load is 140 megawatts (MW).

PRIOR YEAR ACCOMPLISHMENTS

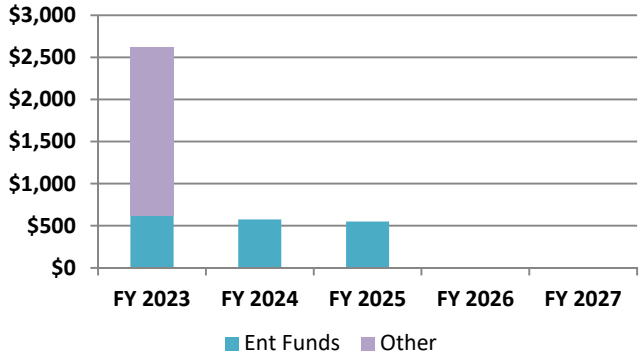
The Electric Program is investing every year in ongoing projects to maintain and upgrade the electrical distribution infrastructure Transmission & Distribution Maintenance (E-030), and Substation Capacity/Reliability Improvements (E-037). The ongoing project placing Overhead Lines Underground (E-033) completed work on Jefferson Street, School Street, Lincoln Ave, and Old Wellington Road.

The spending on maintenance and upgrades of the electrical distribution directly contributes to the City's excellent power service availability of 99.99%. This translates to less than 52 minutes of outage time for the average consumer in a year.

THE FIVE-YEAR PLAN (FY 2023 – FY 2027)

The FY 2023 Five-Year Capital Improvement Program (CIP) includes a $1,750,000 transfer from the Electric Fund and $2,000,000 in Other Sources.

FY 2023 funding consists of a $625,000 transfer from the Electric Fund and $2,000,000 in Other Sources.



(Dollars in Thousands)

FY 2023 CAPITAL PROJECTS

LED Streetlight Replacement (E-034)
Upgrade all Manassas City streetlights (approximately 2,800) to LED over seven years.

Manassas Airport Distribution Improvements (E-035)
Develop an electrical infrastructure replacement and upgrade plan at the Airport to include adding switching options for redundancy and upgrade of backup generation.

FY 2023 MAINTENANCE CAPITAL PROJECTS

Transmission & Distribution Maintenance (E-030)
Replace cables and terminations on Trinity Lane and Corey Drive.

Place Overhead Lines Underground (E-033)
Relocation of utility services underground along Sudley Road (southside).

Substation Capacity/Reliability Improvements (E-037)
Perform major maintenance and capacity improvements to the four City-owned distribution substations.

Circuit Automation (E-038)
Improve reliability and switching operations by replacing manual switches with automatically operated devices.

NEW CAPITAL PROJECTS

- Lockheed Substation Relocation/Upgrade (E-042)

SUMMARY OF ELECTRIC CAPITAL PROJECTS

($ in Thousands)

Cost Estimates:	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
Planning	3,325	250	-	-	-	-	-	3,575	250
Land	-	-	-	-	-	-	-	-	-
Construction	43,330	2,375	575	550	-	-	-	46,830	3,500
Total Cost	**46,655**	**2,625**	**575**	**550**	**-**	**-**	**-**	**50,405**	**3,750**
Funding Sources:									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-	-
Electric Fund	1,955	625	575	550	-	-	-	3,705	1,750
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	44,700	2,000	-	-	-	-	-	46,700	2,000
Total Funding	**46,655**	**2,625**	**575**	**550**	**-**	**-**	**-**	**50,405**	**3,750**
Operating Impacts:									
Revenue	-	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-	-
Program (Costs) Saving	-	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

ELECTRIC CAPITAL PROJECT LISTING

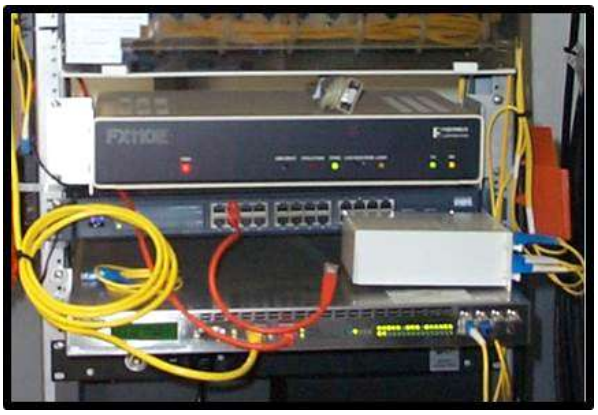
($ in Thousands)

Project Name	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
New Fiber Optic Loop/Ri	505	-	-	-	-	-	-	505	-
LED Streetlight Replace	575	125	125	100	-	-	-	925	350
Manassas Airport Distrib	875	450	450	-	-	-	-	1,775	900
Distribution Facility Relo	-	50	-	450	-	-	-	500	500
AWS/BCG Substation	41,700	2,000	-	-	-	-	-	43,700	2,000
Lockheed Substation Re	3,000	-	-	-	-	-	-	3,000	-
Total	**46,655**	**2,625**	**575**	**550**	**-**	**-**	**-**	**50,405**	**3,750**

E-032 New Fiber Optic Loop/Ring

Year Introduced: 2015
Change: Timeline
Associated Proj: E-039
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.8

Est. Start: 7/1/2016
Est. Complete: 6/30/2025



Description:

Identify needs of self-healing rings/loops using fiber optic paths for priority services. Install new fiber optic cabling to provide priority services to the necessary redundancy loops/rings. This will improve reliability of critical infrastructure networks and public safety services.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	505	-	-	-	-	-	-	505
Total Cost	**505**	**-**	**-**	**-**	**-**	**-**	**-**	**505**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	505	-	-	-	-	-	-	505
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**505**	**-**	**-**	**-**	**-**	**-**	**-**	**505**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-034 LED Streetlight Replacement

Year Introduced: 2017
Change: No change
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.10

Est. Start: 7/1/2016
Est. Complete: 6/30/2025

Description:
Upgrade all Manassas City streetlights (approx. 2,800) to LED over seven years.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	50	-	-	-	-	-	-	50
Land	-	-	-	-	-	-	-	-
Construction	525	125	125	100	-	-	-	875
Total Cost	**575**	**125**	**125**	**100**	**-**	**-**	**-**	**925**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	575	125	125	100	-	-	-	925
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**575**	**125**	**125**	**100**	**-**	**-**	**-**	**925**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-035 Manassas Airport Distribution Improvements

Year Introduced: 2020
Change: No change
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.8

Est. Start: 7/1/2019
Est. Complete: 6/30/2024

Description:

The electrical distribution system at Manassas Regional Airport has been installed over time without a coordinated plan for redundancy and reliability. This project will study the new loads planned at the Airport and develop a replacement and upgrade plan for the electrical infrastructure. This will include adding switching options for redundancy and a review and upgrade of the backup generation.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	75	-	-	-	-	-	-	75
Land	-	-	-	-	-	-	-	-
Construction	800	450	450	-	-	-	-	1,700
Total Cost	**875**	**450**	**450**	**-**	**-**	**-**	**-**	**1,775**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	875	450	450	-	-	-	-	1,775
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**875**	**450**	**450**	**-**	**-**	**-**	**-**	**1,775**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-039 Distribution Facility Relocations (Pr Wm Water Tank Site)

Year Introduced: 2022
Change: Timeline
Associated Proj: E-032
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.8

Est. Start: 7/1/2022
Est. Complete: 6/30/2025

Description:

This is a project to complete all the electric work needed to accommodate the removal of the existing Water Tank at Prince William Substation. The scope of work includes the relocation of two Prince William Distribution Circuits (Ckt. 101 & Ckt. 102) that are in conflict up to the first manhole, demolishing and removing the existing control building and installing a new pre-fab control building with pad and foundation. The scope of work includes the removal of all communication antennas and fiber optic circuits and relocating them to the new location.

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Future**	**Total Project**
Planning	-	50	-	-	-	-	-	50
Land	-	-	-	-	-	-	-	-
Construction	-	-	-	450	-	-	-	450
Total Cost	**-**	**50**	**-**	**450**	**-**	**-**	**-**	**500**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	50	-	450	-	-	-	500
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**-**	**50**	**-**	**450**	**-**	**-**	**-**	**500**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-040 AWS/BCG Substation

Year Introduced: 2022
Change: Increased Estimate
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.8

Est. Start: 7/1/2021
Est. Complete: 6/30/2023

Description:

This is a project to build a new, dedicated, dual-feed electric substation for the sole purpose of serving an industrial-grade customer electric load. The scope of work includes the planning, engineering, design, and build of the electric substation including high side delivery point tap fee, two (2) 50 MVA transformers, two (2) 230 KV gas circuit breakers, switchgear, control house, battery banks & back up systems, UG cables and protection relays.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	2,900	200	-	-	-	-	-	3,100
Land	-	-	-	-	-	-	-	-
Construction	38,800	1,800	-	-	-	-	-	40,600
Total Cost	**41,700**	**2,000**	**-**	**-**	**-**	**-**	**-**	**43,700**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	41,700	2,000	-	-	-	-	-	43,700
Total Funding	**41,700**	**2,000**	**-**	**-**	**-**	**-**	**-**	**43,700**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-042 Lockheed Substation Relocation/Upgrade

Year Introduced: 2023
Change: New Project
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.8

Est. Start: 7/1/2022
Est. Complete: 6/30/2023

Description:

This project involves the reclassification and relocation of the Lomar Energy Delivery Point to Dominion Energy Cannon Branch substation and upgrade the delivery point to 230 KV. In order to meet NERC/PJM Standards, Dominion Energy is required to convert the existing 115 KV lines to a new 230 KV system.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	300	-	-	-	-	-	-	300
Land	-	-	-	-	-	-	-	-
Construction	2,700	-	-	-	-	-	-	2,700
Total Cost	**3,000**	**-**	**-**	**-**	**-**	**-**	**-**	**3,000**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	3,000	-	-	-	-	-	-	3,000
Total Funding	**3,000**	**-**	**-**	**-**	**-**	**-**	**-**	**3,000**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

ELECTRIC MAINTENANCE CAPITAL PROJECT LISTING

($ in Thousands)

The City identifies Capital Projects as projects with a cost greater than $100,000 **and** a useful life of 10+ years. The City recognizes that there are additional projects/needs that are capital in nature but do not meet the requirement set forth for a capital project. These additional projects/needs are considered Maintenance Capital Projects, a list of which is provided below for the Electric Program.

Project Name	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
Electric T&D Maintenanc	5,347	800	800	800	800	800	-	9,347	4,000
Alternative Generation In	2,350	300	300	300	300	300	-	3,850	1,500
Place Overhead Lines U	2,725	500	500	500	500	500	-	5,225	2,500
Substation Capacity and	925	375	350	350	350	350	-	2,700	1,775
Distribution Switching Ca	260	-	110	-	110	-	-	480	220
Total Cost	**11,607**	**1,975**	**2,060**	**1,950**	**2,060**	**1,950**	**-**	**21,602**	**9,995**
Funding Sources									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-	-
Electric Fund	11,463	1,975	2,060	1,950	2,060	1,950	-	21,458	9,995
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	144	-	-	-	-	-	-	144	-
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**11,607**	**1,975**	**2,060**	**1,950**	**2,060**	**1,950**	**-**	**21,602**	**9,995**