

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

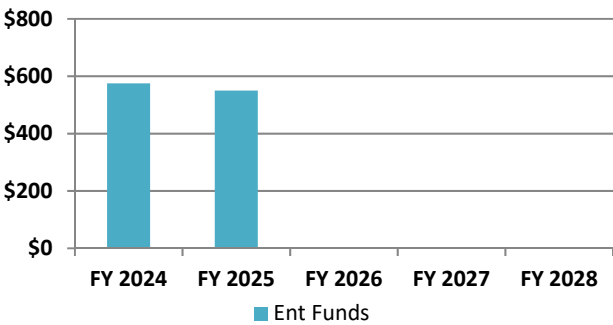
The Electric Program is investing every year in ongoing projects to maintain and upgrade the electrical distribution infrastructure Transmission & Distribution Maintenance (E-030), and Substation Capacity/Reliability Improvements (E-037). The ongoing project placing Overhead Lines Underground (E-033) completed work on the southside of Sudley Road from Stonewall Road to Digges 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 2024 – FY 2028)

The FY 2024 Five-Year Capital Improvement Program (CIP) includes a \$1,125,000 transfer from the Electric Fund.

FY 2024 funding consists of a \$575,000 transfer from the Electric Fund.



(Dollars in Thousands)

FY 2024 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 2024 MAINTENANCE CAPITAL PROJECTS

Transmission & Distribution Maintenance (E-030)
Replace cables and terminations on Waterford Drive and Cloverhill Road



Alternative Generation Initiatives (E-031)
Maintain and upgrade generation assets to meet changing emissions requirements and investigate new technologies to provide alternative peak-shaving methods

Place Overhead Lines Underground (E-033)
Relocation of utility services underground along Douglas Street, Mathis Avenue, and Irving Street

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

Distribution Switching Capabilities (E-038)
Improve reliability and switching operations by replacing manual switches with automatically operated devices.

NEW CAPITAL PROJECTS

There are no new projects in the Electric program.

ELECTRIC CAPITAL PROJECT LISTING

(\$ in Thousands)

Project Name:	Prior Years	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project	5-Year CIP
New Fiber Optic Loop/Ring	505	-	-	-	-	-	-	505	-
LED Streetlight Replacement	700	125	100	-	-	-	-	925	225
Manassas Airport Distribution	1,325	450	-	-	-	-	-	1,775	450
Distribution Facility Relocations (Pr	50	-	450	-	-	-	-	500	450
AWS/BCG Substation	43,700	-	-	-	-	-	-	43,700	-
Lockheed Substation	3,000	-	-	-	-	-	-	3,000	-
Total:	49,280	575	550	-	-	-	-	50,405	1,125

E-032 New Fiber Optic Loop/Ring

Year Introduced:	2015
Change:	No Change
Associated Proj:	E-039
Program Area:	Electric
Managing Dept:	Utilities
Manager:	T. Dawood
Plan Conformance:	CFI 7.4.8

Est. Start: 07/01/2016
Est. Comp: 06/30/2025



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.

	Prior Years	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	505	-	-	-	-	-	-	505
Total Cost:	505	-	-	-	-	-	-	505

Funding Sources:

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:

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-

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

Upgrade all Manassas City streetlights (approx. 2,900) to LED over seven years. As of FY 2023, approximately 2,000 have been replaced.

Funding Sources:

Operating Impacts:

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-

E-035 Manassas Airport Distribution Improvements

Year Introduced:	2020
Change:	Timeline
Associated Proj:	N/A
Program Area:	Electric
Managing Dept:	Utilities
Manager:	T. Dawood
Plan Conformance:	CFI 7.4.8

Est. Start: 07/01/2019
Est. Comp: 06/30/2025



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.

[illegible]**Funding Sources:**

General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	1,325	450	-	-	-	-	-	1,775
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding:	1,325	450	-	-	-	-	-	1,775

Operating Impacts:

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-



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:	Prior Years	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project
Planning	50	-	-	-	-	-	-	50
Land	-	-	-	-	-	-	-	-
Construction	-	-	450	-	-	-	-	450
Total Cost:	50	-	450	-	-	-	-	500

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

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-

E-040 AWS/BCG Substation

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

Est. Start: 07/01/2021
Est. Comp: 12/31/2024



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.

(\$ in 1,000s)

Cost Estimate:	Prior Years	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project
Planning	3,100	-	-	-	-	-	-	3,100
Land	-	-	-	-	-	-	-	-
Construction	40,600	-	-	-	-	-	-	40,600
Total Cost:	43,700	-	-	-	-	-	-	43,700

Funding Sources:

General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	43,700	-	-	-	-	-	-	43,700
Total Funding:	43,700	-	-	-	-	-	-	43,700

Operating Impacts:

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-

E-042 Lockheed Substation Relocation/Upgrade

Year Introduced: 2023
Change: Timeline
Associated Proj: N/A
Program Area: Electric **Est. Start:** 07/01/2022
Managing Dept: Utilities **Est. Comp:** 12/31/2024
Manager: T. Dawood
Plan Conformance: CFI 7.4.8



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.

(\$ in 1,000s)

Cost Estimate:	Prior Years	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project
Planning	300	-	-	-	-	-	-	300
Land	-	-	-	-	-	-	-	-
Construction	2,700	-	-	-	-	-	-	2,700
Total Cost:	3,000	-	-	-	-	-	-	3,000

Funding Sources:

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:

Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue:	-	-	-	-	-	-	-	-

ELECTRIC MAINTENANCE CAPITAL PROJECT LISTING

The City identifies Capital 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 2024	FY 2025	FY 2026	FY 2027	FY 2028	Future Years	Total Project
Electric T&D Maintenance and	6,147	800	800	800	800	800	-	10,147
Alternative Generation Initiatives	2,650	300	300	300	300	300	-	4,150
Place Overhead Lines Underground (Non-	3,225	500	500	500	500	500	-	5,725
Substation Capacity and Reliability	1,300	350	350	350	350	350	-	3,050
Distribution Switching Capabilities	260	110	-	110	-	110	-	590
Total Cost:	13,582	2,060	1,950	2,060	1,950	2,060	-	23,662

Funding Sources

General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	13,438	2,060	1,950	2,060	1,950	2,060	-	23,518
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	144	-	-	-	-	-	-	144
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding:	13,582	2,060	1,950	2,060	1,950	2,060	-	23,662