ELECTRIC PROGRAM

The Electric Program is administered by the Electric division of 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

Each capital project is reviewed by staff to ensure it is both economically justifiable and consistent with the Utilities Strategic Plan. Projects are coordinated with Public Works to ensure that relocations and underground projects are accomplished together with transportation projects so community disruptions are minimized. Electric utility relocations related to such projects are reflected in the Transportation Program beginning in FY 2018.

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

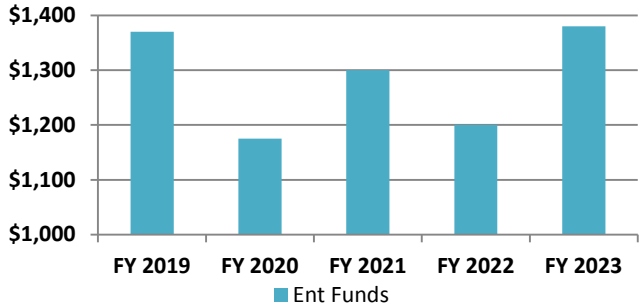
Place Overhead Lines Underground (E-033)
Efforts continue to replace overhead electric service with underground services to improve reliability.

Underground Cable/Termination Replacement (E-030)
Efforts continue to replace the underground cables & terminations throughout the City that have reached their useful life. This will improve reliability.

THE FIVE-YEAR PLAN (FY 2019 – FY 2023)

The FY 2019 Five-Year Capital Improvement Program (CIP) includes $6,425,000 in Enterprise Funds (Electric Fund).

FY 2019 funding consists of a $1,370,000 transfer from the Electric Fund.



(Dollars in Thousands)

The spending on maintenance and upgrades of the electrical distribution infrastructure has directly contributed 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.

FY 2019 CAPITAL PROJECTS

Underground Cable/Termination Replacement (E-030)
Replace cable and terminations along Confederate Trail.

New Generation Initiatives (E-031)
Ongoing contributions to maintain and upgrade diesel generation through the 2020 bid year, to relocate units behind the meter, and to investigate new energy technologies to provide peak shaving.

New Fiber Optic Loop/Ring (E-032)
Install 28,000 feet of new fiber optic cabling from VMEA to Quarry.

Place Overhead Lines Underground (E-033)
Relocation of utility services to underground lines along Foster Drive from Technology Drive to Dean Drive.

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

FY 2019 MAINTENANCE CAPITAL PROJECTS

Replace/Automate Pad Mount Fuse Cabinets (E-004)
Continue efforts to replace metal fuse cabinets with pad-mount switch cabinets.

NEW CAPITAL PROJECTS

There are no new projects proposed for the Electric Program.

SUMMARY OF ELECTRIC CAPITAL PROJECTS

($ in Thousands)

CostEstimates:	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project	5-Year CIP
Planning	410	10	10	10	10	10	-	460	50
Land	-	-	-	-	-	-	-	-	-
Construction	4,740	1,360	1,165	1,290	1,190	1,370	100	11,215	6,375
Total Cost	**5,150**	**1,370**	**1,175**	**1,300**	**1,200**	**1,380**	**100**	**11,675**	**6,425**
Funding Sources:									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-	-
Electric Fund	5,150	1,370	1,175	1,300	1,200	1,380	100	11,675	6,425
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**5,150**	**1,370**	**1,175**	**1,300**	**1,200**	**1,380**	**100**	**11,675**	**6,425**
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 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project	5-Year CIP
Underground Cable and	2,940	400	400	400	400	400	-	4,940	2,000
New Generation Initiativ	1,150	300	300	300	300	300	-	2,650	1,500
New Fiber Optic Loop/Ri	160	195	-	-	-	-	-	355	195
Place Overhead Lines U	750	375	375	500	400	580	-	2,980	2,230
LED Streetlight Replace	150	100	100	100	100	100	100	750	500
Total	**5,150**	**1,370**	**1,175**	**1,300**	**1,200**	**1,380**	**100**	**11,675**	**6,425**

E-030 Underground Cable and Termination Replacement

Year Introduced: 2010
Change: No change
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: D. Jones
Plan Conformance:
Comprehensive Plan 7.7

Est. Start:
Est. Complete:

Description:

The utility has experienced an above average number of failures on the 15KV main feeder circuits because cables have been in use long past their expected service life. This is a formal program for replacing cables and terminations based on test results, age, and the number of faults experienced.
FY19: Confederate Trail; FY20: Liberia Avenue
FY21: Georgetown South Tie Point Phase I
FY22: Georgetown South Tie Point Phase II
FY23: Acer Lane Circuit Tie Point 103/302

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project
Planning	210	10	10	10	10	10	-	260
Land	-	-	-	-	-	-	-	-
Construction	2,730	390	390	390	390	390	-	4,680
Total Cost	**2,940**	**400**	**400**	**400**	**400**	**400**	**-**	**4,940**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	2,940	400	400	400	400	400	-	4,940
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**2,940**	**400**	**400**	**400**	**400**	**400**	**-**	**4,940**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-031 New Generation Initiatives

Year Introduced: 2011
Change: No change
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: D. Jones
Plan Conformance:
Comprehensive Plan 7.7
Comprehensive Plan 8.3

Est. Start:
Est. Complete:

Description:

Maintain and upgrade the diesel generation assets to meet changing emissions requirements and investigate new technologies to provide alternative peak-shaving methods.
Projects in development: Gas turbine tie to Prince William Substation; Dean generators relocation; study generators for peaking; Osbourn HS generator replacement.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project
Planning	150	-	-	-	-	-	-	150
Land	-	-	-	-	-	-	-	-
Construction	1,000	300	300	300	300	300	-	2,500
Total Cost	**1,150**	**300**	**300**	**300**	**300**	**300**	**-**	**2,650**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	1,150	300	300	300	300	300	-	2,650
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**1,150**	**300**	**300**	**300**	**300**	**300**	**-**	**2,650**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-032 New Fiber Optic Loop/Ring

Year Introduced: 2015
Change: No change
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: D. Jones
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 7/1/2016
Est. Complete: 6/30/2020

Description:

Identify needs of self-healing rings/loops using fiber optic paths for priority services. Install new fiber optic cabling to provide priority services the necessary redundancy loops/rings. This will improve reliability of critical infrastructure networks and public safety services.
FY19: VMEA to Quarry (28,000') and Ball Field to Micron (1,200');
FY20: Prince William to Buckner (12,100')

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	160	195	-	-	-	-	-	355
Total Cost	**160**	**195**	**-**	**-**	**-**	**-**	**-**	**355**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	160	195	-	-	-	-	-	355
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**160**	**195**	**-**	**-**	**-**	**-**	**-**	**355**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

E-033 Place Overhead Lines Underground (Non-Transportation)

Year Introduced: 2016
Change: Increased Estimate
Associated Proj: N/A
Program Area: Electric
Managing Dept: Utilities
Manager: D. Jones
Plan Conformance:
Comprehensive Plan 7.6.3

Est. Start:
Est. Complete:

Description:

Place overhead electric, telephone, cable, and fiber lines underground, improving reliability and aesthetics, and lowering maintenance costs. 86% of lines are underground and approximately 3,900 feet are undergrounded annually.
FY19 and FY20: Foster Dr. (Technology Dr. to Dean Dr.)
FY21: Sudley Rd. (Southside; Digges Rd. to Godwin Dr.)
FY22: Sudley Rd. (Southside; Stonewall Rd. to Digges Rd.)
FY23: Portner Ave. (Main St. to Sudley Rd. Tie Point 404/104)

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Future**	**Total Project**
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	900	375	375	500	400	580	-	3,130
Total Cost	**900**	**375**	**375**	**500**	**400**	**580**	**-**	**3,130**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	900	375	375	500	400	580	-	3,130
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**900**	**375**	**375**	**500**	**400**	**580**	**-**	**3,130**
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: D. Jones
Plan Conformance:
Comprehensive Plan 8.3

Est. Start: 7/1/2016
Est. Complete: 6/30/2024

Description:

Upgrade all Manassas City streetlights (approx. 2,800) to LED over seven years. First year activities include planning, design, and specifications of fixtures including public input and investigation of other local municipalities that have changed to LED.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project
Planning	50	-	-	-	-	-	-	50
Land	-	-	-	-	-	-	-	-
Construction	100	100	100	100	100	100	100	700
Total Cost	**150**	**100**	**100**	**100**	**100**	**100**	**100**	**750**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	150	100	100	100	100	100	100	750
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**150**	**100**	**100**	**100**	**100**	**100**	**100**	**750**
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 2019	FY 2020	FY 2021	FY 2022	FY 2023	Future	Total Project	5-Year CIP
Replace/Automate Pad	749	55	55	55	55	55	55	1,079	275
Total Cost	**749**	**55**	**55**	**55**	**55**	**55**	**55**	**1,079**	**275**
Funding Sources									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-	-
Electric Fund	749	55	55	55	55	55	55	1,079	275
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**749**	**55**	**55**	**55**	**55**	**55**	**55**	**1,079**	**275**