

Resource Conservation Plan

Fiscal Year 2023

Maryland-National Capital Park and Planning Commission

Montgomery County Department of Parks

Montgomery County Planning Department

February 17, 2022

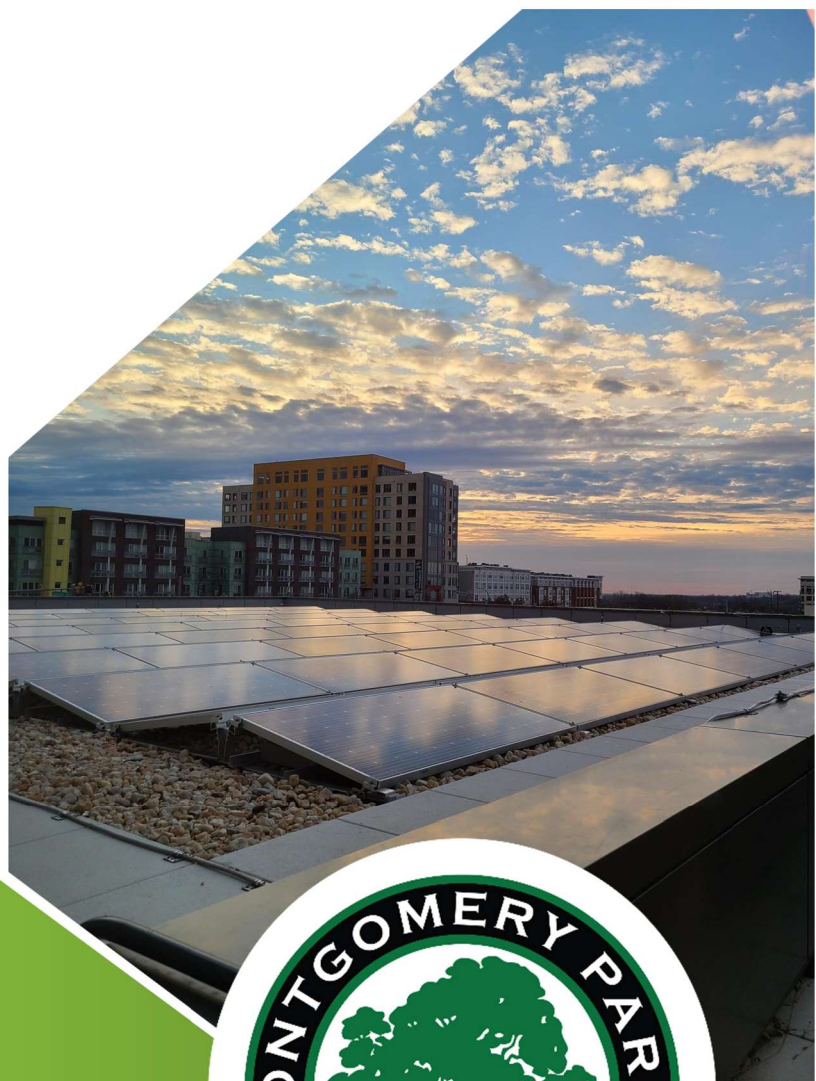


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Introduction

The Maryland-National Capital Park and Planning Commission (M-NCPPC) in Montgomery County is responsible for the acquisition, development, and management of more than 37,000 acres of parkland, providing residents and visitors with a diverse array of recreational and leisure-time opportunities/activities; clean, safe and accessible facilities; meaningful educational opportunities; and dedication to open space and habitats for conservation and stewardship of our County's precious natural resources.

Developed by the Sustainability Office in the Facilities Management Division of the M-NCPPC Department of Parks, the Resource Conservation Plan report presents the accomplishments of the implemented energy and water-related efficiency projects/initiatives as of December 2021 and the projected plans for the balance FY22.

The report also establishes strategies for FY23 to conserve energy and water resources as part of a comprehensive approach to resource management. The Resource Conservation Plan is developed to align with the M-NCPPC – Montgomery County Sustainability Plan, approved and currently implemented for FY20 - FY21 with an extension granted through FY22 to allow for integration with the recently published Montgomery County Climate Action Plan.

The COVID-19 pandemic has continued into FY22, and the M-NCPPC continues to promote the health and safety of staff through operational changes and additional precautionary measures. While there have been work program impacts due to the on-going pandemic, staff continue to work diligently to continue operations as seamless as possible in delivering on the mission of the organization to the community for which it serves.

Montgomery County government released the countywide Climate Action Plan in June 2021 to address the significant and serious challenges posed by global climate change. The development of this plan was a broad-scale community-wide effort that engaged residents, businesses, non-profits, government, and other stakeholders to lay a coordinated framework guidance for achieving an 80% reduction in greenhouse gas emissions by 2027 and 100% elimination by 2035. M-NCPPC – Montgomery County is committed to acting responsibly and collaboratively with all local government agencies, organizations, community members, and other stakeholders toward achievement of these reduction/elimination goals. Working together will be critical to our success in battling climate change and ensuring a healthy and safe environment for future generations.

In the spirit of collaborative work county-wide, the M-NCPPC Department of Parks participates in the Interagency Committee on Utilities Management (ICEUM) and works with numerous other participating agencies to share information and ideas on energy conservation, energy efficiency, and other conservation measures related to utility consumption by the individual organizations. This committee meets regularly throughout the calendar year. Annually, the Committee compiles projected unit cost per utility data for each agency. While several factors impact utility unit costs for each agency, including differences in tariffs, account-type and volume pricing differences, and other factors, it is a valuable exercise to assist with the budgeting process. Utility unit cost projections for FY23 have been included on page 26 of this document for each of the participating agencies in ICEUM.

Utility Cost and Projections

The Department of Parks and the Planning Department established a comprehensive utilities management program beginning in July 2003. Utility resource consumption has been reduced as a result of the projects and programs implemented by Commission staff. M-NCPPC manages a utility program consisting of over 500 utility meters across the county (water, sewer, electricity, natural gas, propane, oil).

Beginning in 2019, significant work to verify all utility meter locations and associated accounts was initiated. This process should help address meter and account validation which will lead to reduction in billing errors across the system.

Utility Cost and Projections FY19 to FY23

The actual utility costs for FY19 through FY21, the budgeted utility costs for FY22, and the proposed FY23 budget are noted in the table below. Utility costs for the new Wheaton Headquarters building have been factored into the FY21 budget and onward.

	FY19 Actual	FY20 Actual	FY21 Actual	FY22 Budget	FY23 Proposed Budget
PARKS DEPARTMENT	\$2,278,801	\$1,839,021	\$1,576,162	\$2,241,777	\$2,259,488
ENTERPRISE	\$852,379	\$781,438	\$814,704	\$910,186	\$874,000
PROPERTY MANAGEMENT	\$23,067	\$26,197	\$36,687	\$25,700	\$34,000
WHEATON HQ	N/A	N/A	\$536,904	\$764,659	\$782,021
PLANNING DEPARTMENT	\$193,786	\$161,729	\$85,854	-	\$5,200
BI-COUNTY	\$73,844	\$64,120	\$51,763	\$75,695	\$87,128
TOTAL:	\$3,421,876	\$2,872,505	\$3,102,074	\$4,018,017	\$4,041,837

Data obtained from M-NCPPC General Ledger and includes renewable energy credits (RECs) beginning FY19 forward

Utility Cost and Projections FY22

The current estimate for utility costs, as of December 28, 2021, for the following Funds within the Department of Parks (including Planning Department), and the shared Bi-County are depicted below. A projection for the fiscal year and approved FY21 budget is also included.

	FY22 Cost as of 12/28/21	FY22 Projection	Budget FY22
PARKS DEPARTMENT	\$807,156*	\$2,138,660	\$2,241,777
ENTERPRISE	\$352,390	\$884,486	\$910,186
PROPERTY MANAGEMENT	\$17,694	\$29,800	\$25,700
WHEATON HQ	\$459,996	\$741,000	\$764,659
BI-COUNTY	\$25,408	\$75,695	\$75,695
TOTAL:	\$1,662,643	\$3,869,641	\$4,018,017

Data obtained from M-NCPPC General Ledger

FY21 Cost includes renewable energy credit (REC) costs

*Includes \$79 electric for Admin Fund

The following table shows, per commodity, utility consumption and cost as of December 28, 2021. The cost projection depicted is for FY22. Utility consumption and cost data for each commodity is obtained from the General Ledger as well as the M-NCPPC EnergyCAP (ECAP) system.

FY21 Consumption as of 12/28/2021	Units	Utility	FY21 Cost as of 12/28/21	Projection	Budget FY22
6,339,757	KWH	Electric	\$1,037,199	\$2,167,761	\$2,173,980
59,392	THERMS	Natural Gas	\$63,632	\$349,800	\$382,900
9,051	GAL	Propane	\$18,262	\$143,400	\$180,015
33,404	KGAL	Water/Sewer	\$434,093	\$938,034	\$981,998
131	GAL	Heating Oil (#2)	\$1,229	\$7,160	\$9,400
1,409,475	KWH	Solar PV	\$108,229	\$230,000	\$277,538
0	REC	Wind REC	\$0	\$12,186	\$12,186
TOTAL:			\$1,662,643	\$3,869,641	\$4,018,017

Utility Cost and Consumption Changes FY22

Facility renovations, upgrades, and improvements of existing locations and parks included in the FY22 approved budget that will increase utility costs, resulting in operating budget impact across both the Department of Parks and the Planning Department, are shown in the tables below.

FY22 Utility Cost Changes – Operating Budget Impact – Montgomery Parks		
FY22 Adopted Budget	Amount	Comment
Martin Luther King Recreational Park - Irrigation	\$5,410	Water for irrigation
Northwest Branch Ballfields Irrigation	\$8,500	Water for irrigation
Piedmont Woods Local Park	\$1,300	Water for drinking fountain; Parking lot lights
Total:	\$15,210	

FY22 Utility Cost Changes – Operating Budget Impact – Wheaton HQ ISF – Montgomery Parks/Montgomery Planning/Montgomery County		
FY22 Adopted Budget	Amount	Comment
Wheaton Headquarters	\$50,000	Natural Gas – budget for this was in miscellaneous services in FY21. Moved to correct account for FY22.

Utility Cost and Consumption Changes FY23

Facility renovations, upgrades, and improvements of existing locations and parks included in the FY23 proposed budget that will increase utility costs, resulting in operating budget impact across both the Department of Parks and the Planning Department, are shown in the tables below.

FY23 Utility Cost Changes – Operating Budget Impact – Montgomery Parks		
FY23 Proposed Budget	Amount	Comment
Avenel Local Park – Athletic Field Irrigation	\$10,820	Water – Irrigation System

Renewable Energy Resources

With the accelerated greenhouse gas reduction targets passed in 2017 (Montgomery County Council Resolution 18-974) and the subsequent release of the countywide Climate Action Plan, a greater focus on local renewable energy generation has taken priority. M-NCPPC is pursuing installation of locally generated renewable resources, primarily through solar photovoltaics. The below table details the rooftop and ground mounted solar projects currently installed or in process of being installed on M-NCPPC parkland in Montgomery County.

Park Location	Complete	Type	System Size	Estimated Annual Production	Estimated Annual Savings
South Germantown Recreational Park	FY18	Ground mount Power Purchase Agreement	1,320 kW	1,647,360 kWh	Variable due to PPA, approx. \$66,000 under current terms
Rock Creek Regional Park	FY18	Ground mount Power Purchase Agreement	1,173 kW	1,463,904 kWh	Variable due to PPA, approx. \$59,000 under current terms
Wheaton Headquarters	FY21	Roof mount	113.5 kW	141,648 kWh	\$15,500
Black Hill Regional Park Maintenance Facility	In Process	Roof mount	67.0 kW	83,566 kWh	\$10,000
Maydale Nature Classroom	FY21	Roof mount	17.4 kW	21,715 kWh	\$3,000
Olney Mill Neighborhood Park	FY18	Roof mount	1.8 kW	2,246 kWh	\$300
Black Hill Regional Park	FY19	Roof mount	1.8 kW	2,246 kWh	\$300
TOTAL:			2,694.5 kW	3,362,685 kWh	\$154,100

The following table shows the solar energy produced and cost per the power purchase agreements for the two solar fields located at Rock Creek Regional Park and South Germantown Recreational Park.

Location	Metric	FY19	FY20	FY21	FY22 as of 11/29/2021
Rock Creek Regional Park	Production	1,506,646 kWh	1,756,284 kWh	1,456,317 kWh	530,123 kWh
	Cost	\$106,686	\$127,592	\$107,492	\$39,905
South Germantown Recreational Park	Production	1,736,005 kWh	2,006,199 kWh	985,849 kWh	643,066 kWh
	Cost	\$125,806	\$147,709	\$72,892	\$50,538

Data obtained from M-NCPPC EnergyCAP

Renewable Energy Certificate Purchase

M-NCPPC has been committed to a clean energy purchase policy since FY16. Barring FY22, M-NCPPC – Montgomery County has purchased wind-based renewable energy certificates (REC) equal to 100% of the total electricity consumption for the organization. In FY22, the cost of RECs increased by nearly 490% due to several factors including the deadly Texas cold snap in early 2021, as well as increased REC demand through corporate purchases, leading to more extreme pricing pressure. Since FY16, RECs had been under \$1 per REC, however, for FY22 indicative pricing was set at over \$5 per REC. This increase was not something that the multi-agency group buying collective could support in existing budgets. The below table outlines historical wind REC purchase details for the organization since FY16.

Renewable Energy Certificate Purchase – M-NCPPC - Montgomery County					
Fiscal Year	REC Volume	Cost per REC	Total Cost	Vendor	Contract
16	52,000*	\$0.67	\$34,840.00	Renewable Choice Energy	Montgomery County
17	52,000*	\$0.71	\$36,920.00	Renewable Choice Energy	Montgomery County
18	54,300**	\$0.48	\$26,064.00	Renewable Choice Energy (Schneider Electric)	Montgomery County
19	54,000**	\$0.48	25,920.00	Renewable Choice Energy (Schneider Electric)	Montgomery County
20	15,500	\$0.89	\$13,795.00	Schneider Electric	Montgomery County
21	15,500	\$0.89	\$13,795.00	Schneider Electric	Montgomery County
22	0	\$5.25 (est.)	N/A	Collective purchase was not made Countywide due to the extreme increase in REC cost for FY22.	

*Agency-wide purchase to include both M-NCPPC Montgomery & Prince George's Counties

**Program overcommitment

Energy Utilization & Consumption Allocations

The total square footage of conditioned buildings/facilities that consume electricity and natural gas are as follows:

TOTAL CONDITIONED BUILDING SQ.FT.					
Energy	FY18	FY19	FY20	FY21	FY22
Electric	1,145,150	1,145,150	1,145,150	1,203,409	1,203,409
Natural Gas	482,170	482,170	482,170	545,049	545,049

Values currently under review and subject to change

FY21 values include the addition of M-NCPPC-controlled square footage at Wheaton HQ and removes Parkside HQ, Hillandale Offices and Montgomery Regional Office (MRO)

The energy consumption for FY18 - FY21, and estimated figures for FY22 and FY23 are as follows:

TOTAL ENERGY CONSUMPTION						
Energy	FY18	FY19	FY20	FY21	FY22 Projection	FY23 RECOMMENDATION
Electric kWh	14,916,755	14,635,012	11,770,351	16,188,121	15,864,358	15,528,128
Natural Gas therms	293,530	287,277	248,144	285,533	280,333	275,321

ENERGY CONSUMPTION – FACILITIES						
Energy	FY18	FY19	FY20	FY21	FY22 Projection	FY23 RECOMMENDATION
Electric kWh	10,529,775	10,390,859	8,356,949	11,493,566	11,263,694	11,024,971
Natural Gas therms	293,530	287,277	248,144	285,533	280,333	275,321

ENERGY CONSUMPTION - ATHLETIC FIELDS & EXTERIOR POLE LIGHTS						
Energy	FY18	FY19	FY20	FY21	FY22 Projection	FY23 RECOMMENDATION
Electric - kWh	4,387,000	4,244,153	3,413,402	4,694,555	4,600,664	4,503,157

Data from FY18 – FY21 are obtained from the M-NCPPC EnergyCAP (ECAP) system

Partial facility closures and program cancelations due to the COVID-19 pandemic contributed to lower usage in FY20

Energy Procurement, Contract Status, & Purchasing Policy

M-NCPPC has implemented a procurement program that has contracted fixed cost energy supply of electricity and natural gas service to provide long-term budget stability. Upcoming renewals are anticipated to be renegotiated six months prior to the current contract expiration dates.

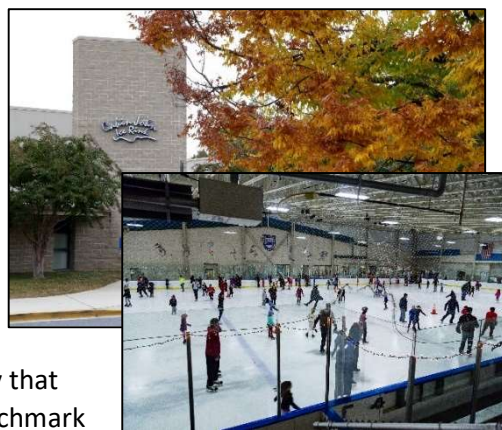
Energy Procurement – M-NCPPC Montgomery County		
	Current Rate	Contract Term
Electricity		
Baltimore Gas & Electric Company (BGE)	\$0.0701/kWh*	June 2019 – June 2021
PEPCO	\$0.04835/kWh	July 2021 – July 2024
Potomac Edison – 1 st Energy Corp	\$0.0580/kWh*	June 2019 – June 2021
Natural Gas		
Washington Gas	\$0.4140/therm	August 2021 – July 2022

*Awaiting new firm contract rates from vendor 2/1/22

Building Benchmarking

Beginning in 2014, Montgomery County government adopted a building benchmarking law and in 2015 amended Bill 35-15 (Environmental Sustainability – Benchmarking Amendments) requiring benchmarking of energy use at nonresidential buildings 50,000 square feet and greater. Utilizing Energy Star Portfolio Manager, these data are reported to Montgomery County government for public disclosure.

Cabin John Ice Rink is the only M-NCPPC, Montgomery County facility that has current data for benchmarking. M-NCPPC will be required to benchmark Wheaton Headquarters in 2022 (2021 data). Cabin John Ice Rink, located at 10610 Westlake Drive, Rockville MD 20852 is a 78,000 square foot public facility. Originally constructed in 1969, this facility offers ice skating and ice hockey classes and camps, as well as special events and skating exhibitions. The facility offers three ice rinks (NHL, Olympic, and Studio) as well as a dance studio, party rooms, a pro shop, and café.



Exterior of Cabin John Ice Rink (above)
Skaters enjoying the ice rink (below)

Summarized building benchmarking data for Cabin John Ice Rink from calendar year (CY) 2016 through 2020 is depicted in the tables below. Between CY 2016 and 2019 the facility saw steady reductions in both grid electric and natural gas consumption. In 2020, the facility saw a slight uptick in grid electric, but the natural gas consumption dropped drastically. In FY19 the facility underwent a significant refrigeration system upgrade for the NHL rink which resulted in the closure of that amenity for a period of 3 months (April – June) which likely explains the grid electricity reductions seen in 2019. In FY20, due to the COVID-19 pandemic, reduced programming may explain some of the drastic reduction in natural gas consumption at this site.

Energy Type	2016	2017	2018	2019	2020	Change (current vs baseline)
Grid Electricity (kWh)	2,621,590	2,742,129	2,547,612	2,067,409	2,670,671	↑ 1.60%
Natural Gas (therms)	84,366	76,648	73,290	60,155	37,400	↓ -55.60%

Source and Site Energy Use Intensity (EUI) for Cabin John Ice Rink have been provided in the table below for CY 2016 through 2020, including weather normalized (WN) values for each. The Site EUI is a measure of the amount of direct energy the facility has consumed per square foot per year. Source EUI additionally accounts for energy lost due to production, transmission, and delivery to the site. The facility has operated with steady reductions in both Site and Source EUI since 2016. Given these savings, as anticipated, associated greenhouse gas emissions have also decreased over 18% since 2016.

Metric	2016	2017	2018	2019	2020	% Difference (current vs baseline)
Site EUI (kBtu/ft2)	222.9	214.4	205.4	167.6	164.8	↓ -26.10%
Site EUI – WN (kBtu/ft2)	222.5	214.4	203.8	167.6	164.8	↓ -25.9%
Source EUI (kBtu/ft2)	453.3	434.0	410.7	334.2	377.5	↓ -13.3%
Source EUI – WN (kBtu/ft2)	434.8	434.0	406.1	334.2	377.5	↓ -13.2%
Total GHG Emissions (MTCO2e)	1305.5	1285.0	1221.2	994.7	1,0440.8	↓ -18.4%

Efficiency Projects on M-NCPPC, Montgomery County Parkland

Throughout the year, projects are completed to improve the efficient use of water and energy resources while still providing an exceptional level of service to the public. The overarching goals of this program include:

- Implementing projects focused on heating and air conditioning system replacements for equipment in operation for over 20 years.
- Continued expansion of building automation controls and energy management systems capabilities in primary staff office, support, and maintenance buildings.
- Exterior lighting retrofit program to utilization of LED technology.
- Making progress on programs and initiatives included in the M-NCPPC – Montgomery County Sustainability Plan.
- Continued comprehensive audit of the utility bills being tracked by EnergyCAP to validate data entered and reported for primary locations.
- Installing small-scale rooftop solar photovoltaic systems to reduce our need and dependence on traditional electrical power and lower our organizational carbon footprint.

Efficiency Projects - Fiscal Year Results, FY21

In FY21 projects were completed in support of the program to efficiently utilize water and energy resources at parks and facilities. The below table depicts specific project locations and types of improvements/upgrades completed.

Projects Completed: FY21

Project Location	Description	Efficiency Standard	Primary Shop/Team
Arora Hills Local Park	Install waterless public restroom building	Water Conservation	Facilities Management Team
Blair Local Park	Installed automated control and monitoring of athletic field lighting (baseball/softball)	Improved energy efficiency through automation	Athletic Fields Team, Park Development Division
Blair Local Park	Install automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	Athletic Fields Team, Park Development Division
Cabin John Regional Park	Installed automated control and monitoring of athletic field lighting	Improved energy efficiency through automation	Athletic Fields Team, Park Development Division
Centerway Local Park	Install solar pv flower for public cell phone/device charging	Solar Panel Installation	Facilities Management Team

Project Location	Description	Efficiency Standard	Primary Shop/Team
Laytonia Recreational Park	Install automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	Athletic Fields Team, Park Development Division
Maplewood Alta-Vista Local Park	Basketball and Tennis Court and Pathway Lighting Replacement	LED Lighting	Electric
Meadowbrook Local Park	Installed solar pv flower for public cell phone/device charging	Solar Panel Installation	Facilities Management Team
Meadowbrook Maintenance Facility	Installed inverter heat pump for front administrative offices	High Efficiency Appliance	HVAC
MLK Recreational Park: Field #3	Install automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	Athletic Fields Team
Ridge Road Recreational Park	Installed automated control and monitoring of athletic field lighting	Improved energy efficiency through automation	Athletic Fields Team, Park Development Division
Sligo-Dennis Local Park	Basketball and Tennis Court Lighting Replacement	LED Lighting	Electric, Park Development Division
Spencerville Local Park: Mildred Pumphrey Recreation Center	Replaced through the wall A/C units with variable blow refrigerant (VFR) system and a fresh air heat exchanger in old administrative section of the building	High Efficiency Appliance	HVAC
Tobeytown Neighborhood Park	Park Lighting Replacement	LED Lighting	Electric
Wheaton Claridge Local Park	Park Activity Building: <ul style="list-style-type: none"> 3 toilets retrofit from 3.5 gpf to 1.6 gpf. 2 wall mounted low-flow sinks. Low-flow kitchen sink faucet and drain replacement from galvanized to PVC.	High Efficiency Water Fixtures	Plumbing
Wheaton Headquarters Building	Construction of the first government owned office building that is to be certified LEED Platinum in the State of Maryland. Numerous energy/water efficiency features.	Designed for LEED Platinum	Park Development Division
Wheaton Headquarters Building	Rooftop solar installation (113.5kW)	Solar Panel Installation	Park Development Division

Project Location	Description	Efficiency Standard	Primary Shop/Team
Wheaton Regional Park: Athletic Fields	Repaired automated control and monitoring of athletic field lighting	Improved energy efficiency through automation	Athletic Fields Team, Park Development Division
Wheaton Regional Park: Athletic Fields (1-3)	Installed automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	Athletic Fields Team, Park Development Division
Wheaton Regional Park: Shorefield Restroom Renovation	Replaced plumbing fixtures and lighting fixtures	High Efficiency Water Fixtures; LED Fixtures	Park Development Division

FY21 Projects Summarized by Type

The follow table summarizes the projects detailed above by project type. In cases where multiple measures have been taken under a single project, the various measures have been spread across the listed categories.

Project Type/Category	Completed
Energy Efficient Appliance/Unit	2
Energy Efficiency via Automation	4
LED Light Fixtures	4
LEED Building	1
Solar Panels	3
Water Efficiency/Advanced Water Management	6

Utility Budget Results for FY21:

	FY21 Cost	FY21 Budget	Difference
PARKS DEPARTMENT	\$1,576,162	\$2,263,022	\$686,860
ENTERPRISE	\$814,704	\$965,900	\$151,196
PROPERTY MANAGEMENT	\$36,687	\$25,700	(\$10,987)
WHEATON HQ	\$536,904	\$764,659	\$227,755
PLANNING DEPARTMENT	\$85,854	\$52,897	\$52,897
BI-COUNTY	\$51,763	\$82,464	\$30,701
TOTAL:	\$3,102,074	\$4,154,642	\$1,138,423

Data obtained from M-NCPPC General Ledger

Expenditures for FY21:

Projects Local:	\$37,000
Projects Non-local:	\$40,000
Water Projects Non-local:	\$25,000
<u>Water Projects Local:</u>	<u>\$25,000</u>
Total in FY21:	\$127,000

Efficiency Projects - Results to Date, FY22

The results of the current program year as of December 2021 are as follows:

Goals:

- Continue to expand the exterior lighting retrofit program to use LED technology.
- Continue executing programs and initiatives included in the M-NCPPC – Montgomery County Sustainability Plan.
- Implementation of small-scale solar photovoltaic opportunities.
- Exploration of additional opportunities for stormwater and graywater harvesting for reuse (e.g. operations, irrigation, toilet flushing, other identified uses).
- Continued comprehensive audit of the utility bills being tracked by EnergyCAP to validate data entered and reported for primary locations.
- Continue updating building square footage for all facilities into the Department's Enterprise Asset Management (EAM) system as well as EnergyCAP. These data will be vital in prioritizing the implementation of energy efficiency and conservation projects as well as to help guide renewable energy projects on facilities in parkland.

In FY22 several projects have been planned, are in process, or have been completed in support of the program to efficiently utilize water and energy resources at parks and facilities. The below table depicts the details and status of specific projects, including locations and types of improvements for FY22.

Project Status to Date: FY22

Project Location	Description	Efficiency Standard	Planned, In Process, or Complete	Primary Shop(s)/Team
Agricultural History Farm Park	Install fresh air exchangers and heat pumps.	High Efficiency Appliance	Planned	HVAC
Bauer Local Park	Court Lighting Replacement	LED Lighting	Complete	Electric, Park Development Division
Black Hill Regional Park: Maintenance Facility	Installation of 68kW United Therapeutics donated rooftop solar pv system	Solar Panel Installation	In Process	Electric
Cabin John Regional Park	Replace water line	Infrastructure Upgrade	In Process	Park Development Division
Cabin John Regional Park Headquarters	Install electric vehicle charging stations	Electric Vehicle/Equipment Charging Station	Complete	Electric
Cabin John Regional Park Maintenance Facility	Install additional electric outlets to accommodate charging of electric landscape equipment	Electric Vehicle/Equipment Charging Station	Complete	Electric
Capital View Homewood Local Park	Replace HVAC system with inverter heat pump with fresh air supply	High Efficiency Appliance	In Process	HVAC

Project Location	Description	Efficiency Standard	Planned, In Process, or Complete	Primary Shop(s)/Team
Cherrywood Local Park	Drinking Fountain Replacement	Improved water conservation	In Process	Plumbing
Clarksburg Local Park	Park Lighting Replacement	LED Lighting	Complete	Electric
Indian Springs Terrace Local Park	Replace HVAC unit with inverter heat pump (dual fuel option, as needed)	High Efficiency Appliance	Complete	HVAC
Kemp Mill Estates Park Activity Building	Replace plumbing fixtures, replace lighting fixtures	Water Efficiency, LED Lighting	In Process	Electric, Plumbing, Park Development Division
Long Branch Stream Valley Unit 1	Park Lighting Replacement	LED Lighting	Complete	Electric
Meadowbrook Local Park Activity Building	Replace plumbing fixtures, replace lighting fixtures	Water Efficiency, LED Lighting	In Process (Design)	Park Development Division
Meadowbrook Local Park	Replace sewer line	Infrastructure Upgrade	Complete	Plumbing, Park Development Division
Meadowbrook Stables Restroom Renovation	Replace plumbing fixtures, replace lighting fixtures	Water Efficiency, LED Lighting	Planned	Park Development Division
Meadowood Local Park	Court Lighting Replacement	LED Lighting	Planned	Electric, Park Development Division
Meadowside Nature Center	<ul style="list-style-type: none"> • Replace plumbing fixtures and lighting fixtures • Upgrade sewer line 	Water Efficiency; LED Lighting	In Process	Electric, Plumbing, Park Development Division
Northwest Branch Athletic Fields 1-4	Install automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	In Process	Athletic Fields Team, Park Development Division
Norwood Local Park Activity Building	Replace plumbing fixtures, replace lighting fixtures	Water Efficiency, LED Lighting	In Process	Park Development Division

Project Location	Description	Efficiency Standard	Planned, In Process, or Complete	Primary Shop(s)/Team
Parklawn Local Park	Install waterless public restroom building	Water Conservation	In Process	Facilities Management Team
Pilgrim Hills Local Park	HVAC Replacement	High Efficiency Appliance	In Process	HVAC
Quince Orchard Knolls Neighborhood Park	Tennis Court Lighting Replacement	LED Lighting	In Process	Electric
Saddlebrook Park Police Headquarters	Lighting replacement for Detective's Office, Gym, Men's Locker Room, and Administrative Hallway	LED Lighting	Planned	Electric
Sligo Avenue Park Activity Building	Replace plumbing fixtures, replace lighting fixtures	Water Efficiency, LED Lighting	In Process	Park Development Division
South Germantown Recreational Park	Replace roadway and central loop lighting with LED technology (62 fixtures)	LED Lighting	Complete	Electric
Stewartown Local Park	Drinking Fountain Replacement	Improved water conservation	In Process	Plumbing
Waters House Special Park: Waters House	Upgrade existing HVAC equipment	High Efficiency Appliance	Complete	HVAC
Wheaton Regional Park: Brookside Nature Center	Replace plumbing fixtures, replace lighting fixtures	High Efficiency Water Fixtures; LED Lighting	In Process	Electric, Plumbing, Park Development Division
Wheaton Regional Park: Brookside Nature Center	Replace HVAC unit with inverter heat pump (dual fuel option, as needed)	High Efficiency Appliance	Complete	HVAC
Wheaton Regional Park: Maintenance Facility	Replace exterior lighting	LED Lighting	Planned	Electric

FY22 Projects Summarized by Type

The follow table summarizes the projects detailed above by project type. In cases where multiple measures have been taken under a single project, the various measures have been spread across the listed categories.

Project Type/Category	Completed	In Process	Planned
Energy Efficient Appliance/Unit	3	2	1
EV/Equipment Charging Station	2		2
LED Light Fixtures	4	7	4
Solar Panels		1	
Maintenance Efficiency/Infrastructure Improvement	1	1	
Water Efficiency/Advanced Water Management		10	1

Utility Budget Projection for FY22:

	FY22 Budget	Cost as of 1/4/2022	FY22 Annual Projection	Difference (FY22 Budget- Projection)
PARKS DEPARTMENT	\$2,241,777	\$807,156*	\$2,138,660	\$1,478,756
ENTERPRISE	\$910,186	\$352,390	\$884,486	\$25,700
PROPERTY MANAGEMENT	\$25,700	\$17,694	\$29,800	(\$4,100)
WHEATON HQ	\$764,659	\$459,996	\$741,000	\$23,659
BI-COUNTY	\$75,695	\$25,408	\$75,695	\$0
TOTAL:	\$4,018,017	\$1,662,643	\$3,869,641	\$1,524,015

Data obtained from M-NCPPC General Ledger

*Includes \$79 electric for Admin Fund

Budgeted expenditures for FY22:

Projects Local:	\$37,000
Projects Non-local:	\$40,000
Water Projects Non-local:	\$25,000
<u>Water Projects Local:</u>	<u>\$25,000</u>
Total in FY22:	\$127,000

Efficiency Projects - Planned Measures, FY23

The proposed program for FY23 is as follows:

Goals:

- Assess building envelopes and improve insulation where applicable.
- Continue lighting retrofit program to use LED technology inside facilities, in parking lots, along walkways and at ballfields/sports courts.
- Determine additional potential small-scale solar applications. Investigate opportunities for geo-thermal technology for heating and cooling.
- Begin prioritizing projects to eliminate on-site fossil fuel burning (natural gas, propane, heating oil) with the ultimate goal of electrifying these functions with renewable energy resources.
- Continue maximizing HVAC and water heater efficiency through appliance and equipment upgrades.
- Continue retrofitting plumbing fixtures to low-flow, low consumption units.
- Maintain existing and implement appropriate new opportunities stormwater and graywater harvesting for reuse (e.g. operations, irrigation, toilet flushing, other identified uses).
- Utilize ArcGIS collector to gather locational data for all utility meters on parkland. Address meter and account issues as appropriate with the utility.
- Continue to implement the comprehensive audit of the utility bills being tracked by E-CAP to validate data entered and reported for primary locations.

For FY23 several projects have been planned in support of the program to efficiently utilize water and energy resources at parks and facilities. The below table depicts the details and status of a limited number of specific projects, including locations and types of improvements.

While a few capital improvement program (CIP) projects have been identified below, due to the nature of the work in the M-NCPPC Facilities Management Division, this list is kept truncated to ensure balance between maintenance tasks that arise through the year, which have a budgetary impact, along with planned, proactive efficiency upgrades. When maintenance tasks arise for specific sites, opportunities are often taken for mobilization of staff and resources to install or upgrade appliances or equipment. This practice effectively improves efficiency and a more holistic approach to maintenance and upkeep of facilities on parkland.

Planned Measures FY23

Project Location	Description	Efficiency Standard	Funding	Primary Shop(s)/Team
Avenel Local Park	Install automated control irrigation with advanced water management	Improved water conservation on irrigated site through automation	To be determined	Athletic Fields Team, Park Development Division
Damascus Recreational Park: Restroom C Renovation	Replace plumbing and lighting fixtures	High Efficiency Water Fixtures; LED Fixtures	PLAR - NL	Electric, Plumbing, Park Development Division

Project Location	Description	Efficiency Standard	Funding	Primary Shop(s)/Team
Damascus Recreational Park: Athletic Lighting Fields 1 and 2	Installed automated control and monitoring of athletic field lighting	Improved energy efficiency through automation	To be determined	Athletic Fields Team, Park Development Division
Meadowbrook Local Park	Replace water line	Infrastructure Upgrade	PLAR LP - MR	Plumbing, Park Development Division
Norwood Local Park: Park Activity Building	Replace plumbing and lighting fixtures	High Efficiency Water Fixtures; LED Fixtures	PLAR LP – PAB	Electric, Plumbing, Park Development Division
Olney Manor Recreational Park: Maintenance Yard	Replace existing shed structure with pre-engineered building with solar panels on roof.	Solar Panel Installation	PLAR – NL	Electric, Park Development Division
Saddlebrook Park Police Headquarters	Replace through-the-wall A/C units with variable flow refrigerant (VFR) system and a fresh air heat exchanger in old administrative section of building	High Efficiency Appliance	Pending Funding	HVAC
Wheaton Regional Park	Replace water line to Sports Pavilion	Infrastructure Upgrade	PLAR NL-MR	Plumbing

FY23 Projects Summarized by Type

The follow table summarizes the projects detailed above by project type. In cases where multiple measures have been taken under a single project, the various measures have been spread across the listed categories.

Project Type/Category	Planned
Energy Efficient Appliance/Unit	1
Energy Efficiency via Automation	1
LED Light Fixtures	2
Solar Panels	1
Maintenance Efficiency/Infrastructure Improvement	2
Water Efficiency/Advanced Water Management	3

Utility Budget Proposal for FY23:

	Proposed Budget FY23
PARKS DEPARTMENT	\$2,259,488
ENTERPRISE	\$874,000
PROPERTY MANAGEMENT	\$34,000
WHEATON HQ	\$782,021
PLANNING DEPARTMENT	\$5,200
BI-COUNTY	\$87,128
TOTAL:	\$4,041,837

Proposed budget expenditures for FY23:

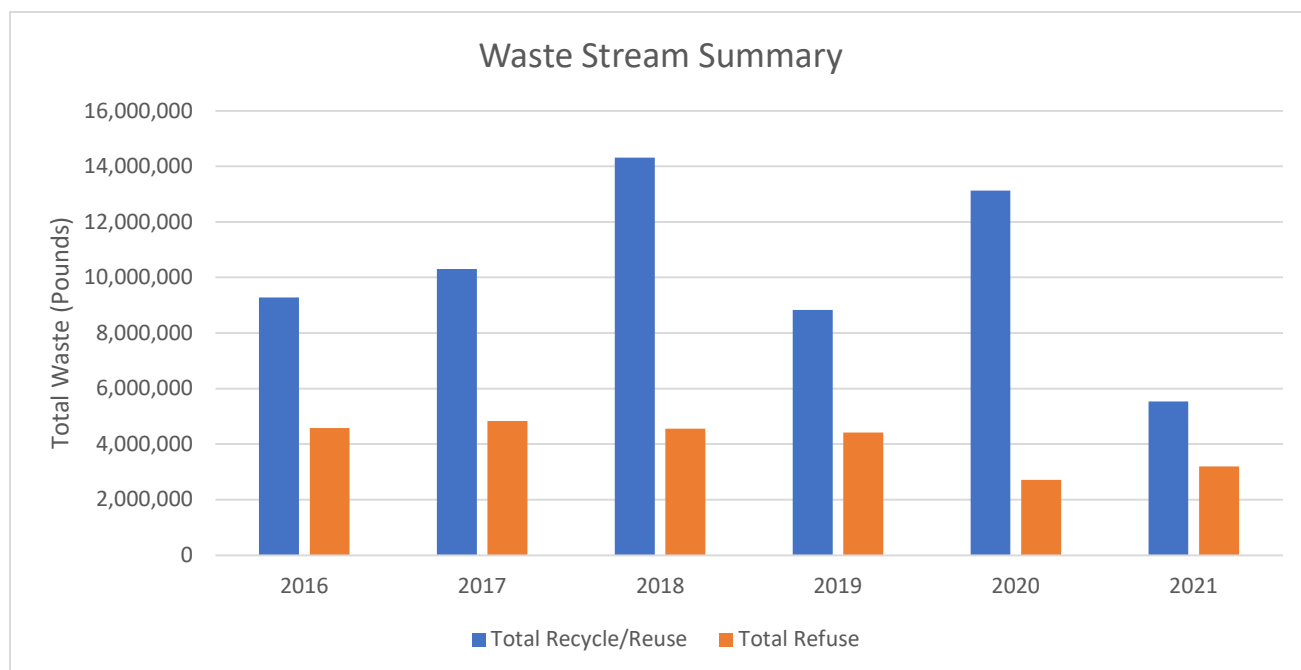
Projects Local:	\$37,000
Projects Non-local:	\$40,000
Water Projects Local:	\$25,000
Water Projects Non-Local:	\$25,000
Total in FY23:	\$127,000

Waste Reduction and Recycling

M-NCPPC – Montgomery County operates a comprehensive and proactive waste reduction and recycling program, adhering to the business/commercial recycling standards and reporting requirements established by the Montgomery County Executive and the Recycling and Resource Management Division.

In 2020, the Montgomery County Recycling and Resource Management Division recognized Montgomery Parks as a business with an outstanding recycling and waste reduction program. This recognition is awarded to businesses or organizations that excel in their efforts to provide a high level of training and education to their customers and/or employees in an engaging manner that increases awareness and participation in their recycling and waste reduction program. The success of the recycling program relies on effective communication, education, and monitoring practices.

M-NCPPC – Montgomery County recycles mixed paper/cardboard, commingled materials of aluminum, glass, plastic, steel/tin, scrap metal, and green waste (e.g. vegetation/plant material). In addition to these materials, the M-NCPPC - Montgomery County further reduces the waste stream by recycling numerous voluntary products including tires, motor oil and other hazardous waste, electronics, light bulbs, batteries, as well as construction debris including concrete and asphalt. The below graph depicts the past six years of waste stream data for the organization. Total Recycle/Reuse includes both the mandatory and voluntary recycling materials.



M-NCPPC – Montgomery County works to divert as much waste out of trash and into an appropriate recycling stream. Montgomery County established a goal of recycling 70% of the waste stream by 2020 and the organization has worked diligently to try to achieve and maintain this goal. In 2016 and 2017, the total waste diversion rates were 67% and 68% respectively. In 2018, M-NCPPC in Montgomery County successfully surpassed the 70% goal with 73% total waste diversion and in 2019 total waste diversion for the organization dropped back to 67%. For 2020, the organization surpassed the Montgomery County goal with a total waste diversion rate of 83%. In 2021, due to work program changes, the waste diversion rate decreased to 63.3%. This drop is largely due to decreased amounts of recycled concrete and asphalt as there were not large-scale projects

that required this kind of disposal. Work programs continue to be altered due to the pandemic which may impact waste and recycling figures. Overall, in 2021, tonnage of all mandatory materials (mixed paper, commingled, and scrap metal) decreased while green waste processing remained consistent with the prior year. Recycling of voluntary materials increased significantly in 2021 over 2020, with tire recycling being the largest contributor to that change.



Waste removed by volunteers from parkland.

Efforts are taken to reduce waste within our operations, however, as a public land agency, a portion of the organizational waste stream is a result of illegal dumping of various types of waste, including household trash, on parkland. These volumes become part of the total waste stream of the organization. This waste is often removed by volunteers through stream and park cleanups. Each year, on

average, nearly 10,000 volunteers dedicate time to removing trash and recyclables from streams and parks. Since FY16, through this valuable support, nearly 550,000 pounds of trash and recyclables have been removed. In 2021, Montgomery Parks' volunteer community contributed more than 9,000 volunteer hours to stream and park cleanups, removing more than 90,000 lbs. of trash and recyclables.

Additionally, the waste audit program has continued for 2021 with the purpose of holding ourselves and colleagues accountable for reducing waste and increasing diversion of recyclable materials to proper recycling streams. Select employees within the agency continue to conduct unannounced waste audits at various parks/maintenance yards to review waste sorting operations and to identify and quantify missed opportunities to recycle. Reports are generated for the site manager(s) and supervisors to help communicate findings and provide support, as needed. The first round of waste audits and reports have been completed and we will begin a second round in spring 2022.

To enhance communication with the public about recycling opportunities, new and improved decals continue to be affixed to our trash and recycling containers out in the parks. These decals were designed to be simple and eye-catching and are currently being assessed for effectiveness at several park sites county-wide.



Pictured Left: New decals developed for trash and recycling containers out in the parks. Pictured Right: The staff that operate the Montgomery Parks recycling truck take extra steps to monitor recycling dumpsters for contamination before materials are transported to the Montgomery Transfer Station.

M-NCPPC – Montgomery County operates an extensive Green Waste Management Program that is managed by staff in the Horticulture, Forestry, and Environmental Education Division. Plant-material waste, also referred to as Green Waste, that is removed from parkland is processed and converted into useful products such as compost, mulch, wood chips, and milled wood. These products are then returned back to parkland in their new form, supporting a wide variety of projects or other park-related needs. In November 2021, the Department held its first ever Urban Wood Sale. This event was a public outreach initiative that allowed people to buy unique pieces of milled lumber for various wood working or carpentry projects. The lumber came from fallen timber or dead/dying trees removed from parks that was milled by our park staff. This wood sale provided an opportunity for access to hyper-local wood resources for the community.



*The first ever Urban Wood Sale was held in November 2021. Pictured Top Right: A very happy customer.
Pictured Below: The event was very popular and drew a lot of interest from the community.*

Fleet and Equipment

M-NCPPC – Montgomery County operates and maintains a park and planning system that offers a wide range of services and amenities for recreation and leisure, as well as habitat and natural resources for the benefit of the community. A diverse array of vehicles and equipment are required to support the operations and maintenance of this system. Vehicle types range from small sedans, to light-duty pickup trucks, to large dump trucks and specialized vehicles which serve as the backbone of our maintenance commitment.

The Department currently maintains 31 hybrid vehicles and 8 fully electric vehicles in the fleet. As technology continues to advance, the Department is committed to continuing to reduce consumption of gas/diesel fuel and electrify the vehicle fleet. Transitioning our vehicle fleet and equipment is critical to meeting the greenhouse gas emission reduction goals outlined by our Sustainability Program and the county-wide Climate Action Plan.

To aid in this transition, our Operations Teams have been testing out different kinds of battery-operated lawn and landscape equipment. Over the past year, Facilities Management has been working to build electrical capacity for charging battery-operated equipment at our maintenance facilities.



Left: Commercial-grade battery-operated lawn and landscape equipment are increasingly being added to the inventory, replacing gas-powered equipment.

In the FY21 Resource Conservation Plan report, it was noted that an extensive review of the Department's vehicle fleet had been conducted as an effort to improve efficiency and cost effectiveness without compromising the safety of employees or jeopardizing the standards for excellence set forth by the Department.

In 2020, the Department began a second similar review of large, heavy equipment to identify efficiencies and cost savings while promoting employee safety which. As part of the research phase of the project, opportunities for sharing equipment across different divisions and maintenance yards was assessed, and an analysis of rental options was conducted. This review concluded in the fall of 2021.

Several immediate opportunities for sharing equipment or divesting were identified – 3 pieces of equipment were recommended for sharing across the Department, 6 were recommended for divesting and renting, and another 6 were recommended for divesting and using other equipment in the inventory. In most cases, purchasing equipment outright still appears to be the better option. Additional recommendations from this analysis include creating and posting a list of equipment available for sharing across divisions, working with Facilities Management Division to create updated procurement forms, and working with Division Chiefs and supervisors from each division to develop a list of standardized equipment.

Resource Conservation Plan Charts

Agency Unit Cost – FY23 Projections**

FY23 utility unit cost projections for the participating agencies of the Interagency Committee on Utilities Management (ICEUM) are included in the table below. A variety of factors may impact the unit costs for each of the participating agencies and include differences in tariffs, account types, utility consumption volumes for individual accounts etc.

Agency	Montgomery College	WSSC	M-NCPPC	MCPS	DGS	Range
Utility						
Electric (kWh)	\$0.1133	\$0.0895	\$0.1140	\$0.1125	\$0.1170	\$0.08595 – \$0.1170
#2 Fuel Oil (gal)	\$0.0000	\$2.220	\$3.770	\$2.500	\$2.797	\$0.0 – \$3.770
Natural Gas (therms)	\$0.830	\$0.930	\$1.153	\$0.890	\$0.895	\$0.830 – \$1.153
Propane (gal)	\$4.060	\$4.000	\$1.818	\$1.750	\$3.578	\$1.750 – \$4.060
Water & Sewer (kgal)	\$12.1800	\$0.0000	\$13.0500	\$12.8000	TBD	\$0.0 – \$13.0500

Unit cost data for M-NCPPC is estimated based on data in EnergyCAP and general projected commodity cost increases.

**Awaiting detail from Montgomery County government about whether this table is required for this FY23 report – if required, all data will be updated for participating agencies.

Summary and Montgomery Parks Green Tree Report

Agency	Maryland-National Capital Park and Planning Commission		
Number of Facilities	396 Facilities that have utilities	Change in number of facilities	0
Total square feet active and leased:	1,137,918	Change in total ft ²	0
Average operating hrs./year	Varies	Change in avg. operating hrs./year	None
Other changes effecting energy consumption	The implementation of a comprehensive energy management and water conservation program for the Department of Parks by the following Divisions: Facilities Management, Northern Parks, Southern Parks, Enterprise, and Park Development contributed to additional consumption reductions at park facilities. The Montgomery Parks Green Tree Report (below) provides insight into available park amenities, facilities, and other park system highlights.		

Active square footage is subject to change as it is currently under review by the organization



MONTGOMERY PARKS, M-NCPPC

Parks Information Line: 301-495-2595

www.MontgomeryParks.org

OUR MISSION

Protect and interpret our valuable natural and cultural resources; balance the demand for recreation with the need for conservation; offer a variety of enjoyable recreational activities that encourage healthy lifestyles; and provide clean, safe, and accessible places for leisure-time activities.

PARK SYSTEM HIGHLIGHTS

Total number of parks: 421

Stream Length: 490 miles

Total owned or managed acres of parkland: 37,100 Total Park Boundary: 966 miles

TYPES OF PARKS

Conservation: 22

Neighborhood: 96

Special: 24

Local: 154

Neighborhood Conservation Area: 41

Stream Valley: 37

Miscellaneous Recreation/
Non-Recreation Facilities: 3

Recreational: 11

Urban: 28

Regional: 5

PARK FACILITIES

Archery: 2

Event Centers: 4

Park Activity Buildings: 25

Athletic fields: 362

Exercise Stations: 50

Picnic Shelters – Non-Permitted: 48

Basketball courts: 227

Formal Botanical Gardens: 2

Picnic Shelters – Permitted: 88

Boating Facility – Rentals: 2

Golf Courses: 4

Playgrounds: 275

Boating Landing Ramps: 3

Gymnasiums: 1

Skate Parks: 3

BMX Track: 1

Historic Sites: 43

Splash Playground: 1

Campgrounds – Full Service: 1

Historic Structures: 114

Tai Chi Courts: 1

Campgrounds – Primitive: 2

Ice Rinks: 2

Tennis Centers – Indoor: 3 (20 courts)

Campsites: 102

Lakes: 4

Tennis Courts – Outdoor: 299

Carousel: 1

Large Group Picnic Areas: 2

Trails – Canoe: 5.4 miles

Community Gardens: 12

Miniature Golf: 1

Trails – Natural Surface: 201 miles

Cricket Fields: 8

Miniature Trains: 2

Trails – Paved: 68.6 miles

Dog Parks: 8

Nature Centers: 4

Volleyball: 21

Driving Range (Stand Alone): 1

Outdoor Rope Courses: 1

Equestrian Centers: 6

Overlay football/soccer fields: 41

PARK BUDGET

Adopted Operating Budget FY2021

\$130.9 million

Capital Improvements Program FY2021-2024

\$51.3 million for acquisition

Capital Improvements Program FY2021-2024

\$193.7 million for development

As of September 2021

Source: EAM, GIS, and the Parks Acquisition Ledger

CIP: Energy Conservation – Local Parks



Energy Conservation - Local Parks (P998710)

Category	M-NCPPC	Date Last Modified	10/04/18
SubCategory	Development	Administering Agency	M-NCPPC
Planning Area	Countywide	Status	Ongoing

Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
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EXPENDITURE SCHEDULE (\$000s)

Planning, Design and Supervision	130	35	35	60	10	10	10	10	10	-
Construction	365	107	96	162	27	27	27	27	27	-
TOTAL EXPENDITURES	495	142	131	222	37	37	37	37	37	-

FUNDING SCHEDULE (\$000s)

M-NCPPC Bonds	495	142	131	222	37	37	37	37	37	-
TOTAL FUNDING SOURCES	495	142	131	222	37	37	37	37	37	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 20 Request	37	Year First Appropriation	FY99
Cumulative Appropriation	310	Last FY's Cost Estimate	495
Expenditure / Encumbrances	150		
Unencumbered Balance	160		

PROJECT DESCRIPTION

This project provides funds to modify existing local park buildings and facilities to control fuel and utilities consumption. The project scope encompasses planning, identifying, implementing and monitoring effective energy conservation measures at each major local park facility. Emphasis is placed upon positive and proven measures to remedy heat losses and gains through modifications to building envelope systems and through improvement and retrofit of building support systems, and modification of electrical and mechanical systems and equipment and their associated control and distribution systems.

COST CHANGE

In FY19, added FY23 and FY24 to this ongoing level of effort project.

FISCAL NOTE

Prior year partial capitalization of expenditures through FY16 totaled \$531,000.

DISCLOSURES

Expenditures will continue indefinitely.

CIP: Energy Conservation – Non-Local Parks



Energy Conservation - Non-Local Parks (P998711)

Category	M-NCPPC	Date Last Modified	10/01/18
SubCategory	Development	Administering Agency	M-NCPPC
Planning Area	Countywide	Status	Ongoing

Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
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EXPENDITURE SCHEDULE (\$000s)

Planning, Design and Supervision	40	10	-	30	5	5	5	5	5	5	-
Construction	350	57	83	210	35	35	35	35	35	35	-
TOTAL EXPENDITURES	390	67	83	240	40	40	40	40	40	40	-

FUNDING SCHEDULE (\$000s)

G.O. Bonds	390	67	83	240	40	40	40	40	40	40	-
TOTAL FUNDING SOURCES	390	67	83	240	40	40	40	40	40	40	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 20 Request	40	Year First Appropriation	FY99
Cumulative Appropriation	190	Last FY's Cost Estimate	390
Expenditure / Encumbrances	67		
Unencumbered Balance	123		

PROJECT DESCRIPTION

This project provides funds to modify existing non-local park buildings and facilities to control fuel and utilities consumption. The project scope encompasses planning, identifying, implementing and monitoring effective energy conservation measures at each major non-local park facility. Emphasis is placed upon positive and proven measures to remedy heat losses and gains through modifications to building envelope systems and through improvement and retrofit of building support systems; and modification of electrical and mechanical systems and equipment and associated control and distribution systems.

COST CHANGE

In FY19, added FY23 and FY24 to this ongoing level of effort project.

FISCAL NOTE

Prior year partial capitalization of expenditures through FY16 totaled \$792,000.

DISCLOSURES

Expenditures will continue indefinitely.

Existing Measures FY00 – FY21

Existing Measures FY00 to FY21	Initial Cost	Annual Net Impact on Maintenance	Energy Type(s)	Units Saved Per Year	Annual Cost Savings
Capital Improvement Program (CIP)					
Equipment Replacement Projects Local & Non-Local	\$615,430 est.	\$123,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	834,000 kWh, 49,600 therm & 6,100 Pounds	\$158,000 est. Annual Cost Avoidance
Equipment Retrofit Projects Includes MEA Grant in 2010 and DOE Grant in 2012	\$397,982 est.	\$10,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	190,200 kWh, 11,500 therm & 600 Pounds	\$47,600 est. Annual Cost Avoidance
Control Improvements	\$153,000 est.	N/A	Electricity and Natural Gas	284,000 kWh & 21,000 therm	\$85,000 est. Annual Cost Avoidance
Lighting Projects Includes MEA Grant in 2010 and DOE Grant in 2012	\$539,000 est.	N/A	Electricity	489,800 kWh	\$208,000 est. Annual Cost Avoidance
Sub Total:	\$1,705,412 est.			1,798,000 kWh, 82,100 therm & 6,700 Pounds	\$498,600 est. Annual Cost Avoidance
Operations and Maintenance					
Operations and Maintenance Best Management Practice and Programs FY00-FY21	\$605,400	\$5,000 annual	Electricity, Natural Gas, and Propane	764,000 kWh, 39,500 therm & 6,800 Pounds	\$155,000 est. Annual Cost Avoidance
Overall Total:	\$2,310,812			2,562,000 kWh, 121,600 therm & 13,500 pounds	\$653,600 est. Annual Cost Avoidance 2.7 yrs. Return on Investment (ROI)

New Measures FY22

New Measures FY22	Projected Initial Cost	Annual Net Impact on Maintenance	Energy Type(s)	Estimated Units Saved Per Year	Projected Annual Cost Savings
Capital Improvement Program (CIP)					
Equipment Replacement Projects Local & Non-Local	\$50,000 est.	\$5,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	79,000 kWh, 11,600 therm	\$10,800 est. Annual Cost Avoidance
Control Improvements	\$10,000 est.	N/A	Electricity	30,000 kWh	\$4,200 est. Annual Cost Avoidance
Lighting Projects Local & Non-Local	\$30,000 est.	N/A	Electricity	39,000 kWh	\$5,300 est. Annual Cost Avoidance
Sub-total:	\$90,000 est.	\$5,000			\$20,300
Operations and Maintenance					
Best Management Practices and Sustainability Programs	\$29,500	N/A	Electricity, Natural Gas, and Propane	21,000 kWh, 400 therm	\$3,000 est. Annual Cost Avoidance
Operations and Maintenance Improvement Programs	\$24,500	N/A	Electricity, Natural Gas, and Propane	9,000 kWh, 300 therm & 100 Pounds	\$3,000 est. Annual Cost Avoidance
Sub Total:	\$54,000	N/A			\$6,000
Overall Total:	\$144,000	\$5,000			\$26,300 5.0 yr. Return on Investment (ROI)

Table and information under review and subject to change

Planned Measures FY22

Planned Measures FY21	Projected Initial Cost	Projected Maintenance Cost	Energy Type(s)	Estimated Units Saved Per Year	Projected Annual Cost Savings
Capital Improvement Program (CIP)					
Equipment Replacement Projects Local & Non-Local	\$40,000 est.	\$2,000 on Annual Service Costs	Electricity, Natural Gas, and Propane	10,300 kWh, 5,000 therm	\$7,500 est. Annual Cost Avoidance
Control Improvements	\$15,000 est.	N/A	Electricity (Solar)	30,000 kWh	\$4,200 est. Annual Cost Avoidance
Lighting Projects Local & Non-Local	\$37,000 est.	N/A	Electricity	47,000 kWh	\$7,000 est. Annual Cost Avoidance
Sub-total:	\$92,000 est.	\$2,000			\$18,700
Operations and Maintenance					
Best Management Practices and Sustainability Programs	\$29,500	N/A	Electricity, Natural Gas, and Propane	21,000 kWh, 500 therm & 100 Pounds	\$3,300 est. Annual Cost Avoidance
Operations and Maintenance Improvement Programs	\$24,500	N/A	Electricity, Natural Gas, and Propane	14,000 kWh, 400 therm	\$2,200 est. Annual Cost Avoidance
Sub Total:	\$54,000	N/A			\$5,500
Overall Total:	\$146,000	\$2,000			\$24,200 6.2 yrs. Return on Investment (ROI)

Table and information under review and subject to change

Proposed Utility Budget by Fund/Cost - FY23

DEPARTMENT OF PARKS	
Electricity	\$853,340
Water and Sewer	\$730,165
Natural Gas	\$216,000
Propane	\$152,045
Heating Oil (#2)	\$5,400
Solar PV (PPA)	\$277,538
Wind REC	\$25,000
Sub Total	\$2,259,488

DEPARTMENT OF PARKS - ENTERPRISE	
Electricity	\$712,000
Natural Gas	\$63,200
Water and Sewer	\$80,800
Propane	\$10,000
Wind REC	\$8,000
Sub Total	\$874,000

DEPARTMENT OF PARKS - PROPERTY MANAGEMENT	
Electricity	\$19,000
Natural Gas	\$5,000
Heating Oil	\$4,000
Propane	\$1,000
Water and Sewer	\$5,000
Sub Total	\$34,000

WHEATON HEADQUARTERS	
Electricity	\$546,041
Natural Gas	\$50,000
Water and Sewer	\$185,980
Sub Total	\$782,021

Planning Department	
Natural Gas	\$5,200
Sub Total	\$5,200

BI-COUNTY	
Electricity	\$82,772
Water and Sewer	\$4,356
Sub Total	\$87,128
Overall Total	\$4,041,837

