



Technology Services

PROGRAM DESCRIPTION AND OBJECTIVES

The goals of the Department of Technology and Business Enterprise Solutions (TEBS) are to promote effective use of automated information systems and telecommunications technology throughout the County government and ensure that the County's information systems and telecommunications capabilities are planned, developed, implemented, and maintained efficiently and effectively.

The objectives of the TEBS capital improvements program are to connect information systems and telecommunications equipment within County buildings to the County's fiber optic network; and to facilitate voice, data, and video transmissions (e.g. Internet access, public-safety radio, traffic control and management) among Montgomery County Government, Montgomery County Public Schools, Montgomery College, Montgomery National Capital Park and Planning Commission and Washington Suburban Sanitary Commission facilities.

HIGHLIGHTS

- The ultraMontgomery project will ensure the County remains technologically ready to serve as a center for business, research and innovation, and to ensure that Montgomery County has the most robust, reliable, and resilient broadband in the nation.
- ultraMontgomery funding will primarily support the deployment of Montgomery County's internet service network, MoCoNet, 100 Mbps residential broadband at affordable housing developments. Federal aid funding for ultraMontgomery has been added with the expectation that the County will receive additional funds from the Coronavirus Capital Projects Fund.
- Add funding in FY27 and FY28 to the FiberNet program, which is the County's critical infrastructure communications network that continues to expand its physical reach and bandwidth capacity. In FY22, FiberNet received a \$7.2 million supplemental appropriation to replace and update infrastructure in the County data center located in the Council Office Building and for new equipment in colocation space being leased at a Tier 4 data center in Ashburn, Virginia, which are part of the first phase of the County-wide business continuity initiative.
- The FiberNet3 upgrade to create scalable capacity and enable 40 times more broadband capacity than FiberNet2 is nearing completion. FiberNet funding would enable the replacement of antiquated equipment and installation of public WiFi at the Upcounty Regional Service Center, the Public Safety Communications Center and the HHS Hungerford Drive location.
- The County Radio Life Cycle Replacement project will provide for the phased replacement of voice radio systems used primarily by the County's public safety first responder agencies including Police, Fire and Rescue, Sheriff, Corrections and Rehabilitation, the Department of Transportation, and the Maryland-National Capital Park and Planning Commission that have reached the end of their expected 10-year service life.

PROGRAM CONTACTS

Contact Alison Dollar of the Department of Technology & Enterprise Business Solutions at 240.777.2769 or Julie Knight of the Office of Management and Budget at 240.777.2800 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

The Recommended FY23-28 Capital Improvements Program totals \$88.1 million over the six-year program. This is a \$53.4 million increase from the \$34.7 million contained in the FY21-26 amended program. This increase is due to the net impact of the addition of FY27 and FY28 being added to the schedule, increased funding for the County Radio Life Cycle Replacement project and federal aid funding in the ultraMontgomery project. A \$7.2 million FY22 supplemental for FiberNet is also reflected prior to FY23.



County Radio Life Cycle Replacement (P342301)

Category	General Government	Date Last Modified	01/10/22
SubCategory	Technology Services	Administering Agency	Technology Services
Planning Area	Countywide	Status	Planning Stage

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Other	45,036	-	-	41,292	9,830	10,845	12,347	2,728	4,830	712	3,744
TOTAL EXPENDITURES	45,036	-	-	41,292	9,830	10,845	12,347	2,728	4,830	712	3,744

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Short-Term Financing	45,036	-	-	41,292	9,830	10,845	12,347	2,728	4,830	712	3,744
TOTAL FUNDING SOURCES	45,036	-	-	41,292	9,830	10,845	12,347	2,728	4,830	712	3,744

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 23 Request	9,830	Year First Appropriation	
Appropriation FY 24 Request	10,845	Last FY's Cost Estimate	-
Cumulative Appropriation	-		
Expenditure / Encumbrances	-		
Unencumbered Balance	-		

PROJECT DESCRIPTION

This program will provide for the phased replacement of voice radio systems used primarily by the County's public safety first responder agencies including Police, Fire and Rescue, Sheriff, Correction and Rehabilitation, the Department of Transportation, and the Maryland-National Capital Park and Planning Commission that have reached the end of their expected 10-year service life. In FY23, radios and related chargers, as needed, will be requested for DOCR, FRS, Police, and Sheriff.

FISCAL NOTE

FY23: Radio Communication Services - \$55,713 (7 APX 8500); DOCR - \$502,010 (85 APX 6000); Fire and Rescue - \$6,117,510 (570 APX 6000XE and 282 APX 7000XE); Police - \$2,302,408 (233 APX 6500 and 111 APX 7000); Sheriff - \$533,253 (67 APX 7500); and \$319,344 for 280 APX 6/8000 Gang (multi-unit) and 480 APX 6/8000 desk (single unit) chargers

FY24: Fire and Rescue Services - \$1,711,615 (215 APX 7000) and Police - \$9,133,500 (1500 APX 6500)

FY25: Fire and Rescue Services - \$3,213,030 (495 APX 6500 and 25 APX 7500) and Sheriff - \$9,133,500 (1500 APX 6500)

COORDINATION

Department of Technology & Enterprise Business Solutions, Department of Corrections and Rehabilitation, Fire and Rescue Services, Police, Sheriff, Department of Transportation and MNCPPC.



FiberNet

(P509651)

Category	General Government	Date Last Modified	01/10/22
SubCategory	Technology Services	Administering Agency	Technology Services
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Planning, Design and Supervision	12,968	6,046	922	6,000	1,000	1,000	1,000	1,000	1,000	1,000	-
Land	1,504	4	-	1,500	250	250	250	250	250	250	-
Site Improvements and Utilities	18,817	17,266	1,251	300	50	50	50	50	50	50	-
Construction	20,948	1,522	8,858	10,568	2,088	1,696	1,696	1,696	1,696	1,696	-
Other	49,942	46,247	695	3,000	500	500	500	500	500	500	-
TOTAL EXPENDITURES	104,179	71,085	11,726	21,368	3,888	3,496	3,496	3,496	3,496	3,496	-

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Contributions	1,611	1,611	-	-	-	-	-	-	-	-	-
Current Revenue: Cable TV	84,099	58,205	4,526	21,368	3,888	3,496	3,496	3,496	3,496	3,496	-
Current Revenue: General	7,456	256	7,200	-	-	-	-	-	-	-	-
G.O. Bonds	8,866	8,866	-	-	-	-	-	-	-	-	-
PAYGO	2,147	2,147	-	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	104,179	71,085	11,726	21,368	3,888	3,496	3,496	3,496	3,496	3,496	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 23 Request	3,888	Year First Appropriation	FY96
Appropriation FY 24 Request	3,496	Last FY's Cost Estimate	89,987
Cumulative Appropriation	82,811		
Expenditure / Encumbrances	71,545		
Unencumbered Balance	11,266		

PROJECT DESCRIPTION

FiberNet CIP provides for the planning, design, and installation of a countywide electro-optical fiber communication network with the capacity to support voice, public-safety, traffic management, data, Internet access, wireless networking (including public WiFi) and video transmissions among Montgomery County Government (MCG), Montgomery County Public Schools (MCPS), Montgomery College (MC), Maryland National Capital Park and Planning Commission (M-NCPPC), Housing Opportunities Commission (HOC) and Washington Suburban Sanitary Commission (WSSC) facilities. Video transmission will include distribution of public, education, government access channel and selected cable programming. FiberNet is the communications backbone for the Public Safety Radio and

Public Safety Mobile Data Systems (collectively, Public Safety Communications System (PSCS), DOT's Advanced Traffic Management System (ATMS), and other technology implementations (including the 800 MHz IP public safety radio). Upgrades and replacements to electronic components in the core and at user sites extend the usefulness of outside fiber facilities. Core and user equipment must be periodically replaced and upgraded, ideally at 7-8 year intervals, to harness the capabilities of technological evolution and to meet the expanding networking demands of FiberNet customers. Implementation of the third generation of core components, FiberNet3, began in FY21. FiberNet3 exponentially increased FiberNet's ability to support cloud services, resilient data storage and retrieval, and cost effective access to high speed broadband service. In FY22, FiberNet upgraded data center equipment and firewall devices at the Council Office Building (COB) data center. FiberNet will also implement an encrypted private cloud, failover recovery equipment and ransomware recovery capabilities as part of the County's business continuity initiative.

ESTIMATED SCHEDULE

The primary focus of the FY21-22 CIP had been to plan and install core third-generation FiberNet3 equipment to exponentially expand capacity within FiberNet, upgrade hub-site electrical equipment to support installation of FiberNet3 equipment, and to establish Ashburn data center connections to enable cost-effective future technology public-private partnerships with government and educational institutions, major research and educational institutions, and large employers. Additional work was done in response to Covid to expand outdoor public WiFi to 14 libraries and to expedite transitioning MCPS to FiberNet3 to support hybrid simultaneous in-person and online teaching. FiberNet was expanded to extend fiber to 448 government and education sites by the end of FY22, including 18 Flash Route 29 Bus Rapid Transit stations. The Traffic Management network reaches over 230 traffic cameras and 909 traffic signals, and backup power to keep traffic signals operations during large scale power outages have been added at 436 traffic signals.

In FY22, TEBS received a \$7.2 million supplemental appropriation to refresh past end of life network, routing and firewall equipment in the COB data center and to install and implement an encrypted private cloud, failover recovery equipment, and ransomware recovery capability. This implementation creates resilient data storage in Ashburn, VA and strengthens the County's ability to safely access and protect data and systems against ransomware.

COST CHANGE

TEBS received a \$7.2m supplemental in FY22 and funds were added in FY27 and FY28.

PROJECT JUSTIFICATION

FiberNet is a critical infrastructure asset providing communication services and applications to every agency in Montgomery County. As more services are offered electronically (e-applications, e-payment, e-document, e-storage, e-learning), and more services require cloud-access, it is critical that every County location has robust access to FiberNet, and that FiberNet be secure, reliable, and always-on, and that sufficient equipment be in place to enable data recovery in the event of major power outages, natural disasters, or cybersecurity events. In addition, aging internal building wiring, public WiFi access points, external fiber, and end point routers, switches and firewalls need to be upgraded to enable use of newer IT services and technology. A large amount of equipment is beyond End of Life or End of Support and some had been identified as critical to replace to prevent cybersecurity intrusions.

FISCAL NOTE

The FiberNet CIP originally was funded by the General Fund. As restricted-use Cable Fund PEG/I NET capital grant funding grew, the Cable Fund became the primary funding source for FiberNet. Cable revenues are declining as cord cutting increases. Funding for future FiberNet CIPs may need to be supplemented by the General Fund. FiberNet operations and maintenance (O&M) activities are a critical component of FiberNet's utility but are not funded by the FiberNet CIP. Federal regulatory actions, or the outcome of renegotiations when the Comcast and Verizon franchises expire in 2021, may negatively impact the Cable Fund. The County is

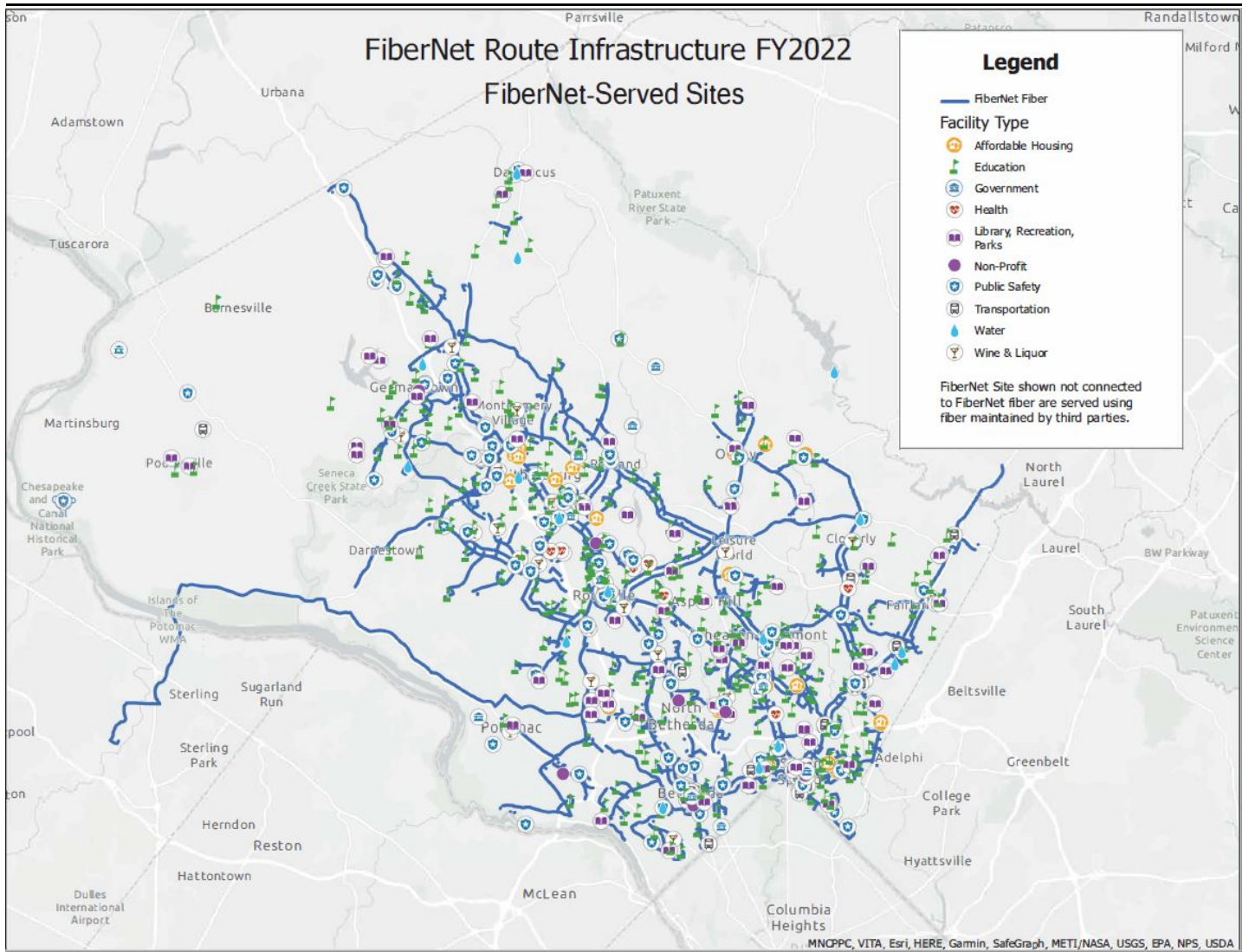
negotiating extensions of the current franchises. In FY16 funds were also used to support government and educational ultraMontgomery broadband initiatives. An FY22 Current Revenue General Supplemental was approved for \$7.2 million for business continuity enhancements.

DISCLOSURES

Expenditures will continue indefinitely.

COORDINATION

Technology & Enterprise Business Solutions (TEBS), Department of Transportation, Advanced Transportation Management System Project, Montgomery County Public Schools, MNCPPC, MC, HOC, WSSC, PSCS, Information Technology Policy Coordination Committee (ITPCC), ITPCC CIO Subcommittee, and Interagency Technology Advisory Group (ITAG); and supports ATMS, Traffic Signal System Modernization (TSSM) and Traffic Signal CIPs.





ultraMontgomery

(P341700)

Category	General Government	Date Last Modified	01/14/22
SubCategory	Technology Services	Administering Agency	Technology Services
Planning Area	Countywide	Status	Preliminary Design Stage

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Planning, Design and Supervision	918	506	92	320	60	80	60	40	40	40	-
Construction	7,766	1,616	2,310	3,840	620	600	640	660	660	660	-
Other	21,235	-	-	21,235	4,635	4,775	4,775	4,775	2,275	-	-
TOTAL EXPENDITURES	29,919	2,122	2,402	25,395	5,315	5,455	5,475	5,475	2,975	700	-

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY21	Est FY22	Total 6 Years	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	Beyond 6 Years
Current Revenue: Cable TV	8,684	2,122	2,402	4,160	680	680	700	700	700	700	-
Federal Aid	21,235	-	-	21,235	4,635	4,775	4,775	4,775	2,275	-	-
TOTAL FUNDING SOURCES	29,919	2,122	2,402	25,395	5,315	5,455	5,475	5,475	2,975	700	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 23 Request	5,315	Year First Appropriation	FY16
Appropriation FY 24 Request	5,455	Last FY's Cost Estimate	7,244
Cumulative Appropriation	4,524		
Expenditure / Encumbrances	3,605		
Unencumbered Balance	919		

PROJECT DESCRIPTION

The ultraMontgomery CIP provides for capital funding to support Montgomery County's economic development program and digital equity initiatives. Like economic development, internet service accessibility and affordability are critical factors in addressing equity disparities. In response to Covid-19, the County Executive and County Council have approved the Office of Broadband Programs, Department of Technology & Enterprise Business Solutions (TEBS)'s plan to strategically re-direct ultraMontgomery CIP funding to support digital equity initiatives in underserved communities where residents do not have home broadband service. Work will continue to complete the Great Seneca Fiber Hwy from Gaithersburg to Ashburn Virginia and Phase 2 of the East County Fiber Hwy from White Oak to Howard County and Prince George's County. The MoCoNet digital equity project to bring free and low cost high speed broadband to affordable housing developments will be expanded. ultraMontgomery will continue to leverage opportunities to expand broadband to rural areas of the County, support expanded public WiFi, and grow public-private partnerships for wireless deployments and innovation.

ESTIMATED SCHEDULE

MocoNet projects are under construction and additional projects are being prioritized. The County is also seeking federal funding through various Covid-19 relief and infrastructure acts. The project anticipates connecting 500 units per year, or more depending on available supplemental funding.

Construction of the final segment of Great Seneca Fiber Hwy is expected to be completed in 2021. The East County Fiber Highway will be completed in 2022. The Purple Line and White Oak Science Gateway projects have been delayed by factors unrelated to ultraMontgomery and work is expected to resume in FY25.

COST CHANGE

Additional federal infrastructure funding provided to the State is being requested. Additional County funds have been added in FY27 and FY28.

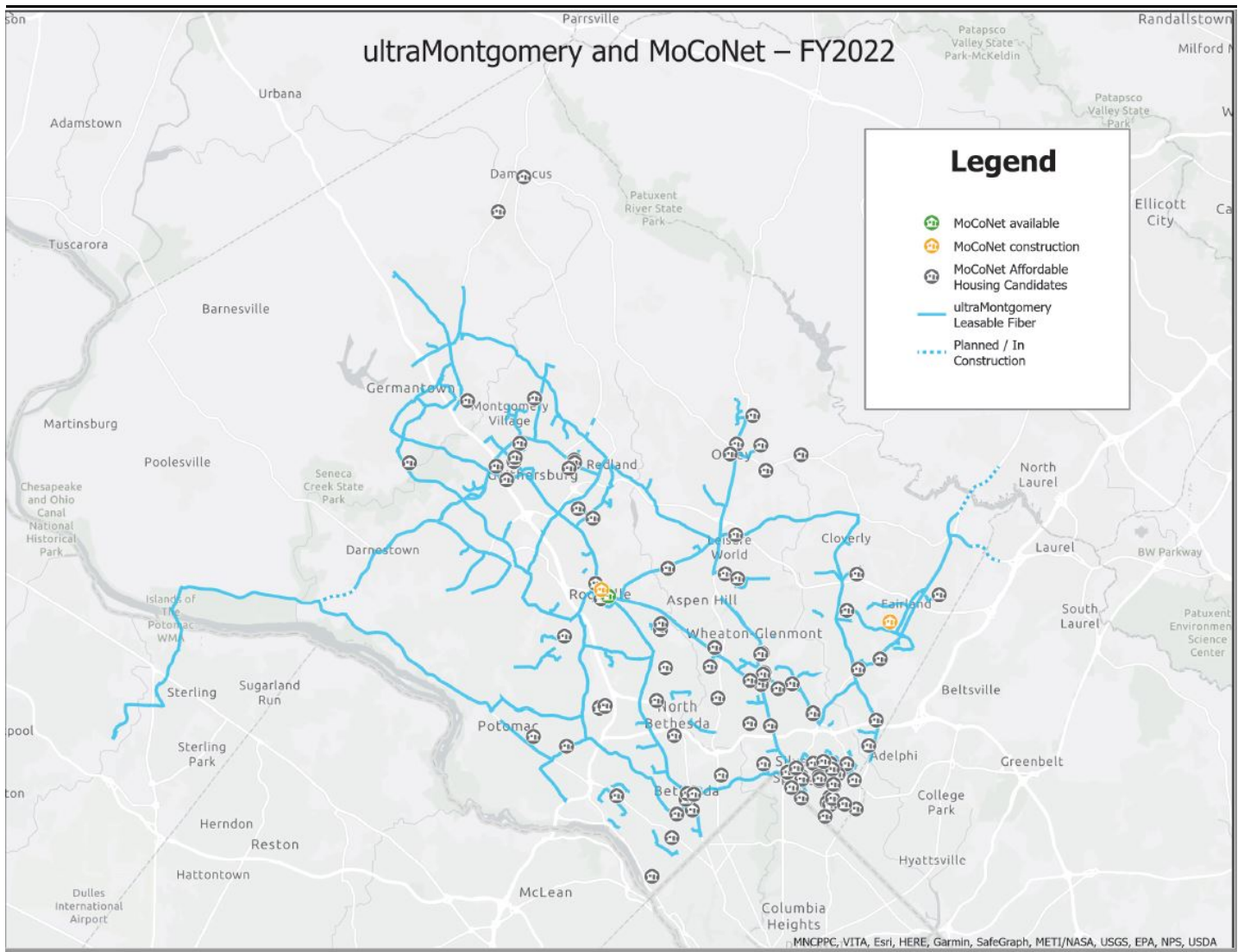
PROJECT JUSTIFICATION

ultraMontgomery is a broadband economic development and digital equity program, designed to ensure that businesses and underserved residents of affordable housing units in Montgomery County have as much reliable, secure, and robust broadband service as they need to live, work, learn and keep our economy moving at the speed of our ideas. As part of the recovery efforts, OBP made internet access available at affordable housing and rural locations.

ultraMontgomery supports economic and racial diversity, equity, and inclusion goals by working to close our community's digital divide through: access to the digital economy for underserved communities through deployment of devices and residential broadband in affordable housing developments and expansion of Public WiFi; access to competitive broadband services in commercial buildings through infrastructure development, public private partnerships, strategic conduit network deployment, and leasing of spare County fiber and conduit; and business growth and innovation in biotech/biohealth, cybersecurity, IT services, financial services, media and similar high-bandwidth-consuming sectors and federal, state, research and higher education institutions.

COORDINATION

FiberNet (P509651); Purple Line Department of Transportation; Maryland-National Capital Park and Planning Commission; Montgomery College; WSSC; Information Technology Policy Coordination Committee; Montgomery County Economic Development Corporation; and affordable housing developers in Montgomery County.



This map shows the location of affordable housing developments in the County that would be served if ultraMontgomery receives the requested funding.