



Technology Services

PROGRAM DESCRIPTION AND OBJECTIVES

The goals of the Department of Technology Services (DTS) 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 DTS 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 County Executive's recommended FY19-24 CIP continues to develop a competitive advantage over commercial carriers by continuing to update and strengthen the County's secure, multi-agency shared network through updates to physical IT infrastructure, network security, connection infrastructure (i.e. fiber), and continually evolving IT technologies.
- Continue the County's progress in the development of a regional network by maintaining and expanding core FiberNet infrastructure (i.e. adding new sites and performing hub upgrades) with the goal of constructing inter-jurisdictional network connections.
- The County continues to add locations to the FiberNet network -- at the end of FY17, FiberNet reached 538 locations. Based on the current funding schedule, FiberNet is scheduled to reach 563 locations by the end of FY18; 581 locations by the end of FY19; and 591 locations by the end of FY20.
- The FiberNet project currently serves a variety of facilities from traffic signals and cameras, wine and liquor stores to major campus networks and large multi-story office buildings, and the County intends to continue to expand this user base.
- The County Executive's recommended FY19-24 CIP includes capital investments to bring WiFi to all County government buildings by the end of FY19.
- The County's ultraMontgomery project will continue to make investments to improve the availability of fiber networks to educational, institutional and business hubs (including investments in the White Oak Science Gateway, connections to the Ashburn Data Center, and greater inter connectivity of networks along US Route 29).
- The County Executive recommends continuing funding at the previous level of effort for the ultraMontgomery project to ensure the County remains technologically ready to serve as a center for research, innovation, and economic development.

PROGRAM CONTACTS

Contact Helen Ni of the Department of Technology Services at 240.777.2807 or Matt Schaeffer of the Office of Management and Budget at 240.777.2776 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

The Recommended FY19-24 Capital Improvements Program totals \$25.7 million over the six-year program. This is a \$1.2 million, or a 4.5 percent decrease from the \$26.9 million contained in the FY17-22 amended program. This decrease is due to the net impact of the addition of FY23 and FY24 being added to the schedule, decreases in the six-year schedule for ultraMontgomery, and decreased costs for the Integrated Justice Information System (IJIS) as the original scope of the IJIS project is nearing completion.



Fibernet

(P509651)

Category	General Government	Date Last Modified	01/05/18
SubCategory	Technology Services	Administering Agency	Technology Services
Planning Area	Countywide	Status	Ongoing

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	8,962	1,882	2,927	4,153	719	705	614	705	705	705	-
Land	2,419	4	525	1,890	300	300	390	300	300	300	-
Site Improvements and Utilities	15,583	14,983	-	600	200	200	200	-	-	-	-
Construction	16,220	1,504	7,822	6,894	1,421	1,045	1,455	991	991	991	-
Other	39,811	31,701	-	8,110	1,200	1,500	910	1,500	1,500	1,500	-
TOTAL EXPENDITURES	82,995	50,074	11,274	21,647	3,840	3,750	3,569	3,496	3,496	3,496	-

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
G.O. Bonds	4,074	4,074	-	-	-	-	-	-	-	-	-
Contributions	1,624	1,611	13	-	-	-	-	-	-	-	-
Current Revenue: Cable TV	70,115	37,207	11,261	21,647	3,840	3,750	3,569	3,496	3,496	3,496	-
Current Revenue: General	256	256	-	-	-	-	-	-	-	-	-
PAYGO	6,926	6,926	-	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	82,995	50,074	11,274	21,647	3,840	3,750	3,569	3,496	3,496	3,496	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 19 Request	3,840	Year First Appropriation	FY96
Appropriation FY 20 Request	3,750	Last FY's Cost Estimate	76,003
Cumulative Appropriation	61,348		
Expenditure / Encumbrances	21,013		
Unencumbered Balance	40,335		

Project Description

The FiberNet CIP provides for the planning, design, construction, and installation of a County wide fiber-based, electro-optical 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.

FiberNet is also the communications backbone for the Public Safety Radio and Public Safety Mobile Data Systems (collectively,

Public Safety Communications System (PSCS)), future Public Safety System Modernization (PSSM) technology implementations (including 800 MHz IP public safety radio), the Department of Transportation (DOT) Advanced Traffic Management System (ATMS), and three generations of FiberNet Wide Area and Local Area Networks (WAN/LAN). FiberNet I is a legacy network still used to support specific public safety and traffic communications. FiberNet II is being used to support all County communications services including 311, e-mail, Internet and local cable channel video. FiberNet III is in limited operation supporting the Montgomery College's connection to Internet II and virtual network, WSSC virtual data centers, PSSM E911, and Computer Aided Dispatch CAD Systems. When fully implemented, FiberNet III equipment will allow faster, higher capacity, more reliable means of networking County communications.

Estimated Schedule

At the end of FY17, FiberNet reached 538 Locations. Based on the current funding schedule, FiberNet is scheduled to reach 563 Locations by the end of FY18; 581 locations by the end of FY19; and 591 locations by the end of FY20. Including County sites connected by private carriers and institutional partners, FiberNet is expected to have a total of more than 600 sites on the network serving a tremendous variety of facilities from wine and liquor stores to major campus networks, and large multi-story office buildings. FiberNet's FY19-20 focus remains on expanding FiberNet to additional locations, expanding public wifi in public buildings and adjoining outdoor plazas and green spaces, performing hub-site upgrades, and strategically adding Dense Wave Division Multiplexing (DWDM) technology for agency projects. In partnership with the Department of General Services, FiberNet/Network Services deployed a complex prototype for Passive Optical Network (PON)-based LAN infrastructure serving MCPS, County Government and M-NCPPC at the Multi Agency Service Park. PON is the new DGS in-building standard. FiberNet will deploy PON technology in the new multi-agency M-NCPPC-operated office building, and wifi in the town center, in the Wheaton Redevelopment Project in FY19-20.

Cost Change

Cost change is due to the addition of FY23 and FY24 to this project.

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, via Internet, and using the Cloud, it is critical that every County location has access to a secure, reliable, and robust FiberNet network.

Disclosures

Expenditures will continue indefinitely.

Coordination

DTS, Department of Transportation, Advanced Transportation Management System Project, Montgomery County Public Schools, M-NCPPC, MC, HOC, WSSC, PSCS, Information Technology Policy Coordination Committee (ITPCC), ITPCC CIO Subcommittee, and Interagency Technology Advisory Group (ITAG).



ultraMontgomery

(P341700)

Category	General Government	Date Last Modified	01/05/18
SubCategory	Technology Services	Administering Agency	Technology Services
Planning Area	Countywide	Status	Preliminary Design Stage

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	535	71	84	380	230	30	30	30	30	30	-
Construction	5,349	-	1,649	3,700	450	650	650	650	650	650	-
TOTAL EXPENDITURES	5,884	71	1,733	4,080	680	680	680	680	680	680	-

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: Cable TV	5,884	71	1,733	4,080	680	680	680	680	680	680	-
TOTAL FUNDING SOURCES	5,884	71	1,733	4,080	680	680	680	680	680	680	-

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 19 Request	680	Year First Appropriation	FY16
Appropriation FY 20 Request	680	Last FY's Cost Estimate	4,524
Cumulative Appropriation	1,804		
Expenditure / Encumbrances	156		
Unencumbered Balance	1,648		

Project Description

The ultraMontgomery project provides for capital funding to support Montgomery County's ultraMontgomery economic development program. Funding supports planning, engineering, design, and construction of: 1) the East County Fiber Highway to interconnect FiberNet along Route 29 to government entities in Howard County and Montgomery County, Internet of Things (IoT) testbeds and applications, and other East County public private partnership (P3) opportunities; 2) interconnection of the East County Fiber Highway to Bytegrid Data Center and creation of an ultraMontgomery conduit and fiber network for White Oak Redevelopment, FDA applications, and similar White Oak P3 fiber capacity ventures; 3) continued design and engineering to utilize State fiber along Purple Line from Montgomery County to the University of Maryland; 4) interconnection of FiberNet to high capacity, low-latency, dark fiber networks that reach 35 data centers in Ashburn, VA and multi-tenant data centers in Montgomery County.

Estimated Schedule

East County Fiber Highway will be completed in 2018. Purple Line coordination is underway and expected to be completed by

end of FY2019. Design coordination with BRT and White Oak developers will be in design and construction from FY2018-20. Ashburn dark fiber route and data center interconnections will be coordinated with private sector construction in FY18-20 and these projects will continue through FY24.

Cost Change

Cost change is due to the addition of FY23 and FY24 to the schedule.

Project Justification

ultraMontgomery was officially launched by the County Executive in December 2014 as one of the County Executive's Six Economic Priorities. ultraMontgomery is designed to expand the STEM (science, technology, engineering, mathematics) and STEAM (STEM plus art and design) jobs and businesses that depend on high-speed, secure, and reliable broadband services and networks. The ultraMontgomery program focuses on four areas: economic and business development; government and education broadband P3s; digital inclusion and connected communities; and public awareness and promotion. Federal, State and local governments, as well as community colleges and higher education entities, are both major employers within Montgomery County and increasingly important partners to expand the cybersecurity, financial services, biohealth/biotech, Internet of Things, media, and next-generation Internet services and gigabit economy jobs and businesses within the County. In addition, the County must ensure that all County residents can participate in the Internet economy, and that the business community is aware of the breadth, diversity and robust assets and opportunities that exist within the County. The major ultraMontgomery capital projects provide opportunities for the County to support business expansion, grow P3s, and leverage new development to continue to ensure the County has robust and reliable broadband available for business and residents.

Coordination

FiberNet (P509651), Department of Transportation, Montgomery County Public Schools, M-NCPPC, MC, HOC, Information Technology Policy Coordination Committee (ITPCC)