

Fund 60030: Technology Infrastructure Services

Mission To provide a reliable and secure technology infrastructure foundation required to support County business processes and systems that strengthen the public service commitment of Fairfax County.

Focus Fund 60030, Technology Infrastructure Services, provides the underlying technology foundation supporting information technology (IT) applications, platforms, hardware, and communications systems for Fairfax County government. This consists of the enterprise portfolio of computers, data communications equipment, radio systems, data center operations, voice communication systems and other critical infrastructure. The Department of Information Technology (DIT) coordinates all aspects of IT for the County and plays an essential enabling role assisting County agencies in advancing the strategic value of technology to transform work processes and provide quality services. Technology infrastructure is managed as an enterprise asset, and this approach results in the delivery of technology infrastructure services that function 24 hours per day, seven days per week.

Fund 60030 is an internal service fund supported by revenues from County agencies and other entities such as the Fairfax County Public Schools (FCPS). Expenditures are primarily driven by customer agencies' use of the IT infrastructure including enterprise and major cross-agency software licenses, data center operations, computer equipment refresh, the PC Replacement Program, telecommunication carrier services, wireless technologies, staff support positions, and outside services. In addition, the chargeback also includes enterprise-wide applications on the platforms in the data center, including the Fairfax County Unified System (FOCUS), which is a joint finance and procurement system for Fairfax County Government and FCPS, and the human resources system for the County. The technology backbone of FOCUS is a contemporary enterprise resource planning (ERP) application suite.

The County's centralized approach to common infrastructure systems and operations provides economies and efficiencies through consolidation and leveraging of resources. Optimum performance is achieved by automated IT support processes and enterprise-wide security tools, ensuring data integrity and system-use accountability. County IT architecture employs industry-standard products and best practices for efficient solution delivery and support. Through energy efficiency initiatives, DIT has achieved major goals in server platform consolidation, which provides significant technology infrastructure cost and operational efficiencies. New IT projects are implemented through Fund 10040, Information Technology, and some IT systems, applications, and data repositories are implemented directly by agencies, however, all new IT systems require IT infrastructure. The resulting infrastructure service obligations can result in higher infrastructure costs over time. Growth in digitization, industrial systems automation and visual data are key contributors.

Technology infrastructure activities in Fund 60030 support systems and operations for County agencies and include the management of County end-user computers (PCs, laptops, and tablets), voice communication systems, servers, storage systems, enterprise office-productivity software, e-mail and messaging systems (Microsoft Office Suite), and databases. Fund 60030 also supports the operations of the County's offsite data center, the management of the County's Radio Systems, Wireless Technologies services, administration of authorized County software license obligations for certain applications, data repositories, the safeguarding of stored data assets, and the enterprise-wide communication networks. Protective measures such as network security and user access tools are typically incorporated into the infrastructure portfolio. In addition to the data center—including the associated server hardware, software, database administration, data storage systems, subscription services for 'cloud' hosted software, and other operational support—the other major infrastructure activities of note are:

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- The County's enterprise network is a private dedicated fiber-optic metropolitan area network (MAN), often referred to as the Institutional Network (I-Net). The county's network is also supplemented with commercial services for Internet peering points as well to locations without I-Net. The I-Net is available at over 400 County Government and Public School locations. The enterprise network is a carrier class service provider network owned and operated by DIT. This private cloud-like network provides scalable bandwidth and controlled security access connecting the County agency users access to the vast array of business applications available in the County managed data centers. The data center's server resources connect over 17,000 end-user end point devices and over 1,900 virtual servers, 90 physical ESXi servers and 1,000 production databases in a hyper-converged environment.
- The PC Replacement Program provides a funding mechanism for scheduled PC, laptop, tablets, etc., device technology refreshes. The cost per PC in the program includes PC hardware, required software licenses, security requirements, protected disposal, service desk and desk-side staff support. This type of program has been recognized as a cost-effective and best-practice model in the governmental and commercial sectors, fully optimizing the allocation of IT assets and providing efficient and predictable desktop maintenance and support. DIT continually reviews various service options for efficiencies in the acquisition and deployment of devices, while ensuring the program remains cost-effective and competitive against other options. The COVID-19 pandemic has substantially transformed the way many County employees are working, requiring DIT to pivot to accommodate the requirements of a more mobile workforce. This has impacts on a program such as the PC Program. For example, DIT has recently purchased additional laptop computers and is now required to purchase more advanced and costlier Microsoft licenses to provide full mobile functionality, including Teams and associated accessories.
- The County's radio systems, devices and support services are used by public safety, public works, the County's bus fleets, FCPS, and other County agencies. Radio communications operate over dedicated critical infrastructure systems relied upon by public safety organizations worldwide, and as is the case with the County, they are managed locally. These systems have proven through many emergency events to be optimally reliable, surviving and sustaining operational integrity through extreme weather such as hurricanes, as well as other regional emergency and high security events while commercial telecommunications carrier networks were jammed or compromised. In FY 2020, the Department of Public Works Solid Waste Management Program completed the transition to the smart phone 'push-to-talk' radio functionality. Workforce Manager was implemented that allowed them to transition from an antiquated paper data collection process to a digital process allowing for real time data capture and reporting capabilities. The Connector bus fleet is scheduled to transition to a Voice Over Internet Protocol (VoIP) solution that will readily integrate its smart bus technology with a vendor solution utilizing cellular communications in FY 2021. The Wireless Technologies staff will continue to work on regional interoperability initiatives and on the Department of Homeland Security national strategy to ensure effective communication between local, state, and federal partners for responders. The radio communications platform is evolving, and staff is looking to the next generation of solutions as appropriate for general County agency use. To support the operational and maintenance requirements of the systems, costs are recovered from the County user agencies and FCPS.

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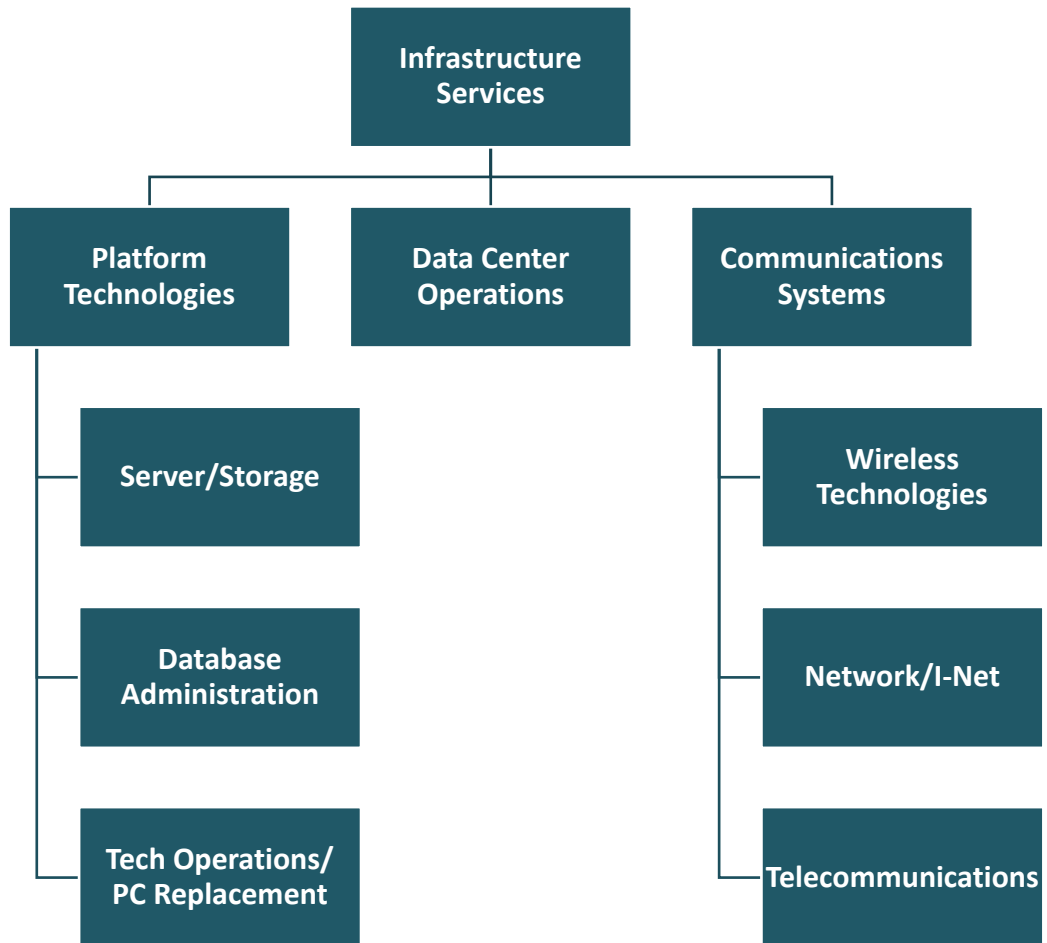
- Voice telecommunications utility services are also supported by Fund 60030. DIT continues to evaluate shifts in marketplace technology to include convergence of voice and data, and advancements in wireless and Wi-Fi. In FY 2021 and FY 2022, DIT is in the process of upgrading its current Private Branch Exchange (PBX) digital phone system, resulting in the implementation of a hybrid system that will include both Avaya enterprise solution and Microsoft Teams depending on agency/job function. There are certain specialized business needs that require an enterprise solution as certain capabilities are not yet available within Teams; however, Teams will become the primary phone for many county employees and job functions. This upgraded system has several improved features that will provide a more mobile workforce with additional flexibility and options. With the Microsoft Office 365 implementation of Teams, County employees can make calls, initiate meetings, share and collaborate on documents/files, and chat using the Teams client. In addition to the voice communications function, the Interactive Voice Response (IVR) function and the associated applications it supports has been incorporated into the Telecommunications Branch. This organizational change will allow for a more tightly integrated unified communications team. Other activities supported by this branch include system installations and executing moves, adds and changes that result from reorganizations and new hiring. DIT recovers the expense for telecommunications via annual and quarterly chargebacks to user agencies. It is anticipated that a revised chargeback methodology to recover costs will be developed in the FY 2022 to FY 2023 timeframe once the new hybrid phone system is fully implemented.
- Relocation of the data center functions offsite as part of a countywide space planning and consolidation effort is close to completion. This will eventually allow County agencies using leased space to move into vacated Government Center space as well as help to achieve DIT technical operational efficiency, resiliency, high-availability, and data security goals.

Pandemic Response and Impact

In response to COVID-19, DIT has adapted quickly and ably to address rapidly-changing requirements. The pandemic's disruption has emphasized the importance of ensuring that all elements of the County's technology structure are current, capable, modernized, secure, and mobile-friendly as resilient, secure, high-performing IT services are increasingly essential to effective government. Working with several partner agencies, DIT has aggressively moved to increase mobile options and improve the ability to conduct work and County business remotely and securely. A key component of this is converting the County's mostly desktop computer system to one that is primarily mobile. In the immediate onset of COVID-19, the County moved swiftly to procure additional laptops and mobile phones for immediate deployment, as well as providing additional support for enhanced licenses. Additional investments in future budget processes are anticipated to build on this foundation and keep the County moving forward.

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Organizational Chart



Budget and Staff Resources

Category	FY 2020 Actual	FY 2021 Adopted	FY 2021 Revised	FY 2022 Advertised
FUNDING				
Expenditures:				
Personnel Services	\$8,096,066	\$8,527,950	\$8,527,950	\$8,527,950
Operating Expenses	38,042,272	31,635,707	35,691,781	34,260,343
Capital Equipment	1,826,136	4,975,000	7,088,219	4,900,000
Total Expenditures	\$47,964,474	\$45,138,657	\$51,307,950	\$47,688,293
AUTHORIZED POSITIONS/FULL-TIME EQUIVALENT (FTE)				
Regular	70 / 70	70 / 70	70 / 70	70 / 70

FY 2022 Funding Adjustments

The following funding adjustments from the FY 2021 Adopted Budget Plan are necessary to support the FY 2022 program:

Operating Expenses **\$2,624,636**

An increase of \$2,624,636 is due to increased baseline operating requirements. Of this total, approximately \$2.6 million is associated with increased Microsoft licensing requirements to utilize Microsoft products on County PCs. DIT is now required to purchase more advanced and costlier licenses to provide full mobile functionality, including Teams and associated accessories. Significant additional costs can be directly traced to COVID-19 and the need for additional remote access and

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enhanced mobility and business continuity requirements. Examples include z-scaler remote access software that has allowed for significantly increased teleworking capacity, video conferencing technology, data analysis software, the Service Now platform, Enterprise Support Services from Microsoft, and several other similar products and services.

Capital Equipment (\$75,000)

Funding of \$4,900,000 is included for Capital Equipment, which is a decrease of \$75,000 from the FY 2021 Adopted Budget Plan of \$4,975,000. Of the \$4,900,000 total, \$2,900,000 is directly associated with the I-Net Refresh, \$600,000 reflects recurring upgrades of sites and refresh of local area network switches and related County enterprise data network equipment and gear that allow user access County applications and internet services, and \$1,400,000 to support infrastructure replacement costs, specifically the Nutanix hardware platform and data protection suite.

Changes to FY 2021 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2021 Revised Budget Plan since passage of the FY 2021 Adopted Budget Plan. Included are all adjustments made as part of the FY 2020 Carryover Review, FY 2021 Mid-Year Review, and all other approved changes through December 31, 2020:

Carryover Adjustments \$6,169,293

As part of the *FY 2020 Carryover Review*, the Board of Supervisors approved funding of \$6,169,293, including appropriation of \$4,145,556 for the upgrade and modernization of the County's telephone system, hardware to support network upgrades, fiber optic network refresh (I-Net), and development of revenue system software. Encumbered carryover of \$2,023,737 supporting data center operations, computer equipment, and various maintenance requirements was included.

Position Detail

The FY 2022 Advertised Budget Plan includes the following positions:

TECHNOLOGY INFRASTRUCTURE SERVICES – 70 Positions			
PC Replacement			
10	Enterprise IT Technicians		
2	IT Technicians II		
Wireless Technologies			
1	Network/Telecom Analyst IV	4	Network/Telecom Analysts II
4	Network/Telecom Analysts III	1	Network/Telecom Analyst I
Data Center Services/IT Service Desk/Platform Technologies			
1	IT Program Director III	5	Systems Engineers II
2	Info. Tech. Program Managers II	1	Systems Engineer I
2	IT Technicians II	5	Network/Telecom Analysts I
1	Programmer Analyst III	12	Enterprise IT Technicians
2	Systems Engineers III		
Network/I-Net			
1	Info. Tech. Program Director I	1	Info. Security Analyst IV
1	Info. Tech. Program Manager I	3	Network/Telecom Analysts IV
2	Systems Engineers III	5	Network/Telecom Analysts III
1	Systems Engineer II	3	Network/Telecom Analysts II

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Performance Measurement Results

The Technical Support Center Help Desk (IT Service Desk) requests for service increased in FY 2020. The number of calls remained relatively high based on a significant number of service calls related to rolling out the latest generations of Microsoft Windows and Office, unified messaging, Enterprise Service Manager Platform (ESMP) rollout, and increased deployment of mobile devices. During the final quarter of FY 2020, this trend was accelerated by the rapid change in the County's operating posture and rapid expansion of telework in response to the pandemic. Strengthened enterprise-wide management and image control processes have allowed resolution of end-user desktop requests quickly. Efforts in FY 2021 will focus on enhanced remote resolution, new mobile devices/apps, and IT Service desk system-workflow services to streamline routine processes to help improve service quality.

Indicator	FY 2018 Actual	FY 2019 Actual	FY 2020 Estimate	FY 2020 Actual	FY 2021 Estimate	FY 2022 Estimate
Business days to fulfill service requests from initial call to completion of request for non-critical requests	5	5	5	5	6	7
Business days to fulfill service requests from initial call to completion of request for critical calls	2	2	2	3	4	5
Business days to fulfill Telecommunications service requests for emergencies	1	1	1	1	2	2
Percent of calls closed within 72 hours	80%	70%	75%	71%	72%	74%
Percent of first-contact problem resolution at IT Service Desk	92%	97%	97%	94%	95%	96%

A complete list of performance measures can be viewed at
<https://www.fairfaxcounty.gov/budget/fy-2022-advertised-performance-measures-pm>

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FUND STATEMENT

Category	FY 2020 Actual	FY 2021 Adopted Budget Plan	FY 2021 Revised Budget Plan	FY 2022 Advertised Budget Plan
Beginning Balance	\$8,171,087	\$1,866,517	\$7,749,245	\$246,874
Revenue:				
Telecommunication Charges	\$4,241,936	\$4,500,000	\$4,500,000	\$4,300,000
Wireless Technologies	827,357	900,000	900,000	925,000
PC Replacement Charges	7,053,045	7,396,624	7,396,624	11,658,927
DIT Infrastructure Charges				
County Agencies and Funds	\$23,851,487	\$24,264,844	\$24,264,844	\$24,262,432
Fairfax County Public Schools	2,030,009	2,030,009	2,030,009	2,285,823
Subtotal DIT Infrastructure Charges	\$25,881,496	\$26,294,853	\$26,294,853	\$26,548,255
Total Revenue	\$38,003,834	\$39,091,477	\$39,091,477	\$43,432,182
Transfers In:				
General Fund (10001)	\$4,824,696	\$0	\$0	\$0
Cable Communications (40030) ¹	4,714,102	4,714,102	4,714,102	4,714,102
Total Transfers In	\$9,538,798	\$4,714,102	\$4,714,102	\$4,714,102
Total Available	\$55,713,719	\$45,672,096	\$51,554,824	\$48,393,158
Expenditures:				
Telecommunication Services	\$4,338,059	\$4,500,000	\$5,283,400	\$5,252,201
Infrastructure Services	28,924,491	29,992,958	35,358,080	29,129,540
Wireless Technologies	1,332,487	1,470,699	1,480,172	1,375,000
Computer Replacement Program	10,202,342	7,900,000	7,901,433	10,531,552
Technology Infrastructure Equipment	3,167,095	1,275,000	1,284,865	1,400,000
Total Expenditures	\$47,964,474	\$45,138,657	\$51,307,950	\$47,688,293
Total Disbursements	\$47,964,474	\$45,138,657	\$51,307,950	\$47,688,293
Ending Balance²	\$7,749,245	\$533,439	\$246,874	\$704,865
Infrastructure Replacement Reserve ³	\$7,749,245	\$533,439	\$246,874	\$704,865
Unreserved Balance	\$0	\$0	\$0	\$0

¹ Funding of \$4,714,102 reflects a direct transfer from Fund 40030, Cable Communications; \$1,814,102 is to support staff and equipment costs related to construction of the I-Net, and \$2,900,000 supports a new multi-year commitment to replace and refresh core equipment elements of the I-Net. The continuation of the equipment refresh effort will help to ensure I-Net continues to operate effectively.

² The fluctuation in ending balance is primarily due to the operation of the PC Replacement and Computer Equipment Reserve Programs. The programs collect funding each year, hold it in reserve until needed, and then expend the funds for replacement equipment. The time period for this action varies based on the needs of the programs.

³ This reserve is designed to assist in the scheduled replacement of enterprise computer and network assets.