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:
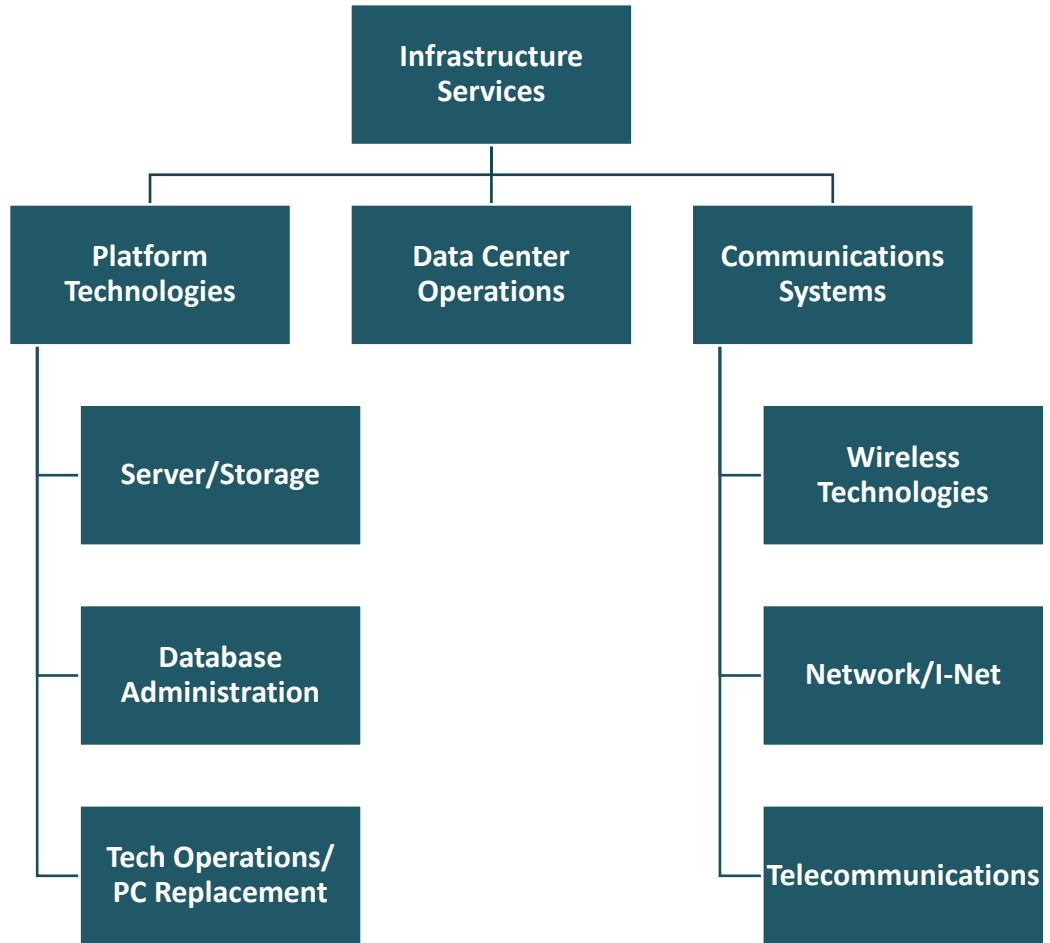
- The County's enterprise network is a private dedicated fiber-optic metropolitan area network (MAN), often referred to as the Institutional Network (I-Net). The county's network is also supplemented with commercial services for Internet peering points as well to locations without I-Net. The I-Net is 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. In FY 2022, DIT has started working on upgrading the county's wireless (Wi-Fi) infrastructure to bring it up to current industry standards. This will improve the county's Wi-Fi security posture, improve location-based services, and provide significantly improved reliability and coverage.

- The PC Replacement Program provides a funding mechanism for scheduled PC, laptop, tablets, and other 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. 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.

- 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. 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/Anywhere 365 depending on agency/job function. Teams will become the primary phone for many county employees and job functions. This also lays the foundation for non-emergency citizen hotline 311 to Anywhere 365 for modernization strategies within the County. This upgraded system has several improved features that will provide a more mobile workforce with additional flexibility and options. 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 2023 to FY 2024 timeframe once the new hybrid phone system is fully implemented.

Organizational Chart

```
                    ┌─────────────────┐
                    │ Infrastructure  │
                    │    Services     │
                    └─────────────────┘
        ┌────────────────┬────────────────┐
┌───────────────┐ ┌──────────────┐ ┌───────────────┐
│   Platform    │ │ Data Center  │ │ Communications│
│ Technologies  │ │  Operations  │ │    Systems    │
└───────────────┘ └──────────────┘ └───────────────┘
        │                                  │
┌───────────────┐                 ┌───────────────┐
│ Server/Storage│                 │   Wireless    │
│               │                 │ Technologies  │
└───────────────┘                 └───────────────┘
        │                                  │
┌───────────────┐                 ┌───────────────┐
│   Database    │                 │ Network/I-Net │
│Administration │                 │               │
└───────────────┘                 └───────────────┘
        │                                  │
┌───────────────┐                 ┌───────────────┐
│Tech Operations/│                │Telecommunications│
│ PC Replacement │                └───────────────┘
└───────────────┘
```

Budget and Staff Resources

Category	FY 2021 Actual	FY 2022 Adopted	FY 2022 Revised	FY 2023 Advertised
FUNDING				
Expenditures:				
Personnel Services	$7,669,131	$8,614,396	$7,673,631	$9,100,720
Operating Expenses	32,150,283	34,260,343	45,695,236	37,041,052
Capital Equipment	4,055,678	4,900,000	6,646,419	2,500,000
Total Expenditures	**$43,875,092**	**$47,774,739**	**$60,015,286**	**$48,641,772**
AUTHORIZED POSITIONS/FULL-TIME EQUIVALENT (FTE)				
Regular	70 / 70	70 / 70	70 / 70	70 / 70

FY 2023 Funding Adjustments

The following funding adjustments from the FY 2022 Adopted Budget Plan are necessary to support the FY 2023 program:

Employee Compensation   **$486,324**
An increase of $486,324 in Personnel Services includes $350,123 for a 4.01 percent market rate adjustment (MRA) for all employees and $136,201 for performance-based and longevity increases for non-uniformed merit employees, both effective July 2022.

Department of Vehicle Services Charges   **$1,591**
An increase of $1,591 in Department of Vehicle Services Charges is based on anticipated billings for maintenance and operating-related charges.

Operating Expenses   **$2,779,118**
A net increase of $2,779,118 is due to increased baseline operating requirements. Of this total, approximately $2.2 million is associated with increased hardware and licensing requirements in the PC Program. DIT is now required to purchase more advanced and costlier licenses to provide full mobile functionality, including Teams and associated accessories and is also purchasing laptop/tablet computers which are significantly more expensive that standard desktop computers. There are also increased costs associated with software, storage, support, and other related infrastructure requirements. Many of these costs can be directly traced to COVID-19 and the need for additional remote access and enhanced mobility and business continuity requirements.

Capital Equipment   **($2,400,000)**
Funding of $2,500,000 is included for Capital Equipment, which reflects a decrease of $2,400,000 from the FY 2022 Adopted Budget Plan total of $4,900,000 due to lower FY 2023 requirements for the I-Net Refresh. Of the $2,500,000 total, $500,000 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 to County applications and internet services, and $1,400,000 is to support infrastructure replacement costs, specifically the Nutanix hardware platform and data protection suite.

Changes to FY 2022 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2022 Revised Budget Plan since passage of the FY 2022 Adopted Budget Plan. Included are all adjustments made as part of the FY 2021 Carryover Review, FY 2022 Mid-Year Review, and all other approved changes through December 31, 2021:

Carryover Adjustments   **$12,240,547**
As part of the *FY 2021 Carryover Review*, the Board of Supervisors approved funding of $12,240,547, including $59,235 in Personnel Services for a one-time compensation adjustment of $1,000 for merit employees and $500 for non-merit employees paid in November 2021. The remaining amount of $12,181,312 is due to the appropriation of $6,049,222 of balances to support IT infrastructure costs; support for increased PC hardware and software license costs; procurement of Anywhere 365 for the upgrade and modernization of the County's telephone system; purchase of additional load balancers to ensure the County network and website can respond quickly to staff and residents; and support for the continuing transition from mainframe to Windows-based operations. Additionally, encumbered carryover of $4,132,090 that supports the purchase of network hardware, contracted support, computer equipment, telecommunications hardware, and various maintenance requirements is included. Further, Operating Expenses are increased by $2,000,000 to provide additional support for the PC program and network infrastructure functions. In order to offset the

expenditure increases for the PC program, network infrastructure and the one-time compensation adjustment, the FY 2022 General Fund Transfer In was increased by $2,059,235.

Position Detail

The FY 2023 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

Performance Measurement Results

The Technical Support Center Help Desk (IT Service Desk) requests for service remained largely consistent in FY 2021; however, due to the needs of a hybrid workforce, it often took longer to resolve certain types of issues. With the implementation of additional Enterprise Service Manager Platform (ESMP) workflow services and the evolving requirements support of a hybrid workforce, support calls are projected to slightly increase in FY 2022 and 2023. Efforts will focus on enhanced remote resolution and IT Service desk system-workflow services to streamline routine processes to help improve service efficiencies.

Indicator	FY 2019 Actual	FY 2020 Actual	FY 2021 Estimate	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate
Business days to fulfill service requests from initial call to completion of request for non-critical requests	5	5	6	5	5	5
Business days to fulfill service requests from initial call to completion of request for critical calls	2	3	4	2	2	2
Business days to fulfill Telecommunications service requests for emergencies	1	1	2	1	1	1
Percent of calls closed within 72 hours	70%	71%	72%	74%	73%	74%
Percent of first-contact problem resolution at IT Service Desk	97%	94%	95%	97%	96%	96%

A complete list of performance measures can be viewed at
https://www.fairfaxcounty.gov/budget/fy-2023-advertised-performance-measures-pm

FUND STATEMENT

Category	FY 2021 Actual	FY 2022 Adopted Budget Plan	FY 2022 Revised Budget Plan	FY 2023 Advertised Budget Plan
Beginning Balance	**$7,749,245**	**$3,239,874**	**$11,123,686**	**$1,400,365**
Revenue:				
Telecommunication Charges	$3,901,685	$4,300,000	$4,300,000	$3,900,000
Wireless Technologies	586,537	925,000	925,000	700,000
PC Replacement Charges	11,430,136	11,658,927	11,658,927	12,727,197
DIT Infrastructure Charges:				
County Agencies and Funds	$24,340,695	$24,348,878	$24,348,878	$25,246,771
Fairfax County Public Schools	2,218,246	2,285,823	2,285,823	2,353,337
Subtotal DIT Infrastructure Charges	$26,558,941	$26,634,701	$26,634,701	$27,600,108
Total Revenue	**$42,477,299**	**$43,518,628**	**$43,518,628**	**$44,927,305**
Transfers In:				
General Fund (10001)	$58,132	$0	$2,059,235	$0
Cable Communications (40030)[1]	4,714,102	4,714,102	4,714,102	2,314,102
Total Transfers In	**$4,772,234**	**$4,714,102**	**$6,773,337**	**$2,314,102**
Total Available	**$54,998,778**	**$51,472,604**	**$61,415,651**	**$48,641,772**
Expenditures:				
Telecommunication Services	$3,699,067	$5,252,201	$6,365,681	$5,102,182
Infrastructure Services	30,163,149	29,192,915	37,783,215	27,906,128
Wireless Technologies	1,208,968	1,387,722	1,398,051	1,447,681
Computer Replacement Program	7,528,908	10,541,901	13,068,339	12,785,781
Technology Infrastructure Equipment	1,275,000	1,400,000	1,400,000	1,400,000
Total Expenditures	**$43,875,092**	**$47,774,739**	**$60,015,286**	**$48,641,772**
Total Disbursements	**$43,875,092**	**$47,774,739**	**$60,015,286**	**$48,641,772**
Ending Balance[2]	**$11,123,686**	**$3,697,865**	**$1,400,365**	**$0**
Infrastructure Replacement Reserve[3]	$11,123,686	$3,697,865	$1,400,365	$0
Unreserved Balance	**$0**	**$0**	**$0**	**$0**

[1] Funding of $2,314,102 reflects a direct transfer from Fund 40030, Cable Communications, to support staff and equipment costs related to construction of the I-Net, and to 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.