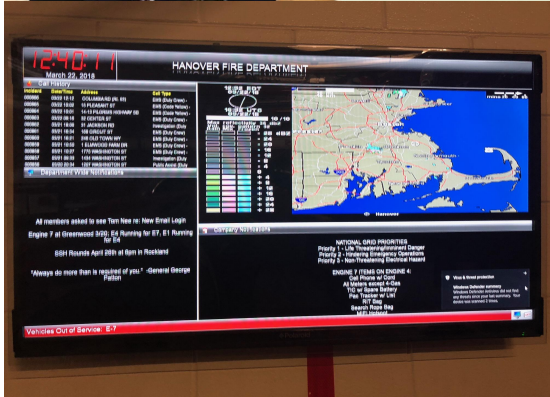


Town of Hanover

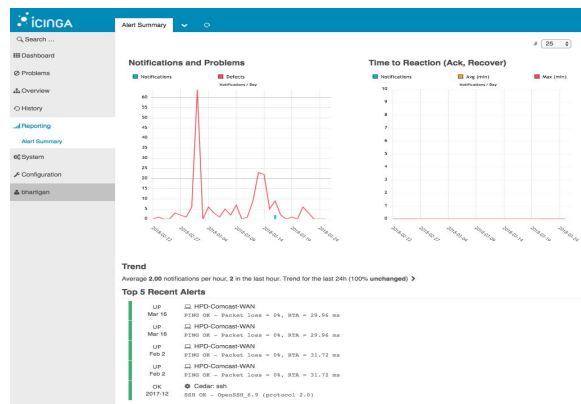
FY '19 BUDGET: Technology Department



Server Watchlist (10 of 16)

+ ADD SERVER

SERVER	CPU		DISK		NETWORK		MEMORY	
Server Name	% Used	Queue	Rate	Queue	Rate	PKT Loss	% Used	Pagefaults
server04		0		0		0		
server03		0		3		0		
milestone01		0		1				
milestone02		0		0				
server1		0		0		0		
server2		0		0		0		
server3		0		0		0		
hhs1								
hhs2								
hhs3								



March 28, 2018



Presentation Outline

- Technology Department Overall Objectives
- Budget
 - History and projections
 - Personnel
 - Expenses
- FY '18 Annual Town Meeting Article Update
- Grants and Reimbursements
- FY '18 Current Technology Initiatives
- FY '19 Proposed Projects
- Video Camera Article
- Systematic Refresh Proposal
- Network Security
- Technology - The Future



Objectives

- Work with town and school departments to implement improved use of technology
- Assist all town and school departments with reviewing existing and new technologies/systems
- Secure budget funding to meet all financial commitments for technology procurements
- Staff the Technology Department to meet all daily and project needs
- Standardize all core infrastructure hardware and configurations
- Develop systematic technology refresh policies
- Provide a secure and stable environment with goal of 100% uptime for all Town and School computer systems



Technology Budget History and Projection

Fiscal Year	Budget	Actual	Budget % Inc.
FY 2013 (Town and School)	\$608,184	\$521,727	
FY 2014 (Town and School)	\$647,818	\$692,287	6.52%
Consolidation July 1, 2014 (FY 2015)			
FY 2015	\$778,926	\$840,823	20.24%
FY 2016	\$958,725	\$924,169	23.08%
FY 2017	\$840,436	\$793,423	-12.34%
FY 2018	\$955,658		13.71%
FY 2019 proposed	\$1,093,346		14.41%
FY 2020 projected	\$1,131,502		3.66%
FY 2021 projected	\$1,206,660		6.91%
FY 2022 projected	\$1,282,446		6.63%
FY 2023 projected	\$1,358,878		6.37%
FY 2024 projected	\$1,435,970		6.14%



Personnel

Position	FY 2018	FY 2019	FY 2020
Director of Technology Operations Bill Hartigan	1.00	1.00	1.00
Technician - Tom Nee	1.00	1.00	1.00
Technician and Media Specialist - Steve Ryerson	1.00	1.00	1.00
Technician - Bryan Long	1.00	1.00	1.00
** Senior Technician Network Specialist - TBA	1.00	1.00	1.00
Part Time Technician Assistant	.63	.63	.63
* Database Coordinator/Systems Developer - Brian Converse (move to Instructional Technology in FY 2020)	1.00	1.00	0.00
New Technician Position as we increase consolidation	0.00	0.00	1.00
Grand Total	6.63	6.63	6.63

* Database Coordinator /Systems Developer is dedicated to Student information System and Instructional Technology

** Position unfilled in FY '18 due to insufficient funding to attract qualified applicants



EXPENSE

Account	FY 2018	FY 2019	Difference
SW Contracted Services Technology School	\$133,415	\$191,245	\$57,830
SW Contracted Services Technology Town	\$177,322	\$238,598	\$61,276
SW Technology Expense	\$55,400	\$75,200	\$19,800
SW Instructional Software	\$68,923	\$70,523	\$1,600
School Copiers	\$89,000	\$89,000	\$0
Existing Verizon and Alarm Lines	\$28,050	\$23,247	(\$4,803)
Grand Total	\$552,110	\$687,813	\$135,703



Annual Town Meeting Articles

Expense	Amount
Budget	\$65,000.00
Erate Disbursement (Catch up Payment)	\$7,184.26
Town Hall Laptops (5 Dell 15")	-7,586.50
TownWide Computers (5 Elitedesk 800 G3)	-\$5,345.05
Town Hall Computers (20 Elitedesk 800 G3)	-\$20,700.00
2 Microsoft Tablets	-\$2,165.20
Grand Total Remaining	\$36,387.51

The Center School Construction Project will be able to absorb the Consolidated Server requested for the FY 19 ATM. Our recommendation is to not fund the FY 19 ATM Consolidated Server Request and ask Town Meeting to re establish the Information Technology Study Committee for FY 2019.



Grants and E-Rate Reimbursements

Awarded MA Community Compact Grant of \$7,052,21 in FY '18 as part of a regional grant application for Digital Orthophotography service. This service would cost over \$10k if Hanover were to do it alone without grant monies or neighboring communities participating.

E-Rate Reimbursement History			
Funding Year	Orig Category of Service	Orig Total Cost	Cmtd Commitment Request
2017	Data / Internet Access	\$12,586.80	\$5,034.72
2017	Internal Connections/Hardware	\$7,549.05	\$3,019.62
			\$8,054.34
2016	Internal Connections/Hardware	\$39,032.76	\$13,172.01
2016	Data / Internet Access	\$12,342.48	\$4,936.99
			\$18,109.00
2015	VOICE SERVICES	\$30,264.84	\$6,052.97
2015	INTERNET ACCESS	\$11,027.28	\$4,410.91
			\$10,463.88
2014	TELCOMM SERVICES	\$66,106.08	\$26,442.43
2014	INTERNET ACCESS	\$11,790.72	\$4,706.88
			\$31,149.31
2013	TELCOMM SERVICES	\$77,956.20	\$31,182.48
			\$31,182.48



FY'18 Projects

The town-wide Technology Department consists of three 3 technical staff who work under the direction of the Director of Technology Operations and are responsible for all aspects of the town computers, networks, servers, firewalls, internet connections, VOIP phones and everything in between. In addition to standard support requests the team works on numerous projects throughout the town many of which are highlighted below. This list is exhaustive but is by no means complete.

- Closed 2423 helpdesk tickets Fiscal YTD
- Converted 200 2006 iMacs to ChromeOS to allow them to continue to be applicable to the learning process.
- Replaced Toshiba copiers with Konica Minolta at Schools and Town Hall (30 units in total)
- Converted Center/Sylvester and Salmond to same VOIP system as Town Hall and other town offices
- Added Verizon FIOS internet to both Police and Fire headquarters to insulate against Comcast outages.
- Implemented a robust and secure backup platform with off-site redundancy for Town Hall and School servers.
- Installed and upgraded battery backup units (aka UPS) at all school buildings to ensure critical systems remain online for approximately 30 minutes after losing power. Configured all buildings to alert Technology in event of power outage.
- Implemented open source/freeware basic network monitoring to monitor all internet connections as well as critical internal servers and network hardware. Alerts are sent to Technology team via e-mail
- Implemented configuration and process to quickly and easily put alert messages on VOIP system



FY'18 Projects (continued)

- Replaced or are in process of replacing 25 obsolete desktops and laptops at Town Hall
- Upgraded network switch at Fire headquarters to provide improved performance and manageability.
- Upgraded WiFi hardware at Town Hall to accommodate increased coverage and faster performance.
- Upgraded WiFi hardware at Hanover Middle School to improve coverage and capacity.
- Prepared caching servers and updated TestNav application for Spring 2018 MCAS testing.
- Delivered internet and WiFi to Boys Club wirelessly from Town Hall and converted their phone to the town-wide VOIP provider.
- Integrated new Town Hall security cameras into existing Milestone environment to give first responders a single interface to view Town and School cameras.
- Converted John Curtis Library to town-wide VOIP provider
- In process of converting School website to same hosted provider as Town Hall and upgrading/updating Town Hall website.
- Design and coordinate all technology components for Center building project.
- In process of migrating Police and Fire e-mail to Town Hall provider (Rackspace) and converting to @hanover-ma.gov
- Moved HPD and HFD inbound services (e-mail, VPN) from Comcast to Verizon to improve reliability
- Converted Ambulance system from AmbulPro to ESO
- Upgraded HHS Building Management System management workstation
- Installed TV in HFD bay for crews to view call history, weather status as well as internal notifications



FY '19 Projects

- Expand existing security system to include cameras at HMS and Cedar
- Center School Building Project
- Consolidated Server
- Improve network security with implementation of Access Control profiles
- Replace/Improve projector at Advisory room (may be FY '18)
- Upgrade HMS and HHS digital media computer labs
- Consolidate town department websites to Hanover-MA.gov site
- Consolidate remaining town department e-mail domains to hanover-ma.gov
- Upgrade phones at HPD and HFD to improve service



HMS and Cedar School Camera Project

Three quotes have been provided so far

- BCM \$70k for HMS only (quote provided by Bob Murray)
- FTG \$82k for HMS only, awaiting quote for Cedar
- East Coast Telcom \$89k

All proposals require we add 3 network switches to HMS and 3 network switches to Cedar for a total cost of ~\$12,000 to support the cameras and recording servers. This equipment to be purchased, installed and configured by Hanover Technology.

BCM	FTG	East Coast Telcom
HMS - \$70 <ul style="list-style-type: none">• 23 cameras• 36Tb server• Wiring• Milestone license• 1 year support	HMS - \$82k <ul style="list-style-type: none">• 40 cameras• 48Tb server• Wiring• 2 42" TVs for office• Milestone licenses Cedar - \$60k	HMS - \$52k <ul style="list-style-type: none">• 52 cameras• 48Tb server• Wiring• Milestone Licenses Cedar - \$37k <ul style="list-style-type: none">• 25 cameras• 48Tb server• Wiring• Milestone Licenses



Systematic Equipment Refresh Proposal

With leasing interest rates near zero percent (some leases are at 0%) it becomes much easier to lease equipment (desktops, laptops) for 3 year terms which forces an automatic refresh and provides for level, predictable expenses.

FY '19 -> FY '24 add \$50k annually to the Technology operating budget for equipment upgrades. Over this 6 year period replace all desktops, laptops and infrastructure equipment.

In FY '19 replace HMS Music and HHS Video labs (45 iMacs):

- ~\$143k to purchase
- ~\$47K to lease over 3 years

Desktop & laptop fleet consists of the following

- 950 Chromebooks/iChromes
- 1100 iMac/MacBooks
- 300 iPads
- 175 Windows machines

Servers and Infrastructure equipment will be purchased rather than leased in order to avoid having to replace every 3 years. Leases beyond 3 years for this equipment are not attractive as the residual values drop for all equipment beyond 3 years.



Network Security

- Working with Department of Homeland Security and Center for Internet Security for security scans to identify any weaknesses
- Implementing Extreme Networks Management monitoring and access control policy appliance/software as part of the Center building project
- Continue to review and upgrade all network and device security services
- Expand logging of Sonicwall



Technology – The Future

Projects to be explored over the next 3-5 years

Consolidate town E-mail and web hosting platforms

Install town-wide fiber optic network

Move to automatic refresh of equipment, average fleet age of desktops/servers 6 years, laptops 4 years, tablets 3 years

Update internal network equipment at HHS, reconfigure network to current best practices and town-wide scheme

Eliminate reliance on outside consultant for HFD and HPD





Discussion and Questions

