

# TECHNOLOGY



## 2014 Bond Update TECHNOLOGY INFRASTRUCTURE

October 2017

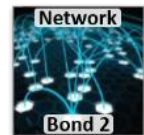


# Technology Infrastructure Update

## Projects



- Install High Speed Wireless Access Infrastructure



- Install Network Electronics Infrastructure



- Upgrade Connectivity, Power, and Air Conditioning



- Upgrade the Data Center and Infrastructure



- Upgrade Staff Technology and Telephone Systems



- Install Technology Infrastructure in New Schools

# Technology Infrastructure Update

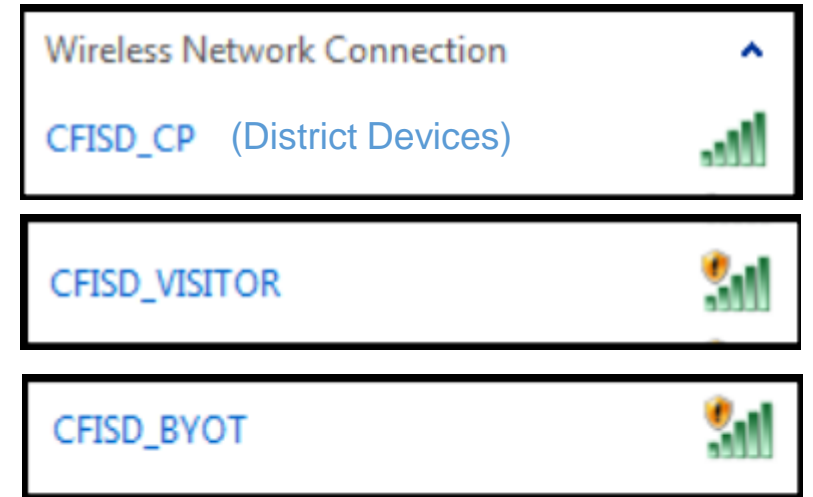


## Install High Speed Wireless Access Infrastructure

Completed the installation of enterprise state-of-the-art, high-speed wireless access infrastructure that includes:

- Up to three wireless device connections,
- Secured Bring Your Own Technology (BYOT) program,
- Secured visitor access, and
- Outdoor wireless coverage.

Grade Level	Installed 9,822 Wireless Access Points
High	100% Complete (installed 2,963)
Middle	100% Complete (installed 2,037)
Elementary	100% Complete (installed 4,567)
Alternative	100% Complete (installed 93)
Support Centers	71% Complete (installed 162)



# Technology Infrastructure Update



## Install Network Electronics Infrastructure

Completed the installation of high-speed network electronic switching infrastructure that provides:

- Secured, high-performance communications,
- Connectivity of all devices in schools, service centers, hubs, and data centers,
- Connectivity to the district's high-speed wide area network fiber, and
- Connectivity to external resources and the Internet.

Area	Installed <b>2,031</b> Network Electronics
High School	100% Complete (installed 583)
Middle School	100% Complete (installed 457)
Elementary	100% Complete (installed 808)
Alternative	100% Complete (installed 22)
Support Centers	100% Complete (installed 161)

# Technology Infrastructure Update



## Upgrade Connectivity, Power, and Air Conditioning

Working to complete the upgrade of network cabling, fiber optic connectivity, air conditioning and network closets in the schools, service centers, hub connections and data centers that provides:

- Network reliability with multiple paths to the Internet reducing single points of failure,
- High-speed connectivity and Internet bandwidth,
- Installation of adequate air conditioning and emergency power in primary network connections.

Area	High-Speed Cabling 8000+ drops	Dual Fiber Internet Connections	Dual Fiber Campus Feed Coverage	A/C Upgrades Network Closets
High School	100%	100%	42%	100%
Middle School	100%	100%	20%	100%
Elementary	100%	100%	10%	Included in construction renovation
Alternative	100%	100%	58%	Included in construction renovation
Support Centers	100%	100%	84%	Included in construction renovation

# Technology Infrastructure Update



## Upgrade the Data Center and Infrastructure

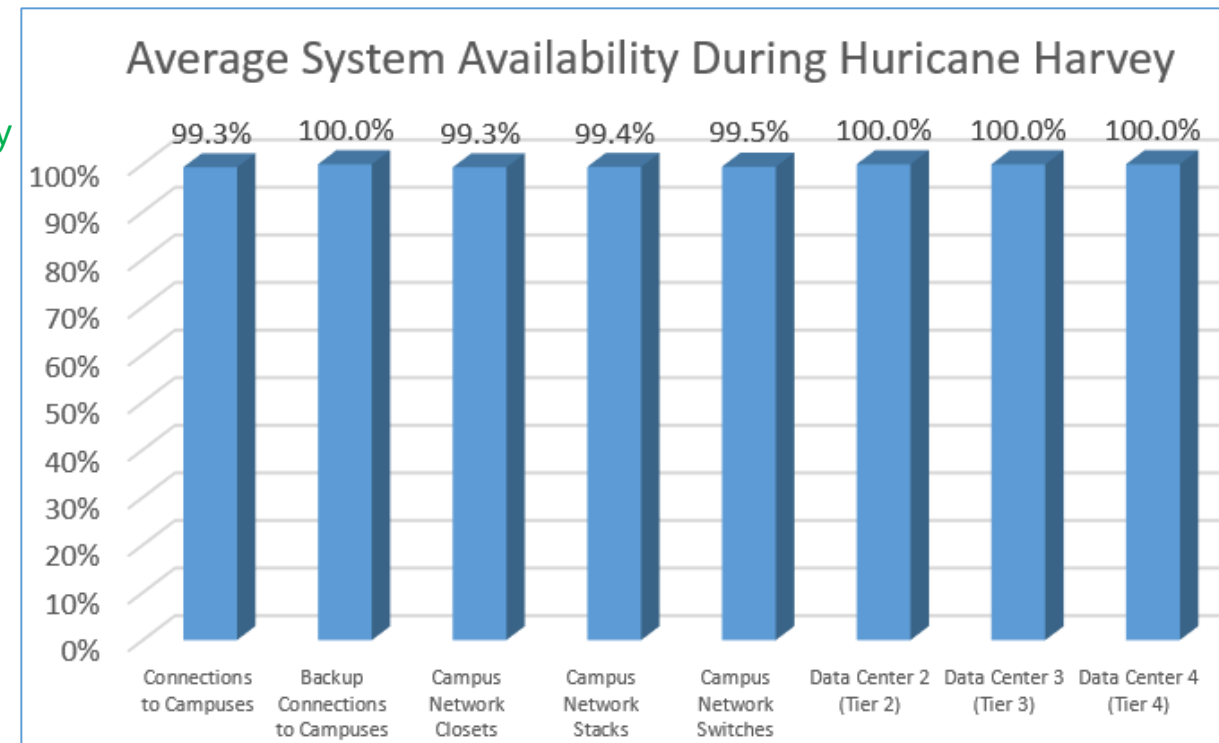
Working to complete the upgrade of infrastructure in three data centers, including a Tier 4 colocation facility (CyrusOne) to improve server availability, business continuity and disaster recovery, and system sustainability.

### ➤ Items Completed at 100%

- ✓ Internet Point of Presence (2<sup>nd</sup> Connection)
- ✓ Optical wavelength connection for Business Continuity between Data Centers
- ✓ Expanded server infrastructure with virtualization
- ✓ Automated Storage Area Network (SAN)
- ✓ Telephone Upgrade (Voice over IP)
- ✓ Data backup system with monitoring
- ✓ Firewalls for security and content filtering
- ✓ Data migration

### ➤ Items Left to Complete

- Disaster recovery system (95% complete)
- Data auditing (50% complete)
- Move Mission critical applications (60% complete)
- Implement a Private cloud (Mid 2018)
- Prepare for automation in future applications



August 25, 2017 – September 11, 2017

# Technology Infrastructure Update



## Upgrade Staff's Technology and Telephone Systems

- Completed the telephone upgrade, replacing the old phone system with Voice over Internet Protocol (VoIP).
- Working to replace state-of-the-art devices and network printers for staff and teachers on a 5 year rotation cycle.

Area	Telephone System to Voice Over IP (VoIP)	Enterprise Desktop Mgmt LANDesk	Administrative Devices					Administrative Network Printers				
			2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
High	100%	100%	100%	100%	100%	68%	0%	100%	100%	100%	100%	100%
Middle	100%	100%	100%	100%	100%	76%	0%	100%	100%	100%	100%	100%
Elementary	100%	100%	100%	100%	100%	51%	0%	100%	100%	100%	100%	100%
Alternative	100%	100%	100%	100%	100%	28%	0%	100%	100%	100%	100%	100%
Support Centers	100%	100%	100%	100%	100%	17%	0%	100%	100%	100%	30%	0%

# Technology Infrastructure Update



## Install Technology Infrastructure in New Schools

Working to install technology infrastructure (phone system and administrative staff technology, wireless access points, network infrastructure) in **new** and renovated schools.

Grade Level	Technology Infrastructure Complete in New Schools	Technology Infrastructure Awaiting in New Schools
High	CyPark High School Bridgeland High School	
Middle	Anthony Middle School	Middle School #19 and #20
Elementary	Matzke Replacement Hoover Elementary Wells Elementary Woodard Elementary	Elementary #57 and #56
Support Centers	Natatorium, West Green Transportation, Pidgeon Stadium,, Cold Storage	
Renovation Campuses	Francone Elementary, Lieder Elementary, Dean Middle, Adam Elementary, Bane Elementary, Jowell Elementary, Watkins Middle, Homesley Elementary, New Moore Elementary	



# Technology Infrastructure Update

Projects



[Weekly Updates](#)

## Cost Summary

2014 Bond Technology Infrastructure Allocation	\$90,391,213.29
Expenditures To Date:	\$68,546,522
Balance as of September 28, 2017	\$21,844,691
Projected E-Rate Technology Infrastructure Reimbursements from 2015-2016 Purchases	\$9,894,105.00