



## **2017 HILLSBORO SCHOOL DISTRICT BOND PROGRAM TECHNOLOGY INVESTMENTS**

### **BOND PROGRAM OVERVIEW**

The 2017 Hillsboro School District Bond was approved by District voters in November 2017 by a margin of 67 percent to 33 percent. The Bond program focused on four major categories: Improving Safety and Security; Building for the Future; Enhancing Existing Infrastructure; and Providing a Modern Educational Experience for all students. Included in the Providing a Modern Educational Experience component of the bond was approximately \$30.2 million for District technology. This total is broken up into two major areas of investment: Classroom Technology and Technology Infrastructure. The purpose of this document is to provide detailed information regarding these technology investments.

### **BACKGROUND**

The Hillsboro School District includes 25 elementary schools, four middle schools, four comprehensive high schools, two alternative schools and five support campuses. The oldest of these buildings was constructed in 1922 (Reedville Elementary) and the newest in 2009 (South Meadows Middle School). Over this 87-year period, technology has rapidly evolved, but its availability and use have not been uniformly applied; the result is that technology varies from building to building. The purpose of the technology investments is to ensure that all of our buildings, regardless of age, have uniform application of technology in classrooms, and a strong infrastructure to support the growing technology needs Districtwide.

### **CLASSROOM TECHNOLOGY INVESTMENTS**

Several years ago a sub-committee of the District Long-Range Planning Committee was formed to determine a baseline standard for classroom technology; in other words, the components that all District classrooms should have available to students, regardless of the age of the facility. The Equitable Learning Environments Sub-Committee developed the following list of technology measures that would be applied to every District classroom:

Cathode Ray Tube (CRT) Monitor Replacement – Eliminate CRT monitors from the District. Newer flat-screen monitors provide better performance and usability and are much more energy-efficient.

- Status: CRT monitor replacement was completed prior to the start of the 2018-19 school year.

Mounted Wireless HDMI Projectors – Provide teaching staff with the ability to project content for the entire classroom in a safe and efficient manner. This will require secure mounting of projectors in the ceiling or wall of every classroom in the District and, where possible, placement of all cabling inside the walls. Installation will comply with fire codes and ensure the safety of students and staff by removing equipment obstacles and cords from classroom aisles.

- Status: Mounting of all projectors in classrooms will be completed by the end of the 2018-19 school year.

Projection Whiteboards/Screens – Install a projection whiteboard or projection screen in every classroom to accommodate the new mounted HDMI projectors.

- Status: This work will be done in coordination with the mounted HDMI projectors and will be completed by the end of the 2018-19 school year.

Document Cameras – Provide teaching staff with the technology to best deliver content to students. Document cameras allow teachers to display information and objects to all students.

- Status: Installation of document cameras will be completed by the end of the 2018-19 school year.

AirTame (or similar device) – Allow teaching staff to project web-based educational content such as Schoology, Khan Academy, YouTube, etc. to a display. This will require the installation of an Apple TV, or similar display device, in every classroom.

- Status: Installation of AirTame devices will be completed by the end of the 2018-19 school year.

Voice Amplification Systems – Ensure that all students can hear their teacher by the use of a voice amplification system in every classroom. This system provides a microphone and speakers to amplify the voice of the speaker. These systems have been shown to significantly improve student performance.

- Status: Installation of voice amplification systems will be completed by the end of the 2018-19 school year.

Wireless Access Points (WAPs) – Ensure that all students and staff have access to a wireless signal from anywhere inside one of our campuses and public buildings. This will be accomplished by having at least one WAP in every classroom and learning space, and additional WAPs in common areas throughout each campus.

- Status: Installation of WAPs was completed prior to the start of the 2018-19 school year.

Student Computers – Install additional dedicated stand-alone computer devices in every District classroom.

- Status: 4,700 laptop computers and carts were distributed to all school buildings prior to the end of the 2017-18 school year.

## **TECHNOLOGY INFRASTRUCTURE INVESTMENTS**

Districtwide Internal Dark Fiber Ring – Design and construct a redundant-path dark fiber ring connecting all District buildings to allow for exchange of digital information, delivery of digital curriculum, digital telephone service, and internet connectivity. The dark fiber ring will allow the District to discontinue our current subscription for internet service. We anticipate that, by eliminating those expenses, this project will provide a five- to seven-year payback on our investment.

Additionally, this project is being completed in conjunction and partnership with the City of Hillsboro and their Fiber to the Premise (FTTP) project. By working together, we are extending the efforts of both agencies beyond what each could do alone, saving time and money in the construction of this very large build-out.

- Status: Planning and design began in the fall of 2017. Implementation and build-out will occur over the course of the next two to three years, beginning in January 2019.

Replacement of Voice over IP (VoIP) Phone System – Replace the existing, aging phone system to include replacement of all handsets.

- Status: Estimated completion of installation and training prior to the 2019-20 school year.

Replacement of Existing Switching Infrastructure – Replace all existing switching infrastructure to support all network operations.

- Status: All switches will be replaced by fall 2020.

Replacement of Uninterruptible Power Supply (UPS) – Replace all existing UPS devices supporting all network and server operations.

- Status: All UPS devices will be replaced by fall 2019.

Refresh Wireless Access Points (WAPs) – Upgrade and refresh all WAPs in place at secondary schools. These schools were all outfitted with limited bandwidth WAPs and will be replaced with WAPs that have more extensive bandwidth capabilities.

- Status: Estimated completion will be by fall 2021.

Server Infrastructure Refresh – Replace all outdated and aging servers in the District data center and the replication site at Liberty High School.

- Status: Completion is anticipated by fall 2020.

Elementary Gym Audio/Visual (A/V) System Installation – Install an A/V system, projector and screen in every elementary school gymnasium.

- Status: Completion is anticipated by fall 2019.

Security and Routing Architecture Upgrades – Install routers and firewalls in all schools to support the new capabilities provided by the new District fiber ring. This upgrade also will allow the District to leverage security enhancements and centralize security operations.

- Status: Still being determined; completion of this project is dependent on completion of the District's dark fiber ring.

Upgrade Storage Infrastructure – Replace old storage infrastructure and expand to meet the growing need for storage and server space.

- Status: Completion is anticipated prior to the start of the 2019-20 school year.

Replacement of Licensed Staff Computers – Replace all classroom teacher workstations. All classrooms will receive a desktop computer, and all licensed teachers will receive a laptop computer for greater mobility.

- Status: Secondary staff devices and classroom computers were replaced in the summer of 2018. Elementary staff will have their devices replaced prior to the start of the 2019-20 school year.

Classified Staff Computers – Provide additional computing resources to classified staff members who do not currently have ready access.

- Status: Deployment of these devices began in the summer of 2018 and is ongoing. Custodians have been provided with a computer to work from at their desk and an iPad to complete tickets and manage duties while out in the building.

Replacement of Internal Frame-to-Frame Fiber Connections – Replace internal fiber connections to support increased data transfer between internal frame rooms.

- Status: Planning and deployment will take place during the 2022-23 school year.

Fence-to-Fence Wireless – Create wireless coverage across all building campuses, inside and out. This will allow learning and access to take place from any place on a building campus.

- Status: Planning and deployment will take place during the 2022-23 school year and will likely take two years to complete.

**SUMMARY OF PROJECTS**

PROJECT	EXPECTED/ACTUAL COMPLETION
<b>Classroom Technology Investments</b>	
Cathode Ray Tube Monitor Replacement	Summer 2018
Mounted Wireless HDMI Projectors	By end of 2018-19 school year
Projection Whiteboards/Screens	By end of 2018-19 school year
Document Cameras	By end of 2018-19 school year
AirTame (or similar device)	By end of 2018-19 school year
Voice Amplification Systems	By end of 2018-19 school year
Wireless Access Points	Summer 2018
Student Computers	Spring 2018
<b>Technology Infrastructure Investments</b>	
Districtwide Internal Dark Fiber Ring (in partnership with City of Hillsboro)	Planning and design: began fall 2017 Implementation: begin January 2019
Replacement of Voice over IP Phone System	Prior to 2019-20 school year
Replacement of Existing Switching Infrastructure	By fall 2020
Replacement of Uninterruptible Power Supply	By fall 2019
Refresh Wireless Access Points	By fall 2021
Server Infrastructure Refresh	By fall 2020
Elementary Gym Audio/Visual System Installation	By fall 2019
Security and Routing Architecture Upgrades	Dependent on completion of dark fiber ring project
Upgrade Storage Infrastructure	Prior to 2019-20 school year
Replacement of Licensed Staff Computers	Secondary: summer 2018 Elementary: prior to 2019-20 school year
Classified Staff Computers	Started summer 2018; ongoing
Replacement of Internal Frame-to-Frame Fiber Connections	Planning and deployment during 2022-23 school year
Fence-to-Fence Wireless	Planning and deployment during 2022-23 school year; two-year implementation